local environment agency plan

WEST CUMBRIA

ACTION PLAN

DECEMBER 1999

ENVIRONMENT AGENCY

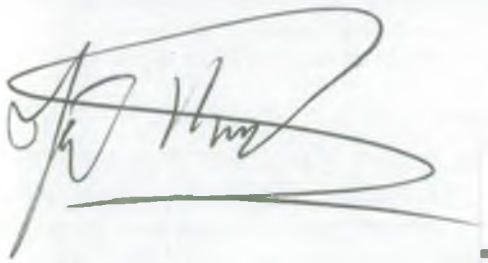

West Cumbria Local Environment Agency Plan
Map 1
Environment Agency
West Cumbria LEAP Area
KEY
Plan Boundary
Watercourse
Built up area
District council boundary
Primary Road
A Road
B Road
Railway
N
0
10km
Silloth
Allonby
Aspatria
Maryport
Dearham
Flimby
Great Broughton
Seaton
Cockermouth
WORKINGTON
Distington
Parton
Keswick
Frizington
WHITEHAVEN
Cleator Moor
St Bees
Egremont
Gosforth
Seascale
Ravenglass
Bootle
ALLERDALE
COPELAND
EDEN DISTRICT
SOUTH LAKELAND
Bassenthwaite Lake
Over Water
Loweswater
Crummock Water
Derwent Water
Ennerdale Water
Buttermere
Thirlmere
Wast Water
A66
A591
A595
A596
A594
A597
A5086
B5299
B5300
B5301
B5291
B5292
B5289
B5294
B5295
B5345
B5344
B5322
NX 00 NY
SC 00 SD
OS Copyright licence number GD 031776

Foreword

The West Cumbria Action Plan has been produced following publication of the Consultation Report in 1998. I am grateful to the local authorities, agencies, interest groups and members of the community for their support and comments during the consultation process. I would also like to thank the Area Environment Group for their help in producing the Consultation Report and this Action Plan.

This Action Plan outlines progress to date and further actions required, over the next five years, to take forward environmental issues identified in the West Cumbria Area. In some cases funding and partnership have already been secured, and some actions are underway or complete. However equally important actions are highlighted for which funding and partners are still sought. Implementation of this action plan is an on-going process, and through a partnership approach actions will be achieved to ensure the environment of West Cumbria is protected and improved.

I look forward to your help in implementing this Plan.



JOHN MARSHALL
Area Manager

Our Vision

"A better environment in England and Wales for present and future generations".

This encapsulates the concept of sustainable development which is at the heart of all that we do. In the West Cumbria area this means protecting the quality of the environment in the rural areas especially the Lake District National Park, and ensuring economic regeneration along the West Coast provides economic and social benefit while maintaining and enhancing the environment.

The Agency wishes to increase environmental awareness at individual and community level across the area, so that people feel empowered to make choices which will be beneficial to the environment. This will include using good science to improve the understanding of the complex environmental processes of the area so that benefits can be weighed against costs.

In this area priority must go to maintaining and improving water quality, especially of the still waters, but also in the rivers and along the coast. We will encourage industry to reduce reliance on landfill to dispose of waste, by waste minimisation and other initiatives. We will ensure discharges to land, air and water under our control are regularly reviewed and improved where necessary to protect the environment and human health.

Water abstraction must be undertaken in a balanced way which allows best use of resources while protecting the environment. Water demand management will be an increasingly important aspect. In the light of recent droughts and predicted climate change, precaution must be used when assessing future water abstraction regimes from the area's rivers and lakes. In addition, we will seek to maximise the benefits of flood defence schemes and improve our flood warning service, particularly along the coast, where it is cost beneficial to do so.

The area contains several important migratory and freshwater fisheries. We will strive to protect the biodiversity of the area, including the fish populations, and encourage sustainable fisheries.

We recognise we cannot achieve these objectives on our own. To maximise environmental benefits we will work with local authorities, a range of industries, voluntary and public bodies as well as the wider community.

Tackling the issues outlined in this plan will be the first step towards achieving this vision.

Contents

APPENDICES

1. INTRODUCTION

The Environment Agency

The Environment Agency (the Agency) has a wide range of duties and powers relating to different aspects of environmental protection and management. These duties together with those areas in which the Agency has an interest, but no powers, are described in more detail in Appendix 1. The Agency is required and guided by Government to use these duties and powers in order to help achieve the objective of sustainable development. The World Commission on Environment and Development (the Brundtland Report, 1987) defined sustainable development as:

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

The Government's revised Sustainable Development Strategy 'A better quality of life' (DETR, 1999) sets out more detailed objectives, based on four broad aims:

- *Social progress which recognises the needs of everyone*
- *Effective protection of the environment*
- *Prudent use of natural resources*
- *Maintenance of high and stable levels of economic growth and employment*

At the heart of these aims is the integration of human needs and the environment within which we live. Indeed the primary aim of the Agency is to protect and improve the environment and make a contribution towards the delivery of sustainable development through the integrated management of air, land and water.

Our aims are:

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

We will do this by:

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

Taking a long-term perspective will require us to anticipate risks and encourage precaution, particularly where impacts on the environment may have long-term effects, or when the effects are not reversible. We must also develop our role to educate and inform society as a whole, as well as carrying out our prevention and enforcement activities, in order to ensure continuing protection and enhancement of the environment.

Although we only have duties and powers to protect some environmental resources, we will need to contribute to other aspects of environmental management even where these are, in the first instance, the responsibility of others. We can only do this effectively by working in partnership with and through others in order to set and achieve common goals.

Introducing the Environmental Themes

Our principal and immediate environmental concerns are stated in our national strategy 'An Environmental Strategy for the Millennium and Beyond' (1997). We plan to revise the strategy in 2000, to take account of the Governments revised sustainable development strategy 'a better quality of life' (DETR, 1999).

A key element of our strategy is to group environmental issues in themes that affect all our functions, which represent the Agency's integrated approach to environmental management. Through the corporate planning process we set ourselves a list of specific actions to progress these themes. The national actions and targets identified in the Agency's Corporate Plan for 2000/1 are summarised as follows:

Theme	National Key Performance Targets Beyond The Millenium	National Priority Actions in 2000/01
Addressing climate change 	Contribute to the UK Government's target to reduce emissions of six greenhouse gases (agreed at the Kyoto Summit) by 12.5 per cent below 1990 levels between 2008 – 12.	♦ Put in place a programme with quantifiable targets for the reduction of methane emissions from landfill operations that are consistent with the Government's UK Climate Change Programme.
Regulating industry 	Implement the new regulatory regime arising from Integrated Pollution Prevention Control (IPPC), ensuring that the environment is at the heart of industry's thinking. Make readily available, good-quality information on emissions to the environment from industry.	♦ Ensure that all Integrated Pollution Control (IPC) processes and waste sites have an up-to-date Operator and Pollution Risk Appraisal (OPRA) score. ♦ Implement IPPC, bringing early sectors into regulation in line with DETR timetable. ♦ Conduct a review of Sellafield discharge authorisations.
Improving air quality 	Reduce emissions of substances from sources regulated by the Environment Agency causing poor air quality or pollution of the atmosphere in accordance with the UK Government's National Air Quality Strategy (NAQS).	♦ Incorporate the necessary improvement programmes in authorisations to meet industry contributions to Government targets. We will also report annual emissions of NAQS substances from IPC processes through the Pollution Inventory (PI) from 1 January 2000 and quantify emissions to air from waste management activities.

Managing waste 	Further improve the consistency and efficiency of the waste industry to minimise the environmental impact of waste management activities.	♦ Use information from the National Waste Survey to generate Strategic Waste Management Assessments, benchmark waste generation rates within industry sectors and inform waste minimisation programmes. ♦ Ensure, as far as possible, business compliance with targets in the Packaging Regulations so as to ensure the UK meets its national packaging recovery and recycling targets in 2001.
Managing water resources 	By 2003, obtain co-operation of others to complete the agreed remedial action to reduce over-abstraction damage at nine SSSIs and 15 other priority sites (identified in the National Environment Programme). Commence a national programme of abstraction management strategy development for England and Wales in 2001/02.	♦ By December 2000, ensure that national and regional abstraction management strategies are published.
Integrated river-basin management 	By 2002, deliver net class upgrades in water quality to 800 km of rivers. By 2005, improve compliance with River Water Quality Objectives (from 82% currently) to greater than 90%. Play our part in creating a thriving, integrated waterways network. Promote the recreational use of river basins. By the end of 2005, increase bathing water compliance to at least 97 per cent with more bathing waters passing consistently, and achieve a significant improvement in guideline standards, particularly at major holiday resorts.	♦ Develop a risk-based approach to enforcement of sites subject to Groundwater Regulations. ♦ By 2001, use the asset management system to develop a prioritised programme of work to maintain and improve navigation assets, as part of waterway development plans for each navigation. ♦ By the end of 2000 increase bathing water compliance to 94 per cent, with more waters passing consistently.
Flood defence 	Work with Government and other operating authorities in further developing a seamless and integrated service.	♦ Agree and implement a finalised set of high-level targets for flood defence with effect from April 2000.
Conserving the land 	Implement the new legal framework for dealing with contaminated land. Make a significant contribution to the start-up of programmes of remediation at seriously contaminated sites.	♦ Make a significant contribution to programmes of remediation at 80 seriously contaminated sites.

Managing freshwater fisheries 	By 2003, develop fisheries on recovering rivers by restoring healthy and sustainable fisheries to 700 km of poor quality fisheries.	♦ Develop pilot Fisheries Development Plans.
Enhancing biodiversity 	By the end of 2003/04, complete a review of existing Agency authorisations to establish their effect on Special Protected Areas (SPAs) and candidate Special Areas of Conservation (cSACs) as required by the Birds and Habitats Directives.	♦ Complete reviews of all Agency issued consents, licences and authorisations affecting 25 SPAs or cSACs.

Local Environment Agency Plans

We are committed at the local level, to a programme of Local Environment Agency Plans (LEAPs) in order to produce a local agenda of integrated action for environmental protection and improvement.

LEAPs help us to identify and assess, prioritise and solve local environmental issues related to our functions, taking into account the views of the local community. As a result, LEAPs allow us to deploy our resources to best effect and optimise benefit for the local environment. LEAPs are based on areas created by geographical catchments. The Agency's North Area of the North West Region is covered by three LEAP areas:

South Cumbria -	consultation report published 1997,	action plan published 1998;
West Cumbria -	consultation report published 1998,	action plan published 1999;
Eden Esk and Solway -	consultation report published 1999,	action plan to be published 2000.

LEAP Consultation Report

The West Cumbria LEAP, Consultation Report, was published in May 1998 and highlighted the most significant issues identified following an analysis of the local environment.

The purpose of the Consultation Report was to enable the Agency and all external organisations and the general public to discuss and, where possible, reach a consensus about the management of the area.

LEAP Action Plan

This Action Plan takes into account the results of consultation and the views expressed following the publication of the Consultation Report. It contains a list of actions based on the issues identified in the Consultation Report that take into account costs, timescales and partner organisations.

These agreed actions have been incorporated into the Agency's annual business plans. Since the publication of the Consultation Report, some actions have been implemented during 1999/00, and issues resolved.

Annual Review

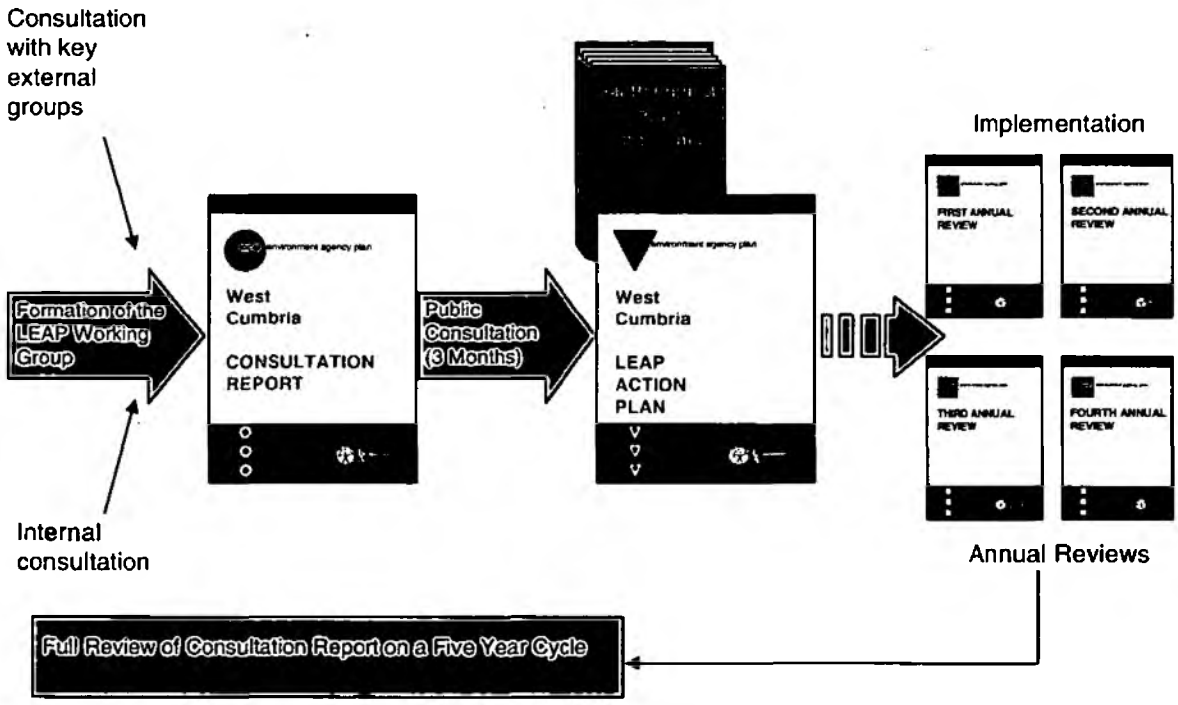
The Agency is responsible, with other organisations and individuals, for implementing the LEAP Action Plan. Progress will be monitored and normally reported annually, through a published review document.

The Annual Review will comprise the following information:

- A comparison of actual progress against planned progress.
- Identification of additional issues and actions to maintain progress in the light of changes in the area.
- Consideration of the need to update the LEAP.

The need for updating will obviously depend on the particular issues of the area. However, updates to the LEAP will normally be undertaken every five years. Key organisations, and individuals forwarding comments on the consultation report will receive an annual review to update them with progress.

The LEAP process involves several stages as outlined below:



Partnerships and LEAPs

LEAPs rely largely on identifying and building partnerships to promote action to resolve local environmental issues. The Agency often has no powers to control directly all identified actions. We strive to build partnerships and encourage public participation and to raise awareness of environmental issues. Section 5 expands on achieving improvements and protection of the environment through a partnership approach.

Links between LEAPs and Development Plans

The links between development plans and LEAPs are most important; (structure plan and local plan together comprise the development plan). The recognition of LEAPs in development plan preparation is essential, as certain LEAP issues could have an impact on future land-use planning and achieving the objective of sustainable development.

Sustainable development is one of the major challenges facing society today. The Government is currently pursuing a number of initiatives that will incorporate the principles of sustainable development more firmly into the planning system. This includes a wider role for Regional Planning Guidance (RPG), to produce a more comprehensive 'spatial' strategy designed to balance needs for development with the need to protect the environment and achieve social and economic objectives. A sustainability appraisal will be integral to the RPG process. The RPG is translated at a local level through the structure plans and local plans (the development plans). From now on, development plans have to incorporate sustainable development objectives. The recently published good practice guide *Planning for Sustainable development: Towards Better Practice, DETR 1998* suggests a systematic method to assist Local Authorities in integrating sustainable development into their development plans. As part of this, the longer term and secondary effects of development need to be recognised. The methodology puts forward aims to place sustainable development at the heart of plan preparation, and integrates it into each stage of the process, resulting in greater emphasis on identifying objectives and indicators as a basis for subsequent monitoring.

The good practice guidance states that planners in all circumstances should be aiming to:

- avoid dangerous interference with the **climate** system;
- protect and improve the **quality of air, soil and water**;
- minimise the **use of resources** (eg land, building materials, water);
- protect and enhance the **built heritage**; and
- conserve the **diversity of species and habitats**.

2. WEST CUMBRIA – AN OVERVIEW

The West Cumbria LEAP area covers almost 1600km^2 and the principal towns are Maryport, Whitehaven, Workington, Cockermouth and Keswick. The resident population is approximately 140,000. This figure can increase dramatically, especially in the summer, because of the influx of tourists into the area. The natural beauty of the area is a key attraction and includes St Bees Heritage Coast and part of the Lake District National Park. Approximately 12 million visitors a year visit the Lake District National Park, with the landscape, and opportunities for outdoor recreation associated with the lakes and fells being the main attraction. While the tourists (staying visitors) visiting the National Park originate from all parts of the UK, a significant number of day visitors to the Lake District originate from the towns along Cumbria's coastal fringe.

The majority of the population within the LEAP area is concentrated towards the coastal fringe, in and around the urban centres of Maryport, Whitehaven, and Workington. The prosperity of these towns was based on their busy ports which expanded rapidly during the 17th and 18th centuries to transport coal, tobacco and other goods. Further expansion occurred during the industrial revolution and Victorian era when mining and manufacturing became significant industries. Coal, limestone and iron ore extraction have all been intensively pursued, principally in support of the iron and steel making industry centred on Workington. The Workington slag bank and numerous mineworkings/spoil tips remain as a legacy to this industrial past. Since then, the West Coast of Cumbria has suffered gradual economic decline, and this is recognised through its eligibility for European Union structural funding to assist regeneration. Diversification into tourism and heritage projects is taking place, as well as town centre refurbishment and other environmental improvements are being encouraged to assist regeneration.

Despite the economic decline, there is still significant industry along the coastal fringe. Within the LEAP area the Agency regulates 12 premises with 24 authorisations under the Integrated Pollution Control (IPC) regulation. The most significant IPC site is Albright & Wilson UK Ltd, who operate 9 authorised IPC processes. BNFL Sellafield is also regulated as an IPC site with two authorisations under IPC regulation.

Land fill remains the major disposal option within the LEAP area, with over 0.5 million tonnes being disposed in this way. However, there are only two sites licensed for the full range of controlled wastes including special waste. These two sites are located at Lillyhall, near Workington, and are operated by Alco Waste Management Ltd and Cumbria Waste Management Ltd, and account for over 46% of the total waste disposed in the area.

The LEAP area has some of the wettest and steepest sloped catchments in England and Wales, with the highest annual average rainfall (4132mm/year) in England usually being recorded at Styhead Tarn near the source of the River Derwent, the principal river system. All the major rivers including the Rivers Ellen, Ehen, Calder and Esk system respond with rapid run-off following heavy rainfall. This can create fluvial flood risk to the towns of Keswick, Cockermouth, and Egremont.

The area is used to supply large volumes of water to parts of the North West region as well as supplying the needs of the local community for both drinking water and industrial use. Of the total volume of approximately 560 Mld licensed to be abstracted for water supply, around 43% is exported from the catchment via the Thirlmere Aqueduct. Thirlmere is operated jointly with the other major Lake District sources, Haweswater, Ullswater and Windermere and the Lancashire Conjunctive Use Scheme as part of a strategic supply system for NWW Ltd. There are three other major abstraction licences which allow NWW Ltd to abstract approximately 32 Mld from Crummock Water, 80 Mld from Ennerdale Lake and 57 Mld from the River Derwent near Workington.

Away from the coast, the area is largely rural with agriculture being the dominant land use. The upland areas support sheep farming with some beef cattle. Dairy farming becomes increasingly important in the lower valleys and predominates in the lower lying areas toward the coast. The most degraded river habitats are on the lower reaches of the River Ehen and Calder where the rivers flow through improved agricultural land, and typically have been subject to improvement works.

Commercial forestry, mainly of conifers, is also a significant land use. There are large forests above Ennerdale Water, around Bassenthwaite Lake and North West of Wast Water. The most significant ancient woodlands associated with river corridors occur in the Borrowdale Valley. On the Rivers Ehen, Calder, Irt, Mite, Esk and Annas the majority of the broad-leaved woodlands on the catchments are associated with the river corridor mainly in the middle reaches.

There are eight major lakes in the LEAP area: Bassenthwaite Lake, Derwent Water, Loweswater, Crummock Water, Buttermere, Ennerdale Water, Wast Water and Thirlmere Reservoir. The area also contains some of the Lake Districts highest and most dramatic peaks including Scafell Pike, which at 978m is England's highest mountain.

In addition, to the nationally important landscape, the area also supports national and internationally important biodiversity. The rivers Esk, Irt, Calder, Ehen and Ellen sustain significant fisheries for salmon and sea trout. The River Derwent is in the top handful of salmon rivers in the country and is the largest oligotrophic river system in the United Kingdom. It is designated a candidate Special Area of Conservation (cSAC) for Atlantic salmon, river lamprey, brook lamprey, sea lamprey, and its clear mountain lakes and aquatic vegetation. As such it is of international conservation and fisheries importance.

The River Ehen cSAC is important because it has the best population of freshwater pearl mussels in the United Kingdom. The LEAP area is also important for its populations of rare fish, with Bassenthwaite Lake and Derwent Water being the only remaining native sites in Britain for populations of vendace a cold water fish from the last glaciation. Another rare fish, arctic charr which live in Buttermere, Crummock Water, Ennerdale and Wast Water are also relic species.

It conclusion it is an area of contrasts between the rural and outstanding landscapes of the Lake District National Park and St Bees Heritage Coast, and the areas of heavy industrial development, particularly within the coastal fringes around Workington and Whitehaven.

3. PROGRESS AND IMPLEMENTATION SINCE THE PUBLICATION OF THE CONSULTATION REPORT

The Consultation Process

The West Cumbria LEAP Consultation Report was published May 1998, and a three-month period for formal consultation followed. Appendix 3 provides a list of respondents and gives a brief summary of the comments received. All comments have been taken into account before finalising this action plan.

The intervening months between publication of the Consultation Report and this Action Plan have given an opportunity to refine the issues further and build on partnerships.

Progress Since the Consultation Report

Significant progress has been made in resolving some of the issues identified in West Cumbria Consultation Report. Two issues identified in the Consultation Report have moved on to such an extent that they are no longer 'issues', identified in this Action Plan.

'Impact of the Former Oatlands Deep Mine Spoil Heap on the River Keekle' was Issue 19 of the Consultation Report. Run-off from the old colliery tip at Oatlands had for a long period caused pollution in the River Keekle. This had limited the fishery potential of the river and had a negative impact on the general ecology and amenity of the water environment.

Since 1996, the Agency had funded jointly a remediation project with Cumbria County Council at the Oatlands Site to minimise, intercept and treat the leachate from the spoil. This involved use of a reedbed treatment system. The final phase of the drainage works is now complete and a reed bed to ameliorate the leachate is well established. Long term monitoring continues.

The Consultation Report also identified 'the need for an effective and efficient flood warning services for coastal areas at risk from flooding' (Consultation Report, Issue 5). Following the introduction of the flood warning dissemination system for the fluvial (river) risk zones, a similar system for the coastal tidal risk zone was developed (Operation Neptune). This involved a programme to define more precisely the areas at risk along the coast, and a formal coastal flood-warning zone was set up in January 1999. It means automated voice messages (AVM) are issued, where it is technically feasible, for areas where the land is below the highest recorded tidal levels. The precise height of the highest known tides varies around the coast depending on the degree of exposure to tidal surges and wind-induced waves.

Other issues such as Issue 5, the need to protect and enhance the areas biodiversity have moved on significantly, while new issues have emerged (see issue 15). The tables of actions following the description of each issue outline the progress to-date and anticipated progress over the next five years.

Implementation and Priorities

LEAPs as Local Environment Agency documents, are produced by the Environment Agency Area Office and are focused on the local environment. However, it is important to remember that the Agency is a national non-departmental government organisation and many area work priorities are set at a national level. New national priorities emerge on a regular basis through changes to legislation eg the recent introduction of the Groundwater Regulations 1999, or through the application of experience learnt elsewhere.

A recent example of the latter is in respect to the flooding which occurred in the Midlands during Easter 1998. As a result of an independent report, and recommendations by MAFF, the Agency has reviewed its working practice and priorities for flood defence across the country as a whole, not just in the region affected. This is as it should be; because it means lessons learnt in one area, benefit all areas across the country.

The knock on effect of national priorities being implemented at a local area level can be seen in the amendments, since the publication of the Consultation Report, to some of the issues in this document. Issue 2 is now the need to assess the structural condition of flood defence assets to take on board recommendations from the Easter Flood Action Plan, and Issue 8, the need to minimise pollution risk form sheep dip chemicals reflects the recent changes brought about by the Groundwater regulations. These issues illustrate how Area priorities have to be reviewed, on a regular basis, to reflect the over-arching national priorities in line with ministerial directives. Regulation continues as a high priority and part of our routine every day work.

In addition to changes in legislation and experience applied from elsewhere, there is significant work underway to update the Agency's corporate strategy and environmental strategy. This will have an effect in terms of the Agency's priorities and work programme and consequently the implementation of LEAP actions over the next 5 years. The corporate plan, which is published annually, outlines what the Agency hopes to deliver with the funds it has available from charge payers and central and local government. In determining how this money is allocated, the Agency takes accounts of the costs and benefits to society as a whole.

There is a well-established link, through our business planning process, between the Corporate Strategy, Environmental Strategy, Corporate Plan and LEAPs. Nevertheless, this Action Plan should be seen as a statement of what we hope to do over the next five years. It is very much a working document, and the issues and actions will need regular review to reflect the changing demands outlined. It also means that in a time of limited resources, difficult decisions may have to be made when reviewing which LEAP actions to implement against national, regional and area priorities, anticipated timescales and the local communities expectations.

Issue 1 The Impact of Industrial and Domestic Water Use on Water Resources

Background

The amount of water currently available for water supply in West Cumbria is near to full utilisation and before issuing any further licences to abstract water, the Agency wants to ensure best use of the currently available resources. To facilitate this, the Agency is working closely with North West Water Ltd and setting up partnerships with large users to promote best practice.

Local Perspective

A number of industrial concerns on the Cumbrian Coast use large volumes of water in their processes, examples include BNFL, Albright and Wilson, Pentagon Chemicals, Iggessund Paperboard and Eastman. The Agency has set up and will continue to be involved with, the West Cumbria Water Users Group which provides a forum for users to exchange ideas that promote best practice to reduce water consumption.

North West Water Ltd have highlighted West Cumbria as a problem area with the future public water supply exceeding the reliable yield. The Agency is involved in discussions with North West Water Ltd to ensure that all possible solutions are given careful consideration and a sustainable strategy is developed, so that reasonable needs for water are met without compromising the environment. In particular, West Cumbria is rich in biodiversity including important species such as pearl mussels, salmon, lamprey, vendace, otters and floating water plantain (*Luronium natans)*. The Agency will give these careful consideration in any solutions proposed. To ensure early consideration of these issues, the Agency and North West Water Ltd have undertaken initial public consultations, and the Agency will ensure that a full consultation process is undertaken before any new licences are granted. In addition, the Government is currently reviewing the abstraction licence process and it is proposed that each LEAP area has an abstraction management strategy. This will allow a better understanding of the catchment, however, the timetable has not been set for the production of the abstraction management strategy for West Cumbria.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
1.1 Undertake investigations into West Cumbria water supply.	NWW Ltd	EA EN	£120K	✓ (20K)	✓ (20K)	✓ (20K)	✓ (20K)	✓ (20K)	✓ (20K)	**National** Water resources
1.2 Promotion of water reduction through demand management	NWW Ltd	EA	£5K		✓ (1K)	✓ (1K)	✓ (1K)	✓ (1K)	✓ (1K)	**National** Water resources
1.3 Continue to be involved with West Cumbria water users group	EA	Member Organisation	Staff time	✓	✓	✓	✓	✓	✓	**Area** Water resources
1.4 In partnership with NWW Ltd resolve specific environmental and nature conservation issues	EA	NWW Ltd	£25K		✓ (5K)	✓ (5K)	✓ (5K)	✓ (5K)	✓ (5K)	**Area** Water resources

Issue 2 The Need to Assess the Structural Condition of Flood Defence Assets

Background

Following the severe flooding, which affected large areas of central and eastern England and parts of Wales over the Easter weekend 1998, the Agency commissioned an independent investigation. The findings of this investigation, chaired by Peter Bye, formed the basis of the Easter 1998 Floods - Report by the Independent Review Team to the Board of the Environment Agency (the Bye Report). This assessed the lessons that could be learnt from the Easter Floods, and the Easter Floods Action Plan outlined actions which would be taken forward. One of the recommendations is to undertake a major programme to inspect all flood defences in England and Wales, including those not in the Agency's ownership.

MAFF have set 'High Level Targets' following the Agriculture Select Committee's 1998 report on flood and coastal defence, and the Bye Report. These targets apply to flood and coastal defence operating authorities, which in this LEAP area are the Environment Agency and Local Authorities. The targets include flood defence asset surveys on 'main' and 'non-main' rivers. This will allow flood and coastal defence assets to be identified, recorded on a central database and their condition to be assessed.

Local Perspective

The initial priority, which has been set by MAFF and agreed by both the Agency and Association of Local Councils (Allerdale Borough Council, Eden District Council, Copeland Borough Council), is to inspect the integrity and condition of all raised defences by April 2000. After April 2000, work will continue on a priorities basis to assess the condition of other structures such as walls and culverts that have the potential to increase the risk of flooding.

A recent report identified the poor structural condition of a river culvert at Gategill Beck near Threlkeld as an 'issue' because it highlighted an example where a situation on a 'non-main' river could contribute to flood risk. The 50 metre long culvert passes under a redundant leadmine spoil heap which has 6 metres of fill above bed level. If a collapse of the poorly maintained culvert occurred, then there would be a build up of water above Threlkeld village, this could cause a flood risk to up to 8 houses and the A66 main road. The Agency has very limited powers, and indeed resources, to intervene in these circumstances.

The Easter Floods Action Plan identified as a national issue such circumstances, where situations on 'non-main' rivers could cause a flood risk. As a result, the Agency with local authorities, are embarking on an asset survey on main and non-main river to identify the scale of this problem.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
2.1 Inspect and assess condition of flood defence assets in the LEAP area	EA	Local Authorities	£4K		✓	✓				National Flood defence
2.2 Carry out recommendations based on the structural/hydraulic assessment from action 2.1	Riparian Owners Local Authorities	EA	Cost unknown		✓	✓				National Flood defence

Issue 3 The Need to Maintain the Minimum Water Level of Derwent Water

Background

Local boat owners and lake users are concerned that the minimum water level of Derwent Water can drop to a level which makes it difficult for them to operate their craft. This concern was highlighted during the drought of 1995, when the lake level reached an all time low. The impact on the landscape was also a consideration, as the low minimum lake level exposed shingle and silt beaches akin to reservoir draw-down. The Agency and Lake District National Park Authority funded jointly an independent environmental appraisal. Its purpose was to assess whether there was scientific evidence to show that the minimum lake level had changed. On the basis of the outcome of this study, possible options for managing the minimum lake level were put forward and assessed in terms of recreation, landscape, archaeology and ecology. The latter being particularly important as the lake is part of the River Derwent/Cocker cSAC and SSSI and contains one of only two native UK populations of vendace.

Current Situation

The study showed that the minimum lake level had fallen by 230 mm over the past 100 years. This change had occurred because of the natural erosion of the boulder clay sill, the bar at the outflow of the lake. The environmental appraisal showed that erosion of the sill had taken place at various rates over the years, with the greatest rate of erosion during the 1970s. The consultants, carrying out the study, estimated that the minimum lake level experienced in 1995 had a 10% chance of occurring in any one year, assuming rainfall and other conditions remained the same. However, because erosion of the sill was a natural process, they could not predict the possible rates of erosion in the future and therefore the effect this would have on the minimum lake level.

Following the publication of the environmental appraisal, the Lake District National Park Authority (LDNPA) undertook extensive consultation on the findings to see if there was a general consensus on the best way forward. Everyone commenting on the study believed the lake level should be managed in some way, but opinion was divided on whether the lake level should be raised or the sill level maintained. On balance following consultation, the option to armour the sill is seen as the best way forward. This proposal will be the subject of a planning application. The LDNPA is investigating possible sources of funding, and implementation depends on the continued support of the riparian owners.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
3.1 Carry out Environmental Appraisal of Derwent Water lake level (Complete)	LDNPA	EA	£12.5K	✓						Area Flood defence and water resources
3.2 Armour the sill at the outflow of Derwent Water	LDNPA	National Trust Lake Users Riparian Owners EA	Staff time		✓	✓				Area Flood defence and water resources

Issue 4 Areas at Risk from Flooding

Background

One of the aims of the Agency is to provide effective defence for people and property from rivers and the sea and to provide adequate arrangements for flood forecasting and warning where it is cost effective to do so.

The Agency aims to provide effective flood defences for protection of people and property to a standard appropriate to land use consistent with the Ministry of Agriculture Fisheries and Food indicative standards where it is cost beneficial and environmentally acceptable to do so. Major fluvial flooding of large numbers of properties in the LEAP area have been mainly restricted to the towns of Keswick and Cockermouth on the Derwent river system. In the 1950s, 60s and 70s significant flooding occurred in Cockermouth, Lorton and Keswick. All watercourses are classified as either 'main-river' (see glossary) or 'non-main river', the Agency only has permissive powers to carry out flood defence work to 'main-rivers'. Local authorities have similar powers for 'non-main river'. Schemes, which the Agency has completed, or is progressing currently within the LEAP area, are listed on page 15.

The Agency collects data on rainfall and river levels for inland rivers and sea-level information on the coast. These data are used to model and predict flood risks for specific locations. They enable the Agency to carry out its role of issuing direct flood warnings to the public.

In response to the Bye Report (see background to Issue 2), the Agency produced an Action Plan, which is aimed at refocusing and accelerating the Agency's flood warning improvement programme for England and Wales. In total, over 100 recommendations have been put forward. To meet these recommendations in the West Cumbria LEAP area, the need for more accurate Flood Warnings, which requires improvements to the hydrometric monitoring network, has been identified.

Additional Hydrometric Telemetry Sites

Additional hydrometric telemetry is required for both existing flood warning zones and new flood warning zones. Suitable river sites have to be upstream or in the flood risk area, stable, have service connections to BT and power, be accessible for routine maintenance and located where installation will create minimal disturbance to the river channel. Permanent hydrometric monitoring apparatus is usually housed adjacent to the river. While permitted development allows the Agency to undertake certain types of development in pursuing its functions, additional procedures apply for permitted development in a SAC site, which may prevent permitted development rights being exercised. Within the riverine cSAC and SSSI (see Issue 6), consent is required from English Nature.

The need for the following additional telemetry in existing flood warning risk zones have been identified:

R. Derwent	Cockermouth Flood Warning Zone (in zone site)	1999/2000
R.Cocker	Cockermouth Flood Warning Zone (in zone site)	1999/2000
R. Greta	Keswick Flood Warning Zone (in zone site)	1999/2000
R. Derwent	Keswick (campsite) Flood Warning Zone (in zone site)	1999/2000
Ravenglass	Tidal Flood Warning Zone (in zone site)	2000/2001

Also the need for improvements at the following existing sites have been identified:

R. Derwent Ouse Bridge (upstream of Cockermouth Flood Warning Zone)	2000/01
R. Cocker, Southwaite Bridge (upstream of Cockermouth Flood Warning Zone)	2000/01
St John's Beck (upstream of Keswick Flood Warning Zone)	2000/01

Borrowdale

In the mid 1960s there was significant flooding in Borrowdale with damage to properties in Rosthwaite and Stonethwaite. The situation was so serious that Army support was brought in to repair channels and structures. It is not economically or environmentally viable to build flood defences for these properties, but the Agency does give heavy rainfall warnings to selected properties.

Keswick

In 1985, very serious flooding occurred in Keswick when up to 70 properties flooded from the River Greta. In 1987 and 1988, a flood alleviation scheme was implemented, work included the removal of an existing weir, wall heightening and the construction of embankments to a 1 in 50 year protection level. Further improvements to the existing wall took place during 1998/99.

Whitehaven Harbour Scheme

The Whitehaven Harbour Scheme flood defence scheme protects properties in Whitehaven which were vulnerable to 1 in 5 year tidal surge flooding. The scheme, completed in 1999, gives a 1 in 200 year level of protection.

Cockermouth

In 1938, substantial parts of Cockermouth suffered extensive inundation. After this event, Goat Weir was removed, and improvements made to the main road bridge in the same area, to reduce future flood risk. Parts of the town are still vulnerable to flooding and the Agency has work in hand, to protect these areas to a standard of 1 in 100 years flood events, compared to the current level of approximately 1 in 25 years. Work was complete November 1999.

Maryport

Small parts of the town are vulnerable to tidal flooding on an infrequent basis. A project to assess the feasibility of the project is ongoing with Allerdale Borough Council. Even if the project proves cost beneficial work on site is unlikely to commence before 2004. Currently flood risk is approximately 1 in 5 years.

River Ehen at Egremont

Up to 30 properties in Egremont are susceptible to occasional flooding from 'main river', which was highlighted in November 1999. The Agency is in the early stages of investigating the feasibility of a flood defence scheme alongside flood warning. Any flood defence scheme will have to show clear cost / benefits to be implemented.

Flooding on 'Non-Main' River – November 1999

The flood event on 5 November 1999, in West Cumbria, was caused by exceptional rainfall with a 1 in 75 year probability. Flooding at Harrington, Cleator Moor, Egremont (not River Ehen), and Pow Beck Whitehaven were all caused by 'non-main' rivers and are therefore the responsibility of the Local Authority.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
Whitehaven Harbour, Cockermouth, Maryport 4.1 Investigate the viability of resolving the flooding problems in West Cumbria, considering conservation and economic aspects and promoting projects accordingly. Whitehaven complete Cockermouth 1999/00 Maryport 2003/4	EA		staff time and cost of projects currently unknown	✓	✓				✓	**Normal Duties** Flood Defence
Egremont 4.2 Investigate introducing new flood warning zones in West Cumbria.	EA		staff time				✓			**Normal Duties** Flood Defence
Flood warning 4.3 Secure new telemetry sites for flood warning. 4.4 Upgrade existing telemetry sites identified.	EA EA		staff time staff time cost of project currently unknown		✓	✓				**National** Flood Defence

Issue 5 The Need for the Protection and Enhancement of the Area's Biodiversity

Background

The 1994 United Kingdom Biodiversity Action Plan set out a strategy for implementing the UK's commitment to biodiversity. The plan emphasised policy integration and partnership between interested organisations. These interests were brought together in a steering group which reported in 1995 and identified the need for some 400 action plans for the UK's most threatened species and some 40 habitat plans for the UK's most vulnerable areas. To be implemented successfully, these national plans are being translated at a local level through Local Biodiversity Action Plans (BAPs).

The Agency is a member of the Cumbria Biodiversity Partnership which will produce the Cumbria Biodiversity Action Plan. Over 80 local habitat and species BAPs will be produced over the next 2 years and the Agency will have a key role in delivering some of the targets. While the local BAPs are being produced, there is a need to continue to protect, improve and monitor existing habitats and species important in the LEAP area.

Local Perspective

So far action within the LEAP area has been targeted at freshwater pearl mussel, otter, vendace, arctic charr, and natterjack toad. The Agency is the lead partner for these species under the National Biodiversity Action Plan. Surveys outlining the distribution of Freshwater Pearl Mussel, Otter, and Vendace have been undertaken. It is important that there is a full picture of the abundance and distribution of these species in order to target possible future actions.

Freshwater Pearl Mussel *(Margaritifera margaritifera)*

The freshwater pearl mussel is now rare in England and has suffered a substantial decline. It inhabits sandy and stony oligotrophic rivers and streams and causes of decline are pearl fishing, nutrient enrichment and local pollution.

In 1996, the Agency with English Nature, undertook a collaborative project on the River Ehen, this revealed that the mussel population was of international importance and resulted in the river's notification as a SSSI and candidate Special Area of Conservation (cSAC). Through the Habitats and Species Directive in which the freshwater pearl mussel is identified as a key species, phosphate stripping for Cleator Moor Wastewater Treatment Works (WwTW) has been included in the North West Water Ltd AMP 3 capital investment programme (2000 to 2005). This will improve water quality in the River Ehen.

During the research for the freshwater pearl mussel project, it became apparent that mussels are found, or have been known to formerly exist, in a number of other Cumbrian rivers. It appears that Cumbria may support the greatest number of pearl mussel rivers and streams in England. A collaborative project, with English Nature and the National Museum of Wales, has instigated a systematic survey of selected Cumbrian rivers to provide comprehensive and detailed information on present status, and the future conservation needs of this important species. The results will be reported in 2000.

Otter *(Lutra lutra)*

The otter was considered common throughout the UK in the 1950s, but declined from the late 1950s onwards to its lowest point in the 1970s. Recent surveys indicate recovery of the UK population. It is believed that

the original population crash and subsequent expansion were as a result of the use and subsequent phasing out of chlorinated hydrocarbon pesticides.

At the conclusion of the Otters and Rivers project, 1991–94, the best rivers in West Cumbria were found to have only a low/transient population of otters with some areas completely devoid of any evidence of otters. There had been some indication that the situation was improving (several road casualties confirmed otter presence), but the West Cumbria LEAP Consultation Report identified the need to re-assess the situation.

In May 1998, the Agency carried out a follow up otter survey. This involved visits to as many road bridges within the LEAP area, (bridge abutments are favoured sprainting sites for otters), as possible in a single day. Of 204 potentially suitable sites, 23 had evidence of otters. There was evidence for a strong otter population throughout the length of the River Ellen (later confirmed as a breeding population with a cub road casualty in December 1998). In addition, distribution was found to be widespread on the upper Derwent catchment centred on the Greta, Glenderamackin, and St Johns Beck, and also on the River Cocker.

Since 1994, the spread of otter down the West Coast of Cumbria has continued unabated, and includes their recent re-colonisation into the central Lake District. However, the Otter and Rivers project survey method was not sensitive enough to detect the very low level of otter in the southern and western catchments of the Ehen, Irt, Esk and Mite, or on the lower Derwent catchment. Sightings and road deaths have provided evidence that otters at least pass through some of these areas. In future years, further surveys will hopefully continue to track and monitor the recovery of the otter population in Cumbria.

Vendace *(Coregonus albula)*

Vendace is an important cold water fish species, with Bassenthwaite Lake and Derwent Water (both in the same catchment) containing the only native British population. The Agency is the contact point, and the lead partner for this species under the National Biodiversity Action Plan and it is crucial that this relic population is safeguarded. Much work has been done on the vendace by the Agency in collaboration with a variety of organisations (English Nature, Institute of Freshwater Ecology (IFE), Lake District National Park Authority, Scottish Natural Heritage).

The population in Bassenthwaite Lake suffers from intermittent breeding success. Water quality particularly nutrient enrichment, non-indigenous fish and sedimentation have been identified as threats to the vendace.

In order to improve the nutrient status of the lake, NWW Ltd installed phosphate stripping facilities at Keswick WwTW, in December 1993. The Agency will continue to monitor the water quality and vendace populations in Bassenthwaite Lake and will use this information to assess the need for further remedial action.

A 3 year study into the impact of introduced non-indigenous coarse fish on the ecology of Bassenthwaite Lake and Derwent Water has been completed. At this stage it appears that the vendace may be able to survive in both lakes despite the 'arrival'of non-native roach in Derwent Water and non-native roach, ruffe and dace in Bassenthwaite Lake. Irrespective of this interim conclusion these species compete for a finite food resource and ruffe is also a predator. Additional stresses of this kind are not in the interests of the vendace in either lake, and the riparian owners with respect to Bassenthwaite Lake, and the angling club with respect to Derwent Water, have restricted the further introduction of non-indigenous coarse fish. Removal of any new species, which have become established, is not a practical option.

The Agency, supported by the national vendace biodiversity steering group, has recently commissioned the Institute of Freshwater Ecology (IFE) to carry out an investigation into the possible establishment of vendace populations in other Cumbrian lakes. The study is a parallel of the one carried out in Scotland to evaluate the possibility of re-establishing the species north of the border. It will examine physical, biological, chemical and human factors in an attempt to ascertain the most suitable sites for extending the distribution of the species. At the end of March 1999 an initial list of 87 possible recipient waters had been reduced to 12 sites which were deemed suitable for further investigation.

English Nature, the Agency and the Institute of Freshwater Ecology have completed a study of the status of the spawning beds in both lakes. The report concludes that potential spawning grounds in Bassenthwaite Lake were heavily silt laden, with no, or only very sparse, cover of submerged vegetation. They are believed to be unsuitable for vendace spawning. In order to investigate the sediments present in Bassenthwaite Lake, the Agency has contracted IFE to identify the nature of the deposits and to try to establish their likely sources so that management options can be evaluated.

Arctic Charr *(Salvelinus alpinus)*

The arctic charr is a cold water fish found in 8 lakes in Cumbria. The Ennerdale Water population is thought to spawn entirely in running water unlike most other populations of charr in England and Wales.

The Agency believes that the arctic charr population in Ennerdale Water is considerably smaller than historically. A major contributor to the apparent decline in charr was thought to be a pipe bridge in the lower reaches of one of the lake's feeder streams. The pipe bridge acts as a gravel trap starving the reach downstream to the lake of gravel. Historically, this has been a very important spawning area for charr. The Agency has worked with the owners of the bridge, Forest Enterprise (FE), to redesign this structure and has contributed to its replacement. Bridge reconstruction was undertaken, during early summer this year. This should re-establish natural gravel movement in the river and help to protect this species. In the interim, the Agency had reared charr from Ennerdale broodstock and restocked 1000 fry back into the lake during 1998.

Natterjack Toad *(Bufo calamita)*

The natterjack toad is on the edge of its biogeographical range in Britain and a significant proportion of the British natterjack toad population is found in a series of sites along the coast within the LEAP area.

The Annaside population is potentially at risk. Landowners wish to see the shingle outfall of the river Annas dredged, to prevent backing up of the river and waterlogging of adjacent fields. They are pressing the Agency to undertake this work. This same backing up of the river is essential for the flooding of the floodplain and natterjack breeding ponds in the winter months, so securing breeding opportunities for the following year.

Dredging of the gravel took place in spring 1997 after a management protocol was successfully agreed with English Nature for works adjacent to the SSSI. This work took both land drainage and the natterjack requirements into account. Given the cyclical nature of this work, there is a need to produce a water level management plan for this site, which safeguards the toad population while balancing land drainage interests. In the interim, a Water Level Management statement has been produced.

Great Crested Newt (*Triturus cristatus*)

Britain has the strongest population of Great Crested Newt, a species which is threatened in Europe as a whole. However there are concerns about the rate of decline, principally caused by urban development and agricultural practices.

In spring 1999, English Nature undertook a survey of sites, over the whole of Cumbria where Great Crested Newt have been recorded. The purpose of the survey is to see which sites are still extant. The survey found that across the whole county at least 65% of the previously recorded sites were still used, and 15 new sites were found. However the West Cumbria LEAP area has a relatively small proportion of the known sites.

The survey will provide valuable information as it will ensure that the Agency's constraint maps, used in commenting on planning applications and land drainage consents, are kept up-to-date.

Salmon (*Salmo salar*)

There is widespread concern about the declining numbers of salmon. The Derwent catchment is now a cSAC (see Issue 7) under the EC Habitats Directive partly due to its Atlantic salmon population. As with other populations, the genetic variation is an important aspect of the salmon population. Salmon have a strong tendency to 'home' to their natal stream to spawn and this can result in large genetic differences even in populations of neighbouring streams. (This was shown to be the case in a study of the River Leven catchment in South Cumbria; McCubbing D J F and Hartley S E 1994). Those populations, which are closest geographically, are not necessarily closest genetically because over time animal and plant populations become genetically adapted to their environment.

Any transfer of fish or ova from one stream to another is a transfer of genetic material. If such transfers are necessary they must be undertaken with minimal genetic impact. Such transfers usually take the form of rearing and stocking fish.

Angling and fisheries interests are keen to undertake enhancement-stocking programmes. Although pure enhancement stocking is no longer undertaken by the Agency and habitat enhancement is the preferred solution (see issue 7), mitigation stocking is usually undertaken in the aftermath of a major fish kill. Stocking can also be undertaken when low fish populations are identified, although it is not normally the first approach. In the past the geographic detail of genetic variation was not appreciated and stocking programmes were managed on a catchment or major sub-catchment level. For the Agency to protect the genetic variation, it first must have knowledge of the geographical distribution of the genetic variation.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
Freshwater Pearl Mussel										**National**
5.1 Undertake a comprehensive survey of selected Cumbrian Rivers (Complete)	EA	English Nature National Museum of Wales	£18K	✓	✓					Fisheries, ecology and recreation
Otter										**National**
5.2 Undertake limited strategic survey of West Cumbria to establish present distribution (Complete)	EA	English Nature	Staff time	✓						Fisheries, ecology and recreation
5.3 Undertake limited strategic survey of West Cumbria to monitor the expansion of Otter distribution		English Nature CWT	Staff time				✓			
Vendace										**National**
5.4 Investigate status of spawning beds and source of sediment loading in Bassenthwaite Lake	EA	EN	£5K	✓	✓	✓				Fisheries, ecology and recreation
5.5 Investigate the possibility of establishing Vendace in the Lake District.	EA	EN Lake Owners	£15K		✓	✓				
5.6 Continue to monitor water quality in Bassenthwaite Lake	EA	NWW Ltd	Staff time	✓	✓	✓	✓	✓	✓	Environ-ment Planning
Arctic Charr										**National**
5.7 Replace bridge on the River Lisa (complete)	FE	EA	£25K	✓						Fisheries, ecology and recreation
Natterjack Toad										**National**
5.8 Produce water level management plan for Annaside SSSI	EA	EN	£6K			✓				Fisheries, ecology and recreation
Great Crested Newt										**National**
5.9 Undertake a Cumbria Wide survey of sites where great crested newts have been recorded previously	EN	CCC EA	£2.5K			✓				Fisheries, ecology and recreation
Salmon										**National**
5.10 Commission a genetic study of the salmon population of the Derwent catchment	EA	Angling and fisheries Interests EN	cost unknown subject to funding being available							Fisheries, ecology and recreation

Issue 6 *The Need for the Protection and Management of Internationally Important Wildlife Sites.*

Background

The Agency is a 'Competent Body' under (The Conservation of Natural Habitats, etc) Regulations 1994 which implement both the EC Habitats and Birds Directives into UK law. This means that the Agency must take full account of the Directives when considering any new permissions, and indeed when undertaking its own operational works where they may affect European Special Protection Areas (SPAs), and Special Areas of Conservation (SACs).

Competent bodies, such as the Agency, also have a duty to review and to then either 'affirm, modify, or revoke' existing consents and activities under their control, where they may impact upon SPAs and SACs (see appendix 2). In doing this, the Agency is obliged to refer to the conservation objectives for these sites devised by English Nature. The Agency has established a timetable, between 1998 and 2004, to carry out the reviews. This involves hundreds of consents, authorisations and permissions within the LEAP area.

Local Perspective

Through the Habitats Directive improvements to key Wastewater Treatment Works discharges have been secured. These improvements are phosphate removal installed at Cockermouth and Cleator Moor WwTW, and improvements to storm discharges at Keswick WwW identified through the AMP3 process.

While some progress has been made in many situations to undertake this review, the Agency will require much better local data to identify problems and consider resolutions. The following SAC and SPA sites, within the LEAP area, will require a full review of activities to ensure that they are being maintained at a favourable conservation status:

Borrowdale Woods cSAC (category C), Clints Quarry, Bothel cSAC (category C), River Derwent and Bassenthwaite Lake cSAC (category A), Drigg Coast cSAC (category B), River Ehen cSAC (category A), Solway Firth cSAC and Upper Solway SPA (category B), Wasdale Screes cSAC (category C), Wast Water cSAC (category C).

Category A - urgent need for review of Agency permissions
Category B - need for further evaluation
Category C - low priority compared to A and B

An Agency Area Implementation Groups has been set up to oversee the review process. In the West Cumbria LEAP Area the Ehen, and Derwent riverine SSSIs, which are also candidate SACs have been identified as priority sites to begin the process in 1999/2000.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
6.1 Determine sound objectives for wildlife sites of international importance	EN			✓	✓					**National** All Functions
6.2 Identify relevant consents and authorisations for wildlife sites of international importance	EA		Cost unknown		✓					**National** All Functions
6.3 Review relevant consents and authorisations for wildlife sites of international importance	EA	EN Licence and Consent holders	Cost unknown							**National** All Functions
Category A sites						✓	✓			
Category B sites						✓	✓	✓		
Category C sites							✓	✓	✓	
6.4 Undertake appropriate assessment of all new consents and authorisation for wildlife sites of international importance	EA		staff time	✓	✓	✓	✓	✓	✓	**National/ Normal duties** All functions

Issue 7 Opportunities for River Restoration and Conservation

Background

The rivers in the LEAP area rise among upland fells dominated by acid grassland and heather moor. The middle reaches of the rivers, Ehen, Calder, Irt , Mite, Esk and Annas are associated with broad leaved woodland. The river Derwent is of international importance and is designated a cSAC (see issue 6), while the river Ehen is designated an SSSI in its middle reaches. By contrast the lower reaches of the rivers Ehen and Calder have some of the most degraded river habitats in the LEAP area, associated with improved agricultural land, which includes agricultural land drainage schemes, and industrial construction.

Land Use Practices

The Agency has long been concerned about the potential impacts of stock management on the water environment. For example, overgrazing in some areas has caused erosion and loss of river bank habitat. Increased erosion bought about by over-grazing alters the structure of rivers making them wider and shallower. This reduces the variety of habitats and species a river can support. Loss of soil into rivers can also block fish spawning areas and the associated organic loading can affect water quality.

This lack of bankside vegetation and the application of modern farming methods leads to diffuse pollution from fertilisers and pesticides which further degrade the ecology and water quality of river systems (see also issue 8).

The Agency has no direct powers to change land use practices and so tries to influence land use by influencing the policy of bodies such as Ministry of Agriculture Fisheries and Food (MAFF), National Farmers Union (NFU), Country Landowners Association (CLA) and other parties. However it recognises that there is a need for direct action on the ground. As a result, the Agency has piloted a project called 'the sustainable rivers project' to encourage land use which is sensitive to the water environment. Initially the Ehen catchment has been targeted because of its status as a SSSI status and cSAC. The Agency has helped fund the Farming and Wildlife Advisory Group (FWAG) to visit landowners and advise them on land use practices which will benefit the water environment.

Land Drainage

In the LEAP area a number of 'main' rivers have been substantially modified in the past to minimise flooding and increase their efficiency for agricultural drainage, which has resulted in a lack of habitat diversity normally present in a natural river environment. In the majority of cases the modification of these watercourses was undertaken prior to the mid 1970s. Before that time, the function of the River Boards, the predecessors to the North West Water Land Drainage Department (1974 -89), the National Rivers Authority and Environment Agency, was as a land drainage authority. The major priority of the River Boards was to drain land for the improvement of agricultural productivity, with no mandate to consider or enhance the river environment other than for drainage or flood defence purposes.

The Agency recognises that needs have changed over the last 25 years and since the Water Resources Act 1991, it has a duty to consider the environmental and conservation impacts of its operational flood defence role. The Agency has critically assessed, and in many cases changed, its maintenance regime over recent years and will continue to do so as opportunities arise. Various factors do, however, limit the Agency's ability to carry out major habitat enhancement work while undertaking its flood defence function. These are: balancing existing commitments to and expectations of landowners, flood defence funding cannot be used to fund enhancement projects, except where enhancements are undertaken as part of essential flood defence

works; the need to show clear cost/benefits, which unfortunately do not yet take into account wider environmental considerations.

River Trusts

Other opportunities exist to introduce habitats and features along river corridors and take a more holistic approach to river management, particular to maintain and improve fish populations. The emergence of private river trusts such as the Cumberland Rivers Foundation charitable trust, Derwent River Owners Association and similar bodies have been important in this respect as they provide a mechanism to work in partnership to achieve common goals.

Local Perspective

River Derwent and tributaries

The River Derwent is one of the finest salmon rivers in the country and is the only oligo-mesotrophic major river in England. However, parts of the River Derwent and tributaries have been modified to improve the drainage of agricultural land, this includes some areas lying within the Lake District National Park.

For rivers in the National Park, the National Park Authority has stated that its objectives include 'allowing some appropriate parts of river systems to become wild, and to restore highly engineered sections to a more natural state' (Lake District National Park Mangement Plan, 1999). As opportunities arise, which will require a partnership approach together with external funding and landowner consent, the Agency will look towards developing river management regimes, which are more sympathetic to landscape and nature conservation objectives in-keeping with the National Park status.

River Calder

The Calder Conservancy Committee, is a partnership between the Agency, BNFL, riparian owners and anglers. It commissioned a report from APEM (Aquatic Pollution and Environmental Management), to examine how natural salmonid productivity in the catchment could be improved. The report found that river habitat was the limiting factor, in particular instability of spawning gravels. On this basis, a number of recommendations were put forward, which the Committee is now looking to implement. Those involving small habitat improvement works are being advanced. A river habitat survey undertaken by the Agency supports these findings. However, the wider issue of the underlying causes of the gravel instability (believed to be due to increase in frequency and severity of flood events partially caused by over grazing in the upper catchment) are proving more difficult to progress.

Rivers Ehen and Irt

In the Ehen and Irt catchments, a number of smaller habitat improvements include river bank fencing and spawning bed improvement schemes. Some of these improvements are being progressed in partnership with the local fisheries interests.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
7.1 Undertake Sustainable rivers project on Rivers in West Cumbria (Rivers Ellen and Ehen targeted to date)	EA	FWAG landowners	Staff time + 14K a year	✓ (£14K)	✓ (£14K)	✓ (£14K)	?	?	?	**Regional** Fisheries ecology and recreation
7.2 Undertake a minimum of 3 river habitat/restoration collaborative projects in the West Cumbria LEAP area (Rivers Derwent and tributaries, Ehen, Irt and Calder likely to be targeted)	Riparian owners Angling and Fisheries Interests National Trust EN LDNPA EA		Cost unknown Subject to funding being available	✓	✓	✓	✓	✓	✓	**Area** Fisheries ecology and recreation Flood defence

Issue 8 Water Pollution from Sheep Dip Chemicals

Background

Modern farming practices involve many activities, which have the potential to cause pollution, particularly in sensitive areas. Examples of agricultural pollutants include: agrochemicals, pesticides, slurry and silage effluents, non-natural farm waste, land-spreading of non-farm wastes and inputs from diffuse pollution such as sheep-dip.

Sheep Dip Pollution

Prior to 1991 all sheep farmers were required by law to dip their animals for the control of sheep scab. Due to significant health concerns with the traditional organo-phosphorus based sheep dip chemicals, this legal requirement has been dropped, and the pharmaceutical industry has been developing alternative chemicals. These new chemicals, known as synthetic pyrethroids (SPs), are considered to be safer for those involved in the dipping of sheep and many farmers have now switched to this alternative for the control of sheep scab and a range of other ailments. SPs are up to 100 times more toxic to insect life than the chemicals they are replacing.

Since 1995, there has been a number of serious pollution incidents involving the use of SP sheep dip affecting Cumbrian rivers. In each case considerable lengths of watercourse have been affected resulting in a complete loss or depletion of riverine insect life. Fish are generally less sensitive to SPs, then the insect life on which they feed, and no significant fish kills have been recorded. However, continuing significant depletion of insect life would not be beneficial to the fishery and ecology of the rivers. Given that there are an estimated 4300 dipping facilities in the county, the potential for continued serious pollution problems is very high. In addition, groundwaters can be at risk of pollution if dip is disposed inappropriately on to land.

The Groundwater Regulations were introduced in November 1998, these brought about a system of authorisation for *disposals* of spent sheep dip by land spreading. In Cumbria as a whole, 1070 applications have been received. The Notices and Codes of Practise introduce legislative powers to control storage of sheep dip chemicals and the sheep dipping process.

At a national level, the Agency has formulated a national sheep dip strategy with input from the farming community, pharmaceutical companies, and other interested parties. Though the Agency has regulatory responsibilities to fulfil, the most productive method of achieving improvement is by proactive work advising on practical issues to meet best practice. Ideally this is achieved by working with partners or bodies who also have close working links with the agricultural sector e.g. Farming Rural Conservation Agency (FRCA), Farming Wildlife Advisory Group (FWAG), Country Landowners Association (CLA), National Farmers Union (NFU), Farm Links.

Local Perspective

River catchments within the LEAP area, which have been affected by sheep dip pollution incidents, include the Ehen, Irt, Ellen and Glenderamackin.

Biological monitoring at some 128 sites in the River Derwent catchment, in spring, summer, and autumn 1998, recorded five new sites with significant toxic impact on the sensitive invertebrate groups attributable to probable sheep dip pollution. At other sites, with previously recorded sheep dip pollution incidents, progress in recovery was apparent during the course of the monitoring programme.

In other parts of the area, the rate of recording of depleted invertebrate fauna attributable to probable sheep dip pollution was reduced markedly relative to experience in 1997, although the high flows through much of the summer may have reduced the likelihood of detection, and enhanced drift re-colonisation. Taking a more positive view, the decline could well be evidence of success for the Agency's considerable efforts in raising awareness of the problem and solutions, though the continuing evidence of problems on the previously affected Ehen and Caldew catchments serves to warn against complacency.

The catchment campaign on the Glenderamackin and Cocker in 1998, to raise awareness of this issue, included visits to sheep farms by environment protection officers, giving pollution prevention advice and where necessary outlining required remedial measures. A catchment campaign on the River Ehen has been undertaken in 1999.

Action	**Responsibility**		**Total Cost (Agency)**	**1998/ 1999**	**1999/ 2000**	**2000/ 2001**	**2001/ 2002**	**2002/ 2003**	**2003/ 2004**	**Agency Priority** Function
	Lead	Other								
8.1 Issue Groundwater Regulations authorisations in the LEAP area	EA		staff time		✓	✓	✓	✓	✓	**National/ Normal duties** Environ-ment Planning
8.2 Ensure Groundwater Regulations are enforced in the LEAP area	EA		staff time	✓	✓	✓	✓	✓	✓	**Normal Duties** Environ-ment Protection
8.3 Give advice and raise awareness among the farming community in the LEAP area	EA	National Farmers Union Country Landowner Association Farming Wildlife Advisory Group	staff time	✓	✓	✓	✓	✓	✓	**Normal Duties** Environ-ment Protection

Issue 9 The Need to Encourage Sustainable Waste Management

Background

In 1995 the Government published "Making Waste Work – A strategy for sustainable waste management in England and Wales", which introduced the concept of a waste hierarchy. The strategy is based on three key objectives for waste management:

- To reduce the amount of waste that society produces;
- To make best use of the waste that is produced; and
- To choose waste management practices which minimise the risks of immediate and future environmental pollution and harm to human health.

The waste hierarchy, introduced by the strategy, ranks the different waste management options giving a broad indication of their relative environmental benefits. This starts with reduction of waste at the top of the hierarchy, then re-use, recovery (including recycling, composting and energy recovery), with disposal at the bottom of the hierarchy.

The recent adoption of the EC Landfill Directive will also have a profound effect on waste management. The Directive bans the landfilling of liquid wastes and prohibits mixing hazardous and non-hazardous wastes in landfill. Article 5 of the Directive also sets targets for the progressive reduction of the amount of biodegradable waste permitted in landfills, seeking the diversion from landfill of 65% of biodegradable municipal waste produced within 15 years of the implementation date (using 1995 as the base year for calculations). Achievement of these targets will require a major change in waste management practice and the adoption of new and more imaginative waste management solutions.

A Draft National Waste Strategy which addresses these issues was published in July 1999. A Regional Waste Management Strategy is in preparation. This will provide a policy framework and help to establish regional targets for recovery and re-use and for future facility provision. The regional strategy and associated Regional Planning Guidance (RPG) was published Autumn 1999. Waste Collection and Disposal Authorities are also engaged in the production of local 'integrated waste management strategies' (replacing recycling plans) which will address the issues of recycling, recovery, and disposal in a more holistic way, emphasising the need to develop more sustainable alternatives to landfill. A waste management strategy is being drawn up for Cumbria.

Implementation of these strategies and plans will require innovation and imagination. Appropriate solutions may well depend on specific local circumstances and opportunities. Local networks and partnerships are likely to be able to deliver the recycling, composting, digestion or waste minimisation schemes required to achieve the high diversion rates more effectively than government or local authorities.

It should be remembered that waste minimisation is often targeted solely at solid wastes, but energy, water, effluent and packaging reductions should not be overlooked. The Agency's definition of waste minimisation draws attention to this when it states that waste minimisation is:

> *"the reduction of waste at source by understanding and changing processes to reduce and prevent wastage. This may also be known as process or resource efficiency. Waste minimisation also includes the substitution of less environmentally harmful materials in the production process."*

The Agency will have a key role in delivering the Strategy at a local level by raising the awareness of both the public and business, by providing information and statistics by forming partnerships with appropriate interest groups and Local Authorities to encourage local waste minimisation and recycling projects. The Waste Minimisation Act 1998 enables Local Authorities to work with businesses in order to reduce controlled waste at source.

Local Perspective

Waste minimisation clubs in Cumbria have been established only over the last two years. There are now five in existence. Although many large businesses have realised the benefits of carrying out environmental audits and joining local environmental associations, the involvement of small to medium sized businesses has been less than expected. For the past two years the Agency has worked in partnership with, and financially supported, Groundwork West Cumbria in its bid to establish a Cumbria-wide Business Environment Network. The Network's aim is to enable more effective dissemination of best practice in environmental management and to enable businesses to obtain maximum benefit from current and developing environmental policy and practice. This will be done by creating a link between the five existing Cumbrian business waste minimisation clubs.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
9.1 Continue to support Groundwork in running business waste management Clubs	Groundwork	EA BNFL Copeland Borough Council	staff time £8K		✓ (£5K)	✓ (£3K)	✓	✓	✓	**National** Environ-ment Planning

Issue 10 The Need for Further Information on the Environmental Quality of the Irish Sea

Background

The definition of 'controlled waters' under the Water Resources Act 1991 includes territorial and coastal waters (that extend 3 miles to sea). The West Cumbria LEAP is bordered by the Irish Sea and it is the Agency's role to monitor the water quality as well as monitoring and controlling land based discharges to 'controlled waters'. The land based inputs include riverine, sewage and industrial sources.

Local Perspective

The Irish Sea is stressed due to the legacy of the past and present inputs. Some potential sources are obvious with the spoil heaps from the coal, iron and steel industries clearly visible along sections of the coastline. Other inputs are less obvious, often being carried by the rivers discharging to the coast.

Periodic work in the past by a range of bodies such as MAFF, University of Liverpool, North West Water and the Agency has indicated that the coastal waters are hyper-nutrified (nutrient enriched). Studies of metals in coastal sediments have also indicated 'hot spots' off the coast of Salter Bay.

While these potential problems have been identified, it is not clear whether the situation is deteriorating or stable. It is also not clear what the consequences of further deterioration will be. As the Irish Sea is subjected to pollution loads from a far larger catchment than just West Cumbria it is important to establish the extent to which any changes to inputs from West Cumbria in isolation will lead to positive benefits. It is also necessary to develop a strategy to protect the Irish Sea and to do that requires detailed knowledge of the processes, inputs and interactions that make up the whole picture. This will enable the determination of cost effective programmes to deliver defined objectives.

For this LEAP, the objective is to establish the influence of West Cumbrian inputs into the local coastline and their impact on the Irish Sea scene in broader terms.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
10.1 Undertake a scoping study to assess the feasibility of a biological monitoring programme along the West Coast	EA		Cost unknown subject to funding being available		✓	✓				**Regional** Environ-ment Planning
10.2 Investigate discharges from Lillyhall	EA		£20K subject to funding being available			✓				**Regional** Environ-ment Protection

Issue 11 The Need for Further Information on the Algal Blooms in Loweswater

Background

Lakes are classified according to their nutrient availability (nitrogen and phosphorus) and the associated primary productivity is commonly measured by chlorophyll-a concentration. The degree of nutrient enrichment is described in terms of trophic status moving from oligotrophic through to eutrophic. There are many definitions of eutrophication and the Environment Agency has adopted the following:

> *The enrichment of waters by inorganic plant nutrients which results in the stimulation of an array of symptomatic changes. These include the increased production of algae and/or other aquatic plants, affecting the quality of the water and disturbing the balance of organisms present within it. Such changes may be undesirable and interfere with water uses.*

None of the Cumbrian lakes are in their natural trophic state. However, geological evolution decrees that certain lakes ought to be eutrophic and slow eutrophication is a natural process. A 'eutrophic' lake is not a reason *per se* for concern. Nevertheless eutrophication, that is the increase in trophic state of a lake, when induced to proceed at an unnatural rate is cause for concern. Some lakes are particularly vulnerable to increased eutrophication because of their shallowness, size, shape or depth.

Algal blooms tend to be symptomatic of the later stage of eutrophication, blue-green algal blooms principally occur where there are high levels of nutrients present, together with the occurrence of warm, sunny, calm conditions. Some blue-green algal species may produce chemicals which are toxic to both man and animals.

Local Perspective

Limited data on the water quality of Loweswater has revealed several features that are not compatible with the local geology and catchment features. There is considerable local concern over water quality and the algal blooms that have occurred virtually all year round not just in the summer months. Much of the evidence is anecdotal and the true water quality status is obscure.

There is a need to look more closely at the water quality of the lake to assess the reasons for these anomalies. This work may also reveal the reasons for the algal blooms. The cost of any follow up actions will depend on the outcome of the study.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
11.1 Investigate the nutrient history and balance for Loweswater	EA		£30K	✓	✓	✓				Area Environ-ment Planning
11.2 Follow up the findings of 11.1 (the Loweswater nutrient study)	EA	NT	Cost unknown		✓	✓	✓			Area Environ-ment Planning

Issue 12 Failure to Meet EC Bathing Water Directive Standards at St Bees and Seascale

Background

The quality of bathing waters in England and Wales is monitored by the Agency against standards laid down in the bathing water regulations, which gave effect to the EC Bathing Water Directive (76/160/EEC). The assessment of compliance against the standards includes analysis for coliform bacteria. This can be indicative of the presence of traces of sewage effluent.

Local Perspective

Despite investment in new sewerage systems and sewage treatment facilities by NWW Ltd, the compliance of Seascale and St Bees bathing waters with the EC Bathing Water Directive still remains inconsistent. Compliance results for 1990 to 1999 for Seascale and St Bees bathing waters are given below.

Table 1: Bathing Water Directive compliance at Seascale and St Bees 1990 to 1999

Bathing Water	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Seascale	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓
St Bees	✓	✓	✗	✓	✓	✗	✓	✗	✓	✓

✓ compliant
✗ non-compliant.

There is a need to identify the causes of these failures in order that remedial action can be targeted. The Agency has undertaken a substantial programme of investigation, including:

- An investigation into the bacterial water quality at designated bathing beaches (1997).
- An investigation into the Seascale and St Bees bacterial balance (1998).
- Modelling of bacteriological discharges to Cumbrian Coastal Waters: St Bees and Seascale.
- Tracer studies by the Agency's Marine and Special Projects team.

The results from these studies have been used by the Agency to influence the capital investment of NWW Ltd during the period 2000 to 2005 (AMP 3) to ensure the NWW Ltd discharges receive the necessary improvements. The Agency may also need to consider controlling private and trade sources of bacterial contamination in the locality of the bathing water, as well as bacterial contamination from diffuse and riverine sources that can become important in wet weather.

Seascale

The above studies have identified a number of sources of bacterial contamination and linked them to Seascale bathing water quality. During dry weather periods, the main sources of bacterial contamination are the sewage discharges in the area, these include Seascale WwTW, Braystones WwTW and private discharges from Sellafield. However, during wet weather riverine sources of bacterial contamination also become important, particularly the River Ehen, this is due to a combination of sewage discharges in the river catchment and diffuse sources (e.g. agricultural runoff).

St Bees

Bacterial sources that can affect the St Bees bathing water quality include St Bees WwTW and the two rivers, Pow Beck and Rottingham Beck, that discharge in the vicinity of the bathing water. Furthermore, the St Bees bathing water can also be affected by the same sources as Seascale (such as Braystones), however, distance, dilution and die-off factors come into play.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
12.1 Monitoring of bathing waters and intensive (see main text) investigations to assess reasons for failures and identify any improvement work required, in the West Cumbria LEAP area (complete)	EA	NWW Ltd Industry	£150K	✓						**National** Environ-ment Planning
12.2 Implement improvements to the Water Company discharges secured through AMP3.	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ-ment Planning
12.3 Negotiate to improve the relevant private and trade sources of bacterial contamination.	EA		staff time			✓	✓	✓	✓	**National** Environ-ment Protection

Issue 13 Adverse Impact of Discharges from Waste Water Treatment Works

Background

Different levels of sewage treatment are required to ensure the receiving water courses have adequate environmental protection. The Agency controls the discharges from waste water treatment works (WwTW) by issuing consents under Schedule 10 of the Water Resources Act 1991. Consents can contain a variety of conditions which are designed to control the quality of the discharge and protect the receiving watercourse to appropriate standards. The Agency is responsible for water quality monitoring and has set water quality objectives which comprise four components - general chemistry, biology, nutrients and aesthetics - each providing a discrete 'window' upon which the quality of river stretches is assessed. As part of this the Agency has developed a strategic classification system known as the River Ecosystem (RE) Classification scheme and has set strategic targets known as River Quality Objectives (RQOs) for all rivers. RQOs provide a basis for water quality management decisions. The River Ecosystem Classification scheme comprises five quality classes (River Ecosystem water quality objectives) that reflect the chemical quality requirements of different types of river ecosystems, and range from RE1 which is the best quality to RE5 which is very poor quality.

Local Perspective

The Consultation Report identified cases where deterioration in water quality, the result of discharges from waste water treatment works, had led to failure to meet water quality objectives and in some cases, the requirements of the EC Freshwater Fisheries Directive. The Agency has highlighted these water quality objective failures to NWW Ltd during the period review of the water companies capital expenditure. The appropriate remedial work has been identified in the NWW Ltd capital investment programme 2000 to 2005 (AMP 3):

Tributary of River Derwent Downstream Grey Southen WwTW	Failure to meet water quality objective of RE3 because of biochemical oxygen demand (BOD), improve treatment at Grey Southen WwTW.
Scad Beck	Failure to meet water quality objective of RE4, because of biochemical oxygen demand and ammonia, divert outfall to Crosscanonby WwTW (currently under investigation).
Brunsow Beck	Failure to meet water quality objectives of RE4, improve treatment at Crosby Villa and Allerby WwTW
Brides Beck	Failed the requirements of the EC Fisheries Directive for ammonia in 1994, 95 & 96, improve treatment at Bridekirk WwTW.
Gill Beck	Failure to meet water quality objective of RE1, improve treatment at Blindecrake WwTW.
River Ehen	Failure to meet water quality objective of RE2 because of biochemical oxygen demand, improve treatment at Cleator WwTW.
River Keekle	Failure to meet water quality objective of RE3 for biochemical oxygen demand, improve treatment at Cleator WwTW.

The Consultation Report also identified the failure of Furnace Gill to meet its water quality objective of RE4. Broughton Moor WwTW has been connected to the Workington sewerage system during 1998 and this problem has been resolved.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
Tributary of River Derwent 13.1 Improve treatment at Grey Southern WwTW	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ-ment Planning
Scad Beck 13.2 Improve treatment at Crosscanonby WwTW	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ-ment Planning
Brunsow Beck 13.3 Improve treatment at Crosby Villa and Allerby WwTW. Relocate outfall to River Ellen.	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ-ment Planning
Brides Beck 13.4 Improve effluent quality of Bridekirk WwTW.	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ-ment Planning
Gill Beck 13.5 Improve effluent quality of Blindcrake WwTW.	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ-ment. Planning
River Ehen and River Keekle 13.6 Improve treatment at Cleator WwTW.	NWW Ltd	EA	staff time			✓	✓	✓	✓	**National** Environ ment Planning

Issue 14 Adverse Impact from Overflows on the Sewerage Network

Background

Within the LEAP area, foul drainage and uncontaminated surface water can be conveyed together in combined sewers to sewage treatment works. Located on the sewerage network are outfalls known as combined sewer overflows (CSOs), emergency overflows at pumping stations and inlet overflows at sewage treatment works. These are designed to prevent foul flooding by relieving the systems during storm conditions. If this did not occur then the raw sewage would back up the sewerage system and could discharge from manholes or into properties. A correctly operating combined sewer overflow should only operate during times of heavy rainfall when adequate dilution should be available in the receiving watercourse.

The increase in residential and commercial development, combined with an increase in domestic usage of water, has led to greater flows going to sewers. Any new developments will have to be considered in terms of the impact they might have on the sewerage network.

Some combined sewerage systems are in poor condition and there is inadequate sewer capacity for the increased flows; the poor condition can allow the ingress of groundwater that further reduces their capacity. This has resulted in more frequent discharges from storm overflows occurring and, sometimes, the premature operation of storm overflows. It can have an adverse impact on the aquatic environment. This can be in terms of water quality, its impact on the flora and fauna in the watercourse or littering from sewage.

The programme of improvements for AMP 3, covering the period 2000 to 2005, is being finalised, and the Agency has identified the need for many improvement schemes which will be undertaken by NWW Ltd as part of AMP 3.

Local Perspective

The following overflows have been identified as unsatisfactory and identified for improvement during AMP 3:

Arlecdon	2 CSOs discharging to Winder Beck, 6 CSO discharging to Distington Beck
Blind Lane	CSO discharging to the River Keekle
Cleator Area	2 CSOs discharging to the River Ehen
Davenby	CSO discharging to Davenby Beck
Egremont	2 CSOs discharging to the River Ehen
Frizington	CSO discharging to Lingra Beck
Gosforth	CSO discharging to Hare Beck
Keswick	CSO discharging to River Derwent, Greta Grove CSO discharging to River Greta
Papcastle	CSO discharging to the River Derwent
Parton	2 CSOs discharging to the Irish Sea
Whitehaven	4 CSOs discharging to Bow Beck, 3CSOs discharging to Snebra Gill
Workington	3 CSOs discharging to Soapery Beck, Hall Brow CSO discharging to Hallbeck, CSO discharging to Ling Beck, CSO discharging to Stanbeck

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority
	Lead	Other								Function
14.1 Reduce the number of unsatisfactory combined sewer overflows in the LEAP area, identified in AMP 3	NWW Ltd			✓	✓	✓	✓	✓	✓	**National** Environ-ment Planning
14.2 Liaise with LPA and developers to reduce impact on the CSO network that could be caused by significant new developments.	EA NWW Ltd Local Authorities Developers.		staff time	✓	✓	✓	✓	✓	✓	**National** Environ-ment Protection
14.3 Encourage better source control of surface water run off into the sewerage system through the planning process.	NWW Ltd. Developer Local Authorities	EA	staff time	✓	✓	✓	✓	✓	✓	**Regional** Environ-ment Planning + Protection

Issue 15 Localised Pollution from Lack of Rural Sewerage

Background

Section 101A of the Water Industry Act 1991 requires sewerage undertakers to consider providing a public sewer where there are environmental or amenity problems arising from private sewage disposal facilities. This is a new duty for the undertakers. Owners and Occupiers of properties, or the Local Authority, may make an application to the sewerage undertaker to provide a sewer.

The Agency has no powers to compel NWW Ltd to provide sewerage; the onus is on the local communities or Local Authorities to approach NWW Ltd directly. The sewerage undertaker will carry out an assessment of whether or not the present disposal facilities meet certain technical or economic criteria before providing a public sewer. The Agency's role is two fold. Both the sewerage undertaker and the applicant may wish to consult the Agency on the assessment. In addition, the Agency may also have to act as the arbiter where the sewerage undertaker refuses an application or there is a dispute over the timing of the scheme.

Local Perspective

The Agency is aware of a number of locations within the West Cumbria LEAP Area where the lack of rural sewerage is causing pollution problems. Where a public foul sewer is not viable, the Agency will look at other options.

The following settlements have been brought to the notice of NWW Ltd:

Bewaldeth
Broad Oak (near Ravenglass)
Coulderton
Howgate
Lamplugh
Loweswater
Kirkland
Middletown
Ponsonby
Rottington
St John's in the Vale
Sandwith
Thackthwaite
Wasdale
Wilton
Wythop

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
15.1 Give advice and arbitrate when requested.	EA		staff time	✓	✓	✓	✓	✓	✓	Area Environ-ment Protection
15.2 Pursue improvements to private sewage facilities.	EA Owners		staff time	✓	✓	✓	✓	✓	✓	Area Environ-ment Protection

issue 16 Failure to meet Water Quality Objectives and EC Directive Standards due to Unknown Causes

Background

The Agency has a statutory responsibility under the Water Resources Act, 1991 and some European Community (EC) Directives to monitor 'controlled waters' for pollution. Controlled waters include rivers, streams, lakes, ditches, groundwater, estuaries and coastal waters.

The chemical quality and the aquatic life in the LEAP area are monitored regularly in a routine program and assessed against water quality objectives (for further information see Issue 13). This includes sampling under obligations arising from EC Directives. The Agency has responsibility for monitoring and ensuring compliance with various EC Directives including:

The Dangerous Substances Directive **(76/464/EEC)**- which provides a framework to control levels of certain substances considered harmful in the aquatic environment.

The Freshwater Fisheries Directive **(78/659/EEC)** - which sets water quality standards required to ensure designated river stretches are suitable for supporting fisheries. Most of the rivers in the catchment are designated for salmonids under this Directive.

The Surface Water Abstraction Directive **(75/440/EEC)** - which ensures that surface water used for drinking water supply, meets certain standards at the point of abstraction.

The Shellfish Waters Directive **(79/923/EEC)** – which sets standards for the quality of waters in areas designated as supporting shell fisheries.

It is not always possible to identify, immediately, the reason for failures to meet Water Quality Objectives or EC Directives. Failures could be due to point source pollution, diffuse pollution or may be due to natural sources. Where the reasons are unknown, the Agency will investigate the cause and identify measures to ensure compliance.

Local Perspective

The Consultation Report identified 6 incidents of stretches of water courses failing water quality objective and/or EC Directives due to unknown causes. It should be noted that one of the water courses identified, the River Derwent at Workington, did not fail these standards in 1998 and so has not been included in this Action Plan. The failure of Gill Beck has been associate with Blindcrake WwTW and this is now covered under issue 13. The following are still outstanding, and further investigation into possible causes of failure is required, so that improvements can be made:

River Annas upstream stretch	Failure to meet Water Quality Objective of RE1 due to Biochemical Oxygen Demand and ammonia, investigate issues eg farm drainage.
Rottington Beck	Failure to meet Water Quality Objective of RE3, due to Biochemical Oxygen Demand, investigate issues eg livestock watering during drought conditions and the proliferation of septic tanks at Rottington.
River Calder	Failure to meet Water Quality Objective of RE1 (Ammonia), investigate potential issues.

Sepulchre Beck — Failure to meet Water Quality Objective of RE2 for Biochemical Oxygen Demand and ammonia, and failure to meet the EC Freshwater Fish Directive Standard for ammonia. Investigate the catchment to find sources of pollution, (agricultural sources are considered most likely).

In relation to Sepulchre Beck, work has been under taken in the catchment and this will be reviewed to identify if further action is required. At Rottington Beck there have been visits to some individual properties, a mail drop campaign, and promotion of Sandwith for first time rural sewage with NWW Ltd and Copeland District Council.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
River Annas upstream stretch 16.1 Investigation issues eg Farm Drainage, causing failure to meet RE1	EA		staff time			✓	✓	✓	✓	**Normal Duties** Environ-ment Protection
Rottington Beck 16.2 Investigation of issues eg Livestock watering during drought conditions and the proliferation of septic tanks at Rottington, causing failure to meet RE3	EA		staff time			✓	✓	✓	✓	**Normal Duties** Environ-ment Protection
River Calder 16.3 Investigate potential issues, causing failure to meet RE1	EA		staff time			✓	✓	✓	✓	**Normal Duties** Environ-ment Protection
Sepulchre Beck 16.4 Investigate the catchment to find sources of pollution, causing failure to meet RE2 and EC Freshwater Fish Directive for ammonia	EA		staff time			✓	✓	✓	✓	**Normal Duties** Environ-ment Protection

Issue 17 Odour Nuisance from the Waste Management Sites at Lillyhall, Workington

Background

Land fill remains the major waste disposal option in West Cumbria with over 0.5 million tonnes disposed in this way. Landfill gas is a product of the decomposition of biodegradable wastes in a landfill site, of which methane gas constitutes up to 65% of its volume.

There are two major landfill sites and one waste management centre based at Lillyhall Industrial Estate, Workington. They take a wide range of solid and liquid wastes including household, industrial, commercial, clinical and special waste.

Local Perspective

In August 1995 the Waste Regulation Department of Cumbria County Council with the Environmental Health Departments of Allerdale and Copeland Borough Councils began to receive complaints about malodours in the Distington and Lillyhall areas. On investigation there were a few possible sources but the major contributors were the two landfill sites. As a result, in January 1996, the licence conditions of the landfills and waste management centre were modified. Alco appealed against the condition and the Planning Inspectorate modified the licence to less prescriptive conditions.

The first modifications made both companies install odour control measures which resulted in the frequency and strength of odours decreasing. Fewer complaints were received until September 1997 when there was a mass of complaints. Monitoring carried out by Agency Officers substantiated these complaints.

A steering group (Distington Odour Steering Committee) made up of representatives of Cumbria County Council, the Agency, Allerdale Borough Council, Copeland Borough Council, Parish Councils, Alco Waste Management, and Cumbria Waste Management was set up to look into the issue. The committee employed consultants to carry out a scientific investigation funded through the landfill-tax. This showed that there were a variety of potential odour sources in the Distington/Lillyhall area, but odours associated with land-fill gas were identified as the main source of odour. It recommended Alco Waste Management and Cumbria Waste Management (CWM) should undertake follow up work.

Alco are undertaking specific targeted scientific investigation for odour sources on site, and infrastructure changes at the waste management centre, to further minimise the potential for odours. They are also implementing a site-wide environmental management system to ISO 14001. This standard is designed to help organisations put in place the necessary structures to ensure that the operations comply with environmental laws and that major environmental risks and liabilities are properly identified minimised and managed.

At the Distington land-fill site operated by CWM, the main aim of the current work is to assess the main sources of odour at the site and propose measures to mitigate off site odours from site operations.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
17.1 Modify licenses of both operators to give greater control over odours (Complete)	EA	Cumbria Waste Manag-Ement Alco	staff time	✓						**National** Environ-ment Planning
17.2 Carry out scientific study to investigate ways to solve the problem. Phase 1 (Complete)	Distington Odour Steering Committee		staff time	✓						**Normal Duties** Environ-ment Protection
17.3 Assess the main sources of odour and propose mitigation measures	Cumbria Waste Manage-ment	Distington Odour Steering Committee	staff time		✓					**Normal Duties** Environ-ment Protection
17.4 Implement site wide environmental management system to ISO 14001	Alco	EA	staff time		✓					**Normal Duties** Environ-ment Protection
17.5 Specific targeted scientific investigation for odour sources on site	Alco	EA	staff time		✓					**Normal Duties** Environ-ment Protection
17.6 Infrastructure changes at waste management centre to further minimise potential for odours	Alco	EA	staff time		✓					**Normal Duties** Environ-ment Protection
17.7 Undertake further detailed monitoring.	EA		staff time	✓	✓	✓				**Normal Duties** Environ-ment Protection

Issue 18 The Adverse impact of Discharges from Lillyhall Industrial Estate on Distington Beck

Background

Lillyhall Industrial Estate has a separate surface and foul water drainage system. The surface water drainage system discharges at three outfalls to Distington Beck. These outfalls were originally designed to prevent flooding on the estate by discharging uncontaminated surface water from roofs/yards into the watercourse. Over time, this surface water system has become contaminated by cross connection, bad practices and spillages on the estate. This has led to numerous pollution incidents in Distington Beck.

Current Situation

The Consultation Report highlighted the need to identify the sources of pollution so remedial action could be taken. An action plan has been established, which involves comprehensive pollution prevention work and progress towards a long term engineered solution, (if possible). This includes, detailed monitoring, a site audit of occupancy, together with a specific pollution prevention campaigns, incident resolution, and production of detailed drainage maps. As a result of this action various pollution problems on the estate have been identified and resolved, but this work is on-going. A possible longer term solution involves the installation of Surface Water Diverters (SWID) and this is being investigated by Cumbria County Council (CCC) at the present time. The installation of SWID would mean any pollutants would be discharged to the foul sewer rather than discharging into Distington Beck.

Action	Responsibility		Total Cost (Agency)	1998/ 1999	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	Agency Priority Function
	Lead	Other								
18.1 Continue proactive campaign to identify and eliminate sources of pollution.	EA		staff time	✓	✓	✓				**Normal Duties** Environ-ment Protection
18.2 Carry out study to investigate the provision of 1st flush interceptors to the foul system	CCC	NWW Ltd EA	staff time		✓					**Normal Duties** Environ-ment Protection
18.3 To implement findings of study	CCC		Cost unknown			✓				**Normal Duties** Environ-ment Protection

5. A BETTER ENVIRONMENT THROUGH PARTNERSHIP

There is a range of initiatives, at various levels, by various bodies, which cover the area of this Plan. These are both statutory and non-statutory in nature and cover a variety of interests. In addition, a number of bodies have produced, or are producing, some form of documentation. It is important for all parties that where interests overlap, discussion occurs on those areas of common interests. In this way action can be integrated, increasing efficiency, avoiding duplication and making the most of limited resources.

Organisations and Partnerships

Local Planning Authorities

The Agency is a consultee for development plans. The LEAP plan area is administered by a number of Local Planning Authorities. These are:

Cumbria County Council
Lake District National Park Authority
Allerdale Borough Council
Eden District Council
Copeland Borough Council

Each of these Local Planning Authorities has in place, an adopted development plan. The LEAP boundary is based on a catchment boundary with no one Local Authority wholly contained within this area. The Agency considers LEAPs are an important part of the ongoing dialogue with Local Planning Authorities in working towards the objective of sustainable development. Particularly, through fostering partnerships and identifying issues, where environmental problems and potentials can be most actively pursued.

Solway Firth Partnership

The Solway Firth Partnership is a partnership of 1200 interests covering the Solway Firth Area and straddles the national boundary. The Partnership is managed by a steering group which includes the Agency. The Solway Firth Strategy was published in 1998 accompanied by a programme for action.

Solway Coast Area of Outstanding Natural Beauty (AONB)

The AONB is administered by a steering group which includes a representative of the Agency. A management plan was produced for the area in 1998. The steering group and Solway Rural Initiative will oversee its implementation.

Solway Rural Initiative

It covers North Allerdale and western Carlisle incorporating the Solway Plain and Coast. Its interests include rural development, tourism and access, countryside management, small business advice and grants. This is a non-profit making company limited by guarantee.

Cumbria Sea Fisheries Committee

Extensive commercial sea fishing takes place in coastal waters and is regulated by the Cumbria Sea Fisheries Committee (Cumbria SFC). Regular liaison takes place between the Agency and Cumbria SFC on matters of joint interest.

Annual Conservation and Fisheries Seminar

Staff from the Agency meet annually with local representatives of conservation organisations. The purpose is to discuss the Agency's annual flood defence maintenance programme and other relevant conservation related issues.

Shoreline Management Plans (SMPs)

Shoreline Management Plan are produced by maritime Local Authorities and provide a strategic framework for coastal defences in an area. The SMPs covering the LEAP is from the Solway to St Bees Head led by Allerdale Borough Council, and from Earnse Point to St Bees Head led by Copeland Borough Council. The Agency has been fully involved in the process of plan preparation.

The Lake District National Park

The Agency works closely with the National Park Authority through officer contact and also representation on various working groups. In addition the Agency has been involved in early consultation over the recently published Lake District National Park Management Plan.

A Local Accord on Native Woodlands in the Lake District National Park

In 1993 the Forestry Commission and the National Parks in England and Wales signed a National Accord to promote and encourage the management and extension of native woodlands in National Parks. The Agency is a signatory to this agreement along with the Lake District National Park Authority, Forestry Authority, Forest Enterprise, English Nature, the Ministry of Agriculture Fisheries and Food, the National Trust and North West Water Ltd.

Cumbria Biodiversity Partnership

The Cumbria Biodiversity Partnership was launched in 1998 and is a partnership of local organisations, interest groups and Local Authorities. The Agency is represented on the steering, technical, and various focus groups of the Cumbria Biodiversity Partnership, which will produce the Cumbria Biodiversity Action Plan.

Derwent Owners Association

This is an association of riparian owners on the River Derwent. It takes an interest in, and pursues matters of relevance to their ownership which includes undertaking river habitat enhancement work.

Cumberland Rivers Foundation

This is a charity which aims to raise awareness of issues relating to water quality, water resources, fisheries, and habitats in West Cumbria. Through co-operation with interested parties it seeks to resolve these issues.

South and West Cumberland Fisheries Association

This Association brings together a range of people who represent fisheries interests throughout the LEAP area. It deals with matters of fisheries interest and is consulted by the Agency.

Road Emergency Plan and Pollution Incidents

The Agency is working closely with Cumbria Fire Service in providing a first line pollution prevention service at road traffic accidents. The Fire Service are normally first on the scene at road accidents. This gives them a unique opportunity to deal with polluting spillages before they reach a watercourse. The Fire Service have agreed to undertake this role where practicable and the Agency will provide training and materials such as oil absorbents. The Fire Service will also notify the Agency of any potentially polluting spillages so that Agency staff can take necessary action.

The A66 from Portinscale to Embleton is the subject of a road emergency plan agreed between the Agency Cumbria County Council and the Fire Service. Cumbria County Council has installed interceptors to contain any spillages caused by road traffic accidents, and therefore minimise any pollution risk to Bassenthwaite Lake.

Site Emergency Plans

As part of Cumbria County Council's Emergency Planning Procedures, certain industrial sites have specific emergency plans. Exercises designed to test and improve procedures are held regularly, and include the participation of staff from the Agency.

Cumbria Business Waste Minimisation Forums

Cumbria-wide Business Environment Network is a partnership between Groundwork, the Agency and Enterprise Cumbria Ltd. Its aim is to disseminate information and best practice between the five business waste minimisation clubs in Cumbria.

Local Agenda 21

The lead in developing Local Agenda 21 is taken by the local communities with the help of the Local Authorities. The Local Authorities in Cumbria are helping develope Local Agenda 21 initiatives and meet quarterly to exchange ideas and information.

The Agency also has responsibilities with regard to sustainable development, and joins with the Local Authorities at their liaison meetings to assist in pursuing the goal of sustainable development.

This is not an exhaustive list.

Regional and Area Environment Agency Committees

Each region of the Agency has three statutory Committees; members are drawn from Local Authorities, interest groups and prominent individuals. These Committees play a vital role in our relations with those affected by our work. These committees meet four times a year and the meetings are open to the public and press. The committees are:

Regional Environment Protection Advisory Committee

We are required to consult this Committee about proposals relating to the way in which we carry out our functions in the Region and we must consider representations made by the Committee. The chief role of the Committee is to identify issues of special importance to the Region, to act as a regional sounding board for ideas emanating from the Agency and our Policy Directorates and to help the Regional Managers to do their jobs by providing advice on matters arising in the Region. The Committee's general remit covers all aspects of the Agency's functions but it would not normally expect to concern itself with specific matters dealt with by the other committees.

Regional Flood Defence Committee

The Agency exercises a general supervision over all matters relating to flood defence in the Region, but must arrange for the discharge by the Regional Flood Defence Committee of all its flood defence functions, except the making of drainage charges, the issuing of levies and the borrowing of money. The Committee has 15 members, including the Chairman who is appointed by MAFF. By statute, the local authority members have a majority of 1 over the other members of the Committee.

Regional Fisheries, Ecology and Recreation Advisory Committee

The chief role of this Committee is to advise us on the manner in which we discharge our duties in relation to Fisheries and Recreation in the Region and these duties will also include advising on all Conservation issues relating to the functions within its remit.

The North Area of North West Region also has two other non-statutory Area based Committees or groups, which are:

Area Flood Defence Advisory Committee

The role of this Committee is to be receptive to local opinion on flood defence and land drainage issues. Also, to consider new flood defence capital schemes, proposed variations to the statutory Main River Map and other matters of a local nature and to make recommendations to the Regional Flood Defence Committee.

Area Environment Group

This group provides a communication link between the local community and the Agency, to advise the Area Manager on the local environment and provide a focus for the input into LEAPs.

A sub group of the North Area AEG has been set up to guide the production of this LEAP, and keep a watching brief on its implementation.

Appendices

Appendix 1: Duties, Powers and Interests of the Environment Agency

The Agency has a wide range of interests in the areas of water management, waste management and pollution prevention and control. The following appendix summarises the Agency's duties, powers and interests and their relationship to land-use planning. While statutory duties and powers support many of these interests, much of our work is advisory, with the relevant powers resting with other bodies such as Local Planning Authorities. For example, the Agency is not responsible for:

- Noise problems (except if it is to do with our work)
- Litter (unless it is restricting the flow of a river or arising from waste management licensed sites)
- Air pollution arising from vehicles, household areas, small businesses and small industry
- Collecting waste in your local area
- Planning permission
- Environmental health
- Food hygiene

These are all dealt with by the Local Authority who will liase with the Agency if necessary.

The Agency is not responsible for the quality or supply of drinking water at the tap or for treating sewage waste, although we regulate discharges from sewers and sewage treatment works.

Agency Duty :	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership :
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	• Grant or vary water abstraction and impoundment licences on application. • Revoke or vary existing licences to reinstate flows or levels to surface-waters or groundwater which have become depleted as a result of abstraction, and are subject to paying compensation to licence holders. • Secure the proper use of water resources through its role in water-resources planning, the assessment of reasonable need for abstractions and promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licence conditions.	• The more efficient use of water by water companies, developers, industry, agriculture and the public and the introduction of water-efficiency measures and suitable design and lay out of the infrastructure.	The Agency is committed to water-demand management and will work closely with water companies and developers, Local Authorities and relevant organisations to promote the efficient use of water. The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures. The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water-conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.
Flood Defence The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.	• The control, through consenting of structures in, over or under 'main river' watercourse (Water Resources Act, 1991 Section 109); structures on 'non-main' river which affect the flow, including dams and culverts, (Land Drainage Act, 1991 Section 23); activities in on or within 8 metres of the bank of 'main river' or adjacent to see or tidal defences (land drainage byelaws) • Produce flood risk maps for all 'main rivers' under S105 of Water Resources Act 1991. • Undertake maintenance works to 'main rivers' using permissive powers. • Issue flood warnings to the public, Local Authorities and the police. • Carry out improvement works to reduce the risk of flooding. Various priorities and constraints need to be satisfied before any promoted scheme is implemented.	• The maintenance of 'non-main rivers' and the carrying out of other works not affecting their flow, which is a Local Authority remit, but may impact on 'main rivers'. • Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by Local Planning Authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.	As a consultee on planning applications within floodplains, the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts or proposed floodplain development. The Agency will encourage best practice, including source-control measures and common standards, among Local Authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood-warning dissemination plans and supports their endeavours to protect communities at risk.

Agency Duty :	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership :
Water Quality The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.	• Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters and into or onto land in respect of water quality through the issue and enforcement of discharge consents. • Prosecute polluters and recover the costs of clean-up operations.	• The control of runoff from roads and highways. This is a Highway Agency duty. • The greater use of source-control measures to reduce pollution by surface-water runoff. • Prevention and education campaigns to reduce pollution incidents.	The Agency will liaise with Local Authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source-control measures. As a consultee on planning applications, the Agency will advise Local Planning Authorities on the water-quality impact of proposed developments.
Air Quality The Agency has a duty to implement Part 1 of the Environmental Protection Act 1990.	• Regulate the largest technically-complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, BATNEEC and BPEO. • Have regard to the Government's National Air Quality Strategy when setting standards for the releases to air from industrial processes.	• The vast number of smaller industrial processes which are controlled by local authorities. • Control over vehicular emissions and transport planning.	The Agency provides data on IPC processes and advice on planning applications to local authorities. The Agency is willing to offer its technical experience to local authorities on the control of air pollution. The Agency wishes to liaise with local authorities in the production of their Air Quality Management Plans. The Agency will advise and contribute to the Government's National Air Quality Strategy.
Radioactive Substances The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.	• To issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public.	• The health effects of radiation.	The Agency will work with users of the radioactive materials to ensure that radioactive wastes are not unnecessarily created, and that they are safely and appropriately disposed. The Agency will work with MAFF to ensure that the disposal of radioactive waste creates no unacceptable effects on the food chain. The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites, and the HSE on worker-protection issues at non-nuclear sites.

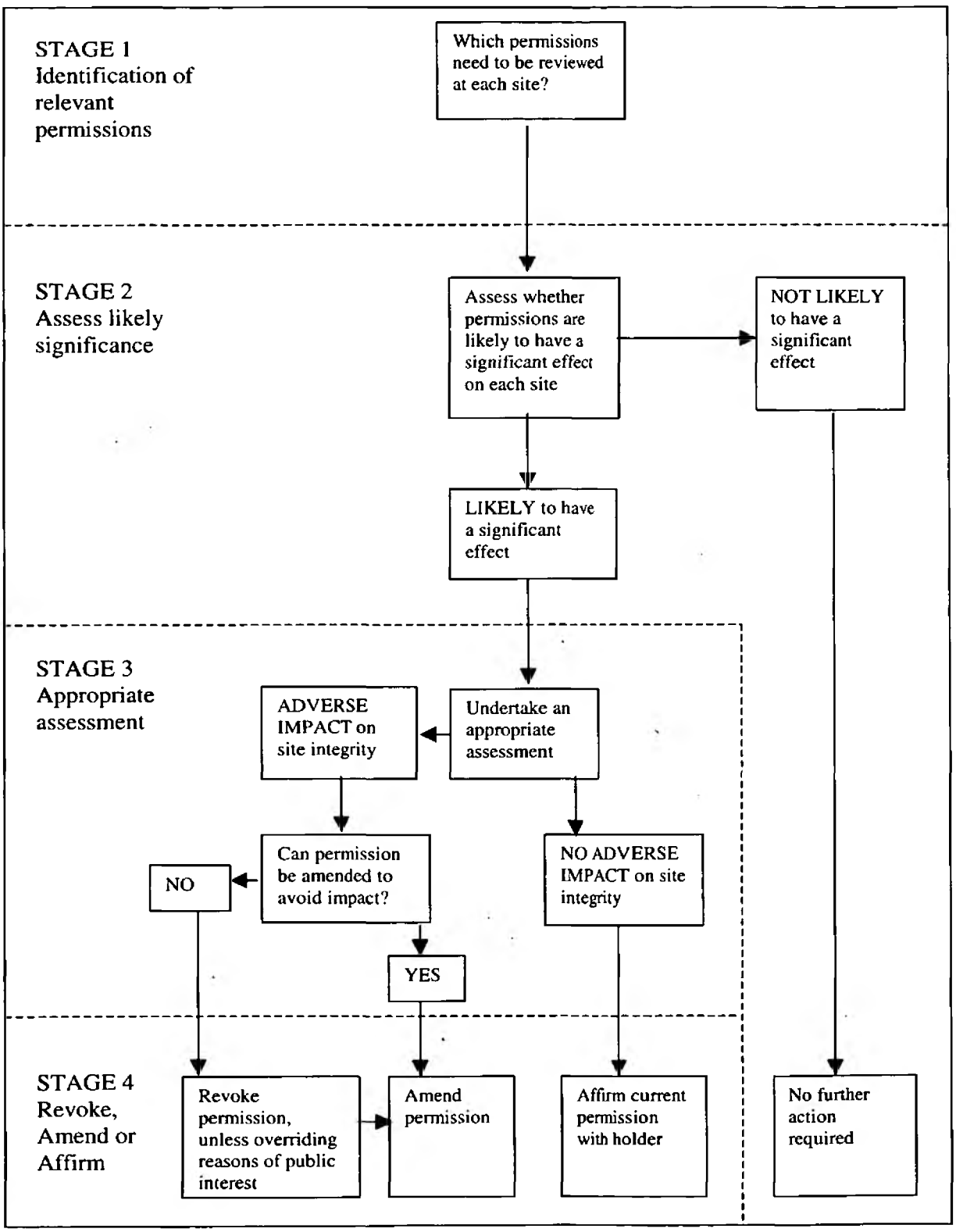
Agency Duty :	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership :
Waste Management The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to human health or detriment to local amenities.	• Grant waste management licence and vary conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations	• The siting and granting of planning permission for waste management facilities. This is conducted by the waste industry and Local Planning Authorities. The Agency, as a consultee on planning applications, can advise on such matters.	The Agency will work with waste producers, the waste-management industry and Local Authorities to reduce the amount of waste produced, increase re use and recycling and improve standards of disposal.
Contaminated Land The Agency has a duty to develop an integrated approach to the prevention and control of land contamination ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment. (pending new legislation)	• Regulate the remediation of contaminated land designated as special sites. (pending new legislation) • Prevent future land contamination by means of its IPC, Water Quality and other statutory powers. • Report on the state of contaminated land.	• Securing with others, including Local Authorities, landowners and developers, the safe remediation of contaminated land.	The Agency supports land remediation and will promote this with developers Local Authorities and others.
Conservation The Agency has a duty to further conservation and enhancement of flora fauna, geological or physiographical features of special interest when carrying out functions other than pollution control; and have regard to flora fauna, geological or physiographical features when carrying out pollution-control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.	• The Agency uses its powers with regard to water management and pollution control to look for opportunities for furthering and promoting conservation.	• The conservation impacts of new development. These are controlled by Local Planning Authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to Local Authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Plan for which it is the contact point for 12 species and one habitat.	The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, Local Authorities, National Park Authorities, conservation bodies and landowners to conserve and enhance biodiversity.
Landscape (Natural Beauty) The Agency has a duty to further conservation and enhancement of the landscape when carrying out functions other than pollution control; and have regard to the landscape when carrying out pollution-control functions; and promote the conservation and enhancement of the natural beauty of inland and coastal waters and associated land.	• The Agency must further the conservation and enhancement of natural beauty when exercising its water-management powers and have regard to the landscape in exercising its pollution-control powers.	• The landscape impact of new development, particularly within river corridors. This is controlled by Local Planning Authorities.	The Agency produces Design Guidelines which it uses when working with Local Authorities, National Park Authorities, organisations and developers and in Areas of Outstanding Natural Beauty, to conserve and enhance diverse river landscapes.

Agency Duty :	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership :
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	• The Agency must promote its archaeological objectives though the exercise of its water-management and pollution-control powers and duties.	• Direct protection or management of sites or archaeological or heritage interest. This is carried out by Local Planning Authorities, County Archaeologists and English Heritage.	The Agency will liaise with English Heritage, Local Authorities, National Park Authorities, National Trust and other organisations which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	• Regulate fisheries by a system of licensing. • Make and enforce fisheries byelaws. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish-entrainment in abstractions. • Promote its fisheries duty by means of land-drainage consents, water abstraction applications and discharge applications. • Regulate the introduction of fish species to rivers and lakes.	• The determination of planning applications which could affect fisheries.	Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers Local Authorities, National Park Authorities and organisations to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	• The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.	• Promotion of water sports. This is carried out by Sports England and other sports bodies.	The Agency will work with the Local Authorities, National Park Authorities, Areas of Outstanding Natural Beauty, Countryside Agency, Sports England, British Waterways and other recreational and amenity organisations to further the recreational use of the water environment.

In addition to the above, the Environment Agency must have regard to:

- The purposes of National Parks (section 62 of the Environment Act 1995), in exercising or performing any functions in relation to, or so as to affect, land in a National Park;
- Any effect that proposals relating to any of its functions, would have on the economic and social well-being of local communities in rural areas.

Appendix 2 Habitats and Birds Directive - Procedure for the Review of Licences and Consents



Appendix 3 List of Respondents Commenting on the Consultation Report

Organisations Responding to the Consultation Report

Allerdale Borough Council
British Canoe Union (Northern Region)
Clean Rivers Trust
Cumbria County Council
Cumbria Wildlife Trust
English Nature
Forest Authority
Friends of the Lake District
Gosforth Anglers Club
Lake District National Park Authority
Ministry of Agriculture Fisheries and Food
National Trust
North West Mills Group
North West Water Ltd (wastewater management)
Solway Firth Partnership
Solway Rural Initiative Ltd
The Inland Waterways Association

Summary of Responses to the Issues

Issue Numbers and titles follow the numbering system in the consultation report. The numbers in brackets refer to the Issue numbers in this Action Plan.

Issue 1 – Impact of industrial and domestic water use on water resources. (see issue 1)

8 Consultees commented on this issue.
There was a general concern that any further abstraction of water to meet the needs of West Cumbria should not have a detrimental effect on the ecology and landscape of the associated lakes and rivers. Consultees identified the need to ensure careful management of existing water resources, as the first priority.

Issue 2 – Poor structural condition of a River Culvert at Gategill near Threlkeld. (see issue 2)

3 Consultees commented on this issue.
Views were mixed on the best way of resolving this issue.

Issue 3 – The potential need for a Water Level Management Plan for Derwent Water. (see issue 3)

8 Consultees commented on this issue.
The majority of consultees supported the need for an environmental appraisal before any decisions could be taken as to the best way forward.

Issue 4 – Flooding Problems (see issue 4)

4 consultees commented on this issue.
All consultees recognised a need for flood defence schemes and flood warning. However, English Nature asked for the restoration of natural flood capacity to minimise flood risk, and that any flood defence works should not compromise the area's biodiversity.

Issue 5 – The need for an effective and efficient flood warning service for coastal areas at risk of flooding. (see section 3)

3 Consultees commented on this issue.
All consultees welcomed the introduction of a comprehensive flood warning system along the coast.

Issue 6 – The need to protect the important and significant biodiversity of the West Cumbria Area. (see issue 5)

8 Consultees commented on this issue.
This was one of the issues which provoked most comment. All consultees supported the need for survey work in respect to the species listed, the replacement of the Irish Bridge on the River Lisa, and the need for a Water Level Management Plan to manage the Annaside natterjack toad population.

Issue 7 – The need to protect and manage sites designated under the EC habitats and birds directive. (see issue 6)

2 Consultees commented on this issue.
Both consultees recognised the need to review consents.

Issue 8 – Adverse impact of rural land use practices on the Water Environment. (see issue 7)

8 Consultees commented on this issue.
The wide-ranging nature of this issue was generally welcomed, and consultees elaborated on the habitat enhancement work which was being undertaken within their own organisations.

Issue 9 – Water pollution from Sheep Dip Chemicals. (see issue 8)

7 Consultees commented on this issue.
All consultees were concerned about the impact sheep-dip chemicals has on the water environment and supported the actions proposed. However, some recognised that this was a national issue and was awaiting new legislation.

Issue 10 – The need to encourage businesses towards sustainable Waste Management. (see issue 9)

6 Consultees commented on this issue.
Consultees supported the need for more sustainable use of resources by industry. Some organisations though the Agency needed to be more proactive in this respect.

Issue 11 – The potential adverse impact on the genetics of local Salmon through stocking and transfer of fish and ova. (see issue 5)

6 Consultees commented on this issue.
All consultees, who commented, supported the action to carry out a genetic study of salmon in the catchment.

Issue 12 – Need for Better Information on the Environmental Quality of the Irish Sea (see issue10)

6 Consultees commented on this issue.
There was support for a feasibility study looking at biological monitoring in the Irish Sea.

Issue 13 – Public concern over algal blooms in Loweswater (see issue **11**)

5 Consultees commented on this issue.
All consultees that commented recognised the need to investigate this issue further.

Issue 14 – Failure to meet EC Bathing Water Directive standards at St Bees and Seascale (see issue 12).

4 Consultees commented on this issue.
All consultees supported the need to monitor bathing waters and investigate reasons for failure to meet the Directive. However, Cumbria County Council asked for action to resolve failures once and for all.

Issue 15 – Inadequate sewage treatment causing water quality problems (see issue 13)

4 Consultees commented on this issue.
3 Consultees supported efforts to address all the water quality problems identified. However, NWW Ltd stated that the actions would depend on the outcome of AMP3.

Issue 16 – Failure to meet Water Quality Objectives and EC Directive standards due to unknown causes (see issue 16)

4 Consultees commented on this issue.
All consultees supported the need to investigate the problems identified, but asked for follow up action and solutions to be implemented within the lifespan of the LEAP.

Issue 17 – Odour nuisance from the waste management sites at Lillyhall, Workington (see issue 17).

1 Consultee commented on this issue.
Cumbria County Council asked for the issue to be up-dated as a study looking into the issue was underway.

Issue 18 – The adverse impact of discharges from Lillyhall industrial estate on Disington Beck (see issue 18).

2 Consultees commented on this issue.
The consultees provided factual information on the issue.

Issue 19 – Impact of the former Oatlands deep mine spoil heap on the River Keekle (see section 3).

3 Consultees commented on this issue.
There was support for the remediation project.

Appendix 4 Environment Agency Interests and Local Planning Authority Development Plan Policies

	Development Plan Policies (the plan policy reference is shown)			
DEVELOPMENT PLAN NAME & STATUS	**AIR, WATER QUALITY AND WATER RESOURCES**	**FLOOD DEFENCE**	**FISHERIES RECREATION & CONSERVATION**	**MINERALS, WASTE DISPOSAL & CONTAMINATED LAND**
Cumbria County Council and Lake District Joint Structure Plan 1991-2006 Adopted July 1995	9, 22, 23, 56	18, 24	17	21, 58, 59, 60, 61, 62
Cumbria Minerals and Waste Local Plan Inspectors Report received January 1998	Policy 5, 7		Policy 6	Policy 5, 6 and 7
Lake District National Park Local Plan including Minerals & Waste. Adopted May 1998	UT1, NE9	UT 3-5	New Policy	M1, M2, & N5
Copeland Borough Council Modified Local Plan. Adopted May 1997	ENV 24-28, 30-31 SVC 1-4	ENV 15	ENV 4 SVC 1	N/A
Eden District local Plan: Post inquiry modifications ended June 1999	ENV 5, 6, 7, 11	ENV 12-14	ENV 19, 32	ENV 9
Allerdale District Deposit Local Plan. Consultation ended August 1997	ENV 1-2, 5	EN 13-17	EN 28-40	EN 11-12

Appendix 5: Glossary

Abstraction	removal of water from surface or groundwater, either permanently or temporarily usually by pumping.
Abstraction licence	licence issued by the Agency under S38 of the Water Resources Act 1991 to permit removal of water from a source of supply. It can limit the quantity of water taken on both a daily and annual basis.
Algal blooms	rapid growth of phytoplankton which may colour the water and may accumulate on the surface as a green scum. Decomposing dead cells consume large quantities of oxygen in the water which may result in the waters becoming anaerobic. Some blooms (such as certain species of blue-green algae) may produce poisons.
AMP	the programme of expenditure by NWW Ltd on environmental improvements is known as the Asset Management Plan (AMP). The amount of capital made available is determined by OFWAT and the DETR. The Agency then draw up a list of schemes in priority order so that the money is spent on the most important projects first. The AMP3 plan covering the period 2000 to 2005 is in the final stages of negotiation and the agreed list of projects is almost complete.
BATNEEC	Best available technology not entailing excessive cost.
Biochemical Oxygen Demand	a standard test which measures over 5 days the amount of oxygen taken up by aerobic bacteria to oxidise organic (and some in-organic) matter.
Biodiversity	the diversity of life, the number of species present.
BPEO	Best Practical Environmental Option
Compensation flow	Water released from a reservoir to maintain the flow required downstream for other users and for the needs of the environment.
Controlled Waters	Rivers, lakes, groundwaters, estuaries and coastal waters to 3 nautical miles. Precisely defined in the Water Resources Act, 1991, Part III, Section 104
Culvert	A man made underground channel for a river or drain - usually in the form of pipes
DETR	Department of the Environment Transport and the Region
Diffuse pollution	Pollution without a single point source e.g. acid rain, pesticides, urban run-off etc.
Discharge consent	A statutory document issued by the Environment Agency under Schedule 10 of the Water Resources Act 1991 as amended by the Environment Act 1995 to indicate any limits and conditions on the discharge of an effluent to a controlled water.
Drought Order	Drought Orders are made by the Secretary of State upon application by the Environment Agency or a water undertaker, under powers conferred by Act of Parliament, to meet deficiencies in the supply of water due to exceptional shortages of rain. The terms and conditions under which Drought Orders may be obtained are given in Sections 73-81 of the Water Resources Act 1991 and Sch 22 5139 of the Environment Act 1995. Drought Orders are sub-divided into 'ordinary' and 'emergency' Drought Orders. A Drought Order could contain provisions to: authorise abstraction from an unlicensed source; override the conditions on an existing abstraction licence; limit the amount of water which may be taken from a

	source; vary discharge conditions; allow the prohibition of use of water for particular purposes; allow a ban on non-essential use of water or introduce the use of stand-pipes.
EC Directive	European Community legislation which is binding on member states.
Eutrophication	the enrichment of water by nutrients, such as compounds of nitrogen. It causes an accelerated growth of algae and higher forms of plant life, changes in the ecological balance and deterioration in water quality. The water body is said to be eutrophic.
Genetic variation	The variation in genes the basic unit of inheritance of animals and plants.
Groundwater	Water lying under the surface of the ground excluding underground streams.
Landfill	The practice of disposing of waste onto or into specially designated landfill sites.
Leachate	solution formed when water percolates through a permeable medium. Can be mineral-rich, toxic or carry bacteria.
Main river	a watercourse shown on the statutory 'main river map' held by the Environment Agency and MAFF, designated under the Water Resources Act 1991. The Environment Agency has permissive powers to carry out works of maintenance and improvement on these rivers. Formal consent is required for all activities that interfere with the bed or banks of the river or obstruct the flow.
Mesotrophic	Water body containing a medium amount of nutrients eg nitrogen or phosphorus
Mld (Megalitres per day)	International unit of measurement. One megalitre = one million litres
OFWAT	Office of Water Industry's Financial Regulator of Water Services Companies.
Oligotrophic	Water body containing few nutrients eg nitrogen or phosphorus, often referred to as nutrient poor.
Ova	eggs from which young animals develop.
Riparian Owner	Owner of land abutting a river or lake. Normally riparian owners own the bed of the river to the mid point of the channel.
Septic Tank	A tank used for settling and partially biologically degrading sewage solids before discharging the treated effluent.
Sewerage -	System of sewers usually used to transport sewage to a sewage treatment works.
Silage	Winter feed for cattle. Produced by storing freshly cut grass in clamps or silos during the Summer.
Site of Special Scientific Interest (SSSI)	Site of national conservation importance designated by English Nature under the Wildlife and Countryside Act 1981
Slurry	Animal waste in liquid form
Telemetry	A means of directly collecting data from remote sites using a telephone line.

NORTH WEST REGION ADDRESSES

REGIONAL OFFICE
Environment Agency
PO Box 12
Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

NORTH AREA
Environment Agency
Ghyll Mount
Gillan Way
Penrith 40 Business Park
Penrith
Cumbria CA11 9BP
Tel: 01768 866666
Fax: 01768 865606

CENTRAL AREA
Environment Agency
Lutra House
PO Box 519
South Preston
Lancashire PR5 8GD
Tel: 01772 339 882
Fax: 01772 627 730

SOUTH AREA
Environment Agency
Appleton House
430 Birchwood Boulevard
Birchwood
Warrington WA3 7WD
Tel: 01925 840000
Fax: 01925 852260

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

NW-12/99-750-Di-BEWQ Printed on 100% recycled paper

All enquires to:
North Area Office
Ghyll Mount
Gillan Way
Penrith 40 Business Park
Penrith
Cumbria
CA11 9BP