EA-Midlands LEAPs BOX 3

local environment agency plan

DERBYSHIRE DERWENT

ACTION PLAN

JANUARY 1999

ENVIRONMENT AGENCY

Derbyshire Derwent Key Details

General	
Area	1200km²
Topography	
Maximum level	636 (mAOD) at Kinder Scout
Minimum level	29 (mAOD) at Church Wilne
Population	375,000 (approximately)

Integrated Pollution Control (IPC)	
IPC authorised sites	26
Radioactive Substances (RAS)	
Authorisations for accumulation and disposal	5

Administrative Details

County Councils	Unitary Authorities	District/Borough Councils	Others
Derbyshire	Derby City	Amber Valley	Peak District National Park
Nottinghamshire	Sheffield City	Ashfield	Authority
		Bolsover	
		Erewash	
		Derbyshire Dales	
		High Peak	
		North East Derbyshire	
		South Derbyshire	

Main Towns and Populations

Town	Population
Alfreton	8,210
Bakewell	3,920
Belper	18,510
Buxton	16,060
Derby	176,535
Matlock	5,130
Ripley	9,250
Wirksworth	5,750

Water Resources

Average annual rainfall	1022mm
Total licensed abstraction:	-5,536 M1/d
	-1,615,739 M1/a
Number of licensed surface abstractions	95
Number of licensed groundwater abstractions	229
Number of licensed impoundments	12

Fisheries

Length of designated rivers	
Salmonid (salmon and trout)	157.4km
Cyprinid (coarse fish)	37.9km

Conservation

Sites of Special Scientific Interest	51
Special Areas of Conservation	3
Scheduled Ancient Monuments	186
Sites of Interest for Nature Conservation	415
Special Protected Area	1

Flood Defence

Length of "Main" river	171.2km
Length of floodbanks and walls maintained by the Agency	20km
Number of urban flood alleviation schemes	9

Waste Management Sites

Landfill sites	25
Transfer stations	16
Civic Amenity Sites	1
Waste processing plants	7

Consented major discharges

Sewage effluent	19
Industrial effluent	8

Water Quality

Length of watercourse (km) in each component of the General Quality Assessment (GQA) 1997 is shown below.

Quality	Grade	Chemistry	Biology
GOOD	A	100.9	104.9
	B	97.8	81.0
FAIR	C	50.3	67.4
	D	26.1	26.0
POOR	E	5.1	5.9
BAD	F	0.0	0.0

(Lengths measured for chemistry and biology differ slightly)

Derbyshire Derwent

KEY

- LEAP area
- Watercourse
- Canal
- Built up area
- Motorway
- A road
- Railway

Copyright Waiver

This report is intended to be used widely and may be quoted, copied or reproduced, provided that the extracts are not quoted out of context and that due acknowledgment is given to the Environment Agency.

vision for the derbyshire derwent area

vision

The Environment Agency's overall aim is for *"a better environment in England and Wales for present and future generations"*. We will achieve this aim by taking a sustainable and wide-ranging approach to the way we protect and enhance the environment.

A sustainable environment is one where there is a balance between economic, social and environmental factors.

Our vision for the Derbyshire Derwent area is:

"Everyone working together to create a sustainable environment that improves the quality of people's lives"

Our key objectives for the Derbyshire Derwent area are to:

- Ensure that recreational interests are managed in a way that is not harmful to the local environment and takes into account the interests of all users.
- Encourage the conservation of natural resources, animals and plants.
- Increase awareness of the effects of sheep dip to the aquatic environment.
- Protect the groundwater quality of the Carboniferous Limestone area from sewage discharges and the spreading of waste to land.
- Work with industry to reduce water usage and minimise waste generation.
- Investigate the feasibility of protecting undefended properties from flooding and enhancing flood defences that are inadequate.
- Enhance and protect biodiversity.
- Develop waste minimisation programmes to meet National waste targets.
- Educate and raise awareness of the environment and environmental issues.

Some of these objectives have common goals; others may require a degree of compromise between differing demands on the resources of the area. Together, through commitment and enthusiastic cooperation, the Agency's vision for the Derbyshire Derwent can become a reality.

Realisation of our vision will be achieved through a balanced management approach to all activities.

ENVIRONMENT AGENCY

NATIONAL LIBRARY &
INFORMATION SERVICE

HEAD OFFICE

Rio House, Waterside Drive,
Aztec West, Almondsbury,
Bristol BS32 4UD

foreword

Welcome to the Environment Agency's local action plan for the Derbyshire Derwent area. The plan covers a five year period and sets out the work which the Agency and others will undertake to achieve environmental improvements in the area.

This document has been produced after the widespread consultation following the launch of the Consultation Report in February 1998 and we are grateful to the many people who responded to the plan. The comments received have enabled the Agency to evaluate the issues raised in the original report and build the framework for collaborative action, upon which this LEAP process reports.

The plan area contains the spectacular scenery and charming villages of the Peak District National Park, dominated by agricultural land use and forestry, as well as the urban area of Derby. Approximately 17 million people live within a distance of 86 kilometres of the National Park boundary and the plan area is considered a magnet for tourists.

The work of the Agency can only be achieved through partnerships as it becomes recognised that more can be achieved through working together. Many of the issues in this plan reflect the need for co-operation, bringing together the complementary responsibilities, powers and finances of the different groups.

This plan is an action by the Agency to set a programme for significant environmental improvement in the area. I hope you will find the plan of interest. 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.

Andrew Wood

Area Manager - Lower Trent, Midlands Region

Contacting the Environment Agency

The Lower Trent Area office is located at:

Trentside
Scarrington Road
West Bridgford
Nottingham NG2 5FA

Tel: (0115) 945 5722 Fax: (0115) 981 7743

E-mail: alison.hepworth@environment-agency.gov.uk

If you have any comments or queries on the Derbyshire Derwent LEAP, please contact Alison Hepworth at the above address.

ENVIRONMENT AGENCY
032503

contents

contents

1.0 introduction

Figure 1 The LEAP process and the main outputs in the five year cycle

This is the first Local Environment Agency Plan (LEAP) for the Derbyshire Derwent area. The quality of our local environment and the way it is managed matters to all who live in and visit the area and rely on its natural resources. To manage the environment as a whole and to achieve environmental improvements we need to work together. The Environment Agency is committed to the delivery of environmental improvement at the local level and through this plan we will work in collaboration and partnership with various organisations and individuals to achieve this aim.

This Action Plan is the second stage in the LEAP process for the Derbyshire Derwent area, which is shown in Figure 1. The plan outlines areas of work and investment proposed by other responsible parties and ourselves over the next five years, and will form the basis for improvements to the environment in the Derbyshire Derwent area. Progress against the Action Plan will be monitored and reported annually.

The five-year programme of actions forms the most important part of this document.
Please turn to Section 4, page 20 if you wish to refer straight to the actions.

1 introduction

1.1 The Environment Agency

The Environment Agency is one of the largest and most powerful environmental protection agencies in Europe. We have legal duties to protect and improve the environment throughout England and Wales. The Agency was created by the 1995 Environment Act and became fully operational in April 1996.

Our 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. We have specific responsibilities for water resources, pollution prevention and control, flood defence, fisheries, conservation, recreation and navigation throughout England and Wales.

Our aims are to:

- Achieve major and continuous improvements in the quality of air, land and water.
- Encourage the conservation of natural resources, animals and plants.
- Make the most of pollution control and river-basin management.
- Provide effective defence and warning systems to protect people and property against flooding from rivers and the sea.
- Reduce the amount of waste by encouraging people to re-use and recycle their waste.
- Improve standards of waste management, recovery and disposal.
- Manage water resources to achieve the proper balance between the country's needs and the environment.
- Work with other organisations to reclaim contaminated land.
- Improve and develop salmon and freshwater fisheries.
- Conserve and improve river navigation.
- Raise awareness about environmental issues by education and informing people.
- Set priorities and work out solutions that society can afford.

The Agency has eight regions in England and Wales, sub divided into twenty-six areas. These are shown on the back cover of this document. The Midlands Region comprises four areas, and the Derbyshire Derwent plan is within the Lower Trent Area. Most of the Agency's work operates at a local level and this allows an integrated and personal approach to managing the environment.

1.1.1 The role of other organisations in protecting and improving the environment

The Environment Agency is not the only organisation involved in managing human activities to protect and improve the environment. Other statutory and non-statutory bodies who have responsibilities were referred to in the Consultation Report. We share many of our responsibilities with local authorities, in particular waste management and the regulation of emissions to air.

1.1.2 Routine Work of the Agency

The strategic nature of the LEAP as a planning tool means that the plan is not designed to reflect fully our routine activities within the plan area. Our everyday work commits substantial resources to managing the environment, including extensive monitoring and survey operations.

1.2 The Local Environment Agency Plan (LEAP) process

For the Agency to fulfil its role and responsibilities, it needs to manage the environment effectively and to work in partnership with others. Local environment planning is an important tool in this process. The plans are non-statutory, integrated action plans based on local river catchments. They provide a focus for those concerned with the future of the local area. We are committed to producing LEAP Consultation Reports for all catchments in England and Wales by December 1999.

LEAPs will help contribute to the principle of sustainable development through integrated environmental management and improvement. They will also play a key role in:

- Prioritising issues and establishing an action plan for managing and improving the local area over the next 5 years
- Developing liaison and partnership with key groups
- Educating the public on local environmental issues
- Promoting openness and accountability

This document is, therefore, part of a process that will enable a shared vision to be developed, along with a strategy for the area's management. This will guide all Agency activities for the next five years and will hopefully influence the activities of other key bodies.

Regular monitoring and updating of the plan will be an integral part of the process. To this end annual progress reports will be published and the full consultation process will be repeated every five years.

1.2.1 LEAPs and other plans

The Agency shares the regulation and management of the environment with others. Whilst LEAPs are the Agency's plans, their content and development will reflect these shared responsibilities. LEAPs will complement and integrate with other organisations' plans such as Local Waste Plans, Local Air Quality Management Plans, Local Biodiversity Action Plans, Development Plans and Local Agenda 21 Action Plans.

Public participation in this Plan will increase awareness of environmental issues and it is hoped this will lead to involvement in, and a feeling of ownership of, our local environment.

1.2.2 Agency Statutory Committees

In order to ensure openness, objectivity and accountability, the Agency is required by law to consult committees on all aspects of its work. Membership of the committees consists of local people drawn from public life, including industry, agriculture, local authorities and environment groups.

The Midlands Region is served by three statutory committees:-

- Regional Environmental Protection Advisory Committee (REPAC)
- Regional Flood Defence Committee (RFDC)
- Regional Fisheries, Ecology and Recreation Advisory Committee (RFERAC).

1.2.3 Area Environment Groups

An advisory, non-statutory, Area Environment Group (AEG) serves the Lower Trent Area of the Midlands Region. Membership consists of 20 people who live and work in the area and who represent a wide range of interests. These include Local Authorities, industry, agriculture, conservation, fishing, amenity and recreational interests. The group advises the Agency on LEAPs, the delivery of local services and acts as a link between the local community, the Agency and its statutory committees. Meetings are held four times a year and are open to the public. The current Chairperson of the AEG is Mr Mike Welsh. A sub-group of the main AEG has been set up for this LEAP and includes members from varying backgrounds who have expressed an interest in the Derbyshire Derwent area. The group has had opportunities to input into the plan process from an early stage. The five members of the sub-group are: Mrs Christine Barker, Mrs Christine Crowther, Mr Rod Tomlinson, Mr Noel Walsh and Mr Roger Wardle.

1.3 Sustainable Development and Biodiversity

1.3.1 Sustainable Development

The Agency is committed through its principal aim to sustainable development. The most commonly used working definition was provided in 1987 in the Brundtland Report *'Our Common Future':*

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

In November 1996 Ministers issued statutory guidance to the Agency on its contribution to sustainable development, and have underpinned the Agency's principal aim by setting it seven main objectives governing the manner in which it should carry out its functions.

Sustainable development does not necessarily mean less economic development. One of the challenges is to promote ways of encouraging environmentally friendly economic activity, and of discouraging or controlling environmentally damaging activity. Integrated environmental management is a means by which the Agency can promote sustainable development, and LEAPs are an important part of this process.

1.3.2 Biodiversity

The term 'biodiversity' is commonly used to describe the number, variability and variety of living organisms. It is simply a term meaning 'the variety of life'. The Biodiversity Convention, signed by the UK Government at the Rio 'Earth Summit' in 1992, seeks to ensure that the full range of animal and plant species are conserved. A national action plan for biodiversity was subsequently published in January 1994.

In pursuance of the Government's commitment to biodiversity conservation, the Agency has significant responsibilities regarding implementation of the UK Biodiversity Action Plan (BAP) and will be developing targets for species and habitats of conservation concern. In the Derbyshire Derwent plan area the water vole and otter are of particular significance. Additionally, there are other water-related species and habitats in the area which will require protection. These include bats, crayfish, derbyshire feather moss and brook lamprey.

All of our operational and regulatory activities will take account of these species and habitats in fulfilment of our commitment to biodiversity. Wherever possible the Agency will seek to meet targets for the restoration and re-creation of priority habitats identified in the UK BAP and the relevant Local BAPs. Additional work will be dependent on available resources and will involve collaborative work with other bodies.

Padley Wood

2.0 the derbyshire derwent plan area

The following gives a summary of the area. More detailed information is available in the Consultation Report, which was published in February 1998. See page 1 for details of how to obtain a copy.

Ladybower reservoir

2.1 Overview

The Derbyshire Derwent area is defined by the area of land that drains to the River Derwent before its confluence with the River Trent. The extent of the area is shown on Map 1, at the front of this report.

The plan area is important in terms of water resources. Derwent, Howden and Ladybower Reservoirs are located in the upper Derwent valley. In the north of the plan area the average annual rainfall is in excess of 1451mm. In the lowland area around Derby annual rainfall levels are between 616mm and 705mm.

The upper Derwent area, is a hilly area renowned for its beautiful and spectacular scenery as well as its charming villages, most of which fall within the Peak District National Park boundary. The National Park was designated in 1951 and was the first of 10 National Parks to be established in England and Wales with a total area of 1438 sq.kms. The National Park is situated in the centre of England; large towns and cities in the North West, Yorkshire, East Midlands and the West Midlands surround it. Approximately 17 million people live within 86 km of the National Park boundary and there are some 22 million visits made to the Park each year.

2.2 Development and infrastructure

The principal urban area in the catchment is the City of Derby. Other towns include Buxton, Matlock, Bakewell and Castleton in the northern half of the plan area. South Normanton, Alfreton, Swanwick, and part of Ripley lie on the eastern side. Belper and Duffield follow the river valley north of Derby.

In terms of transport links, the M1 runs in a south to north direction to the east of the area, crossing the plan area briefly to the east of Alfreton. The A6 Trunk road is the main highway that passes through the area. It follows the River Derwent

predominantly from its confluence with the River Trent until it meets the River Wye at Rowsley where it follows this watercourse through to Buxton. Derby is a central rail link with main line connections to London, the southwest and the northeast.

The local economy of the whole plan area is focused towards agriculture. Farming is an important activity both in terms to the local economy and to the environment. Tourism and recreation is also important in the north of the area. In the south of the plan area, companies such as Rolls Royce and Courtaulds are significant in the local economy as well as the skyline of Derby. The Toyota factory is significant to the local economy despite being located just outside of the plan area. Quarrying is also a significant activity, in particular in the north of the area, in terms of its influence upon the local economy and its visual impact. Within the City of Derby, such schemes as the Pride Park City Challenge have promoted development within the area. The Regional Planning Guidance for the East Midlands was published in 1994 (reviewed in 1996). This guidance recognised the need to achieve sustainable development. It aims to influence the policies of structure and local plans to achieve a coherent development strategy for the region.

There are two structure plans and one unitary development plan within the plan area. These are prepared by Derbyshire County Council and Derby City Council, Peak District National Park Authority and Sheffield City (although only a small portion is in the plan area) respectively. This provides a broad strategic framework for planning and development control in the area. Derbyshire is in process of reviewing the plan and the Agency is involved in this consultation process.

The existing statutory local plans and those currently in preparation are shown in Table 1 below. This has been updated from the consultation report. Local plans are prepared to be in conformity with the Derby and Derbyshire Joint Structure Plan. Derby City is now a Unitary Authority. Joint working between the County Council and the City of Derby should ensure broad conformity between the two authorities on strategic planning issues.

LOCAL PLANNING AUTHORITY	% OF LPA IN LEAP AREA	ESTIMATED POPULATION IN LEAP AREA	DEVELOPMENT PLAN TITLE	STATUS AND CONSULTATION DATE
Derbyshire County Council	33	348,491	Derby and Derbyshire Joint Structure Plan	Deposit April 1998
Peak District National Park Authority	65	26,986	Peak District National Park Local Plan Structure Plan	Deposit Draft Spring 1997 Adopted 1994 Review To be finalised in 1999
Amber Valley Borough Council	82.86	75,320	Amber Valley Local Plan	Adopted August 1994 Under Review
Ashfield District Council	4.3	3,400	Ashfield Local Plan	Adopted December 1995
Bolsover District Council	14.54	31,720	Bolsover Local plan	Deposit Draft December 1997
Derby City Council	70.31	161,625	Derby and Derbyshire Joint Structure Plan	Deposit April 1998
Derbyshire Dales District Council	61.54	45,590	Derbyshire Dales District Council Local Plan	Deposit Edition including proposed changes February 1996
Erewash Borough Council	32.54	13,480	Erewash Borough Local Plan	Adopted September 1994 under Review
High Peak Borough Council	50.2	26,350	High Peak Local Plan	Adopted April 1998
North East Derbyshire District Council	26.94	13,160	North East Derbyshire Local Plan	Deposit Draft including proposed Pre-Inquiry changes September 1996
Sheffield City Council	6.5	Negligible	Sheffield Unitary Development Plan	Modifications to Deposit Autumn 1997
South Derbyshire District Council	3.55	832	South Derbyshire Local Plan	Adopted March 1998

Table 1 The status of Development Plans within the plan area

2.3 Process industries regulation

Part A Processes

There are 26 Part A processes operating in the plan area. These are those industrial processes regulated under the Environment Protection Act 1990, having the greatest potential to cause pollution. They are the so called "heavy" industrial processes. It is expected that the number of Part A processes in the plan area will increase slightly over the life of this LEAP.

Storage and disposal of radioactive materials

The Agency regulates two nuclear installations within the plan area and three separate disposal authorisations. There are also some 60 closed source registrations.

Those premises registered to dispose of radioactive materials are the two nuclear installations operated by Rolls Royce and also Derby City General Hospital, Derbyshire Royal Infirmary and the University of Derby. All of these are located within Derby. The authorisations for these premises permit the controlled release of radioactivity to air, sewer, and land as well as for off-site incineration. Some low-level waste from Rolls Royce is disposed of to land at Crich near Matlock. Within the plan area there are no facilities authorised to incinerate low level radioactive waste. This material is transported by road to sites outside the catchment for authorised disposal.

Power generation

The new power station operated by Derwent Cogeneration Ltd at the Courtaulds site in Spondon, Derby, is a gas fired combined heat and power plant. It comprises four gas turbines and one waste heat boiler. It is capable of generating a total of 216MW of electricity. The plant was commissioned in 1995 and replaced the coal fired power station on the site.

2.4 Waste

There were 49 licensed waste management facilities in the area in 1997. This figure tends to fluctuate slightly over time. Twenty-five of these were licensed landfill sites. Other facilities include transfer stations, treatment plants and metal recycling sites.

In 1997, there were 61 registered exemptions for metal recycling facilities and 233 registered exemptions for other general exempt facilities in Derbyshire. These other exemptions include the use of waste soil for land reclamation or construction purposes, the storage of waste in a secure place and recycling banks (such as paper, cardboard, glass and oil).

River Derwent near Courtaulds, Spondon, Derby

In 1996/97, over 170 prenotifications for landspreading waste were received in Derbyshire. This accounted for well over 30,000 tonnes of controlled wastes consisting of food and drink processing waste, farm and abattoir sludge and paper sludge (see Issue 11).

Illegal activities are not uncommon and take the form of fly-tipping waste (see Issue 12), operating a site without a licence or not complying with licence conditions. During 1996/97, investigations were carried out into over 60 incidents involving alleged illegal tipping activity in Derbyshire.

2.5 Contaminated land

Contaminated land is not a serious problem in this area. Former industrial sites in the main urban areas can be derelict. Some may be contaminated. Appropriate remedial action where sites are causing problems is required by the Agency, usually during redevelopment. Former landfills in Derbyshire have been identified as potential problems. The Agency has the primary responsibility for (and a number of duties to manage) "Special (contaminated land) Sites". There are not considered to be a significant number of potential "Special Sites" in this plan area, on the basis of information currently available to the Agency.

2.6 Mineral working

There are extensive mineral workings within the plan area, which are of National importance. They are also essential for meeting the local and regional community needs for such resources. These include limestone, coal, brickclay, sandstone and sand and gravel. The area is a net exporter of minerals and mineral related products.

The South Derbyshire Coalfield crosses the area. There are no active deep mines, but opencast sites remain.

The clay deposits of Carboniferous coal measures and Mercia Mudstones are extracted in the east of the plan area.

Sand and gravel workings can be found along the River Derwent, particularly in the south of the plan area.

The major mineral extracted is limestone, with extensive quarries, particularly in the Buxton area. These quarries have many years of reserves left and are creating huge voids in the Derbyshire countryside. These will require coherent restoration concepts to be devised. Due to the extremely high groundwater vulnerability, there is a policy of objecting to restoring limestone quarries that are using potentially polluting wastes (see Issue 9).

Igneous rock is extracted at Waterswallows near Buxton and other locations.

Fluorspar and other minerals are quarried on a small scale throughout the Peak District from linear deposits known as rakes.

2.7 Agriculture

Over 80% of the land in the plan area is in agricultural use. This is predominantly grassland, which accounts for 83% of the farmed area.

Edale End Farm near Jaggers Clough

The Derwent valley is mainly a livestock area, dominated by dairying. The agricultural workforce has seen a shift from full to part time holdings and there are approximately 1886 holdings in the plan area, of which 59% are worked part time.

In terms of land quality, as graded by MAFF, 30% of the plan area is within the grades 1-3. The poorer quality grade land (grade 4) is situated predominantly in the limestone and coalfield areas. The poorest agricultural land (grade 5) dominates the northern parts of the plan area (moorland), where stock farming is the dominant agricultural practice.

River Derwent - middle reaches

2.8 Domestic and industrial effluent disposal

Domestic effluent

The majority of the domestic sewage generated in the plan area is treated at Sewage Treatment Works (STWs) owned and operated by the local water undertaker, Severn Trent Water Ltd. There are also numerous small private Sewage Treatment Plants (STPs) serving single dwellings. These normally take the form of septic tanks. The effluent disposal route is normally a properly constructed soakaway. There are also a number of direct discharges from small privately owned STPs serving public houses, hotels, activity centres and small businesses.

Severn Trent Water Ltd operates 42 STWs in the plan area. These vary in size from small septic tank installations serving two or three properties, such as at Flagg, though various sized treatment works serving villages such as Foolow and towns such as

Matlock, Ripley and Alfreton, to the large scale works at Spondon serving the Derby conurbation.

Most STWs discharge directly to the River Derwent or its tributaries. A small number serving villages in the Carboniferous Limestone area, however, discharge treated effluent to the underground strata (see Issue 7).

Approximately 180 megalitres of sewage is collected daily by the water company for treatment, over half of which is treated at the Spondon STW. The majority of the remainder is treated at STWs discharging to the River Amber system. These drain the urban areas of Ripley, Alfreton, Clay Cross and parts of Sutton in Ashfield via the Hartshay, Press and Alfreton Brooks. Treated sewage forms a high proportion of the dry weather flow. This tends to make the water quality of the River Amber and the River Derwent downstream of the confluence slightly inferior when compared to the River Derwent upstream of Ambergate (see Issue 5). Generally the effluents from STWs serving towns and villages upstream of Ambergate, such as Matlock, Bakewell and Hathersage are able to take advantage of the higher variation in flows in the river. The effluent from Buxton STW is however discharged to the headwaters of the River Wye. The water quality immediately downstream of this discharge is therefore significantly affected but improves along the downstream stretch by both natural self-purification processes and further dilution. The water quality returns to a good standard through Millers Dale, Monsal Dale and Ashford in the Water.

The Derby STW is by far the largest in the catchment. Although the works produces a good quality effluent it nevertheless contributes a substantial organic and nutrient load to the river system. This, combined with low summer flows, enhanced river temperatures brought about by industrial cooling and the effects of photosynthetic activity, results in the classic diurnal variation in the dissolved oxygen level, pH and un-ionised ammonia, which in turn can cause fish mortality. The river downstream of Derby supports a good quality coarse fishery. Fish are however under considerable stress during nights in June and July, when the dissolved oxygen levels can dip to 35% saturation. Under these circumstances, any abnormal addition of organic load can lead to fish deaths (see Issue 4).

Industrial effluent

A number of the industries in the area discharge trade effluent to the local sewerage systems for treatment at the local STWs. However, a large number of large industrial effluents are discharged direct to the river system. These include effluents from the following: -

- limestone quarries
- sand and gravel quarries
- ex-colliery sites
- treated dye effluent from Drabbles on the Bentley Brook
- Stevensons (Dyers) on the River Amber
- treated process waters from the metal recycling process at Darley Dale, and
- large quantities of cooling water from places like Courtaulds Chemicals in Spondon.

2.9 Water resources and abstraction

Water Resources

Water resources within the plan area have been extensively developed; making the River Derwent one of the most heavily managed rivers in England and Wales.

The primary consumptive use of water in the area is for public water supply. There are a number of large reservoirs at the headwaters of the River Derwent (Howden, Derwent and Ladybower) and the River Amber (Ogston). In addition there are large river abstractions at Ambergate, Little Eaton and Draycott. Boreholes in the Carboniferous Limestone aquifer near Buxton also provide public water supplies. There is a net loss of water from the catchment for public water supply, with supplies going to Sheffield, Nottingham and Leicester.

Ladybower Reservoir

Industrial water use makes up the next highest use, from large chemical works such as Courtaulds Chemicals at Spondon to numerous small rural industries. Dewatering and licensed abstractions from mineral processing sites can have a big impact on water resources and are especially prevalent in the Buxton area, associated with limestone extraction.

In terms of impact upon the river, the main use is for hydropower. There are many mills on the River Derwent and its main tributaries, which produce power for the National Grid. If these sites are operated improperly they can have severe impacts on levels and flows in the river which affect other abstractors and the environment (see Issue 21).

The control and management of these demands upon the surface water system and the aquifers requires the Agency to monitor the state of the resources through a network of groundwater level monitoring sites, river flow gauges and rainfall gauges. Information thus gathered is used for long term planning and for taking operational decisions to limit the impact of large abstractions.

Silk Mill, Derby

Groundwater - geology

The plan area includes a great variety of rock formations and landforms. Natural features such as cliffs and outcrops, together with human activity like mining and quarrying, mean that rock formations are visible to the public in many locations.

The headwaters of the River Derwent rise on an area of Millstone Grit with a band of Carboniferous Limestone to the west of the area. East of Matlock the area is dominated by Coal Measures. The north of the plan area is characterised by a series of discontinuous water bearing sandstone horizons subdivided by impermeable shales and mudstones. These are overlain to the south of the area by a narrow outcrop of permo-triassic Sherwood sandstone formation and, in turn the Mercia Mudstone formation under the City of Derby.

Alluvial and glacial drift deposits, including sands, gravels, silts and clays, commonly overlie these strata throughout the area.

River Wye

Hydrogeology

Both the Carboniferous Limestone and the Sherwood Sandstones sequences are classified as Major Aquifers, and both tend to yield good quality groundwater. The Sherwood Sandstones are capable of supporting large abstractions for private and public water supplies. The Carboniferous Limestone, however, holds groundwater within fissures and voids which reduces accessibility by abstraction. Transmission of contaminants via fissure systems in the limestone strata can be extremely rapid. This means that the aquifer can be highly vulnerable to pollution incidents (see Issues 7 to 11). Although abstractions directly from the limestone are limited, the aquifer supplies substantial baseflow for the River Wye and the River Derwent, (which are abstracted from further downstream).

River Wye

The Millstone Grit and Coal Measures are Minor Aquifers, providing locally important groundwater sources for agriculture and industry. The Mercia Mudstone is classified as a non-aquifer, although small groundwater yields are obtainable where sandier layers called skerry bands are encountered.

Sand and gravel drift deposits form localised Minor Aquifers, and support many small abstractions for agricultural and industrial purposes.

2.10 Flood water storage and flood defence

Flooding History

The Derwent Valley has historically suffered from frequent and extensive flooding with notable events occurring in 1875, 1881, 1901, 1907, 1921, 1922, 1928, 1929, 1931, 1932, 1941, 1947, 1957, 1960, 1965, 1967, 1970, 1977, 1978 and 1998. A number of flood alleviation schemes have been undertaken to protect the urban areas of Draycott, Shardlow, Great Wilne, Ambaston, Derby, Little Eaton, Matlock, Darley Bridge and Duffield from Main River flooding.

Flood Warning

The Agency operates a flood warning service across England and Wales. Since September 1996 the Agency has taken the lead role in passing flood warnings to people at risk in order that they can take the necessary action to protect themselves and their properties. The latest technology is used to monitor rainfall and river levels for 24 hours a day, 365 days a year. The flood warning service is provided for certain reaches of Main River where there is a risk to people and property and where there is sufficient time for the warnings to be effective. Flood warnings are issued to the police, Local Authorities and the public through a variety of media including AA Roadwatch, Teletext, radio and television. The Agency also provides a Floodcall "dial and listen" service. This provides 24-hour recorded information on the latest flooding situation. The Rivers Derwent and Wye are the watercourses for which the Agency will issue flood warnings in this plan area.

It should be noted that the Agency uses the best information available to predict the possibility of flooding but no warning system can cover every eventuality. It is the responsibility of those who live in flood prone areas to be aware of any risk and to know what action should be taken to protect themselves if flooding occurs.

2.11 Conservation; sites of ecological importance

Wildlife

English Nature has divided the country into Natural Areas, comprising unique combinations of wildlife, land use, geology and culture. They link the historical and cultural development of an area to its wildlife and natural features. The Natural Areas Project is an important part of the Biodiversity Action Plan and will assist in stimulating local action. The project also ties in with Countryside Character Areas of the Countryside Commission.

In this plan the Natural Areas have been identified as the Dark Peak, White Peak, Derbyshire Peak Fringe and Lower Derwent, Coal Measures, Needwood and South Derbyshire Claylands, Trent Valley and Rises and a very small part of the Southern Magnesian Limestone.

Dark Peak

The Dark Peak forms part of the Peak District Moors Special Area of Protection and most of the moorland is a Site of Special Scientific (SSSI). The Dark Peak forms the head of the Derbyshire

Derwent catchment and is mainly wild open moorland. It is named after the dark Millstone Grit and is one of the most extensive areas of semi-natural habitats in the country, ranging from blanket bog and heather moorland, to the deep river valleys of the Noe and Ashop. There is little semi-natural woodland but many hillsides have commercial conifer plantations. The high plateau moorlands support breeding populations of golden plover and dunlin and on the lower heath are found merlin, short-eared owl and twite. The gritstone tors and edges support occasional peregrine falcon. The scrubby edges of the moorland support black grouse.

The wet pastures found away from the moors are home to curlew and lapwing. In the remainder of farming land careful management will stop the decline in species of brown hare and grey partridge. The Derwent reservoirs support common sandpiper, grey wagtail and little ringed plover.

White Peak

This is a very important area being part of the Peak National Park and having numerous SSSIs. There are candidate Special Areas of Conservation (SACs) for Peak District Dales, Peak District Dales Woodland, and Gang Mine. The River Lathkill is a National Nature Reserve (NNR) and a River SSSI, one of only 27 in the country. It is known as the White Peak because it is a limestone plateau, intersected with steep sided dales, such as the Rivers Wye and Lathkill. Much of the original heathland is now limestone walled meadow with dewponds, some of which hold great crested newts.

The Dales offer the most diverse habitat for fauna and flora, supporting species rich grassland with cowslip, early purple orchid, brown argus butterfly and cistus forester moths. The significant scrubland, often containing the rare dark red helleborine, grades into semi-natural ancient ash woods. The river and streams running through the dales have excellent water quality and have populations of brown trout, native crayfish, kingfishers and water vole.

There has been extensive quarrying in the White Peak and this provides nesting sites for peregrine falcon and ravens. The spoil from lead mining in the past has given rise to metallophyte communities.

Derbyshire Peak Fringe and Lower Derwent

This is predominantly a pastoral area with areas of unimproved neutral and marshy grassland alongside the River Derwent and its tributaries. Many of these were dammed for industrial milling uses and the open water bodies of the rivers and reservoirs provide important habitats for great crested newts, breeding and wintering wildfowl and migrating waders. Reed bunting, kingfisher and the emerald damselfly can also be found. Ogston Reservoir provides a large gull roost and the lower reaches of streams have populations of water voles. The otter may be recolonising from the west, but the status of the white clawed native crayfish is uncertain (see Issue 18).

Grassland is abundant but traditional hay meadows, with associated rich diversity of grasses, flowers, insects and birds, have been affected by agricultural treatments.

The semi-natural woodland, mainly sessile oak, provides habitat for deadwood invertebrates, the lesser spotted woodpecker and redstart and, in some, bluebells, a globally threatened species, are found. Old trees are important for bats, which use the holes and cracks for roosting. There are small areas of wet woodland, usually dominated by alder mixed with birch, ash and hazel.

There are only scattered remains of heathland, much of which has gone under the plough or become scrub or woodland through lack of grazing. Both adders and nightjar are now found only in the adjacent peak areas.

The remaining Natural Areas comprise a small part of Coal Measures around Alfreton, a similar small part of Needwood and South Derbyshire Claylands and the River Derwent at Derby and downstream which is in the Trent Valley and Rises Natural Area. The City of Derby covers a substantial part of these two latter areas. The Project Riverlife and Greenstep projects have ensured that there are wildlife havens along the river and within the city parks and small watercourse corridors.

2.12 Fisheries

Angling is an important activity within the plan area with very high value trout fisheries on the Rivers Derwent, Wye and Lathkill. In addition there are excellent reservoir trout fisheries in the upper reaches of the area. The lower Derwent is a particularly good quality coarse fishery and there are a number of gravel pit still water fisheries in the gravel pits in the floodplain.

River Derwent upstream of the River Noe confluence

Ladybower Reservoir

Grouse shooting takes place on the moors of the Dark Peak. Walking and climbing bring visitors to the Dark Peak. The southern end of the Pennine Way starts at Edale near Kinder Scout. Many cycle routes have made use of old railway tracks. Camping and caravanning are catered for at several locations throughout the area and one campsite at Birchen Edge has been provided specifically for climbers. The "edges" offer many good climbs along with the cliffs at Matlock and Black Rocks near Wirksworth. Horseriding takes place along the bridle ways but there are problems with All Terrain Vehicles causing erosion to paths and tracks.

The reservoirs at Ladybower, Derwent, Howden and Ogston provide "put and take" trout fisheries, with facilities for disabled anglers at Ladybower. Ogston also has a sailing club operating on the water. A canoe slalom course has been installed in the River Derwent at Matlock.

2.13 Recreation

The Peak National Park is very popular with visitors having many activities and attractions to offer. Tourists visit the impressive gorges found along the Wye Valley and the Derwent Valley at Matlock and Matlock Bath. At Matlock Bath one of the associated tourist attractions is a chair lift to the top of the gorge. Riber Castle dominates the gorge from its very fine position on top.

Ashford in the Water - Sheepwash Bridge

Lower Derwent

In Derby, Project Riverlife, supported by the Countryside Commission, English Nature, Courtaulds and the Agency, has constructed a walkway and cycle route from Borrowash to Darley Abbey.

A new interpretive centre at Belper shows how the rivers have been used for industrial purposes over several hundred years. There are many other museums, mills, craft centres and other visitor attractions throughout the plan area.

The River Derwent has a right of navigation from Derby downstream to the River Trent. At one time, canals linked Derby with the Trent and Mersey Canal near Swarkestone, and the Erewash Canal near Sandiacre. The Cromford Canal ran north from the end of the Erewash Canal at Langley Mill. On other parts of the River Derwent the riparian owners use the river for boating, for example in Belper.

Church Wilne lagoon, adjacent to the water supply reservoir, offers facilities for power boating and water ski-ing.

2.14 Archaeology and heritage

The Dark Peak is very rich in archaeological resources dating back to prehistoric times. These range from Mesolithic remains in the blanket bogs and extensive Neolithic and Bronze Age remains on the lower plateau. Old packhorse routes and small abandoned stone quarries are found, along with burial barrows on the high ground. The traditional dry-stone walling and the agricultural landscape are the product of 18th century farming practices.

In the White Peak, one of the greatest British prehistoric monuments is found at Arbor Low, a 4000 year old henge, and there are Roman roads to be found. Between 1650 and 1850, much lead mining took place in the area. Not only has this left a legacy of old lead spoil heaps and charcoal burning, but also the multitude of underground soughs constructed in the limestone to drain the water (see Issue 2). The waters of the Rivers Derwent and Wye were used for milling purposes and the large old mill buildings and river weirs built by Sir Richard Arkwright still dominate the valleys.

There are some spectacular caverns in the Peak District and many caves of National and Regional importance. These include notably Pooles Cavern near Buxton and the Blue John and Speedwell Caverns around Castleton.

The magnificent country houses of Chatsworth and Haddon, a medieval stronghold added to in the 1600s, are the homes of the Duke of Devonshire and the Duke of Rutland respectively. Both are open to the public and are very popular with tourists. Elvaston Castle and Kedleston Hall, near Derby, are other popular attractions.

The largely disused railway network and canal infrastructure was used for transporting goods, especially quarried stone in the Matlock area. Only parts of the Cromford Canal still have water, and only remnants of the Derby Canal are visible. The Derby and Sandiacre Canal Trust are, however, looking to restore this particular waterway.

Parts of the plan area are famous for well dressing ceremonies, which relate back to pagan times. Well dressing is the art of decorating springs and wells with pictures made of flower petals and other natural materials.

Boars Head Mill, Derby

consultation

3

3.0 review of the consultation process

3.1 Summary of Public Consultation

The Agency is committed to full consultation during all stages of the LEAP process. During the consultation period following the launch of the Derbyshire Derwent LEAP, in February 1998, we have undertaken extensive consultation with interested parties and the general public. This section reviews this process and provides a brief summary of the results. A more detailed review of the comments, including individual responses, is given in a separate document entitled "Statement of Public Consultation".

3.1.1 Informal consultation

In July 1997, the Agency wrote to a range of organisations and groups that have an interest in the local environment. We asked for comments on an initial list of issues affecting the environment in the area, and 55 organisations responded. All comments from this initial informal consultation were considered and where appropriate were incorporated into the Consultation Report.

A sub-group of the Lower Trent Area Environment Group (AEG) was set up for the Derbyshire Derwent LEAP. The five members of the sub-group participated in the development of the Consultation Report and have been consulted on the drafting of both this Action Plan and the Statement of Public Consultation.

3.1.2 Formal consultation

The Consultation Report was launched on 2 February 1998 at Pride Park, in Derby. We invited over 300 organisations and individuals to the launch. A total of 51 attended the launch, representing a wide range of interests from within the area including Local Authorities, environmental organisations, industry and conservation organisations. All delegates received a copy of the Consultation Report and Summary Leaflet. Directly after the launch a further 300 reports were distributed to a wide range of organisations and individuals on our mailing list and on request during the consultation period.

The launch marked the start of the formal three-month consultation period, which ended on 30 April 1998. During this time the Consultation Report was promoted by:-

- Radio interviews, press releases and public notices in the press
- Wide distribution of the Summary Leaflet
- Display boards about the LEAP, which toured eight libraries in the plan area
- Copies of the report placed on deposit at Local Authority offices and libraries

3.2 Summary of responses

A total of 99 responses to the consultation were received, including 38 questionnaires. A list of all those who commented is included in Appendix 1. A more detailed review of comments, and our response, is given in the "Statement of Public Consultation", which is available from the address on page 1. An analysis of information from the questionnaires is also given in the statement. All letters and questionnaires were acknowledged during the consultation period when received.

All comments have been considered, and where appropriate and practicable, incorporated into the Action Plan. During the consultation process and via the responses many organisations expressed an interest in working in partnership with the Agency towards resolving the issues highlighted in the Plan. We received many helpful and welcome suggestions. Errors and omissions were also highlighted, and these are summarised in Appendix 2.

The consultation process has given us a more comprehensive understanding of the issues and options presented in the LEAP and of the public's concern for the plan area. The topics that were raised most frequently and were of particular interest to consultees included:

Issue 8: Pollution of the water environment by new types of sheep dip chemical

General support was expressed to the Agency for having highlighted this problem. There was also a general feeling that there should be some reference to a need to seek controls if necessary, by legislation.

Issue 11: Possible pollution effects from the spreading of waste on land

Support for the issue, including some concern about the landspreading of waste paper pulp.

Issue 15: Promotion of recreational access along river valleys

By far the most popular issue in the plan - responses all generally support the issue, but vary widely in the nature of interest in the subject of access. Rights of local residents, sporting activities (including canoeing). Agreement about the need for a strategy to deal with tourism and transport pressure.

Issue 18: Biodiversity protection

Inclusion of this issue was welcomed and generally supported. Some responses questioned the omission of mention of mink control. Information was offered on clarification of responsibilities for various species, the status of complementing BAPs and other plans being produced by various organisations.

3.3 Further action

A number of changes to the options proposed in the consultation report have been made as a consequence of the public consultation. The Vision and Protection through partnership sections have been modified. Partnerships have been developed following meetings with key organisations and groups.

The options "to do nothing" from the consultation report have not been carried through to the Action Plan. As far as possible the actions have retained the same numbering as for the options. These actions represent the work that will be undertaken over the next five-year period in the plan area, to help achieve the vision and thereby contribute to sustainable development in the plan area.

Changes to existing issues have been identified in the Action Plan tables in Section 4. Suggested new actions have been incorporated under existing issue headings where appropriate. The Action Plan reflects a balance between the opinions expressed and the need to ensure a feasible and workable plan.

River Noe

4

actions

4.0 actions

4.1 Implementation

Implementation of the plan is based on the 25 key issues set out below. These were discussed in detail in the Consultation Report and have been modified where appropriate in the light of the consultation responses. Their resolution is considered necessary in order that the plan can be successful in achieving real improvements within the plan area. Following the end of the consultation period the Agency has undertaken extensive negotiations with key groups and individuals.

The consultation process generally supported the issues raised by the Agency. Many of the options have been carried through into the action tables but many new actions have been added, and new approaches taken.

4.2 Issues

The issues are presented with a number of actions, a target timetable and the identification of responsible parties as well as the name of the Agency person responsible for taking the lead on that action. The Action Plan primarily covers the five year period to 2003. Where possible, costs have been outlined for the period covered by the plan. This does not necessarily reflect the total cost of the schemes and is sometimes a projected estimate to be more accurately costed later. Costs shown are Agency costs unless indicated otherwise. This document is produced in good faith, recognising current priorities both within the Agency and other organisations.

Key

●	Action in the year indicated (cost figures given if known).
R	Recurring - no additional costs to annual budgetary provision.
U	Unknown costs at this time.
K	£000.

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. Some work may take longer than indicated due to funding availability, Government policy or more urgent priorities. All changes will be highlighted in the Annual Review.

Notes on abbreviations

AMP3	Asset Management Plan 3
BATNEEC	Best Available Techniques Not Entailing Excessive Costs
BCU	British Canoe Union
BTC	Bakewell Town Council
DDDC	Derbyshire Dales District Council
DETR	Department of the Environment, Transport and the Regions
DVHT	Derwent Valley Heritage Trust
DWT	Derbyshire Wildlife Trust
EN	English Nature
EH	English Heritage
FRCA	Farming and Rural Conservation Agency
FWAG	Farming and Wildlife Advisory Group
HM+U	Herbicide Manufacturers and Users
HSO	Hydropower Site Operators
LA	Local Authority
MAFF	Ministry of Agriculture, Fisheries and Food
MCC	Matlock Canoe Club
MoU	Memorandum of Understanding
MPA	Minerals Planning Authority
NFU	National Farmers Union
OFWAT	Office of Water Services
PC	Parish Council
PDNPA	Peak District National Park Authority
RO	Riparian Owners
RSPB	Royal Society for the Protection of Birds
SAC	Special Area for Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
STW	Sewage Treatment Works
STWL	Severn Trent Water Ltd
WSUK	Water Services UK

LEAPs translate the Agency's long term 'Environmental Strategy for the Millennium and Beyond' into action on the ground. The actions in each issue have therefore been linked to the appropriate environmental theme. These nine environmental themes set out in the Environmental Strategy are:

- Addressing climate change
- Improving air quality
- Managing our water resources
- Enhancing biodiversity
- Managing our freshwater fisheries
- Delivering integrated river-basin management
- Conserving the land
- Managing waste
- Regulating major industries

4 actions

The issues are separated into three sections: Site specific; Plan wide and National issues and are shown on Map 2. There is no priority order to the sections or to the issues within each section.

Section 1 - Site specific issues

These are issues that are key to a specific location.

Section 2 - Plan wide issues

These issues occur in a number of locations within the plan area.

Section 3 - National issues in the plan area

These issues have a national profile but important examples can be found in the Derbyshire Derwent area.

Wherever possible the individuals or organisations responsible for carrying out each option have been identified. The actions are intended to facilitate improvements to the environment for the benefit of all users.

Site specific issues

Issue 1: The deterioration of Calver Weir

Issue 2: Historic mine workings have affected flows in the River Lathkill

Issue 3: The detrimental impact on water quality from wrong sewerage connections in Derby

Issue 4: Problems of maintaining current water quality levels in the Lower Derwent

Issue 5: Obstructions and water quality in the River Amber limit fish distribution

Issue 6: Negative impact on natural brown trout populations in the Rivers Ashop and Noe caused by the operation of abstractions associated with the Derwent Valley reservoirs

Plan wide issues

Issue 7: Discharges to underground strata in the Carboniferous Limestone of Derbyshire

Issue 8: Pollution of the water environment by new types of sheep dip chemical

Issue 9: The lack of availability of future landfill space

Issue 10: The threat to water quality posed by closed landfill sites

Issue 11: Possible pollution effects from the spreading of waste on land

Issue 12: Fly-tipping of domestic waste

Issue 13: Loss of habitat to invasive plant species

Issue 14: The use of helicopters to spray herbicides may affect water quality in potable supply catchments

Issue 15: Promotion of recreational access along river valleys

Issue 16: The rich archaeological and historical resource of the Derwent valley requires protection

Issue 17: Disparity between abstraction licensing policies for surface water and groundwater

National issues in the plan area

Issue 18: Biodiversity protection

Issue 19: Minimisation of industrial waste generation

Issue 20: Minimisation of water use

Issue 21: Damage to the water environment and derogation caused by the operation of hydropower sites

Issue 22: Problems of utilising land identified as contaminated land

Issue 23: The risk of flooding to undefended properties and to properties where existing flood defences require enhancement

Issue 24: Control of the development of floodplain

Issue 25: The inability to provide scientific interpretation due to the lack of air quality data

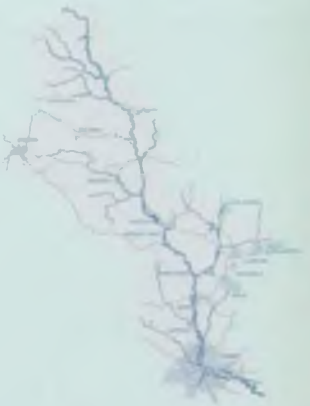
Issue 4: Maintaining current water quality levels in the Lower Derwent

PLAN WIDE ISSUES

7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17

NATIONAL ISSUES IN THE PLAN AREA

18, 19, 20, 21, 22, 23, 24, 25



Issue Locations

KEY

- LEAP area
- Watercourse
- Canal
- Built up area
- Issue location
- Issue river stretch
- Issue area (Carboniferous Limestone)

4 actions

ISSUE 1: The deterioration of Calver Weir

Objective - Prevent Calver Weir from collapsing

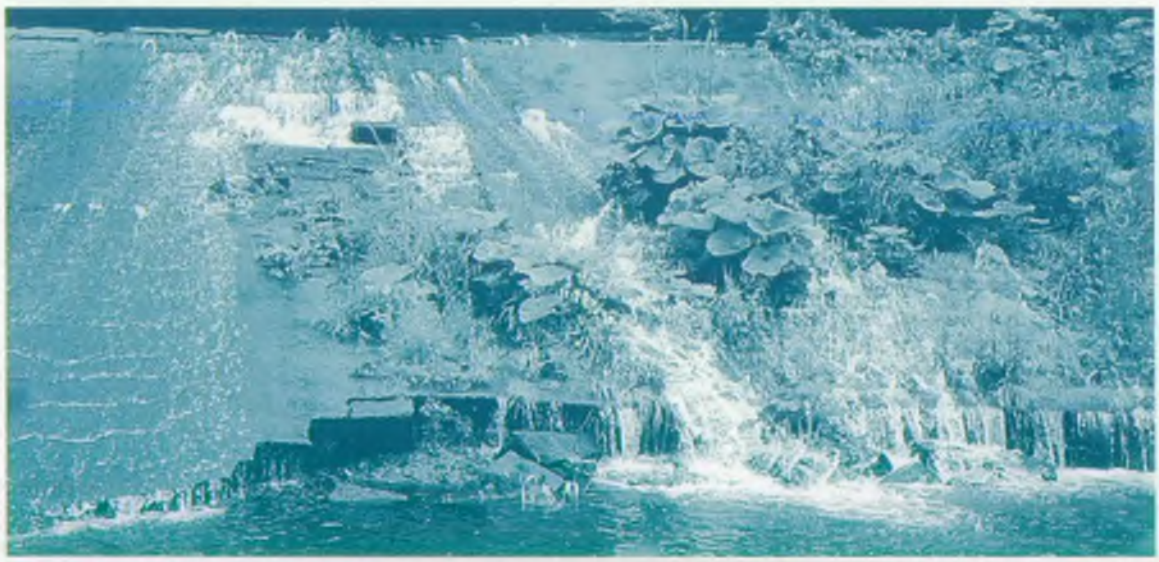
Calver Weir is a large imposing structure on the upper reaches of the River Derwent. Over the last few years the condition of the weir has considerably deteriorated and the Agency and local residents are concerned about the structural condition of the weir. The significance of the weir is increased by the fact that it is a listed structure.

The owners are unable to effect repairs and there is a concern that the structure may collapse causing the following problems:-

i) a significant amount of silt to be carried onto the river bed downstream

ii) a drop in water levels that could have an effect on the willow and alder carr on the upstream bank.

The angling club who fish upstream of the weir are investigating the possibility of a Lottery bid to repair the weir. Peak District National Park Authority is also keen to encourage repairs to the weir.



The deterioration of Calver Weir

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
1.1 Assist in the preparation of a lottery bid.	PC	Environment Agency PDNPA EH RO LA	R	●					Val Holt
1.2 Assess the present structural condition of the weir.	Environment Agency		U	●					David Hoskins
1.3 Assess potential damage to the environment in the case of a collapse. Undertake a review of previous information and commission new survey work as appropriate.	Environment Agency	RO PDNPA	2		2				Val Holt
1.4 Examine potential for additional funding through the group set up to evaluate the problem.	DDDC	Environment Agency RO PDNPA PC	U		●				Val Holt

ISSUE 2: Historic mine workings have affected flows in the River Lathkill

Objective - understand hydrological and hydrogeological factors affecting flows

The River Lathkill has experienced extreme low flows, and on some reaches no flow at all.

The area around Lathkill Dale was once a centre for lead mining. To improve the mining conditions, between the years 1600 and 1900, drainage soughs were constructed to suppress the natural water table. These soughs also affected the natural groundwater flows. Some of the drainage that would normally reach the River Lathkill is in effect being diverted into the soughs and discharged directly to the Rivers Wye and Derwent further downstream. Of more significance is the loss of water through the river bed. This is thought to be due to a deterioration of the river's puddle clay lining which was lain by the soughers to protect the flows in the river. It is felt the river bed condition and the soughs are a probable cause for the loss of flow, which was recently compounded by some of the driest months on record.

Historic mine workings have affected flows in the River Lathkill

The lower parts of the river are managed as a fishery by the local landowners, Haddon Estates. There is concern that the fishery is suffering due to the lack of flow.

The River Lathkill is a river SSSI identified by English Nature. The river SSSI is part of the larger Lathkill Dale SSSI, which is part of the candidate Derbyshire Dales Special Area for Conservation (SAC). This will be designated under the Habitats Directive for its importance for native crayfish. The Agency and English Nature are required under a Memorandum of Understanding (MoU) to draw up conservation objectives and a consenting protocol for the SSSI, and to review Agency consents that may affect the SAC.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
2.1 Study the hydrogeology of aquifer affecting River Lathkill catchment in order to identify solutions. Investigate the condition of the river bed and assess losses to the sough.	Environment Agency	EN	10	●					Rob Harper
2.2 Prepare a consenting protocol for the River Lathkill SSSI to identify areas for further work.	Environment Agency	EN	R	●					Val Holt
2.3 Review by 1999 the consents affecting SACs and Special Protection Areas (SPAs) to gain an understanding of Agency effects in the catchment.	Environment Agency	EN	R	●					Val Holt
2.4 Survey the area for the presence of native crayfish.	Environment Agency	EN	R	●					Pete Sibley
2.5 Investigate passages to fish migration pending results of Action 2.4.	Environment Agency	RO	R		●				Keith Easton

4 actions

ISSUE 3: The detrimental impact on water quality from wrong sewerage connections in Derby

Objective - stop wrong sewerage connections through better education and public awareness

Within the area of Derby City there is a common problem of wrong sewerage connections. Most of the problems identified concern washing machines, dishwashers or hand basins being connected into the surface water sewer system rather than the foul sewerage system. There are even situations where gross solids have been identified in the surface water system. The majority of these problems tend to occur in dilution of smaller urban watercourses close to residential areas.

The investigation of wrong connections is an issue that requires considerable resources to tackle successfully. Often the more complex problems are time consuming. Historically the Agency and Derby City Environmental Health Department have followed up public complaints, using powers to serve notice under Section 34 of the Public Health Act 1936. Further legislation that is available to Local Authorities to tackle this problem is the Building Act 1984, Section 59, which requires the owner of a property to make satisfactory provision for the drainage of a building. Water companies have the ability to prosecute under the Water Industries Act 1991, Section 106(2), and it is proposed to reach an agreement with Severn Trent Water Ltd. The company will undertake the initial survey to identify the source of the problem and hand this information onto the Environmental Health Department. It is hoped that this will be an improvement upon the existing situation.

For more information, please see the Agency leaflet "Making the right connection - avoiding water pollution". See Appendix 3 for details of how to obtain a copy.

Typical new development

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
3.1 Develop a prevention and education strategy.	Environment Agency	Derby City Council STWL	U		●				Mark Cunningham
3.2 Continue liaising with interested parties.	Environment Agency	All interested parties	R	●	●	●	●	●	Mark Cunningham

ISSUE 4: Problems of maintaining current water quality levels in the Lower Derwent

Objective - to reduce eutrophic conditions and create a better understanding of the complex nature of the Lower Derwent from all interested parties

Eutrophication

The Lower Derwent receives large quantities of treated sewage and industrial effluents. The water quality immediately downstream from these is satisfactory. The unsatisfactory reach is downstream from the Southern Surface Water Sewer (SSWS) which drains the southern part of Derby. This receives intermittent dry weather discharges from the foul sewerage system.

Levels of orthophosphate (an important plant nutrient) are high within parts of the lower River Derwent. This means that the river supports dense beds of aquatic plants downstream of Derby. Botanical surveys have shown a vegetation typical of eutrophic conditions. Eutrophication is the excess growth of aquatic vegetation due to increased plant nutrients being introduced to the watercourse. Concentrations of dissolved oxygen in the lower reaches of the river show wide diurnal fluctuations, which are influenced strongly by plant photosynthesis and respiration.

The Agency carries out periodic assessments of watercourses for designation as Sensitive Areas (Eutrophic) (SA(E)) under the Urban Wastewater Treatment Directive (UWWTD). The River Derwent downstream of Derby has now been approved as a SA(E) using data collected during the last UWWTD review period (1994-96). The rest of the catchment upstream of Derby is now being assessed as a candidate SA(E) using data collected during the present review period (1998-2000).

The designated SA(E) downstream of Derby will be monitored prior to nutrient removal equipment being installed at Derby STW (see Action 4.4).

The lower Derwent is a high quality coarse fishery, due in part to the high organic contribution from the above upstream sources. This fishery is however in balance because of the complex factors at work in the lower Derwent. Courtaulds abstract water from the River Derwent for cooling purposes, and the amount of water abstracted may increase depending upon the ambient temperature. The resulting higher volume of warmer water that is returned to the river affects pH levels, resulting in increased levels of un-ionised ammonia, creating a situation harmful to fish. This balance can be further upset by discharges from the storm water outfalls, operating due to heavy rainfall over Derby. These discharges in effect create a flash pollution event. Another effect is that the size of the fish is affected by aquatic vegetation growth associated with eutrophication.

A better understanding of the complexity of the quality of the lower Derwent is required, as well as improved co-operation between the various companies and angling clubs using the river for industrial and recreational purposes.

It was recognised that the water quality of certain reaches of the lower Derwent was not sustainable without further investment and plans for sewerage works improvements are presently being undertaken under AMP2. Severn Trent Water Ltd are well into a major improvement programme expected to cost in the region of £30 million to address the longstanding problems of the Southern Surface Water Sewer.

4 actions

ISSUE 4: (continued)

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
4.1 Create an information pack for the Lower Derwent.	Environment Agency		U	●	●				Keith Easton
4.2 Complete assessment of candidate SA(E) downstream of Derby STW following 1994-96 review.	Environment Agency	DETR	R	●					Phil Harding
4.3.1 Carry out monitoring of designated SA(E) downstream of Derby.	Environment Agency		R	●	●	●	●	●	Phil Harding
4.3.2 Carry out assessment of candidate SA(E) upstream of Derby during next review period (1998-2000).	Environment Agency		13.5	3.5	5	5			Phil Harding
4.4 Removal of nutrients at Derby STW.	STWL		U				●		Phil Harding

ISSUE 5: Obstructions and water quality in the River Amber limit fish distribution

Objective - improve the fisheries potential of this stretch of watercourse

Upstream of its confluence with Alfreton Brook at Toad Hole Furnace, the River Amber is a trout stream with a self-sustaining population. Downstream of the Alfreton Brook confluence due to a combination of old mill weirs and fluctuating water quality, fish distribution is detrimentally affected.

The old mill weir structures create an obstruction to the migration of brown trout and coarse fish. There is also a problem of siltation associated with these structures, which results in a lack of suitable spawning habitat.

The Alfreton Brook catchment is predominantly urbanised and as such the watercourse contains high proportions of treated sewage, urban runoff and industrial effluents. There are also major inputs of mine water to the watercourse, which although providing a valuable source of low BOD (Biological Oxygen Demand) dilution water, also gives rise to increases in both ochrous and saline concentrations. The problem is made worse by occasional high levels of ammoniacal nitrogen in this stretch of the River Amber. This combination of factors can produce an environment, which pressurises the maintenance of a fish population.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
5.1 Review the operation of mill weirs on the River Amber to identify possible installation sites of fish passes and improved operation of sluices.	Environment Agency		R	●					Keith Easton
5.2 Test stability of water quality and habitat of River Amber using marked fish as pioneer stock to aid reestablishment of self sustaining fish stocks.	Environment Agency		12		8	4			Keith Easton

ISSUE 6: Negative impact on natural brown trout populations in the Rivers Ashop and Noe caused by the operation of abstractions associated with the Derwent Valley reservoirs

Objective - alteration in the water release regime from Ladybower Reservoir

The River Noe and the River Ashop are located in the north of the plan area. The Noe flows through the Vale of Edale and the Ashop through Woodlands valley.

As part of the Derwent Valley reservoir system, water is abstracted from the River Noe at Edale and from the Rivers Alport and Ashop at their confluence. This water is diverted from the rivers by weirs and aqueducts to the Derwent Valley reservoirs. To compensate for the abstraction of the whole flow in the River Noe, 17Ml/d is discharged into Jaggers Clough and returns to the River Noe some distance downstream of the diversion. There is no compensation release into the River Ashop despite a similar abstraction of the whole flow.

River Ashop downstream of diversion.

The result of these abstractions is a dry river bed in both cases. In the River Noe the dry stretch is approximately 2km in length, in the Ashop it is in the region of 3km.

Lower down, the River Noe supports natural populations of brown trout, which are fished by the Peak Forest Angling Club. The Agency is concerned about the reduced numbers of brown trout in the headwaters of the River Derwent and its tributaries in the north of the plan area. The natural brown trout population in the upper reaches of the Rivers Noe, Ashop and Derwent suffer from the low flows associated with the operation of the Ladybower Reservoir system.

A different regime of water release and/or impoundment could allow the fish population to spread and become more secure. For example, dividing the compensation release between Jagger's Clough and the River Noe itself will result in constant flow in the river. The construction of fish passes will also aid the fishery.

Native brown trout

Long term solution

The proposed solution involves construction of compensation release facilities, together with fish passes. This will provide a flow below each of the existing diversion weirs. This could be balanced by a reduction of the compensation release from Ladybower Reservoir at Yorkshire Bridge that should ensure the maintenance of adequate flows in the 4km reach down the confluence with the Noe, whilst not affecting the security of supply from the Derwent Valley Reservoirs.

Expected improvements

Some 2km of the River Noe and 3km of the River Ashop will be re-watered.

The re-instatement of flows through the low flow reaches on both the Noe and the Ashop will improve the continuity of the linear wildlife habitat, which is currently incomplete due to the negligible flows within the river reaches at present.

The water flowing above and below the current diversion points is of the highest water quality classification (RE1) which supports populations of brown trout. Increasing the flow within the dry

ISSUE 6: (continued)

sections will create suitable conditions for a viable fishery with both economic and ecological benefits. The provision of fish passes will allow the new fishery to link with the reaches upstream of the existing weirs.

The popularity of the Peak District National Park means that there are large numbers of visitors. With improved flows, it is hoped that more people will be encouraged to visit these areas, providing more income for local services and relieving pressure on more traditionally popular areas within the Park.

Further investigation

Final details of the compensation release facilities and associated fish passes at the existing weirs will be investigated by the Agency. This will include possible seasonal variations in the patterns of releases.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
6.1 Review abstraction operation arrangements for both the River Ashop and the River Noe to establish options for improvements.	Environment Agency		R	●	●				Trevor White
	STWL		U	●	●				
6.2 Request that changes to the River Noe operating system are progressed through the AMP3 process.	Environment Agency		R	●	●				Trevor White
	STWL		U	●	●				
6.3 Vary abstraction licences for the River Ashop and River Noe to authorise changes to the abstraction operating system for the Derwent Valley reservoirs and provide flow for a greater proportion of the year.	STWL		R		●	●			Trevor White
	Environment Agency		189		●	●			
6.4 Install fish passes on Edale and Ashop weirs to allow migration of trout populations(dependant upon progress of Actions 6.1-6.3).	STWL		U				●		Keith Easton
	Environment Agency		R				●		

ISSUE 7: Discharges to underground strata in the Carboniferous Limestone of Derbyshire

Objective - protection of the limestone Major Aquifer from sewage effluent discharge

Unrestricted discharge of sewage effluents directly to the Carboniferous Limestone presents potential water quality problems and public health hazards. Because there is a lack of surface watercourses in the limestone area, a number of sewage effluent discharges have to be made to underground strata.

It is essential that discharges into limestone, particularly via shafts, fissures or shacks, are of an acceptable quality. There are several STWs that discharge effluent in this manner, and this must be adequately controlled. There is a need for a policy to ensure that consistent standards are applied to all discharges across the limestone area, both large and small and to assist with prioritising for AMP3 spending by the water company.

The Carboniferous Limestone is classified as a Major Aquifer. This means that within the rock formation

significant quantities of high quality water are stored. The high quality of this groundwater means it is a valuable source of drinking water when abstracted. There are several significant abstractions and a multitude of smaller ones, which are dependent upon this source of groundwater. The aquifer must be protected, however it is highly vulnerable to pollution. Contamination of groundwater can also affect surface water due to rapid groundwater flows and the hydraulic connection with surface waters.

Much of the limestone has extensive cave systems, many of these underground systems have SSSI status and subsequently discharge into rivers of a similar status. These may be show caves, as found in the Castleton area or other cave/lead mine systems used by cavers. Such discharges may present a health hazard to cavers e.g.,in the Knotlow Mine system, cavers have reported pollution downstream of Flagg STW.

Derbyshire limestone

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
7.1 Monitor and enforce consent standards on existing discharges to underground strata in the Carboniferous Limestone of Derbyshire	Environment Agency		R	●	●	●	●	●	Pete Hufton
7.2 Identify underground discharge route and assess risks to obtain information for Action 7.3.	Environment Agency STWL	Other dischargers where appropriate	R (total unknown)	●	●	●	●	●	Pete Hufton
7.3 Review appropriate standards for new and existing consents and infrastructure investment options in view of Actions 7.1 and 7.2.	Environment Agency STWL	Other dischargers where appropriate	R (total unknown)	●	●	●	●	●	Pete Hufton

ISSUE 8: Pollution of the water environment by new types of sheep dip chemical

Objective - increase awareness of the effects of sheep dip to the aquatic environment

Biological monitoring of parts of the Peakshole Water catchment has shown recent examples of serious toxic pollution with severe damage to invertebrate communities. This has been traced to contamination of an underground tributary of Peakshole Water by sheep dip chemicals, including synthetic pyrethroids.

This particular pollution problem is being addressed, but the wider issue of sheep-dip use and disposal within the catchment needs to be considered. Farmers are switching to the newer pyrethroid-based dips following concerns about the health hazards of traditional organophosphate-based products. This has resulted in an understandable perception that the new dips are "safer". However pyrethroid-based dips are highly toxic and can destroy aquatic life along large stretches of watercourses. A large increase in water pollution nationally has been associated with the introduction of pyrethroid based dips.

ISSUE 8: (continued)

Recently in the Lower Trent Area of the Agency, there has been a campaign of visits by Agency staff to the livestock markets in Derbyshire. The aim of the campaign has been to raise awareness in the farming community of the problems of sheep dip use.

A National working group has also been created to prepare a strategy for Sheep Dip, which was due to be published in January 1999. For more information on this subject, please see the Agency R&D Technical Report P170 "A Strategic Review of Sheep Dipping".

Pollution of the water environment by new types of sheep dip chemical

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
8.1 Maintain routine biological surveillance of watercourses at risk from disposal of sheep dip.	Environment Agency		R	●	●	●	●	●	Phil Harding
8.2 Assess the success of the recent awareness campaign at Derbyshire livestock markets and develop where appropriate. Including possible joint presentations with STWL and adaptation of Agency Emergency Response vehicle for promotion purposes.	Environment Agency	STWL	U	●	●	●	●	●	Robin Acton
8.3 Continue to undertake farm visits to survey sheep dip facilities to carry out risk assessment.	Environment Agency	STWL	R	●	●	●	●	●	Pete Hufton

ISSUE 9: The lack of availability of future landfill space

Objective - consider the needs and alternatives to landfill

In the north and west of the plan area there is a problem in landfilling waste. This is due to the Carboniferous Limestone Major Aquifer. As discussed in Issue 7, the Aquifer is an important supply of high quality water and is vulnerable to pollution. As a result the Agency has a policy of not allowing the development of landfills for domestic, commercial or industrial waste that would affect the Aquifer. This restricts any future landfill development in the area.

There are some old waste disposal sites in the north of the plan area. One such site at Taddington was the subject of a recent Waste Management Licence Application. The application was for a small volume of additional waste disposal in a lined area to enable this site to be restored to an acceptable standard. The site is now operating and the licence contains conditions to ensure the highest standards of engineering and operation for the small additional waste input.

The geology appears more favourable elsewhere in the plan area for the creation of landfills, but there are no current proposals being considered by the Agency. In these areas, however, high standards of

environmental controls may still make a certain number of these sites unsuitable for development.

Current planning guidance requires the provision of waste planning facilities, but these need to be considered in a regional context, not just locally.

The need for landfills as an issue is being considered as part of the Derbyshire County Council Waste Management Strategy and the Waste Local Plan arising from it. The Agency will continue liaison with the Derbyshire Waste Management Strategy Officer Steering Group on the development of a waste strategy for Derbyshire. The Agency will also continue to liaise with Local Authorities by means of representation on the East Midlands Mineral and Waste Working Group and (when formed) the Regional Technical Advisory Body (RETAB).

Taddington Landfill site

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
9.1 Continue Agency liaison with Derbyshire Waste Management Strategy Officer Steering Group on Development of Waste Strategy for Derbyshire.	Derbyshire County Council	Environment Agency	U	●	●				Robin Acton
9.2 Continue liaison with LAs via representation on the East Midlands Mineral and Waste Working Group and (when formed) the Regional Technical Advisory Body (RETAB).	LA	Environment Agency	U	●	●	●	●	●	Robin Acton

ISSUE 10: The threat to water quality posed by closed landfill sites

Objective - limit the environmental risk from rising leachate levels

Closed landfill site

ISSUE 10: (continued)

Closed landfills, if not managed properly, can pose a threat to the quality of both groundwater and surface water. Within the plan area two such examples can be found, at Buxton and Crich. These former domestic waste landfills were closed before the introduction of the need for a certificate of surrender. One of the main problems is that many of the older landfill sites were not prepared or engineered to today's higher standards.

The aftercare of these sites is only controlled by the occasional removal of leachate by the owner/ former operator, Derbyshire County Council. Both sites mentioned above have several metres depth of leachate, which could pollute. In one case this could affect a lake used for diving, and in the other case a drainage sough discharging to a watercourse.

There is a need for a more formal and regular control of the leachate to ensure that pollution does not occur. The present spasmodic arrangements cannot be controlled in any way by the Agency but officers have serious concerns regarding the long-term future of these sites. It is hoped that negotiations with the site operators will lead to more formal control with a commitment to action, monitoring and remedial action as necessary.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
10.1 Liaise with Derbyshire County Council at Buxton and Crich sites to determine the volume and depth of leachate to ensure extent and nature of the threat to water quality is fully quantified.	Environment Agency	Derbyshire County Council	R	●	●				Pete Hufton
10.2 Ensure the appropriate actions are undertaken by the site owners/ former operators of the sites at Buxton and Crich to reduce the risk to the environment from theses sites as identified by Action 10.1 above.	Environment Agency	Derbyshire County Council	R		●	●	●	●	Pete Hufton

ISSUE 11: Possible pollution effects from the spreading of waste on land

Objective - examine the necessity for the scale of waste spreading to land and techniques to restrict potential polluting wastes

There is some control at present over the spreading of certain wastes to land. However, there are some areas which the Agency feels need clarification and possibly some regulatory control.

Current waste management legislation does not allow the Agency to regulate agricultural waste. We can, however have an impact through pollution prevention visits.

As for industrial wastes such as food and drink processing waste and paper making wastes, the Agency is currently developing guidance. This guidance should enable us to enforce the regulations in a consistent manner across England and Wales.

All sectors involved in the landspreading of waste under an exemption from the Waste Management Licensing Regulations (1994), will need to adopt this guidance. The Agency believes that universal adoption

of the guidance will provide the Agency and the public with a high level of assurance that both the environment and public health are being protected, irrespective of the type of waste being recycled in this fashion.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
11.1 Consider ways to raise the profile of pollution prevention with regard to landspreading, to aid reduction in the potential for harm to human health, pollution of and detriment to the local environment.	Environment Agency		R		●				Pete Hufton
11.2 Increased inspection of spreading of waste on land activities.	Environment Agency		R		●	●	●	●	Pete Hufton

ISSUE 12: Fly-tipping of domestic waste

Objective - investigate the need and potential for different waste disposal services

There is a recognised problem of fly-tipping of waste within the plan area. One of the causes of fly-tipping is believed to be the lack of provision of Civic Amenity sites. Section 50 of the Environmental Protection Act 1990 places a responsibility on the County Council Waste Disposal Authority to arrange for the provision of places at which residents may deposit their household waste free of charge. These facilities are commonly known as Civic Amenity sites.

The coverage of such facilities within the plan area is limited, with only one facility located within the area, in the City of Derby. There are other Civic Amenity sites within Derbyshire, but all of these fall outside the plan area.

The District Council may also provide small scale recycling facilities, this situation does not promote the principles of sustainability for the residents of areas such as Buxton, Bakewell and Matlock, in that they have to travel significant distances to find a Civic Amenity site.

Some District Councils also offer a household bulky waste collection service, whereby waste is collected on the doorstep. In some areas there is a charge for this service.

There has been a general problem in determining the division of responsibility between the Agency and LAs about who deals with fly-tipping. A Memorandum of Understanding (MoU) has now been published which should clarify the matter. The MoU should help those involved to prioritise and respond to fly-tipping incidents dependant upon type, quantity and location of the deposits.

Fly-tipping of domestic waste

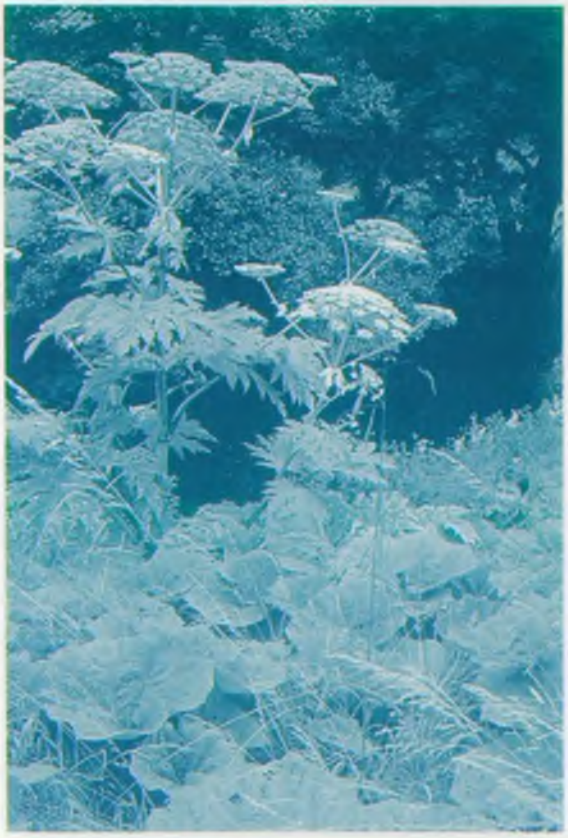
ISSUE 12: (continued)

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
12.1 Promote household collection sites to help reduce fly-tipping.	LA		U	●	●	●	●	●	Robin Acton
12.2 Target fly-tipping "Hot Spots" for preventative measures.	Environment Agency		R	●	●	●	●	●	Mark Cunningham

ISSUE 13: Loss of natural habitat to invasive plant species

Objective - control and eradicate where possible invasive plant species

Giant Hogweed is able to grow in excess of 4.5m high and when touched will cause blisters on skin exposed to sunlight. It is an offence under the Wildlife and Countryside Act (WCA) to cause this plant to grow. Immediate action is required to prevent further spread of this invasive poisonous plant. There is a large patch of Giant Hogweed growing in the old dry Lumford Mill pond upstream of Bakewell on the River Wye. There are also plants on the banks of the river. The plant is becoming a nuisance to adjacent landowners and could become a health hazard in Bakewell.



Giant Hogweed

Himalayan Balsam

Apart from Giant Hogweed, the Agency also recognises Himalayan Balsam and Japanese Knotweed as invasive plants. These plants grow very densely and shade out native plants as well as being poor habitats for fauna. They devalue the natural landscape and increase the risk of river bank erosion when they die back in autumn. To allow these plants to grow is also an offence under the same legislation.

A survey of Japanese Knotweed has been undertaken for the River Derwent. With the assistance of riparian landowners, this will form the basis for a strategy to control and eradicate this plant wherever possible.

The Agency will, in conjunction with other agencies, seek to prepare a strategy for the control of alien invasive plants along Main Rivers in the plan area and to implement this strategy on the River Wye near Bakewell.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
13.1.1 Determine a programme of control for Giant Hogweed on the River Wye at Bakewell including all partners	PDNPA	Environment Agency RO PC BTC	8(2)	2(0.5)	2(0.5)	2(0.5)	2(0.5)		Val Holt
13.1.2 Monitor growth of Japanese Knotweed on the River Derwent	Environment Agency	RO DWT	R	●	●	●	●	●	Val Holt
13.2 Advise riparian owners on the control of all alien invasive plant species through provision of leaflets.	Environment Agency		R	●	●	●	●	●	Val Holt

( ) Figures in brackets indicate Agency portion of total costs.

ISSUE 14: The use of helicopters to spray herbicides may affect water quality in potable supply catchments

Objective - to ensure appropriate control of the use of helicopters to apply asulox herbicides

Asulox is a herbicide used to control the invasive nature of bracken in moorland areas. It is particularly effective on the control of ferns and is accepted to have a low toxicity for mammals. Whilst the Agency does have authorisation procedures to control the use of herbicides near to watercourses, the Derbyshire Derwent area is considered to be particularly sensitive as it is a potable supply catchment. During the course of a year helicopters may be used up to 5 times in the plan area to control bracken.

Bracken spreads continually and is highly competitive and successful being completely disease resistant. Bracken is a serious threat to heather moor and heathland which it stifles completely. It is unsuitable to ground-nesting birds and most other fauna, suppresses tree growth, and because of its array of poisonous chemical defences poses a health risk to humans and animals. Bracken beds lie in the catchments of both of the major Derwent reservoirs and the numerous small potable sources.

Bracken on typical moorland

4 actions

ISSUE 14: (continued)

Recent trials have indicated that the EC Drinking Water Directive's mandatory limit of 0.1 µg/litre for pesticides in potable supplies (drinking water) may be exceeded when helicopters are used to spray asulox herbicide onto bracken in upland areas. This concerns the Agency.

Asulox is not the only method that can be employed to control bracken, there are several others which include cutting and crushing. This is a process undertaken over a number of years to gradually deplete the rhizome system but cannot take place if ground nesting birds are at risk. New types of crushers are however presently being developed that are more sensitive to the surrounding environment and suitable for rough terrain.

A workshop entitled "The Environment Agency Bracken Control Workshop" was hosted by the Agency in November 1998 in Manchester to discuss this issue. Presentations were followed by a series of workshops to discuss various aspects of the problem. The results of this workshop will feed into Action 14.2.

The actions for this issue include one for an R&D project to review available information on which to base Agency policy and individual decisions. It will look further into the use of alternative methods of bracken control.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
14.1 Monitor and enforce existing Agency policy on herbicide applications to protect water quality and safeguard public health	Environment Agency		R	●	●	●	●	●	Pete Hufton
14.2 Fund research project to provide review of available information on which to base Agency policy and individual decisions.	Environment Agency		25	25					Pete Hufton
14.3 Redefine Agency policy in light of the findings of R&D project in Action 14.2 above.	Environment Agency		R		●				Pete Hufton
14.4 Develop methodology of application alternative to helicopters to further protect water quality and safeguard public health.	Environment Agency	HM+U	U		●				Pete Hufton
14.5 Use of alternative bracken method controls	RO	Environment Agency	U			●	●	●	Pete Hufton

ISSUE 15: Promotion of recreational access along river valleys

Objective - to develop a strategy for access to watercourses that is sensitive to the environment

The plan area contains many river valleys extensively used by tourists and recreational users. A trust has been formed, with representation from the Agency, to encourage the development of a tourism strategy for the Derwent Corridor. The Agency has supported the formation of an interpretive centre and picnic tables Belper. The Agency will continue to support such initiatives.

Whilst promotion of recreational access is one consideration, there are sensitive areas in terms of habitat that should not be disturbed. There are also areas within the plan area where the sheer volume of tourists creates traffic congestion at peak periods during the year, and further promotion of recreational access may be detrimental.

Canoe slalom at Matlock

Walkers in Padley Wood

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
15.1 Support initiatives such as the Derwent Valley Heritage Trust and local groups interested in access alongside watercourses to help improve existing facilities.	Environment Agency	DVHT LA RO	R	●	●	●	●	●	Val Holt
15.2 Work in partnership with LA's and other bodies to improve facilities and access:	Environment Agency	LA RO	R	●	●	●	●	●	Val Holt
15.2.1 continue to support Project Riverlife in Derby.	Environment Agency		1		0.5	0.5			
15.2.2 Improve access for canoes at Matlock	Environment Agency		2	2					
15.3 Work with BCU and Matlock Canoe Club to draw up designs for the restoration of the canoe slalom course at Matlock.	Environment Agency	MCC BCU LA	5	5					Val Holt
15.4 Ensure any new access alongside rivers is subject to Environmental Assessment procedures to protect sensitive habitats or protected species.	Environment Agency	LA RO DWT	R	●	●	●	●	●	Val Holt

ISSUE 15: (continued)

Anglers at Ladybower

ISSUE 16: The rich archaeological and historical resource of the Derwent Valley requires protection

Objective - protect archaeological and historical resources from development pressures

In the reaches of the lower Derwent close to its confluence with the River Trent there is a unique archaeological resource. The Agency is concerned that this resource is at risk from gravel extractions in the lower Derwent valley.

The upper Derwent valley is also rich in archaeological remains and surveys have recently been undertaken and funded by Severn Trent Water Ltd, The National Trust Forest Enterprise and the Peak District National Park Authority. The tributaries of the Derwent, as well as the Main river, have historically provided water for a large number of mills. There is considerable heritage value in the large number of industrial mills located along the River Derwent. It must be ensured that these resources are protected from water resources schemes, and quarrying activity in particular. Other resources must be protected by good management,

Cromford Canal at Cromford

for example, the Pennine Way is also a Roman road on part of its course. The Pennine Way starts at Edale in the north of the plan area. It is a popular walk and the sheer number of visitors creates a pressure to the route through erosion. The project funded by the Countryside Commission has achieved considerable improvements to the Pennine Way route and eroded moorland.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
16.1 Prepare an archaeological strategy for the Lower Derwent as a partnership project with all interested parties.	LA MPA	Environment Agency RO National Trust	20 (total project cost)		3#	3#			Val Holt

- these are Agency costs only

ISSUE 17: Disparity between abstraction licensing policies for surface water and groundwater

Objective - to develop an integrated surface and groundwater licensing policy which recognises the development of future small abstractions

There is growing pressure on the water resources in the River Derwent catchment. Surface water licensing policy takes into account Severn Trent Water Ltd's public water supply (PWS) licences and support of river flows for PWS and environmental purposes. Groundwater licences for the Carboniferous Limestone and Gritstone aquifers may be granted, subject to no local adverse environmental impact, but each abstraction can potentially reduce baseflow in the River Derwent and so derogate the PWS licences. There is therefore a need to develop an integrated surface and groundwater licensing policy, so that some resource development is possible in future for small abstractions.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
17.1 Review existing licensing policy to achieve consistent policies for surface water and groundwater.	Environment Agency		R	●	●				Trevor White
17.2 Negotiate with existing major licence holders to allow small licences without derogation claims.	Environment Agency	STWL HSO	R	●	●				Trevor White

ISSUE 18: Biodiversity protection

Objective - to protect and improve where possible the variety of life

The signing of the Biodiversity Convention by the UK Government at the Earth Summit in 1992 has given a high profile to biodiversity protection. Biodiversity is the variety of life, encompassing all the forms of life, which constitute the living world. The term includes mankind and our relationship with the rest of the environment. Many species are at risk as a direct result of human activity (see section 1.3.2).

A national Biodiversity Action Plan (BAP) has been produced and there are many county initiatives. Three BAPs are being produced for Derbyshire - the Peak District, The National Forest and the Mid Derbyshire. These BAPs have been produced for Derbyshire by Derbyshire Wildlife Trust, in conjunction with others. The Midlands Region of the Agency has produced its own BAP.

Maintaining biodiversity will need attention to all species and habitats although limited resources require that priorities will have to be set. National and local BAPs are therefore focusing initially on those habitats and species most at risk.

The following are key species and habitats for which the Agency has a special interest and responsibility. All of these key species have protection under legislation. The Agency understands that there are many other endangered species and habitats, but has focused on areas where its influence is greater.

ISSUE 18: (continued)

1. MAMMALS

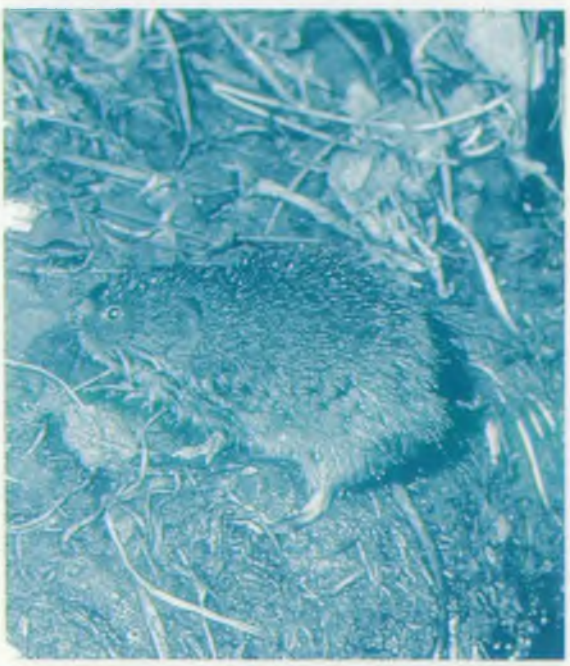
Otters

The otter is a globally threatened species and became virtually extinct in the plan area in the 1950s. There have been occasional sightings in 1980s and 1990s, but these would be visiting otters from the west where better established populations exist.

Otter

Water Voles

The water vole has suffered a rapid decline in the UK. Reasons may include poor water quality, loss of habitat and an increase in the numbers of its predators.



Water vole

Bats

Bats hibernating and roost sites must be protected from any development or maintenance work. Daubentons Bats, particularly, feed over water, and are of particular interest to the Agency.

2. CRAYFISH

The Atlantic Stream Crayfish is the only crayfish native to the UK. They were once widespread in the River Wye and Upper Derwent part of the plan area. However a population collapse a few years ago decimated crayfish numbers. The cause of the collapse is unknown but it could have been through crayfish plague, a fungal infection that can be passed from Signal Crayfish, a North American species. A better understanding of their distribution, ecology and management of crayfish is required.

Atlantic Stream Crayfish

3. DERBYSHIRE FEATHER MOSS

Derbyshire Feather Moss is an extremely rare plant identified at only one site in the world, in the Dales. The site must be safeguarded and ecological research should be undertaken to ensure effective conservation management and prevent atmospheric pollution.

4. BIRDS

Birds associated with water such as dippers, common sandpiper and sand martin are at risk through disturbance or loss of habitat.

5. BROOK LAMPREY

The brook lamprey is a nationally rare species found locally in the plan area. The adults require gravel for spawning and the juveniles live in fine silts and sand. The Agency recognises that the habitat requires protection where the species is present. However very little is understood about the brook lamprey and further understanding is essential to its protection.

Brook lamprey

6. HABITATS

Wetlands

Wetlands have declined over the last few decades. There is a need to protect, restore and create open water habitat, grazing marsh, fen and reed bed habitat. There is also a need to recreate natural water regimes in valley bottoms.

Grasslands

There has been a serious decline in wet grassland habitat through drainage. This is causing a lowering of the water table.

Upper Moorlands
(Blanket Bog, Heathland and grassland)

The Dark and White Peak areas were once extensive heath and moorlands. There has been degradation of the blanket bog on the Dark Peak through drying out as well as a loss of heathland elsewhere. Land management practices and the use of the land as a water resource catchment have contributed to the loss of habitat in this area. The heathland is an important habitat for a range of plants, invertebrates and birds. There is a need to re-introduce species to restore, extend and link heathland. Natural processes should also be used where appropriate.

Woodland

Peak District Dale Woodlands is a candidate SAC, comprising Cressbrook Dale, Lathkill Dale, Matlock Woods and Via Gellia Woodlands. These are mixed woodlands on alkaline soils associated with rocky slopes. These dales are considered to be one of the best areas of mixed woodland in the UK. The National Forest area is found in the south of the plan area, the major part of the new forest being outside the area. Wet woodland is a declining habitat and the disease Phytophthora is affecting alders along the Derwent and Amber valleys.

Typical otter habitat

4 actions

ISSUE 18: (continued)

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
Otters 18.1 Survey main rivers for otter presence. 18.1.1 contribute to Midlands Otter Project for Staffordshire/ Derbyshire/ Nottinghamshire and Leicestershire.	Otter Project Environment Agency	DWT EN WSUK WTs	15	15					Val Holt
18.2 Construct artificial otter holts. 18.2.1 identify suitable sites for otter holts, working through the otter project.	Otter Project Environment Agency	DWT PDNPA RO	4		1	1	1	1	Val Holt
18.3 Encourage the use of buffer zones and agri-environment grants to secure appropriate management of the river corridor to improve habitat.	MAFF FWAG FRCA Environment Agency		R	●	●	●	●	●	Val Holt
18.4 Produce river strategies to establish appropriate maintenance work in relation to habitats and species.	Environment Agency		R	●	●	●	●	●	Val Holt
Voles 18.5 Survey main river to assess the vole population. Ensure that surveys are carried out as part of river strategies for Flood Defence maintenance work.	Environment Agency	DWT	10		5	5			Val Holt
18.6 Promote sensitive management of riparian habitat, (taking account of BAP targets) by:	Environment Agency	LA RO DWT	R	●	●	●	●	●	Val Holt
18.6.1 Flood Defence maintenance work			R	●	●	●	●	●	
18.6.2 Advice to riparian owners.			R	●	●	●	●	●	
Bats 18.7 Ensure that information and advice is available to developers and LAs on the protection of bat habitat and provision of bat roost boxes in relation to bridges, culverts and riverside tree roots.	Environment Agency	LA RO	R	●	●	●	●	●	Val Holt
Crayfish 18.8 Ensure appropriate habitat management is undertaken on watercourses where native crayfish are present.	Environment Agency		R	●	●	●	●	●	Val Holt
18.8.1 Ensure that river strategies take account of crayfish.			R	●	●	●	●	●	

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
Crayfish (continued)	EN	Environment Agency	R	●	●	●	●	●	Val Holt
18.9 Investigate the potential for recovery of native crayfish in the Derwent catchment, particularly on the:									
18.9.1 River Lathkill			R	●	●	●	●	●	
18.9.2 River Wye.			R	●	●	●	●	●	
18.10 Protect sites where crayfish are present through the Agency Authorisation process and prevent from development, particularly:	Environment Agency	EN LA	R	●	●	●	●	●	Val Holt
18.10.1 Markeaton Brook			R	●	●	●	●	●	
18.10.2 Stoke Brook (possibly at risk if Calver Weir collapses).			R	●	●	●	●	●	
Derbyshire Feather Moss	Environment Agency		R	●	●	●	●	●	Pete Sibley
18.11.1 Monitor site to protect the species.									
18.11.2 Undertake ecological research.	EN		R	●	●	●	●	●	
Birds	Environment Agency	DWT LA RO PDNPA	R	●	●	●	●	●	Val Holt
18.12 Advise recreational users regarding disturbance to breeding birds via liaison meetings with users to improve education and protection of habitat.									
18.13 Investigate the creation of habitat in the river corridor, particularly on the upper Derwent for Sand Martins.	DWT	Environment Agency	R	●	●				Val Holt
Brook lamprey	Environment Agency		R	●	●	●	●	●	Val Holt
18.14 Protect areas where brook lamprey are present through:									
18.14.1 River strategies for Flood Defence work.			R	●	●	●	●	●	
18.14.2 Regulatory processes.			R	●	●	●	●	●	
18.15 Support research programmes into brook lamprey to increase understanding.	Environment Agency		R			●			Val Holt
Wetlands	Environment Agency	DWT	2		2				Val Holt
18.16 Investigate the loss of wetlands in the plan area.									
18.16.1 Produce a plan of important wetlands in the Derwent valley.									
18.17 Encourage the creation of new wetlands	Environment Agency		R	●	●	●	●	●	Val Holt
18.17.1 Reed beds at Bakewell as part of the Sustainable Partnership Programme			9	9					

ISSUE 18: (continued)

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
Wetlands (continued) 18.18 Protect existing wetlands through the regulatory process.	Environment Agency		R	●	●	●	●	●	Val Holt
Grasslands 18.19 Investigate the restoration of the hydraulic connection between watercourses and the floodplain, particularly in the lower Derwent through mineral restoration projects.	Environment Agency	LA MPA	R	●	●	●	●	●	Val Holt
18.20 Ensure the protection of wet grasslands through agri-environment schemes by targeting areas of the Derwent valley.	MAFF Environment Agency	LA DWT RO FWAG	R	●	●	●	●	●	Val Holt
Upper Moorlands 18.21 Support the restoration of degraded heathland through:	MAFF Environment Agency		R	●	●	●	●	●	Val Holt
18.21.1 Agri-environment schemes for ESA.			R	●	●	●	●	●	
18.21.2 Continued monitoring of bracken spraying (see issue 14).			R	●	●	●	●	●	
Woodlands 18.22 Review Agency consents by 1999 which may affect SAC woodlands in the Wye/ Derwent catchment.	Environment Agency		R	●					Val Holt
18.23 Support plans for new planting in the National Forest: 18.23.1 through the regulatory process.	Environment Agency		R	●	●	●	●	●	Val Holt
18.24 Investigate the extent of diseased alders in the Derwent and Amber river corridors by commissioning a survey of the river corridors.	Environment Agency	DWT EN RO	2		2				Val Holt
18.25 Investigate the restoration of the hydraulic connection between the watercourse and the floodplain to encourage more wet woodland through river strategies.	Environment Agency		R	●	●	●	●	●	Val Holt

ISSUE 19: Minimisation of industrial waste generation

Objective - to work with waste producers and ensure minimisation of industrial wastes

Since the Industrial Revolution the generation of waste by industry has been a problem. Many companies now recognise that this is environmentally unsustainable and directly affects the profitability of their enterprise. These companies have taken action to reduce the amount of waste they produce. There is, however, still a long way to go and the Agency is actively engaged in promoting initiatives, some of which have been enshrined in law, to reduce waste generation.

Companies operating Part A processes are required to use Best Available Techniques Not Entailing Excessive Costs (BATNEEC) to prevent, minimise and render harmless releases from their processes to the environment. They are required to examine which of their activities generate waste and where possible, produce plans to reduce waste over time. Progress with this requirement will be monitored via the statutory four yearly review of Part A process authorisations undertaken by the Agency.

There have already been significant reductions in waste production achieved by Courtaulds in Derby in a number of its processes. Major reductions in waste and in releases to air have been achieved by plant modifications to the cellulose acetate process. These modifications include providing improved process control. This has significantly reduced the number of "out of specification" batches requiring reprocessing or disposal.

Within this plan area there are two nuclear installations operated by Rolls Royce. These are the only two nuclear installations in the Midlands Region. Three other premises that are authorised to dispose of radioactive materials are Derby City General Hospital, Derby Royal Infirmary and Derby University.

Any establishment which generates radioactive waste is required by statute to hold an authorisation, issued by the Agency, which permits it to accumulate and dispose of such waste. For nuclear installations the Agency regulates only the disposal of radioactive waste; the accumulation is regulated by the Nuclear Installations Inspectorate. All authorised establishments are required to minimise the quantity of radioactive waste produced.

Buxton mineral water company

Nuclear installations are a particularly important potential source of radioactive materials in the environment and therefore, are subject to stringent regulation by the Agency. The Agency proposes to review the authorisation documents which relate to these installations. This will involve re-examining the dose assessment[1] which should ensure continued stringent control and public safety. As part of this review the Agency will support work which is already planned, and encourage further work, to improve the recovery and re-use of radioactive materials thereby reducing the need for disposal.

[1]No matter what the size of the establishment, the process of authorisation and review involves a critical assessment of releases to all environmental media to ensure that public safety is not compromised. The assessment of maximum receivable dose is based on extremely "pessimistic" assumptions about the behaviour of a theoretical individual or group exposed to releases from the establishment. Only if the dose to this critical individual or group is within the dose limits acceptable is the release accepted as satisfactory. Therefore, this use of a theoretical critical group ensures that significant safety margins are built into the assessment procedure.

ISSUE 19: (continued)

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
19.1 Work with process operators to ensure that waste generating activities are critically examined and waste production is minimised.	Environment Agency	Part A process operators	R	●	●	●	●	●	John Collins
19.2 Work with owners of authorised establishments to ensure that radioactive waste generating activities are critically examined and waste production is minimised.	Environment Agency	Users of radioactivity	R	●	●	●	●	●	John Collins

ISSUE 20: Minimisation of water use

(Please note the change of title to reflect the end of the drought)

Objective - to minimise water usage where possible

Ladybower October '96 drought

Water is an essential resource used by agriculture, industry and for potable supply.

Agricultural demand is generally met through direct abstraction from rivers and aquifers. In addition to direct abstraction, industry also uses water from the public water supply system. Demand on the public water supply system is generated by customers (using water) and losses (through leakage from the distribution network).

Historically water has been a cheap commodity for industry. Domestic customers see unlimited and uninterrupted supplies as a right. Together with the domestic charging system, these factors have contributed to a culture of profligate water usage and little recognition of its true value. The recent drought, from 1995 to 1998, served to highlight the problem and progress has been made in understanding the environmental effects of wasting water. The introduction of waste minimisation, demand management measures and effective agricultural use has reduced the demand on supplies to some degree.

The level of leakage losses from the distribution and trunk main systems and customer supply pipes varies across the Midlands Region. This variation depends on the length of pipe, number of connections and the age of the system. The leakage from a distribution system means that the system has to be 'over-supplied' to ensure that a secure source of potable water is supplied to customers. This 'extra' water has to be abstracted from surface water or aquifers, reducing availability to other users and the environment. The Agency in the Midlands Region, has stated that water companies should achieve economic levels of leakage before new abstraction licences are issued.

Across the whole of its water supply network, covering the majority of the Agency's Midlands Region, Severn Trent Water Ltd is committed to reducing leakage as a major part of its demand management strategy.

Ladybower normal level

Forecasts of leakage for 1997/98 by the company were for total leakage of almost 400Ml/d, 20.5% of their total supply. The target is to reduce leakage to 12% of supply by 1999/2000. There is also a commitment to reduce leakage from customers' pipes from a forecast 5.9% in 1997/98 to 3% by 1999/2000.

Industry is a significant water user in the area and the Agency proposes to encourage a reduction in water use by a range of initiatives. One initiative in particular will be to examine closely the water used by companies operating those processes that have the most potential to cause serious pollution to air, land or water. These are known as Part A processes. The aim is to encourage these companies to reduce water use wherever this can be achieved. The opportunity will be taken to address this specific issue as part of the authorisation review procedure, which the Agency undertakes. The introduction of the Integrated Pollution Prevention and Control Directive (IPPC), (96/61/EC) will require the use of resources, including water, to be specifically considered as part of such reviews. They will also be required to be considered during authorisation under that legislation.

The Agency is also working in partnership with water companies, OFWAT and other organisations to promote measures to manage and reduce public demand. This joint approach relates to various areas where reduction in demand can be achieved, thus enabling reduction in abstraction. The main areas of activity are:

- **Education and information programmes** (eg. Roadshows, High Street displays, schools guides, gardening tips, help lines).
- **Promotion of water efficient appliances** (eg. low flush or dual-flush WCs, water efficient washing machines and dishwashers, trigger-gun sprinklers, water butts).
- **Promotion of low-cost retrofit water saving devices** (eg. hippo bags, low flow shower heads, sprinkler exchange schemes).
- **Water audits** (eg. washer replacement schemes, fitting hippos, fitting urinal controllers, installing water-less urinals, water use surveys).
- **Promotion of water recycling and refuse** (eg. grey water recycling systems, re-circulation systems, water butts).
- **Waste minimisation schemes** (eg. Industrial process audits, waste minimisation clubs).
- **Leakage reduction programmes** (eg. active leakage detection and repair, refurbishment and renewal programmes for supply pipes, communication pipes, distribution mains, service reservoirs, raw water mains and reservoirs, installation of pressure reduction systems).

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
20.1 Raise public awareness by education to reduce domestic demand.	Environment Agency	STWL	R	●	●	●	●	●	Trevor White
20.2 Reduce leakage to economic levels.	STWL		U	●	●	●	●	●	Trevor White
	Environment Agency	OFWAT	R	●	●	●	●	●	
20.3 Encourage industry to introduce demand management measures through distribution of Demand Management Bulletin.	Environment Agency		R	●	●	●	●	●	Trevor White
	STWL		U	●	●	●	●	●	
	Industry		U	●	●	●	●	●	
20.4 Monitor the effectiveness of demand management measures.	Environment Agency	STWL	R	●	●	●	●	●	Trevor White
20.5 Promote the efficient use of water resources in agriculture.	Environment Agency		R	●	●	●	●	●	Trevor White
	MAFF								
	NFU								
	Farmers								
20.6 Work with Part A process operators to ensure that water usage is critically examined and minimised where possible.	Environment Agency	Part A process operators	25	5	5	5	5	5	John Collins

4 actions

ISSUE 21: Damage to the water environment and derogation caused by the operation of hydropower sites

Objective - ensure hydropower sites operate in a manner that is not detrimental to the environment

The River Derwent and its tributaries have historically been used to generate power for the industries along their length. There remain a number of sites in the catchment producing electricity for the National Grid under the Government's Non Fossil Fuel Obligation scheme.

Operators must carefully manage and operate impoundments to avoid causing peaks and troughs in flows downstream. Because the Derwent is so highly regulated it cannot easily absorb the impact of these flow variations. This can potentially cause a number of problems. In the past, poor operation of the Belper Mill hydropower site has had an impact on the following:

Downstream abstractors - changes in flows and water levels can affect a number of licensed abstractions, particularly public water supply abstraction at Little Eaton, the abstraction by Courtaulds Chemicals at Derby and other hydropower sites downstream.

Environmental damage - sudden low flows can cause lack of dilution for sewage effluent discharges from Spondon STW and contaminated surface water discharges from Derby SSWS. This can result in low oxygen levels and a subsequent threat to fisheries. Stretches of a quarter of a mile of river between the impoundment and the tail race discharge point may be dried out while water levels recover.

Belper Mill weir

Visual amenity - tourism and leisure are important in the plan area. Poor management of hydropower schemes can result in dry weirs and river bed and a loss of visual amenity. Drying of the Horseshoe Weir and lowering of water levels at Belper Gardens are examples.

In most cases, Hydropower schemes require abstraction licences, land drainage consents and sometimes impounding licences. Licence holders are additionally required to enter into legal agreements under Section 158 of the Water Resources Act 1991. These agreements set out management and operational rules designed to prevent flow problems in the river. Fish passes are included in these agreements where appropriate. The Agency enforces and reviews the conditions on these agreements on an ongoing basis.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
21.1 Issue/ review Section 158 agreements to ensure the best possible operation of the following sites: 21.1.1 Cressbrook Mill, Buxton 21.1.2 Borrowash Mill, Derby 21.1.3 Milford Mill, Belper 21.1.4 Masson Mills 21.1.5 Belper Mill.	Environment Agency	Licence holders	R	●					Trevor White
21.2 Increase effectiveness of enforcement once the above Section 158 agreements are issued. Ensure sites are operating correctly and provide early warning of incidents.	Environment Agency		R	●	●	●	●	●	Trevor White

ISSUE 22: Problems of utilising land identified as contaminated land

Objective - to establish after use for areas identified as contaminated land

There are areas of derelict land within the plan area, some of which may be contaminated. Of particular concern are the numerous abandoned small-scale metalliferous quarrying sites in the north of the area. These are unsightly and tend to attract fly-tipping (see Issue 12). If contaminated, these may also have health and safety implications.

Compared with the remainder of the Midlands Region, the majority of the plan area (excluding the City of Derby, in particular Pride Park) has not previously been subject to heavy industrial usage. It is not thought therefore, to have been significantly blighted by contamination.

It is the responsibility of Local Authorities to identify areas of contaminated land, and they are required to develop a strategy for doing so within 18 months of the implementation of the new Contaminated Land Regulations. The Agency advises the Local Authorities on the strategy and shares appropriate information.

The Agency has the primary responsibility for (and a number of duties to manage) "Special (contaminated land) Sites". There are not considered to be a significant number of potential "Special Sites" in this plan are, on the basis of information currently available to the Agency.

The Pride Park site to the east of the city was identified as an area of contaminated land. The development of this site highlights the amount of control that is necessary to ensure that contaminated land does not affect other environmental media, such as water. The nature of the Pride Park site has necessitated the construction of a groundwater treatment plant. A Consent to discharge to the adjacent River Derwent from the plant has been designed by the Agency to cover all parameters present on the site. Levels for the discharge have been set appropriate for a river that is used for Public Water Supply. There are 54 different contaminants within the Consent to discharge which will be monitored regularly. In the long term it is the synergistic/antagonistic effects of such a complex effluent that will be investigated. It is proposed to put this discharge forward for Direct Toxicity Assessment with a view to replacing a number of the individual parameters with an overall Toxicity Condition.

The surface water drainage from the site is monitored regularly for key parameters such as BOD, ammonia and phenols. All of the above will be complimented by biological sampling.

A detailed management agreement for the operation of the Pride Park site is required to be drawn up by Derby City Council. The Agency needs to ensure that the document lists the full requirements for the long term management, maintenance and monitoring of the site and treatment works to protect downstream users.

Pride Park

ISSUE 22: (continued)

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
22.1 Investigate and establish the locations and the demand for contaminated land restoration	LA	Environment Agency	U R	●	●	●	●	●	Rob Harper
22.2 Investigate the potential of partnerships to accelerate contaminated land restoration.	LA	Environment Agency English Partnerships RO Potential developers	U R		●	●	●	●	Mark Cunningham
22.3 Establish a detailed management agreement for the operation of Derby Pride Park site.	Derby Pride Park Environment Agency Derby City Council		U		●	●			Mark Cunningham

ISSUE 23: The risk of flooding to undefended properties and to properties where existing flood defences require enhancement

Objective - to identify properties at risk from flooding and investigate the potential to provide flood protection

There is a risk that properties at Bakewell, Ashford and Rowsley, and to a lesser extent at a number of other undefended locations, can be affected by flooding from Main River watercourses within the catchment. Where it is practical these properties currently receive flood warnings as part of the Agency's flood warning scheme.

It is considered however that the feasibility of carrying out flood defence schemes at these undefended locations should be investigated, the first priority being given to Bakewell, Ashford and Rowsley. In order for any scheme to be considered it will be necessary to demonstrate that the benefits exceed the costs of the works. All new schemes must also consider conservation aspects to ensure that such an engineering scheme can be accommodated in an environmentally sensitive manner.

There is also a risk that properties at Bradwell, Buxton and Castleton can be affected by flooding from ordinary watercourses (ie non Main river) within the catchment. The Agency, however, is not empowered to undertake works that affect an ordinary watercourse.

It has been identified that the existing flood defences and ground levels adjacent to the River Derwent, south-east of Derby centre provide a less than adequate standard of flood protection than is desirable for large industrial sites and housing developments.

In order to minimise the risk of flooding to properties from Main River watercourses it is necessary to ensure that existing flood defences are to an appropriate level and that their structural integrity is adequate.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
23.1 Investigate the feasibility of defending properties at risk from flooding at Bakewell, Ashford and Rowsley.	Environment Agency		100	25	25	25	25		Tony Hallam
23.2 Investigate the feasibility of defending properties at risk from flooding at Bradwell, Buxton and Castleton.	LA		U		●				Tony Hallam
23.3 Construct new defences along the River Derwent between Wilmorton Railway Bridge and Spondon.	Environment Agency		1868*	891	783				Tony Hallam

* Please note that this total includes some expenditure prior to 1998/99.

ISSUE 24: Control of the development of floodplain

Objective - identify the limits of the floodplain for main rivers to minimise future flooding risk to property

There is increasing pressure for the development of floodplains within urban areas. Developments in floodplains will be at risk from flooding and may increase the flood risk elsewhere by reducing the storage capacity of the floodplains and/or impeding the flow of floodwater. The raising of ground levels by tipping, or following restoration of gravel workings, may have a similar effect.

The Agency's aim therefore is to protect floodplain areas. A national document entitled 'Policy and Practice for the Protection of Floodplains' sets out the Agency's flood defence policies in relation to floodplains and explains the reasoning behind them.

In order to control development on floodplains effectively it is necessary to define their extent accurately. Floodplain maps are used by the Agency when making recommendations to Local Planning Authorities as a statutory consultee on development proposals. Currently the floodplain of the Rivers Derwent and Wye are inadequately defined and therefore may result in unsustainable development.

Floodplain development

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
24.1 Complete floodplain mapping for the Rivers Derwent and Wye.	Environment Agency		150	62	88				Tony Hallam
24.2 Undertake floodplain mapping for: 24.2.1 Bottle Brook. 24.2.2 Alfreton Brook.	Environment Agency		U		●				Tony Hallam

ISSUE 25: The inability to provide scientific interpretation due to the lack of air quality data

Objective - work with Local Authorities to improve air quality data collection

In common with most of England there is a paucity of data on air quality within the plan area. Until very recently there has been little continuous monitoring apart from facilities in the City of Derby. High Peak and Derbyshire Dales District Councils have been awarded a grant under Phase 1 of the DETR Air Quality Management Demonstration Project. This will measure small particulates in air (PM_{10}s) at a number of sites near to working quarries in the north west of the area. Some preliminary data is available at the time of writing. The Agency will work with the Local Authorities to identify sources and priorities to be incorporated into this plan.

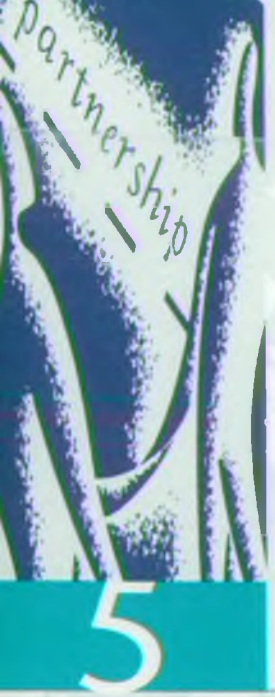
Through legislation[1] aimed at establishing a national system for local air quality management, the Government is seeking to introduce new air quality standards (recommended by the Expert Panel on Air Quality Standards - EPAQS) for a range of pollutants[2], by the year 2005.

Within the plan area there are a number of industries regulated by the Agency which release one or more of the specified pollutants. The Agency proposes to work with Local Authorities to establish the current levels of these pollutants in the air and create a source inventory. The Agency will work with industry to bring about reductions in the amount of the specified pollutants released with the aim of meeting the new air quality standards by the designated date. There is also a need to work to a national scale as air quality may be affected by sources from outside the plan area.

[1]The United Kingdom National Air Quality Strategy.

[2]Benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, ozone, fine particles (PM10) and sulphur dioxide.

ACTIONS & ENVIRONMENTAL THEMES	RESPONSIBILITY LEAD	RESPONSIBILITY OTHER	TOTAL COST (£K)	1998/ 99	1999/ 2000	2000/ 01	2001/ 02	2002/ 03	AGENCY ACTION LEADER
25.1 Work with LAs to obtain air quality data and to establish a pollutant source inventory.	LA	Environment Agency	R	●	●				John Collins



5.0 protection through partnership

5.1 Introduction

Our natural environment is complex and environmental management must be undertaken in many different ways by the broad community both in the short and the long term. Even where we do have a good understanding of a particular element of the environment, the implications of change often remain difficult to predict and understand. The linkages between our society, economy and environment vary over time and the effect of what at first may seem to be a local issue, can have wider regional and even global effects. Work is underway in the UK and across the world to define sustainable development indicators, which can be used to assess environmental change.

It is this kind of understanding that led to the Rio Earth Summit in 1992, the adoption of sustainable development principles and the commitment to manage the environment in an integrated way through partnership (see Section 1.3.1). In this plan it is partnerships that will enable the vision and the key objectives to be realised. Such partnerships provide accountability, as well as a means of attracting inward investment, to improve the environment, from such bodies as the European Union (EU) and the National Lottery. This helps to reduce duplication between agencies and allows the pooling of scarce resources.

The Agency is well placed to influence many of the activities affecting the environment through its own activities and enforcing the Environment Act 1995 and other legislation. However, achieving environmental improvement often depends on co-operation between the Agency and others. The Memoranda of Understanding (MoU) between the Agency and the Local Authority Associations and Peak District National Park Authority set out how we will work with those organisations in protecting and improving the environment. The MoUs seek to establish a framework to promote better integration of our work and ensure the best use is made of resources.

Partnerships will enable the key objectives and the long term vision of this plan to be realised. Implementation of the plan will involve the joint action of a number of organisations, such as Local Authorities, businesses, conservation organisations and community groups, as well as actions by the Agency.

5.2 Waste minimisation

The key sustainable development objectives for waste and waste management are to minimise the amount of waste that is produced, to make best use of the waste that is produced and to minimise pollution from waste. The Government has defined a hierarchy of waste management options, which are ranked to give a broad indication of their relative environmental impact.

The best option is not to produce waste in the first place. Milk deliveries and milk bottles are a good example of re-use. Recycling includes bottle banks, newspaper banks etc. These require additional energy and the production of further wastes to make useful products. Energy generation covers incineration using waste as a fuel. The final option is disposal to landfill, currently the main form of waste disposal in the UK. The Agency's objective is to

site for shops and houses. As part of the scheme, the BRWP aims to set aside certain designated areas for wildlife protection along the riverside.

Although Local Authorities are seen as the focus for promoting and encouraging local community action in LA21 strategies, the Agency aims to integrate LEAP actions into Local Agenda 21 programmes where appropriate.

The Agency is committed to encouraging more sustainable life styles for all, through our work and in partnership with others. We are also keen to develop closer relationships with local communities. Playing our part in LA21 helps us to achieve this. The Agency is involved in LA21 groups and projects across England and Wales. Experts from our functions are advising LA21 groups on the state of their local environment and providing Agency information on air quality, waste management and the aquatic environment. All this information will help in the development of sustainability indicators and targets for environmental improvement. Agency staff are not usually involved in the wider social and economic groups working under the LA21 umbrella.

We see a number of benefits accruing from our involvement in LA21, for example :-

- raising the awareness of the Agency and our work
- developing partnerships to aid our consultation process on LEAPs and waste minimisation strategies, and
- working in partnerships with LA21 business clubs to promote best environmental practice to industrial sectors that we may not directly regulate, such as small and medium sized enterprises (SMEs).

5.3.2 Integrated Pollution Prevention and Control (IPPC)

The system of Integrated Pollution Prevention and Control (IPPC) is a long-term approach to environmental regulation.

The IPPC Directive 96/61/EC came into force in October 1996, with a three year deadline for incorporation into legislation of each Member State. Its primary purpose is to prevent or reduce emissions to the air, water and land from potentially polluting industrial installations "so as to achieve a high level of protection for the environment as a whole". IPPC regulates major industrial installations and is similar to the Integrated Pollution Control (IPC) regime, which the Agency has operated since 1991. IPPC extends the activities to be covered to include smaller industrial processes, landfill sites, major food processing plants, slaughter-houses, renderers and large scale intensive livestock units. Some of these are currently regulated in the UK by Local Authorities under LAPC (Local Air Pollution Control), whilst others are already regulated by the Agency under Waste Regulations.

General requirements for operators

Installations shall be operated so as to achieve integrated prevention and control of pollution through measures to prevent, or where that is not practicable, reduce emissions to air, land and water, based on the following principles:

- prevention pollution by using of Best Available Techniques (BAT)
- waste minimisation
- energy conservation
- accident prevention and limit to their environmental consequences
- clean up of site when activities cease

Best Available Techniques (BAT)

Best available techniques should be used in taking all preventative measures against pollution. "Available" means those developed on a scale which allows implementation in the relevant industrial sector, under economically technically viable conditions, taking into consideration the costs and benefits, in the context of the overall aims of the Directive.

Permits

IPPC will use a system of permitting. These permits will specify:

- plant operating conditions
- emission limit values for certain substances to air, land and water
- annual reporting of releases

Operators must submit a detailed application to the enforcing authority, which must issue or refuse a permit within six months. Permits will be reviewed on a periodic basis. Emission values will be based on BAT, taking into account technical characteristics of the installation, geographical location and local environmental conditions. If necessary, permits shall include measures for the management of waste generated by the installation and for protection of soil and groundwater. Also the permit will contain provisions on the minimisation of long distance or trans-boundary pollution and to ensure a high level

move waste management further up the waste hierarchy while retaining the best practical environmental option. Clearly we all have a part to play in reducing the amount of waste produced and making the best use of the waste that is produced. Household waste can be reduced by individuals taking responsibility. Options include re-using, re-cycling and composting and also by buying long life, reusable and environmentally friendly products with minimal packaging. According to the DETR, approximately 50% of household waste is potentially recyclable. Local Authorities have been set targets by the Government to recover up to 40% of household wastes in England and Wales by 2005.

Individuals and businesses should therefore:-

- Support local waste minimisation and recycling initiatives.
- Support the extension of minimisation and recycling initiatives in their area (such as the provision of home composting bins).
- Reduce the amount of material thrown away.
- Respond to consumer demand to reduce unnecessary packaging and other forms of waste production.

5.3 Partnerships in environmental protection

5.3.1 Local Agenda 21

Agenda 21 was one of four main agreements signed at the Earth conference at Rio by representatives of 150 countries including the UK government. 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".

This is an environmental action plan for the next century, which recognises the central role of local Authorities and the value of partnerships and the local community in achieving sustainable development. It brings together economic, environmental and social concerns into a "blueprint" for a more sustainable way of life for everyone. It recognises that environmental problems at all levels have their basis in local activities and emphasises the need for local action.

This is one of the most exciting aspects of Agenda 21 - that it recognises that action by national governments alone is not enough and that all groups - civic, community, business and industrial have to be involved to bring about change. It promotes the idea of "thinking globally and acting locally". Local Authorities in some areas have undertaken a consultative process with local people and to achieve a Local Agenda 21 for their community. A document entitled "The Challenge - a Derbyshire Local Agenda 21 Strategy" has been drawn-up by Derbyshire County Council. It is similar in its approach to the Agency's LEAP process in that it seeks to gain input from as many interested parties as possible.

The consultative process does not just occur at the county level but also at District level, for example Derby City Council recently hosted a conference entitled "Derby's 2020 Vision Conference". This conference reported upon the successes so far in the Derby area and used a workshop format to work out the issues and solutions needed to achieve a sustainable future for Derby.

At the local level, a pilot LA21 project was introduced in the electoral ward of Blagreaves in southwest Derby. The aim of this two-year project was to test whether or not the LA21 process could be applied in practice to help people improve their quality of life. The Blagreaves project formed one of three pilot projects in Derbyshire. The other two pilots were at Tideswell, near Buxton, and Shirebrook near Mansfield. A second aim of all three projects, which were run in conjunction with Derbyshire County Council, was to compare and contrast the best techniques and methods of involving local people in the process of LA21.

Elsewhere in the plan area, Derbyshire Dales District Council has also produced a LA21 strategy, launched in September 1998. This document includes a position statement and outlines ten local visions for a sustainable Derbyshire Dales.

Bakewell 2000 is a project which was set up with the assistance of Derbyshire Dales District Council as the coordinating body for local organisations to promote the objectives of LA21 in Bakewell. One of the projects currently being promoted is the Bakewell Riverside Wildlife Project (BRWP).

The Bakewell Project will relocate the livestock market from the town centre to a site on the east of the River Wye at the northern end of the showground. This will allow for the redevelopment of the original

of protection for the environment as a whole.

The requirements for public consultation and access to environmental information will remain similar to those of IPC processes regulated under EPA90.

Timetable

Oct 1996 - Directive enters into force in the EC

Oct 1999 - Directive brought into effect in the UK

Oct 2007 - All existing installations will require IPPC permits

It is expected that operators currently holding IPC authorisations will not be required to maintain both IPC authorisations and IPPC permits. Such operators will be required, if within the scope of IPPC, to apply for an IPPC permit to replace their IPC authorisation(s) in accordance with the above timetable.

5.4 Land use planning

Land use is the single most important influence on the environment. Human activity can have both positive and negative impacts on the environment. Redevelopment and renewal can do a lot to repair the damage of the past, while controls on new development can protect sensitive habitats and biodiversity and can prevent increased emissions of pollution to air, land and water.

5.4.1 Planning liaison

The control of land use change is primarily the responsibility of Local Planning Authorities (LPAs) through the implementation of the Town and Country Planning Acts. Local development plans provide a framework for land use change and are key considerations in the determination of planning applications. Government planning guidance supports co-operation between LPAs and the Agency in relation to land use and the environment.

The Agency is a statutory consultee in respect of development plans and certain categories of planning applications. This allows the Agency's views to be considered by the LPA prior to a planning application being decided or policies in a development plan being approved. Planning liaison is the link between the Agency's functions and Local Authority planners. Guidance on the types of planning applications we would wish to see is contained in the Agency's document "Liaison with Local Planning Authorities".

5.4.2 Development Control guidance

The following is draft guidance to LPAs from the Agency on a number of areas of mutual interest. Town and Country Planning can support sustainable development and work towards meeting the country's commitments to biodiversity and global warming. Some of these policy approaches should be at the regional level, while others should be considered in a more local context.

5.4.2.1 Transport and infrastructure

Road traffic accounts for some 25% of the UK's contribution to global warming. Vehicle use also contributes towards acid rain through the production of sulphur dioxide and oxides of nitrogen.

Regional policies should be in place to minimise the need for travel by locating as far as possible, homes, places of work and other facilities in reasonable proximity to each other. Such broad policies offer the basis for more detailed land-use policies. For example, a preference for new employment sites and retail developments to be sited close to good public transport networks and away from locations that cannot readily be served. Such an approach should also influence the Structure Plans and Part I Unitary Development Plans with respect to the distribution of new housing.

Commitments outlined in the Local Agenda 21 action programmes of Local Authorities encourage: -

- extending the provision for cyclists and for the safe movements of pedestrians;
- promotion of public transport as an attractive substitution for car use; and
- The reduction of energy consumption and pollution by unnecessary journeys to work, shops and leisure facilities.

In Derbyshire one of the key challenges in the LA21 Challenge document is to promote sustainable transport to cut congestion on Derbyshire roads and improve public transport. As mentioned in previous sections, Derbyshire, and in particular the Peak National Park, receives large numbers of tourists each year. The problem is to find a solution to peoples' reliance on the private car.

The various measures proposed in the document have differing timescales from short to long term. They range from encouraging more public transport usage (through enhanced routes and ticket schemes), to supporting the reopening of rail links.

partnership

The South Pennines Integrated Transport Strategy has been formulated by the Peak Park Transport Forum. The forum consists of representatives of 9 Highway Authorities, 5 District/ Borough Councils, Peak District National Park Authority, 2 railway companies, Railtrack, the Countryside Commission and Transpennine Ltd. The strategy aims to:-

- improve trans-pennine rail services
- restrain traffic on most cross pennine roads to limit traffic growth
- create an improved and safer environment for residents and visitors
- conserve and enhance the National Park
- help to re-invigorate the economies of urban areas surrounding the National Park
- improve road corridors in the north and to the south of the National Park
- re-route cross-park cars and lorries.

5.4.2.2 Energy

Although the Agency is responsible for the regulation of emissions to the environment from power stations it has little direct influence on the consumption of energy within the area. We are, however, in a position to help influence planning policy and its impact on energy use. Energy conservation is important to combat global warming and the long-term sustainable use of non-renewable resources.

Planning Policy Guidance Note 12 (PPG12) states that structure plans should include policies for energy generation, including renewable energy. Structure plans and UDP Part I's should include policies and proposals for providing renewable energy in their area. Plans need to address the potential conflict within development areas for such installations and the protection of landscape and wildlife. They should propose the criteria to be applied to planning applications for renewable energy installations in National Parks and Areas of Outstanding Natural Beauty (AONBs).

In addition to providing for renewable energy installations, development plans can affect energy conservation through development patterns. PPG 12 offers guidance to Local Authorities in this respect. The Council for the Protection of Rural England (CPRE) has produced a document, " Energy conscious planning", highlighting the integration of energy issues in land-use planning.

Within Local Plans, energy related policies may be expected to provide a more specific framework for development control decisions which would apply not only to greenfield developments, but also to redevelopment and infilling within existing settlements.

Given this context, it is appropriate for Local Planning Authorities to pursue policies which:-

- Discourage low density development.
- Promote some degree of concentration of principal employment activities and community facilities.
- Ensure that new development is well related to established or convenient public transport routes.
- Encourage energy-sensitive siting, orientation and layout of new development, particularly in order to allow future energy saving technologies to be accommodated.

In addition to planning, the building regulations section of Local Authorities are also influential, for example in terms of energy efficient buildings.

5.4.2.3 Natural Habitats and Biodiversity

Whilst many species native to the UK are relatively common, between about 10 and 20 % of native species are considered threatened. A monitoring programme is being established under the Biodiversity Action Plan (BAPs) to measure changes in both the extent of habitats and their quality, in terms of the populations of characteristic flora and fauna found in them (Issue 18).

There are three BAPs in Derbyshire, however only two of these actually fall in the Derwent plan area, these being the Peak District and Mid Derbyshire Local Biodiversity Action Plans. Production of the Plans stems from the Earth Summit in Rio 1992 and in its similarity to LEAPs it seeks to focus the efforts of partner organisations. The focus will be to enhance the biodiversity resource, taking account of local, national and international priorities.

Ecological issues have traditionally been reflected as restraint policies in development plans. As a result of the growing strength of wildlife groups and the more widespread use of Environmental Assessments, a wider range of ecological matters can now be addressed in plans. Policies should be in place to promote ecological diversity.

As advised in PPG 1, although the principal use of a site may be for housing or other development, schemes should be designed to retain natural features on site and where none exist, to create new

habitats or features to encourage wildlife. Local Plans offer the opportunity to incorporate policies to replace wildlife resources lost through development using Section 106 Agreements.

Policies should be offered along the lines of :

"All new development should preserve and enhance existing elements of nature cothe promotion of wildlife corridors.

5.4.2.4 Waste management

The management of waste impacts on land use. The location of landfill sites and the operation of waste transfer stations affects the proposed use of land and the amenity of surrounding areas.

Planning permission should not be granted for the deposit of biodegradable waste within 250m of any development unless measures can be taken to monitor and control landfill gas. In any event permission should not be given for the deposit of biodegradable waste within 50m of development. Without correct management, the migration of landfill gas can give rise to the risk of explosion in buildings, underground services or voids. It also presents a risk of asphyxiation.

Where a proposed development might be at risk from migrating landfill gas, the Agency can advise on the work required to protect property. Any residential development within 50m of a known gassing landfill should be refused unless the developer can clearly show how it will be protected.

Methane generated in a landfill site must be controlled in order to minimise its impact on the environment. Collecting it and using it as a fuel has two benefits, by avoiding pollution and generating energy. There should be a presumption against the passive venting of landfill gas unless it can be shown that methane oxidation is reducing methane emissions to a low level. Planning applications to utilise landfill gas for the generation of energy should generally be encouraged.

Waste transfer stations can have an adverse impact on the amenity of nearby properties through dust, noise and smell and can cause considerable pollution to rivers and streams from run-off. Planning permission for waste transfer stations accepting over 100 tonnes of biodegradable waste a day should only be permitted if the sites are operated under cover except where waste is deposited into closed containers for prompt disposal elsewhere.

5.4.2.5 Flood defence and the control of surface water run-off

Importance of floodplain

River channels have a limited capacity and when this is exceeded, flooding of the adjoining land known as the floodplain occurs.

The need to protect floodplains has not always been recognised and they have sometimes been subjected to inappropriate development. Rivers and their floodplains are finite resources, which need to be managed in accordance with the principles of sustainable development.

If flood risks to land and property are not to be increased and the ecological value of rivers and floodplains is to be safeguarded, then rivers and their floodplain need to be protected from activities, such as development, which may adversely affect them.

The impact of urban development and the control of surface water runoff

The urban development of a catchment can have the following major effects on the hydrological regime:-

- Increased volumes of storm water runoff.
- Higher peak flow rates and flood water levels.
- Lower base flows in rivers and streams.
- Inundation of available storage in (and conveyance capacity of) river corridors.
- Reduction in soil moisture recharge leading to a reduction of groundwater resources.
- Increase in pollutant loads carried into sewers or surface waters.

Urban runoff should be considered as a resource. The management of urban runoff to mitigate its adverse impact on the water environment is the concept of "source control". This aims to identify local and more sustainable solutions for surface water management, without giving rise to detriment in groundwater quality.

partnership

Key Points:-

- Wherever appropriate surface water should be disposed of as near to the point of incidence as possible. Site owners and occupiers will have to assume a greater responsibility for surface water management.
- Clean and contaminated surface water should be kept separate.
- The use of "softer" engineering structures such as swales, detention ponds, infiltration basins and porous surfaces should be encouraged as alternatives to conventional drainage where appropriate and practical. Ideally these techniques should be considered in preference to conventional drainage systems providing there are no adverse impacts on groundwater resources.
- When planning a development, surface water management should be considered as a fundamental part of the design and operation of the project. The retention of water on site for low grade usage such as landscape management and vehicle washing can also reduce the demand on the potable supply system giving further environmental benefits.
- The active promotion of surface water runoff disposal to infiltration basins may have an additional benefit as a means of artificial recharge to aquifers. The potential quality problems for groundwater where very polluted runoff could be involved may limit this option to surface waters draining non-industrial locations, but in any case full assessments will be needed.
- Infiltration drainage should be considered for developments proposed in areas where the existing combined sewer capacity is a limiting factor.
- Source control should apply to roads as well as buildings.

Adoption

If a source control system is to be incorporated into a road drainage system, for example by means of a soakaway system or reed bed, then such a system can become the responsibility of the highway authority. If the system is to be incorporated into an area of public open space, through a Section 106 agreement or a unilateral understanding with the developer, then the Local Authority can adopt it. It is currently the policy of the Statutory Sewerage Undertakers in England and Wales not to adopt infiltration systems. We are working with Local Authorities and sewerage undertakers to change attitudes to make adoption more acceptable.

5.5 Education

Education is a key objective for the Agency and a major part of its strategy for environmental understanding, protection and improvement. It is essential to the delivery of cleaner more sustainable environment in the long term. In many cases a lack of information and awareness is one of the factors which leads to environmental damage or neglect whether it be by accident or deliberate. There is a need for a greater level of educational involvement by the Agency and a need to raise awareness of environmental issues. The Agency has recently 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 educational material and much of this information is free of charge. For a list of what is available please see Appendix 2. For copies, please contact: Sue Quinlan, Customer Contact Team Leader Tel: (0115) 9455722 Ext 3696.

5.5.1 Educational initiatives

The Agency undertakes a wide variety of pollution prevention, waste minimisation and education initiatives with local communities, business, Local Authorities and others.

Specific initiatives include:-

Water pollution prevention

- in excess of 100 pollution prevention site inspections a year in the catchment to business and agriculture.
- Agency and Derbyshire Fire and Rescue Service operate a joint approach to pollution prevention and containment at incidents.
- Distribution of leaflets to Local Authorities, schools, libraries etc.

Local Authority liaison

- Planning roadshows to improve relations between LPAs and the Agency.
- Promotion of "source control".

Waste management

- Producer responsibility.
- The draft Producer Responsibilities (Packing Waste) Regulations place an obligation on certain businesses to recover and recycle specific amounts of packaging waste. Area offices are capable of responding to queries from local businesses and provide advice and information.
- Waste minimisation.
- The Agency will promote best practice in waste management and special waste regulations.

5.5.2 Schools education

The Agency is committed to improving its education work with schools. The Agency is one of a number of organisations working with schools and there are opportunities for joint approaches. 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. The Agency is developing its own national education strategy and work in the LEAP area will accord with that framework.

The Agency also took part in the Scitec '98 Science Festival at Derby University in June/ July 1998. This festival was attended by 13,500 adults and children over a five day period.

The links between education, health, recreation and the environment are considerable and initiatives and projects to integrate these interests are worthwhile. The Agency will consider scope for our involvement and support where possible.

5.5.3 The Bakewell Show

In August 1998, the Agency was awarded a gold medal for its stand at the Bakewell Show. The stand included a water saving garden as well as numerous interactive displays aimed at children and adults.

The Agency Stand at the Bakewell Show

Water saving garden at the Bakewell Show

6 future

6.0 future review and monitoring

The Agency will be jointly responsible, with other identified organisations and individuals, for implementing this Action Plan. Progress will be monitored and reported annually by the Agency to all the key partners and other interested parties. The first Annual Review is due at the end of January 2001.

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

- Examine the need to update the LEAP in the light of changes in the plan area.
- Compare actual progress with planned progress, and explain the reason for any changes to the content or timing of individual actions.
- Report on other matters, including any legislative and classification scheme changes, affecting the LEAP.
- Roll forward the detailed actions.

Scitec - using the microscope

appendix one

List of organisations and individuals who made written responses to the Consultation Report

Mr S Adams, Etwall

Amber Valley Borough Council, Environmental Forum - Martin Rich (Env. Officer)

The Arkwright Society - Christopher Charlton (Secretary)

Bakewell Beyond 2000 - DJ Russell

Mrs Helene Bellofatto, Belper

Belper Town Council - Councillor John Harrington (Leader of the Council)

Mr Alastair Boden, Derby

Tony Bostock,(RFAC & Upper Severn AEG)

BCU, West Midlands Region - Mike Nicholls (Regional Chairman)

BCU, Carel Quaile (National Development Officer)

BTCV, Neil Canham (Midshires area Manager)

BTO, Karl Evans (Development Assistant)

BW, Keith Boswell (Waterway Manager)

BW, North East Region - IA White (Regional Manager)

Broomfield College, Mr Phillips (Estate Manager)

Calver PC, Councillor WJ Geary

Civil Aviation Authority, Safety Regulation Group, Mr Harry Siepmann

Clean Rivers Trust, Dr Harvey Wood

The Coal Authority, DJ Stafford (Asst. Property Manager)

Mr BR Cooper, Spondon

CPRE, Derbyshire Branch, J Gidlow & NP Tompkins (1998 Derwent LEAP sub Committee)

CPRE, Sheffield, Peak District & S. Yorks. Branch, Dennis Patton (Director)

Countryside Commission, Midlands Regional Office, Tony Pike (Countryside Officer)

Courtaulds Chemicals, RIJ Gray (Site Director, Spondon)

Derby and Sandiacre Canal Trust, PN Horton-Turner (Chairman)

Derby City Council, Corporate Services, Andy Hills (Environmental Coordinator)

Derby City Council, Leisure Services, Museum and Art Gallery, WM Grange (Keeper of Natural History)

Derby Civic Society, Maxwell Craven

Derbyshire Angling Federation, S Clifton

Derbyshire County Angling Club, Mr OW Handley (Secretary)

Derbyshire County Council, Environmental Services, Richard Sandbach

Derbyshire Historic Buildings Trust, Dr Patrick Strange

Derbyshire Joint Anglers Council, G Cleveley (Hon. Secretary)

Derbyshire Wildlife Trust, Pete Longbottom (Conservation Officer)

Derwent Valley Trust, Graham Knight

Derwent Fly Fishing Club, Stephen Baker (Chairman, River sub committee)

Mr AS Dewick, South Derbyshire

East Midlands Rowing Council, Nige Mayglothling (Chair)

Elvaston PC, Mrs P Garratt

English Nature, Peak Dist. & Derbys. Team, Claire Trinder (Conservation Officer)

English Nature, East Midlands Team, Ian Evans

English Nature, Humber to Pennines Team, Roger Morris (Conservation Officer)

Exchem Plc, Derek Guilfoyle

FRCA, Mr AJ Bowness

Mrs Sheila Furniss, Littleover

GOEM, Mr R Charlton (Planning Team 2)

Govt. Office for Yorks. and the Humber, Miss J Capstick

Haytop Country Park, Mr H George

Ms Joan Hinpley, Duffield

Hydro ACTIVE, Andy Bond

The ICE, Roger Dobson (Director General & Secretary)

The ICE, East Midlands Ass., N. Notts & N. Derbys. Branch, Mr DL Hollingsworth

Inland Waterways Association, Neil Edwards (Executive Director)

Mr Alan Jeffreys, Breaston, Derby

Lafarge Redland Aggregates Ltd, Mr DR Wardrop (Divisional Geologist)

Laporte Minerals, Mr JW Parkhouse

MAFF, Rural and Marine Environment Division, Mr RJ Warlow

Mr David Mallon, Glossop

Councillor John March, Matlock

Matlock Civic Association, KJ Parker (Secretary)

Midland Canoe Club, Simon Pilbeam

Moorway AC, Mr K Reader

Mortimer Wilson School, Env. Science Dept, Mr M Gander (Coordinator of Humanities)

NFU, West Midlands Region, Andrew Richards (Snr Technical Adviser)

The National Trust, The High Peak Estate Office, Stephen Trotter (Property Manager)

NE Derbyshire District Council, Jonathan Noad (Planning Assistant)

Ockbrook PC, Graham E Taylor (Clerk)

PDNP Authority, John Thompson (Ass. Nat. Park Officer - Head of Recreation)

Peak Rail Plc, J Clegg (Chairman)

Ramblers Ass., SYNED Area, Allen Pestell (Access/ Countryside Officer)

Ramblers Ass., Manchester Area, Mrs J Cliff (Countryside Officer)

Ramblers Ass., Derbyshire Area, Mr DB Nicholas

Ms Anne Robinson, Alport Castles Farm

Mr K Robotham, Chellaston, Derby

RSPB, NW England Office, Patrick J Lindley (Conservation Officer)

Rural Development Commission, Mr G Bennett (Rural Development Officer)

Rural Development Commission, Tony Harvey (Regional Planning Officer)

Severn Trent Water Ltd, John Martin

Shardlow PC, Mrs Eccles (Parish Clerk)

South Derbyshire District Council, John Birkett (Head of Planning)

Staffordshire Wildlife Trust, Ms R Hering (Upper Trent Otter & Water Vole Project Asst.)

Mr Alan Stringer, Somercotes

Sustrans, Midlands, Peter Foster

Mr Trevor Taylor, Chesterfield

Mrs E Thorpe, Matlock

Mr GW Thorp

Mr NP Tompkins, Brailsford

Transport 2000, Derbys. & Peak District Group, Chris Ryan (Chairman)

Ms Jenny Turville, Mackworth, Derby

University of Huddersfield, Dept. of Geog. & Env. Sci., Prof John Gunn

Yorkshire Water Services Ltd, Ed Bramley (Principal Adviser - Env. Regulation)

Yorkshire Water Services Ltd, Finance and Regulation Directorate, Geoff Roberts (Head of Safety, Health & Environment)

Plus a further six questionnaires with no return name or address given

The Environment Agency gratefully acknowledges all comments received

appendix

appendix two

SECTION	PAGE	ERROR/OMISSION	RAISED BY
2.3.3	15	Omission of rowing in Derby	East Midlands Rowing Council
2.4.2	9	Chatsworth and Haddon are not neo classical. One is Baroque, the other medieval. Kedleston Hall is neo classical.	Derby Civic Society
3		Issue 18 - Mid Derbyshire Derwent BAP produced by DWT on behalf of a partnership of local organisations.	Derbyshire Wildlife Trust
4.2	113	Omission of rowing in Derby	East Midlands Rowing Council
5.12	87	Omission of rowing in Derby	East Midlands Rowing Council
6.4.2	113	Derby and Sandiacre Canal Company is now the Derby and Sandiacre Canal Trust.	Inland Waterways Association
Map 3	10	S Yorks County Council no longer exists.	English Nature (Peak District & Derbyshire Team)
Map 5a	12	Limestone boundary wrongly marked.	English Nature (Peak District & Derbyshire Team)
Appendix 4	124	Greenbelt definition misleading	Rural Development Commission

appendix three

Environment Agency leaflets and information

Listed below is a selection of leaflets available from the Agency. It is intended as a guide to the type of information available rather than as a complete list, as new leaflets are being produced. It does not include policy documents or technical reports.

GENERAL INFORMATION

- A Better Environment for England and Wales
- 0800 Leaflet (Emergency Hotline)
- Customer Charter
- Corporate Plan Summary
- Annual Report and Accounts
- Complaint and Commendation Procedure
- Charging for Information
- Worldwide Web - State of the Environment
- The Environment of England and Wales - A Snapshot
- Green Shoots - Strategy for Environmental Education
- An Environmental Strategy for the Millennium and Beyond
- Partnership in Environment Protection
- Our Midlands Environment
- Local Agenda 21
- Planning and acting for a Better Environment (joint leaflet with West Midlands Local Govt. Association)
- Liaison with Local Planning Authorities

ENVIRONMENT PROTECTION /POLLUTION PREVENTION

- Blue Green Algae
- Identifying Freshwater Life
- 'How to Avoid' Pollution Series
- Making the Right Connection -Avoiding Water Pollution
- Designs that Prevent Pollution -Nature's Way
- Farm Waste Management Plans
- Mobile Sheep Dipping - a guide to reducing pollution risks
- The Oil Care Code: a number of leaflets
- Pollution Prevention Guidelines (PPGs) : PPG1-PPG20

- Building a Cleaner Future
- Water Pollution Incidents in England and Wales - Summary
- Recovering the Cost of Pollution
- Discharge to Controlled Water Annual Charges
- Assessing Water Quality
- The Use of Licences to prevent pollution
- A Guide to Groundwater Vulnerability Maps
- A Guide to Sustainable Urban Drainage
- Integrated Pollution Control Fees and Charges
- Charging Scheme for Radioactive Substances Act Regulation
- Integrated Pollution Control and You
- What a Waste!
- Special Waste Regulations 1996 - How they affect you
- Classification of Special Waste
- Use of the Consignment Note
- Obtaining and Sending Consignment Notes
- Waste Regulation and You
- The Registration of Waste Carriers
- New Packaging Regulations - How do they affect you
- Clinical Waste
- Producer Responsibility Obligations 1997 (1st Ed, July 1997)
- Producer Responsibility Obligations (Packaging Waste) Regs 1997

FISHERIES CONSERVATION AND RECREATION

- Anglers and the Agency
- Rod Fishing Licences 1997/98
- Buyer Beware - Your Guide to Stocking Fish
- Fisheries News
- Fishing Guide 1997/98
- Conservation - Work in the Midlands Region
- Mink
- Understanding Buffer Strips
- Control of Invasive Plants Near Watercourses
- Have Fun, Have a Care (Water recreation information)
- Recreation Sites (Midlands)
- Enjoy Your Garden - Care for our Environment
- Conservation Designations
- Rod Fishing Bylaws
- The Severn Way
- Aquatic Weed Control Operation
- Phytopthora disease of Alder
- Severn Bore and Trent Aegir
- Climate Change in the Garden
- River Life - from Source to Sea

FLOOD DEFENCE AND WATER RESOURCES

- Flood Warning Information: What to do if your property is at risk
- Flood Warning Information: Various rivers
- Schedule of Main Rivers
- Land Drainage Byelaws
- Water Abstraction Charges
- Water Abstraction Can Cause Pollution
- Abstraction Licensing and Water Resources
- Spray Irrigation
- Making the most of your Spray Irrigation Abstraction Licence
- Water Alert
- Information Sheets 1-23 - Flood Defence - various subjects
- Flood Defence Factsheet
- Application for Consent for works affecting watercourses and/or flood defences- Explanatory Notes
- Rivers and Wetlands - Best Practice Guidelines
- Defying the Disaster: Memories of the 1947 floods
- Living on the Edge - a guide for riverside owners
- Safeguard the Environment: A guide for developers
- Policy and Practice for the protection of floodplains

Please contact Sue Quinlan, Customer Contact Team Leader Tel: (0115) 9455722 Ext 3696 at the Lower Trent Area office for further information and to obtain these and other leaflets (subject to stock availability).

appendix four

glossary

Abstraction The removal of water from any source, either permanently or temporarily.

Abstraction Licence Licence issued by the Environment Agency under s.38 of the Water Resources Act 1991 to permit removal of water from a source of supply.

Agenda 21 A comprehensive programme of worldwide action to achieve a more sustainable pattern of development for the next century. UK Government adopted the declaration at the UN Conference on Environment and Development (the Earth Summit) held in Rio de Janeiro in 1992.

AONB Area of Outstanding Natural Beauty.

Aquatic Pertaining to the water environment.

Aquifer A water bearing-stratum situated below ground level. The water contained in aquifers is known as groundwater.

Asset Management Plan (AMP) Water Companies' Strategic Business Plans - initiated by OFWAT as part of the periodic review of water company charges. Sets out investment priorities for water resources, sewerage improvement and sewage treatment. We are now in the third review (AMP3) which will cover the period 2000 to 20005.

BAP Biodiversity Action Plan.

Base flow The flow of a river derived from groundwater sources.

BAT Best Available Technique.

BATNEEC Best Available Technique Not Entailing Excessive Cost.

Biodiversity Diversity of animal and plant life.

Borehole Well sunk into a water bearing rock.

Catchment The total area from which a single river system collects surface run-off.

Coarse Fish Freshwater fish other than salmon and trout.

Combined Sewer Overflow (CSO) An overflow structure which permits a discharge from the sewerage system during wet weather.

Cyprinid fish Coarse fish belonging to the carp family, eg.Roach, Dace and Bream.

appendix

EC Directive A type of legislation issued by the European Commission of the European Union which is binding on Member States in terms of the results to be achieved but which leaves to Member States the choice of methods.

Effluent Liquid waste from Industry, agriculture or sewage treatment plants.

Eutrophication excess growth of aquatic vegetation due to increased plant nutrients being introduced to the watercourse.

Fauna/Flora Animal life/ Plant life.

Floodplain This includes all land adjacent to a watercourse over which water flows or would flow but for flood defences in times of flood.

Groundwater Water which saturates a porous soil or rock substratum (or aquifer). Water held in storage below ground level.

Groundwater units Administrative sub-divisions of aquifers, defined on geological and hydrological criteria, which form the basis for groundwater resource management and licensing policy decisions.

Heavy Metals A loose term covering potentially toxic metals used in industrial processes, common ones include chromium, copper, lead, zinc and cadmium.

Herbicide Any agent, either organic or inorganic, used to kill vegetation.

Integrated Pollution Control (IPC) An approach to pollution control in the UK which takes account of potential effects upon all environmental media. Applies to processes authorised under Part A of the Environmental Protection Act 1990.

Integrated Pollution Prevention and Control (IPPC) extends the activities of IPC processes (see above) to be covered to include smaller industrial processes.

Invertebrate fauna Animals which lack a vertebral column - used for biological classification.

Landfill Site used for waste disposal into/onto land.

Leachate Liquor formed by the act of leaching.

LNR Local Nature Reserve.

LPA Local Planning Authority.

MAFF Ministry of Agriculture, Fisheries and Food.

Main River The watercourse shown on the statutory 'main river maps' held by the Environment Agency and MAFF. The Agency has permissive powers to carry out works of maintenance and improvement on these rivers.

Nitrate Sensitive Areas (NSA) An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50 mg/l laid down in the 1980 EC Drinking Water Directive, and where voluntary, compensated agricultural measures have been introduced as a means of reducing those levels.

Nitrate Vulnerable Zone (NVZ) An area where nitrate concentrations in sources of public drinking water exceed, or are at risk of exceeding the limit of 50 mg/l laid down in the 1991 EC Nitrate Directive, and where compulsory, un-compensated agricultural measures will come into force on 19 December 1998 as a means of reducing those levels.

Nitrogen dioxide (NO2), Nitric Oxide (NO), Oxides of Nitrogen (NOX) NO2 and NO are both oxides of nitrogen (NOX) produced by traffic and industry. NO2 can have an adverse effect on human health, increasing the symptoms associated with respiratory illness. NO2 is a target pollutant in the UK National Air Quality Strategy.

NNR National Nature Reserve.

Ordinary watercourse A watercourse that does not form part of a Main River.

Particulates Small particles of matter released from a number of sources which can affect the respiratory and cardiovascular systems. A target pollutant in the UK National Air Quality Strategy. PM_{10}-particles below 10µm.

Renewable Energy Energy produced from resources which are unlimited or rapidly replenished eg. wind, water, sunlight, wave power or waste.

Riparian Owner of land adjacent to the river.

River Corridor The continuous area of river, river banks and immediately adjacent land alongside a river and its tributaries.

River Ecosystem (RE) Classification used to measure water quality, see RQO definition below.

River Quality Objectives (ROO) Water quality targets to secure specific formal minimum quality standards for specific stretches of water by given dates. A component of these was introduced by "The Surface Waters (River Ecosystem Classification) Regulations 1994".

SAC Special Area for Conservation.

SA(E) Sensitive Area (Eutrophication).

SAM Scheduled Ancient Monument.

Sewage Liquid waste from cities, towns and villages which is normally collected and conveyed in sewers for treatment and/or discharge to the environment.

Sewerage Means of conveying foul or surface water.

Sherwood Sandstone A thick sequence of poorly cemented red-brown sandstones with interbedded marls and conglomerates deposited during the Triassic era, constituting one of the main aquifers in the British Isles.

Site of Special Scientific Interest (SSSI) A site given a statutory designation by English Nature or the Countryside Council for Wales because it is particularly important, on account of its nature conservation value.

SSWS Southern Surface Water Sewer.

Sulphur Dioxide (SO_2) A gas which dissolves in water to give an acidic solution. It is an Irritant when inhaled and may cause breathing difficulties. Emissions of SO_2 can lead to acid rain, affecting ecosystems and water quality. A target pollutant in the UK National Air Quality Strategy.

Surface Water Water collecting on and running off the surface of the ground.

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

Transfer Station Waste disposal facility where waste is collected prior to transport to final disposal point.

UWWTD Urban Waste Water Treatment Directive.

Volatile Organic Compound A term which includes all organic compounds released to air in the gas phase.

Water Table Top surface of the saturated zone within the aquifer.

Winter Storage Reservoir Reservoirs built by farmers to store water during the winter months when it is "plentiful" for re-use during the summer.

µm Microgramme.

MANAGEMENT AND CONTACTS:

The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD
Tel: 01454 624 400 Fax: 01454 624 409

Internet World Wide Web www.environment-agency.gov.uk

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN
Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

MIDLANDS
Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

NORTH EAST
Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

NORTH WEST
Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

SOUTHERN
Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

SOUTH WEST
Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

THAMES
Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

WALES
Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0LT
Tel: 01222 770 088
Fax:01222 798 555

For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE
0645 333 111

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

ENVIRONMENT AGENCY EMERGENCY HOTLINE
0800 80 70 60

ENVIRONMENT AGENCY

MI-1/99-1K-C-BECU Printed on Recycled Paper

Lower Trent Area
Trentside Offices
Scarrington Road
West Bridgford
Nottingham
NG2 5FA
Tel: 0115 945 5722
Fax: 0115 981 7743