



ENVIRONMENT  
AGENCY

**SECOND ANNUAL REVIEW**

**OF THE**

**TAW / TORRIDGE ESTUARY**

**CATCHMENT MANAGEMENT PLAN**

**(1997)**



## **TAW/TORRIDGE ESTUARY 2ND ANNUAL REVIEW.**

### **ERRATUM**

Page 5. Mr R Wolton should read Dr R Wolton.

### **ADDENDUM**

Page 14. **Issue 6: Impact of Dredging Operation and Sand and Gravel Extraction.**  
Progress to date should read:

Current licence expires in October. A change of status has occurred as Crow Point is part of Braunton Burrows Special Area of Conservation, and subject to restrictions. A detailed study of sediment movement in the estuary is to be carried out, with data expected to be collected in May of this year with a report produced in October. This will provide relevant information for assessment of any future applications.

Page 22. **Issue 14: Known Flooding Problems - Complete other phases of Bideford Scheme - Quay (4c).**  
Progress to date should read:

4c due to start approximately February 1998. Construction work expected to take 12 - 15 months.

## SOUTH WEST REGION

### TAW-TORRIDGE ESTUARY CATCHMENT MANAGEMENT PLAN - ACTION PLAN - SECOND ANNUAL REVIEW (1997)

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Further copies of this report and any enquiries concerning this plan should be directed towards:

Richard Parker  
Environment Planner  
Environment Agency South West Region  
Manley House  
Kestrel Way  
Exeter  
Devon EX2 7LQ

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April 1997



### **Vision for the Catchment**

In an area of such high amenity and ecological value as the Taw-Torrige Estuary, our vision of the future is towards a catchment where:

- the biodiversity of the waters and associated lands of the estuary is maintained and extended.
- improvements continue to be made to existing discharges, meeting the most stringent appropriate standards
- an agricultural and forestry system develops which minimises the risk of diffuse pollution and improves the physical habitat of the river system and wetlands for wildlife.
- everyone's enjoyment and appreciation of the estuary continues to grow.
- there is minimal risk to people and property from flooding
- there are sustainable salmonid, sea and shell fisheries within the estuary.

# 1. Introduction

## 1.1 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.

Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report).

### 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.

## 1.2 The Environment Planning Process

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 is being developed to help manage these interactions and conflicts for the overall benefit of the environment and its users. This planning process 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 ourselves and other interested parties in the catchment. Following consultation, the Action Plan identifies actions to resolve the problems and issues. The Plans provide background data for Environment Agency responses to development plans and highlight our concerns about development. Achievement of the Action Plans is reported annually in Annual Reviews.

This Second Annual Review summarises the progress made by the Environment Agency from March 1996 to March 1997

It is recommended that this report is read in conjunction with the Taw/Torridge Estuary Catchment Management Plan Consultation Report (August 1993) (Ref 1) the Taw/Torridge Estuary Action Plan (March 1995) (Ref 2) and the First Annual Review (April 1996) (Ref 3).

We will review progress again in March 1998, when we will publish our Taw/Torridge Estuary 3rd Annual Review.

## 1.3 The Catchment Steering Group

Catchment Steering Groups represent a range of commercial, local authority and environmental interests who endorse the Consultation Report and Action Plan prior to public release. They 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 help to promote and develop initiatives of benefit to the environment within the catchment. This Annual Review of the Taw/Torridge Estuary Catchment Management Plan Action Plan is reported to the members of both the River Torridge and the River Taw Catchment Steering Groups. The Catchment Steering Group Members are:

### River Taw Catchment Steering Group:

Name	Representing
Mr R Boa	Local Industry
Mrs S Darling	Conservation - Devon Bird Watching and Preservation Society
Mrs R Day	Taw/Torridge Estuary Forum
Mr J Delbridge	Local Farmers - National Farmers Union
Mr M Jenkins	River Taw Fishing Association
Mr T Gameson	South West Water Services Limited
Mr B Hill	Netsmen/Shell Fishermen
Mr D Ingyon	Tourism - Fox & Hounds Hotel
Mr R Nickell	Fish Farms

Mr N Phillips	North Devon Sea Anglers Association
Mr D Spear	Regional Flood Defence Committee
Mr D Thorne	North Devon District Council
Mr S Toms	Barnstaple & District Angling Association
Mr M Turner	Regional Environment Protection Advisory Committee
Mr R Wolton	Conservation - English Nature

### **River Torridge Catchment Steering Group**

<b>Name</b>	<b>Representing</b>
Mr A Bell	Taw/Torridge Estuary Manager
Mrs G Bowering	Torridge District Council
Mr B Butler	Local Farmers - National Farmers Union
Mr R J Chappell	Torridge Environmental Forum
Mr J Daniel	Netsmen
Mrs R Day	Taw/Torridge Estuary Forum
Mr I Edmonds	Recreation/Leisure - Bideford Canoe Club
Mr T Gameson	South West Water Services Limited
Mr T Hynes	Hartland Heritage Coast Officer
Mr C Inniss	Devon Fisheries Forum
Ms M R Lane	Conservation - Tarka Project Officer (Devon Wildlife Trust)
Mr R Lascelles	Riparian Owners
Mr G Mountjoy	Bideford Anglers Association
Mrs T Norton-Smith	River Torridge Fisheries Association
Mr L J Walter	Hartland Parish Council
Mr D Wilson	Local Industry - WBB North Devon Clay Works

### **Future Reviews**

We will review progress again in April 1998, when we will publish our Third Annual Review of the Taw/Torridge Estuary CMP Action Plan

## **2. Review of Progress**

### **2.1 Summary of Progress**

Actions are only shown which are outstanding. Actions which were noted as being completed in the Action Plan, together with actions which are part of our routine work, and enforcement at known problem sites, are not shown. The costs for routine work are not included in the costs shown to the Agency.

Actions concerning liaison with planning authorities are not shown in the tables as this is part of our routine work. The policies in the statutory development plans produced by Local

Authorities guide the way that land will be developed in the future. We advise Local Planning Authorities and encourage them to adopt policies which protect the environment from harmful development. We will reinforce these policies, where we can, when commenting on planning matters or in making our own decisions.

### **Taw and Torridge Estuary Manager**

The Taw and Torridge Estuary Project continues with funding now in place until March 1998. The close working relationship with the Estuary Manager, Andrew Bell, is well established. In order to guarantee the objectives set in order to gain European funding, the possibility of a student placement for a six to nine month period is being investigated.

The trial zoning policy and code of conduct to manage recreation has been reviewed with local user groups. The scheme appears to have worked well and new and more permanent information panels will be erected at key sites to ensure its continued success.

One scheme, currently being studied as a sustainable use of the area, involves producing saltmarsh-raised lamb. Similar schemes are already in place in various European countries and appear to be working successfully. The product must be compatible with the conservation objectives of the estuary project and the study will examine the conservation benefits that can be gained from such a scheme. Conservation targets are being sought from English Nature. This proposed scheme is linked to saltmarsh creation and the set-back of tidal defences in appropriate locations.

The Estuary Manager has outlined the process and timetable for the revision of the Estuary Management Plan, to which we have an input. Groups have been set up for: Recreation, Industry, Landscape Heritage and Conservation, Land-use, Water Quality, Commercial and Ministry of Defence (MOD) and Educational Awareness. The first meetings of these groups took place at the end of March. We are closely involved with each of the topic groups, which will report to the Estuary Steering Group. One fundamental aim is to revise the area of the plan to include the estuary up to the tidal limits of the Rivers Taw and Torridge and their lower tributaries. Public consultation will begin in April 1997 and a first draft of the Revision will be produced in September 1997. Following a further period of public consultation a final version will be produced in March 1998.

Braunton Burrows is presently used for Ministry of Defence training. The MOD proposes to create a permanent link between Chivenor and Braunton Burrows to provide easier access. This may also involve an extension to the area in which training takes place. We need to look at the environmental implications of increased use of the Burrows and this has been entered as a new issue (Issue 2.2).

The Shoreline Group agreed that the Shoreline Management Plan should be extended to include a detailed study of Bideford Bay. Data may be collected in May of this year with a report produced in October. The study would provide important information regarding shoreline activity which would be useful in the consideration of continued sand and gravel extraction.

### **South West Water Services Limited's Clean Sweep Scheme**

In order to investigate the potential nomination of the estuary as a 'Sensitive Area' under the Urban Waste Water Treatment Directive (Ref 4) or a 'Polluted Water' under the Nitrates Directive (Ref 5), chemical and biological monitoring has been carried out. The report has now been completed, which indicates that Ashford Sewage Treatment Works (STW) contributes to the nutrient loading into the estuary. The results were forwarded to the Department of the Environment. Over the next 18 months other discharges into the estuary, which currently receive a comparatively low level of treatment, will be connected into Ashford STW, i.e. Braunton and Yelland, providing a major improvement for the estuary. The extension of the Biologically Aerated Flooded Filter (BAFF) Unit at Ashford STW will shortly be completed. The STW is being extended in order to treat the additional sewage. In addition Bideford STW fine screening discharge will be moved from within the Taw/Torridge Estuary to a marine outfall at Comborough. In view of these improvements, it is proposed to review the status of the Estuary after 18 months.

The long term discharge consent, to include the extra flows from Braunton, is about to be issued. The consent requires the effluent to have secondary treatment and will require compliance with an ammonia limit and all year round disinfection of the treated effluent. Consents are also being issued for all the improved storm overflows and emergency overflows. All previously untreated discharges of sewage now receive treatment.

In the Torridge Estuary, consent has been issued for the treated, disinfected sewage discharge to Bideford Bay at Comborough. As in the Taw Estuary, consents requiring improvements to storm overflows and emergency overflows are being issued. All previously untreated discharges of sewage now receive treatment. The Comborough scheme is being held up by the need for a Compulsory Purchase Order and no construction work has started on sewers, treatment works or outfall. It is possible that this scheme may not be commissioned until 1999.

### **Taw Aerial Photograph Interpretation Project**

Aerial photographs for the whole of Devon were taken in 1994, and purchased jointly with Devon County Council. The Taw/Torridge Estuary photographs were interpreted in 1995, and this data was digitised in 1995/6. The provision of this data to Devon Area is linked to the progress of the Geographical Information Systems (GIS) Pilot Project. The project is to be reported at the end of May with the recommendation that GIS be provided to all area Fisheries, Recreation and Conservation and Flood Defence offices, plus the regional Communications Centre. The project would provide many data sets including World Heritage Sites, Special Areas of Conservation, Environmentally Sensitive Areas, National Nature Reserves, SSSIs, Areas of Outstanding Natural Beauty, County Wildlife Sites, and Regionally Important Geological Sites.

### **Taw/Torridge Fisheries Inquiry**

The Agency's proposals for restricting the exploitation of salmon on the rivers Taw and Torridge include a modified Net Limitation Order, a reduced netting season and rod fishing bylaws. Net fishing, rod fishing and other fishery interests in the catchments objected. As a result, a Public Inquiry was held in November. Due to problems associated with the appointment of a technical assessor, the Inquiry was abandoned after two days and rescheduled for January 1997.

The January Inquiry lasted for two weeks. It was hoped that a decision might have been given by MAFF prior to the commencement of the netting season on 1 April, but to date MAFF have yet to receive the Inspector's Report. A decision is not expected until May 1997.

### **Reducing Pollution Incidents**

The system to collect leachate and runoff in a lagoon at Deep Moor Landfill appears to be working effectively. The contents of the lagoon are treated by an activated sludge process at the site and are then pumped to the sewage treatment works at Great Torrington. Since implementation of the system, there have been no pollution incidents at this site.

A pollution incident involving a chemical discharge to the River Caen, in which a substantial fish kill was reported, occurred in October 1996. Following our investigation, Brannoc Fibres were prosecuted and fined £2,000 plus costs. The pollution risks at this site have now been fully assessed and necessary remedial action to avoid any reoccurrence has been undertaken. A contingency plan has also been drawn up in case of emergencies situations.

The spreading of industrial wastes such as whey, milk washings and cidar making waste to land, needs careful monitoring by the Agency in order to prevent environmental pollution. We are currently working with the DoE, MAFF, ADAS and WRc (Consultants) on a report which will be used in drawing up a Code of Practice for the landspreading of industrial wastes. It is hoped that this Code of Practice will be available before the end of 1997.

### **Braunton Marsh**

We have monitored water quality on a regular basis with the results indicating few problems. Botanical and invertebrate sampling have shown the ditch network to be of high value. Some progress has been made on raising water levels, particularly in summer and we intend to proceed on an experimental approach. The area has been added to Braunton Great Field as a target area for Countryside Stewardship and some progress has been made towards developing agreements.

## Progress Tables

Actions	Responsibility <i>Lead Other</i>	a	b	Progress to Date
<b>Issue 1. Poor Effluent Quality</b>				
a DoE to decide on proposed review of existing Ashford STW consent	DOE			Progressing. Long term consent about to be issued.
b Agency to determine consent for South scheme discharge to ensure compliance with the EC BWD (Ref 6) and EC UWWTD (Ref 5)  SWWSL to carry out capital works to ensure consent compliance on South scheme discharge	Agency  SWWSL			Issued - see Introduction  No progress to date. Buckley Fields STW effluent transferred to Bideford as initial part of scheme
c Agency to determine consent for Croyde STW to ensure compliance with EC UWWTD  SWWSL to carry out capital works at Croyde under AMP2 (Ref 7) to ensure compliance with new consent	Agency  SWWSL			Agency currently considering surveys which need to be conducted in order to determine if disinfection required  SWWSL have agreed to bring this scheme forward from original date (post 2000). Now to be completed by 1999. Appropriate treatment has been identified to SWWSL as secondary treatment, together with a survey to determine whether UV disinfection required.

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 2.1: Further Conservation of Importance Species and Habitats</b>				
Support initiatives that encourage less intensive land management, especially those targeted on wetlands	Agency <i>MAFF, CoCo, EN LAs</i>	£400 p.a.	£400	Braunton Marsh ditch network shown to be of high conservation value.
Encourage restoration of wetlands habitats when consenting or advising on development proposals or other activities affecting the water environment.	Agency <i>LAs Landowners Developers</i>	£100 per application	£100 per application	Ongoing, we continue to comment and advise on habitat protection and recreation on all proposals screened
Seek collaborative opportunities with others to enhance wetland habitats	Agency <i>LAs NGOs</i>	Unknown	£1k	A draft Management Plan for the borrow pit at Braunton has been produced. See also actions relating to Braunton Marsh above.

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 2.2: Impact of increased use of Braunton Burrows</b>				
Investigate impact of increased use of Braunton Burrows	Agency	Unknown	-	

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 2.3: Decline in Ecological Value of Ditches on Braunton Marsh</b>				
Carry out special field investigation: - rapid biological appraisal - follow up water quality assessment where necessary	Agency  Agency			Full biological survey complete. Results indicate high conservation value.
- undertake a full biological survey (including macro-invertebrates, macrophytes, river corridor and habitats) at selected sites in Braunton Marsh to provide baseline data - assess results of survey	Agency  Agency	£7k	£11.5k	Full biological survey undertaken and report produced. This is currently under discussion

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility <i>Lead Other</i>	a	b	Progress to Date
<b>Issue 2.4: Loss of Saltmarsh Habitat</b>				
- set biodiversity target for saltmarsh; aim to increase area in estuary.	EN <i>Agency, DWT</i>	-	-	County Biodiversity Action Plan proceeding. Biodiversity Project officer in place, partial funding by the Agency.
- Contribute to technical studies investigating replenishment of pebble ridge and possible link with sand encroachment on Skern	EN TDC <i>Agency Others</i>	-	-	To be included in the detailed study of sediment movement (see Introduction)

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 3: Absence of Comprehensive Ecological Data</b>				
- Aerial survey interpretation of estuary area	Agency	£130k	£90k (whole pilot project)	Progressing. Interpretation is now complete and information is held digitally. A pilot project has been carried out in Cornwall Area, installing the information on GIS.
- Develop appropriate macro-invertebrate monitoring programme in estuary  - Brannoc Fibres survey 1996  - Brannoc Fibres survey 1997	Agency  Agency  Agency	£5k  £15k	£9.5k	Survey planned for 1997 if resources available.  A survey was undertaken in 1996 to look at the impact of the discharge from Brannoc Fibres. A draft report has been produced, no significant impact was detected.  Additional survey (baseline) is planned for 1997 if resources permit.

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 4: Watersport Pressures on the Estuary</b>				
- Participate in the Estuary Manager Steering Group	Agency <i>TDC, EN, NDDC</i> <i>DCC, TTEF</i>	-	-	Agency participated in discussions

a - Planned cost the Agency

b- Actual cost to Agency 1996

## b- Actual cost to Agency 1996

Actions	Responsibility Lead Other	a	b	Progress to Date
<b>Issue 5: Restricted Shellfish Farming</b>				
- Determine management protocols for shellfish including export of spat etc.	Agency MAFF, EHOs, EN Commercial fishermen	Unknown	Unknown	No progress (as currently no shellfishing in the Estuary)
- Agency to contribute through its national R&D programme to a SNIFFER research project to investigate the relationship between levels of bacteria in shellfish and water quality	SNIFFER Agency	£9k	Unknown at present	Draft report received and currently being circulated for comment. This project is to link into a further project on faecal streptococci.

Actions	Responsibility Lead Other	a	b	Progress to Date
<b>Issue 6: Impact of Dredging Operations and Sand and Gravel Extraction</b>				
- Seek to halt gravel extraction off Crow Point when licence expires and ensure no new sites introduced, subject to investigation of the impact.	Agency DCC	-	-	A detailed study of sediment movement in the estuary is to be carried out, with data expected to be collected in May of this year with a report produced in October.

a -Planned cost the Agency  
b- Actual cost to Agency 1996

Actions	Responsibility Lead Other	a	b	Progress to Date
<b>Issue 7: Reduce Pollution Incidents</b>				
- Carry out task force visits - on Woolacombe Stream, Croyde Stream, River Caen, Knowle Water and Bradford Water	Agency	£10k	£4k	The inspections of Woolacombe Stream and Croyde Stream in 1996 mean that Task Force visits or surveys have now been carried out on each of these streams. Where problems have been identified, appropriate action has been taken.
- 'Hot Spot' visits to sites of known pollution risk	Agency	£0.2k p.a.	£0.2k	Ongoing. 'Hot Spots' continue to be visited, with some sites being removed from the list and other sites being added as problems are rectified/found.
- Consider LPA development proposals to ensure no deterioration of existing pollution problems occur and to prevent new risks arising	Agency <i>LPA</i>	£2k p.a.	£2k	Ongoing - proposals considered routinely
- Enforce the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991	Agency	£0.6k p.a.	£0.6k	Ongoing
- Draw up contingency plans for holders of significant quantities of polluting material	Agency <i>Traders</i>	£0.5k	£0.5k	The Contingency Plan for Brannoc Fibres has now been completed
- Monitor and liaise with dischargers and South West Water Services Ltd	Agency <i>Traders, SWWSL</i>	Approx. £0.6k p.a.	£0.8k	Ongoing. Increased work in 1996 led to a slightly higher than average cost.

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 8: Implement Water Resources Strategy to Meet Future Needs - Implement Strategy Locally for the Taw Torridge Estuary</b>				
- The implication of the strategy for the estuary will be reviewed	Agency	Unknown at present	-	Modelling of the Roadford Strategic Supply Zone as part of revising the Roadford drought management plan has identified areas of limited resource. The ongoing AMP3 process will provide an opportunity to discuss an appropriate strategy with SWWSL for meeting demands in North Devon

a -Planned cost the Agency

b- Actual cost to Agency 1996



Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 10: Impact of Nutrient Enrichment</b>				
- Collect and analyse chemical and biological monitoring data to investigate the potential nomination of the estuary as a 'Sensitive Area' under the UWWT Directive	Agency	-	£13k	Report on the Taw Estuary completed February 1997 (see Introduction)

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead Other	a	b	Progress to Date
<b>Issue 11: Decline of Salmon, Sea Trout and Trout Stocks</b>				
- Maintain catch controls (netting in estuary, rod fishing in both catchments) for the agreed period and then review	Agency <i>Netsmen</i> <i>Riparian Owners</i>	£30k	Unknown	Public enquiry held in January re: proposed new restrictions. Currently awaiting Inspector's Report and MAFF decision. We have taken the decision that any new statutory measures will not be implemented until 1998. In the interim period (1997) the Agency is pressing for voluntary restrictions.
- Introduce a bye-law to control estuary sea fishing - gather data and review	Agency	<£1k	Unknown	As above
- Conduct a review of Agency SW policy on spring fish in South West (cropping controls etc)	Agency <i>Netsmen</i> <i>Riparian Owners</i>	£10k	Unknown	As above
- Enforce salmonid fisheries legislation in estuary and out to six mile limit at sea	Agency	£15k	£15k	Continuing No significant enforcement needed in the last year

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 12: Pressure on Bass Fisheries</b>				
- Consider extension to the boundaries of the bass nursery area to cover the whole of the estuary. Gather data and review.	MAFF <i>Agency</i>	<£1k	<£1k	MAFF are still reviewing bass nursery measures in the estuary.

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 13: Review Flood Defence Operation</b>				
- Incorporate conservation requirements identified by the above actions into the Service Level Agreement	Agency	Unknown	-	
- Complete Service Level Agreement for routine flood defence maintenance operations around the Estuary	Agency	<£1k	<£1k	Ongoing programme. 1997/98 Service Level Agreement in preparation.
- Agency to hold discussion with IDB and EN in order to contribute to the production of a Water Level Management Plan for Braunton Swanpool	Agency <i>EN</i> <i>IDB</i>	<£1k	<£1k	Discussions in progress. Further work to be done commencing in the new financial year.
- Consider relevance of Estuary to the Shoreline Management Plan for Bridgewater and Bideford Bay - Phase I Complete Scoping Study - Phase II Additional data collection, coastal process modelling, recommended strategies. - Phase III Agree draft strategies consultation.	Agency <i>EN</i> <i>SCC</i> <i>ACC</i> <i>DCC</i> <i>WDC</i> <i>SDC</i> <i>WSDC</i> <i>TDC</i> <i>NDDC</i> <i>MAFF</i>	£12k  £29k  £2k	£12k  None to 1996  None to 1996	Scoping study complete  Phase II due for completion December 1997  Phase III will follow completion of Phase II

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 14: Known flooding problems</b>				
- Apply to MAFF following planning approval NDDC for preferred option at Muddlebridge	<i>NDDC</i>	£110k	£110k	MAFF approval received. Muddlebridge scheme complete.
- Complete Braunton Tidal Defence Scheme	Agency <i>MAFF</i>	£621k	£621k	Phase I of scheme complete. Phase II to start 1997/1998
- Complete Appledore scheme	Agency <i>MAFF</i> <i>DCC</i>	£1,120K	£993K	Scheme complete 1997
- Complete other phases of Bideford Scheme - Quay (4c) - Downstream of 4c (4D) - East-the-Water (3)		£840k £88k Unknown at present	- - -	4c due to start February 1998 To be carried out concurrently with 4c On hold. Dependant on Torridge District Council's development decision for site
- Urban (2)		Unknown at present	-	Under appraisal. Scheme provisionally programmed for 1999/2000

a -Planned cost the Agency

b- Actual cost to Agency 1996

Actions	Responsibility Lead <i>Other</i>	a	b	Progress to Date
<b>Issue 14: Known flooding problems - Kenwith Valley</b>				
- Complete Kenwith Valley Enhancement scheme	Agency <i>MAFF</i>	£652k	£652k	Scheme complete

a -Planned cost the Agency

b- Actual cost to Agency 1996

**APPENDIX 1****GLOSSARY**

<b>Biodiversity</b>	The total range of the variety of life on Earth or any given part of it
<b>Eutrophication</b>	The enrichment of a water body with plant nutrients which alleviates a shortage of a limiting substrate and thereby causes the excessive growth of algae which results in a general decline in water quality.
<b>Macroinvertebrate</b>	A large invertebrate, e.g. jellyfish, snail, fly
<b>Macrophytes</b>	Plants that are large enough to be easily seen, readily identifiable in the field without microscopes and are found submerged, emergent, floating or at the water's edge. They include large algae, lichens, bryophytes (liverworts and mosses), ferns, horsetails and all higher plants which are aquatic or associated with the water's edge.
<b>Salmonid</b>	Game fish of the salmon family, e.g. salmon, trout and sea trout.
<b>Sensitive Area</b>	Under the EC UWWTD (Ref 4) these are areas which receive discharges serving population equivalents greater than 10,000 and also where surface waters are or may become eutrophic in the near future.
<b>Spat</b>	Shellfish larvae.
<b>Task Force</b>	An intensive investigation of possible sources of pollution following non-compliance with water quality objectives in the catchment.

**ABBREVIATIONS**

ACC	Avon County Council
ADAS	Agricultural Development and Advisory Scheme
Agency	Environment Agency
AMP2	Asset Management Plan 2
BAFF	Biologically Aerated Flooded Filter
CoCo	Countryside Commission
DCC	Devon County Council
DoE	Department of the Environment
DWT	Devon Wildlife Trust
EC	European Community
EHO	Environmental Health Officer

EN	English Nature
GIS	Geographical Information System
HMIP	Her Majesty's Inspectorate of Pollution
IDB	Internal Drainage Board
k	Thousand
LA	Local Authority
LPA	Local Planning Authority
MAFF	Ministry of Agriculture, Fisheries and Food
MOD	Ministry of Defence
NDDC	North Devon District Council
NGO	Non-Government Organisation
NRA	National Rivers Authority
R&D	Research & Development
RMB	Royal Marine Base
SCC	Somerset County Council
SDC	Sedgemoor District Council
SNIFFER	Scottish and Northern Ireland Forum for Environmental Research
SSSI	Site of Special Scientific Interest
STW	Sewage Treatment Works
SW	South West
SWWSL	South West Water Services Limited
TDC	Torrige District Council
TTEF	Taw and Torrige Estuary Forum
UWWTD	Urban Waste Water Treatment Directive
WRA	Waste Regulation Authority
WDC	Woodspring District Council
WSDC	West Somerset District Council

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