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THE FROME & CATCHMENT MANA ACTION P



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PIDDLE AGEMENT PLAN LAN



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*National Rivers Authority
South Western Region
February 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.

NRA Emergency Hotline

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Further copies of this Action Plan can be obtained from

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NRA South Western Region
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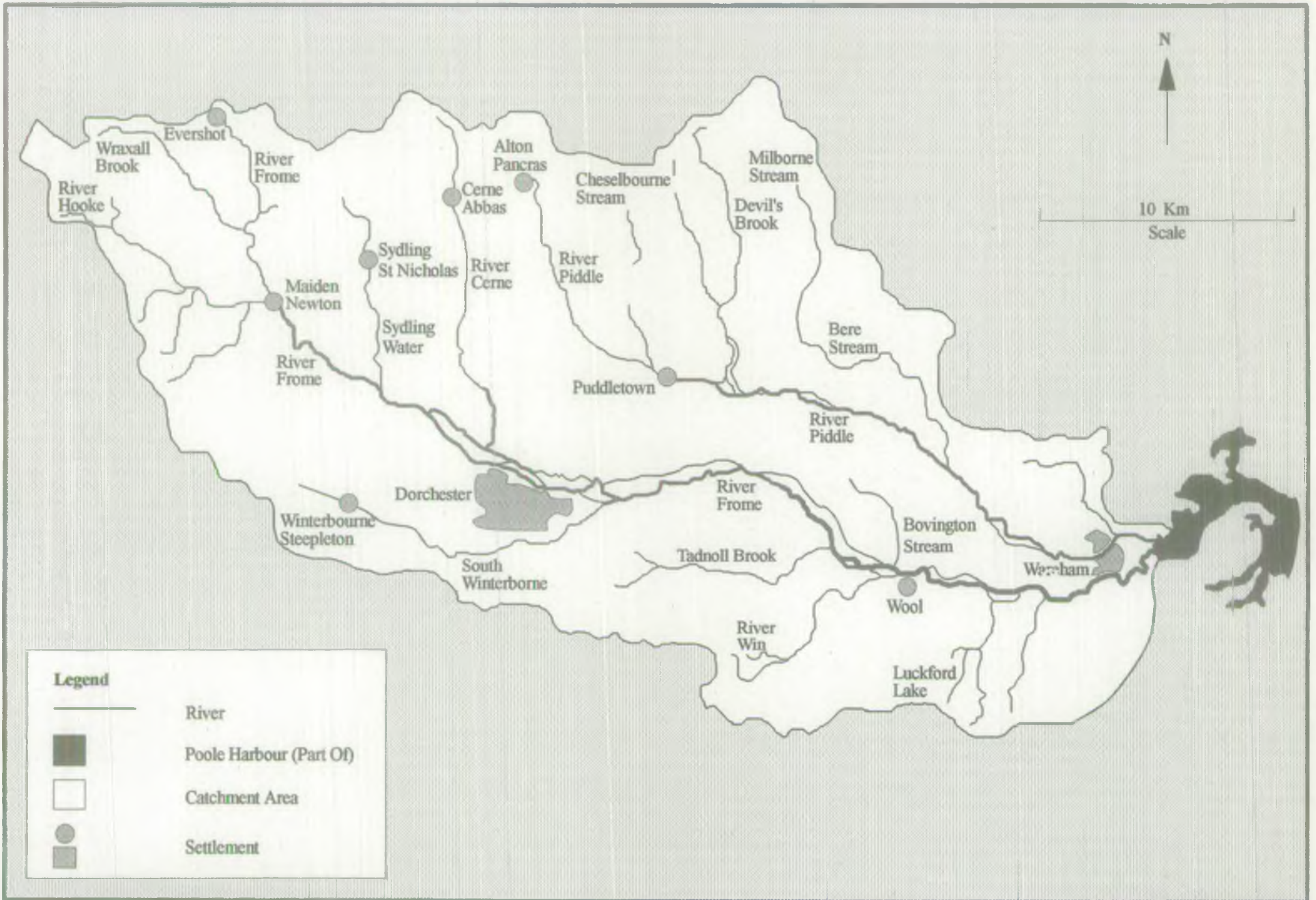
The NRA and the Environment Agency

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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MAP1: FROME & PIDDLE CATCHMENT



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NRA South Western Region

FOREWORD

"The Frome waters were clear as the pure River of Life shown to the Evangelist, rapid as the shadow of a cloud, with pebbly shallows that prattled to the sky all day long. There the water-flower was the lily; the crowfoot here."

Thomas Hardy, from Tess of the d'Urbervilles

The Rivers Frome and Piddle drain an area of outstanding natural beauty, and are typical of the chalk streams of southern England, rich in wildlife and popular game fisheries.

Land use change and the need to provide public water supplies are putting parts of the catchment under pressure and causing environmental damage.

This Action Plan recognises these issues and many others that affect the health of rivers, and points to the way forward for sustainable improvements.

These actions will guide our work within the catchment for the forthcoming years.



Howard Davidson

Area Manager, South Wessex Area

ENVIRONMENT AGENCY



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1. INTRODUCTION

This Action Plan outlines how the NRA and other organisations plan to tackle issues that affect the water environment in this catchment. We identify 27 Issues which are summarised in Activity Tables.

We have set up a Catchment Steering Group to help us produce this Plan and carry out the Activities. The membership of this group, which will also help with the Poole Harbour & Purbeck and the West Dorset Rivers Plans, reflects as many interests as possible in the catchment, and includes members of Local and Regional NRA Committees.

Our aim is to harness local knowledge to the benefit of our activities, and to provide a forum for the distribution of information to those interested in the catchment.

1.1. Future Review and Monitoring Programme

An Annual Review will be published to report on progress to the Catchment Steering Group for the Frome & Piddle. The Review will also examine the need to update the Catchment Management Plan (CMP) in the light of changes in the catchment. The period between major revisions will normally be 5 years.

2. VISION FOR THE CATCHMENT

The Frome & Piddle is a rural catchment of high amenity and ecological value. The upper part of the catchment lies within the Dorset Area of Outstanding Natural Beauty and is characterised by steep-sided valleys. The rivers change in character as they flow through lowland towards Poole Harbour where they drain into the English Channel. These rivers make an important contribution to the rural economy through tourism, agriculture and recreation.

The high quality water in the aquifer provides a source both for public water supply and for the rivers which support high quality salmonid fisheries. The protection of public health and the natural water environment therefore demands that our management of the catchment will ensure that:

- *the quality of water in aquifers is not compromised*
- *abstractions of water are in balance with the ecological needs of rivers and where flows are not environmentally acceptable then, where justifiable, sustainable solutions must be sought*

The rivers also allow us to disperse treated sewage effluents and we must ensure that using the cleansing capacity of the Frome & Piddle to purify effluents does not damage their considerable ecological, amenity and fishery potential.

In our management of flood defences and land drainage, we will seek to balance the needs of the environment by:

- *protecting people and property from flooding*
- *developing a strategy for agreed floodplain land use management, recognising the need to conserve and enhance the wetland wildlife interest of the catchment*

The realisation of this vision will involve the commitment of all who have an interest in the water environment, and the NRA recognises the importance of establishing links with local communities and their representatives. It is important that local planning authorities include policies in their local plans which protect and enhance the water environment. The NRA has a commitment to work with all relevant parties to implement the principles of sustainable development.

3. PUBLIC CONSULTATION

The Issues listed in this Action Plan were first identified in our Frome & Piddle Catchment Management Plan Consultation Report, published in March 1995.

About 650 copies of the Report were distributed to organisations and individuals, and we received 36 formal responses.

Some of these responses are summarised in Appendix 4.

4. CATCHMENT MANAGEMENT PLANS & DEVELOPMENT PLANS

Although we can control some things that 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.

Local planning authorities prepare statutory development plans, and 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 that protect the water environment from harmful development. Where we can, we will reinforce these policies when we comment on planning matters or if we are making our own decisions.

5. THE FROME & PIDDLÉ CATCHMENT

The Frome rises on the North Dorset Downs near Evershot, and flows south to be joined near Cattistock by the Wraxall Brook, and at Maiden Newton by the River Hooke. Two small streams, the Sydling Water and the Cerne, also join the Frome upstream of Dorchester. Below Dorchester, the Win, South Winterborne and Tadnoll Brook enter from the south, while the Frome itself meanders in an easterly direction to Poole Harbour.

The Piddle rises at four major springs near Alton Pancras, initially flowing south before turning east at Puddletown towards Poole Harbour. The Devil's Brook and Cheselbourne flow from the north and join the Piddle east of Puddletown. The Bere Stream flows south through Milborne St. Andrew and Bere Regis to join the Piddle at Warren.

In the upper reaches, the rivers are dependant on springs and groundwater levels for their flows. Many are winterbournes, where the stream ceases to flow during the summer, or perched, where the flow goes underground for part of its length.

The middle and lower reaches of both rivers have a braided network of channels; some are flood relief channels and others natural, but many are relics of historic water meadow systems. Most of these systems are now abandoned, but their locations are easily seen; some have been partially restored, on the Frome at Maiden Newton and on the Devil's Brook.

5.1. Catchment Facts

Area	660km ²
Population (mid 1992 estimate)	50,460

FLOOD DEFENCE

Length of statutory main river	133km
Length of tidal defences	19km

WATER QUALITY

General Quality Assessment (1994 GQA)

Chemical	A (Excellent)	118.9km
	B (Good)	79.9km
	C (Fair)	2.8km
	D (Fair)	2.1km
	E (Poor)	0.7km
	F (Bad)	None

WATER RESOURCE LICENCES

Surface water abstractions	91
Groundwater abstractions	194
Surface water abstraction volume	243.4Ml/d
Groundwater abstraction volume	241.5Ml/d

EC FRESHWATER FISHERIES

Salmonid fishery	111.8km
Cyprinid fishery	None

WILDLIFE

Sites of Special Scientific Interest (SSSI)	44
SSSIs with wetland interest	23

6. ISSUES MATRIX

The Issues Matrix below may help you find your way around the document to issues that relate to a particular area of interest. This gives a number of topic titles (along the top) and those issues in the plan (down the side) which may affect them.

	Habitat	Wildlife	Plant Species	Invertebrates	Salmonid Fishery	Angling	Water Quality	Nutrient levels	Metals	Silt	Low Flows	Public Water Supply	Flooding	Building/development	Recreation
1. Trophic status of Frome is uncertain	•	•	•				•	•							
2. Control of cress farm discharges				•			•		•	•					
3. Significant non-compliance with RQO							•								
4. Marginal non-compliance with RQO							•								
5. Sewerage in the Piddle valley							•							•	
6. PWS abstraction on the Piddle	•	•			•	•					•	•			
7. Funding of low flow alleviation					•	•					•	•			
8. Manage water resource development											•	•			
9. Diurnal flow fluctuations on the Hooke			•		•						•				
10. Identification of flood risk areas													•	•	
11. Management of assets													•		
12. Review FD maintenance	•	•	•	•	•								•		
13. Flood Alleviation Schemes	•	•	•	•	•								•	•	
14. Provision of flood warning													•	•	
15. Impact of SSSI designation on operations													•	•	
16. Management of salmon stocks					•	•	•			•	•				
17. Management of the brown trout fishery					•	•	•			•	•				
18. Management of coarse fish stocks	•						•								
19. Improved public access	•	•													•
20. Recreational boat use on the Frome	•						•						•		•
21. Improved conservation status	•	•	•	•			•	•		•	•	•			
22. Conservation of important species	•	•	•	•	•	•				•					•
23. Protection of archaeological interest													•	•	
24. Increased silt load in the rivers	•		•		•	•		•		•			•		
25. Review of weed cutting	•	•	•	•	•	•					•		•		
26. Management of water levels	•	•	•	•									•		•
27. Impact of development	•	•	•	•	•		•						•	•	•

7. ACTIVITY TABLES

The Activity Tables outline detailed proposals for resolving the issues identified in the consultation report and the public consultation.

The Actions contained in these Tables are clear, specific and time-bounded as far as possible, allowing ourselves as well as external organisations and individuals to monitor progress.

The costs identified represent our planned expenditure over the next 5 years. However our policy and priorities may change during this time which may affect how much we are actually able to spend on specific Issues.

The financial years covered by this Plan are represented by a single date, for example, '95' represents the financial year April 1995 to March 1996.

Our everyday work also commits substantial resources to managing the water environment; the scope of that work has been explained in the Consultation Report.

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 and by setting our own River Quality Objectives which aim to protect water quality for recognised uses.

7.1.1. EC Directives and Annex 1A Reduction Programme

There are three EC Directives which currently apply to the catchment: the EC Freshwater Fish Directive, the EC Dangerous Substances Directive, and the EC Urban Waste Water Treatment Directive (UWWTD). Sites within the catchment comply with the requirements of all these Directives.

We are studying the Frome between Dorchester STW and the tidal limit to determine whether it is eutrophic. This could support a possible nomination as a sensitive water under the UWWTD, which would require the installation of nutrient removal facilities at Dorchester Sewage Treatment Works (STW) (Issue 1).

The Annex 1A Reduction Programme is a commitment that we have made with other North Sea countries to reduce the amounts of certain substances entering tidal waters. We have reported significant loads of zinc and nickel under Annex 1A for the site on the Frome at Holme Bridge, but they are low in the UK rankings.

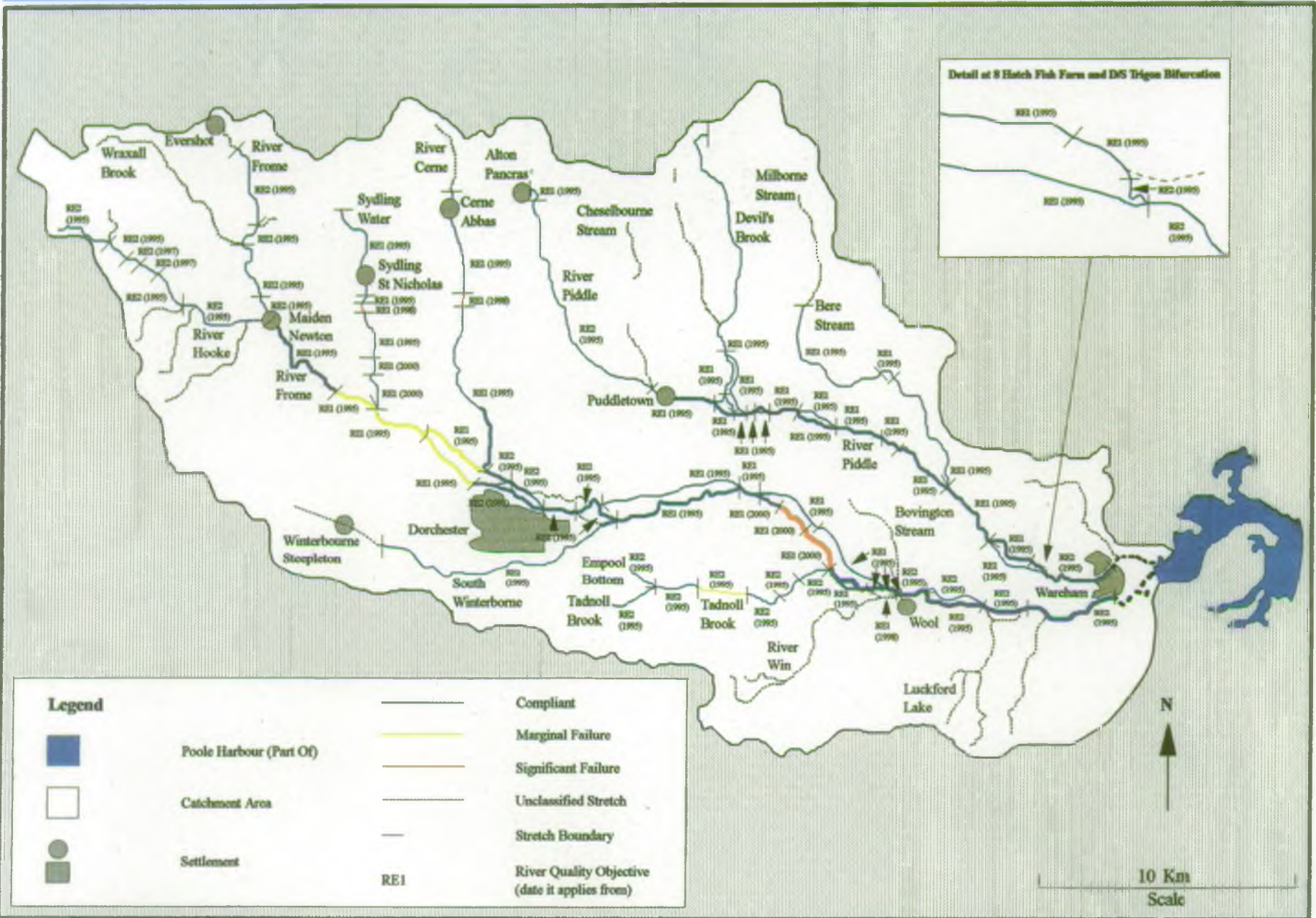
The main source of zinc appears to be from cress farms. We will control the release of zinc from these sites by issuing discharge consents by March 1996 (Issue 2).

7.1.2. River Quality Objectives

The water quality targets that we use in all rivers are known as River Quality Objectives (RQOs). These are used for managing water quality, and are based on the River Ecosystem (RE) classification scheme. This is made up of five water quality classes (shown overleaf) which reflect the chemical quality

Issues and Actions	By	Cost	95	96	97	98	99	Notes
1. Trophic status of the Frome is uncertain								
1.1. Collect and analyse chemical and biological investigate potential nomination of the Frome d/s Dorchester STW as a sensitive water under UWWTD	NRA	£5.3K	●	●	●			Successful designation would data to provide the legal requirement to install nutrient removal facilities at Dorchester STW
1.2. Promote land use practices which reduce run off of nutrients e.g. buffer zones	See 24.5							
2. Control of cress farm discharges								
2.1. Issue discharge consents for all cress farm discharges by March 1996	NRA	£3K	●					
2.2. Install settlement facilities where necessary	Growers		→					
2.3. Joint R&D project to produce watercress strains with improved resistance to crook root fungus and water cress yellow spot virus in order to reduce the need to treat with zinc	NRA Cress Growers Assoc	£24K	●	●				
2.4. Monitor impact of discharges where there is use of off-label pesticides and zinc	NRA	£25K	●	●	●	●	●	Impact assessment will focus on discharges of zinc and pesticides
2.5. Review discharge consents if there is adverse impact from the use of off-label pesticides and zinc	NRA						●	

MAP 2: FROME & PIDDLE CATCHMENT - RIVER QUALITY OBJECTIVES (RIVER ECOSYSTEM CLASSIFICATION) AND COMPLIANCE 1994



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NRA South Western Region

needed by different types of river ecosystem including the types of fishery they can support. The RE classification scheme replaces the National Water Council (NWC) system which used to be used by the NRA.

CLASS	DESCRIPTION
RE1	Water of very good quality suitable for all fish species
RE2	Water of good quality suitable for all fish species
RE3	Water of fair quality suitable for high class coarse fish populations
RE4	Water of fair quality suitable for coarse fish populations
RE5	Water of poor quality which is likely to limit coarse fish populations

The Consultation Report introduced proposals for RQOs for the Frome & Piddle catchment based on RE classes; the RQOs for the catchment have now been finalised and are shown on Map 2. We have set the highest quality target (RE1) for most of the river system (Map 2). Some lengths have been classified as RE2, often because their natural characteristics prevent them from reaching RE1.

This Map 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. These failures are identified as either marginal or significant.

The water quality status of some stretches has changed since we published the Consultation Report; these changes are indicated in the Activity Table. We will investigate all situations where there has been an RQO failure (Issues 3 & 4).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
3. Significant non-compliance with River Quality Objective targets								
Investigate cause of non-compliance on the following reaches:	NRA	£25K	•	•				
3.1. Frome d/s Golden Springs Fish Farm to Moreton, Moreton to confluence with Tadnoll								These were marginal failures in 1993 and significant failures in 1994
3.2. Hooke from Hooke to Higher Kingcombe, Higher Kingcombe to Kingcombe								These were significant failures in 1993 and compliant in 1994. Changes in sampling sites mean that these stretches will be reassessed using 1995 data
3.3. Sydling d/s Huish Fish Farm to d/s Sydling STW, Cerne u/s Nether Cerne Fish Farm to d/s Nether Cerne Fish Farm								The sampling sites will be relocated to ensure that they are representative
4. Marginal non-compliance with River Quality Objective targets								
Investigate cause of non-compliance on the following reaches:	NRA	£25K	•	•				The investigation of EC Directive failures and significant RQO failures are afforded a higher priority than marginal failures
4.1. Frome from Frampton to confluence with Sydling confluence with Sydling to u/s Dorchester bifurcation, u/s Dorchester bifurcation to confluence with Cerne, u/s Dorchester bifurcation to Poundbury								These were identified as compliant in 1993 and marginal failures in 1994
4.2. Frome d/s Pallington to d/s Golden Springs Fish Farm								This was identified as a marginal failure in 1993, but a new site in 1994 showed it to be compliant
4.3. Tadnoll Ryclose to Moigne Combe								This was identified as compliant in 1993 and a marginal failure in 1994. The failure is caused by zinc which is thought to have originated from the cress beds; this will be consented by March 1996

7.1.3. Other Water Quality Issues

There are still problems involving infiltration to the sewer system at several villages in the Piddle valley. This can lead to surface discharges of raw sewage. We hope that Wessex Water Services (WWS) will be able to complete the improvement work needed within the current AMP2 financial period (Issue 5).

We are concerned about the levels of silt entering these clear rivers, both as a pollutant in its own right and because of its detrimental impact on the spawning of salmonid fishes. We will

control the release of silt from cress farms in the catchment by issuing consents (Issue 2) and monitor the benefits of recent improvements to the operation of the MoD ranges at Bovington (Action 24.6).

A number of initiatives are taking place to help farmers in the catchment to reduce agricultural inputs of silt; these include The Piddle Valley Soil Erosion Project (Action 24.1), and the promotion of buffer zones and other best management practices (Action 24.5).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
5. Sewerage in the Piddle Valley and elsewhere								
5.1. Improve sewerage system in the Piddle valley to reduce infiltration	WWS NRA							These have been given high priority under AMP2 programme, but top priority schemes are to be completed first so there is no agreed timescale, but the work is likely to go ahead
24. The increased silt load in the rivers								
24.1. Piddle Valley Soil Erosion Project	NRA Owners Tenants	£4K	●					To establish the cause of soil erosion and produce a plan to reduce soil runoff
24.2. Proposed National R&D Project on decline of salmon stocks in chalk streams	See 16.1							This will consider the role of siltation in the control of salmon populations
24.3. Conduct a survey to investigate the origin and quantities of silt inputs to the Tadnoll	NRA	£1K		●				Annual surveys by Fisheries staff have identified a deterioration in salmon spawning conditions
24.4. Where siltation causes a problem in terms of channel capacity and hence water levels, we would carry out an appraisal for appropriate works which could include dredging	NRA		→					
24.5. Promote the establishment of buffer zones and other best-management practices to reduce silt and nutrient inputs	NRA Owners Tenants	£25K	→					R&D projects are in hand that cover a range of land use issues. Outcomes will include: best management practice advice, promoting awareness, and developing a strategy to influence land management
24.6. Monitor discharges at Bovington over winter 95/96 to assess the effect of MoD improvements	NRA	£5K	●					This will be the first winter since MoD have implemented new precautions on Bovington tank ranges - reseeded, restricted areas and all-weather surfaces

7.2. WATER RESOURCES

We aim to manage water resources to achieve the right balance between the needs of the environment and those of legitimate abstractors.

Most of the surface water abstractions in this catchment are for non-consumptive uses like fish farming, where the water is returned to the river near the point of abstraction with little impact on the flow.

By contrast, large volumes of groundwater are abstracted for consumptive use such as public water supply, where the water is not returned to the river near the point of abstraction. This can affect the flow regime in the rivers and hence their ecology and fisheries.

The Piddle is one of the National Top 20 low flow problems caused by abstraction. The upper Piddle above the Devil's Brook confluence is largely affected by the Alton Pancras borehole; the middle Piddle below the Devil's Brook confluence mainly by the Briantspuddle borehole; and the Devil's Brook itself is affected by the Dewlish borehole. We have a long-term objective to improve river flows where they are affected by licences granted in the past that authorised what today would be considered excessive abstraction (Issues 6 & 7).

Our management of water abstraction seeks to achieve the best use of water resources in the Frome & Piddle catchment within a planned and sustainable framework. The Water Resources Development Strategy for South Western Region, Tomorrow's Water, provides this framework and outlines how water resources will be managed to meet future demand for public water supply (Issue 8).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
6. Public water supply abstraction on the Piddle								
6.1. Publish a report on the identified impacts and preferred solutions for the upper and middle Piddle by 31 March 1996	NRA		•					Cost not available
6.2. Recommend flow for fisheries using the PHABSIM methodology	NRA	£10K	•					
6.3. Negotiate temporary and permanent stream augmentation at Dewlish and at Briantspuddle from existing boreholes	NRA WWS		•	•				
6.4. Co-operate with WWS in trials for augmentation of the upper Piddle as an immediate partial mitigation measure	NRA WWS		•	•				
6.5. Negotiate the full terms of an unambiguous strategy for remedy of low flows to satisfy reasonable needs	NRA WWS		•	•				
7. Funding of low flow alleviation								
7.1. Assess the costs and benefits of alleviating the impacts of abstractions by 31 September 1996	NRA	£90K	•	•				
7.2. Establish funding mechanisms for low flow remedies and timing of permanent schemes	NRA			•				
8. Manage future development of water resources by implementing South Western Region Water Resources Development Strategy (RWRDS)								
8.1. Seek information to enable us to effectively review and update the RWRDS	NRA		•	•	•			Cost not available
8.2. Publish a revised RWRDS document by May 1998	NRA	£20K				•		
8.3. Implement local licensing policy	NRA		•	•	•	•	•	This was 6.3 in the Consultation Report
9. Impact of diurnal flow fluctuations on the Hooke								
9.1. Investigate cause	NRA	£1K		•				
9.2. Assess results and decide course of action	NRA			•				Dependant on results of 9.1

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. We will support, where appropriate, any initiatives from landowners or other bodies to improve public access (Issue 19).

The tidal waters are popular for recreational boating, and we own and administer 127 non-residential moorings on the tidal Frome. There are concerns regarding the numbers and size of boats in use here, and also regarding water quality and speeding; we collaborate with the appropriate authorities on these matters (Issue 20).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
19. Assess the scope for improved public access to rivers and associated land for informal recreation								
19.1. Examine scope for improved access, particularly for disabled and educational use	NRA Owners LPAs	£5K		●	●			Subject to funding
19.2. Investigate the potential for collaborative projects to improve footpaths, including those at South Quay Wareham and North Walls, Wareham	NRA Local authorities Owners	£5K		●	●			Subject to funding
19.3. Restoration of water meadows at Maiden Newton	See 26.3							
20. The impact of recreational boat use on the tidal Frome								
20.1. We will continue to monitor water quality in the tidal waters and investigate any pollution problems	NRA			●	●	●	●	
20.2. We will continue to enforce the speed limits set to protect the tidal defences and other river interests	NRA			●	●	●	●	

7.4. FISHERIES

We aim to maintain, improve and develop fisheries allowing for a sustainable harvest of fish by anglers and netmen. The lower catchment is known for its salmon and migratory trout fishing, and the middle and upper catchment for brown trout and grayling. There is little recognised coarse fishing on these rivers.

We own the fishery on the tidal Piddle; we let the game angling in season, and allow coarse angling at other times. We also own the fishery on the tidal Frome, which is available for coarse angling.

We have designated 111.8km of river in the catchment as salmonid fisheries under the EC Freshwater Fisheries Directive. This allows us to set high water quality standards for these rivers.

Salmon catches have declined in recent years, in line with the trend on other local rivers. There has been a long-term decline in stocks of large spring-run salmon which can be traced back for about 40 years, and a decline in all salmon stocks which became apparent after 1988.

Catch Returns	Salmon 1993	Salmon LTA	Sea trout 1993	Sea trout LTA
Frome (rod)	83	284	11	70
Piddle (rod)	2	23	19	33
Net (estuary)	20	119	28	31

LTA represents Long Term Average 1952-93

We are working to improve the spawning conditions in the rivers by reducing silt inputs (Issue 24) and by cleaning and loosening the gravel (Action 16.5). We are also carrying out a study of smolt production on the Frome with the Institute of Freshwater Ecology (IFE) at East Stoke (Action 16.6).

We are supporting initiatives by landowners to improve the habitat for brown trout in the upper rivers (Issue 17) while working with WWS to ensure adequate flows of water in these rivers (Issue 6).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
16. Management of salmon stocks								
16.1. Scoping study for a proposed National R&D Project to study the decline in salmon stocks and catches in chalk streams	NRA	£10K	●					Subject to funding
16.2. National studies on the decline in large spring-running fish	NRA							Study on the genetic aspects of spring-running fish has been completed
16.3. Review the revised salmon angling byelaws	NRA	£0.5K		●				
16.4. Use of PHABSIM to determine flow requirements and demonstrate impact of low flows	NRA	£10K	●					Work carried out at Briantspuddle
16.5. Restore and protect spawning and nursery areas	NRA	£2.5K pa	●	●	●	●	●	When appropriate, gravel raking takes place following river maintenance for flood defence. Further work may be required if stocks do not recover
16.6. Monitor migrating smolts on the Frome	NRA IFE	£33K	●	●				A similar sum is being contributed to this project by IFE. This is part of a National project looking at spawning and recruitment of salmon
16.7. Prepare a Fisheries Action Plan for each river	NRA				●	●		Fisheries Action Plans will be prepared every 5 years
16.8. Undertake genetic studies to characterise Frome and Piddle salmon stocks	NRA	£2K	●					Completed
16.9. Monitor juvenile salmonid stocks	NRA	£7K pa	●	●	●	●	●	
17. Management of the brown trout fishery								
17.1. Flow management policies should attempt to meet the proven requirements of wild trout populations	See 6.2 and 16.4							
17.2. Promote local brown trout habitat improvement	GCT WWS Owners		→					Use of measures like fencing to keep cattle out, and small in-channel structures such as groynes and weirs
17.3. Restore and protect spawning and nursery areas	See 16.5							Extensive gravel cleaning was carried out on the Piddle in 1993
17.4. Control the restocking of brown trout through Section 30 Consents	Owners NRA		●	●	●	●	●	We will support the use of marked fish and selective cropping, or better still sterile triploid stock, to reduce the risk of genetic dilution
17.5. Catch and return is being encouraged by Frome, Piddle and West Dorset Fisheries Association	Owners		→					
17.6. Assess benefit of pike removal on brown trout populations	GCT WWS		→					
17.7. Investigate the impact of cormorants and other fish-eating birds	NRA DoE MAFF	£1M	●	●	●			This is part of a National R&D Project looking at the impact and control of fish-eating birds
17.8. The NRA will support licensed killing only when serious damage to fisheries by cormorants has been established and alternative non-destructive methods of preventing damage have been tried	Owners NRA		●	●	●	●	●	
17.9. Carry out strategic stock surveys	NRA	£12K				●		This is a regular 5 yearly survey
18. Management of coarse fish stocks								
18.1. We propose no direct action on this issue at present	See 15.1							Action to raise water levels or introduce more sympathetic weedcutting is likely to help coarse fish. Their requirements will be considered when a conservation strategy is developed for the pSSSI

7.5. LANDSCAPE, WILDLIFE & 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; much of it is designated as an Area of Outstanding Natural Beauty.

The government has identified a need to maintain the richness of flora, fauna and habitats in the catchment, and English Nature, the government's advisor on wildlife conservation, will play the lead role in developing species and habitat action plans.

When these plans are established we can promote them when carrying out our own duties (Issue 21). Meanwhile, we will continue to encourage sound management of rivers and wetlands to promote wildlife conservation in balance with other river uses.

We support the work of other agencies such as English Nature and the Dorset Wildlife Trust to help gather information on wildlife in the catchment, and we are working on our own methods of evaluating rivers for conservation. Sometimes we can initiate measures which contribute directly to the survival or recovery of rare species; in this catchment we will promote special measures to conserve otters and crayfish (Issue 22).

English Nature will designate the Frome below Dorchester as a Site of Special Scientific Interest in the near future. We have signed a Memorandum of Understanding with English Nature, which will lead to the production of an agreed conservation strategy and consenting protocol for this part of the catchment (Issue 15). Water Level Management Plans will form a core part of this conservation strategy (Issue 26).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
21. Improve the conservation status of the catchment								
21.1. Encourage and cooperate with the setting of standards for wetland habitat and species conservation based on the recommendations of the UK Biodiversity Action Plan and other initiatives	NRA EN		→					NRA will be setting interim targets once the UK Plan is published in December 1995
21.2. Agree objectives and sources of finance for river corridor improvements in discussion with other bodies once targets are set	NRA Others		→					This follows from 21.1
21.3. Jointly agree and produce a consenting protocol and conservation strategy for the Frome pSSSI	See 15.1							
21.4. Develop River Habitat Survey to a stage where it can guide our protection and rehabilitation efforts	NRA IFE			●	●			The National cost of this project is £224K. The Frome and Piddle are both pilot rivers
21.5. Survey aquatic plants around Dorchester STW under UWWTD	See 1.1							There is concern from EN about the impact of phosphates on the plant community in the river
22. Conservation of important species								
22.1. Investigate rare species in winterbournes, and their vulnerability	NRA					●	●	Subject to funding
22.2. Investigate pesticide levels in eels, the major food source of otters	NRA	£1.2K	●					
22.3. Carry out bioassays and post mortems on dead otters	NRA		●	●	●	●	●	Contact our Blandford office should a dead otter be found
22.4. Increase protection for native crayfish by pursuing a no-go area designation for the Piddle catchment	NRA			●				The Piddle is probably the only river in South Wessex Area which still has a population of native white-clawed crayfish
22.5. We intend to introduce a Fisheries byelaw to prevent the use of crayfish as live-baits in the Piddle	NRA			●				
22.6. Collate information on the present distribution of crayfish, and assess the need for future work	NRA	£5K		●				This is a Regional desk study
22.7. Investigate the impact of fisheries improvement work on native crayfish	GCT WWS		→					
23. The protection of features of archaeological interest								
23.1. Screen NRA works and planning applications for possible impact on known archaeological features	NRA		●	●	●	●	●	This is part of our everyday work
23.2. Investigate the possibility of a scoping project to identify opportunities for increasing our knowledge of archaeology within river valleys	NRA			●	●			Subject to funding; collaborative work with local authorities is envisaged

7.6. FLOOD DEFENCE

We aim to provide effective defence for people and property against flooding from rivers and the sea (Issue 10) and to provide adequate arrangements for flood forecasting and warning (Issue 14). We take account of economic and environmental considerations when assessing flood defence operations.

All rivers are classified as either main river or ordinary watercourses; there are 133km of designated main river in the catchment. We supervise all flood defence matters, but have special powers to carry out or control work on main rivers and sea defence; local authorities are responsible for flood defence on ordinary watercourses.

Most rivers in the catchment respond relatively slowly to rainfall due to the highly permeable nature of the underlying chalk. The exception is the Frome upstream of Maiden Newton which responds relatively quickly during intense rainfall because of the steep valleys and the clay deposits. Downstream of Wareham there are tidal defences at Wareham Marshes, Bestwall and Keyworth (Issue 13).

Our river maintenance includes weedcutting on the Frome between Dorchester and Wareham (Issue 25) and repairs to the defences along the tidal reaches of the Frome and the Piddle. We review maintenance practices to take account of conservation considerations where appropriate (Issue 15 & 26).

We are developing a national Standard of Service which, once implemented, will be used to determine the need for maintenance and capital works (Issue 12).

Issues and Actions	By	Cost	95	96	97	98	99	Notes
10. Improved identification of flood risk areas								
10.1. Carry out S105 surveys in 1996/97. Further detailed surveys are proposed for 1999/2000	NRA LPAs	£30K £20K		●				●
11. The management of assets and the future control of water levels								
11.1 Survey of assets	NRA	£40K	●					Completed in 1995
12. Review the efficiency and effectiveness of Flood Defence maintenance operations								
12.1. Apply Flood Defence Management System to catchment	NRA		→					National initiative; local costs are not available
12.2. Revise Standards of Service methodology	NRA	£3K	●	●				
13. Investigate, justify and, if appropriate, implement Flood Defence schemes								
13.1. Liaise with planning authorities	NRA LPAs MAFF		●	●	●	●	●	
13.2. Maiden Newton Flood Alleviation Scheme : Appraisal in 96/97, Construction in 97/98	NRA MAFF	£185K			●	●		Pre-feasibility study completed, and project confirmed in Capital Programme
13.3. Investigate the justification for the proposed Swincham tidal flood embankments FAS	NRA MAFF							Post 2000. This scheme would cost £257K and is currently low priority
13.4. Investigate the justification for the proposed Arne tidal flood embankments FAS	NRA MAFF							Post 2000. This scheme would cost £161K and is currently low priority
14. Ensure the adequate provision of flood warning in the catchment								
14.1. Review flood risk areas in the catchment	NRA		●	●				Part of a Regional project to improve flood warning. The total cost of the project is approximately £150K
14.2. Review existing provisions of flood warning with respect to Emergency Response Levels of Service	NRA	£5K	●	●				
14.3. Recommend improvements and produce a costed programme of future work	NRA		●	●				

Issues and Actions	By	Cost	95	96	97	98	99	Notes
15. The impact of an SSSI designation on NRA river operations								
15.1. Agree operational and maintenance plan if the SSSI designation is extended beyond existing sites on the Frome	NRA EN	£5K	●	●	●			We have signed a Memorandum of Understanding with EN regarding the protection and management of rivers notified as SSSIs which will result in an agreed conservation strategy and consenting protocol
25. Review the objectives, efficiency and effectiveness of weedcutting operations								
25.1. Review the Weedcutting Code of Practice and Policy (see also 15.1)	NRA Owners	£4K		●		●		Incorporated in SSSI consultations. Biennial meeting with fishery and farming representatives to review weedcutting strategy
25.2. Remove weed from moorings on the Frome when necessary and appropriate	NRA		●	●	●	●	●	
26. The management of water levels in the catchment								
26.1. Draw up a Water Level Management Plan for the tidal waters	NRA EN	£9K	●	●				
26.2. Discuss a Water Level Management Plan for non-tidal waters with EN	NRA EN		●	●	●			Probably in conjunction with the Memorandum of Understanding, see 15.1
26.3. A collaborative project has been proposed, subject to funding, to assist with the restoration of the water meadow system at Maiden Newton	NRA DCC	£12K		●				If the Maiden Newton FAS goes ahead there may be some benefit from proposed restoration of control structures

7.7. DEVELOPMENT CONTROL

We have wide-ranging responsibilities for the protection and enhancement of the water environment, but limited control over land use change and allocation. This is largely the responsibility of local planning authorities through the implementation of the Town and Country Planning Acts, and specifically through the production of statutory Development Plans.

We are a consultee of the local planning authorities, and work with them to ensure that policies to protect and enhance the water environment are included in Development Plans and addressed in our responses to planning applications.

On new road schemes, we specify our requirements to the promoters at an early stage to enable them to be incorporated into the design of the road and implemented during construction.

Issues and Actions	By	Cost	95	96	97	98	99	Notes
27. Impact of development, including road schemes and minerals and waste developments								
27.1. Incorporate flood protection measures in all new developments, as necessary	NRA DoT LPAs Developers		→					
27.2. Incorporate pollution control measures in all new developments, as necessary	NRA DoT LPAs Developers		→					Includes Tolpuddle bypass, construction due to commence April 1996
27.3. Ensure the wildlife and landscape of river corridors are protected and enhanced in all new developments, as necessary	NRA DoT LPAs Developers		→					
27.4. Implement NRA Policy and Practice for the Protection of Groundwater	NRA		→					

APPENDIX 1 : GLOSSARY OF TERMS

AMP2	Asset Management Plan (the strategic business plan for the water companies)
BOD	Biochemical Oxygen Demand
CMP	Catchment Management Plan
d/s	Downstream
DCC	Dorset County Council
DoE	Department of the Environment
DoT	Department of Transport
EC	European Community
EEC	European Economic Community
EN	English Nature
FAS	Flood Alleviation Scheme
FD	Flood Defence
GCT	Game Conservancy Trust
GQA	General Quality Assessment
IFE	Institute of Freshwater Ecology
LPA	Local Planning Authority
LTA	Long Term Average
MAFF	Ministry of Agriculture, Fisheries & Food
MoD	Ministry of Defence
NWC	National Water Council
NRA	National Rivers Authority
Off-label	Users of agricultural pesticides may apply to have the approval of specific pesticides extended to cover uses additional to those approved and shown on the manufacturer's label
PHABSIM	Physical Habitat Simulation
PPPG	Policy and Practice for the Protection of Groundwater
pSSSI	Proposed Site of Special Scientific Interest
PWS	Public Water Supply
R&D	Research and Development
RE	River Ecosystem
RQO	River Quality Objective
RWRDS	Regional Water Resource Development Strategy
SSSI	Site of Special Scientific Interest
STW	Sewage Treatment Works
u/s	Upstream
UWWTD	Urban Waste Water Treatment Directive
WWS	Wessex Water Services Ltd

APPENDIX 2 : UNITS

MI/d	millions of litres per day
km	kilometre
km ²	square kilometre
mph	miles per hour
£K	thousands of pounds
£M	millions of pounds

APPENDIX 3 : REFERENCES

EC Directive Concerning Urban Waste Water Treatment (91/271/EEC)

EC Directive on Freshwater Fish (78/659/EEC)

EC Directive on Pollution Caused by the Discharge of Certain Dangerous Substances into the Aquatic Environment (76/464/EEC)

The Frome & Piddle Catchment Management Plan Consultation Report, NRA South Western Region, March 1995, SW-3/95-1k-E-ANAO

Tomorrow's Water. Water Resources Development Strategy, NRA South Western Region, April 1995, SW-4/95-1k-B-ANOQ

APPENDIX 4 : SUMMARY OF PUBLIC CONSULTATION

Approximately 650 Consultation Reports were circulated, and we received 36 responses, including those from:

National Organisations

British Canoe Union
Forestry Authority
Crown Estate
Institute of Freshwater Ecology
Friends of the Earth
Ministry of Agriculture, Fisheries & Food
Royal Society for the Protection of Birds
English Nature
National Farmers Union

Regional and Local Organisations

Dorset County Council
Poole Harbour Commissioners
Wessex Water Services Ltd
Dorset Wildlife Trust

Parish and District Councils

Purbeck District Council
West Dorset District Council
Winfrith Newburgh Parish Council
Stinsford Parish Council

Sixteen responses were also received from individual members of the public. Some of the comments and concerns are summarised below.

1. Water Quality. Concern was expressed about the proposed RE2 target for the Hooke.

Our comment: An RE2 target has been set for the Hooke to reflect the fact that the underlying geology of clay and greensand makes an RE1 target almost unattainable. The RE2 target recognises the importance of the Hooke as a trout

spawning and nursery area, and represents water of good quality suitable for all species of fish.

2. Recreation. Several consultees made comments about public access, ranging from statements of public support, concern about the impact of increased recreational use on wildlife, and the need to consult fully with landowners and occupiers.

Our comment: The development of public access within the catchment will require collaboration with local authorities, landowners, occupiers and conservation interests to ensure that environmental impacts and conflicts with other uses are recognised and addressed.

Concerns were also expressed about the size and speed of craft using the tidal Frome, and about weed drifting onto the tidal moorings.

Our comment: We enforce a 4mph speed limit under our byelaw which aims to protect the tidal floodbanks. The control of weed drifting onto the tidal moorings is problematic; it can arise from NRA-cut weed escaping from our booms in heavy rain, from weed cut by riparian owners and not properly removed by them, and by natural rip-out during the autumn as river flows increase. Therefore it is difficult to predict and control, and we will continue to remove weed from the moorings on the Frome when possible.

3. Water Resources. Support was expressed for our work to alleviate low flows on the Piddle, but concerns were expressed about the potential impacts of any water resource developments in the Frome.

Our comment: Tomorrow's Water, our Water Resources Development Strategy, provides the framework for our future management of water resources. Any new developments should fully address environmental needs and provide an element of environmental protection e.g. protective abstraction licence provisions such as prescribed flow conditions and the transfer of licensed resources and/or reduction of licensed resources at environmentally sensitive locations.

4. Wildlife Conservation. Several organisations and individuals felt that we should be setting species and habitat targets in CMPs.

Our comment: There is a national initiative to set species and habitat conservation targets called the UK Biodiversity Action Plan. We will be involved with many other agencies in developing targets for this plan. When these targets are set and agreed, we will promote them in our CMPs. As targets are set they can be incorporated into Action Plans at the Annual Review stage.

5. Groundwater Protection. A number of consultees felt that we should take a more positive approach to protecting groundwater from the impact of quarrying and waste disposal developments. Particular concern was expressed about developments in the vicinity of Empool source.

Our comment: We place great importance on protecting aquifers from pollution. Our Policy and Practice for the Protection of Groundwater (PPPG) contains policy statements covering a number of aspects of groundwater protection, including the risks posed by various activities to groundwater based on the type of aquifer, its vulnerability, and in the case of drinking water sources, the proximity to that source.

We apply the PPPG through our authorisations (discharge consents and abstraction licences) and in our role as a statutory consultee in the planning process; this includes detailed inputs to structure plans, minerals and waste plans, local plans, and commenting on specific development proposals.

6. Flood Alleviation and Control. Concern has been expressed by a number of consultees about bank erosion and siltation on the Frome.

Our comment: Erosion and deposition are part of the natural features of a river, and part of the process that provides the landscape and natural habitat for which the Frome is renowned. Erosion of riverbanks is the responsibility of the riparian owner. We have discretionary powers to carry out erosion control work, and can use them where important natural or man-made assets are at risk. Each case is viewed on its own merits, but outside of direct threats to NRA Flood Defences, we have only carried out erosion control works where a substantial contribution has been made by the riparian owner.

Desilting works are carried out on the same basis, with assessment of environmental damage and balancing of the costs and benefits.

Obstructions to flow and flooding issues on non-main rivers were raised by a number of consultees.

Our comment: These matters are the responsibility of the riparian owners and the local authority respectively. West Dorset DC have carried out recent flood alleviation schemes at Cerne Abbas, Frampton and Sydling St. Nicholas, and are investigating flooding issues in the Piddle valley and at Chilfrome. Flood risk as a result of rising groundwater has been identified at Castle Park, Dorchester, and is also being investigated by West Dorset DC.