

RIVER TEME CATCHMENT MANAGEMENT PLAN ACTION PLAN MARCH 1996



NRA

*National Rivers Authority
Severn-Trent Region*

CATCHMENT KEY DETAILS

GENERAL

Area	1,648 km ²
Population 1991	75,400
Population 2001	83,000 (estimated)

TOPOGRAPHY

Source of Teme	480m (AOD)
Highest Point	547m (AOD)
Lowest Point	10m (AOD)

ADMINISTRATIVE DETAILS

	Percentage of Plan Area
COUNTY COUNCILS	
Shropshire	61.2%
Hereford & Worcester	32.1%
Powys	6.7%

DISTRICT COUNCILS (i)

South Shropshire DC	53.2%
Bridgnorth DC	7.3%
Shrewsbury & Atcham BC	0.7%
Leominster DC	16.5%
Malvern Hills DC	15.3%
Worcester CC	0.2%
Wyre Forest DC	0.1%
Radnorshire DC	6.1%
Montgomeryshire DC	0.6%

NRA

Severn-Trent Region, Upper Severn Area

WATER COMPANIES

Severn Trent Water Ltd
Dŵr Cymru/Welsh Water

INTERNAL DRAINAGE BOARDS

None

Note: (i) DC = District Council
BC = Borough Council
CC = City Council

MAIN TOWNS AND LAND USE

Main towns and settlements in the catchment are Worcester (part) 11,438, Ludlow 9,011, Tenbury Wells 2,500, Knighton 2,500, Church Stretton (part) 2,060, Craven Arms 1,892, Cleobury Mortimer 1,700 and Bishop's Castle 1,569.

The main land uses in the catchment are upland pasture/rough grass 33%, arable 26%, grass 24%.

WATER QUALITY

Length (km) of river in each component of the General Quality Assessment (GQA) 1994.

General	Chemistry	Biology		
Description	GQA Grade	Inferred Water Quality Class		
GOOD	A	165.7	1	325.7
	B	170.8	2	42.6
FAIR	C	25.3	3	1.5
	D	1.6	4	—
POOR	E	6.9	5	0.5
BAD	F	—	6	—

No of Consented Discharges 277

Comprising: 103 water undertaker sewage and storm overflows, 150 private STPs, 24 industrial.

WATER RESOURCES

Average annual rainfall	840mm
Total licensed abstraction	10,480 ML/a
Mean flow of River Teme at Tenbury	1,240 ML/d
Maximum recorded flow (since 1956)	21,500 ML/d
Mean Annual Flood flow (since 1956)	12,400 ML/d
95 % ile exceedence flow (since 1956)	134 ML/d
Minimum recorded flow	57 ML/d
Number of licensed abstractions	239
of which: Groundwater	69
Surface Water	170

FLOOD DEFENCE

Length of Main River in Catchment	180 km
Length of floodbanks & flood walls (maintained by NRA)	0.5 km

No of (urban) flood alleviation schemes none
No of operational sluices/pumping stations none

FISHERIES

Length of watercourse designated under EC Directive for Freshwater Fisheries (78/659 EEC)

Salmonid	300.3 km
Cyprinid	0

CONSERVATION

Sites of Special Scientific Interests (SSSIs)	59
SSSIs with Wetland Interest	27
Prime Sites	397
Prime Sites with Wetland Interest	154
Scheduled Ancient Monuments (SAMs)	200
SAMs with close association with water environment	47
Areas of Outstanding Natural Beauty (AONBs)	2

FOREWORD

The National Rivers Authority was created in 1989 as an independent environmental agency. In its role as 'Guardian of the Water Environment', the Authority is committed to preparing a sound plan for the future management of each of the Region's catchments.

This Action Plan is the second stage in the catchment management planning process for the River Teme catchment. The plan translates the issues and problems highlighted in the Consultation Report into actions. These actions are timetabled and costed (where possible) and our aim is to deliver real improvements on the ground.

We welcome the responses that were received following the launch of the Consultation Report in September 1995. The views and comments expressed have been carefully considered and incorporated where possible in the Action Plan.

The implementation of the Action Plan will be closely monitored, with an Annual Review each year and a full review at the end of five years. In April 1996, the NRA together with its partners Her Majesty's Inspectorate of Pollution (HMIP) and Waste Regulation personnel from local authorities come together to form the Environment Agency. The work included in this Plan will continue into the new Agency.



John Kalicki

Area Manager, Upper Severn Area



ENVIRONMENT AGENCY

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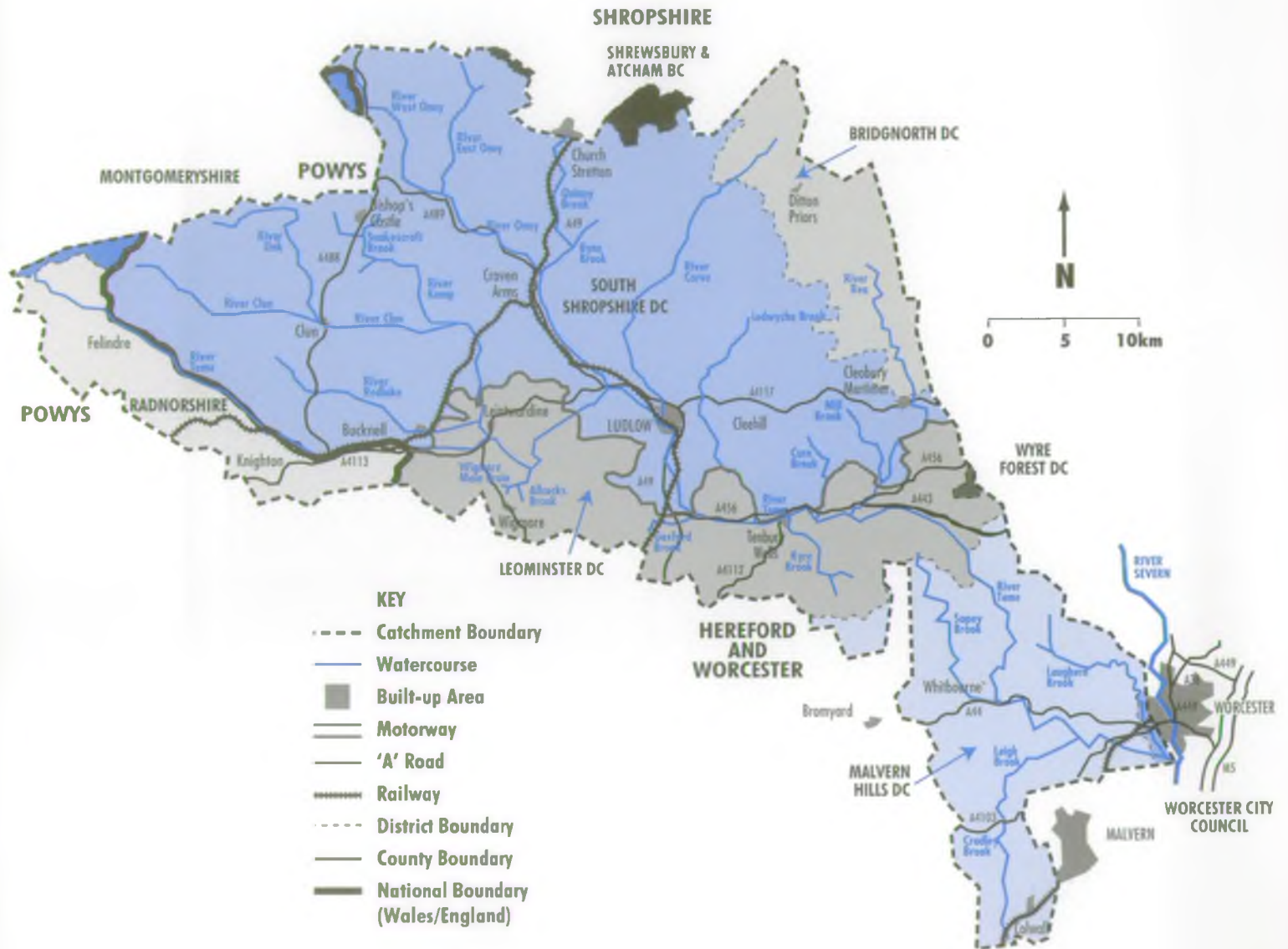
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Front Cover: The River Teme at Ludlow



THE NRA'S VISION FOR THE RIVER TEME CATCHMENT

*"The pools and rivers wash so clean
The trees and clouds and air,
The like on earth was never seen,
And oh that I were there."*

One hundred years have passed since Housman wrote these lines, and it seems an appropriate time to take stock of the rivers and countryside that inspired them. We owe it to future generations to work towards ensuring a sustainable environment, so that these words will be as true next century as when they were written.

The River Teme rises in the Kerry Hills and is a top quality river of high conservation value throughout its 122 kilometre journey to the Severn just south of Worcester. The high quality of the landscape is reflected by the fact that a large part of the catchment is designated as an Area of Outstanding Natural Beauty. The landscape is varied, ranging from rolling hills to wooded slopes, from hidden valleys to open summits, and from rugged moorlands to the wide pastoral valleys and rich farmscapes of the lowlands. The streams and rivers are an integral part of the catchment's picturesque countryside.

Our overall aim is to safeguard and maintain the highest possible level of protection for the catchment, and to work towards resolving those issues and existing problems that have been identified in the plan. Key objectives are to:

- Protect, and where appropriate, enhance the habitat quality, biodiversity, fisheries, conservation and landscape value of the river catchment.
- Improve the water quality of the 12.9 km of rivers where the required longer-term River Ecosystem River Quality Objective is not already met and seek solutions to problems of inadequate sewerage, contaminated land and diffuse nitrate pollution.
- Manage water resources to meet legitimate abstraction demands and maintain and where possible enhance the conservation and fishery value of the catchment.
- Ensure current levels of protection from flooding are maintained and improved where appropriate.
- Ensure increased demands for recreational activities which may impact on the water environment in the catchment are developed in an environmentally sustainable manner.

It seems fitting that we should base our vision for the future of the catchment on Housman's words written a century ago. However, we cannot realise these aspirations without the committed and enthusiastic co-operation of others. To achieve a shared vision we need to work in partnership with local authorities and many other agencies, environmental groups, individuals and all those who have the interests of the catchment at heart.

*"In valleys of springs of rivers,
By Ony and Teme and Clun,
The country for easy livers,
The quietest under the sun..."*

From 'A Shropshire Lad' by A E Housman, published 1896.

(by kind permission of The Society of Authors as the literary representative on the Estates of A E Housman)

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RIVER TEME CATCHMENT MANAGEMENT PLAN ACTION PLAN

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1. INTRODUCTION

1.1 PLANNING FOR THE FUTURE : CATCHMENT MANAGEMENT PLANS

Demands on the rivers, lakes, estuaries and coastal waters of England and Wales are large and increasing. Many different uses interact or compete for water and will inevitably come into conflict with one another.

Catchment Management Plans (CMPs) allow the National Rivers Authority (NRA) to manage these interactions and balance competing requirements for the overall benefit of the water environment and its users. The process seeks to realise the environmental potential of a catchment by establishing a sound planning base for the future management of the water system.



The River Teme at
Ashford Weir

The plans set out the NRA's vision for the future of individual river catchments, and seek to create a partnership between public, private and voluntary sectors to achieve a shared objective. It is intended that CMPs (which are themselves non-statutory) will make a positive input to Local Authority Development Plans by emphasising the interaction between land use planning and the water environment. Section 4 outlines how the concerns of the water environment should influence the location and nature of land use change within the catchment.

The CMP process comprises three main stages, each supported by documents as follows:

- **The Consultation Report:** This contains an analysis of the issues affecting each catchment, suggested options for their solution, an assessment of catchment uses and resources, and information on targets for the water environment. It forms the basis for public consultation and discussion.
- **The Action Plan:** This details areas of work and investment proposed by the NRA and others, formulated as a result of the consultation process. Timescales, targets and estimated costs are added at this stage.
- **Implementation of the Action Plan:** Progress will be monitored and an Annual Review produced, which reports on progress, examines the need to update the CMP, and rolls forward the detailed actions.

1.2 THE NRA AND THE ENVIRONMENT AGENCY

The NRA was created in 1989 as an independent environmental agency. Its prime purpose is to protect and improve the water environment in England and Wales and to regulate the use of water by industry, agriculture and the private water and sewerage companies.

The NRA's responsibilities cover rivers, lakes, canals and underground waters. It has statutory responsibilities for water quality, water resources, flood defence, salmon and freshwater fisheries, conservation, navigation (in some catchments) and recreation. It also has a duty to protect people and property from flooding caused by rivers and the sea. The responsibilities for water quality and fisheries extend into coastal waters.

The NRA is the UK competent authority for approximately 20 European Commission (EC) Directives. It is a non-departmental public body, sponsored by the Department of the Environment (DoE). The Ministry of Agriculture, Fisheries and Food (MAFF) has important policy and funding responsibilities in relation to flood defence and fisheries. The Welsh Office has important responsibilities in relation to the NRA's work in Wales.

The following extract is taken from the NRA's Mission Statement:

We will protect and improve the water environment by the effective management of water resources and by substantial reductions in pollution. We will aim to provide effective defence for people and property against flooding from rivers and the sea. In discharging our duties we will operate openly and balance the interests of all who benefit from and use rivers, groundwaters, estuaries and coastal waters.

The NRA has chosen Catchment Management Plans to translate these principles into action. In achieving our aims, we recognise the need to work with local communities, landowners, interest groups, industry and other agencies whose activities and interests include the water environment.

In April 1996 the NRA merges with Her Majesty's Inspectorate of Pollution (HMIP) and the Waste Regulation Authorities to form the Environment Agency. This new body will be responsible for the environmental protection of water, air and waste and will continue to seek to prevent and control pollution.

One of the Agency's principal aims will be to contribute towards attaining the government objective of achieving sustainable development by protecting and enhancing the whole environment. It is anticipated that CMPs will continue as the focus for river basin management in the Agency, although they will be developed in the context of wider management plans for the protection and enhancement of water, land and air.

1.3 ROUTINE WORK OF THE NRA

The Severn-Trent Region is divided into four Areas, each headed by a locally based Area Manager. Most of the functions of the NRA operate at an Area level and this allows an integrated approach to management which gives a responsive service to customers.

The strategic nature of the CMP as a long-term planning tool, directing manpower and financial resources to resolving environmental problems, means that the plan is not designed to reflect fully on routine activity within the catchment. Our everyday work, outlined below, commits substantial resources to managing the water environment.

For pollution control, an important task is to monitor the aquatic environment and any discharges made to it in order to assess compliance with national and European legislation and Consents to Discharge. The pollution of water is a criminal offence and the NRA will prosecute when necessary. Pollution prevention work is extremely important and regular inspections are carried out at various sites.

The responsibilities for water resources include licence determination, charging, source operation, policing and enforcement. Through these responsibilities an integrated approach is taken that aims to strike a balance between the needs of abstractors and the environment. Abstracting or impounding water without a licence can lead to prosecution of offenders by the NRA.

Flood defence activities cover regulation and enforcement, maintenance and emergency response. Regulatory activities include the issuing of land drainage consents. Routine maintenance includes the clearance of debris from watercourses and the maintenance of channels and flood defences. Emergency response involves the continuous monitoring of weather and river levels to forecast where and when flooding is likely to occur and issuing appropriate warnings. During flood events, defences are monitored and operated.

The NRA is responsible for maintaining, developing and improving fisheries. These duties include enforcement of fisheries law, scientific monitoring of fish stocks, fish rearing and stocking, fish rescues and advice to the general public. Fishery bailiffs check licences and ensure that anglers and others abide by the relevant legislation.

To ensure conservation and recreation duties are fulfilled, staff collaborate with numerous external bodies. The NRA also manages many conservation and recreation sites and keeps detailed registers of these. Environmental Assessment procedures are followed to ensure high quality control over the NRA's construction work.

The NRA works closely with Local Planning Authorities (LPAs) through its planning liaison function, under which the NRA acts as a statutory consultee. Planning applications are considered in relation to their impact on the water environment and a response is made which reflects any concerns of the NRA. Local, Structure and Regional Plans are all carefully considered.

The CMP will form a focus for much of our future activity within the catchment but some of our work will remain reactive as we respond to specific events eg: floods and pollution incidents.

2. REVIEW OF THE CONSULTATION PROCESS

2.1 METHOD OF PUBLIC CONSULTATION

One of the objectives of Catchment Management Planning is to involve all interested parties in the planning for the future of river catchments. The NRA is therefore committed to the concept of public consultation on all its Catchment Management Plans. Comments and suggestions are welcomed from everyone with an interest in the water environment, ranging from large public organisations to individual members of the public.

Production of the River Teme CMP has involved a number of stages since work commenced on the Consultation Report early in 1995. Informal consultation took place early in the process, during April 1995, with 90 key external groups. Local authorities, national organisations and other representative bodies were invited to comment on an issues document, which identified and discussed the issues affecting the water environment in the catchment. All comments from this initial consultation were considered and incorporated in the Consultation Report where possible. Discussion also took place with English Nature and MAFF on technical matters involved in preparation of the Report.

The Consultation Report was launched on 28 September 1995 at the Clive Pavilion, Ludlow Racecourse. This marked the start of the formal consultation period. The Consultation Report concentrated on the issues in the catchment and the management options for their solution. The 120 delegates who attended the event represented a wide spectrum of interests from within the catchment, plus national groups and organisations. All delegates received a copy of the report, and further reports were circulated widely within and outside the catchment to local authorities, environmental groups, business groups, parish and community councils, sport and recreation groups and the public.

The consultation aimed to obtain agreement on the catchment uses, consensus on the environmental objectives and standards required and detailed comment on the issues and options in the document.

A two month consultation period followed, concluding on 2 December 1995. During this time the Consultation Report was promoted by:

- Radio interviews, press releases and advertisements in the press.
- The distribution of over 700 copies of the report and a large number of summary booklets directly to key groups and individuals.
- A display about the catchment management plan in seven libraries throughout the catchment area, a Community College and a school.
- Copies of the report placed on deposit at sixteen council offices throughout the catchment and at a further library; summary booklets were also available at these locations.

Representatives from the NRA's Regional Committees (Regional Fisheries Advisory Committee, Regional Rivers Advisory Committee and the Regional Flood Defence Committee) took part in a briefing tour of the catchment and were invited to participate in the development of both the Consultation Report and the Action Plan.

2.2 RESULTS OF CONSULTATION AND FURTHER ACTION

84 written responses were received. More information on the comments received, and key points raised, is given in Appendix 2. These responses provided useful feedback and many supported the objectives in the report and the concept of catchment management in general. Several organisations indicated their strong support for the concept and the NRA's commitment to manage catchments in an integrated and sustainable way. The NRA's vision for the catchment was shared or fully supported by a number of organisations.

When responses were received, they were referred to the appropriate NRA departments, for action where necessary. Written replies were sent to all respondents after receipt, and where possible any queries were answered by this initial letter. All comments have been considered and, where appropriate and practicable, incorporated in the Action Plan (refer Appendix 2b for more information). As a result of the consultation process, a number of amendments have been made to the Consultation Report. These are detailed in Appendix 2c.

A number of local issues were also raised in the course of the consultation procedure and, where appropriate, these matters have been referred to the relevant department for action. Consideration has also been given to recently published NRA and external documents.

The NRA welcomes the comments received. Several changes to the issues and options raised in the plan have been made as a consequence of consultation. Two new issues have been added - Issue 21 on the periodic drying up of the River Teme, and Issue 22 on the upgrading of long term River Quality Objectives (RQOs) to protect future water quality. Modifications to existing issues have been incorporated under existing issue headings where appropriate. The general support shown for many of the objectives set out in the Consultation Report is appreciated.

Following the launch, meetings were held with several organisations and other interested groups to discuss issues arising from the Report. The purpose of these meetings was to discuss catchment issues that were of particular concern to the groups involved, and to discuss, formulate and agree management options and actions for the catchment. Discussions also took place by telephone and further correspondence was entered into on a number of subjects.

Four subject areas proved to be of particular interest:

- The conflict between angling and canoeing.
- The proposed notification of the River Teme as a Site of Special Scientific Interest (SSSI).
- Drying up of the River Teme upstream of Leintwardine during summer months.
- Fisheries
 - The importance of the preservation of native brown trout.
 - Whether the emphasis on improving salmon fisheries is appropriate in this catchment.
 - The impact of piscivorous birds.

2.2.1 The conflict between Angling and Canoeing

This issue was the subject of a large number of written responses. Concerns were expressed by a wide range of groups and individuals and a number of views were put forward. Some groups wrote to say that the CMP did not adequately acknowledge the amount of canoeing that takes place in the catchment, others wrote to remind the NRA of the interests of its fishing licensees. Many supported NRA efforts in trying to bring together interested parties to reach agreement over uses of the river.

There were a number of queries on rights of navigation. The NRA has no jurisdiction regarding navigation on the River Teme but does have a general duty to promote water-based recreation. The NRA is not aware of any evidence which supports the view that a public right of navigation exists on the River Teme upstream of Powick Weir although the British Canoe Union believes that a right under common law, through implied dedication, exists. In the absence of such a right the use of rivers for canoeing can only be carried out with the permission of riparian owners. As a result of the concerns expressed, however, a new action (15c) has been added to the plan to re-examine the navigation status of the river.

The NRA supports the establishment of access agreements where public rights of navigation do not exist and can act as a mediator between landowners, anglers and canoeists where requested to do so. The NRA will also be acting to promote the establishment of a canoe/angling liaison group to help resolve problems (Action 15b).

2.2.2 The proposed notification of the River Teme as a Site of Special Scientific Interest

The NRA supports the proposal by English Nature (EN) to notify the River Teme as a Site of Special Scientific Interest. A number of the written responses also supported the proposal, although some were concerned over restrictions which may be imposed. The NRA and EN are negotiating a conservation strategy (Action 10d) and protocols for the NRA's operational and regulatory work on the River Teme SSSI (Action 10c). EN are to negotiate directly with landowners and occupiers over specific management issues (Action 10b). EN will also promote a Wildlife Enhancement Scheme to provide incentives to owners to manage land in sympathy with the SSSI aims.

2.2.3 Drying up of the River Teme upstream of Leintwardine during summer months

This subject attracted a number of comments and was particularly topical in view of the drought during the Summer of 1995. The stretch of river in the Stanage and Brampton Bryan area dries up regularly during summer droughts, and in 1995 the problem affected a wider area and some tributaries. Several responses referred to the problem increasing in recent years, and changes in land use and possible excessive abstraction were suggested as possible causes. Significant environmental problems result, especially with loss of fish stocks, and the NRA is involved in fish rescues where feasible.



Dried-up section of the River Teme between Knighton and Leintwardine, August 1995

The NRA considers that the periodic drying up is probably a natural phenomenon, but in view of the concerns raised will be investigating possible causes. A new issue (Issue 21) has been included in the Action Plan.

2.2.4 Fisheries

Concerns were expressed by several angling clubs and individuals about a perceived emphasis given to salmon management issues in the Consultation Report. In particular, some respondents felt that more attention should be given to trout fisheries. The importance of native brown trout populations is fully recognised by the NRA. Protection of these fish may best be achieved by safeguarding existing high quality habitats (Issues 1, 10d, 14a) and by maintaining the integrity of local genetic stocks. In recognition of anglers' concerns, Actions 11f, g and h have been added to the Action Plan to strengthen protection for brown trout.

The NRA also considers that the River Teme has a very important role to play as both a fishery and a spawning/nursery area for Severn salmon stocks. Techniques for improving rivers for salmon, such as the construction of fish passes, are well established but often expensive. Cuts in Grant-in-Aid from Government are likely to reduce such work in future. High quality coarse fisheries in the Teme also play a very important part in providing one of the best mixed-fishing waters in the country (see Issue 12).

Many anglers expressed concern about damage caused to fish stocks by piscivorous birds. MAFF is able to issue licences to shoot such birds as an aid to scaring but only does so subject to stringent conditions, where significant damage can be demonstrated and where other methods of scaring have failed. Conservation organisations are generally opposed to culling of these birds for fisheries protection purposes. The NRA's role is primarily an advisory one with respect to licence applications. Other bodies such as English Nature and the Countryside Council for Wales have a statutory role in providing advice. MAFF, DoE and the NRA have recently commissioned a national R & D project on the impact of piscivorous birds on fish stocks to gain further knowledge of this subject.

2.3 THE WAY FORWARD

The Action Plan is a strategic policy framework for the management of the catchment. It includes a plan to achieve the vision for the River Teme Catchment. The Action Plan will form the basis for improvements to the water environment by outlining the areas for work and investment proposed by the NRA, and its successor, the Environment Agency, and others. The Action Plan primarily covers the five-year period from 1996 to 2001. A number of the projects may take longer owing to funding availability and government policy.

We have considered the detailed responses made and have developed the Action Plan in a way that reflects a balance between the opinions expressed and the need to ensure a feasible and workable plan.

3. OVERVIEW OF THE CATCHMENT

3.1 BRIEF DESCRIPTION OF THE CATCHMENT

The Teme catchment comprises an area of approximately 1,648 square kilometres (636 square miles) located to the north west of Worcester and extending to the Welsh borders. Most of the catchment is within the counties of Shropshire (61%) and Hereford and Worcester (32.5%), with a small proportion being in Powys (6.5%).

Settlement is mainly focused on the river valleys, in market towns and larger villages, although there are a number of villages and smaller settlements scattered throughout the catchment. The resident population is just over 75,000, with the largest towns being Ludlow, Tenbury Wells and Knighton, although the highest concentration of population occurs in the western part of Worcester City that just comes within the catchment area.

The River Teme is the second largest tributary of the River Severn. It rises in the Kerry Hills in Mid-Wales from a small spring in Bryn Coch quarry on Cilfaesty Hill at 460 metres above sea level. From near its source the river follows the Welsh/English border for some 27 kilometres. The Teme is a very rural river, passing through only three market towns before it joins the River Severn just south of Worcester, some 122 kilometres (76 miles) from its source.

The Teme has many tributaries, including the rivers Clun, Onny, Corve and Rea, and larger brooks such as the Ledwyche, Kyre, Sapey, Leigh and Laughern. The rural nature of the catchment is reflected by high quality rivers, with the Teme and many of its tributaries supporting high class fisheries and providing a variety of habitats for a wide range of flora and fauna.

The unspoilt countryside is widely regarded as some of the most attractive in Britain, and large parts of the catchment are designated as Areas of Outstanding Natural Beauty. The landscape is characterised by rolling hills and attractive valleys, with the sheep-grazed Welsh border uplands in the west giving way eastwards to the softer, more fertile countryside of the English Midlands. The catchment features a wide variety of hill country from the Mid Wales hills through those of South Shropshire, the Stiperstones, Long Mynd and Clee Hills to the Abberley Hills and the western slopes of the Malvern Hills near the Teme's confluence with the River Severn.

It is a predominantly natural catchment, with the flow regime of the Teme and its tributaries modified very little by human activities. There is a considerable variation between winter floods and low summer flows following periods of dry weather. Although there are no major aquifers (water-bearing layers of rock) to support base-flows in the Teme catchment, water stored in river gravel deposits helps sustain flows during summer.

Agriculture is the most important land use in the catchment. Upland pasture and rough grassland accounts for about a third (33%) of the catchment area, mainly in the west and north. This land is used mainly for sheep farming, sometimes in conjunction with beef farming. Arable land accounts for just under 26% of the area, concentrated mainly in the river valleys and lower land to the south east of the catchment where hop growing is locally important. A further 24% is grassland, and woodland is limited to only about 5% of the catchment area. Just over 6% of the catchment is moorland.

3.2 SUMMARY OF CATCHMENT RESOURCES, USES AND ACTIVITIES

These are described in detail in the Consultation Report. The following provides a summary of key points:

3.2.1 DEVELOPMENT AND INFRASTRUCTURE

There are three County Councils (Shropshire, Hereford and Worcester, and Powys) and nine District, Borough and City Councils, all with planning and administrative responsibilities within the catchment. However, imminent Local Government re-organisation will result in some changes.

Only a moderate rate of development is envisaged within the catchment up to 2001. Current Development Plans indicate an approximate total of 2,050 new dwellings from April 1995 to March 2001, equating to a build rate of approximately 340 dwellings per year. The majority of new housing will occur in South Shropshire District (62%) followed by Leominster District (15%), Radnorshire District (9%), Malvern Hills District (6%), Worcester City (4%), Bridgnorth District (3%) and areas within Montgomeryshire, Shrewsbury & Atcham and Wyre Forest Districts (1%).

Additional industrial/employment developments of about 55 hectares to 2001 are envisaged, much of which will occur on undeveloped areas of sites already allocated for employment uses. By the turn of the century industrial/employment areas will exist to varying degrees in Bishop's Castle, Bucknell, Burford, Church Stretton, Cleobury Mortimer, Clun, Craven Arms, Ditton Priors, Eardiston, Knighton, Knucklas, Leintwardine, Ludlow, Martley, Tenbury Wells, Wigmore and Worcester.

Most of the catchment within England falls within a Rural Development Area and the western section of the catchment (approximately 80% of the total area) is designated by the European Union as eligible for Objective 5b assistance. The NRA is seeking to promote this resource as a means of part funding some of the solutions to issues raised in the Plan.

Whilst the catchment contains no motorways or major dual carriageway highways, it is traversed from Ashton/Orleton to Church Stretton by an important inter-regional transport corridor containing the A49(T) Ross-on-Wye to Warrington trunk road and the Cardiff to Crewe railway, (currently being considered for European status). The Onibury-Stokesay A49(T) road improvement scheme has recently been completed.

Other schemes under consideration include the Wooferton Bypass, Craven Arms Bypass, Strefford Bridge to Upper Affcot improvements, and the Marshbrook Diversion.

Another important road route is the A44 from Worcester to east and west. An extension of the Worcester Southern Bypass to join the A44 at Rushwick is proposed. Due to a change of emphasis regarding Government road transport policy and financial restraints the timing of all these road schemes is uncertain.

Beyond the market towns and major villages there is little public sewerage provision or strategic water supply mains. This, together with the capacity limitations in existing sewerage systems, restrains sustainable development.

3.2.2 WATER RESOURCES AND ABSTRACTION

There is a plentiful supply of surface water resources in the Teme catchment during the winter period. However, flows decrease rapidly in the summer, resulting in restrictions having to be placed on some surface water abstractions during this period.



Knightsford Bridge
gauging station

Agricultural abstraction from watercourses is reliant on adequate summer (prescribed) flows. New abstractors are asked to consider taking water during the winter and storing it for future use, but this is not always financially viable. It does, however, give a more reliable supply of water than summer-only abstraction. Charges for winter water are a tenth of those for summer water, in an attempt to encourage winter abstraction.

Groundwater resources are not plentiful in the catchment. Much of the area is exempt from the need for licensing for groundwater abstraction. The reason for this is that the geology of the area is such that there are no major aquifers (water-bearing layers of rock) in the catchment.

Water for public water supply is abstracted under licence from gravels alongside the rivers by Dwr Cymru/Welsh Water at Leintwardine and by Severn Trent Water Ltd at Clungunford. Dwr Cymru also abstracts from the River Teme at Whitbourne. Other groundwater abstractions for public water supply also exist, but being in the exempt area they are unlicensed. There are other minor aquifers in the catchment from which less significant quantities of water are available or abstracted.

The main uses of surface water and groundwater as a percentage of total licensed water quantity abstracted are as follows: Public Water Supply (53%), Fish Farming (23%), Spray Irrigation (11.5%), Circulation through pools (4%), Mineral Washing (3%), Private Water Supply (2%), Agriculture (other than spray irrigation) (1.5%), Industrial Use (1%), Miscellaneous (1%).

There are no notable hydropower abstractions in the Teme catchment. Such schemes could become economically viable as technology advances, however the restraints of the proposed River Teme SSSI status and conservation issues would need to be considered. Most sites identified in the Teme catchment in a national survey commissioned by the Energy Technology Support Unit (Department of Trade & Industry) were rejected as non-viable because the heads were less than 2 metres. Some weirs in the catchment could be used for hydropower developments, particularly if renovated.

The majority of abstraction licences (135 out of 239) are for agricultural purposes and spray irrigation, giving a total potential abstraction of 1363 Ml/a (Megalitres per annum), of which 1262 Ml/a is from surface water and only 100 Ml/a from groundwater for these purposes. Although there are only 7 licences for public water supply, they account for 53% of the total quantity abstracted.

3.2.3 WATER QUALITY AND EFFLUENT DISPOSAL

Throughout its entire 122 kilometres (76 miles) the River Teme is a top quality river suitable for drinking water supply and capable of supporting game and other high class fisheries.

The 1994 General Quality Assessment (GQA) of water quality covered 370 km of river and indicated that 91% of the classified stretches achieved the category of Good (Grades A and B), although some localised stretches of poorer quality occur in the Snakescroft Brook, the River Kemp and the Cradley Brook.

The biological quality of the River Teme and its tributaries is consistently good or very good, with over 99% of the classified stretches achieving quality classes 1 and 2. The diverse fauna of the upper and middle reaches includes high numbers of stoneflies, mayflies and caddisflies. This good biological quality is maintained in the lower reaches. Short stretches of poorer quality occur in the lower River Rea and the upper reaches of the Onny and the Leigh/Cradley Brook.

The River Teme and its tributaries support a diverse flora and fauna in a wide range of aquatic habitats and have extensive salmonid and cyprinid fisheries, many of which are EC designated. Water is of sufficient quality for potable abstraction at Whitbourne by Dŵr Cymru/Welsh Water in the most downstream section of the river.

The largest sewage discharges are from the main population centres in the catchment – Ludlow, Church Stretton, Craven Arms and Tenbury Wells. The total volume of sewage effluent discharged is approximately 11.5 Ml/d which constitutes about 5% of the dry weather flow of the River Teme at the confluence with the River Severn. Most of the public sewerage systems have storm water overflows which operate either prior to or at the works. Most operate without causing nuisance, although those located in areas of easy public access do on occasion give rise to complaints.

The 150 privately-owned works in the catchment are generally smaller plants serving populations from single dwellings to schools, and small Council or Housing Association-owned housing developments. The types of plant vary from traditional septic tank and filter beds to modern package treatment plants. In some areas where there is poor permeability for septic tanks coupled with no public foul sewer the proliferation of privately-owned and managed package plants can be difficult to avoid.

Due to the rural nature of the catchment a large proportion of properties are not connected to public or private sewage treatment works but dispose of foul sewage by means of septic tanks and soakaways. Volumes of discharge are generally very small, invariably below 5m³/d.

The largest discharges to the River Teme originate from either planned or emergency discharges from the stretch of the Elan Aqueduct which passes through the Teme catchment from Knighton to Cleobury Mortimer on route to Birmingham.

During 1995, 179 pollution incidents were reported and investigated in the catchment. One (a sewage discharge) was identified as being a major incident. 12 were classed as significant, 119 as minor and 47 unsubstantiated. The largest numbers of significant incidents were of agricultural origin.

3.2.4 WASTE DISPOSAL AND MINERAL WORKING

There are 18 sites recorded in the catchment, including current landfills, waste transfer stations and licensed scrapyards. There are also a number of 'historic' closed landfill sites.

Currently there are two domestic landfill sites in operation within the catchment – at Martley near Worcester and Aldon near Ludlow. Both sites are nearing completion and there currently appear to be no plans for replacement sites within the catchment, although various proposals for a waste transfer station in the Craven Arms/Ludlow area have been considered. Problems are experienced at both sites with the generation of leachate.

A landfill site for the disposal of tyres exists at Heyope near Knighton. Tipping has now ceased but the site has yet to be restored. Part of the site has been burning underground for over 6 years, and there are also problems of leachate arising from another part of the site.



Part of Clee Hill Quarry

A number of disposal sites for inert wastes from construction and road building exist. Most of these are restored back to agricultural land once tipping has ceased and do not give rise to problems if properly managed. More sites are likely to be needed in the future in association with projects such as the A49 road improvement schemes.

A considerable amount of mining for both metals and coal has occurred historically within the catchment, however, there are now no active mines. Old mining sites such as the South Shropshire Metalliferous Mining Area and the Clee Hill Area are now of historic interest. In the western parts of the catchment, in the headwaters of the River West Onny, lead was mined from Roman times until the 1890s. Zinc was also mined, and barytes was mined in the orefield well into the 20th Century. A number of abandoned shafts and spoil

heaps exist in the area within the Teme catchment. The Clee Hill area has always been important for mineral workings. Coal has been mined over the centuries and ceased in the 1920s. Evidence of this past activity exists in the numerous spoil heaps and shafts spread over a wide area of the hill. Disused coal mines also exist in the Clows Top area. Tentative proposals to resume mining have occurred from time to time but none has come to fruition.

There are eight permitted minerals sites in the catchment including a sand and gravel quarry at Bromfield near Ludlow, where gravels are extracted from the flood plain of the River Onny. All those which discharge settled site drainage to adjacent watercourses have a consent, and are regularly monitored by the NRA.

3.2.5 AGRICULTURE AND FORESTRY

The Teme catchment is predominantly rural, with over 93% of the area being agricultural. Of this agricultural land around 95% is laid down to arable and grassland. There are over 2,400 farms in the catchment.

The landscape varies from hill land in the west, to the lower land of the river valleys in the east. Land quality also varies greatly over the catchment area. Sheep farming is widespread, and increasing numbers of sheep are being raised predominantly on higher areas of land and often in conjunction with beef farming. Total cattle numbers have fallen in recent years, this is attributable to the reduction in dairy cattle and general decline in dairy farming. Numbers of beef cattle, however, have risen in recent years. The intensive raising of poultry is prevalent throughout the catchment, and there are several large pig farms.



A farm in the Teme catchment

Large tracts of hill land have been designated as Environmentally Sensitive Areas (ESAs) by MAFF and WOAD. Most of the Shropshire Hills and Clun ESAs and part of the Radnor ESA come within the catchment. Under this voluntary scheme, financial rewards are provided for maintaining the habitats and features of the landscape, and controls are exerted on the production and disposal of organic wastes. There is generally little, if any, slurry production associated with farming in these areas. However, sheep dip chemicals and silage effluent are commonplace, extremely polluting substances that require careful storage and disposal.

Oakeley Farm, near Bishop's Castle, has been put forward as a candidate as a Nitrate Vulnerable Zone (NVZ) and designated as a Nitrate Sensitive Area (NSA). These measures are aimed at

limiting nitrate losses from land by means of an action plan which covers matters such as quantity and timing of applications of manure and fertilisers.

A large acreage of cereals is grown, together with a wide range of other crops. An increasing acreage of beans, peas, oilseed rape and linseed has been planted in recent years, but fruit production and hop production, once dominant in some parts, has declined.

Agriculture and the rural economy in general within the Marches area (which includes most of the catchment) has experienced a decline over the past decade. Around 80% of the catchment now benefits from designation by the European Union as eligible for Objective 5b funding assistance. Farm development schemes and diversification into new opportunities eg. food processing enterprises, farm-related tourism etc, may therefore increase during the next five years.

There are several large forested areas within the catchment, particularly on the upland region around Ludlow and Clun, and at the headwaters of the catchment. Satellite images show that 5.4% (88 km²) of the catchment is wooded.

Soil erosion due to forestry activities can result in siltation of surface waters. However, forestry in this area does not cause watercourse acidification due to the nature of the soils in the catchment.

Felling of mature plantations, followed by replanting is expected to increase over the next few years. There are no plans for major forestry expansion; farm woodland is the only growth area – MAFF statistics show this as having increased by 33% to 4,300 hectares within the Teme catchment over the last decade.

For both agriculture and forestry, there is potential for enhancing and safeguarding the water environment by creating buffer zones adjacent to watercourses. The NRA is keen to promote practices that are likely to result in improved water quality. Research on buffer zones, less intensive farming and organic methods is being pursued.

3.2.6 FLOOD DEFENCE

The Teme and its tributaries are prone to flooding, with major floods of note in 1795, 1924, 1947, 1955, 1960 and 1965.

The Teme and its tributaries have extensive lengths of flood plain, although there are few places (Leintwardine to Wigmore and some locations approaching the confluence with the Severn) where the flood plain width exceeds a kilometre. It nonetheless plays a vital role in attenuating flood flows and minimising flood levels, and needs vigilant safeguarding from encroachment by development.



Flooding across the road at Bransford

Upstream of the Downton gorge the river channel is relatively shallow and water starts spreading into its flood plain at least once or twice a year, but downstream of Ludlow the channel becomes very deep (over 4 metres) and the frequency with which it uses the flood plain drops dramatically.

Instances of significant urban development in the flood plain are limited to Knighton, some low-lying parts of Ludlow, and Tenbury Wells. Because of its rural nature the Teme catchment has had no significant flood defence improvement schemes implemented. Proposals for alleviating flood risks in Tenbury Wells were rejected by local opinion in the 1980s.

The NRA operates a flood warning system on the River Teme downstream from Ludlow. There are 180 kilometres of Main River in the catchment.

3.2.7 FISHERIES

The catchment is characterised by having many high quality and unspoilt fishery habitats, most of which are designated salmonid fisheries under EC Directive (78/659/EEC). Preservation of these high quality and relatively pristine resources is one of the most important fisheries issues for the NRA to address in the Teme area.

Trout and grayling predominate in the upper reaches of the River Teme, and in most of the tributary streams. Good stocks of native brown trout exist in many areas and grayling populations are starting to recover after a prolonged period of decline. Coarse fish increasingly become the dominant species in the



A specimen barbel
from the River Teme

There are no large stillwaters and no canals in the catchment. Walcot Lakes near Lydbury North and Kyre Pool near Tenbury Wells are among the larger waters providing coarse fishing, together with numerous smaller pools, many of which have been purpose-built in recent years. Similarly there are many small stillwater trout fisheries in the catchment, mostly stocked with rainbow trout.

3.2.8 CONSERVATION

The complicated geology of the area is responsible for a varied landscape which supports a wide range of habitats and species. The catchment is of high conservation value despite post war land use changes which have decreased ecological diversity. There are 59 Sites of Special Scientific Interest (SSSIs) within the catchment, of which 27 are water dependent and include pools, marsh, swamp, wet woodland and wet meadow habitats. Species of national importance which can be found in the catchment include otter, crayfish and black poplar.



Native British Crayfish

catchment for species and habitats of conservation concern. These will relate to the targets for key wetland species and habitats as identified in the UK Biodiversity Action Plan, emphasising the contribution that the NRA locally can make to national targets.

The whole of the River Teme (but not the catchment area) is a proposed SSSI as it is considered to be a nationally outstanding example of a large river flowing mainly over old red sandstone, with rich and varied plant, invertebrate, fish and other communities. Notification is due in 1996. A further 20 SSSIs in the catchment have streams or rivers which are a component part of their designation. This reflects the high quality of the River Teme, other rivers and streams within the catchment and habitats associated with them. There are almost 400 Prime Sites for Nature Conservation within the catchment, of which 154 are water-related.

In pursuance of the Government's commitment to biodiversity conservation, the NRA, in collaboration with other agencies, will be developing targets in the Teme

3.2.9 LANDSCAPE, ARCHAEOLOGY AND HERITAGE

The Shropshire Hills Area of Outstanding Natural Beauty (AONB) covers nearly 780 square kilometres, the majority falling within the Teme catchment. The western side of the Malvern Hills AONB is also within the catchment. Part of the Radnor Environmentally Sensitive Area (ESA) and all of the Shropshire Hills and Clun ESAs fall within the catchment, with agricultural landscape being a component feature of this designation. Much of the northern part of the catchment is within the area covered by the Shropshire Hills Management Plan, which is being produced by the Shropshire Hills Joint Advisory Committee.

The catchment area contains many landscapes of historic interest including historic parks and gardens, areas of industrial archaeology and old mining sites.

The area has been of importance since prehistoric times with the Teme being the focus of settlement, commerce, industry and a source of energy. The importance of the river itself is demonstrated by the wealth of archaeological and historical remains associated with it, including Scheduled Ancient Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens. Many of the undesignated landscape areas and archaeological sites are as important as the protected landscapes and sites, and may be more at risk.

3.2.10 RECREATION AND AMENITY

The catchment is popular for recreational and leisure activities due to its proximity to the West Midlands. Recreational activities taking place include walking, birdwatching, horse riding, cycling, gliding, canoeing and in particular, angling. The area is becoming more popular for these activities and is being promoted for tourism, sport and recreation. This is likely to lead to a greater demand for facilities in the future, with some sites possibly being put under pressure, or with existing pressures being increased (eg: Offa's Dyke and Long Mynd).

The River Teme is used extensively by canoeists, and has been for many years. In some instances this has led to conflict with fishing interests and attempts have been made to ban canoeing in certain areas in the belief that no public right of navigation exists on the river.

The catchment provides a variety of high quality angling opportunities. The middle and lower reaches of the Teme are some of the best river coarse fishing waters in the country and many of the tributaries and upper reaches of the river produce excellent fishing for both wild and stocked trout. Salmon fishing is also available, especially in the lower reaches, although this has declined in recent years.



The River Teme at Ludlow

4. RELATIONSHIP BETWEEN LAND USE AND THE WATER ENVIRONMENT

4.1 LAND USE PLANNING AND CATCHMENT MANAGEMENT PLANNING

Land use has the single most important influence on the water environment. It follows therefore, that land use *changes*, whether from increased urbanisation and other pressures for development, tourism, changing agricultural practices or afforestation, have important implications for the water environment. The impact of land use changes may not always become apparent in the short term. A better understanding of the complex relationship between land use and changes and the water environment, and the time scales involved, is therefore essential if we are to succeed in the long term sustainable management of the catchment.

Agenda 21, the international blueprint for sustainable development, identifies the need for an integrated approach to the management of land and water resources. Government planning guidance (e.g. PPG12, PPG23, Circular 30/92 and 68/92) highlights the importance of communication between local planning authorities and the NRA and the relationship between land use and water matters. It is just as important that liaison takes place with other agencies whose policies and actions impinge on the water environment.

The broad objective of catchment management planning is to conserve and enhance the total river environment through effective land and resource management. However, while the NRA is well placed to influence some of the factors affecting the water environment, particularly within the river corridor, it has very little control over the mechanisms which determine land use change on a catchment-wide basis. This is largely the responsibility of local planning authorities (LPAs) through implementation of the Town and Country Planning Acts. Government policies on agricultural subsidies also have an impact on land use, particularly in rural catchments.

The policies in statutory development plans are important in this regard in that they set out the framework for land use change, and provide the key reference for the determination of planning applications. The NRA encourages the inclusion of policies which reflect its concerns and responsibilities for the water environment.

The NRA has produced a set of statements in its "Guidance Notes for Local Planning Authorities in the Methods of Protecting the Water Environment through Development Plans". These statements provide a guide to LPAs on what policies should be included and why they are important.

The current status of development plans within the Teme catchment was summarised in the Consultation Report. One plan has since been adopted – Powys County Structure Plan in February 1996. The West Midlands Regional Planning Guidance (RPG 11) was published in September 1995. The Guidance requires LPAs to set out planning policies which take full account of land use effects on the water environment by effective integration with CMPs (para 12.21).

4.2 LAND USE STATEMENTS FOR THE TEME CATCHMENT

The following land use statements give a catchment perspective to documents such as the NRA Guidance Notes referred to above, and are intended to assist local authority planners and others to integrate water issues into their decisions and actions. They identify areas and potential uses of land which have particular implications for the water environment within the catchment.

For each statement, examples of Local Authority Development Plan policies are cited. This is not a comprehensive list of cross-referenced policies, but rather serves to illustrate the interface between NRA and Local Authority planning activities.

LU 1 The NRA will encourage all local authorities to adopt a precautionary approach to development which might affect the water environment in this high quality catchment. The effects of development on the water environment should be considered so as to minimise its adverse impacts and maximise potential benefits. In particular, we will work with developers and others to encourage inclusion of environmental enhancements, including integration of existing watercourses and wetland habitats, as part of development wherever appropriate.

e.g. Hereford and Worcester County Structure Plan (1993) – Policy CTC 9
Leominster District Local Plan (Consultation Draft) – Policy A3
City of Worcester Local Plan (Deposit Version) – Policy NE2

LU 2 Full account needs to be taken of the availability and provision of sewerage and sewage treatment facilities in considering the location, extent and timing of new developments. Many smaller villages and some larger settlements in the catchment have inadequate sewerage facilities or no sewerage provision at all. **Settlements currently not served by mains sewerage and where sewage problems or development constraints have been identified include:** Aston Munslow, Bayton, Bridges, Broome, Bushmoor, Chapel Lawn, Cleeton St Mary, Clows Top, Clunbury, Clungunford, Clunton, Colebatch, Culmington, Diddlebury (part), Doddington, Eardiston, Farden, Frith Common, Hints (part), Little Hereford, Llanfairwaterdine, Long Meadowend, Mamble, Menithwood, Middleton (part), Munslow, Neen Sollars, Newnham Bridge, Norbury, Onibury (part), Orleton/Catherton Common, St Michael's and Oldwood Common, Stoke St Milborough, Wentnor, Whitegrit, Wichenford (part), Woofferton. **Settlements that are sewered but where there are constraints or limited capacity for further development without improvements to the sewerage system include:** Bishop's Castle, Church Stretton, Upper Sapey and West Malvern.

e.g. **Regional Planning Guidance for the West Midlands (RPG 11) – Para 12.21**
South Shropshire Local Plan (1994) – Policy GP16

LU 3 Full account needs to be taken of the availability and provision of water supplies in considering the location and extent of significant new developments. The key issues are quantity, location, and source (i.e. surface water or groundwater) of abstractions. There is a limited availability of water resources to support surface water abstractions during the summer, and groundwater resources are generally very limited throughout much of the catchment, particularly in the west. The NRA will be reviewing the surface water licensing policy, and the exempt status of a large part of the catchment currently exempt from licensing for abstraction of groundwater. The NRA supports measures that minimise waste through leakage control and demand management, and looks to the Water Companies to meet current and increased demands in an environmentally sustainable manner.

e.g. **RPG 11 – Paras 12.17 – 12.19**
Shropshire Structure Plan (1993) – Policy 2/2
Leominster District Local Plan (Consultation Draft) – Policy A57

LU 4 The conservation, fisheries, landscape, heritage/archaeological and recreational value of local river corridors needs to be protected and enhanced. This includes protection under conservation legislation such as designation of AONBs, ESAs, SSSIs, SAMs etc, and guidelines such as those produced by the Forestry Authority. It also involves prevention of soil erosion by inappropriate riverside land use and the consideration of increased flood risk. The value of buffer zones and sensitive riparian management is recognised. The NRA is carrying out research into the effect of different land management techniques. Stretches of river where there are problems of an integrated nature should be targeted and a strategy for the river corridor agreed. The proposed River Teme SSSI, which will include land 10 metres either side of the river, forms an important river corridor and will provide an opportunity to define and agree management practices sympathetic to nature conservation.

e.g. **RPG 11 – Para 12.22**
Powys County Structure Plan (Draft replacement, Deposit Version) – Policy EC10
City of Worcester Local Plan (Deposit Version) – Policy NE5

LU 5 The flood plains of rivers and watercourses in the catchment need safeguarding from encroachment by development. The River Teme and its tributaries are naturally prone to regular flooding, although there are few places where the flood plain width exceeds a kilometre. The relative scarcity of low altitude land at gradients suitable for development means that there is pressure for development in flood plains. Principal settlements with sites at risk from flooding include Clun, Knighton, Leintwardine, Ludlow, Tenbury Wells. Flooding problems caused by surface water run-off are restraining development at Bishop's Castle, Church Stretton and Cleobury Mortimer. Where appropriate, and agreed with local authorities, changes in land use leading to a reduction in life and property at risk of flood will be considered with a view to relaxing current levels of protection, so benefitting wetland restoration.

e.g. **RPG 11 – Para 12.24**
Leominster District Local Plan (Consultation Draft) – Policy A53

LU 6 The management of contaminated land sites is raised as an issue in the CMP. There are a number of Waste Disposal Sites (including Heyope tyre tip, Aldon Hill Landfill and Penny Hill Landfill) and old mineworking sites (including the South Shropshire Metalliferous Mining Area and Clows Top) where pollution problems occur, or have potential to occur. The management of waste disposal sites must give due care to the protection of surface water and groundwater from pollution in their construction, operation and aftercare. Proposals for restoration of worked-out mineral sites can present opportunities for environmental enhancement, including features of historic interest, and should be encouraged.

e.g. Radnorshire Local Plan (Consultation Draft) – Policy RCF5
Shropshire Structure Plan (1993) – Policy 2/96

LU 7 Tourism and countryside recreation in the Teme catchment has increased in recent years, and there are likely to be increasing pressures in the future. The catchment's rivers and watercourses are an integral and attractive part of the countryside scene, and are likely to play an increasingly important role in tourism and water-based recreation. The NRA will liaise with Local Authorities and developers to ensure such developments are sympathetically designed and located to take into account the safeguarding of the water environment, and where possible its enhancement. The development and promotion of water-based recreation facilities such as riverside footpaths and canoeing should take into account the need to safeguard the catchment's high quality riverine habitats. Sensitive areas should be protected from recreational pressure, and should be targeted for monitoring.

e.g. Shropshire Structure Plan (1993) – Policy 2/71
Powys County Structure Plan (Draft replacement, Deposit Version) – Policy TR1, TR14
Malvern Hills District Local Plan (Deposit Draft) – Tourism Policy 1,
Recreation Policy 4



Enjoying walking on a public footpath in the Unk valley area of the Shropshire Hills

SUMMARY OF ISSUES



5. ACTIONS

Implementation of the plan is based around the 22 key issues set out below. These were discussed in detail in the Consultation Report and have been modified where appropriate in the light of the consultation responses. Their resolution is considered necessary in order that the plan can be successful in achieving real improvements within the Catchment.

The issues are presented with a number of actions, a target timetable and the identification of responsible parties. Where possible, costs have been outlined for the period covered by the plan. This does not necessarily reflect the total cost of the schemes and is sometimes a projected estimate to be more accurately costed later. The plan will span a five year period and will be renewed annually.

KEY

<	Less than
===	Action in the year indicated (numeric entry given if costs known)
U	Unknown at this time
CS	Commercially sensitive
R	No additional costs to annual budgetary provision (recurring or routine)
*	Costs shared between identified bodies
▲	New or modified issue/action added as a result of consultation
pa	per annum
I	To be undertaken as part of a Regional investigation

A number of actions will require feasibility studies and appraisal of options prior to work commencing. In some cases, depending on the outcome of these studies and investigations, further action may not be required. The timescales for actions may vary depending on future political and economic changes. All changes will be highlighted in the Annual Review.

NOTES ON ABBREVIATIONS

ADAS	AGRICULTURAL DEVELOPMENT ADVISORY SERVICE	HSE	HEALTH AND SAFETY EXECUTIVE
AMP	ASSET MANAGEMENT PLAN	LA	LOCAL AUTHORITY
BCU	BRITISH CANOE UNION	LPA	LOCAL PLANNING AUTHORITY
CC	COUNTY COUNCIL	MAFF	MINISTRY OF AGRICULTURE, FISHERIES & FOOD
CCW	COUNTRYSIDE COUNCIL FOR WALES	NFU	NATIONAL FARMERS UNION
CLA	COUNTRY LANDOWNERS ASSOCIATION	NRA	NATIONAL RIVERS AUTHORITY *
CoCo	COUNTRYSIDE COMMISSION	RQO	RIVER QUALITY OBJECTIVE
DC	DISTRICT COUNCIL	RSPB	ROYAL SOCIETY FOR THE PROTECTION OF BIRDS
DCWW	DWR CYMRU/WELSH WATER	SCC	SHROPSHIRE COUNTY COUNCIL
DoE	DEPARTMENT OF THE ENVIRONMENT	SSDC	SOUTH SHROPSHIRE DISTRICT COUNCIL
DoT	DEPARTMENT OF TRANSPORT	STW Ltd	SEVERN TRENT WATER LTD
EA	ENVIRONMENT AGENCY *	WDA	WELSH DEVELOPMENT AGENCY
EN	ENGLISH NATURE	WOAD	WELSH OFFICE AGRICULTURE DEPARTMENT
FA	FORESTRY AUTHORITY	WRA	WASTE REGULATION AUTHORITY *
FUW	FARMERS' UNION OF WALES	WT	WILDLIFE TRUST
HMIP	HER MAJESTY'S INSPECTORATE OF POLLUTION *		

* From April 1996 the NRA, HMIP and local WRAs come together to form the Environment Agency

ISSUE 1 – NEED TO SAFEGUARD HIGH QUALITY WATER, WATER RESOURCES AND HABITATS

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 2000	2000/ 2001	FUTURE
a.	Seek additional EC fisheries designations on the River Redlake, Gosford Brook and Byne Brook.	NRA/EA		R	===	===				
b.	Designate groundwater protection zones for supply sources at Clungunford, Leintwardine and Munslow.	NRA/EA		4	===					
c.	Identify risks to water supply boreholes by undertaking surveys.	NRA/EA		4		2	2			
d.	▲ Develop targets for habitat protection and enhancement in relation to the UK Biodiversity Action Plan and LA Biodiversity Challenges.	EN LAs NRA/EA	WTs	U		===	===			

NOTES:

In addition to the above actions, the NRA/EA will address this issue through its routine and ongoing activities. In particular, water resources, water quality, aquatic habitats and biodiversity will be protected through the planning liaison process, by application of the NRA's regulatory powers and groundwater protection policies, and through implementation of the NRA's area conservation and fisheries strategies. Designated sites, including AONBs, SSSIs, County Prime Sites and SAMS, will be especially protected. The development of riparian buffer zones and the protection of riparian habitats will be promoted (also see Issue 9). MAFF/WOAD and other suitable incentive schemes should be used to assist this process with Farming and Wildlife Advisory Group involvement where appropriate. The NRA/EA will also seek to encourage restoration of contaminated land.

An option for investigating the impact of land use changes is dependent on the outcome of a proposed pilot study in the River Severn – Upper Reaches catchment, where the problem is currently considered to be greater.



The River Teme at Leintwardine

ISSUE 2 – FAILURE TO COMPLY WITH RIVER WATER QUALITY OBJECTIVES AND EC WATER QUALITY DIRECTIVES

ACTIONS		RESPONSIBILITY									
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	2001/ 2001	FUTURE
a.	Review consent conditions on Cotwoll STP discharge and improve STP.	NRA/EA STW Ltd		1 U				1	===		Hoped for inclusion in AMP3.
b.	Investigate causes of poor quality in River Kemp upstream of Colebatch. Instigate remedial action where appropriate.	NRA/EA		1	1						
c.	Ensure improvements to Bishop's Castle sewerage system are undertaken.	SSDC STW Ltd	Highways Authority	U U	===	===	===	===			
d.	Monitor investment in improvements to Bishop's Castle STP and sewerage system under AMP2 programme.	NRA/EA	STW Ltd	R6 CS		2 ===	2 ===	2 ===			
e.	Investigate causes of reduction in expected biological quality in River Rea and identify any remedial action needed.	NRA/EA		1	1						
f.	Investigate possible sources on River Teme upstream of Whitbourne Water Treatment Works.	NRA/EA	DCWW	5	3	2					
g.	Carry out site surveys of timber preservation sites and impose consents if applicable.	NRA/EA HSE	LPA's Timber Companies	R U	=== ===	=== ===	=== ===				

NOTES:

In addition to the above actions, the NRA/EA will address this issue through its routine and ongoing pollution prevention activities (refer Section 1.3)

ISSUE 3 – AGRICULTURAL POLLUTION INCLUDING THE EFFECTS OF AMMONIA AND NITRATE

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
				COST (£K)						
a.	Liaise with LPAs to ensure applicants submit supporting information with planning applications for intensive livestock units.	NRA/EA LPAs		R	===	===	===	===	===	
b.	Target farm inspections – identification of remedial action needed.	NRA/EA		1	1					
c.	Monitor effectiveness of NVZs in reducing nitrates.	DoE		U	===	===	===	===	===	
d.	Investigate feasibility of providing community-based anaerobic digester.	Shropshire CC ADAS	NRA/EA	<40	===					
e.	▲ Promote uptake of free advisory visits and Farm Waste Management Plans.	MAFF/ WOAD ADAS NRA/EA		U U 1	=== === ===					

NOTES:

In addition to the above actions, the NRA/EA will address this issue by promoting the Codes of Good Agricultural Practice for the Protection of Water and Soil, and enforcing the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations. Nationally, research on buffer zones, less intensive farming and organic methods is being pursued.

ISSUE 4 – INADEQUATE RURAL SEWERAGE

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
a.	Amend discharge consent for West Malvern STP within constraints of AMP2.	NRA/EA STW Ltd		R <5	=== <5					
b.	Improve Bishop's Castle sewerage system (See also 2c).	SSDC STW Ltd	NRA/EA Developers	U CS	===					
c.	Monitor impact of Church Stretton sewerage system for prioritisation under AMP3.	STW Ltd	NRA/EA Developers	U	===	===	===	===		
d.	Investigate discharges to Dumbleton Brook at Clows Top.	NRA/EA	LA	R	===					

NOTES:

In addition to the above actions, the NRA/EA will promote policies for inclusion in Development Plans to prevent further problems in critical locations and will liaise with Local Authorities over provision of sewerage schemes (also see Section 4.2 LU2).

ISSUE 5 – POLLUTION RISKS FROM CONTAMINATED LAND

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 2000	2000/ 2001	FUTURE
a.	Investigate, assess and implement method of leachate management and control at Aldon Landfill.	Shropshire Waste Management	NRA/EA WRA/EA	U R	=== ===	=== ===	=== ===			
b.	Continue monitoring groundwater/leachate contamination around Penny Hill Landfill and instigate improvements via site completion and restoration.	Shanks & McEwan	NRA/EA WRA/EA	U R	=== ===	=== ===	=== ===			
c.	Evaluate change in quality of contaminated minewater at Clows Top and modify clean up programme accordingly.	NRA/EA	Operator	R	===	===	===	===	===	
d.	Assess and control potential impact of any proposals for restoration on old mine workings at Whitegrit and Shelve.	NRA/EA WRA/EA LA	Land-owners	R	===	===	===	===	===	Ongoing

NOTES:

In addition to the above actions, the NRA/EA will address this issue by reviewing Waste Management Licences, implementing its 'Policy and Practice for the Protection of Groundwater' and through routine and ongoing pollution prevention activities.

ISSUE 6 – POLLUTION RISKS ASSOCIATED WITH HEYOPE TYRE TIP

ACTIONS		RESPONSIBILITY									
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	2001/ 2001	FUTURE
a.	Seek engineering and Waste Management solutions in liaison with interested parties.	Owners WDA NRA/EA WRA/EA		U	===	===					
b.	Monitor impact of fire on water quality.	NRA/EA		R6	3	3					
c.	Review Waste Management Licence.	NRA/EA WRA/EA		R	===						

ISSUE 7 – DEFICIENCIES IN THE LEVEL OF FLOW AND QUALITY MONITORING

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
a.	Review need for new flow measurement station on River Teme upstream of Tenbury Wells (also see Issues 8 and 18).	NRA/EA		R	===					
b.	Implement recommendations of review under a.	NRA/EA		80				80		
c.	Assess appropriate location for and install automatic water quality monitors on River Teme.	DCWW NRA/EA		<25*	===					Progress dependent on site availability & funding
d.	Reconstruct Knightsford Bridge flow measurement station (also see Issue 12d).	NRA/EA		170	10			80	80	

ISSUE 8 – PROBLEMS OF ABSTRACTION LICENSING IN THE TEME CATCHMENT

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
a.	Review whether new flow control point is required for abstractions in the upper catchment.	NRA/EA		R	===					
b.	Review groundwater licensing exemptions policy (also see Issue 21).	NRA/EA	STW Ltd DCWW NFU FUW	R			===			
c.	Investigate relationship between abstraction and low flows for dilution in Cradley Brook headwaters.	NRA/EA		R				===		
d.	▲ Investigate effects of groundwater abstractions on wetland SSSIs and other sites of conservation value.	NRA/EA	EN CCW	I	===					
e.	Review surface water licensing policy, specifically the resource allocation for summer abstractions.	NRA/EA		I	===					
f.	Establish which surface water controls support wetlands and riparian SSSIs (also see Issue 9).	NRA/EA		R		===				

ISSUE 9 – PROTECTION, ENHANCEMENT AND RESTORATION OF RIVERINE AND OTHER WETLAND HABITATS

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
a.	Identify historic breeding areas for wading birds and assess scope/need for habitat enhancement.	NRA/EA	RSPB EN WTs	5		<5	<5			
b.	▲ Develop wetland conservation strategy for the Teme Valley.	EN/CCW NRA/EA		R	===	===				
c.	Restore and create wetlands in the Teme Valley at sites identified in 9b above.	EN/CCW NRA/EA	WT/ Land- owners	45*			15	15	15	
d.	▲ Work with EN to implement site management statements promoting the development of riparian buffer zones and the protection of riparian habitats.	EN/CCW NRA/EA		U		===	===	===	===	
e.	Investigate requirements for Water Level Management Plans on (i) River Teme	NRA/EA	EN/Land- owners	R			===			
	▲ (ii) Burrington Meadows	LAs	Land- owners	U			===			
	▲ (iii) Other appropriate sites	LAs	Land- owners	U						=====
f.	Assess prevalence of invasive weeds in the catchment and reduce further spreading by spraying or other appropriate techniques.	NRA/EA EN/CCW		10	<5	<5	<5	<5	<5	

NOTES:

In addition to the above actions, the NRA/EA will address this issue through its routine and ongoing activities (also see Issue 1). Countryside Stewardship, extension of the Water Fringe Habitat Scheme and the use of ESA, Setaside and other MAFF/WOAD incentive schemes should be promoted in riparian locations. In particular, the use of buffer zones should be encouraged (see Issue 1), together with reduced livestock grazing on land immediately adjoining rivers and wetland habitats where appropriate.

ISSUE 10 – NOTIFICATION, PROTECTION AND MANAGEMENT OF THE RIVER TEME AS A SITE OF SPECIAL SCIENTIFIC INTEREST

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
				COST (£K)						
a.	▲ Notify River Teme as SSSI.	EN/CCW		U	===					
b.	▲ Negotiate agreed management statements with owners/occupiers following notification.	EN/CCW		U	===	===				
c.	▲ Develop protocols for NRA operations and regulatory activities within the SSSI.	NRA/EA/ EN		R	===					
d.	▲ Develop Conservation Strategy for River Teme SSSI, with biodiversity targets for important species and habitats.	EN/CCW NRA/EA		R	===	===				
e.	Implement agreed actions from above Conservation Strategy.	EN/ NRA/EA	Land- owners MAFF	30*			10	10	10	
f.	▲ Investigate and monitor phosphate concentrations in the River Teme (prior to Action g).	NRA/EA		6	2	2	2			
g.	Designate appropriate Special Ecosystem targets and assess compliance with targets.	NRA/EA		U						===(1)
h.	▲ Promote/implement *Wildlife Enhancement Scheme for River Teme SSSI.	EN/CCW		U		===	===	===	===	

NOTES:

As the statutory body for nature conservation, English Nature will be notifying the whole of the River Teme as a SSSI during 1996 (also see Section 2.2.2).

(1) Timing dependent on implementation of SWQO scheme.

* The proposed Wildlife Enhancement Scheme will be an incentive scheme to encourage riparian owners to manage their land in an environmentally sustainable manner in accordance with the aims of the SSSI.

ISSUE 11 – MAINTENANCE, IMPROVEMENT AND DEVELOPMENT OF HIGH QUALITY GAME FISHERIES

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 2000	2000/ 2001	FUTURE
a.	Review bylaws and voluntary restrictions on salmon fishing methods.	NRA/EA		R		===				
b.	Construct salmon passes at Buckton Weir (Teme), Tetsill Weir (Rea), Knapp and Hapton Court Weirs (Leigh Brook).	NRA/EA		200			50	50	50	50
c.	Improve salmon passage facilities at Stokesay (Onny) and Halford Weirs (Onny).	NRA/EA		5		5				
d.	Improve salmon spawning gravels and access to Ledywche, Leigh, Corn and Sapey Brooks.	NRA/EA		15		5	5	5		
e.	Stock River Teme upstream of Ashford and tributaries with local hatchery-reared salmon.	NRA/EA		R40	<10	<10	<10	<10	<10	
f.	▲ Assess present status of native brown trout in catchment	NRA/EA	Angling Clubs	5		<5	<5			
g.	▲ Determine stocking policy for protection of native brown trout and implement through Section 30 Consents procedures.	NRA/EA		R	===	===				
h.	▲ Investigate opportunities for production of hatchery reared trout from local genetic stock.	NRA/EA	Fish Farms Angling Clubs	U		===	===			
i.	Establish and implement rearing and/or restocking programmes for grayling, using native broodstock if possible.	NRA/EA		15	<5	<5	<5	<5	<5	

NOTES:

In addition to the above actions, the NRA/EA will address this issue and safeguard habitats through its routine and ongoing activities (also see Issue 1). Special regard will be paid to protecting native brown trout stocks. Fish will be rescued from 'drying up' lengths of the River Teme where appropriate. Surveillance and anti salmon poaching patrol work will be maintained in line with the National Salmon Management Strategy, subject to budgetary provision.

ISSUE 12 – MAINTENANCE, IMPROVEMENT AND DEVELOPMENT OF HIGH QUALITY COARSE FISHERIES

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/	1997/	1998/	1999/	2000/	FUTURE
				COST (£K)	1997	1998	1999	2000	2001	
a.	Enforce Schedule 1 provisions of Theft Act 1968 to combat theft of barbel and other coarse fish from rivers and still waters in the catchment.	Police/ Fishery Owners	NRA/EA	U	===	===	===	===	===	
b.	Review Fisheries Byelaws to assist in enforcement action against fish thefts and implement public awareness campaign on this problem.	NRA/EA		R		===				
c.	Obtain coarse fish broodstock from River Teme for rearing and restocking programmes.	NRA/EA		<10	<5	<5	<5	<5	<5	
d.	Construct elver passes at Powick, Ashford and the proposed Knightsford Weirs.	NRA/EA		<10		<5	<5	<5		
e.	▲ Review rationale for coarse fish removals from game fisheries.	NRA/EA		U		===				

NOTES:

In addition to the above actions, the NRA/EA will address this issue and safeguard habitats through its routine and ongoing activities (also see Issue 1), and by monitoring coarse fish populations through survey programmes.

ISSUE 13 – IMPACTS OF PISCIVOROUS BIRDS ON FISH STOCKS

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/	1997/	1998/	1999/	2000/	FUTURE
				COST (£K)	1997	1998	1999	2000	2001	
a.	Investigate substantiated reports of adverse impacts by piscivorous birds on local fish stocks.	NRA/EA		U	===	===	===	===		

NOTES:

In addition to the above actions, MAFF/WOAD should ensure appropriate consultation on applications to control piscivorous birds. MAFF, DoE and NRA have recently commissioned a three year R&D project to gain more knowledge of the impacts of piscivorous birds on fish stocks (also see Section 2.2.4).

ISSUE 14 – PROTECTION OF RARE AND THREATENED SPECIES

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
				COST (£K)						
a.	▲ Identify key habitat types and species within the catchment and develop and implement targets and objectives to maintain biodiversity.	EN/CCW NRA/EA	WTs	U		===	===	===	===	
b.	Maintain and improve bankside cover and other riparian habitat for otters.	NRA/EA EN/CCW Land-owners	MAFF WOAD	10		<5	<5	<5	<5	
c.	Identify current distribution of alien crayfish in the catchment.	NRA/EA		R		===				
d.	Develop policy on alien crayfish and restrict any further introductions into the catchment.	MAFF/ WOAD EN		U		===				
e.	Determine the current spawning distribution of shad in the catchment and take steps to increase this if practicable.	NRA/EA		R5		<5	<5			
f.	Determine the extent and possible impact of alder disease in the catchment.	NRA/EA FA		R	===	===				
g.	Collate records of black poplar distribution along rivers and floodplains and implement new planting at suitable sites.	NRA/EA LA	WT	NRA 15 Others U	5 ===	5 ===	5 ===	 ===	 ===	
h.	▲ Investigate genetic variability of black poplars and promote availability of local stocks if appropriate.	NRA/EA LA	WT Specialist Nurseries	NRA 10 Others U	10 ===	 ===	 ===	 ===	 ===	

NOTES:

The River Severn Otter Project Report produced by NRA/Worcester Wildlife Trust will provide guidance to Action 14b.

ISSUE 15 – THE INCREASED DEMAND FOR AMENITY AND RECREATION

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
a.	Seek resolution to access and river use conflicts between canoeists, anglers and riparian owners, particularly between Ashford and Tenbury.	BCU Anglers Land- owners NRA/EA	Sports Council LAs	U	===	===				
b.	▲ Develop angling and canoeing Liaison Group.	BCU Anglers Land- owners NRA/EA	Sports Council	U		===				
c.	▲ Re-evaluate historic and recent evidence in respect of the navigation status of the River Teme.	NRA/EA	BCU LAs	<5		<5				
d.	Improve footpath network in the Teme/Severn confluence area and access around the Laughern Brook.	NRA/EA LA		10	5	5				
e.	▲ Investigate opportunities for improved riverside access at other suitable locations.	NRA/EA CoCo	LAs Land- owners EN	U		===	===			

ISSUE 16 – PROTECTION OF LANDSCAPE, ARCHAEOLOGICAL AND CULTURAL HERITAGE VALUE OF THE CATCHMENT

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	FUTURE
a.	Identify key landscape, archaeological and heritage issues related to the water environment in the catchment, develop policies and implement improvements where appropriate.	LAs Archeol Trusts CoCo NRA/EA	EN/ CCW MAFF/ WOAD	U		===	===	===	===	
b.	Carry out landscape assessment of river corridors.	NRA/EA	CoCo	5		5				
c.	Investigate scope for archaeological river corridor surveys.	NRA/EA	Archeol Trusts LAs	R	===					
d.	Investigate viability and costs of restoring historically important weirs through Ludlow.	Ludlow Town Council SSDC Weir owners	English Heritage SCC NRA	U	===	===				
e.	Investigate options for repair of Powick Weir and implement if appropriate.	NRA/EA		R/U		===	===			
f.	▲ Investigate the status of other historic weirs and water management systems in the Teme catchment.	LAs NRA/EA	English Heritage Archeol Trusts	<5		<5	<5			

NOTES:

In addition to the above actions, the NRA/EA will address this issue by ongoing activities including maintaining a database of archaeological and historic sites, liaising closely with County, Trust and other Archaeologists (in relation to NRA operations) and with the Shropshire Hills Joint Advisory Committee (Shropshire Hills Management Plan) and by promoting ESA, Setaside, Countryside Stewardship and other appropriate MAFF/WOAD incentive schemes.

The NRA/EA also recognises that a number of organisations, including CoCo, EN and LAs have carried out extensive landscape assessments in areas covering many parts of the catchment. The NRA/EA will draw on these assessments in relation to 16b (above) and will aim to work within agreed landscape strategies developed from these assessments.

ISSUE 17 – EROSION AND UNAUTHORISED RIVER WORKS

ACTIONS		RESPONSIBILITY									
		LEAD	OTHER	TOTAL	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE	
				COST (£K)							
a.	Undertake campaign to promote awareness in the agricultural community of the damaging impacts of unauthorised river works.	NRA/EA	MAFF WOAD CLA NFU FUW LPAs	<5		<5					
b.	▲ Investigate the possibility of extending main river designation on the Teme upstream of Knighton to enable appropriate controls to be exercised by NRA on all river works.	NRA/EA		R	===						

NOTES:

The NRA/EA will use its powers under the Water Resources Act 1991 and the Salmon & Freshwater Fisheries Act 1975 to prevent unauthorised river works and to protect salmonid spawning gravels from such works.

The NRA/EA will also promote the use of 'soft' bio-engineering works for bankside protection where appropriate. MAFF's Code of Good Agricultural Practice for the Protection of Soil should also be promoted to reduce this problem.

ISSUE 18 – PRESSURE FOR DEVELOPMENT IN FLOOD PLAIN

ACTIONS		RESPONSIBILITY									
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	2001/ 2001	FUTURE
a.	Carry out ground level surveys and computer modelling.	NRA/EA		126	===	===					
b.	Update flooding survey for S105 Water Resources Act 1991.	NRA/EA		R	===						

NOTES:

In addition to the above, the NRA/EA will address this issue through its routine and ongoing activities; in particular by pressing for policies to protect flood plain from development, and restoration of natural flood plain in appropriate circumstances, to be included in Development Plans.

ISSUE 19 – FLOODING AT SPECIFIC LOCATIONS INCLUDING PROBLEMS CAUSED BY SURFACE WATER RUN-OFF

ACTIONS		RESPONSIBILITY									
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	2001/ 2001	FUTURE
a.	Investigate feasibility of flood alleviation scheme for Knighton.	LA		U	===	===	===	===	===		
b.	Implement flood alleviation scheme for Clun.	LA		U	===						
c.	Investigate feasibility of flood alleviation scheme for Ludlow.	NRA/EA		U				===			
d.	Re-examine feasibility of flood alleviation scheme for Tenbury Wells.	NRA/EA		U					===		
e.	Design and implement flood alleviation scheme for Bishop's Castle.	LA/ STW Ltd		U	===						
f.	Investigate feasibility of surface water drainage improvements for Church Stretton.	LA		U	===	===	===	===	===	===	===
g.	Investigate feasibility of flood alleviation scheme for Cleobury Mortimer.	LA		U	===	===	===	===	===	===	===

NOTES:

No dates agreed for a, f & g as LA not yet committed to resolution of problem. Costs of schemes cannot be specified at present; the Annual Review will provide an update. In the design of any flood alleviation scheme the NRA/EA will, as usual, continue to aim to provide a 'least impact' design in order to minimise environmental conflicts, and would expect other organisations to take the same approach.

ISSUE 20 – EXTENSION OF FLOOD WARNING SYSTEM

ACTIONS		RESPONSIBILITY									
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	2001/ 2001	FUTURE
a.	Identify need for extension of flood warning system.	LA		U	===						
b.	Investigate feasibility of extension of flood warning service to meet need identified in a.	NRA/EA		U		===					
c.	Implement more level and flow gauging stations identified in b.	NRA/EA		U		===	===				

NOTES:

Also refer to Issue 7.

▲ ISSUE 21 – PERIODIC DRYING UP OF THE RIVER TEME UPSTREAM OF LEINTWARDINE

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1998	1999/ 1999	2000/ 2000	FUTURE
a.	Investigate possible reasons for drying up of River Teme upstream of Leintwardine during dry summers, including long term flow data analysis.	NRA/EA	DCWW	5		===				

▲ ISSUE 22 – RIVER STRETCHES THAT CAN BE UPGRADED TO PROTECT FUTURE WATER QUALITY

ACTIONS		RESPONSIBILITY								
		LEAD	OTHER	TOTAL	1996/ COST (£K)	1997/ 1997	1998/ 1999	1999/ 2000	2000/ 2001	FUTURE
a.	Review long term data trends and upgrade the long term RQOs where sustainable.	NRA/EA		R	==	==	==			

NOTES:

In a number of rivers the current water quality is better than the long term River Quality Objective (RQO). Where this is sustainable we propose to upgrade the long term RQO, to protect future water quality. Stretches identified in 1996 are: River Teme from Ludlow STP to Ashford Carbonell (2.2 km), River Kemp from Acton Bank Brook to Acton Pool Brook (1.5 km), Quinny Brook from Little Stretton to Church Stretton STP (0.1 km), Byne Brook from upstream of Coats to Quinny Brook (12.5 km) and Leigh/Cradley Brook from Hoe Court to Cradley STP (3.0 km).

6. FUTURE REVIEW AND MONITORING PROGRAMME

The NRA and its successor the Environment Agency will be jointly responsible, with other identified organisations and individuals, for implementing this Action Plan. Progress will be monitored and reported annually by the Environment Agency to all the key partners and other interested parties. The first Annual Review will be due at the end of May 1997. The period between major revisions will normally be five years.

The Annual Review will take the form of a short progress report and will:

- *Examine the need to update the Catchment Management Plan in the light of changes in the catchment.*
- *Compare actual progress with planned progress, and explain the reasons for any changes to the content or timing of individual actions.*
- *Report on other matters, including any legislative and classification scheme changes, affecting the Catchment Management Plan.*
- *Roll forward the detailed actions.*

APPENDIX 1: NOTE ON NEW RIVER WATER QUALITY SCHEMES

Two new schemes for the reporting and management of river water quality were introduced in 1994. The new schemes will replace the National Water Council (NWC) Scheme, which was first introduced in the late 1970s. In May 1994, the River Ecosystem (RE) Use of the Statutory Water Quality Objectives (WQOs) was introduced by *The Surface Waters (River Ecosystem) (Classification) Regulations 1994*. At the same time the NRA introduced the General Quality Assessment (GQA) Scheme.

WQOs will be used for long term planning and target setting for the use of the river. The GQA classification will be used to make periodic assessment of overall water quality in order to monitor geographical trends and trends over time.

Until WQOs are formally established by legal notice served by the Secretary of State (and therefore exist on a statutory basis), they will be applied on a non-statutory basis through translation of River Quality Objectives (RQOs) from NWC classes to appropriate RE classes with target dates. These new non-statutory RQOs will form the basis from which to develop Statutory WQOs (SWQOs).

Five uses have been proposed for rivers under the WQO scheme, of which the River Ecosystem (RE) use is the first to have been introduced. The five uses include; River Ecosystem (general river health); Special Ecosystem (for example SSSI); Abstraction for Potable Supply; Agricultural/Industrial Abstraction; and Watersports.

Five Classes have been established for the RE use:

Class RE1:	Water of very good quality (suitable for all fish species).
Class RE2:	Water of good quality (suitable for all fish species).
Class RE3:	Water of fair quality (suitable for high class coarse fish populations).
Class RE4:	Water of fair quality (suitable for coarse fish populations).
Class RE5:	Water of poor quality (which is likely to limit coarse fish populations).
Unclassified:	Water of bad quality (in which fish are unlikely to be present), <u>or</u> insufficient data available by which to classify water quality.

The introduction of SWQOs will require full public consultation, and the timetable will be set by the Government. CMPs will provide the framework within which the NRA and its successor the Environment Agency can implement the new system, and we will use the Annual Review as well as other approaches to inform you of progress on this matter.

APPENDIX 2A: LIST OF ORGANISATIONS AND INDIVIDUALS RESPONDING TO THE CONSULTATION REPORT

The following organisations and individuals sent in written responses to the Consultation Report.
The NRA gratefully acknowledges all comments received.

ADAS (Worcester)	D Marchant
J S Bennett	G C Mascal
Birmingham Anglers Association Limited	N D McCormack
Birmingham Canoe Club	Midland Flyfishers Ltd
Bishop's Castle Town Council	Ministry of Agriculture, Fisheries and Food
Bridgnorth District Council	D H Morgan
British Canoe Union (Head Office)	R Morley
British Canoe Union (South West Region)	P C Narten
British Canoe Union (West Midlands Region – Chairman)	National Farmers Union (West Midlands Region)
British Canoe Union (West Midlands Region – Vice Chairman)	Newnham Estate Syndicate
British Canoe Union (West Midlands Region – Recreation Officer)	A Orme (The Haven Fishery)
M Brown	C P (Wolverhampton)
Cadw	D Perry
Canoe & Kayak Capers	M C Powell
R Childs	Powys County Council
Church Stretton Parish Council	Powys Fire Service
Council for the Protection of Rural England (Herefordshire Branch)	K Pratley
Council for the Protection of Rural England (Shropshire Branch)	Radnorshire District Council
Countryside Council for Wales	Ramblers' Association (Shropshire Area)
Croome Estate Trust	Royal Commission on the Ancient & Historical
Culmington Parish Council	Monuments of Wales
Drummond Outdoor	Mr & Mrs C W Rudd
Dyfed-Powys Police	Rushwick Parish Council
English Nature	Salmon & Trout Association (Shropshire & Montgomery Branch)
ETSU (for Dept. of Trade & Industry)	Salopian Fly Fishers Association Ltd
J A Fielden	Shropshire Association of Parish & Town Councils
Friends of the Earth (Malvern Hills Area)	Shropshire County Council
J H Froggatt	Soil Survey & Land Research Centre
W Froggatt	South Shropshire District Council
LA Greenall (Holdings) Ltd	Sports Council for Wales
J W Griffiths	Sports Council (West Midlands Region)
Hereford County Canoe Club	St John's Angling Society
Herefordshire Nature Trust Ltd	Stratford on Avon Kayakists
M F Home	Strettons Civic Society
Institute of Chartered Foresters	Sun Valley Poultry Ltd
P Johnson	Dr R Townshend
Kayak Control/Paramount Pursuits	Wales Tourist Board
J W Lane	Words 84 Angling Club
Leintwardine Fishing Club	Welsh Office Agriculture Department
Leintwardine Group Parish Council	White Swan Piscatorials
Leominster District Council	Worcester City Council
Lydbury North Parish Council	Worcestershire Wildlife Trust
Malvern Hills District Council	

APPENDIX 2B: RESPONSE TO COMMENTS RECEIVED

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
ADAS	Noted activities by ADAS on a) free pollution and conservation advice to farmers b) free advice on production of Farm Waste Management Plans/ could target Teme catchment c) production of Environmental Impact Assessments for developments involving livestock units	Action 3e. Meeting to be convened.
J S Bennett	Commented on Issue 15, concerned over conflict between angling and canoeing.	Actions 15a, 15b, 15c. Section 2.2.1.
Birmingham Anglers Association Ltd.	Commented on Issues 1, 2, 3, 4, 8, 10, 12, 13, 15. Suggested campaign of awareness over risks to watercourses from fertilisers and pesticides. Introduction of SSSI welcomed provided present fishing practices and policies can be maintained. Proposed improvements in the development of the river as a salmonid fishery should not be at expense of coarse fishing. Improved riverside access should be a priority.	Actions 3b, e. Action 10b. Anticipated reduction in GIA will mean less work on salmon in future (Section 2.2.4). Actions 15d, 15e.
Birmingham Canoe Club	Provided information on use of rivers used by canoeists (Teme, Rea, Onny, Clun). May be some historic evidence on right of navigation.	Noted/amended records. Actions 15a, b, c. Section 2.2.1.
Bishop's Castle Town Council	Concerned about problems of drainage and sewerage in Bishop's Castle (Issues 4 & 19) and apportionment of the capital costs.	Progress discussed by letter. Action 4b.
Bridgnorth District Council	Only a small area in catchment, no specific comments.	—
British Canoe Union (Head Office)	The NRA should continue to support efforts by the BCU to achieve appropriate access agreements with riparian interests. A right of navigation under common law (through implied dedication) may well exist on the River Teme. Suggested formation of a local Teme Angling and Canoeing Liaison Group.	Noted. Actions 15a, b, c. Section 2.2.1. Further correspondence.
British Canoe Union (South West Region)	The CMP should reflect the actual situation on the rivers with regard to canoeing activities. Canoeing activities pose little threat to the environment. Wished for positive role in liaison with NRA over conflicts of river use. Status of legal rights of navigation queried.	Noted. Actions 15a, b, c. Section 2.2.1.
British Canoe Union (West Midlands Region - Chairman)	Provided information on use of rivers by canoeists (Teme, Onny, Clun, Rea). Stressed importance of the River Teme to the pastime of canoeing, wished to discuss access agreements to achieve fair usage.	Noted/amended records. Actions 15a, b, c. Section 2.2.1.
British Canoe Union (West Midlands Region - Vice Chairman)	Provided information on use of rivers by canoeists (Teme, Onny, Clun, Rea). The CMP did not acknowledge the amount of canoeing that takes place in the catchment, or historic navigational use. Concerned over documentation of a ban imposed on canoeists.	Noted/amended records. Actions 15a, b, c. Section 2.2.1. Further correspondence.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
British Canoe Union (West Midlands Region - Recreation Officer)	Commented on need for better shared use of the river for canoeists and anglers, access, disputed navigation status, design of weirs. Information welcomed on water levels and flows.	Actions 15a,b,c. Section 2.2.1. Will be included if possible in 'Riverline' update.
M Brown	Provided information on use of rivers by canoeists (Teme).	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
Cadw	Welcomed the greater weight given to aspects of the historical environment, built heritage and archaeological conservation. Suggested inclusion of two new targets in Section 5. Note that old mine sites or areas of mineral extractions can be of great historic interest.	Addressed through actions/notes under Issue 16. LU6.
Canoe & Kayak Capers	Considered that canoeing was marginalised in the CMP, canoeing has been a major recreational use on the river since the 1930s.	Noted. Actions 15a,b,c. Section 2.2.1.
R Childs	Commented on the impact of the 1995 drought, recreational demands, plans to restore wetlands, otter populations. Work to encourage salmon stocks was commended, effect of drought on grayling stocks should be monitored. Credit should be given to positive pollution prevention action undertaken by the responsible farming community.	Noted. New Issue 21, LU3. Routine fisheries surveys will continue. Noted.
Church Stretton Parish Council	General support was given to the establishment of the River Teme SSSI (Issue 10) and to access along the river banks.	Noted. Section 2.2.2.
Council for the Protection of Rural England (Herefordshire Branch)	Welcomed the CMP and commended the NRA. Commented on Issues 3,5,9,10,16,17,18,19. Recommended inclusion of riparian buffer zones, and reference to role of set aside as source of finance for conservation purposes. NRA should develop leadership role over river conservation interests. Greater use of 'call in' powers for departures from planning policy. Offered to discuss/assist in proposals for landscape assessment. Welcomed proposals to investigate low flows. Suggested setting up a forum for voluntary organisations in catchment.	Noted. Action 9d, Issue 1 footnote, LU4. MAFF/WOAD incentive schemes – Issues 1, 9,16. NRA to develop conservation strategy jointly with EN. Forum could be considered as part of EA Area Environment Consultative Groups.
Council for the Protection of Rural England (Shropshire Branch)	Commended NRA on the CMP. Commented on low flows – need to encourage winter storage, pressure needed on Water Companies to reduce leakages. LPAs should ensure sufficient information is available for planning applications for livestock buildings. Balancing demands of various users of the river – agreements between anglers and canoeists.	Actions under Issues 8, 21, LU3. Action 3a. Actions 15a,b,c. Section 2.2.1.
Countryside Council for Wales	Commented on most Issues, including monitoring of potential pollution areas/siting of intensive livestock units, inadequate rural sewerage, pollution risks from Heyope tyre tip. Would welcome groundwater supply protection zones. Control of abstractions – winter storage should be encouraged. The periodic drying up of the Teme above Brampton should be a separate issue. Further research necessary into impact of cormorants on fish stocks. Concerned over unauthorised river works – extension of 'Main River' status above Knighton should be considered.	Noted. Actions under Issues 1,3,4,6,8. New Issue 21. Section 2.2.3. Issue 13 – NRA has recently commissioned 3 year project on impact of piscivorous birds on fish stocks. Section 2.2.4. Action 17b.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
Croome Estate Trust	Commented on Issues 7,8,9,10,11,15,19. Concerned over groundwater abstraction, byelaws/poaching, canoeing. Need for Pawick Weir to be reinstated, with safeguards for public access. Emphasised appropriate monitoring of flooding.	Noted. Actions under Issues 8,11,12,15,16,20.
Culmington Parish Council	Commented on the need for mains drainage in Culmington and high estimated costs to residents.	Funding possibility and discussion with LA suggested. LU2.
Drummond Outdoor	Considered that inadequate mention was made of canoeing. Provided information on use of River Teme by canoeists. The Teme provides an ideal water for training. Most canoeists do little to disturb waterways.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
Dyfed-Powys Police	Present role of Dyfed-Powys Police was adequately defined in Appendix 1 (Flood Defence Roles). Welcomed consultation and continued information sharing.	Noted. From 1 Sept. 1996 police will no longer disseminate flood warnings.
English Nature	Commented on most Issues. Level of flood protection standards for agricultural land could be reviewed, to contribute to wetland restoration objectives. Additional actions suggested include promotion of riverside buffer zones, extension of 'Main River' designation, press for re-introduction of MAFF grants in areas of special significance (eg River SSSI catchments, NVZs, NSAs), introduction of a Wildlife Enhancement Scheme for River Teme SSSI, biodiversity action plan targets. Proposal to investigate groundwater abstraction impacts on wetland SSSIs could be extended to selected Prime Sites. Supported introduction of Special Ecosystem WQOs. Collaboration over conservation priorities and targets is essential- eg between NRA and MAFF/WOAD in application of ESA management prescriptions to waterside & wetland situations. Suggested exploring a joint approach to a wetland conservation initiative for the Teme Valley.	Vision amended, LUS. Action 9d, Issue 1 footnote, LU4. Action 17b. Noted. Action 10h, Section 2.2.2. Actions 1d, 10d, 14a. Action 8d. Actions 10f,g. Footnotes Issues 1,9,16. Conservation Strategy, Actions 10d,e.
ETSU (for Dept. of Trade & Industry)	CMP did not mention use of hydropower as a useful application of water resources. Some weirs in the catchment could be used for hydropower if renovated.	Noted. Section 3.2.2. Discussions held re Ludlow Weir.
J A Fielden	Query on decisions and funding.	Query replied to.
Friends of the Earth (Malvern Hills Area)	Commented on most Issues, particular concerns on agricultural pollution and rural sewerage. Increasing tendency towards drought - existing abstraction licences need reviewing and winter storage encouraged. Little scientific evidence that piscivorous birds are having any significant impact on fish populations.	Noted. Actions under Issues 3,4,8, 21, LU2, Section 2.2.3. Section 2.2.4, Issue 13 footnote.
J H Froggatt	Commented on all Issues, particular concerns on rural sewerage, low water levels in summer and abstraction policy, winter storage of water. Provided useful local information on the River Teme. Barbel should not be encouraged. Goosanders have increased on the Teme. Alder trees (roots impede flow) and Black Poplar (take up a lot of water) should not be planted on river banks. Not all weirs should be restored- some should be removed as they impede flow.	Noted. Actions under Issues 4,8,13,21, LU2. Personal visit by Area FRCN Manager.
W Froggatt	Commented on Issues 7,12,14,15. Offered use of mill building below Ashford Bridge for flow/quality monitoring, to provide Black Poplar cuttings, and have salmon fish pass at Ashford adapted for elvers.	NRA grateful for helpful offers, and to follow up. Action 12d.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
LA Greenall (Holdings) Ltd	Not aware of flooding problems at Temeside, Ludlow: flood scheme not necessary. Feasibility of restoration of Ludlow Weirs should be explored (through grant aid if possible), and also the hydropower potential.	Noted. Action 16d. Discussions held re Ludlow Weir.
J W Griffiths	Joint comments with Powys County Council.	Refer Powys CC.
Hereford County Canoe Club	Considered there was insufficient mention of canoeing in the CMP. Suggested further consultation with canoeing bodies via the BCU.	Noted. Actions 15a,b,c. Section 2.2.1.
Herefordshire Nature Trust Ltd.	Commented on most Issues. Improving flood protection may not be an ideal objective from wildlife viewpoint. Additional actions included setting of biodiversity targets, re-instatement of riparian buffer zones, promotion of agricultural practices which require minimal use of chemicals. Setting of optimum and minimum flow levels to prevent environmental damage. Opposed to culling of piscivorous birds while other issues remain unresolved. Any additional recreational developments associated with water environment should be closely assessed in relation to their impact.	Vision amended, LU5. Actions 1d, 10d, 14a Action 9d, Issue 1 footnote, LU4. Actions under Issue 8. Section 2.2.4 – Issue 13 footnote. LU7.
M F Home	Provided information on use of rivers by canoeists (Teme). Concerned to hear of reports of conflicts and suggested possibility of time zone agreements for use of the river.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
Institute of Chartered Foresters	Welcomed the CMP and the fact that it takes a correct and supportive attitude towards forestry.	Noted.
P Johnson	Strategy needed to deal with effects of Worcester Ring Road extension on first class coarse and salmon fishing. Queried emphasis on salmon.	No direct impact anticipated. Section 2.2.4.
Kayak Control/ Paramount Pursuits	Provided information on use of river by canoeists (Teme).	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
J W Lane	Referred to conflict between conservation and recreation. Concerned over numbers and pressures of summertime visitors in riverside fields.	Noted. LU7.
Leintwardine Fishing Club	Commented on Issues 7,11,13,15. Some members consider that a disproportionate amount of resource is allocated to improvement of salmon fishing cf. trout fishing. Piscivorous birds - goosander now more numerous and may become a nuisance. Breakthrough of meander/ increased flow velocity at Black Bridge-Burrington. Aim of improving public access should be dealt with sensitively.	Noted. Section 2.2.4. Actions 11f,g,h & footnote. Action 13a and footnote, Section 2.2.4. Further correspondence, records noted.
Leintwardine Group Parish Council	Commented on local flooding. Concerned over sewerage discharges in Leintwardine area, and monitoring of Heyope tyre tip.	Actions under Issues 6, 19. Specific concerns addressed in correspondence.
Leominster District Council	Concerned over water shortage in Burrington area. Problem of erosion on banks of Kyre Brook at a site in Tenbury.	Action 8b. Erosion problem discussed separately.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
Lydbury North Parish Council	Commented that fisheries are already being damaged by piscivorous birds. Concerned over restrictions which may be imposed as a result of River Teme SSSI designation.	Action 13a and footnote. Section 2.2.4. Actions 10b,c. Section 2.2.2.
Malvern Hills District Council	Acknowledgement should be made of the West Midlands Regional Planning Guidance (Sept. 1995). Issue 15 – scope for consultation with local authorities.	Published as CMP was going to print. Section 4.1. Actions 15a,c,d,e.
D Marchant	Provided information on use of rivers by canoeists (Teme, Rea).	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
G C Mascal	Provided information on use of rivers by canoeists (Teme). Concerned about access points being blocked off, suggested access agreements.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
N D McCormack	The CMP does not suggest commitment to increase access to river banks. Urged NRA to continue to arbitrate between established interests and also help the public to enjoy the riverine scene.	Dependent on riparian owners. Actions 15d,e.
Midland Flyfishers Ltd.	Commented on most Issues. Emphasised importance of wild trout fisheries in Upper Teme, and detriment if area is opened up as a salmon spawning ground. Concerned over adverse effects on fishing by increased recreational activities and possible opening up of riverside paths in Upper Teme. Drying up of stretch of Teme at Stanage seems to happen more frequently now. Disappointed that the Onny and Byne & Quinny Brooks are classed as RE2 quality objective.	Previous 6 year research study established no adverse impact of salmon on wild brown trout stocks. LU7. Section 2.2.4. Consultation with land owners. Section 2.2.3. New Issues 21 and 22.
Ministry of Agriculture, Fisheries and Food	Commented on Issues 3,9,13,14,16,17. Welcomed the promotion of MAFF's Codes of Good Agricultural Practice (COGAP) for the Protection of Water and Soil, and reference to MAFF funded free advice on pollution control through ADAS. Pointed out that the ESA scheme should i)help to limit increased fertiliser applications, ii)protect existing watercourses, iii)remind farmers of their duty to dispose of sheep dip safely, iv)may provide a method of encouraging access to riverside sites. COGAP (Soil) could be promoted to reduce erosion.	Points noted, reference in Issues 1,3,9,16,17, including footnotes.
D H Morgan	Commented on Issues 1,2,3,4,10,11,12,13,14,15. Welcomed remarks on routine and ongoing activities. Suggested additional actions – studies on organo-phosphates entering watercourses, and monitoring of rare and threatened invertebrate species (invite academic bodies to assist). NRA should have input into negotiating agreements with owners/ occupiers for the proposed River Teme SSSI. Hoped the NRA would become involved in Theft Act prosecutions.	Section 1.3, Issues footnotes. Not catchment specific. Actions 10d, 14a will address invertebrate issue, suggestion noted. SSSI negotiations by EN, NRA will be pleased to advise. Actions 12a,b.
R Morley	Provided information on use of rivers by canoeists (Teme). Activities of responsible canoeists not considered to be of much detriment to environmental or fisheries interest, has had great enjoyment from peaceful use of the river.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
P C Narten	Organic farming should be promoted as the best way forward, and as a solution to the problems of erosion and nitrate pollution.	Section 3.2.5. Being addressed nationally. Issue 3 Footnote.
National Farmers Union (West Midlands Region)	Commented on Issues 3,6,8,9,10,11,12,13,14,15,17,19,20. Welcomed recognition of importance of the agricultural industry in the catchment. Need for continuing pollution risk from Heyope tyre tip, and review of abstraction licensing policy. Encouraged a full review of problem of piscivorous birds, and investigation into Alder disease. Concerned over any proposals which might be interpreted as encouraging access to riparian land and river other than with consent. Repair of Powick Weir must be completed as a matter of urgency. NRA should investigate introduction of a voice bank (flood line) for the River Teme.	Noted. Actions under Issues 6,8. Action 13a and footnote, Section 2.2.4. Action 14f. Noted. Weir repair dependent on funding/archaeological concerns. Being considered under national floodwarning review.
Newnham Estate Syndicate	No further comments (commented at draft issues stage on Issues 2,4,9,10,11,12,14,15,16,18,19).	Noted for Consultation Report and Action Plan.
A Orme (The Haven Fishery)	Commented on Issues 12,15,17. Suggested changes in legislation to combat barbel thefts, and cessation of commercial eel fishing upstream of Tewkesbury Weir. Concerned about possible impacts of electro-fishing on large barbel during broodstock capture, and effects of coarse fish removals from game fisheries on river fish stocks in general. Considered canoeing should be banned on River Teme. Recommended reduction in NRA tree maintenance work to improve habitat quality and asked for increased publicity of NRA fisheries work on the river.	Changes in primary legislation beyond scope of CMP. No commercial eel licences currently issued in area of concern, no evidence of damage to barbel. Action 12e. Section 2.2.1. Action 10c. 'Fisheries News', 'Angling Times', press releases.
C P (Wolverhampton)	More control needed to stop small landfill sites where they are destroying Temeside beautyspots. Restocking of non-indigenous fish not needed, particularly barbel. Landowners who make a revenue from fishery waters should make a financial contribution to the NRA.	Noted. Schemes for fishery owner contribution may be revisited under EA.
D Perry	Provided information of use of rivers by canoeists (Teme).	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
M C Powell	Provided information on use of rivers by canoeists (Teme, particularly lower reaches). Expressed concern at restrictions. Suggested evidence on River Teme being a public navigation throughout recorded history.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
Powys County Council (CC)	Commented on Issues 6,10,19. Supports efforts to resolve problems at Heyope tyre tip. The proposed River Teme SSSI designation should draw attention to the need to conserve its resources.	Actions under Issues 6,10,19.
Powys CC Chief Fire Officer	Appendix 1 — advised that from 1 April 1996 District/County Councils in Wales will be replaced by Unitary Authorities.	Noted and Appendix 1 amended for future CMPs.
K Pratley	Provided information on use of rivers by canoeists (Teme). Urged NRA to help re-open the river to responsible canoeists.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
Radnorshire District Council	Commented on Issues 6,17. Would be favourable to Issue 17 if "Main River" designation were to be extended upstream of Knighton.	Action 17b added.
Ramblers' Association (Shropshire Area)	Would prefer a firm intention to improve access to riversides. Hoped that the NRA would disregard the unsubstantiated view that rambling along river banks conflicts with angling.	Actions 15d,e.
Royal Commission on the Ancient and Historical Monuments of Wales	Welcomed emphasis on conserving archaeological, architectural and historic features. Should also be an awareness of leets, sluices etc. Issue 16 (a) – the Commission can also be consulted to advise on key landscape, archaeological and heritage issues.	Noted. Action 16f and footnote.
Mr & Mrs C W Rudd	Provided information on use of rivers by canoeists (Teme). Would be concerned if the river became unavailable for young canoeists.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
Rushwick Parish Council	Supported NRA in trying to bring together interested parties to reach agreement over uses of the river. Favoured continuance of sporting and leisure activities along the river but not establishment of a footpath.	Noted. Issue 15e, consultation with landowners. LU7.
Salmon and Trout Association (Shropshire and Montgomery Branch)	Commented on Issues 1,2,3,10,11,13,14,15. Requested that process for endorsing new abstractions be considered further. Water Quality Objectives are an excellent starting point but should be regarded as minimum standards to build upon rather than as an end in themselves. Concerns included organic waste disposal, new fish passes allowing access to unwanted species, piscivorous birds. Keen to preserve integrity of native brown trout. Issue 15 should be reconsidered – concerned about effect of canoeing on fisheries.	Actions 8b,e. New Action 22 – possible upgrading where sustainable. Steep 'denil' type fish passes on Teme unlikely to be used by non-salmonid fish. Action 13a & footnote, Section 2.2.4. Actions 15a,b,c, Section 2.2.1.
Salopian Fly Fishers Association Ltd	Detailed comments on most Issues. Particular concerns included: Water Quality Objectives (should be regarded as absolute minimum standards), agricultural pollution, need for expenditure on rural sewerage, review of licensing exemption status, wetland re-establishment and creation of riparian buffer zones. Establishment of suitable salmon spawning gravels must be a priority. Unwanted species must not be allowed access via fish passes. Concerned over reduction in GIA funding. Restrictions on stocking brown trout. Alien species such as rainbow trout should not be stocked. Data available now proves that cormorants and goosanders take and damage fish. Urgent research needed on Alder tree disease. No legal right of navigation exists on River Teme, the ban on canoeing by fishery/landowners should be supported. CMP should include an education programme to help resolve problem of erosion and unauthorised river works. Option of increasing the numbers of part-time, honorary or club bailiffs could be considered to police fisheries in vulnerable areas. Some other points raised were outside the scope of the CMP.	Discussion with Area FRCN Manager. New Action 22 – possible upgrading where sustainable. Actions under Issues 3,4,8,9c. New action 9d, Issue 1 footnote. Action 11d. Fish passes – see above. Action 11h. Action 13a, Section 2.2.4. Action 14f. Action 15c, Section 2.2.1. Action 17a. Honorary/part time bailiffs are part of existing practice, but there may be scope for expanding.
Shropshire Association of Parish & Town Councils	Commented on Issues 2,3,4,5,8-14,16,17. Particular concerns included sewerage problems at Bishop's Castle and Church Stretton – planners should limit development until suitable works provided and Water Company should make improvements to the works a first charge on their income. Whitegrit/Shelve landowners should be identified as responsible under Option 5(d). Suggested provision of a regulating reservoir in the headwaters of the Teme to augment flow at times of drought, and reduce flooding.	Noted. Actions under Issues 4 and footnote, LU2. Action 5d. A major water resources proposal was last investigated 25 years ago.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
Shropshire County Council	Commented on Issues 5,9,14,15,16,17. The CMP highlights that there is much to be achieved, which can only be done successfully by close co-operation with the many agencies identified. No mention of monitoring of recreational activities. The Shropshire Biodiversity Challenge should be noted as a framework for promoting restoration of wetlands and conservation of rare and threatened species. The NRA should recognise the Shropshire Hills Management Plan. NRA input into Waste Local Plans should be maximised. Suggested studying effect of water abstraction on buried archaeological material. Option 15c should be expanded to cover all historic weirs. Should be a recognition of the historic interest of old mining sites.	Noted. No specific body with monitoring role for recreational activity on the Teme. LU7. Action 1d added. Issue 16 footnote, Section 3.2.9. Action 8d could apply for known sites. Historic weirs now considered under Action 16f. LU6.
Soil Survey & Land Research Centre	Not enough reference to soils and soil erosion. Supported applications for livestock units being accompanied by Waste Management Plans.	Soils – noted for future CMPs. Possible R&D LU4. project.
South Shropshire District Council	Commented on Issues 3,4,15,16,18,19 and also on other Issues during earlier consultation. Further settlements need to be included under issue of rural sewerage. Should be made clear that the weirs in Ludlow are of special architectural/historic interest. Pressure for development in flood plains is not on a scale which requires detailed examination.	Noted. Settlements included in LU2. Action 16d. Queries on flooding etc. discussed in correspondence.
Sports Council for Wales	No comments.	—
Sports Council (West Midlands Region)	Supported positive attempts by the NRA to resolve conflicts between anglers and canoeists, and would be pleased to help in discussions. Supported notification of the River Teme SSSI but the PDO list must not preclude sporting and recreational uses of the river for canoeing.	Noted, support welcomed. SSSI concerns relayed to English Nature.
St. John's Angling Society	Introducing canoeing to the Lower Teme in the vicinity of Powick /Worcester is impractical (too narrow). There are already ample riverside walks in the Teme/Severn confluence area.	Concerns noted. Section 2.2.1. Proposed footpaths should not impose on St. John's interests.
Stratford on Avon Kayakers	Provided information on use of rivers by canoeists (Teme). Kayaking causes no environmental impact. Urged NRA to support access for all.	Noted/amended records. Actions 15a,b,c. Section 2.2.1.
Strettons Civic Society	Commented on drainage/sewerage problems in Church Stretton (Issue 4.3). Development boundaries should not be relaxed in order to raise funds for improvements to the system.	Subject to discussion between STW Ltd and LPA. Action 4c, LU2.
Sun Valley Poultry Limited	Commented that planning applications should require both manure plans and COSHH assessments of chemicals to be used on the site.	Noted.
Dr R Townshend	Commented on the decline in trout/fish numbers in the River Teme in 1970s/80s, although considered heronry/goosanders not to blame.	Noted.
Wales Tourist Board	Supported NRA's objectives in respect of water quality, wetland habitats, fisheries and landscape, archaeological and cultural heritage of the catchment. Will seek opportunities to collaborate with NRA and others in context of the tourism potential of the rivers of Wales.	Noted, support welcomed. LU7.
Wards 84 Angling Club	Raised question of expenditure on salmon fisheries being out of proportion to interests of current river users.	Section 2.2.4.

CONSULTEE	COMMENTS	RESPONSE/REFERENCE IN ACTION PLAN
Welsh Office Agriculture Department	No specific comments on Issues, but would be pleased to discuss the way forward where WOAD is mentioned as a responsible body.	Noted, support welcomed.
White Swan Piscatorials	Commented on Issues 2,8,15. Concerned about biological quality of River Rea, suggested academic body be invited to treat it as a study. Welcomed proposed review of surface water licensing policy. Conflicts between anglers and canoeists - NRA should be mindful of the legitimate interests of its licensees.	Action 2e, suggestion noted. Action 8e. Section 2.2.1.
Worcester City Council	A workable strategy would be useful with regard to improved access to riverbanks in Worcester area. Protection of wild birds legislation should be strictly adhered to. CMP fits well with emerging policies of Worcester City Local Plan. Keen for partnership work between NRA and the City Council to continue and expand.	Noted. Action 15d will include Laughern Brook area. Section 2.2.4. Section 4.1, LU1, LU4. Partnership welcomed.
Worcestershire Wildlife Trust	Commented on Issues 1,3,5,8,9,14,17. Possibility of relaxing Flood Defence standards in appropriate areas should be considered, to benefit wetland/riverine habitats. Supported recognition of important role of riparian buffer zones. Recommended routine analysis to include other bio-accumulating substances such as PCBs and heavy metals. Important to determine the minimum flow requirement needed to protect Teme SSSI and also wetlands lying outside the designation. Suggested a list of target areas for wetland initiatives is needed. The CMP should refer to The River Severn Otter Project. Would support extension of "Main River" designation upstream of Knighton.	Noted, Vision amended, LU5. Issue 1 footnote, Action 9d, LU4. Monitoring already takes place. Considered under Issue 8. Suggestions welcomed. Issue 14 footnote. Action 17b added.

APPENDIX 2C: ADDENDUM TO CONSULTATION REPORT

SECTION	PAGE	ERROR/OMISSION	RAISED BY
2.3	19	Conservation key details – AONBs should appear here as a statutory designation.	Shropshire County Council
3.2	34	Issue 8.2 – should mention that abstraction of groundwater can affect buried archaeological evidence.	Shropshire County Council
3.2	35	Issue 9 – last line of final paragraph should read “MAFF’s Habitat and ESA Schemes”.	MAFF
3.2	41	Issue 13 – MAFF issued licences as an aid to scaring birds. “significant economic damage” should read “significant damage”.	MAFF
3.2	44	Issue 16.1 – the Management Plan being produced for the Shropshire Hills by the Shropshire Hills Joint Advisory Committee should be recognised.	Shropshire County Council
3.2	44	Issue 16.2 – “Archaeological Trust” should be inserted after “County Archaeologist”. Old mine sites can be of great historic interest and advice should be taken before proposals to alter them are embarked upon.	Cadw
3.2	45	Issue 16.3 – should refer to County Conservation Officer in Shropshire.	Shropshire County Council
3.2	48	Issue 19.1 – should mention that flood prevention works often have archaeological constraints.	Shropshire County Council
3.3	61	Issue 11.c – “Stokesay (Teme)”, delete “(Teme)”.	Lydbury North PC Midland Flyfishers
3.3	65	Issue 15.a – phrase ‘Lack of legal rights’ – position does not appear to have been actually established.	British Canoe Union (BCU)
4.2.4	81	No mention of use of hydropower as a useful application of water resources.	ETSU (for Dept.of Trade & Industry)
4.5	87	Amendment to second paragraph on historical mining (refer Pg. 9 of Action Plan). Historical interest of old mining sites should be recognised.	Shropshire County Council
4.6	88	No mention of soils/soil erosion.	Soil Survey & Land Research Centre
4.6	88	Change “free pollution prevention advice...” from ADAS to “non-chargeable independent pollution prevention advice...”.	Welsh Office Agriculture Dept.
4.7	91	More attention to forestry needed.	Shropshire County Council
4.11	100	Examples of formally designated areas should include Registered Parks and Gardens. After “not formally protected” add “through legislation”. After “To safeguard designated sites” add “and their settings”.	Shropshire County Council

APPENDIX 2C: ADDENDUM TO CONSULTATION REPORT

SECTION	PAGE	ERROR/OMISSION	RAISED BY
4.11+ Map 16	101	"Hereford & Worcester AONB" should read "Malvern Hills AONB".	NRA
4.11	102	Archaeology, 2nd sentence: amend to "County Archaeologists and the relevant Royal Commission on Ancient Monuments should be consulted on such works...".	Royal Commission on Ancient & Historical Monuments of Wales
4.13	106	"Wales Rail" Guided Walks scheme is organised by the Ramblers' Association with assistance from Regional Railways and Powys County Council. The Shropshire Way and Worcestershire Way are of more than county importance.	Ramblers' Association
5.3.1	121-122	Sub heading and other references should include the phrase "Historic Environment".	Shropshire County Council
5.3.1	123	Should amend to "Positive management...is required to protect, enhance, and restore the ecological and historic value of the catchment".	Shropshire County Council
App.1	133	Flood Defence Roles — note for reference that from 1 April 1996 District/County Councils in Wales are to be replaced by Unitary Authorities.	Powys County Council
App.5	140	Bibliography — add British Canoe Union (West Midlands) Handbooks 1936, 1987 and 1995.	BCU
General		The amount and extent of canoeing currently occurring in the catchment was not specified in the Consultation Report.	BCU, Canoe & Kayak Capers, Drummond Outdoor, Hereford County Canoe Club, G Mascall, R Morley
Summary Booklet	5,16	Small map — printing error, confluence of Laughern Brook is with Teme, not Severn.	NRA, Worcester City Council

NOTES:

Suggestions were also made for inclusion of responsible bodies for actions — these have been incorporated in the Action Plan tables as appropriate.

APPENDIX 3: GLOSSARY

Abstraction	The removal of water from any source, either permanently or temporarily.
Abstraction Licence	An authorisation granted by the NRA to allow the removal of water from a source of supply.
Acidification	The detrimental effect of acid rain on soils and freshwater.
Ammonia	A chemical compound found in water often as a result of pollution by sewage effluents. It is widely used to determine water quality.
AMP2/AMP3	An acronym for the second Asset Management Plan produced by the Water Companies for the Office of Water Services (OFWAT). It sets out the water industry investment programme for the period 1995 to 2000. AMP3 will set out the water industry investment programme for the period 2000-2005.
AOD	Above Ordnance Datum.
AONB	Area of Outstanding Natural Beauty.
Aquifer	A porous water-bearing underground layer of rock, sand or gravel capable of holding significant quantities of water.
Biodiversity	Diversity of biological life, the number of species present.
Coarse Fish	Freshwater fish other than salmon or trout.
Cyprinid Fish	Coarse fish belonging to the carp family, eg: roach, dace and bream.
EC Directive	A type of legislation issued by the European Union which is binding on Member States in terms of the results to be achieved but which leaves to Member States the choice of methods.
Environmentally Sensitive Area (ESA)	An area where traditional farming methods may be supported by grant aid from the Ministry of Agriculture, Fisheries and Food (MAFF) to support distinctive landscape, wildlife habitats or historic features.
Flood Plain	Land adjacent to a watercourse over which water flows in the time of flood, or would flow but for the presence of flood defences where they exist.
Groundwater	Water held in aquifers.
Leachate	Liquid emanating from solid matter.
Main River	The watercourses shown on the statutory 'Main River maps' held by NRA and MAFF. The NRA has permissive powers to carry out works of maintenance and improvement on these rivers.
MI/a	Megalitres per annum (one Megalitre is equal to 1 million litres or approximately 220,000 gallons).
Nitrate Sensitive Area (NSA)	An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50 mg/l laid down in the 1980 EC Drinking Water Directive, and where voluntary, compensated agricultural measures were introduced as a means of reducing those levels.

APPENDIX 3: GLOSSARY

Nitrate Vulnerable Zone (NVZ)	An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50 mg/l laid down in the 1991 EC Nitrate Directive, and where compulsory, un-compensated agricultural measures will be introduced from 1996 as a means of reducing those levels.
Objective 5b	European funding with the aim to facilitate the development and structural adjustment of rural areas.
Piscivorous	Feeding on fish.
Prime Sites	Sites of importance for nature conservation, designated by County Wildlife Trusts and in some cases English Nature and Local Authorities. Non statutory.
Riparian Owner	Owner of riverbank and/or land adjacent to a river. Normally owns riverbed and rights to midline of channel.
River Corridor	The continuous area of river, river banks and immediately adjacent land alongside a river and its tributaries.
Salmonid Fish	Game fish of the Salmon family, for example, trout and salmon.
Scheduled Ancient Monument (SAM)	The key sites nationally for archaeology, designated by the Secretary of State for National Heritage, through English Heritage and Cadw. Statutory; designated under the Ancient Monuments and Archaeological Areas Act 1979.
SSSIs	Sites of Special Scientific Interest. The best examples of the national heritage of wildlife habitats, geological features and landforms, designated by English Nature and the Countryside Council for Wales. Statutory; notified under the wildlife and Countryside Act 1981.
STP	Sewage Treatment Plant.
Surface Water	Water collecting on or running off the surface of the ground.
Sustainable Development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Wetland	An area of low lying land where the water table is at or near the surface for most of the time, leading to characteristic habitats.

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