local environment agency plan

KENNET VALLEY LEAP

NOVEMBER 2000

ENVIRONMENT AGENCY

THE ENVIRONMENT AGENCY AND PUBLIC INFORMATION

We are committed to being an open organisation. We will provide information about our decisions and actions and ensure all our customers are consulted on plans and reports. Our Customer Charter sets out how we intend to achieve this commitment. We maintain a set of Public Registers which hold information on the activities we regulate and the monitoring we carry out. In addition to the information we place in Registers, we make available to the public most other environmental information that we hold.

We have produced a guide to the information available to the public and how to obtain it. Information is usually provided free of charge, but for large and complex requests we may charge for staff time and materials. Confidential information, incomplete or draft reports and information where disclosure may lead to environmental damage are generally not available. Some environmental details and information about our Public Registers are available on the Internet on http://www.environment-agency.gov.uk.

Should you require extra copies, futher information or have any queries on this document, please contact either Maria Mc Glashan on 01491 828484 or Jamal Hamid, LEAPs Team Leader on 01491 828304, or write or e-mail

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A full description of the LEAP area and background information for the issues raised is provided in the Kennet Valley Environmental Overview, which is available on request from the address above.

Note
Whilst every effort has been made to ensure the accuracy of information in this document there may be errors or omissions which we will be pleased to note. All comments received will be treated as public information and will be released on request unless you explicitly request otherwise.

Figure 1
The Overview map is reproduced from the Ordanance Survey 1:50,000 scale by the Environment Agency with the permission of the Controller of the Stationary Office, © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number GD 03177G.

Figure 2
The Sectional maps of the Kennet and Avon Canal are reproduced courtesy of British Waterways. For further information on the work of British Waterways and to see maps of the complete British Waterways network, visit their website at www.britishwaterways.co.uk

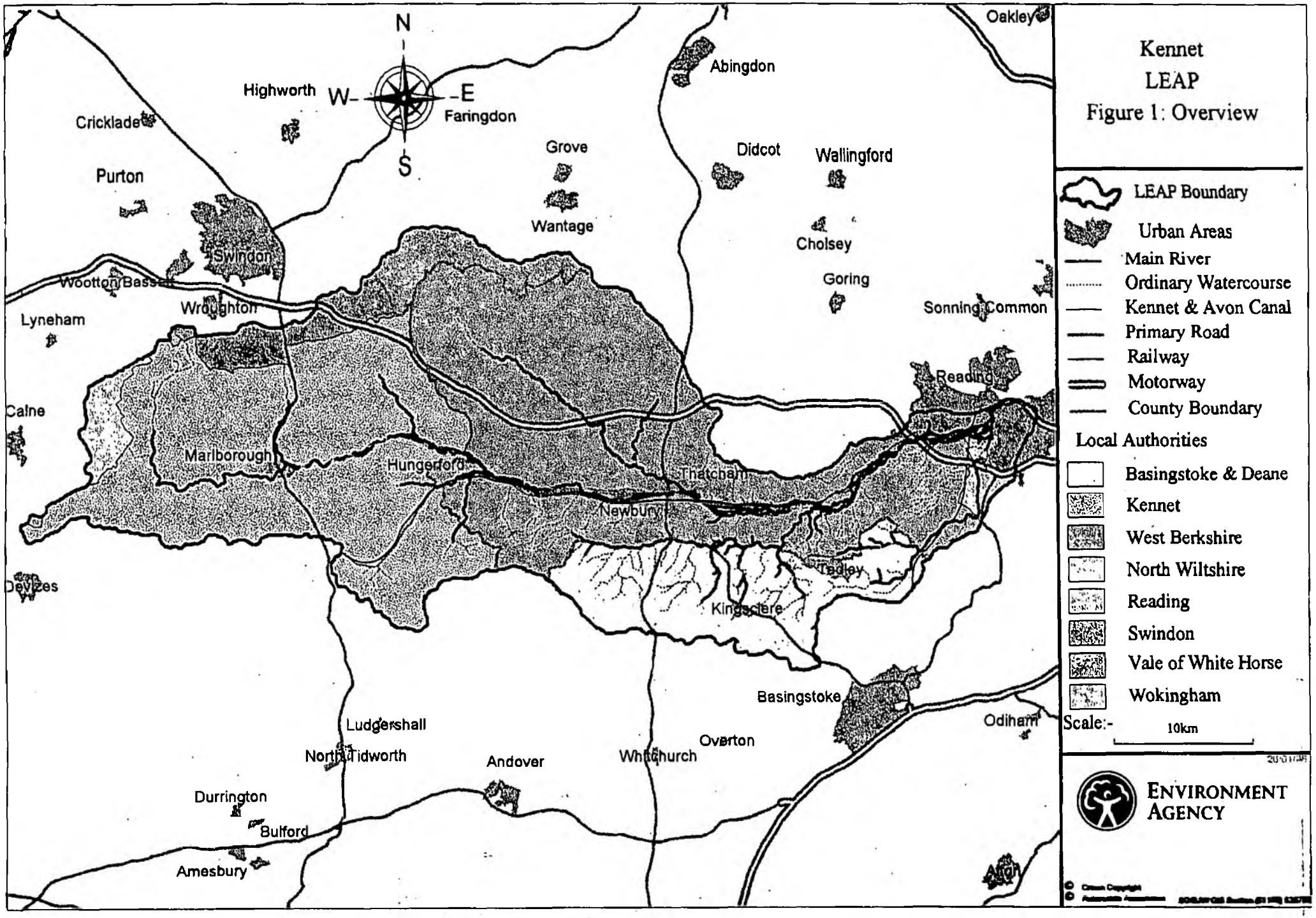
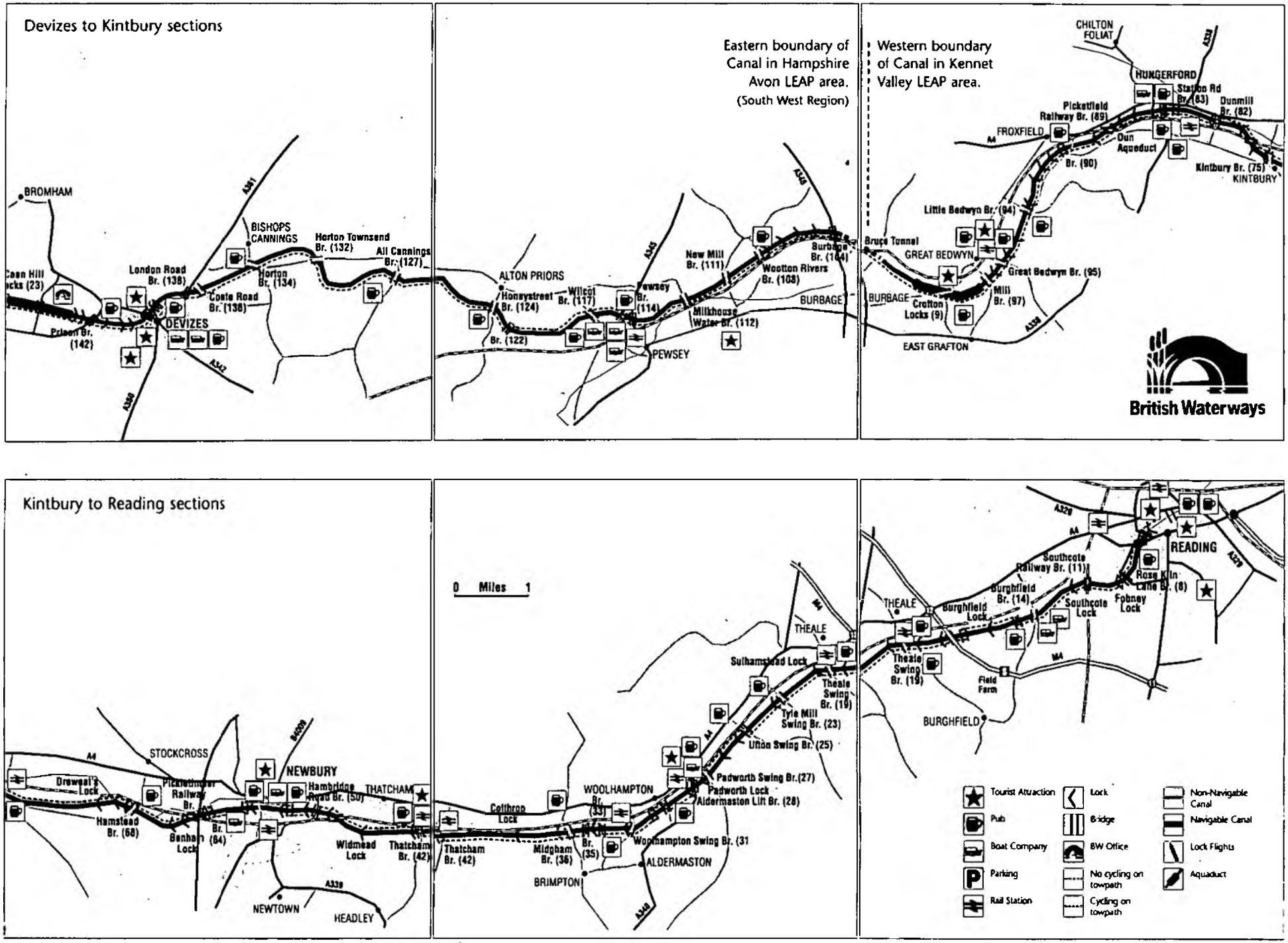

Kennet
LEAP
Figure 1: Overview
N
S
E
W
Highworth
Faringdon
Cricklade
Purton
Grove
Wantage
Abingdon
Oakley
Didcot
Wallingford
Cholsey
Goring
Sonning Common
Swindon
Wootton Bassett
Wroughton
Lyneham
Reading
Calne
Marlborough
Hungerford
Thatcham
Newbury
Tadley
Kingsclere
Devizes
Basingstoke
Odiham
Ludgershall
North Tidworth
Andover
Overton
Whitchurch
Durrington
Bulford
Amesbury
Alton
LEAP Boundary
Urban Areas
Main River
Ordinary Watercourse
Kennet & Avon Canal
Primary Road
Railway
Motorway
County Boundary
Local Authorities
Basingstoke & Deane
Kennet
West Berkshire
North Wiltshire
Reading
Swindon
Vale of White Horse
Wokingham
Scale:-
10km
ENVIRONMENT AGENCY

Figure 2: Sectional Maps of the Kennet and Avon Canal from Devizes to Reading



Maps courtesy of British Waterways

CONTENTS

VISION

The vision for the Kennet Valley describes how the Environment Agency would wish to see the environment of the area. The vision is long-term and while it may only be partly achieved in the next five years, it is something we can all work towards.

Our vision for the area is to achieve a sustainable environment which can be passed on to future generations in an improved condition. Our vision is one in which:

a We achieve continuous improvements in the air quality of the LEAP area;

b protect habitats and landscapes of conservation and heritage value and improve degraded ones, i.e. protect the best and improve the rest;

c waste production is minimised and standards of disposal improved;

d all waters support a diverse flora and fauna including abundant, diverse, thriving and sustainable fish populations;

e water resources in the Kennet Valley are managed in a sustainable manner to achieve secure water supplies for abstraction and a better water environment for future generations;

f new development incorporates sustainable surface water drainage;

g water quality is maintained or improved in order to support or sustain (b) and (d);

h increase the quality, quantity and diversity of appropriate access opportunities for the public enjoyment of the river corridor; and

i ensure that existing water related recreational interests are protected and new opportunities created in the course of Agency work.

Some of the actions needed to achieve this vision are:

i development of an air quality strategy for releases from Agency regulated processes within the LEAP area;

ii investigate the impact of abstractions on the Kennet SSSI under the National Environment Programme;

iii implementation of recommendations in the River Kennet and Freemanís Marsh Water Level Management Plans;

iv install phosphate strippers at identified sewage treatment works in the LEAP area;

v implementation of an agreed programme of actions in the Kennet and Lamboum SSSI Conservation Strategy;

vi use UK Biodiversity Action Plan priorities, river corridor surveys and other relevant information to inform a prioritised habitat enhancement programme;

vii robust incident response with remedial actions and enforcement as required;

viii pollution prevention and waste minimisation campaigns; and

ix raise awareness of the opportunities and benefits that recreation presents in delivering environmental understanding in the Kennet Valley.

To achieve this vision the Environment Agency will work in collaboration with external environmental organisations, local communities and their representatives, government agencies and industry.

FOREWORD

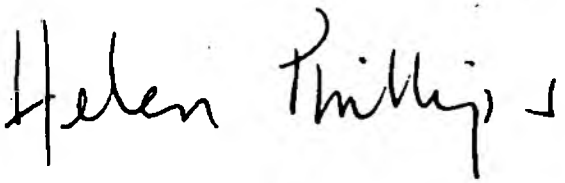
This LEAP (Local Environment Agency Plan) is one of a series. Between them they will cover the whole of England and Wales. LEAPs are a significant step forward in environmental thinking and will form the basis for local environmental strategy and planning in the future.

It has been clear for many years that environmental issues relating to land, water and air, particularly in relation to pollution, cannot be addressed individually. They are interdependent; each affects the other. It is because of this that the Environment Agency was created. It has a specific, umbrella responsibility for all three.

The issues covered by this LEAP are central to the quality of life of people living in the area. Increasingly we are working with local authorities to link into the environmental aims of the various Local Agenda 21 groups. They will influence the priorities of the Agency in the LEAP area and will affect our business plan as it is developed and revised for the future. As a result, they are of real importance to the growing number of people with concerns for the environment and of course to everyone who lives in it.

This document is about quality of life and sustainability. It sets out a costed programme of work by the Agency, in agreement with other organisations, to protect and improve the environment of this LEAP area over the next five years. Annual reviews will report on the progress being made.

I hope you find the Plan of interest. It is the outcome of public consultation. If you have any comments or views or wish to become actively involved in addressing the issues raised, we would like to hear from you.



Helen Philips
West Area Manager
Thames Region
Environment Agency

ACKNOWLEDGEMENTS

We would like to thank all those organisations and individuals who have been involved in the production of the LEAP. Thanks go to colleagues in the Environment Agency who invested hard work in the preparation of this report and also to the contribution and guidance provided by the Members Working Group for this LEAP.

1.0 THE ENVIRONMENT AGENCY

1.1 AIMS AND OBJECTIVES

The Environment Agency (the Agency) was established in April 1996 when the Environment Act brought together the National Rivers Authority, Her Majesty's Inspectorate of Pollution, the Waste Regulation Authorities and several units from the Department of the Environment, (now the Department of the Environment, Transport and Regions) into one single Agency. The Agency is a strong environmental regulator and takes a holistic approach to protecting the environment which involves regulating activities that can affect air, land and water.

Our vision is
A better environment in England and Wales for present and future generations.

Our aims

- To achieve major and continuous improvements in the quality of air, land and water.
- To encourage the conservation of natural resources, animals and plants.
- To control pollution throughout river basins.
- To provide effective defence and warning systems to protect people and property against flooding from rivers and the sea.
- To reduce the amount of waste by encouraging people to re-use and recycle their waste.
- To improve standards of waste disposal.
- To manage water resources to achieve the proper balance between the countryís needs and the environment.
- To work with other organisations to reclaim contaminated land.
- To improve and develop salmon and freshwater fisheries.
- To conserve and improve river navigation.
- To tell people about environmental issues by educating and informing.
- To set priorities and work out solutions that society can afford.

We will do this by:

- being open and consulting others about our work;
- basing our decisions around sound science and research;
- valuing and developing our employees; and
- being efficient and businesslike in all we do.

1.2 THE ROLE OF THE ENVIRONMENT AGENCY

The Agency has a wide range of duties and powers for managing the environment and improving the quality of air, land and water. This responsibility includes encouraging the conservation of natural resources, animals and plants.

The Agency is required by statute to help achieve sustainable development, which is

'.... development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

Concern about specific environmental issues has increased, particularly air pollution. Other concerns include industrial pollution of water and land, waste management and reduction, and conserving our water supplies. The Agency is determined to influence the debate on these key issues.

It is now generally accepted that environmental changes are occurring on a global scale and that we need to work at a wider international level. Issues such as climate change will affect the United Kingdom (UK) in a complex way. The Government has therefore signed the Framework Convention on Climate Change, which was agreed at the 1992 Earth

Summit in Rio, and is taking an active role in international negotiations to reduce greenhouse gas emissions.

Another outcome of the Earth Summit was agreement by governments that local action is crucial to solve global environmental problems. ***We must think globally but act locally.*** The Local Agenda 21 initiative has encouraged local government and communities to identify and begin to tackle a wide range of local environmental issues.

The Agency is also committed to a programme of local action through our Local Environment Agency Plans (LEAPs). As we have duties and powers to protect only some environmental resources, we need to work with others locally to achieve the common goal of sustainability. Our LEAPs will, therefore, reflect our close contact with industry, the public, local government and many others in planning actions to address environmental issues.

1.3 ROUTINE WORK OF THE AGENCY

The Agency has eight Regions, shown on the back cover of this document. The Thames Region is made up of three Areas, and the Kennet Valley is within the West Area.

As "Guardian of the Environment" the Agency's principal aim is to protect and enhance the environment, thus contributing to the Government's overall commitment to sustainable development. We will do this by integrating environmental protection for land, air and water using pollution prevention and control, education and enforcement where necessary. We have related responsibilities for the management of water resources, fish and wildlife and for protecting people and property from flooding.

Most of our work operates at a local level and there is a strong commitment to an integrated approach to managing the environment. LEAPs are one way of achieving this integrated approach, although they do not cover routine work carried out to meet statutory requirements or national Agency policy. This work is described in our *Corporate Plan* (published annually in September) and Environmental Strategy (*"An Environmental Strategy for the Millennium and Beyond"*, published in September 1997). A summary of our routine work is provided in Appendix 1.

The Agency recognises that education at all levels in the community and with industry will result in a more informed society that is better able to understand the environment. We provide a wide range of information to all sectors of society and give many talks and presentations. The Agency recently published a leaflet "Green Shoots, our vision for Environmental Education."

All actions of the Agency must take into account a number of umbrella duties, which include, furthering conservation, protecting existing recreational access and the creation of new recreational opportunities, environmental impact assessment for the Agency's engineering works, the requirement to assess costs and benefits, the contribution to sustainable development and the impact on rural communities.

1.4 ENVIRONMENTAL SERVICES PROVIDED BY OTHERS

The Agency's duties and powers are laid down in Acts of Parliament and various byelaws and do not cover all aspects of environmental service to the general public. We are **not** responsible for:-

- noise problems (except if it is to do with our work)
- litter (unless it is restricting the flow of a river)
- air pollution arising from vehicles, household areas, small businesses and small industry
- environmental health
- food hygiene
- planning permission
- collecting waste in your local area

Your local authority deals with these issues and will contact the Agency if necessary.

We are not responsible for the quality or supply of drinking water or for treating sewage waste, although we regulate discharges from sewers and sewage treatment works.

1.5. THE LEAP PROCESS

LEAPs are integrated local management plans for

".... identifying, prioritising and solving local environmental issues, related to the Agency's functions, taking into account the views of the Agency's local customers."

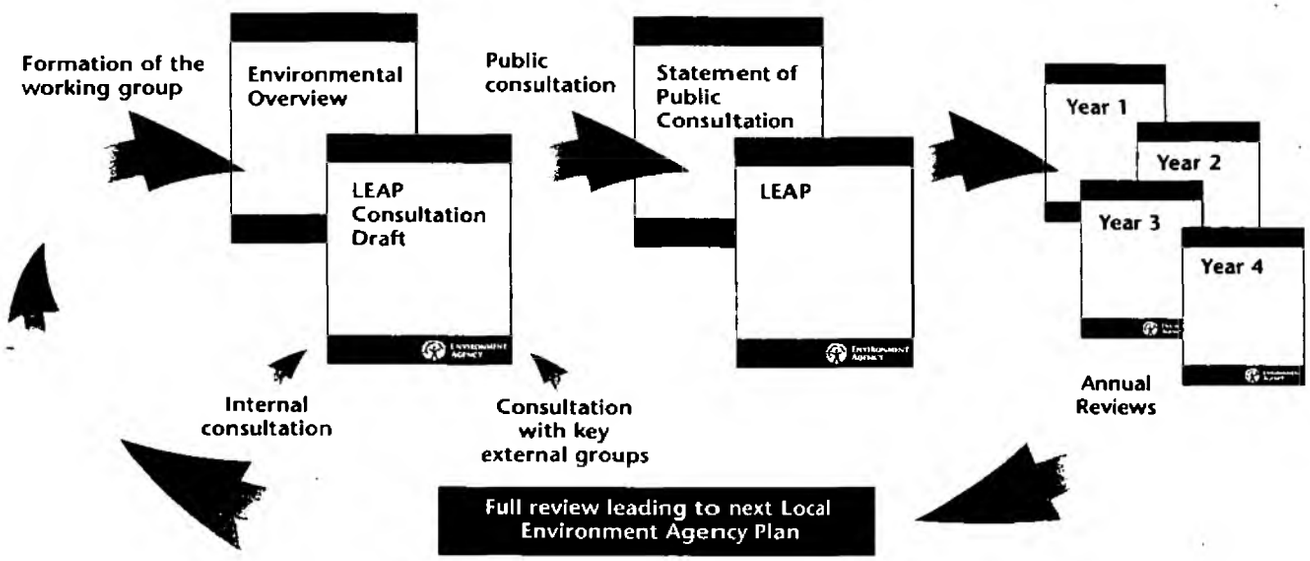
They replace the Catchment Management Plans which were produced by the former National Rivers Authority and build on their success by covering all the Agency's functions.

LEAPs are developed by:

- involving interested parties in planning for the future of a specific area;
- focusing attention on the issues affecting the environment of that area; and
- establishing a prioritised plan of action, for the Agency to fulfil alone or in partnership with others, to address these issues.

The process involves several stages which are illustrated by Figure 3:-

Figure 3 The LEAPs Process



A team of Agency staff who work in the Kennet Valley area has produced this LEAP. To ensure a wide and balanced approach, the West Area Environment Group (AEG) has also charged a Members Working Group to participate and advise on this Plan. The AEG is our local advisory group which has members drawn from a wide range of community interests. A more detailed description is given in Appendix 2.

We have also formally consulted representatives from the various local authorities and environmental organisations in the LEAP area. Comments and ideas have been incorporated wherever possible and the Agency is grateful for the contribution of time and effort of respondents and consultees. A report on this public consultation is given in Appendix 4.

The LEAP is supported by an ***Environmental Overview*** which contains information about the Kennet Valley LEAP area and describes some aspects of the state of the local environment. Copies of the Environmental Overview are available to buy on request.

Together with the Members Working Group, we will monitor implementation of the LEAP and report on progress in a published ***Annual Review.*** The Annual Review will also identify any additional actions needed to maintain progress in the light of any changes in the LEAP area and also whether any actions need removing or amending where they are no longer appropriate.

2.0 THE LEAP AREA

Kennet Valley LEAP covers an area of 1,164 km² and is dominated by the River Kennet, the largest tributary of the River Thames which it joins at Reading, some 70 km east of its source in the Marlborough Downs in Wiltshire. The Kennet and Avon Canal runs parallel with the River Kennet downstream of Hungerford, at times sharing the same channel. Defined by the Berkshire and Marlborough Downs to the north and the Hampshire Downs to the south the LEAP area is predominantly rural in character. However 211,000 people live in the area, mostly in the principal towns of Reading, Marlborough, Newbury and Hungerford and their lifestyles put considerable pressure on the environmental resources available.

Much of the Kennet Valley falls within the North Wessex Downs Area of Outstanding Natural Beauty (AONB) a national designation by the Countryside Commission. The high quality of the rural landscape and the archaeological importance of sites such as Avebury (a designated World Heritage Site) ensure that the western part of the valley is strongly protected from large scale development.

Further east, however, the Kennet valley has seen significant change over the last 45 years with many large housing developments in Newbury, Thatcham and Reading; the construction of the M4 motorway and Newbury by-pass and extensive mineral extraction between Newbury and Reading. This area has also seen the growth of numerous business and retail schemes, for example the Reading and Theale Business Parks and the Oracle shopping centre. There will continue to be pressure for development in the East of the area, particularly the need to accommodate additional housing.

The Kennet Valley contains a number of nationally important wildlife sites and habitat types. There are two River SSSIs within the catchment, the River Lambourn and the River Kennet itself from Marlborough to Woolhampton. These have been notified in recognition of their outstanding chalk river plant and animal communities. Other nationally important sites include areas of reedbed, fen, chalk grassland and ancient woodland. There are two candidate Special Areas of Conservation wholly or partly within the Kennet catchment; the Kennet and Lambourn Floodplain and Pewsey Downs; the former has most significance for the Agency and is proposed mainly for its internationally important populations of Desmoulin's Whorl snail. The Kennet and Avon Canal provides an additional biological resource and is particularly notable for its important water vole populations. The large amount of stillwater habitat provided by old gravel pits in the lower Kennet valley are also important ecologically, particularly for their ornithological interest.

3.0 ISSUES AND ACTIONS

LEAPs translate the Agency's long term Environmental Strategy into action on the ground. The Environmental Strategy sets out nine environmental themes:-


addressing the causes and effects of climate change


improving air quality


managing water resources


enhancing biodiversity


managing freshwater fisheries


delivering integrated river-basin management


conserving the land


managing waste


regulating major industries effectively.

Issues in the LEAP are structured around these priority themes. The issues and actions are the views of Agency staff, Area Environment Group members, local authorities and interest groups They are not presented in any order of priority. Further information is detailed in the Environmental Overview which can be obtained from the Agency, if required.

The issues are presented with a number of actions, a target timetable and the identification of the lead or key partners. Where possible costs have been outlined for the period of the LEAP. This does not necessarily reflect the total cost of the schemes and is sometimes an estimate to be more accurately costed later. Not known (N/K), has been written where costings are not available. The indicative cost where possible, has been placed in four bands for guidance:

Band 1 <£10,000
Band 2 £10,000-£50,000
Band 3 £50,000-£100,000
Band 4 >£100,000

Costs given are Agency costs unless otherwise stated. A number of the actions will require feasibility studies and an appraisal of options prior to work commencing. In some cases, depending on the outcome of these studies, further action may not be required.

ISSUES IN THE KENNET VALLEY

ADDRESSING THE CAUSES AND EFFECTS OF CLIMATE CHANGE

ISSUE 1 Minimising the effect of landfill gas on climate change.

IMPROVING AIR QUALITY

ISSUE 2 Achieving local air quality objectives through regulation of Agency controlled processes.

MANAGING WATER RESOURCES

ISSUE 3 Balancing the needs of the environment and abstractors.

ISSUE 4 Water supply to the Kennet and Avon Canal.

ENHANCING BIODIVERSITY

ISSUE 5 Implementing the UK's Biodiversity Action Plan.

ISSUE 6 Implementing the River SSSI Conservation Strategies.

ISSUE 7 Habitats Directive review.

ISSUE 8 Water Level Management Plans.

ISSUE 9 Habitat enhancement, restoration and suitable land management.

ISSUE 10 Impacts of signal crayfish in the Kennet, Lamboum and Enborne.

MANAGING FRESHWATER FISHERIES

ISSUE 11 Enhancement of wild fish populations and sustainable fisheries management.

ISSUE 12 Kennet and Pang Fisheries Action Plan.

ISSUE 13 Affect of river structures on fish migration and river habitats.

ISSUE 14 Thames Salmon Rehabilitation scheme.

DELIVERING INTEGRATED RIVER-BASIN MANAGEMENT

ISSUE 15 Poor water quality.

ISSUE 16 Reducing the adverse impacts of agricultural land use on the water environment.

ISSUE 17 Hungerford Fish Mortality.

ISSUE 18 Regular Flooding at Newbury Street, Lambourn.

ISSUE 19 Flooding caused by rise in bed levels of chalk streams.

ISSUE 20 Need to establish a comprehensive inventory of existing water recreation provision and access within the Kennet Valley.

CONSERVING THE LAND

ISSUE 21 Minimising the adverse environmental impact of planned development.

ISSUE 22 Contaminated land.

MANAGING WASTE

ISSUE 23 Minimising Waste.

ISSUE 24 Increase in the level of flytipping, particularly in the Newbury area.

ISSUE 25 The disposal/recovery of stable waste in the Lambourn area.

REGULATING MAJOR INDUSTRIES EFFECTIVELY

ISSUE 26 Discharges of radioactivity from the Atomic Weapons Establishment.

3.1 ADDRESSING THE CAUSES AND EFFECTS OF CLIMATE CHANGE

Perhaps one of the most important issues affecting our environment is climate change. It is an issue that has no boundaries and is truly international in scale. Burning fossil fuels in cars, in power stations and in industrial processes emits "greenhouse gases" such as carbon dioxide into the atmosphere and is believed to contribute to long-term climate change.

The UK will be affected in a complex way by these changes. Current predictions suggest winters are likely to become wetter and summers drier, reducing overall rainfall totals in the south and east and increasing rainfall in the north. This will lead to more variable rainfall patterns and probably increased storminess.

Changes in rainfall patterns/river flows may affect species and habitats which exist in the Kennet and Lambourn SSSIs, including the Winterbourne reaches and its water level dependant cSAC and wetland SSSIs.

Locally, the Agency's main influence on climate change will be to help ensure that the Government's greenhouse gas reduction targets are met by regulating emissions from major industrial processes. We will also set an example by reducing our own energy and fossil fuel consumption. We have targets to achieve the following by March 2000:-

- Reduce energy use in our offices and depots by 20%, compared to 1996/97 figures.
- Undertake energy inspections and set targets for 40 Agency premises.
- Implement "Green Transport Plans" to reduce commuter transport impacts at all our key sites.
- Reduce mileage on Agency business by 7%, compared to 1996/97 figures.
- Improve overall fuel efficiency for badged vehicle fleet by 3 miles per gallon, compared to 1996/97 figures.

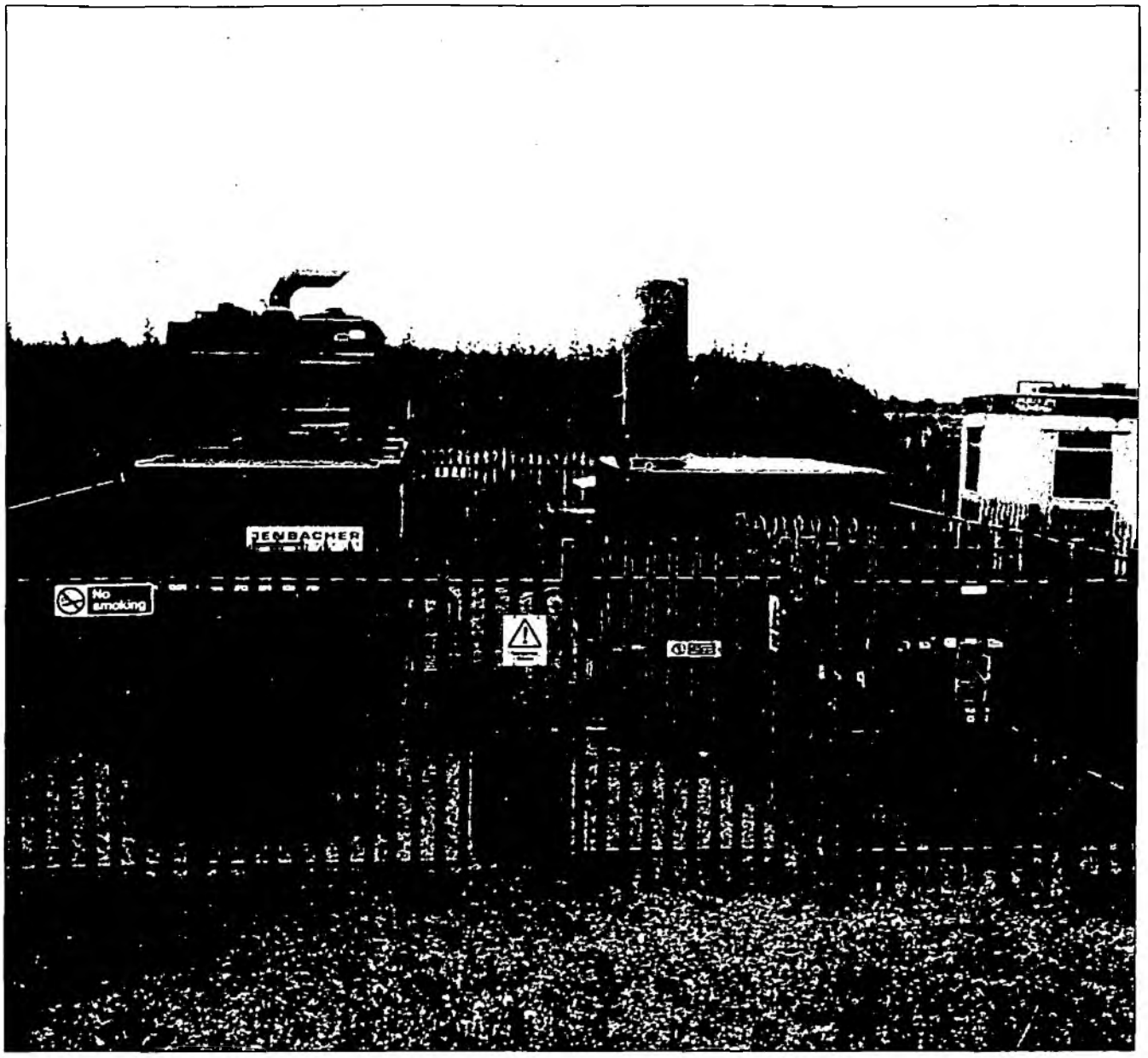
ISSUE 1: MINIMISING THE EFFECT OF LANDFILL GAS ON CLIMATE CHANGE

Methane and carbon dioxide are the main gases produced at landfill sites as organic waste decays. The impact of methane on climate change is 25 times greater than that of carbon dioxide. The impact can be reduced by burning methane.

As well as reducing the environmental impact of emissions, using landfill gas to generate power will also reduce the amount of fossil fuels that are consumed - further enhancing the environmental benefits.

In the LEAP area at present only Grundons Landfill at Beenham uses landfill gas to produce electricity; this is used by Marley tiles. RMC Environmental Services Ltd (Southern) who operate Smallmead Landfill have carried out a feasibility study, which shows that electricity production is possible. The company has been successful in gaining a contract under NFFO-5 (Non Fossil Fuel Obligation Order No.5) and, subject to the granting of planning permission should be generating electricity in about two years time.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
1	Request that all new applications for household, commercial and industrial landfills incorporate controlled gas extraction systems into their plans.	Agency	2000-05	<10	Contribute to the slowing down of climate change.



Power Generating Plant, fuelled by landfill gas at Grundon's Landfill, Beenham

3.2 IMPROVING AIR QUALITY

Air quality knows no boundaries. Its freedom to travel means that problems can spread away from points of origin, although specific problem areas can be created. The major sources of air pollutants are transport and industry. Monitoring and controlling air pollution from transport is the responsibility of local authorities and not the Agency. We are reducing emissions from our own vehicles by reducing mileage and encouraging the use of public transport (see Section 3.1). We are also encouraging the public to consider the impact their travel has on the environment.

Air pollution is believed to play a part in some breathing-related problems, such as asthma. The Agency is working with national and local government to ensure that the National Air Quality Strategy improves air quality and that emissions from major industries and vehicles are reduced.

ISSUE 2: ACHIEVING LOCAL AIR QUALITY OBJECTIVES THROUGH REGULATION OF AGENCY CONTROLLED PROCESSES

Local air quality planning is the responsibility of the local authorities who monitor traffic pollution and regulate the smaller industries and processes. However, the Agency is responsible for regulating emissions to air from major industrial processes under the regime of Integrated Pollution Control.

We will work with local authorities to ensure that Agency-driven improvements complement local authority air quality objectives. A local air quality strategy for Agency regulated processes would allow the Agency, when formally consulted by local authorities, to contribute to local air quality plans.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
2a	In partnership with local authorities, develop an overall air quality strategy for releases from Agency regulated processes within the LEAP area.	Agency/ LAs	2000-05	Staff time	Improve air quality.
2b	Assess current monitoring programmes for Agency regulated processes in light of their impact on local air quality.	Agency	Ongoing	Staff time	Ensures emissions from major industrial processes to the atmosphere are regulated effectively.

3.3 MANAGING WATER RESOURCES

At their worst, water shortages lead to dry taps for consumers and cause rivers to fall to levels which kill plants and animals. The Agency's responsibilities include ensuring that water companies, industry and the public use water more efficiently and address problems where the abstraction of water is causing unacceptable environmental impacts.

We urge water companies to reduce leakage and manage the water demands of their customers more effectively and we advocate targets to Government and the Office of Water Services (OFWAT) to reduce losses. This will help limit the damage to the environment during a drought.

ISSUE 3: BALANCING THE NEEDS OF THE ENVIRONMENT AND ABSTRACTORS

Following the Government's review of abstraction licensing the Agency has been asked to develop and periodically review Catchment Abstraction Management Strategies (CAMS). These strategies will provide the local framework for achieving sustainable management and utilisation of water resources in a catchment. They will include a clear statement of resource allocation and availability, produced by consulting and involving those with a legitimate interest in local water resource management. The strategies will promote a transparent, open and consistent framework for using the abstraction licensing mechanism to balance existing and future human demands with those of the aquatic environment. The format and core of these strategies is being developed following consultation, and the production of the local CAMSs will begin in April 2001. They will be reviewed every six years. The Kennet and Pang CAMS area will be the first to be started.

In the meantime all new applications for abstraction licences will be determined in line with existing regional policy to protect both existing abstractors and the environment. Some existing licences require additional scrutiny in the light of recent events, e.g. low flows at Fobney and recent designation of parts of the Kennet and Lambourn as SSSIs.

The Water Resources Plan from Thames Water has identified options for meeting the growth in demand for water from Swindon. There will be additional transfers from Farmoor (near Oxford), but no increases in transfers from the Upper Kennet.

While short-term growth in demand from Newbury can be met locally, in the longer-term further growth in demand from Newbury may require schemes to transfer water from elsewhere eg Reading to Newbury. It is important that any proposed new development does not proceed ahead of the development of water resources to meet this demand.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
3a	(i) Develop the format and core of an Abstraction Management Strategy (AMS).	Agency	2000-01	10-50	Will provide the framework for the consistent utilisation of water resources.
	(ii) Develop a Catchment Abstraction Management Strategy (CAMS) for the Kennet Valley LEAP area.	Agency	2001-07	50-100	Will provide a transparent basis for water resource planning.
3b	Further investigations of the impact of TW abstractions at Speen on the cSAC of the Kennet and Lambourn floodplain.	TW/Agency	2000-05	TW >100	Clarification of impact on SSSI and cSAC and identification of remedial actions. (See Issue 7)

ISSUE 3: BALANCING THE NEEDS OF THE ENVIRONMENT AND ABSTRACTORS (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
3c	Further investigation of the impact of TW abstractions at Axford on the Kennet SSSI, to include evaluation of the amount of water available from the Fobney abstraction.	TW/Agency	2000-05	TW >100	Clarification of impact on SSSI and cSAC and identification of remedial actions. (See Issue 7)
3d	Complete Agency national and regional water resource strategies.	Agency	Complete National by Jan 2001	>100	Balancing the needs of the consumer with those of the environment.
3e	Annual update of Water Resources Plans.	TW/Agency	Annually	10-50	Ensures that programme of work progresses.
3f	Achieve practical and economic levels of leakage loss.	TW/Agency	Ongoing	<10	Leakage levels in this zone for 1997/8 were 199 litres/property /day, plan to reduce this to 121 litres / property /day by 2024/5.

ISSUE 4: WATER SUPPLY FOR THE KENNET AND AVON CANAL

The operational requirements of the Kennet and Avon Canal are dependent on inflows from watercourses within the catchment, primarily Froxfield Stream, the River Shalbourne and the River Kennet. This can result in less than optimum flows in the River Dun and River Kennet, particularly in the summer months and in drier years, leading to conflict between the needs of the Canal, the requirements of fishery managers and the protection of the ecological integrity of the rivers, particularly within those reaches designated SSSI. Current negotiations with British Waterways are continuing in order to secure a sustainable apportionment of flows in order to protect the environmental needs of the river and optimise resources for canal operation and other uses. Such an approach is consistent with both the River Kennet SSSI Conservation Strategy and the Kennet and Avon Canal Conservation Plan.

Right: River Shalbourne overspill from the Kennet and Avon canal

ISSUE 4: WATER SUPPLY FOR THE KENNET AND AVON CANAL (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
4a	Evaluate existing and future water supply needs and availability for the K&A canal and consider options to reduce the water resources demands in the Kennet LEAP area. Initially undertake measurements of flows into, out of, and in canal and river between Kintbury and Benham weir	Agency/BW	2000-02	12pa	To ensure the sustainable use of water resources for canal operations within the catchment, and the identification of measures to reduce conflict with ecological requirements.
4b	Implement recommendations of the River Kennet SSSI Conservation Strategy (including the management strategy for canal and Kennet navigation) and Water Level Management Plan with respect to the optimal management of canal structures which influence flows in the River Kennet.	Agency, EN, BW, landowner	2000-01	N/K	An agreed flow apportionment between canal and river which meets BW management requirements and protects low flow requirements to the River Kennet. (This may be amended in the light of the findings of the study under 4a)
4c	Implement recommendations of the Freeman's Marsh SSSI Water Level Management Plan. A diversion channel was constructed in Spring 2000. This directs the flow of the Shalbourne under the canal and into the Dun. This is currently a temporary arrangement. The Agency will apply for an abstraction licence to facilitate a more permanent division of flows. (See Issue 17)	Agency, EN, BW, landowner	1999-01	N/K	This will ensure that the navigational requirements of the canal and the ecological requirements of the SSSI are met.

3.4 ENHANCING BIODIVERSITY

Biodiversity, the variety of life on earth, is declining rapidly. In the UK alone, more than 100 species are thought to have become extinct this century. In June 1992, at the Earth Summit in Rio, the Convention on Biological Diversity was signed by the UK and over 150 other countries. The UK response to this commitment was launched in January 1994 with "Biodiversity: The UK Action Plan."

The UK Biodiversity Action Plan identifies "contact points" for threatened and declining species. The Agency is the contact point for chalk rivers, of which the Kennet is a prime example, and for 13 species of aquatic and riparian animals and plants including the otter, water vole and rare species of fish. We will be developing action plans to help protect these species and will report on their progress. The Agency however, has actions planned for many more species and a number of habitats within the UK plan.

There are also a number of other initiatives which serve to meet the objectives of the UK BAP, such as the production of Conservation Strategies for the two River SSSIs in the catchment, the production of Water Level Management Plans for water-dependent SSSIs, the review of authorisations affecting cSAC sites, the ongoing habitat enhancement programme, collaborative projects with other organisations, and an advisory service to land management initiatives such as the Countryside Stewardship Scheme. All the above initiatives require the Agency to work in partnership with others to conserve and enhance biological diversity.

ISSUE 5: IMPLEMENTING THE UK'S BIODIVERSITY ACTION PLAN

Above: Water Vole

The UK Biodiversity Action Plan identifies a number of species relevant to the LEAP area which require conservation action. The Agency is the contact point for the Otter, Native Crayfish, Freshwater Pea Mussel, the Water Vole and the Desmoulin Whorl snail. An important first step in the conservation of these species will be to collect accurate information about their current status. There are also other key species in the LEAP area for which the Agency has a significant role to play, as well as a number of habitats such as chalk rivers, reedbeds and fens. Our position as contact point for chalk rivers and our duties and responsibilities for water management give us particular responsibilities for the biodiversity of all our watercourses.

Local authorities and conservation bodies are working on Local Biodiversity Action Plans and we will support the development of these Plans to ensure the protection of locally important species.

Priority actions for the Agency key species and habitats in the Kennet catchment are summarised in the table overleaf:

These represent the top priority species and habitats for the Agency under the UK BAP. However, Agency actions are required for a wealth of other species and habitats for which the Agency is well placed to initiate and advise on actions. These include wetland birds such as Snipe, Redshank and Bearded Tit, a number of reptiles and amphibian species, a range of invertebrates, and native fish communities including species such as Brown Trout, Grayling, Barbel, Brook Lamprey and Bullhead. The Agency fully recognises, and demonstrates by its action, that wildlife conservation and enhancement is most profitably achieved by working at the habitat level, to benefit a range of species and communities. This is best exemplified by an holistic approach to whole catchment management.

ISSUE 5: IMPLEMENTING THE UK'S BIODIVERSITY ACTION PLAN (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
5a	**Otter:** undertake habitat enhancement informally agreed through the Kennet Otter Habitat Project. Establish a network of volunteers in conjunction with conservation organisations to monitor the catchment for otters and other riparian mammals.	Agency, BW Wildlife Trusts, EN, landowner	Medium term	10-50	Improvement of bankside habitat and refuge sites for otters.
	Support the Thames Water and the Wildlife Trusts Otters and Rivers Project.	TW, Wildlife Trusts, Water U.K	Long term 2010-15	10	To facilitate an expansion of the otter population in the catchment and to achieve a viable population by 2010-2015.
	Monitor the use of otter culverts on the Newbury Bypass.	Highways Agency, Agency	Ongoing		
5b	**Water Vole:** Establish the current distribution of the water vole on the catchment through support of the BBONT Water Vole Recovery Project and Wiltshire Water Vole Survey. Ensure flood defence maintenance works and canal management do not adversely affect the species. Seek to improve habitat through riparian enhancement schemes and advice to 3rd parties.	Agency, EN, BBOWT,Wildlife Trusts, BW, FWAG, landowner	2000-05	10-50pa	To maintain the current distribution and abundance of the species in the catchment and encourage expansion back into suitable habitats.
5c	**Desmoulin's Whorl snail:** Implement the agreed actions in the Kennet and Lambourn Floodplain SSSI WLMP to safeguard this species. Undertake Habitats Directive Review of potentially damaging authorisations with respect to the Kennet and Lambourn Floodplain cSAC. Ensure river and canal maintenance activities safeguard the habitat of this species, particularly on cSAC sites.	EN, Agency, BW, landowner	1999-04	N/K	Maintaining the current known distribution and enhancing associated habitat where possible.
5d	**Bittern:** Complete habitat restoration work at Thatcham Reedbeds and encourage the restoration and creation of other reedbed/wetland complexes, in order to facilitate the return of the Bittern as a breeding bird in the catchment.	Agency, RSPB, West Berks Council, EN, KVCP, FRCA, landowner	By 2002	10-50pa	Facilitate the return of the bittern as a breeding bird in the catchment.

ISSUE 5: IMPLEMENTING THE UK'S BIODIVERSITY ACTION PLAN (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
5e	**Finelined Pea Mussel:** Establish the current distribution of the species within the catchment.	Agency/ EN.	1999-01	<10	Identification of strongholds leading to protection of populations.
5f	**Native Crayfish:** Establish current distributions of native and alien crayfish and maintain a distribution database. Protect remaining populations; attempt eradication of alien crayfish (depending on results of feasibility studies).	EN, Agency, MAFF	Survey by 2002	<10	The conservation of the remnant populations of native crayfish on the catchment.
5g	**Chalk Rivers:** Implement actions for the River Kennet and River Lambourn SSSI Conservation Strategies and WLMPs (see Issues 6 & 8).	Agency, EN, river managers, BW, TW, landowner	See Issues 6 and 8		Attainment of objectives under the Chalk Rivers Habitat Action Plan.
5h	**Eutrophic Standing Waters:** Assess the ecological quality of the gravel pits and other large standing waters in terms of national quality criteria from the Eutrophic Standing Waters Action Plan (criteria not yet determined). Provide advice to owners and managers of gravel pits and other lake habitats to promote the conservation and enhancement of the associated flora and fauna. Work with local authorities to safeguard standing water habitats through the planning process, and promote the imaginative restoration of new gravel workings to diverse open water and wetland habitats where appropriate. Promote the strategic management of the lower Kennet gravel pits to ensure sympathetic use of the resource for nature conservation and recreation.	Agency, LAs, Local Wildlife Trusts, English Nature, Reading Ornithological Society, Theale Area Bird Club, Lake owners, Angling Clubs.	2000-05	50-100	Maintenance and enhancement of the biodiversity of eutrophic standing waters. Good stewardship of the substantial standing water resource in the lower Kennet valley.
5i	**Other Species and Habitats:** Input into the production of local BAPs. Produce an internal Biodiversity strategy to inform Agency conservation work at a LEAP level.	Agency, EN, LAs, Wildlife Trusts, other conservation groups.	1999-00	Staff time	Agreed actions to conserve and enhance the wide spectrum of plant and animal communities particularly those dependent on the aquatic environment.

ISSUE 6: IMPLEMENTING THE RIVER SSSI CONSERVATION STRATEGIES

The Environment Agency and English Nature have jointly produced Conservation Strategies and agreed a Consenting Protocol for the two River SSSIs in the LEAP Area, the River Kennet and River Lambourn. These Strategies provide a framework for action by these agencies to ensure that the special scientific interest of the river is maintained and, where appropriate, enhanced. The Protocol defines agreed procedures between the two organisations for dealing with consents and authorisations. Actions within the Conservation Strategies cover a wide range of activities too numerous to detail in their entirety though many are represented elsewhere within this document, therefore only the overarching actions are given below.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
6a	Carry out the agreed programme of actions in the River Kennet and River Lambourn SSSI Conservation Strategies.	Agency, EN, landowner BW, river managers	1999-05	N/K	Protection and enhancement of the two nationally important rivers in the catchment.
6b	Ensure compliance with the procedures detailed in the Consenting Protocol for the two River SSSIs.	Agency /EN	Ongoing	N/K	Ensure routine activities protect river SSSIs and co-ordination of authorisations to ensure efficient service and advice to customers.

Looking downstream from Eddington Bridge, Hungerford, candidate Special Areas of Conservation on the left hand side

ISSUE 7: HABITATS DIRECTIVE REVIEW

Under the provisions of the EU Habitats Directive, the Agency is required to review existing authorisations to ensure that they do not threaten the integrity of Sites of Community Interest. There are currently two such sites, known as candidate Special Areas of Conservation in the Kennet catchment, although one (Pewsey Downs) falls largely outside the catchment. The Kennet and Lambourn Floodplain cSAC is made up of eight component sites, four on the Lambourn (from Weston down to Bagnor) and four on the Kennet (from Chilton Foliat down to Thatcham). Each component site has to be investigated separately. Other sites will be designated in the lifetime of this LEAP.

Above: Chilton Foliat - one of the eight component SSSIs of the candidate Special Area of Conservation

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
7a	Identify all authorisations which might be affecting the cSAC.	Agency/EN	1999-01	N/K	Will identify the potential environmental impact and clarify any actions required to protect sites of community interest.
7b	Assess which of those authorisations identified under (a) above are likely to have a significant effect on the cSAC.	Agency/EN	2000-04	50-100	As in 7a.
7c	Those authorisations identified in (b) will undergo more detailed investigation.	Agency/EN/TW	2000-04	>100	As in 7a.
7d	Revoke, amend or affirm authorisations as appropriate.	Agency/EN	2000-04	50-100	As in 7a.
7e	If necessary as a result of the above actions revise the operating protocol of the West Berkshire groundwater scheme so that it best protects the interests of the river.	Agency/EN	2000-04	N/K	As in 7a.

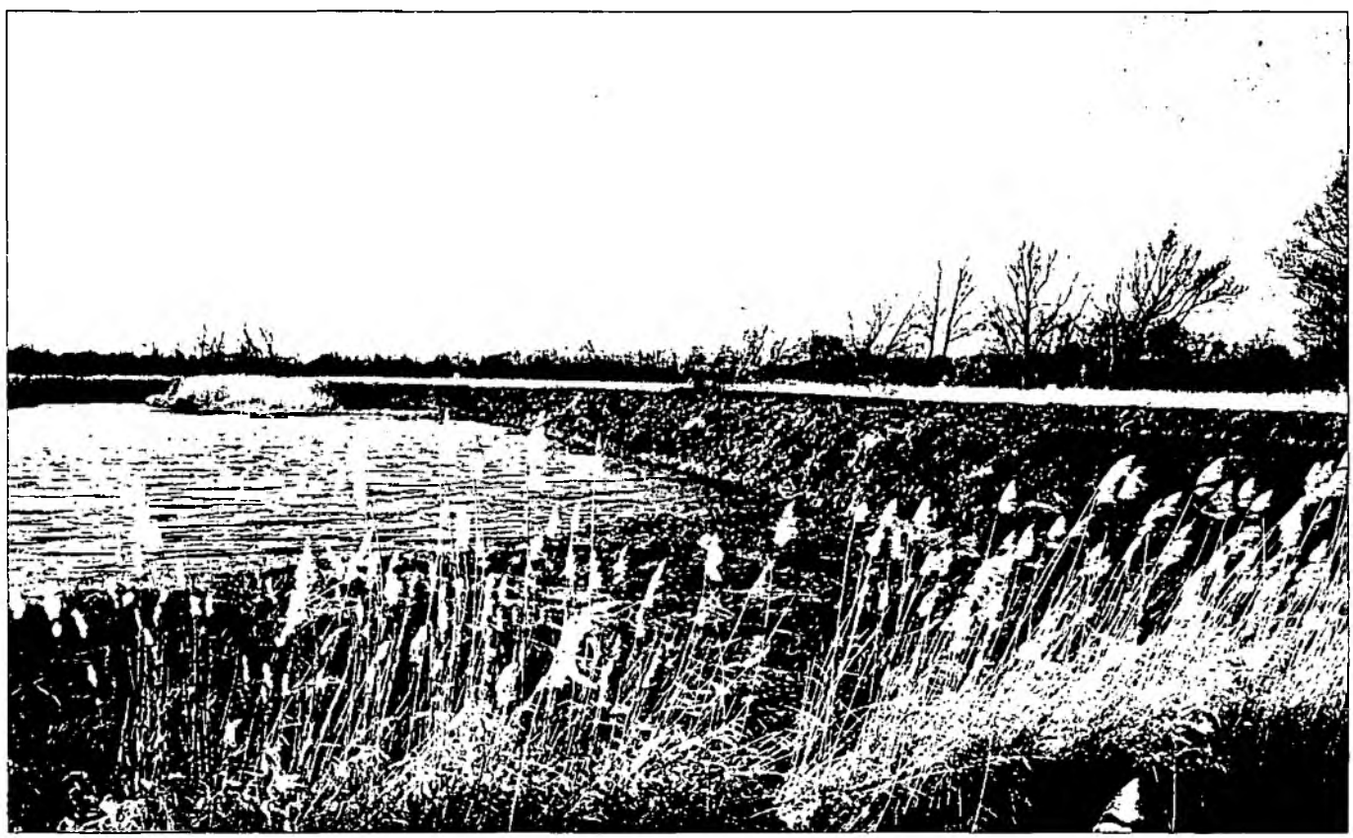
ISSUE 8: WATER LEVEL MANAGEMENT PLANS

The Agency has embarked on the production of Water Level Management Plans for wetland SSSIs within the catchment. These are produced in consultation with English Nature, landowners and land managers for the respective sites, and identify actions required to secure optimum water level management to protect the conservation interest in conjunction with other uses of the site, particularly agricultural and recreational interests.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
8a	*River Kennet SSSI WLMP:* Implement actions including agreement with BW and other landowners on the operation of control structures which influence flows to SSSI sections of the river.	Agency, EN, BW landowners	1999-04	N/K	Maintenance of optimal hydrological regime for the SSSI.
8b	*River Lambourn SSSI WLMP:* Carry out feasibility study for removal of damaging impoundment at Woodspeen.	Agency, landowners	1999-00	<10	Evaluation of options for restoration of flow dependent habitats and reduction in flood defence maintenance liability.
8c	*Kennet and Lambourn Floodplain SSSI WLMP:* Agree operation of control structures to secure integrity of component site at Speen in the Kennet Valley. Secure reparations of control structures at Rack Marsh, to ensure integrity of component site adjacent to the River Lambourn.	Agency, EN, landowner Highways Agency	1999-00	10-50	Secure hydrological integrity of internationally important sites.
8d	*Freemans Marsh SSSI WLMP:* Secure agreement with BW on the apportionment of flows between the SSSI and the K&A Canal and Implement agreed changes to the management of the canal overspills.	Agency, EN, BW	1999-04	N/K	Secure optimal hydrological conditions on the SSSI and reduce any adverse impacts of canal overspills.
8e	*Chilton Foliat SSSI WLMP.* Ensure optimal use of control structures to maximise required conditions and monitor achievement of hydrological and ecological objectives.	Agency, EN, landowner	Ongoing	Staff time	Safeguarding hydrological regime of the SSSI.

ISSUE 8: WATER LEVEL MANAGEMENT PLANS (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
8f	*Thatcham Reedbeds SSSI WLMP:* Continue implementation of agreed work programme to restore wet reedbed habitat and secure the integrity of fen habitat supporting populations of the Desmoulin's Whorl Snail.	Agency, EN, West Berks Council, RSPB, BW, landowners	By 2001	10-50	Restoration of optimum hydrological conditions within the SSSI for key species such as Bittern, Bearded Tit, Water Rail and Desmoulin's Whorl Snail.
8g	*Complete outstanding WLMPs for remaining sites:* i) Boxford Water Meadows SSSI. ii) Easton Farm Meadow SSSI.	Agency, EN, landowners	1999-00	<10	Ensure hydrological management protects the integrity of these special sites.



Thatcham Reedbeds, February 1998

ISSUE 9: HABITAT ENHANCEMENT AND RESTORATION

The Agency undertakes a number of habitat enhancement schemes each year. These are designed to restore previously degraded river habitats and wetlands, lost or damaged through previous river engineering and associated land drainage activities. The Agency also supports and advises the work of other bodies to secure improvements in sensitive land management and the restoration of riparian habitats. The nature of this support varies from recommendations to the Farming and Rural Conservation Agency on the targeting of Countryside Stewardship schemes within the catchment, to advisory and financial support to the Kennet Valley Countryside Project in order to help secure habitat and landscape improvements. In this way the Agency seeks to influence agricultural land management in order to secure more sustainable landuse practices. (see Issue 16)

TW is funding a major rehabilitation project, costing £400,000 on the Upper Kennet. The overall objective of the project is to design, implement and monitor rehabilitation measures along 10km of the River Kennet, to demonstrate a range of environmental enhancements and be a catalyst to encourage further restoration in the future. Project managers and a project steering group including representatives from the Agency, ARK and EN will be providing a range of practical and technical support and will be actively seeking funding opportunities in the future. Phase 1 of the project was completed in 1999.

The Agency is also hoping to embark on a collaborative project in the upper Kennet Valley to help target farm conservation advisory visits to address the issue of diffuse agricultural inputs and their impact on the River Kennet headwaters. Promotion of the Codes of Good Agricultural Practice and of opportunities within Countryside Stewardship schemes should help diminish inputs of biocides and fertiliser and reduce soil loss (and therefore river siltation), thus complementing measures already being taken to enhance habitat and reduce phosphate inputs from point sources.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
9a	Use existing River Corridor Survey, Fisheries Survey, River SSSI Conservation Strategies and Water Level Management Plans, as well as opportunities for enhancements on SSSIs and Sites of Nature Conservation Importance, to inform a prioritised programme of habitat enhancement schemes. Schemes currently under consideration include:- i) those identified under Issue 8. ii) channel enhancement works on a number of degraded reaches in the catchment.	Agency, Wildlife Trusts, EN, landowners	Ongoing	10-50pa	Further the conservation of flora and fauna dependent on the aquatic environment; attainment of UK and Local BAP, River SSSI conservation strategy and WLMP objectives.
9b	Continue to support the Kennet Valley Countryside Project and the Countryside Stewardship scheme to secure improvements to river valley land management and provide opportunities for floodplain habitat restoration.	Agency, EN, LAs, FRCA, FWAG, landowners	Ongoing	<10pa	Improved stewardship of river catchments and promotion of sustainable agricultural practices.

ISSUE 9: HABITAT ENHANCEMENT AND RESTORATION (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
9c	Design, implement and monitor Upper Kennet Rehabilitation Project. Seek collaborative funding opportunities for restoration work.	Agency, ARK, EN, Wildlife Trust, TW, landowners	1999-02	>100 TW 10-50 Agency	Restoration of degraded reaches of the River Kennet, demonstrating a range of environmental enhancements and acting as a catalyst for future restoration work.

ISSUE 10: IMPACTS OF SIGNAL CRAYFISH IN THE KENNET, LAMBOURN AND ENBOURNE

In recent years the American Signal Crayfish has become widespread throughout much of the South of England. This has been to the detriment of the White Clawed Ccrayfish, our only native species, which is identified in UK BAP. There have only been very few confirmed records of White Clawed Crayfish over the last five years in the Kennet LEAP area and its status is now believed to be very recarious. Sightings of Signal Crayfish are regularly reported from most of the watercourse and stillwaters in the area.

The native species has been displaced by a combination of factors, including a fungal disease carried by Signals, competition for food and territory from the larger more aggressive Signals and loss of suitable habitat.

There is also evidence to suggest that fish species such as Bullhead (listed under the Habitats Directive) and populations of slower moving aquatic invertebrates may suffer as a result of Signals. Concern has also been voiced about their effect on water plants and damage to river banks caused by burrowing. Although fish such as Barbel, Chub, and Trout will eat Signals, anglers fishing in the Lower Kennet frequently complain about the nuisance caused by Signals eating their bait.

The Kennet and its tributaries support a commercial crayfishery with large quantities captured by traps. (The prior written consent of the Agency is required for this activity.) Recent research funded by the Agency suggests that rather than depleting numbers, trapping may actually increase the survival rate of juvenile Signal crayfish by the preferential removal of the adults which prey on them.

Above: Juvenile Signal Crayfish

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
10a	Joint Agency and English Nature research project to find a means of control or eradication of Signal Crayfish.	Agency/ EN	1999-01	10-50	Establish the feasibility of removing alien crayfish to the benefit of native crayfish and the broader ecology of the river.
10b	Monitor crayfish populations in the Kennet Valley:- i strategic surveys ii reactive surveys and routine monitoring.	Agency, EN	2000-02	<10	Understand the distribution of crayfish in the catchment so that the native species can be better protected and the impacts of Signals more accurately assessed.

3.5 MANAGING FRESHWATER FISHERIES

The fisheries of the Kennet catchment have seen major changes in the last decade, which have necessitated a shift in the approach to their management.

Foremost among these changes has been the opening of the Kennet and Avon Canal to full usage. The impact on the fisheries can be seen from Kintbury, where the canal first joins the river, to Reading. This has resulted in changes in water clarity, quality and flows, leading to subtle changes in fish distribution. In the canal itself, above the river confluence, increased boat usage has resulted in reduced water clarity and macrophyte growth which has led to changes in fish populations. The canal has experienced a change from a specimen Roach and Tench water to one dominated by small fish, mainly Bream and Roach.

A first phase of a Code of Best Practice has been agreed by the Agency, the Kennet Valley Fisheries Association and English Nature. The purpose of the code is to protect and enhance wild fish populations in the Kennet. The first phase deals with fish removal, particularly the potential over exploitation by removal of resident coarse fish and Grayling from trout fisheries. The second phase will address stocking issues (see below).

Habitat quality remains one of the primary constraints on the health and diversity of fish communities, particularly in the upper Kennet and tributaries. The impact of increased sediment loadings, as a result of changes in land use, together with eutrophication from diffuse and point sources, and modifications to channels have led to localised loss of clean gravel beds and associated plant communities. The Agency is particularly concerned about the impact on species such as Wild Brown Trout, Grayling and Barbel, populations of which may be abundant in parts of the UK, but limited internationally. The implementation of the UK BAP (see Issue 5) includes a responsibility to safeguard these species. The Agency's habitat restoration work (see Issue 9), often in partnership with others, is in part targeted at to the restoration of channel habitat using appropriate techniques to benefit the range of fish species throughout the LEAP area. This is also recognised in the Conservation Strategies for the two River SSSIs (see Issue 6)

Although many of the issues affecting fishery resources appear in Local Environment Agency Plans (LEAPs), there are many more *local* issues affecting *individual* river reaches and stillwaters. The Agency is developing the concept of Fisheries Action Plans (FAPs) - these documents are to be produced by teams comprising local fisheries interests and the Agency, and aim to identify and prioritise all issues restricting the full improvement and development of fisheries within a LEAP area. It is hoped that, by agreeing a comprehensive and fully costed action plan, it should be possible to attract substantial public and private funds to implement the required actions. The concept of Fisheries Action Plans was one of the recommendations of the Government's recent Salmon and Freshwater Fisheries Review.

ISSUE 11: ENHANCEMENT OF WILD FISH POPULATIONS AND SUSTAINABLE FISHERIES MANAGEMENT

Both the coarse and game fisheries of the Kennet Valley provide a valuable recreational and conservation resource. It is essential that fishery management provides for productive angling, while not compromising the overall ecology.

Coarse fish, particularly Pike, and Grayling have been periodically removed from many of the game fisheries in the catchment. Whilst there can be some justification for controlled removal in certain circumstances, it is important that removals are managed to ensure that coarse fish stocks are protected from over-exploitation. The Agency has developed a Code of Best Practice for Fish Removals in collaboration with the Kennet Valley Fisheries Association.

Although continued stocking of Brown and Rainbow Trout is perceived as vital to the maintenance of many game fisheries, this practice has little or no ecological value. Other game fisheries rely on natural stocks - while these can be perceived as less productive in angling terms, they are important in conservation terms. (Increasingly, Wild Brown Trout are being seen as more challenging and demand for this sort of fishing is increasing.)

Although the Kennet and Lambourn have natural brown trout populations, there are locations where recruitment

ISSUE 11: ENHANCEMENT OF WILD FISH POPULATIONS AND SUSTAINABLE FISHERIES MANAGEMENT (contd)

(juvenile survival) is compromised. Whilst the Agency will continue to address the limiting factors, it has deployed trout incubation boxes to supplement natural stocks.

Throughout the Kennet catchment, fishery owners and angling clubs employ a variety of habitat management practices to improve their fisheries. It is important that such activities adhere to best practice to improve fisheries and the overall ecological value of the river.

In the lower Kennet, as in many catchments in England and Wales, stillwater coarse fish stocks are perceived to be affected by predation from Cormorants, especially where natural cover is limited. While it is accepted that Cormorants can have a significant impact in certain locations, many of the methods of control are often ineffective. The Agency and CEFAS (a MAFF advisory agency) are examining methods or protecting coarse fish stocks from predation.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
11a	Continue to implement the agreed Code of Good Practice for fish removals and review context of SSSI Conservation Strategy.	Agency, EN, KVFA	2000-on	<10	Sustainable approach to fisheries management and protection of valuable coarse fish populations.
11b	Review need for Code of Best Practice for Fish Introductions, commensurate with SSSI Conservation Strategy.	Agency, KVFA, EN	2000-01	<10	Sustainable fisheries based where possible on natural fish populations.
11c	Review need for Brown Trout incubation boxes and deploy where stocks identified as limited.	Agency, landowners	ongoing	<10	To supplement fry production.
11d	Develop guidance on management practices and habitat improvements, commensurate with SSSI Conservation Strategy.	Agency, KVFA, EN	2000-01	<10	Better and affordable protection of fish stocks from Cormorant predation. Reduce reliance on fish stocking to compensate for predation losses.
11e	Produce guidelines on the construction and installation of cost-effective fish shelters (reefs, etc.) and trial on lower Kennet stillwaters.	Agency, CEFAS, angling clubs	2000-01	<10	Better and affordable protection of fish stocks from predation. Reduce reliance on stocking to compensate for predation losses.

N.B While these issues will progress as planned, they will become integrated into the Kennet and Pang Fisheries Action Plan

See also Issue 9 Habitat enhancement.

ISSUE 12: KENNET AND PANG FISHERIES ACTION PLAN

The Agency plans to produce one of the first Fisheries Action Plans (FAPs) for the Kennet and Pang. Not only will this consolidate the relevant actions within this LEAP and the Thames Benson to Hurley Pang and Wye LEAP, it will identify, cost and plan many others. It does not aim to replace the wider role of the LEAP, but should complement it.

It is important to note that the success of FAPs lies in the full and continuous involvement of interested parties. While the Agency will help organise and produce the Kennet and Pang Fisheries Action Plan and implement some of the actions itself, it will be reliant on local organisations and individuals to identify and actively pursue many others.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
12a	Identify local interests and arrange initial meeting. Establish FAP team.	Agency, KVFA, others	2000	<10	All fisheries interests are encouraged to participate in FAP production.
12b	Encourage all interests to identify relevant issues and potential actions.	FAP team	2000	<10	Identification of all issues affecting fisheries within the catchment.
12c	Agree actions, costs and priorities - seek funds to implement priority actions. Publish Fisheries Action Plan.	FAP team, other interests	2000-01	<10	Comprehensive and agreed action plan to address issues, against which achievement can be monitored.
12d	Implement 1st year of FAP actions.	FAP team, landowners, Agency, local interests	2001-02	N/K	Substantial investment in improving and developing fishery resources in Kennet Valley.
12e	Monitor achievement and annual review.	FAP team	2002/-	<10	Refined and updated FAP

ISSUE 13: EFFECT OF RIVER STRUCTURES ON FISH MIGRATION AND RIVER HABITATS

Parts of the Kennet and to a lesser extent the Lambourn are controlled by a series of sluices and structures, historically used for milling or to flood watermeadows. Most of these are no longer used for their original purposes. Control of the associated water level structures is now minimal and frequently the original sluices are replaced by overspill boards. This means that the river remains impounded upstream of the structures except at times of very high water. This leads to the siltation of gravels, reduction of macrophyte growth, changes in invertebrate communities and decline in water quality, often for several hundred metres upstream of the impoundment. Typical examples of this can be seen at Woodspeen Mill on the Lambourn and at Eddington Mill, Ramsbury Mill and Howe Mill on the Kennet. (See Issue 8)

These structures and others, such as gauging weirs, can seriously limit the ability of fish to move about the river at will, as well as limiting the opportunity of natural recolonisation should headwaters suffer population crashes. It is therefore an objective of the Agency to seek opportunities to reduce the damaging impacts of river structures on habitat and fish movements, where this is appropriate and does not threaten other important habitats dependent on the current hydrological regime.

ISSUE 13: EFFECT OF RIVER STRUCTURES ON FISH MIGRATION AND RIVER HABITATS (cont'd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
13a	Systematically identify and prioritise all barriers and impoundments on Kennet and tributaries.	Agency	2000-01	<10	Identify and cost options for removal, by-passing or mitigation of obstructions and impoundments.
13b	Pursue opportunities with landowners and river managers to remove or adapt obstructions.	Agency	1999-00	Staff time	Improved fish movement and maintenance of habitat.

ISSUE 14: KENNET MILLENNIUM SALMON PASS PROJECT (THAMES SALMON REHABILITATION SCHEME)

Until the early 1800s the River Thames was a prolific salmon river with commercial catches in excess of 3000 fish per year. Increasing pollution from human and industrial sources, together with regulation of the river for boat traffic caused the rapid decline of salmon. The last recorded capture was in 1833.

Improvements in water quality in the 1950s and 1960s resulted in a salmon being found at West Thurrock in London in 1974, prompting the establishment of the Thames Salmon Rehabilitation Scheme in 1979; the aim being to restore a self-sustaining run of salmon to the Thames.

Many of the Thames tributaries have been stocked with salmon parr, fry and smolts since 1979, but recent efforts have concentrated on the Kennet and the Lambourn due to the good water quality and availability of spawning and nursery habitat.

Barriers to salmon migration still exist. The lower Thames weirs have been bypassed, but there are 17 weirs on the lower Kennet, 11 of which have salmon passes installed. six remain to be passed. A mixture of funding made up from a grant from the Millennium Commission, funds donated to the Thames Salmon Trust and Agency funds, are being used to construct the 17 Kennet fish passes. These will allow salmon access to the middle reaches of the river and to the Lamboum.

The issues relating to restoring a salmon population to the Thames are covered in the River Thames Salmon Action Plan Consultation Document. This identifies those factors that are believed to delay the re-establishment of a population to the river and seeks solutions. Current issues include access to suitable spawning and nursery habitat by adults and water quality and quantity in the lower river.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
14a	Complete the 17 passes identified in the Kennet Millennium Salmon Pass Project. (11 passes have now been completed and are operational)	Agency, Thames Salmon Trust, Millennium Commission	All passes complete before end 2000	>100	Returning salmon now have access to the lower reaches of the River Lambourn and Enbourne and to the main river as far as Newbury.
14b	Complete and consult widely on the River Thames Salmon Action Plan.	Agency	Launch Consultation Draft by Autumn 2000	<10	Nationally consistent method of assessing salmon stocks. The identification of issues and actions. Review of the current position and future strategy.

3.6 DELIVERING INTEGRATED RIVER-BASIN MANAGEMENT

Integrated river-basin management is a way of looking at the river and its surrounding land as a whole. It not only looks at the quality and quantity of water in the river but also at its physical environment including landscape, recreational use, flood control works and the wildlife of the river and surrounding land.

The challenge for the Agency is to minimise activities that adversely affect surface and groundwaters and to maximise the benefits that can be derived from a well managed river-basin system. Principally through LEAPs we reconcile the various and often conflicting demands placed on natural waters when exercising our duties relating to water quality, flood prevention, fisheries, navigation, recreation, conservation, disposal of waste waters and water abstraction.

Many of the actions covered elsewhere in this LEAP are vital to the achievement of a more successful integration of river-basin management activities. Those covered under this theme relate primarily to actions necessary to safeguard water quality and to address the need to protect people and property from the adverse impacts of flooding.

ISSUE 15: POOR WATER QUALITY

There have been concerns about ecological changes observed in the upper River Kennet over recent years. The principal observation has been changes in the growth of macrophytes. This is a complex matter with several possible causes, including nutrient enrichment, low flows, and turbidity. Concerns have been expressed about changes in the diversity and abundance of plants and animals, the performance of fisheries and about the aesthetic appearance of the river. A recent report prepared by the Institute of Freshwater Ecology (now the Centre for Ecology and Hydrology) on behalf of the Agency has brought together existing data and observations on the perceived ecological deterioration in the upper Kennet.

Inputs from point sources such as sewage treatment works and from diffuse sources such as run-off from agricultural and other land are often responsible for elevated concentrations of plant nutrients, nitrate and phosphate, in rivers. These nutrients can, under the appropriate conditions, cause excessive algal growth that smothers plants, such as Ranunculus (Water crowfoot) and gravels and increases turbidity. Decreased rainfall with consequent low river flows seems to have exacerbated this problem over recent years. One particular group of algae, the diatoms, has been prominent in the upper and middle Kennet during the spring and early summer. During these blooms, diatoms have smothered plants and discoloured the river water.

A range of actions has been instigated in order to improve understanding of the impact of plant nutrients and to develop methods of managing those impacts. In the latter part of 1997 Thames Water installed a pilot phosphate removal plant at Marlborough STW. The impact of this plant has been monitored and results are promising, with a significant reduction in the concentration of phosphate downstream of the works. The National Environment Programme, endorsed by the Government in 1999, identified obligations for the installation of phosphorus reduction plant at other STW's in the Kennet catchment and for the pilot plant at Marlborough to be replaced with a permanent facility. Those schemes have been incorporated into Thames Water's asset management plan (AMP3) for the period 2000-2005.

Nutrient enrichment from diffuse sources must be addressed by encouraging farmers to create buffer zones along riverbanks to reduce the amount of agricultural run-off entering the river directly (See Issue 16).

Several research and development projects are in progress or planned in order to improve the scientific knowledge of nutrient dynamics in the Kennet catchment. These include a three-year study by the University of Reading to develop mathematical models of nitrate and phosphate behaviour. The Flux project is a joint initiative between the Agency, the Centre for Ecology and Hydrology (CEH) and Silsoe Soil Institute. It will investigate sources of nutrients entering the Kennet and Avon Canal and rivers Kennet and Dun in the Hungerford area. The findings of these projects will be used in determining what further actions are necessary to manage the nutrient status of watercourses in the Kennet catchment.

ISSUE 15: POOR WATER QUALITY (contd)

Turbidity remains a concern where the Kennet and Avon Canal overspills to the Dun and Kennet where in addition to the discolouration caused by diatoms, silt disturbed by the increasing number of boats using the canal is being washed into the rivers. A reedbed built by the Agency at Freeman's Marsh near Hungerford has helped to reduce this problem. British Waterways plan to install bypass weirs around locks on the canal to the west of Hungerford. This will address the turbidity issue on the Dun in the future.

Further work is required to assess the impact of the canal on the River Kennet. A programme of continuous water quality monitoring is being evaluated for key sites. Both turbidity and algology will be investigated.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
15a	Monitor the changes in water quality as a result of the installation of a phosphate reduction measures at Marlborough STW.	Agency, TW, Institute of Hydrology, ARK	1997-00	Staff time 2(TW)	Assess the effect of the installation.
15b	Install Phosphate reduction measures at the following STWs: Fyfield (Wilts) Chieveley Hungerford East Shefford Ramsbury Silchester	TW		N/K	Reduces levels of plant nutrients entering the river, preventing excessive algal growth.
15c	Investigate opportunities to create reedbeds. Installation of bypass weirs west of Hungerford.	Agency, BW, landowner	Ongoing	Staff time	Decrease turbidity in the river.
15d	Reduce the quantity of water that spills from the canal into the River Dun.	Agency, BW, landowners	Ongoing	N/K	As above.
15e	Nutrient identification and control project. Flux Project	Reading University Agency, CEH, Silsoe Soil Institute	 2000-01	50-100	
15f	Install water quality loggers at key sites in the Kennet.	EA, BW	2001-02	10-50	Identification of the sources and quantity of inputs

Above: View of Marlborough STW from old railway bridge, Elcot Lane.

ISSUE 16: REDUCING THE ADVERSE IMPACTS OF AGRICULTURAL LAND USE ON THE WATER ENVIRONMENT

Agricultural activities have the potential to adversely affect the water environment in a number of ways. Improved land drainage, often following past major river engineering schemes, can add to the 'flashiness' of rivers, exacerbating flooding problems as well as causing destabilisation of river banks. Historic engineering and land drainage has also resulted in the loss of a significant proportion of floodplain wetland. Cultivation of land up to river bank top or on valley sides can lead to enhanced soil loss and siltation of river gravels, as well as resulting in the leaching of agri-chemicals such as fertilisers and biocides into watercourses. Excessive livestock poaching of river banks can destroy marginal habitats and add to silt inputs. In total, these various pressures can lead to changes in the dynamics of river processes by increasing silt loadings, by the eutrophication (enrichment) of watercourses, and at worst by direct toxic impacts of freshwater life from inputs of biocides.

Many of these potential threats can be minimised through the adoption of good farming practices, such as those promoted through the MAFF Codes of Good Agricultural Practice (COGAP) for the protection of Soil, Air and Water. There are legislative measures, such as the new Groundwater Regulations for the disposal of agricultural biocides, the requirement for buffer zones to be established alongside watercourses during farm spraying operations and the production of Local Environmental Risk Assessments for Pesticides (LERAPs). In addition, the Countryside Stewardship Scheme offers the potential to extensify agricultural activities in the floodplain and alongside watercourses, and therefore reduce the impact of intensive agricultural operations on the water environment.

The Agency will continue to advise on pollution prevention measures and sustainable farming practices, and will work with a range of other organisations to maximise the benefits of agri-environment schemes and to provide support to farmers who are keen to ensure their farming enterprises have minimal impact on the water environment on which we all depend.

ISSUE 16: REDUCING THE ADVERSE IMPACTS OF AGRICULTURAL LAND USE ON THE WATER ENVIRONMENT (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
16a	Provide advice to farmers and landowners on sustainable land management practices and promote the MAFF Codes of Good Agricultural Practice.	Agency, FWAG, MAFF/ FRCA, NFU	Ongoing	<10	To secure good husbandry techniques and minimise agricultural inputs and soil loss to watercourses.
16b	Continue to advise on farm pollution prevention measures and safe storage of agri-chemicals and slurries.	Agency, FWAG, MAFF/ FRCA	Ongoing	<10	Reduction of impacts of farm chemicals and waste on the water environment.
16c	Advise on and promote the establishment of buffer zones and agricultural extensification on floodplains and river corridors, especially through agri-environment schemes.	MAFF/ FRCA, FWAG, Agency and other NGOs	Ongoing	10-50	Buffering of watercourses from intensive agricultural activities and the establishment of more wildlife-rich farmland in floodplains and river corridors.
16d	Initiate a project to target Farm Conservation advice in the Upper Kennet.	Agency, FWAG, TW, ARK, EN, Wildlife Trusts, landowners	2000-03	50-100	To secure sustainable agricultural practices and minimise agricultural impacts on the ecology of the River Kennet.

ISSUE 17: HUNGERFORD FISH MORTALITY

In March 1998 over 150 tonnes of fish were killed at Berkshire Trout Farm, Hungerford and many thousands more died in the nearby Kennet and Avon Canal and River Dun. After an extensive investigation by the Agency, the weight of evidence supported a biological cause, the most likely agent being a toxin produced by a microbial source. The production of the toxin appears to be linked to a number of factors such as the dredging of the canal in the previous months, the die back of a major algal bloom in the canal and the unusual weather conditions which occurred during and prior to the event.

The Agency has published a "Technical Investigation of the Hungerford Fish Mortality" which makes a number of recommendations for operational management, requiring close collaboration between the Agency and British Waterways. Some of these are detailed below. These actions will reduce the risk of a reoccurrence of the incident while more longer- term research is proposed to help our understanding of this unusual and complex incident.

Right: Fish removed from Berkshire Trout Farm in March 1998

ISSUE 17: HUNGERFORD FISH MORTALITY (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
17a	Reduce the transfer of water from the canal into the River Dun and associated watercourses. A diversion channel was constructed in Spring 2000. This now directs the flow of the Shalbourne under the K& A canal and directly into the Dun. This is a temporary arrangement put in place to minimise the transfer of water from the canal into the Dun via overspill weirs. The Agency will apply for an abstraction licence to secure a long term solution that meets navigational and ecological requirements. See Issue 4	Agency/BW	1999-01 2001	<10	Improved water quality and flow in the River Dun and protection of Freemansmarsh SSSI.
17b	Maintain an appropriate flow in the canal during the late winter-early spring.	BW/ Agency	2000-05	N/K	Reduces the opportunity for algal or bacterial blooms to develop.
17c	Take all reasonable measures to control nutrient and microbial inputs to the canal. See Issue 15	BW/ Agency	2000-05	N/K	Reduces algal blooms.
17d	Identify and implement an environmental monitoring programme.	Agency/ BW	1999-01	10-50 plus staff time	Will highlight the development of any unusual environmental conditions before they have the potential to develop into a reoccurrence of the incident.
17e	Develop a procedure for the rapid deployment of hydrogen peroxide for use in fish kills or when fish are at risk due to toxic events.	Agency	1999-00	10-50	Prevents fish kills.

ISSUE 18: REGULAR FLOODING AT NEWBURY STREET, LAMBOURN

Flooding occurs regularly 10 metres upstream of the main river limit at Newbury Street road bridge adjacent to the Lamb public house. Flooding is caused by a restrictive culvert underneath Newbury Street which traps debris and thus impedes the flow of the River Lambourn.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
18a	Identify funding for the installation of a trash screen on "ordinary watercourse".	Agency	2000-01	<10	5 plus properties & 1 road achieve flood alleviation.
18b	Liase with the local authority for the *enmainment of the River Lambourn through Lambourn village.	Agency/LA	2004-05	<10	Twenty plus properties and several roads have flood alleviation.

*Watercourses are designated as either "main river" or "ordinary" Main rivers are watercourses where the Agency exercises its permissive powers to carry out maintenance works and advise on planning issues. Local Authority's have similar powers on ordinary watercourses and these powers are exercised where resources are available.

It should be noted that the ultimate responsibility for the maintenance and upkeep of the watercourses rests with the riparian owner.

ISSUE 19: FLOODING CAUSED BY RISE IN BED LEVELS IN CHALK STREAMS

Residents of villages along the River Lambourn have voiced concern over the gradual rise in bed levels, giving rise to more frequent flooding.

The River Lambourn is a SSSI and any proposals to alter the form of the channel needs thorough investigation to substantiate the claims and identify appropriate solutions.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
19a	Investigate claims using core samples/age profiling techniques. *Undertake level surveys through urban areas and identify possible options for alleviation of high flows.*	Agency	2000-01	10-50	50 plus properties protected from flooding.

ISSUE 20: NEED TO ESTABLISH A COMPREHENSIVE INVENTORY OF EXISTING WATER RECREATION PROVISION AND ACCESS WITHIN THE KENNET VALLEY

The Kennet Valley has a regionally significant role in providing opportunities for water recreation, via the Kennet and Avon Canal and its 500 hectares of wet gravel pits. With the expansion of employment and housing provision, particularly in the Reading and Newbury areas, an increase in demand for greater recreational access is likely to occur. In pursuance of it statutory duty to promote the recreational use of all inland waters, the Agency's aim is to increase the quantity, quality and diversity of appropriate access opportunities for the public enjoyment of the river corridor.

No comprehensive record of existing water- related recreational provision or access currently exists for the valley/river corridor. Before embarking on any plan on how to meet the Agency's recreational aim, or how latent demand could be established, an assessment is needed on what recreational resources are currently available and of what type (e.g. sailing; water skiing).

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
20a	Undertake a comprehensive survey to quantify the extent of the existing water recreational resource and current level of exploitation/use.	Agency/L.A./Sport England/ Countryside Agency	2001-02	<10	Provides the sound basis for future decision making.
20b	Prepare an assessment of what recreational resources are needed.	Agency/L.A./Sport England/ Countryside Agency	2002-03	<10	As above
20c	Establish and maintain a recreation database, to store survey info.	Agency	2000-01	<10	As above

3.7 CONSERVING THE LAND

Land is a limited resource requiring protection to maintain its beneficial use and remediation to reverse the legacy of the past. Conserving the land is a major contribution to sustainable development, protecting lives, reducing health risks and maintaining economic activity. The Agency has a major operational, regulatory and advisory role through its flood defence and environmental protection activities.

We will do our best to prevent housing and industrial development in the wrong places by influencing decisions made by local authorities under the Town and Country Planning systems. This will include discouraging development in flood plains (in accordance with our Policy for the Protection of Floodplains) and ensuring the availability of water resources and waste and sewerage infrastructure are considered when new developments are planned. We will also encourage development on "brown field" sites in preference to the use of "green field" land, subject to the right safeguards being taken e.g. in the case of the "brownfield" site being contaminated land. For example the Agency has recently assisted the Joint Strategic Planning Unit for Berkshire in its selection of appropriate sites for housing development. Potential sites were assessed for their suitability and preference given to those which exhibited the least environmental constraints.

With local authorities, we will identify and report on the extent of contaminated land and will regulate identified special sites.

Floodplains and river corridors are vital components of river landscapes and river ecology, and many issues covered elsewhere in the LEAP reflect on their value. Inappropriate agricultural activities in floodplains and river valleys can lead to degradation of the land, loss of soil and resultant impacts on the freshwater environment. The Agency works with others to promote the establishment of non-intensive riparian buffer zones through such mechanisms as the Countryside Stewardship scheme (see Issue 9). The Agency also promotes the MAFF Code of Good Agricultural Practice for the Protection of Water. We have also recently undertaken a Geomorphogical Assessment of the Kennet catchment, using the Geodata Institute of Southampton University, which further informs as to where land degradation may be impacting on the freshwater environment.

ISSUE 21: MINIMISING THE ADVERSE ENVIRONMENTAL IMPACT OF PLANNED DEVELOPMENT

Thames Region has recently published a document entitled "Thames Environment 21" (available upon request), which sets out six sustainability principles that the Agency will use in its work of influencing the land use planning process. This document outlines the environmental pressures of development and provides guiding messages for dealing with them, techniques for implementing the strategy and planning strategy tables which support each of the six sustainability principles and provides guidance on how to implement the strategy in a variety of situations.

A significant proportion of this predominantly rural LEAP area is designated as either Area of Outstanding Natural Beauty or Areas of High Landscape Value. The main areas of development are therefore concentrated around the existing urban areas at Newbury, Thatcham and the southern part of Reading. Recent developments which have involved input from the Agency have included the following proposals:

Greenham Common, Newbury - the former air base was declared surplus to defence requirements in 1993 and comprises some 900 acres. The planning brief relating to the site proposes that most of the land should be restored to heathland grazing with the former technical area of the base being used for employment generating purposes. The Agency's main involvement has been over contaminated land issues, changes to the drainage regime of the site and the removal of materials from the runways.

Thatcham MOD site - this is another site which will be vacated by the MOD and a housing scheme is being promoted. The Agency has made inputs to the planning brief on the issues of surface water drainage and ecology.

Reading Southern Gateway - To the south of Reading, adjacent to the new A33, there are a number of developments,

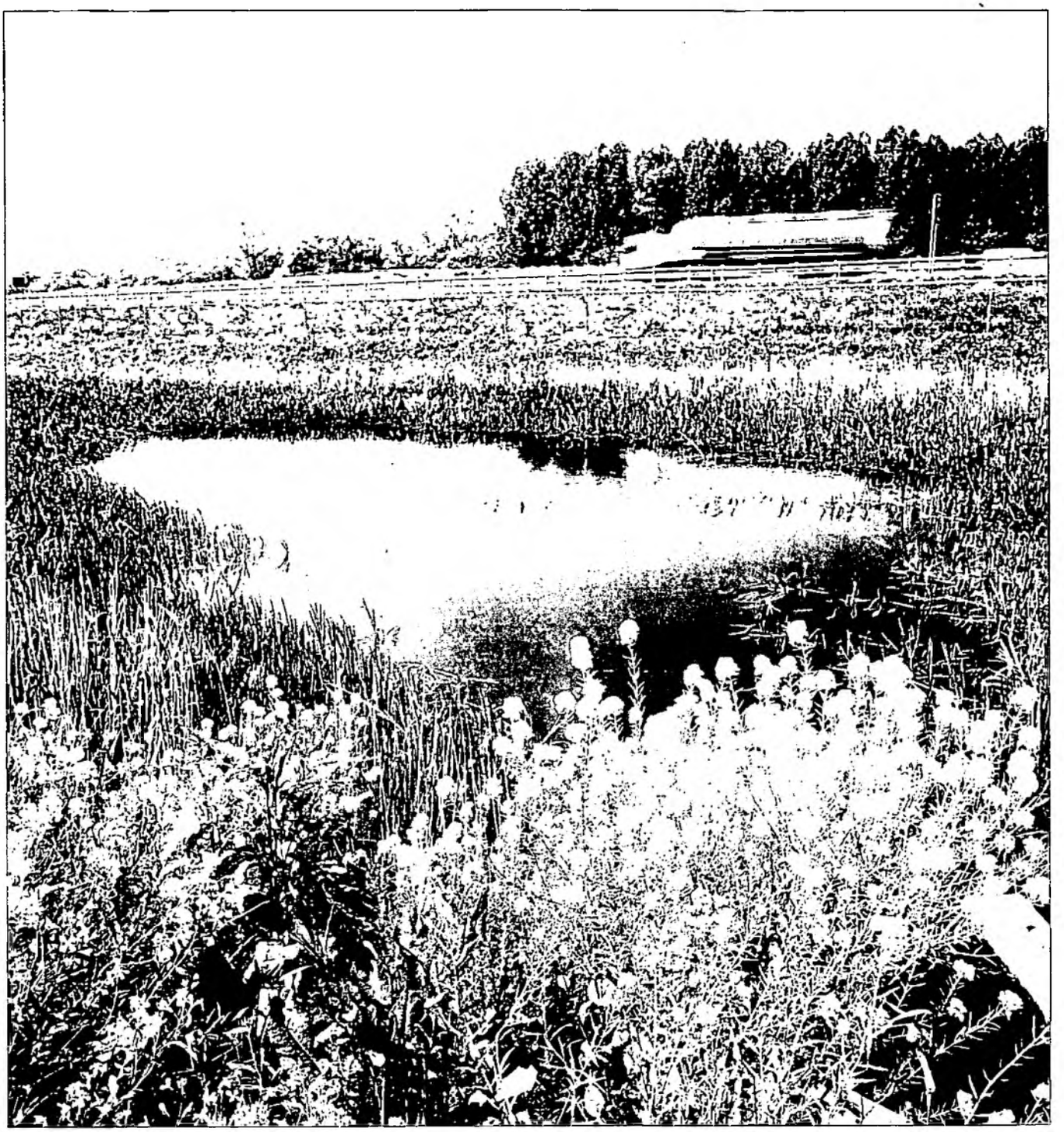
ISSUE 21: MINIMISING THE ADVERSE ENVIRONMENTAL IMPACT OF PLANNED DEVELOPMENT (contd)

jointly known as the Reading Southern Gateway, including Green Park (Business Park), the Madjeski Football stadium, a hotel and a proposed new Sewage Treatment Works. The Agency has had much involvement in this area as part of the land has been contaminated by a former waste site. In addition some of the area falls within the floodplain, with the Green Park development requiring a flood relief channel. Other recent developments include Sandleford Park and the Oracle which are described in the Environmental Overview.

The whole of Berkshire will be under continuing pressure for housing development in the future. The Regional Planning Guidance for the South East is currently under review and is projecting as many as 860,000 dwellings in the south east region between 1996 - 2016, of which Berkshire will be allocated a significant proportion. The Agency will continue to work closely with the local authorities to try to ensure that future development is allocated to the most sustainable locations.

As well as built development the Kennet Valley has been used extensively for mineral development, with about one-fifth of Berkshire's valley gravel resources between Reading and Newbury and a further 10% west of Newbury. The reserves between Newbury and Thatcham have been largely worked out. Other existing and proposed workings between Newbury and Reading have been concentrated near Woolhampton, Beenham/Aldermaston Wharf, Theale and Chamberhouse Farm to the south of Thatcham. This latter site has been of particular concern to the Agency because of its proximity to the Thatcham Reedbeds SSSI and its position in the floodplain.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
21a	Continue to promote Agency Planning Guidance to Local Authorities and to provide detailed representations on development proposals in the Kennet Valley, with particular emphasis on discouraging development in the floodplain.	Agency/ LAs	Ongoing	Staff time	The views of the Agency concerning sustainable development techniques and the minimisation of any impact on the environment will be considered at an early stage in any proposed developments.
21b	Actively encourage developers to use source control techniques as an alternative to traditional surface water drainage systems.	Agency	2000-05	Staff time	Minimises the impact of surface water runoff.
21c	Monitor and compare the performance of pond FG (sub surface flow reedbed) against that of the more traditionally constructed , pond B, which were constructed to store and treat highway runoff from A34 Newbury Bypass.	Agency	Ongoing	>100	This project will result in the production of a design guide for reedbed construction to optimise pollutant removal from urban runoff.
21d	Implement the aims of the Agency's "Thames Environment 21 Strategy". Follow the six sustainability principles, using the implementation techniques and following the guiding messages outlined in the strategy in all land use planning and development decisions.	Agency	Ongoing	Staff time	Minimisation of the adverse environmental impacts of planned developments and the protection and enhancement of the environment.



Above: Balancing ponds at Newbury Bypass

ISSUE 22: CONTAMINATED LAND

Historically, industrial processes, waste disposal and other potentially polluting activities have been subject to fewer controls than today. As a consequence contamination of soils, groundwater and surface water may have arisen from a variety of sources, including inappropriate storage or disposal of oils and chemicals, accidental spillage, and insecure landfill sites.

In many cases land contaminated by virtue of historic usage is in a derelict state. Where re-development of such sites is planned, then the resultant disturbance can give rise to further pollution. The Agency will normally seek appropriate controls to protect the water environment by liaising with Local Planning Authorities under the Town and Country Planning Act 1990. Where contaminated sites are still in current use, then the Agency has powers to take appropriate action under the Water Resources Act 1991.

It is essential that the nature and extent of the contamination at such a site is fully characterised prior to any ground disturbance. The Agency will therefore seek early consultation with developers and the Local Planning Authority to ensure that any proposed site investigation is fully adequate.

Under the Environmental Protection Act 1995 a new regime for the identification, investigation and remediation of contaminated land is introduced into the Environment Protection Act 1990. This is to be implemented by the Local Planning Authorities and the Agency and is subject to statutory guidance. This came into effect on April 2000.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
22a	Encourage consultation with developers (prior to site investigation) on proposed development sites that may be potentially contaminated.	Agency/ LA's/ Developer	2000-05	<10	The Agency's concerns will be addressed at an early stage and remediation work carried out if necessary.
22b	Ensure that Planning Permissions contain conditions designed to protect water quality and resources.	Agency/ LA's	2000-05	<10	Protection of water quality and resources.
22c	Prior to the redevelopment of a contaminated site, ensure that appropriate standards of remediation and water quality monitoring are agreed on the basis of a risk assessment.	Agency/ LA's	2000-05	<10	As above.

3.8 MANAGING WASTE

Waste impacts upon our lives in many different ways, from litter on our streets to bad smells and gases from poorly managed landfill sites. The Agency's regulatory responsibilities include measuring the effectiveness of taxation to reduce waste and encouraging its re-use and recycling.

Other responsibilities include the apprehension of fly-tippers and implementing the new Producer Responsibility Regulations. These Regulations require industry, particularly manufacturing, to recover or recycle packaging waste.

We are also working in other ways to encourage industry and consumers to recycle their waste. We are urging consumers to consider waste when selecting products, and industry to reduce the amount of waste it produces.

ISSUE 23: MINIMISING WASTE

The Agency and its predecessor bodies have sponsored a number of successful projects on waste minimisation. These projects have demonstrated how waste minimisation techniques can reduce operational costs, save on raw materials, water and energy, and reduce waste outputs.

Householders should also be made aware of the individual and collective contribution they can make to reduce waste. Widespread public support for recycling needs to be matched by information on the choices people have in purchasing and disposing of goods.

The EC Directive on Packaging and Packaging Waste requires that no later than 2001 the UK recovers or recycles at least 50% of its packaging waste. The aim is to ensure that the real cost of producing, using and disposing of packaging falls directly on those who produce or use it. The UK government has also set the target to compost or recycle 25% of household waste by the year 2000.

The Landfill Directive must be implemented in UK law by 16 July 2001. It will have a major impact on the waste industry and on waste regulation in the UK. It enforces certain actions to be completed within set time limits.

- A ban on liquid wastes to landfill.
- The progressive reduction of the amount of biodegradable municipal waste (MSW) permitted in landfill.
- Existing landfill sites to be classed as hazardous, non-hazardous or inert.
- Tyres to be banned from landfill.
- Waste to be treated prior to disposal.

WISARD is a Life Cycle Assessment tool for waste management that has been developed for the Agency by the Ecobilan Group. It stands for "Waste Integrated Systems Assessment for Recovery and Disposal". It is available for LAs to buy and enables them to model their waste strategy and analyse the overall impact on the environment, offering assistance in the development of appropriate and practical strategies.

In order to plan the provision of waste disposal and recovery facilities in the future, the Government asked the Agency to find out how much waste is produced by industry and commerce throughout the country and what happens to it. The investigation was called the National Waste Production Survey and was completed on the 31st March 1999. The results of the survey will be published in 2000 along with the regional strategic waste management assessments which show waste throughput in the region.

ISSUE 23: MINIMISING WASTE (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
23a	Develop liaison with LAs to increase opportunities for waste minimisation schemes and reduce duplication of projects.	Agency, LAs	2005-05	<10	Minimising waste production.
23b	Continue to liase with LA's and comment on their Waste Strategies and Waste Local Plans.	Agency, LAs	2000-05	<10	As above.
23c	Encourage LAs to seek alternatives to landfill through the promotion of the EA LCA tool WISARD.	Agency, LAs	2000-05	>100	Sustainable waste management.

ISSUE 24: INCREASE IN THE LEVEL OF FLYTIPPING, PARTICULARLY IN THE NEWBURY AREA

Illegal tipping, or "flytipping" is a widespread problem that affects the rural as well as the urban environment. It makes the environment unattractive and in some cases can cause land and water pollution and hazards to people.

There is evidence that flytipping is an increasing problem in the LEAP Area. Often the problem is made worse by the general public being unaware that their wastes can be disposed of for no charge, either by the collection authorities or through civic amenity sites. This problem may be exacerbated in some areas (eg. Reading Borough) by a shortage of Civic Amenity sites.

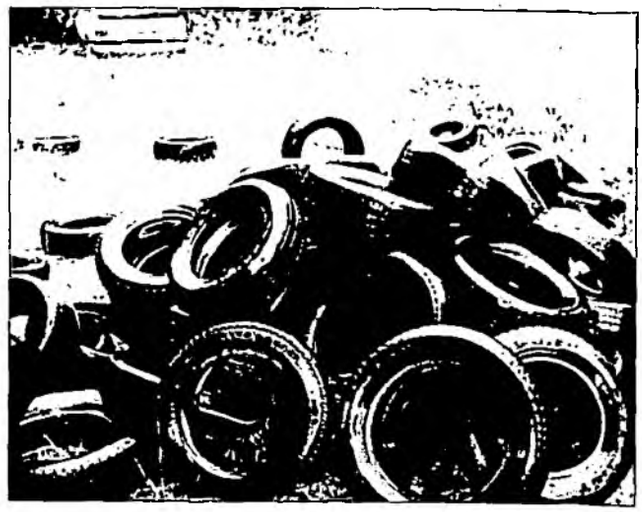
The materials that are flytipped most are household and builders' wastes. However, there are occasions when industrial and commercial wastes such as tyres, drums and 'Special Waste' (for example, asbestos) are tipped. The problem may be exacerbated by the shortage of Civic Amenity sites throughout the LEAP area and in particular by the closure of the Plaices Hill site at the end of March 1999.

The Agency has teams of enforcement staff who carry out investigations, and where necessary surveillance, to identify and prosecute offenders. However, it is often difficult to identify and find culprits and in many cases the tipping is cleared at considerable expense by the Local Authority or landowners, for example tyres in the Burghfield area.

An Area wide, waste tyre survey was carried out at the end of 1999 to establish disposal routes of waste tyres.

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
24a	Encourage LAs to provide more civic amenity sites and recycling facilities through the Waste Strategy consultation process.	Agency, LAs	2005-05	<10	Reduce flytipping.
24b	Liaise closely with LAs over the flytipping protocol to address local problems.	Agency, LAs	2000-05	<10	Problems can be dealt with quickly and efficiently.
24c	Review the results of the waste tyre survey.	Agency	2000-02	<10	To ensure waste tyres are being disposed of correctly.

Waste being compacted at Grundons landfill, Beenham



Flytipping of tyres in the Kennet Valley

ISSUE 25: THE DISPOSAL/RECOVERY OF STABLES WASTE IN THE LAMBOURN AREA

In the Lambourn area, a significant quantity of stables waste is generated as a result of the high density of racehorse training establishments. A key function of the Agency is to regulate the carriage, storage, treatment and disposal of such wastes.

Anecdotal evidence tends to suggest that the most common method of disposing of the stables waste was uncontrolled, open burning. However, the legal burning of spent horse bedding was difficult to achieve for a number of reasons. These included capital expenditure on incineration plant, relevant authorisation and licence fees and the possibility of having to acquire relevant planning consent.

Another method of disposal is the application of waste to land. This represents an economical and, when properly controlled, an environmentally safe way of recovering value from a variety of organic wastes. However, this option gives rise to the stockpiling of spent horse bedding during periods of the year when application is not possible. In spreading and stockpiling such waste, due consideration has to be given to preventing pollution of surface waters by surface water runoff.

Waste from Lambourn stables has in the past been taken elsewhere for composting, the product being used for mushroom cultivation.

The management of Sheepdrove Farm, in association with Lambourn Parish Council and the Lambourn Trainers Association and in consultation with the Organic Resource Agency Ltd (a subsidiary of Elm Farm Research Centre, Hampstead Marshall), has now developed an "on farm" composting system for stables waste.

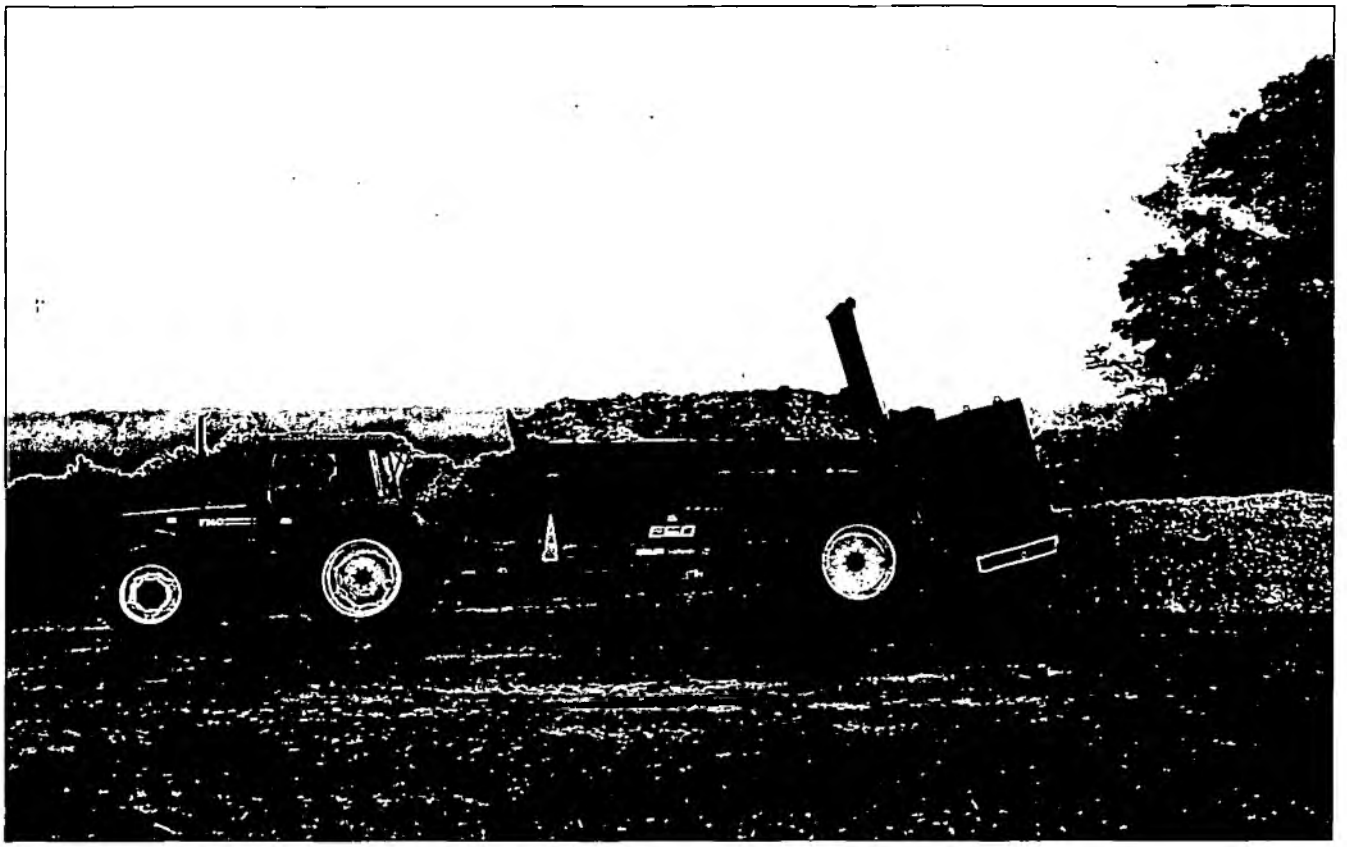
The Agency has been closely involved with the project since its inception and three sites on the farm have now been registered as exempt from the requirement for a waste management licence.

The Agency can fully support exempt waste treatment operations when they are conducted in a manner that does not cause pollution to the environment or harm to human health. Furthermore, this particular activity is a particularly good example of sustainable waste management, with arisings being processed in the locality, taking account of the proximity principle and the use of the resulting compost in organic agriculture.

"On Farm" composting can therefore provide a sustainable waste management solution to the problem of disposing of spent stable bedding.

ISSUE 25: THE DISPOSAL/RECOVERY OF STABLES WASTE IN THE LAMBOURN AREA (contd)

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
25a	Continue to encourage schemes which enable stable wastes to be composted at farms in the area and the product to be spread on the land.	Agency, Organic Resource Agency Ltd, local farmers and trainers.	Ongoing	Staff time	Sustainable waste management solution to the problem of disposing of spent stable bedding.



Left: Composting of stoble waste at Sheepdrove Farm

3.9 REGULATING MAJOR INDUSTRIES EFFECTIVELY

One of the Agency's key responsibilities is to prevent the release of pollutants into the air, water or land. Where releases do occur, we try to make sure they are minimised and made harmless.

Some industries discharge radioactivity to the environment. Radioactive substances emit ionising radiation which is radiation that changes the physical state of any stable atoms which it strikes causing them to become electrically charged or "ionised". Substances which are unstable and can change into another form emitting energy as ionising particles or rays are termed "radioactive".

Radioactive substances are already present in the environment at low level as a result of naturally occurring radioactive decay and also from man's technological development of nuclear technology. Whilst most of the radiation exposure of the UK population is from entirely natural sources the use of man-made radioactivity does contribute to low levels of artificial radioactivity in the natural environment. It is important to the future of our environment that this additional use of radioactivity is both limited and controlled.

The Agency is responsible for regulating the keeping and use of radioactive materials and the accumulation and disposal of radioactive wastes in England and Wales. The Agency's objective is to regulate the use of radioactive substances so that radiation doses within the environment are 'As Low As Reasonably Achievable' (ALARA).

Nuclear sites are major sites which handle very large quantities of radioactive material. They include nuclear power stations, nuclear fuel fabrication and reprocessing plants, research establishments and isotope production centres. These sites are licensed by the Health and Safety Executive under the Nuclear Installations Act 1965. They are also regulated by the Agency who set strict limits for control of radioactive discharges to the environment. The Agency requires operators to employ the best practicable means (BPM) to minimise the radioactive content of discharges and to carry out appropriate monitoring of their discharges and the environment in the vicinity of their sites to demonstrate the effectiveness of these controls.

The Atomic Weapons Establishment (AWE) at Aldermaston and Burghfield are nuclear sites which undertake the design, manufacture and servicing of nuclear weapons and carry out decommissioning of redundant weapons systems and associated nuclear process plants. The manufacturing and decommissioning operations produce solid, liquid and gaseous radioactive waste which principally contain tritium, uranium and plutonium. Small quantities of cobalt and caesium radioactive waste are also produced from maintenance of AWE Aldermaston's nuclear research reactor which is not operational and has been shut down awaiting decommissioning.

The work of AWE has been subject to national security restrictions for many years. However, the Secretary of State for the Environment has recently made changes to National Security arrangements that enabled greater public openness. The first change, in 1995, allowed radioactive discharges reported by AWE to be placed on the Environment Agency's Public Registers. Further changes were made in 1997 allowing the Environment Agency to consult the public for the first time on proposals to revise the existing authorisations controlling discharges of radioactivity from AWE. Subsequently in February 1998 AWE applied to the Agency for revised authorisations under the Radioactive Substances Act 1993 to dispose of radioactive waste from AWE Aldermaston and Burghfield.

The Agency has introduced a policy of extended consultation on issues of particular environmental interest by holding local public meetings to explain the Agency's decision making process and seek views. The AWE application was selected for this procedure and the Agency held public meetings at Newbury, Reading and Tadley in July and September 1998, and further public meetings in October 1999.

The Agency has conducted an assessment of the applications and considered the proposed discharge limits and the employment of best practicable means (BPM) to minimise discharges. The Agency published a Consultation Document

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that formed the basis of a three month public consultation, which included two public meetings. Over 4000 written responses were received, and these were used when deciding what discharges of radioactivity to the environment should be permitted from AWE. The details of our final decision have recently been published and include a reduction of discharge limits for liquid discharges of plutonium and uranium radioactivity into the River Thames by 60%, and a requirement to cease discharges of radioactivity to the Thames via the Pangbourne Pipeline within five years. A copy of the Decision Document is available from the Environment Agency's PIR/RSR Team in Wallingford.

In order to achieve the closure of the Pangboume pipeline the management of AWE Aldermaston will have to employ a system which is the Best Practical Environmental Option (BPEO). There is a strong presumption that this will be based on evaporator technology. This will result in a small increase in the gaseous discharges from the Aldermaston site. Again it is important to emphasis that the Agency considered human health, the safety of the food chain and the environment when making its decisions.

The Agency also carries out its own independent monitoring of the radioactive releases from AWE to the environment. These results are published each year in an Annual Report called "Radioactivity in the Environment - A Summary and Radiological Assessment of the Environment Agency's Monitoring Programmes".

Ref	Proposed Action	Lead/Key Partners	Timetable	Cost (£k)	Benefits
26a	Ensure that the conditions of the new authorisations are fully implemented, including the submission and execution of action and improvement plans.	Agency DETR HSE, MAFF LAs	2000-05	Staff time	Improved regulatory control, ensuring that the environment is a priority for the operators of AWE Aldermaston & Burghfield.
26b	Conduct a thorough environment and health & safety audit of the activities at AWE Aldermaston.	Agency DETR HSE, MAFF LAs	Autumn 2000	Staff time	To ensure that the authorisations are being implemented correctly and to identify any further areas for improvement.

4.0 A BETTER ENVIRONMENT THROUGH PARTNERSHIP

4.1 INTRODUCTION

The Agency is in an ideal position to influence many of the activities that affect the environment through the Environmental Protection Act 1995 and other legislation. For example, the Agency is the lead regulator for the water environment and also has regulatory powers over waste management activities. In addition, the Agency shares the regulation of emissions to air with local authorities. There are other activities that the Agency does not have any responsibility over such as the control of vehicle emissions, litter management, or discharge to air from less harmful industrial processes; these are activities most often associated with local authorities.

As a single body the Agency can not work alone to protect and enhance the environment or solve the problems associated with striving to achieve sustainable development, and has therefore established a close responsive relationship with the local community. The Agency liases with a wide variety of organisations which include the public, local authorities and bodies with an interest in the environment. In many cases partnerships are already established especially with other statutory bodies where there is joint responsibility for managing the environment. The Agency needs the support of local voluntary and special interest groups and the general public to tackle pollution and enhance the environment in ways we may not have thought of. An integral part of developing opportunities is for the Agency to work in partnership with others.

Across the LEAP area, all local authorities are assisting their communities in developing local strategies and action plans for sustainable development. The Agency will seek to work with them to protect and improve the local environment. We want our LEAPs to contribute to Local Agenda 21 (LA21) Action Plans and Local BAPs, as well as providing a focal point for working closely with others to address the local issues it has identified. We welcome and encourage suggestions for practical partnership projects.

4.2.1 Partnerships and Planning

Land use is one of the single most important influences on the environment and land use changes can have both positive and negative effects on the environment. Land use planning is the responsibility of the county, district and unitary planning authorities and control of land use change is through the Town and Country Planning Acts and Government Planning Guidance. The Agency is committed to developing close working relationships with the local planning authorities (LPAs) to ensure effective links between planning and environmental protection.

The Agency is a statutory consultee for certain categories of planning application, and councils have discretionary powers regarding the referral of other matters. This allows the Agency's views to be considered by the councils prior to planning applications being determined. The Agency is also a statutory consultee for county council structure plans, district council local plans and unitary authority development plans. This allows the Agency's views to be considered by the councils when formulating development plan policies and allocating land for development.

The Agency is taking a proactive role in the land use planning system in order to guide developers and local planning authorities on matters concerning air quality, waste management and the water environment. The aim is to ensure that future development is sustainable and implemented within the overall aim of protecting and enhancing the environment. The Agency is working with local authorities to ensure that Agency policies are adopted into development plans, which are used to guide future development.

The Environment Agency is consulted regularly on planning matters that fall within its remit, both in the preparation of statutory plans and waste disposal plans and in connection with individual applications for planning permission.

Guidance on development and risk of flooding is provided by the DETR in Planning Policy Guidance Note 25 (PPG25);this replaces Circular 30/92. This guidance explains how local planning authorities should consider flood risk at all stages of the planning and development process in order to minimise future damage to property and possible loss of life. The lead role of the Agency in providing strategic advice on flooding issues is emphasised. Ultimate planning control and the final decision of any planning matter lies with the local authority.

4.2.2 Development Control and Development Planning

Development control activities should be guided to those locations where they would not have a negative impact. Redevelopment can do much to repair the damage of the past and we seek to influence remediation schemes to protect the wider environment through the planning process. Controls on new development can protect sensitive habitats and biodiversity and prevent increased risk of flooding and pollution to air, land and water.

The control of land use change is primarily the responsibility of the LPAs. Their development plans provide a framework and are key considerations in the determination of planning applications. LEAPs are non-statutory documents and one option for increasing the effectiveness of the issues and actions contained in them is to encourage the incorporation of these issues into statutory plans such as development plans.

4.2.3 Planning Gain

During the process of determination on a planning proposal there can often be opportunities to be gained for community or environmental benefit. The general term used for these benefits is "planning gain". In some cases benefits can be achieved through negotiation between the developer and the LPA or by working on a partnership scheme together. A more formal way to achieve a particular benefit is to enter into a Section 106 Planning Obligation (Town & Country Planning Act 1990, section 106 as substituted by Planning Compensation Act 1991, section 12).

The Agency has had considerable success in achieving environmental enhancements through the land use planning system. In general these enhancements have been achieved because the Agency has taken a proactive approach towards its involvement in the planning system and we see this as an integral part of our work to protect and enhance the environment. It is essential that environmental enhancement opportunities be identified as early as possible in the planning process and for partnerships to be established with external bodies including local authorities, industry and environment groups.

The Agency has had less experience of entering into Section 106 agreements but these can offer significant opportunities for the Agency to effect environmental enhancement through a proactive and creative approach.

4.2.4 Development and Water Supply

The Agency works closely with water companies in managing water resources in the LEAP area to achieve the proper balance between the needs of the environment and the abstractors. The abstraction licensing system regulates water companies and other abstractors to protect the water environment. It is important that development does not proceed ahead of the necessary resources and infrastructure and that the full costs (including societal and environmental) are considered. The Agency will seek to gain agreement on sustainable water supplies before development takes place. The Agency is also placing greater emphasis on demand management where this will reduce pressures on the environment or prevent the need for new resource developments.

4.2.5 Local Agenda 21

LA21 is the global action plan endorsed at the United Nations Conference on Development and the Environment at the Rio Summit in 1992. It is intended to be "A comprehensive programme of action needed throughout the world to achieve a sustainable pattern of development for the next century". It brings together economic, social and environmental concerns into a "blueprint" designed to achieve a more sustainable way of life for everyone within all levels of the community. The document that launched LA21 emphasised the need to encourage local action to implement the aims of global environmental policy. In other words "think globally, act locally".

The local authorities are seen to be the focus for promoting and encouraging local community action and the Environment Agency supports this approach by providing information, expertise and support where possible. Since the Earth Summit, local authorities have been charged with producing LA21 plans for their areas, which aim to encourage wider access to information, greater community participation in decision making and the adoption of sustainable development principles.

4.2.6 Schools Education

The Agency sees education as having a crucial short, medium and long-term role in improving the environment. Damage is often caused not through a malicious intent to harm the environment but usually through a lack of awareness. The Agency tries to tackle education at all levels and has published its education strategy "Green Shoots" which considers environmental education into the next century.

Our goals are to:-

- Build positive partnerships through consultation, joint ventures and sponsorship.
- Help educate young people through teaching aids and other initiatives.
- Improve understanding of environmental issues, through links with education, work placements and an awards scheme.
- Work with industry and produce marketing campaigns to promote prevention of pollution rather than its remediation.
- Foster public awareness of environmental issues, to encourage responsibility for the environment and its challenges.
- Build on established and create new, international relationships to further global sustainable development.

The Agency has produced a wide range of education material and much of this information is free of charge. ***Please contact Customer Contact and Education on 01491 828310 / 828316.***

Information to schools will dovetail into the national curriculum. Attention is being focused at key stages 2 and 3 and there is a commitment to provide information for 'A' level and university students.

By creating learning opportunities within the schools we hope to bring about an attitude change towards environmental responsibility.

The Agency is one of a number of organisations working with schools and there are opportunities for joint approaches as illustrated below:

"The Salmon's Tale" a play funded by the Agency in association with the Kennet Valley Countryside Project and performed by the Watermill Theatre from Newbury.

The play tackles many issues and illustrates how our everyday activities can have an impact on our local environment. The Agency believes that the play will raise awareness and help children to have a better understanding of the environment and the part they have to play if it is to be protected for current and future generations to enjoy.

The play was supported by an education pack and the feedback received from schools on both the pack and the play was very positive. As a result of this the Agency decided to fund a tour of 40 primary schools in the Reading and Bracknell area between April and May 1999, this was then extended to include 20 more primary schools in Thames Region. Until further funding is secured there are no plans for further performances.

The Eco Schools award scheme is a straightforward and flexible way for schools to extend environmental lessons outside the classroom and apply them to the day to-day running of the school. It involves all members of the school community working together to improve the schools environmental performance.

The scheme is managed by the Tidy Britain Group and promoted by Going for Green, the Agency and Local Authorities. Five schools in the Kennet Valley area have registered for the scheme and one in Newbury has received an award. Any other organisation interested in promoting or supporting Eco Schools should contact the ***Eco Schools manager on 01942 824620.***

Kennet Valley Education Pack (CD ROM). The Kennet Valley Countryside Project has secured funding for an education pack for Key stage 2 and 3 children and their teachers. The Pack will cover the key issues of limited resources, sustainability and individual responsibility in the Kennet Valley. These will be linked to wider local and national issues as required by the National Curriculum. The total cost for the pack is £19,000, of which £17,000 has been provided by the Environmental Trust for Berkshire (local landfill tax funding body) and the remaining £2000 by the Agency. The project began in September 1998 and is scheduled for completion in June 1999.

CREST Awards aim to involve young people as researchers in projects linked to their local environment. As a partner in the Environment Research Challenge, the Agency hopes to encourage problem solving amongst young people and to stimulate a wider and lifelong interest in their environment.

4.2.7 Waste Minimisation

The key objective for a more sustainable waste strategy is to minimise the amount of waste produced and to minimise the pollution from waste.

As part of the Government's National Waste Strategy we are taking a key role in promoting waste minimisation within industry to reduce the dependence on landfill and industrial waste treatment. We have produced guidance for businesses on waste minimisation which include:

- a leaflet - "Are your profits going ... up in smoke ... down the drain ... in the bin ...?";
- a summary guide and video - "Money for nothing and your waste tip for free";
- an 83 page manual - "Waste minimisation - An Environmental Good Practice Guide for Industry";
- a leaflet and a computer disk - "Waste Minimisation Interactive Tool".

4.2.8 Pollution Prevention

There is a need to identify and match the effectiveness of different pollution prevention techniques to the resource available. Partnerships are therefore becoming increasingly important and we build on partnerships where we can influence strategies and policies of other bodies, e.g. MAFF and the Forestry Authority. We will compile a matrix highlighting partnership opportunities from the identification of issues and who else is interested in them and how we can influence these other parties. Current links with bodies such as the local Farming and Wildlife Advisory Group will be developed in order to benefit wildlife through improved water quality. We will support collaboration with them and similar bodies.

4.2.9 Links with Other Plans

(i) Local Air Quality Management Plans

Local authorities have the primary responsibility for local air quality, including establishing targets for certain air pollutants so as to improve air quality, and monitoring against these targets. Through our responsibilities for Part A processes the Agency will be required to participate in this. The Agency therefore seeks to be involved at an early stage when the local authorities are developing Local Air Quality Management Plans.

(ii) Local Biodiversity Plans

The Agency is currently working with both statutory and non-statutory bodies to develop Biodiversity Action Plans for Oxfordshire, Wiltshire and Berkshire.

4.2.10 Enhancement Projects

The Agency has undertaken a number of collaborative habitat enhancement projects in the LEAP area in recent years, including:

- Restoration of Thatcham Reedbeds SSSI in collaboration with English Nature, RSPB and West Berkshire County Council.
- Habitat enhancement at View Island, on the River Thames, with Reading Borough Council.
- Habitat enhancement on the River Kennet at Stitchcombe in partnership with Thames Water on its Upper Kennet Rehabilitation Project.

The Agency will continue to seek partnerships with others in order to implement schemes to enhance and restore degraded habitats.

The Agency frequently works with other organisations such as local authorities on routine matters such as planning applications. More recently we have got much more involved in specific collaborative projects.

PARTNERSHIPS IN PROGRESS IN THE KENNET VALLEY (2000)

RESCUE

The 11th Rivers and Environmental Spaces Cleanup Event took place on the 18 and 19th March this year. Over 1000 volunteers, anglers, canoeists, conservationists, divers, ramblers, scouts and school children helped clear the Kennet from Kintbury to the Thames confluence and on the Thames from Pangbourne to Reading. The event was sponsored by Reading Borough Council, the Agency and West Berkshire Council, BTCV, Vodafone and Marks and Spencers.

See Table of Partnership projects overleaf.

PARTNERSHIPS IN PROGRESS IN THE KENNET VALLEY (2000) (contd)

Name of project	Aim	Partners
Kennet Valley Countryside Project	Promotion of good environmental land management practice and the conservation and enhancement of river valley landscapes and habitats.	West Berkshire Council, Reading BC, EN
Wiltshire Water Vole Survey	Full assessment of status of distribution of Water Vole in Wiltshire.	Wiltshire Wildlife Trust, British Waterways.
RSPB education project at Thatcham Reedbeds	To educate local people and school children on environmental/wetland management issues.	West Berkshire District Council, EN, RSPB.
River Kennet fish passes	Introduction of fish passes on existing impounding structures.	Millennium Commission, Thames Salmon Trust.
"A Salmon's Tale"	Education by means of a theatre roadshow in schools.	Watermill Theatre, Kennet Valley Countryside project.
RESCUE; Rivers and Environmental Spaces Clean Up Event	To clean Reading's water courses and green spaces annually.	General Public, Reading BC, 10 other organisations.
River Kennet and Lambourn SSSI conservation strategies	Identify actions required to conserve and enhance these two nationally important rivers.	English Nature and Landowners.
Water Level Management Plans	Secure optimum water level management to protect the conservation, agricultural and recreational interests of other users of the site.	English Nature and Landowners.
Water Vole Recovery Project	Promote habitat management and enhancement to benefit water vole populations and co-ordinate systematic surveys to consolidate knowledge of current status and distribution in Berks, Bucks, Oxon.	BW, TW, and BBOWT
Thames Water and the Wildlife Trust's Otters and Rivers Project	To encourage natural colonisation of the otter and improve habitat for other wildlife.	BBONT, Water UK.
Thames Water's Upper Kennet Rehabilitation Project	Implement a prioritised series of habitat enhancement works to degraded reaches of the Kennet and associated land between Marlborough and Ramsbury.	TW, Agency, EN, ARK, KVFA, Wilts Wildlife Trust, landowners.
Thatcham Reedbeds habitat restoration	Rejuvenation and enhancement of reedbeds.	EN, RSPB, West Berkshire District Council.

APPENDIX 1

THE ROUTINE WORK OF THE AGENCY

On a day-to-day basis the Agency carries out a huge environmental monitoring and regulatory operation, most of which is to achieve statutory requirements. The aim of regulation is to balance the needs of people and the environment. The Agency works to:

- save, redistribute and improve river, lake, reservoir and underground water supplies;
- prevent and control pollution of air and water;
- reduce the risk of harm from contaminated land and bring it back into use;
- make sure waste is dealt with safely and legally;
- make sure radioactive materials are kept, used and disposed of safely; and
- make sure flood risks are not created or exacerbated.

Regulating the environment takes place through licensing. The Agency manages licences for abstraction of water from rivers and boreholes, releases to air and water, the carrying and disposal of waste and to carry out work in, over, under or near a watercourse. Within West Area we manage over 1,400 water abstraction licences, 190 waste management licences, 455 registrations and authorisations under the Radioactive Substances Act 1993 and 17 Part A IPC authorisations under the Environment Protection Act 1990.

We monitor the environment to ensure that pollution is controlled and resources are adequately protected. We regularly monitor the flow and quality of rivers, estuaries and the sea and check emissions from the processes we regulate. Results are reported on a public register which can be inspected at the Agency's main offices. We run a 24-hour service for receiving reports of, and responding to, flooding and pollution incidents and emergencies in the air, water or on land. We work with others to reduce the risk of harm from contamination and to bring land back into good use. We undertake biological monitoring of macroinvertebrates, macrophytes and algae (including diatoms). We also advise on the presence of blue green algae so that appropriate action can be taken to reduce the risk of toxins affecting people, livestock and pets.

We work to minimise waste and prevent pollution through advice and education, including national campaigns, and through working with other environmental regulators. When necessary we are prepared to enforce environmental legislation in a tough way. Those who show little regard for the law and who cause blatant and persistent damage to the environment can expect to be prosecuted.

The Agency also has the role of reducing risk to people and the environment from flooding by providing effective defences. Protecting life is our highest priority and to meet this aim we provide a flood forecasting and warning service and discourage development in flood-risk areas. We also manage over 900 km of flood defences and aim to protect and improve the natural environment by promoting flood defences that work with nature.

We are responsible for maintaining, improving and developing fisheries. We regulate fisheries by issuing licences for rod angling and net fishing and enforcing the Salmon and Freshwater Fisheries Act and fisheries bylaws. We carry out improvements to fisheries by improving the habitat and fish stocks and providing advice to fishery owners.

The Agency seeks to ensure that wildlife, landscape and archaeological heritage are protected in any work carried out by ourselves or others. We integrate conservation objectives into policy and operational decisions, and apply conservation criteria to our authorisations. We have a full part to play in the implementation of the UK Biodiversity Action Plan and initiate habitat enhancements to benefit wildlife associated with the water environment.

Our principal aim for recreation is to protect, improve and promote the water environment for recreational use. We do this by protecting existing use, and creating opportunities in the course of our work and by maximising the use of Agency owned sites for recreation while taking the environmental factors into consideration.

The Agency is a statutory consultee for development plans and is concerned with strategic and local issues. Although our interests will not always coincide with those of other organisations or landowners, conflict will be dealt with through dialogue and negotiation and exceptionally by presenting our views to an independent inquiry. We are also able to support the work of local authorities by providing information and guidance to assist with development plan preparation.

APPENDIX 1 (contd)

The following table summarises our duties, powers and interests and their relationship to land-use planning.

Agency Duty	The Agency has powers to:	The Agency has an interest, but no direct powers in:	Partnership
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	• Grant or vary water abstraction and impoundment licences on application. • Revoke or vary existing licences to reinstate flows or levels to surface-waters or groundwater which have become depleted as a result of abstraction, and are subject to a liability for compensation. • Secure the proper use of water resources through its role in water-resources planning, the assessment of reasonable need for abstractions and promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licence conditions.	• The more efficient use of water by water companies, developers industry, agriculture and the public and the introduction of water-efficiency measures and suitable design and layout of the infrastructure.	The Agency is committed to water-demand management and will work closely with water companies and developers, local authorities and relevant organisations to promote the efficient use of water. The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures. The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.
Flood Defence The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.	• Control, through Land Drainage consents, development or construction of a structure that would affect the flow of an ordinary watercourse (Water Resources Act, 1991 Section 109, Land Drainage Act, 1991 Section 23). • Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991.	• Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by local authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a	As a statutory consultee on planning applications within main-river floodplains, the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts or proposed floodplain development. The Agency will encourage best practice, including source-control measures and common standards, among local authorities and riparian owners to protect and enhance the

APPENDIX 1 (contd)

Agency Duty	The Agency has powers to:	The Agency has an interest, but no direct powers in:	Partnership
	• Undertake works to main rivers using permissive powers. • Issue flood warning relating to main river to the public, local authorities and the police. • Consent mineral workings within 16 metres of main rivers.	local authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.	environment. The Agency works with the civil authorities to prepare flood-warning dissemination plans and supports their endeavours to protect communities at risk.
Water Quality The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.	• Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharges consents. • Prosecute polluters and recover the costs of clean-up operations.	• The control of runoff from roads and highways. This is a Highway Agency/local authority duty. • The greater use of source-control measures to reduce pollution by surface-water runoff. • Prevention and education campaigns to reduce pollution incidents.	The Agency will liaise with Local Authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source-control measures. As a statutory consultee on planning applications, the Agency will advise Local Planning Authorities on the water-quality impact of proposed developments.
Air Quality The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.	• Regulate the largest technically complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, BATNEEC and BPEO. • Have regard to the Government's National Air Quality Strategy when setting standards for the releases to air from industrial processes.	• The vast number of smaller industrial processes which are controlled by local authorities. • Control over vehicular emissions and transport planning.	The Agency provides data on IPC processes and advice on planning applications to local authorities. The Agency is willing to offer its technical experience to local authorities on the control of air pollution The Agency wishes to liaise with local authorities in the production of their Air Quality Management Plans. The Agency will advise and contribute to the Government's National Air Quality Strategy

APPENDIX 1 (contd)

Agency Duty	The Agency has powers to:	The Agency has an interest, but no direct powers in:	Partnership
Radioactive Substances The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.	• Issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public.	• The health effects of radiation.	The Agency will work with users of the radioactive materials to ensure that radioactive wastes are not unnecessarily created, and that they are safely and appropriately disposed of. The Agency will work with MAFF to ensure that the disposal of radioactive waste creates no unacceptable effects on the food chain. The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites. The Agency will work with the HSE on worker-protection issues at non-nuclear sites.
Waste Management The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to public health or detriment to local amenities.	• Vary waste management licence conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations	• The siting and granting of planning permission for waste management facilities. This is conducted by the waste industry and local authorities. The Agency, as a statutory consultee on planning applications, can advise on such matters.	The Agency will work with waste producers, the waste-management industry and local authorities to reduce the amount of waste produced, increase reuse and recycling and improve standards of disposal.
Contaminated Land The Agency has a duty to develop an integrated approach to the prevention and control of land contamination ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment.	• Regulate the remediation of contaminated land designated as special sites. • Prevent future land contamination by means of its IPC, Water Quality and other statutory powers. • Report on the state of contaminated land.	• Securing with others, including local authorities, landowners and developers, the safe remediation of contaminated land.	The Agency supports land remediation and will promote this with developers and local authorities and other stakeholders.

APPENDIX 1 (contd)

Agency Duty	The Agency has powers to:	The Agency has an interest, but no direct powers in:	Partnership
Conservation The Agency will further conservation, wherever possible, when carrying out water-management functions; have regard to conservation when carrying out pollution-control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment. It has duties with respect to requirements under the Wildlife & Countryside Act 1981 and the Conservation (Natural Habitats) Regulations 1994.	• The Agency has no direct conservation powers, but uses its powers with regard to water management and pollution control to exploit opportunities for furthering and promoting conservation.	• The conservation impacts of new development. These are controlled by local authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to local authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Plan.	The Agency supports action to sustain or improve natural and manmade assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, local authorities, conservation bodies and landowners to conserve and enhance biodiversity.
Landscape The Agency will further landscape conservation and enhancement when carrying out water-management functions; have regard to the landscape when carrying out pollution-control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.	• The Agency must further the conservation and enhancement of natural beauty when exercising its water-management powers and have regard to the landscape in exercising its pollution-control powers.	• The landscape impact of new development, particularly within river corridors. This is controlled by local authorities.	The Agency produces River Landscape Assessments and Design Guidelines which it uses when working with Local Authorities and developers to conserve and enhance diverse river landscapes.
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	• The Agency must promote its archaeological objectives though the exercise of its water-management and pollution-control powers and duties.	• Direct protection or management of sites or archaeological or heritage interest. This is carried out by local authorities, county archaeologists and English Heritage.	The Agency will liaise with those organisations which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.

APPENDIX 1 (contd)

Agency Duty	The Agency has powers to:	The Agency has an interest, but no direct powers in:	Partnership
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	• Regulate fisheries by a system of licensing. • Make and enforce fisheries bylaws to prevent illegal fishing. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish entrainment in abstractions. • Promote its fisheries duty by means of land-drainage consents, water abstraction applications and discharge applications.	• The determination of planning applications which could affect fisheries.	Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and local authorities to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	• The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.	• Promotion of water sports. This is carried out by Sport England and other sports bodies.	The Agency will work with the Countryside Agency, Sport England, British Waterways and other recreational and amenity organisations to optimise recreational use of the water environment.
Navigation The Agency has a duty to maintain and improve non-tidal Thames navigation from Cricklade to Teddington.	• Improve, conserve and operate the non tidal Thames navigation. • Regulate navigation by a system of licensing. • Enforce navigation legislation.	• The management and operation of British Waterways navigation's and other navigation's within the region.	The Agency will work with British Waterways, other navigation authorities, riparian landowners, local authorities and navigation users to improve navigation's valuable environmental, recreational, commercial and heritage resources.

APPENDIX 2

AREA ENVIRONMENT GROUP (AEG)

The AEG is a forum through which the Agency seeks local opinion on environmental issues and plans. It is a non statutory and non executive body which provides an important means of communication between the Agency and the local people. Members of this group have been involved in a working party (the members working group referred to in section 1.5 to advise on the content and nature of this LEAP.

Members of the AEG live in the local area and have relevant experience of local interests and issues. Although some may have been chosen for their expertise in the Agency's activities, others have been selected for their contribution to wider aims - for example sustainable development or education, as well as representation from local authorities, industry, small enterprises, landowners and members of the general public. Members do not represent organisations or particular political views.

The AEG meets four times a year to advise on the full scope of the Agency's activities. Meetings are open to both the public and media. Meeting dates and lists of current membership are available from the West Area's Business Services Section on 01491 828453.

APPENDIX 3

ABBREVIATIONS

AEG	Area Environment Group
ALARA	As low as reasonably achievable
AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
BBOWT	Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust
BPM	Best practicable means
BW	British Waterways
cSAC	Candidate Special Area of Conservation
EN	English Nature
ENTRUST	The body authorising Environmental Trusts set up to receive Landfill Tax Credits
FRCA	Farming and Rural Conservation Agency
FWAG	Farming and Wildlife Advisory Group
HSE	Health and Safety Executive
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
KVCP	Kennet Valley Countryside Project
KVFA	Kennet Valley Fisheries Association
LA	Local Authority
LEAP	Local Environment Agency Plan
MAFF	Ministry of Agriculture Fisheries and Food
NAQS	National Air Quality Strategy
NEP	National Environment Programme
N/K	Not Known
NSA	Nitrate Sensitive Area
NVZ	Nitrate Vulnerable Zone
OFWAT	Office of Water Services
RE	Rivers Ecosystem classification scheme
RSPB	Royal Society for the Protection of Birds
SSSI	Site of Special Scientific Interest
STW	Sewage Treatment Works
TW	Thames Water
UWWTD	Urban Waste Water Treatment Directive
WLMP	Water Level Management Plan

APPENDIX 4

REPORT ON CONSULTATION

The Kennet Valley Local Environment Agency Plan (LEAP) Consultation Draft was published in July 1999. Consultation responses were requested to be submitted to the Agency by 11th November 2000.

The Consultation Draft provided a summary of the Agency's aims and objectives and the work that it undertakes, a description of the LEAP area, followed by relevant key issues and actions proposed by the Agency, and proposed partnerships to help deliver the 'Actions' in the LEAP. A total of 23 'Issues' relevant to the LEAP area were highlighted by the Agency in the Consultation Draft.

Consultation Response

The Consultation Draft was sent to 166 consultees. A press release was also issued to local newspapers and radio stations inviting readers and listeners to ask for a copy of the consultation draft and comment on it.

A total of 33 written responses were received. The overall response rate was 20% of those consulted. A breakdown of the response rates by consultee type is provided below.

Consultee Response Record

Consultee Type	Number of Consultees	Number of Responses	Response Rate
County Councils /Borough Councils / District Councils	14	6	43
Parish Councils	12	1	8
Agricultural Interest Groups / Landowners and industry	28	3	11
Environmental / Conservation Groups	32	4	13
Educational / Research Establishments	9	0	0
Waterways Action Group	13	4	31
Amenity / Recreation Groups	25	10	40
Central Government Depts	6	2	33
Public bodies & Utilities	27	2	7
Individuals		1	
TOTAL	**166**	**33**	**20**

Matters Raised

The Consultation draft was well received by respondents and their suggestions for improvements have been discussed among the project team and, if appropriate incorporated.

The written responses varied in length and detail. Responses included general comments, suggested corrections to text, as well as specific points on the Issues raised in the Consultation Draft. All Issues generated comments, with the exception of contaminated land. The Table below highlights those Issues that attracted the greatest attention. Please note that the issue numbers given below may not correspond to those in the LEAP.

APPENDIX 4 (contd)

ISSUES PROPOSED IN THE CONSULTATION DRAFT		NUMBER OF TIMES MENTIONED
ISSUE 1	Minimising the effect of landfill gas on climate change.	3
ISSUE 2	Achieving local air quality objectives through regulation of Agency controlled processes.	2
ISSUE 3	Balancing the needs of the environment and abstractors.	10
ISSUE 4	Water supply to the Kennet and Avon Canal.	9
ISSUE 5	Implementing the UK's Biodiversity Action Plan.	14
ISSUE 6	Implementing the River SSSI Conservation Strategies.	5
ISSUE 7	Habitats Directive Review.	3
ISSUE 8	Water Level Management Plans.	9
ISSUE 9	Habitat Enhancement and Restoration.	9
ISSUE 10	Enhancement of wild fish populations and sustainable fishery management.	4
ISSUE 11	Impact of Signal Crayfish in the Kennet, Lambourn and Enborne.	3
ISSUE 12	Effect of river structures on fish migration and river habitats.	2
ISSUE 13	Thames Salmon Rehabilitation Scheme.	4
ISSUE 14	Poor Water Quality.	14
ISSUE 15	Hungerford Fish Mortality.	4
ISSUE 16	Regular flooding of Newbury Street, in the village of Lambourn, by the River Lambourn.	1
ISSUE 17	Flooding caused by rise in bed levels of chalk streams.	1
ISSUE 18	Minimising the adverse environmental impact of planned development.	3
ISSUE 19	Contaminated land.	0
ISSUE 20	Minimising waste.	1
ISSUE 21	Increase in the level of flytipping, particularly in the Newbury area.	1
ISSUE 22	The disposal/recovery of stable waste in the Lambourn area	1
ISSUE 23	Discharges of radioactivity from the Atomic Weapons Establishment.	3

N.B. The Issue numbers given in this Appendix may not correspond to the Issue number contained within this LEAP

Many of the consultees were supportive of the work being undertaken by the Agency as outlined in the Consultation Draft.

A brief summary of the comments received is given below

ISSUE 1
Renewable energy sources should be promoted.

ISSUE 2
Recommended that the consultation process is extended to cover neighbouring Local Authorities as air quality knows no boundaries.

ISSUE 3
Three respondents cited over abstraction as a cause of low flows in certain stretches of the River Kennet. Two respondents stressed the need for water efficiency and Thames Water assured that it is on course to obtain its targets for reduction of leakage.

ISSUE 4
This is a very complex issue and stimulated much debate among respondents. Two respondents felt strongly that the Kennet and Avon Canal is not entitled to water from the Shalbourne and that Freemans Marsh and the River Dun should receive first clean water and not secondary water from excess. The K& A Canal Partnership explained that recent work should result in an improvement in water supply to the East of the Canal.

APPENDIX 4 (contd)

ISSUE 5
A well received issue. Most respondents felt that this work was very important and were keen to get involved. The Inland Waterways Association stressed that they were supportive of this work provided it did not adversely affect boating and waterside interests.

ISSUE 6
National Farmers Union pleased that WLMPs are sensitive to agricultural interests.

ISSUE 7
No particular comments.

ISSUE 8
Action 4d & 8d are identical so a similar debate was had.
Reminded that MAFF' procedural guidelines for WLMPs state that recreational and sporting interests should be consulted.

ISSUE 9
This issue was strongly commended by most respondents.
Newbury Angling Association, suggested that fisheries surveys were not as useful as they could be.

ISSUE 10
Another well received issue, with the suggestion that the problems faced by wild fisheries should also merit discussion.

ISSUE 11
Respondents were glad to see that action was been taken against Signal Crayfish at last.

ISSUE 12
Comments received on the operation of the fixed head weir at Fobney only.

ISSUE 13
It is questioned whether the Salmon Rehabilitation Scheme should be in the LEAP.

ISSUE 14
Considerable concern was expressed at the absence of planned phosphate strippers for Newbury, Great Bedwyn and Wilton STW's.

ISSUE 15
General agreement with the actions proposed.

ISSUE 16
This issue was raised by Hampshire Wildlife Trust only. They are very concerned that the proposals for enmainment sound like hard engineering works and may cause detriment to the character of the river.

ISSUE 17
The National Trust suggests that it would be useful to establish whether a rise in bed level impedes flows.

ISSUE 18
A wide ranging set of comments on planned development, with the main theme being
No development in the floodplain'.

ISSUE 19
No comments received.

ISSUE 20
A reminder that not all alternatives to landfill are sustainable.

ISSUE 21
Proposed actions were strongly supported by the National Farmers Union.

ISSUE 22
No comments.

ISSUE 23
Greater public openness is welcomed but greater detail on the discharge arrangement is requested.

Suggested Additional Issues
Respondents raised a number of other issues which they wished to be considered for inclusion in the LEAP. These have been arranged under the appropriate theme.

Theme: Managing water Resources
Exceptionally low water level at Theale Lagoon during the winter months have led to the grounding and damage of some boats. Prolific weed growth has added to these problems. This lake is one of five linked lakes fed by the River Kennet upstream of Sheffields Weir. The club would like the Agency to act as a mediator with the various organisations involved to enable a solution to these problems to be found. It is also suggested that adjustments to water levels upstream of Sheffields Weir at particular times of the year, could be beneficial in feeding additional water through the lake system. *(Burghfield Sailing Club)*

Theme: Delivering Integrated River Basin management
Recreation
Canoeing is an environmentally friendly activity enjoyed by people of all ages. The water space available for canoeing is limited. The BCU have been advised by Government to seek access to waterspace through agreements with riparian interests. So far success has been limited and the BCU hopes that through the LEAP the Agency will encourage the making of agreements to enable canoeing to take place on physically canoeable waterways;-promote the use of the booklet "Agreeing Access to Water for Canoeing"

There are no references to on-water recreation in the draft LEAP and the Agency is urged to include actions in the LEAP which will address the needs outlined above.*(British Canoe Union)*

It is disappointing that there is no reference to managing recreation in the area.*(The Countryside Agency)*

Concerned that there is no mention of navigation or recreation.*(Inland Waterways Association)*

Disappointed that the long-term vision of the plan does not mention protection of existing recreation and the creation of new opportunities. Activities such as canoeing and walking have some difficulty gaining access to water, surely this would form an issue suitable for inclusion in the LEAP.*(Sport England)*

With reference to expansion of housing and employment in the Newbury and Reading areas. This will cause an increase in demand for recreational opportunities. Without a planned approach to this increased demand, the pressure of usage will stretch existing resources. *(Sport England)*

Landcare Project

Very interested in the Agency's Landcare project in the Upper Avon area and would like to see a similar scheme underway in the Kennet Valley. Would like to be involved in the development. Kennet valley would be an ideal site for

such a project as it is generally quite compact. (Mr Ainslie ARK)

"...hope that the Agency plans to extend the 'Landcare Strategy' and would be willing to be involved in this scheme in the Marlborough area...' *(Friends of the Earth)*

Urge that a project similar to the Landcare initiative in South West is instigated as part of the LEAP, as the Kennet Valley also suffers from agricultural pollution, in particular that from pig farming. *(Savernake Flyfishers)*

Theme: Regulating Major Industry

'The rail served sites of Wigmore Lane, Theale, contains two rail stone unloading facilities a road stone coating plant and a rail oil discharge and storage facility. These activities give rise to dust nuisances, smells and obnoxious fumes.' *(Theale Parish Council)*

Conclusions

The consultation process for the Kennet Valley LEAP confirmed that the Environment Agency is addressing most of the key issues of relevance in the LEAP area. The response rate for all consultee types was less than 50% with the best response from Local Authorities (43%) and Amenity and recreation groups such as British Canoe Union and Reading and District Angling Association (42%) displaying a keen interest and awareness of environmental issues and concerns. These figures reflect an average response to LEAP consultation.

Issue 5 Implementation of the UK's Biodiversity Plan and Issue 14 Poor Water Quality were raised most often, 14 times. Many respondents were glad to see the Biodiversity Theme being dealt with so proactively. The lack of proposals for phosphate strippers at Great Bedwyn, Wilton and Newbury STWs gave some respondents great cause for concern and they strongly urged the Agency to address this imbalance.

Respondents suggested a number of new issues. After considerable discussion the project team considered two of the suggested issues to be suitable for inclusion in the LEAP. These are the provision of on-water recreation in the LEAP area, which is now Issue 20 and Reducing the adverse impacts of agricultural land use on the water environment which is now Issue 16.

The concerns raised by Theale Parish Council about a rail site at Wigmore Lane proved not to be within the Agency's remit but fell within the powers of West Berkshire Council under the Environmental Protection Act 1995.

The project team felt that the concerns raised about the water management of the lakes and gravel pits in the Lower Kennet Valley were best dealt with by local agreement .