

# local environment agency plan

**LUNE LEAP  
ACTION PLAN  
1998-2003**

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**OCTOBER 1998**



**ENVIRONMENT  
AGENCY**

**Lune  
Local Environment Agency  
Plan  
Map 1**

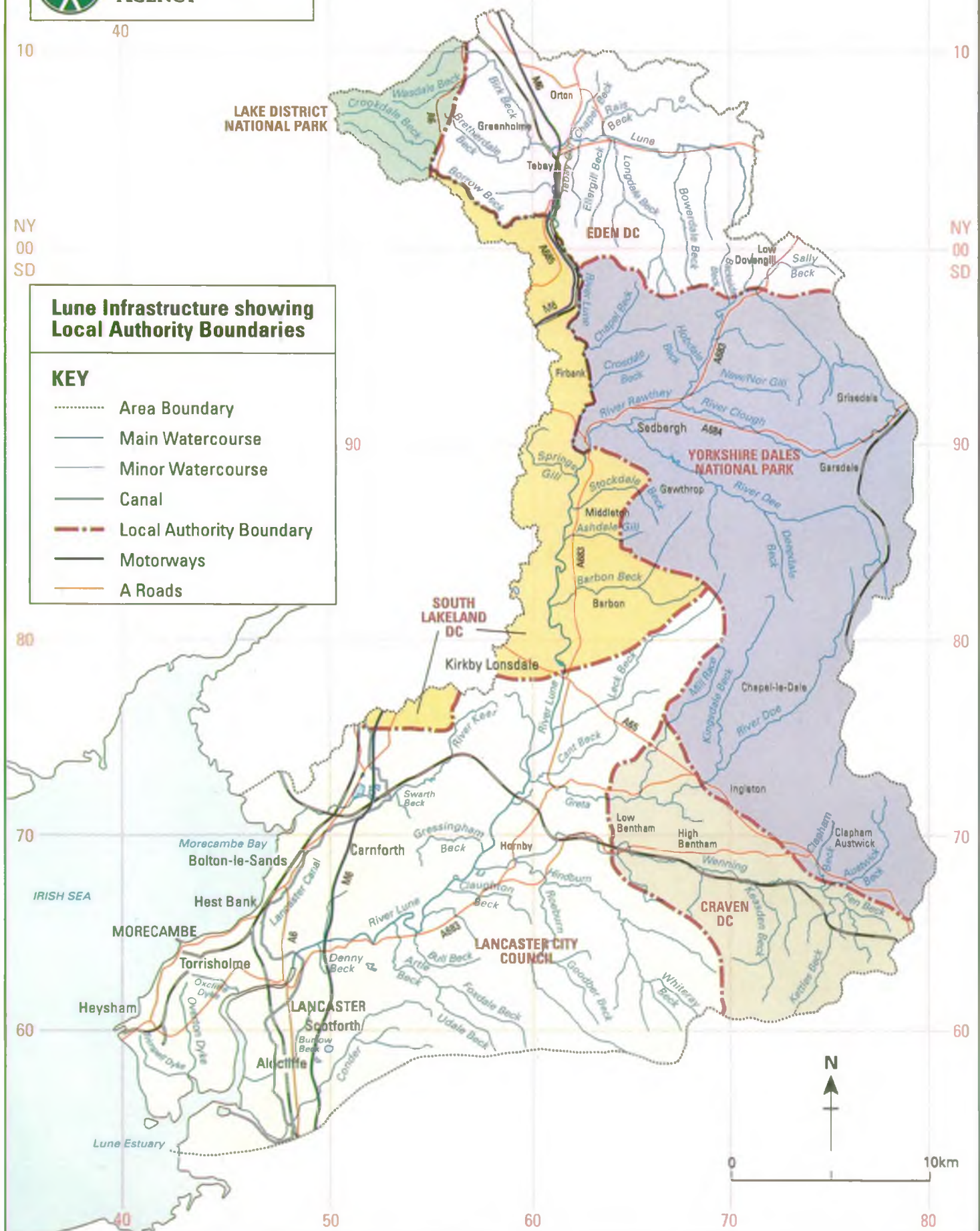


**ENVIRONMENT  
AGENCY**

**Lune Infrastructure showing  
Local Authority Boundaries**

**KEY**

- ..... Area Boundary
- Main Watercourse
- Minor Watercourse
- Canal
- Local Authority Boundary
- Motorways
- A Roads







## Water Quality - Rivers and Canals - General Quality Assessment 1996

GQA	Chemical 1994 - 1996	Classification	Biological 1995	Classification
	Km	%	Km	%
Very Good	190.2	52.3	141.4	45.2
Good	102.0	28.0	121.2	38.8
Fairly Good	64.0	17.6	30.4	9.7
Fair	5.3	1.5	18.5	5.9
Poor	2.4	0.7	0.0	0.0
Bad	0.0	0.0	1.1	0.4
Total	363.9	100	312.6	100

If you wish to discuss any matters arising from this plan,  
please contact:

The Environment Planner  
The Environment Agency  
Central Area Office  
PO Box 519  
South Preston  
PR5 8GD  
Tel: (01772) 339882 ext. 4005  
Fax: (01772) 627730

Jeremy Warburton

Info. Centre  
Rivonhouse  
Waterhole Drive  
Astic West  
Bristol

## The Environment Agency's Vision for the Lune Area

The Agency recognises that the Lune Area encompasses many high quality environmental areas such as Morecambe Bay SSSI and SPA.

In view of the above the vision for the Lune Area in 25 years, providing an improved local environment is:

We aim to prevent pollution of the environment, harm to human health and serious detriment to amenity. Controlled waste in the area will be managed in accordance with the principles of sustainability. In particular by reducing the amount of waste produced, making the best use of waste that is produced and choosing waste management practices which minimise the risk of immediate and future environmental pollution and harm to human health. Even in a good quality environment there is room for improvement.

An area where clean up of contaminated land has taken place and the land returned to use for the benefit of local communities.

An area where water quantity, quality and riparian habitat, specifically in the Rivers Lune, Conder and Keer, have been improved and maintained to a consistent, high standard in which salmonid and coarse fish can live and breed successfully.

An area where the watercourses such as main Rivers Lune, Keer and Wenning and coastal waters particularly adjacent to Morecambe Bay are both attractive and clean environments which can support a wide range of recreational and amenity uses. These uses can include, amongst others, angling, bathing and water sports and also walking within continuous green corridors. The ecological value of the area having been improved, landscape quality conserved and restored and the cultural heritage, including archaeological sites, such as the Roman forts at Lancaster and Barrow and Devils Bridge at Kirkby Lonsdale, protected for future generations to appreciate.

An area which achieves the right balance between the needs of the environment and those of abstractors, allowing the best use of resources, while protecting the environment. No shortage of future water supplies and wise use of water.

An area where the risk of flooding to property, for example in Bolton-le- Sands and around Aldcliffe, is minimised and the design of flood defences e.g. at Sedbergh on the River Rawthey accommodates for and seeks to enhance where possible species, their habitats and access to the watercourse for recreational pursuits.

An area where education has raised awareness of the ecological features such as wildlife habitats on the Lune Estuary and also landscape, archaeological and historic features. Their protection, promotion and enhancement are endorsed by legislation and has been adopted as policy through local development planning process.

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## FOREWORD

The Lune Local Environment Agency Plan (LEAP) is a significant step forward in achieving the Agency's vision for the future improvement and integrated management of the area. The plan has been produced following extensive consultation.

However, the Action Plan only represents the beginning. Through collaboration and commitment we will turn these words into reality and secure real and continuing environmental improvements.



P C GREIFENBERG  
AREA MANAGER  
CENTRAL

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## Executive Summary

The Lune LEAP area encompasses the Local Authorities of Lancaster, Craven, South Lakeland and Eden. In addition, it also covers parts of the National Parks of the Lake District and Yorkshire Dales (See Map 1). Within the catchment there are diverse ranges of recreational and economic activities, encompassing fishing, canoeing, cycling, fell walking and potholing in addition to the importance of tourism and farming to the local economy.

At the consultation stage for the Lune LEAP environmental issues within the area were set out. These issues have been discussed at both local consultation surgeries and by correspondence with interested organisations and individuals. Resulting from the consultation process amendments were made to the accompanying text of some issues and resultant actions proposed. The issues and actions amended, reflecting consultation responses, are outlined in the Review of the Consultation Process.

The following issues have been developed for action in this plan:

- The protection and restoration of existing and degraded important habitat types and their associated species, to protect and increase bio-diversity and landscape quality.
- The susceptibility of locations at risk of flooding within the Lune area.
- Low flow conditions within the catchment adversely affecting wildlife due to historic rights of abstraction.
- Adverse impact of discharges from North West Water (NWW) Ltd Wastewater Treatment Works and sewerage systems on water quality.
- Failure to comply with Water Quality Objectives and impact on water quality due to agricultural activities.
- The adverse impact of contaminated land on the environment.
- Deterioration in water quality due to lack of adequate sewerage / sewage treatment facilities.
- Failure to meet Bathing Water Directive Standards at Morecambe South and Heysham Half Moon Bay beaches.
- The adverse impact of industrial site and trading estate drainage on the environment.
- Reduced runs of the mature salmon and sea trout stock.
- The impact of barriers restricting the distribution of fish in the River Lune area.
- The conflict of interests between different types of recreational users.
- The adverse impacts of flytipping at Oxcliffe Marsh.

The main objective of this action plan is to resolve the issues mentioned by undertaking initiatives, where appropriate with other organisations. Following consultation our preferred options have been translated into actions and costed where possible.

The Consultation Process highlighted concerns of, for example, conflict of interests between different types of recreational users (Issue 12) and proposed actions (such as manual loosening of compacted gravels, Issue 1.5 and identifying areas where potholing is causing a reduction in the base flow Issue 12). These proposed actions have been removed in response to representations received. Issue 8 has been amended to reflect improvements in bathing water quality at Morecambe North, this area having passed the mandatory bathing water standards in 1997 and 1998.

The proposed action, in Issue 11 "installation of fish pass on River Conder" has been dropped.



## 1.0 THE ENVIRONMENT AGENCY

### Our Vision is:

- a better environment in England and Wales for present and future generations.

### 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 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 everything we do.

The Environment Agency has a wide range of duties and powers relating to different aspects of environmental management. These powers together with those areas where we have an interest, but can not directly react to are described in more detail in Appendices 1 and 2. We are required and guided by government to use these duties and powers in order to help achieve the objective of sustainable development. The Brundtland Commission defined sustainable development "as development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

At the heart of sustainable development is the integration of human needs and the environment within which we live. Indeed the creation of the Agency itself was in part recognition of the need to take a more integrated and longer-term view of environmental management at a national level. We therefore have to reflect this in the way we work and in the decisions we make.

Taking a long-term perspective requires us to anticipate risks and recognise particularly where impacts on the environment may cause long-term problems, or when the effects can not be reversed. We must develop our role to raise awareness and inform society as a whole, as well as carrying out our prevention and enforcement activities, to continue to protect and enhance the environment.

One of the key outcomes of the United Nations "Earth Summit" held in Rio de Janeiro in 1992 was agreement by governments that, in order to solve global environmental problems, local action is crucial: we must all therefore think globally but act locally.

## **1.1 Local Environment Agency Plans**

We for our part at the local level are committed to a programme of Local Environment Agency Plans (LEAPs) in order to produce a "local agenda" of integrated action for environmental improvement. LEAPs are intended to allow us to direct and deploy our resources and efforts to best effect to benefit the local environment.

LEAPs help us to identify and assess, prioritise and solve local environmental issues related to our duties and responsibilities, taking into account the views of our local customers. The outcome of the process is a 5-year local programme of integrated action for environmental improvement. The objective being to optimise benefit for the local environment.

The LEAP process involves several stages as outlined below.

### **LEAP Consultation Draft**

The publication of the LEAP Consultation Draft marks the start of a three-month period of formal consultation enabling organisations and the general public to work with us in planning the future of the local environment.

### **LEAP Action Plan**

The Action Plan is prepared once we have considered the comments received during the consultation process. The Action Plan will be monitored over the next five years. It identifies and consolidates the preferred options in the Consultation Report and details the nature of actions required, with named third parties or partners where appropriate. The plan also highlights the costs to be incurred, both internal and external, where known, within agreed timescales. The Agency will be seeking commitment to planned actions by others wherever possible and will incorporate the Actions into our annual business plans.

### **Annual Review**

Progress on the Action Plan will be monitored and normally reported annually, by means of a review document. The Annual Review will be publicly available. This will ensure that all timetabled Actions are monitored to measure their success in terms of being realistic and programmable. The review document will comprise the following information:

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

Where the statutory or primary responsibility is with another organisation e.g. Local Authority, this will be referenced either in the issues, text or through the partnership section. Update requirements will obviously depend on the particular needs of the area. Every five years we will carry out a major review. Key organisations and individuals forwarding comments will receive an annual review paper to provide updated plan progress.

### **Constraints**

To ensure improvements and overcome the problems in the area, partnership with other organisations and individuals will be necessary. Where the Agency does not have the powers to make improvements it will use its influence, to gain environmental improvements, wherever possible

## 1.2 LEAPs and Other Plans

The Agency shares the regulation and management of the environment with others. Local Environment Agency Plans intend to complement and integrate with other organisation's plans such as Local Waste Plans, Local Air Quality Management Plans, Development Plans, Local Agenda 21 Action Plans and Local Bio-diversity Action Plans.

Where actions are needed to overcome identified issues, in some cases this support will include the support and delivery by other organisations or individuals. The Environment Agency is a statutory consultee on certain plans like Development Plans and in our Protection Through Partnership section, planning guidance statements are included to set out the approach we feel is necessary to help reduce or prevent future problems in the plan area.

The National Waste Strategy sets out targets for the reduction and use of waste, but the Agency has no powers to require businesses or the general public to reduce waste or use more sustainable methods of waste management. Similarly, the National Air Quality Strategy sets out targets that need to be met, but the Agency has no powers to regulate emissions from motor vehicles, the main cause of air pollution. However, through awareness raising the Agency can encourage and promote the means by which we can achieve these targets in accordance with our environmental strategy.

## 1.3 The LEAP Process for the Lune Area.

### The Local Environment Agency Plan Consultation Report

The Consultation Report for the Lune LEAP area was published in February 1998. The report included a vision, details of the area, issues to be addressed and options for their resolution, as identified by the Agency. The Consultation Report was circulated to a wide variety of individuals and groups having an interest in the Lune area, to allow them to comment on the issues and options raised.

The Agency is also required by law to consult committees on all aspects of its work in order to ensure openness and accountability. The North West Region is served by three statutory committees:

- Regional Environment Protection Advisory Committee (REPAC)
- Regional Flood Defence Committee (RFDC)
- Regional Fisheries Advisory Committee (RFAC)

The Central Area of the North West Region is served by its own advisory, non-statutory, Area Environment Group (AEG). Membership consists of 21 local people who live and work in the area and who represent a wide range of interests and act as a link between the local community, the Agency and its statutory committees. These include Local Authorities, industries, agriculture, conservation, fishing, amenity and recreational interests. This group advises the Agency on LEAPs, while a specific sub-group has allowed a more detailed input into the Lune LEAP.

Where the statutory or primary responsibility is with another organisation e.g. Local Authority, this will be referenced either in the issues, text or through the partnership section. Update requirements will obviously depend on the particular needs of the area. However, updates to the LEAP will normally be undertaken every five years. Key organisations and individuals forwarding comments will receive an annual review paper to provide updated action plan progress.



## 1.4 Bio-diversity

"Bio-diversity is all living things, from the tiny garden ant to the giant redwood tree. You will find bio-diversity everywhere, in window boxes and wild woods, roadsides and rain forests, snow fields and sea shore."

*Bio-diversity: The UK Steering Group Report 1995*

The Bio-diversity Convention, signed by the UK Government at the Rio "Earth Summit" in 1992, aims to ensure that the full range of animal and plant species are conserved. In 1994, the UK Government published its UK Bio-diversity Action Plan as a framework document laying out the government's proposals for protecting bio-diversity in the UK. Through this plan, a UK Steering Group was established to develop targets for rare and vulnerable habitats and species and provide guidance at a local level.

The Environment Agency has significant responsibilities regarding implementation of the UK Bio-diversity Action Plan and will be developing targets for species and habitats of conservation concern. Key species for the Lune Area include native crayfish, migratory salmon, sea trout, wading birds including redshank and curlew.

Local Bio-diversity Action Plans (LBAPs) are seen as an essential method through which the UK targets can be achieved, by translating them into effective action at a local level. LEAPs are seen as a key mechanism for identifying the actions the Agency needs to take at a local level to deliver its contribution towards individual species and habitat action plans. Our operational and regulatory activities will take account of these species and habitats in fulfilment of our commitment to bio-diversity. Additional work will be dependent on available resources and will involve collaborative work with other organisations.



## **2. The Lune LEAP Area**

The Lune LEAP area encompasses the Local Authorities of Lancaster, Craven, South Lakeland and Eden. In addition, it also covers parts of the National Parks of the Lake District and Yorkshire Dales. The River Lune and its tributaries drain an area of 1223 square kilometres. It is one of the largest rivers in the North West of England. Rising at Ravenstonedale Common in Cumbria, it flows west to Tebay before turning south towards its confluence with the Irish Sea west of Lancaster. A total distance of 105 kilometres.

The Lune area is relatively undeveloped, which is reflected in its vast range of wildlife. There are many designations for specific species and habitats. The Lune together with Morecambe Bay forms an area not only of local significance, but also of regional, national and international importance.

Within the area there are a diverse range of recreational and economic activities encompassing fishing, canoeing, cycling, fell walking and pot holing in addition to the importance of tourism and farming to the local economy. The tourist centres in the lowland areas focus around the historic City of Lancaster, the beaches at Morecambe and more rural areas, for example Kirkby Lonsdale. The Lune catchment also offers facilities for recreational pursuits such as canoeing, walking, cycling trails and is also popular for fishing.

The catchment supports rod and line and net fisheries for migratory salmon and sea trout, net fisheries for eels and elvers. There is also recreational fishery for coarse and brown trout. Around the Lune Estuary and Morecambe Bay there are commercial net fisheries for species such as Mullet and Bass. Lancaster Canal offers the opportunity for both coarse fishing and boating. The canal has the designation as a County Biological Heritage Site and also has notable structures of landscape and heritage value, such as the River Lune Aqueduct at Lancaster.

Within the Lune LEAP Area there are a diverse range of uses, activities and physical resources, which have a bearing on the work of the Agency.

### **Water Quality**

Water Quality plays a significant role in determining a variety of uses that the Lune LEAP can support. The Agency has the responsibility of setting water quality standards and assessing current water quality against these standards. The objectives are in three parts:

- Short to medium-term River Ecosystem Water Quality Objectives.
- Long - term River Ecosystem Water Quality Objectives.
- EC Directive Water Quality Objectives.

### **Air Quality**

Climate change is an issue that has no boundaries and is truly international in scale. Within a local planning document such as a LEAP it can only be addressed by looking at local contributions to a global problem. Addressing climate change in the UK will require action by everyone, from the Department of the Environment, Transport and the Regions (DETR), through the Local Authorities, to business and every member of society. As part of its overall aim of contributing to sustainable development, the Agency is addressing climate change as part of its work. The Agency has set this out in its Environmental Strategy, which includes the following objectives:

- help to ensure that the Government's greenhouse gas emission targets are met;
- develop methods to improve our estimates of the emissions of methane into the atmosphere from landfill sites;
- promote tax incentives to reduce energy production from burning fossil fuels;
- set an example by reducing our own energy and fossil fuel consumption;

- invest in research to predict the likely effects of climate change on the environment of England and Wales, and how to manage them;
- provide improved mapping of low-lying coastal areas at risk from sea-level changes;
- develop techniques to identify changes in plant life, using remote sensing techniques, to measure the effects of different weather patterns in sensitive areas and
- contribute our knowledge and expertise to national and international forums dealing with climate change.

Much of the Agency's existing work and the proposals contained within this plan will help to achieve some of these objectives. For example, we are working to reduce our vehicle use and to improve the efficiency of our vehicles to reduce releases of the gasses that contribute to climate change. Agency staff in the area have also been looking at their own impacts by taking part in a one year project called Action at Home, which is part of the Global Action Plan. This was a voluntary scheme aimed to encourage positive action for the environment, by encouraging people to change their everyday activities.

We have not, however, identified any specific local issues relating to addressing climate change and therefore there are no issues in this action plan. As previously stated many of the issues raised in this LEAP Action Plan have an impact on climate change, but if you can think of specific issues in this area please let us know.

Responsibility for the overall management of air quality rests with local authorities. Monitoring of Air Quality Stations, located within the Lune LEAP, is the responsibility of Lancaster City Council. These are:

- 4 sites in Lancaster - for Sulphur Dioxide, Nitrogen Dioxide and Ozone.
- 2 sites in Morecambe - for Nitrogen Dioxide.

Further details of air quality monitoring can be obtained by contacting Lancaster City Council.

### **Industry and Integrated Pollution Control**

Operators who wish to carry out an IPC Part A process must first seek prior permission from the Agency.

Part A Authorised IPC processes within the Lune LEAP area are as follows:

- Angus Fire Armour - Target date for review of authorisation 31/12/98.
- Avocado Research Chemicals, Heysham - Target date for review of authorisation 31/5/99.
- British Gas Transco, Carnforth - Review of authorisation currently underway to take account of the proposed installation of a third compressor.
- Courtaulds Chemicals, Nelson Acetate Works, Lancaster - Target date for review of authorisation 1/5/00.
- Joseph Storey and Company Ltd, Lancaster - Target date for review of authorisation 31/1/99.
- Lancaster Basalt Ltd, Lancaster - Target date for review of authorisation 1/5/00.
- Lancaster Synthesis Ltd, White Lund, Morecambe - Target date for review of authorisation 1/3/98
- Solrec Ltd, Heysham - Target date for review of authorisation 31/1/98.

### **Nuclear Industry - Radioactive Substances**

Radioactive substances are present in the environment, resulting both from natural sources and technological developments. The uncontrollable use of radioactivity from technological developments can be hazardous and consequently, it is important to the future of our environment that this additional use of radioactivity is limited and controlled. The Agency's objective is to regulate the use of radioactive substances so that radiation doses within the environment are "As Low As Reasonably Achievable" (ALARA). The commitment to ALARA is carried out through registration, authorisation, inspection and enforcement arrangements.

The range of premises using radioactivity is large and includes hospitals, universities, research establishments and various components of the nuclear industry.

There are two nuclear power stations in the area which are owned and operated by Nuclear Electric Ltd. The Heysham 1 & 2 sites are authorised by the Agency to dispose of radioactive wastes generated as a result of operating the stations. The stations also have a number of consents for the discharge of non-radioactive liquid effluent to Morecambe Bay.

## **Effluent Disposal**

### **Sewage**

The Wastewater Treatment Works within the Lune LEAP area vary in size, with the smallest WwTW treating a population equivalent of less than 250 and the largest WwTW at Lancaster a population equivalent of more than 130,000.

The Lancaster WwTW at Stodday presently provides primary treatment only for wastewater generated in Lancaster and Heysham and discharges to the Lune Estuary around high water. A new WwTW has recently been constructed at Middleton to provide secondary treatment for sewage generated in the Morecambe area which was formerly discharged twice daily, after receiving fine screening only, from the Schola Green pumping station into Morecambe Bay.

Several other WwTWs have been identified as having a significant impact on water quality. The WwTW at High Bentham is undersized and of poor design. A new works is being built to provide better treatment of wastewater prior to its discharge to the River Wenning. This scheme should be completed by October 1998.

At Glasson sewage is presently discharged crude at two locations into the Lune Estuary near to Glasson Docks. Regular complaints are received about these poor quality discharges and their location in high amenity areas used for a wide range of recreational activities.

Another major contributory factor to poor water quality is discharges from septic tanks in the Green Lane area affecting Oxcliffe Dyke. Other watercourses in Tunstall, Melling, Cantsfield, Leck, Cowan Bridge, Barbon, Gressingham Beck, Clapham Station, Caton Green and Conder Green, are affected to a lesser extent.

### **Industrial**

There are a relatively few discharges of industrial trade effluent direct to watercourse within the Lune LEAP area. Industrial discharges are from:

- Angus Fire Armour to the River Wenning.
- Butterley Bricks to tributaries of the River Lune at Claughton.
- Quarries at Ingleton, Shap, Dry Rigg near Austwick and Tilcon at Carnforth

### **Intermittent Discharges - Combined Sewerage Systems**

There are approximately 60 combined sewer overflows in the area, of these around 30 are unsatisfactory. NWW are presently implementing a seven-stage sewerage rehabilitation scheme to upgrade the Lancaster City sewerage system. The Agency is involved in detailed discussions over this scheme.

### **Separate Sewerage Systems**

In 1996 NWW completed a three-year project aimed at resolving the most significant contaminated surface water (CSW) discharges. Several new problems have since been found causing localised water quality problems in Burrow Beck, Artle Beck and the River Lune in Kirkby Lonsdale.

### **Industrial Estates**

There are a number of industrial estates within the Lune area and drainage systems on these estates are liable to contamination, which potentially can have an impact on the receiving water. The following estates are examples of contaminated discharges occurring:



- Vickers and White Lund estates near Lancaster contribute to poor water quality in Oxcliffe Dyke.
- Heysham Industrial Estate contamination to Trimpell Dyke causing poor water quality.
- Smaller estates at Tebay and at White Cross in Lancaster causing problems in Old Tebay stream and the Lancaster Canal respectively

### Agriculture

In the Upper Lune area the predominant agricultural feature is sheep farming, with more dairy farming found in the Keer catchment and in the middle and lower parts of the Lune catchment.

Incidents from livestock farms including releases of silage, slurry and other farm waste can cause serious pollution problems. Agency pollution staffs are proactive in undertaking surveys and farm visits to identify sources of farm pollution. Generally there has been a good degree of co-operation from the farming community with many farmers carrying out significant improvements to their facilities in recent years.

A River Keer rehabilitation scheme has recently been launched and farm drainage problems within the Keer catchment will be investigated as part of this project.

### Fisheries

#### Salmonid Fishery

In February 1998 the Agency published the Lune Salmon Action Plan setting out objectives for the management of salmon fisheries. The Salmon Action Plan can be considered as a sub-set of the Lune LEAP. Some of the major issues addressed in the plan are:

- The impact of farming practices.
- Possible over-exploitation of the stocks by rods, nets and high seas fisheries.
- Reduced juvenile production caused by insufficient habitat and bird predation.
- The spring salmon stock.
- The potential impact of potholers on river flows.
- The ingress of rainbow trout into the river.
- The potential impact of man-made structures on river ecology.

The Agency operates sites for monitoring the populations of adult salmon and sea trout entering into the River Lune on their spawning migrations; at Forge Weir, Caton and at Broadrairie Weir, Killington. Each site has an automatic fish counter and a trap. The information gained from these allows the Agency to determine the size of the salmon and sea trout "run" each year (the number of fish that migrates in from the sea to spawn).

There are a number of problems that may be affecting different life stages of the salmon and trout in the River Lune leading to a reduction in potential number of fish present. The exploitation (number of fish caught and killed) by the rods and nets may be too high, man made barriers may impede fish passage upstream or there may be a problem with fish eating birds.

#### Coarse Fishery

The River Lune supports populations of coarse fish species in its lower reaches. These consist of bream, dace, roach, gudgeon, perch and eels but these have been in decline since the 1970's. Successful spawning of these species is erratic and some populations appear to be maintained through stocking alone. The Agency will work with local interested parties to rehabilitate spawning areas for coarse fish in the lower parts of the river.



## Recreation

There are diverse ranges of opportunities for recreation in the area. Recreational uses can and do give rise to conflict of interest between different types of users. Motor boats in the Estuary disturbing bird watchers, being one example. The Agency's approach to this type of conflict is to attempt to achieve resolution by education of and liaison with the user groups and by encouraging good codes of practice where possible.

The main recreational features within the Lune area are as follows:

- Fell walking in the Upper Valley.
- The Lune Valley ramble along the banks from Lancaster to Kirkby Lonsdale.
- A coastal footpath running through the catchment.
- Lancaster to Bull Beck cycle way.
- Canoeing, both for touring and white water runs.
- Pot holing in the limestone area, centring on the village of Ingleton.
- A diving club based at Over Kellet Quarry.
- Sailing clubs based on the River Lune and at Morecambe.
- Bathing at Morecambe, with skiing, power boating and jet skis at Morecambe Bay.
- Training of novice divers by, on the River Lune, Kendal BSAC at Devils Bridge. Many canoe clubs also use the river at this location for training beginner canoeists.

In addition to the above Morecambe Tourism have indicated that phase five of the coastal defence works, completed June 1998 and fully operational early October 1998, a large additional slipway will be open at the Green Street area of Morecambe. This may result in jet skiers and power-boat owners visiting the resort.

The Agency will work in collaboration with landowners and local government to improve environmentally sustainable access routes along the river corridor for a variety of user groups.

## Wildlife, Landscape and Heritage

The River Lune rises in the north east of the area and flows west. Significant features of the area include the Howgill Fells Character Area to the south. These fells are composed of acidic sandstones and siltstones which outcrops in places. Within the Howgill Fells and Birkbeck Fells area there are many sites designated as Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI). This upland area is also important as a breeding area for many wading birds, including redshank and curlew. Many fast flowing streams with deeply incised valleys flow from this area into the Lune Valley.

To the north side of the valley is the Orton Fells Character Area, which is composed of limestone. Woodland is sparse and trees are mainly found on the lower slopes in proximity to villages and farmhouses. Fields are divided by dry stone walls that use the stone native to that area

Over three-quarters of the area has some sort of designation for its beauty. This includes two national parks (the Lake District and the Yorkshire Dales) and two Areas of Outstanding Natural Beauty (AONB) (Forest of Bowland and Arncliffe/Silverdale). Other areas are designated as areas of county landscape value.

Within the Lune area there are many outcrops, scars, pavements, gorges and one of the most extensive cave systems in Europe. The cave systems often take much of the surface waters, leaving rivers only in the bottom of the dales or where the rocks are less permeable.

The area has never been densely populated but nevertheless has a long history of settlement. There are numerous prehistoric enclosures in the area, the majority of which are on the fells. Significant features are:

- Roman forts at Lancaster and Burrow.
- Old Roman road on the lower slopes of the eastern valley side.
- Norman castle at Lancaster and numerous motte and bailey structures along the length of the river at Halton, Hornby, Arkholme and Kirkby Lonsdale.
- Old bridges such as Devils Bridge at Kirkby Lonsdale.

### **Water Resources**

#### **Public Water Supply**

The surface waters of the Lune catchment are primarily used for public water supply mainly for the Lancaster area, the Fylde and North Preston areas. The supply of potable water is the joint responsibility of North West Water Ltd and Yorkshire Water.

The major water supply network in the Lune/Wyre catchment is the Lancashire Conjunctive Use Scheme (LCUS), which was commissioned in the mid/late 1970's .

The LCUS comprises a number of diverse sources, both within and outside the Lune catchment as follows:

- Stocks Reservoir (Ribbles catchment)
- Barnacre Reservoir, with associated intakes.
- River abstraction from the River Wyre at Garstang.
- River abstraction from the River Lune transfer to River Wyre.
- Groundwater abstraction from the Fylde aquifer.

There are residual flow conditions on both the Lune and Wyre to protect the rivers. The abstraction licence from the River Lune specifies that abstraction will not take place when the flow in the Lune falls below 365 Ml/d. This is measured at Skerton Weir in Lancaster.

#### **Surface Water Abstractions (non-public Water Supply)**

There is limited abstraction from the River Lune and its tributaries for industry, agriculture and fish farming purposes.

There is one major tidal abstraction from Heysham Dock by Nuclear Electric for industrial - cooling purposes at Heysham Nuclear Power Stations.

#### **Groundwater Abstractions.**

The only major abstractions from groundwater are for industrial purposes in the Lancaster area adjacent to the River Lune.

## **Waste Management**

The significant Waste Sites within the Lune LEAP Area are:

### **Solrec Ltd Heysham**

The site for processing receives approximately 50,000 tonnes per annum of wastes. The waste mainly consists of solvents from the manufacture, supply and use of paints, inks, pharmaceutical and fine chemicals and the solvent is either recovered for re-use or processed into a secondary liquid fuel which is burned in a cement kiln.

### **Salt Ayre Landfill**

Main types of special waste deposited on this site are:

- asbestos
- distillation residues
- plastisol waste stream.

### **Imported Waste**

The county of Lancashire has three active ports, namely Heysham, Fleetwood and Glasson Dock and all have been known to handle waste. The ports at Heysham and Glasson Dock shall be monitored on a regular basis to ensure that waste is not stored on site for more than 48 hours, in accordance with Agency policy. Furthermore, the Agency will not encourage the use of Glasson Dock for the importation of hazardous / special waste.

## **Area Drainage, Flooding and Flood Alleviation**

There are fifty river tributaries under the Agency's main river responsibility, contributing flows at various locations. The major ones are the Rawthey and Wenning. The river is tidal to Skerton Weir, though exceptionally high tides do overtop the structure.

Apart from the urban conurbation around Lancaster, the area is mainly rural with small towns and villages. The lower and middle reaches are prone to flooding during the winter months affecting mainly agricultural land forming the natural floodplain. The exception to the seasonal pattern being the Wray disaster, which happened in August 1967.

Lancaster and Morecambe are also at risk from tidal flooding, when strong westerly winds off the Irish Sea combine with the higher astronomic tides. Lancaster City Council has completed the first stage of a project to improve the protection of riverside properties at St.George's Quay in Lancaster, the second phase is programmed to be completed before the year 2000. Construction of defences along the sea front at Morecambe is also under progress.

There are three surveys scheduled within the catchment:

- The Morecambe Bay Coastline Survey
- Morecambe Coastal Frontage Survey
- Length of the river from the M6 Motorway downstream.

The first two surveys are programmed within the recently updated Medium Term Plan, between 1998 and 2003. The third survey falls outside of this time period.

### **Flood Warning**

The Agency takes the lead in the dissemination of Flood Warnings, but other organisations including the Local Authorities and the Police are also involved.

There are three Formal Flood Risk Zones within the area, identified by the Agency:

- Hornby, on the River Wenning.
- Skerton in Lancaster on the River Lune.
- The Castle Ward area of Lancaster on the River Lune.

The Agency provides a Flood Call Message Service, which is a local rate telephone number continually updated to provide the public with up to date Flood Warning Information. The telephone number is 0645 881188.



### 3. Review of Consultation Process

This section reviews the consultation process and provides a summary of the results of consultation.

Pre-Consultation took place in May 1997 and generated a good response from various organisations. This was in addition to a number of meetings between Agency functional staffs and representatives from other organisations. This early consultation provided an indication for Agency staff as to the type of issues that should be addressed in the Lune LEAP area.

The Lune LEAP Consultation Report was publicly launched in March 1998 marking the start of the formal three-month consultation period. Approximately 300 people who have an interest in the Lune LEAP area were invited to attend the launch. The launch consisted of two consultative surgeries over two days at locations in Kirkby Lonsdale and Lancaster. The surgeries enabled us to meet a broad representation of those organisations and individuals having an interest in environmental issues within the Lune LEAP area.

The Consultation Process elicited 52 written responses to the Consultation Report. The individuals and organisations are listed in Appendix 3.

In general the comments received were supportive of the concept of LEAPs and the Lune LEAP in particular. Comments on the issues and options raised were received and these have been considered in the production of this Action Plan. The significant changes in this action plan include rewriting of Issues 1,2, 5,12 and 15 and also removal of the proposed action "identifying areas where potholing is causing a reduction in the base flow". It was decided to remove this proposed action from the plan until further investigation has been undertaken to establish whether or not potholing is causing reduction in the base flow.

The Consultation Report proposed short-to-medium term and long-term River Quality Objectives. Short-to-medium term objectives reflect the improvements which it is anticipated can be brought about over the 5-year lifetime of the Action Plan. Long-term objectives reflect the Agency's vision for the Lune LEAP area. These objectives will be used for longer term planning. No changes have been made to these objectives following the public consultation exercise. Please refer to the table on pages 99 to 101 of the Consultation Report for full details of these confirmed RQOs.

Resulting from consultation responses there is now reference made to Bio-diversity, to reflect the issues arising from the 1992 Earth Summit in Rio.



The breakdown of responses for each issue is as follows:

Issue No.	Number of Responses	Issue No.	Number of Responses
1.1	11	4.4	1
1.2	3	5	6
1.3	2	6	1
1.4	2	7	3
1.5	2	8	4
2	5	9	1
3	2	10	7
4	1	11	3
4.1	3	12	10
4.2	1	13	1
4.3	0	14	0
		15	5

These figures include responses to more than one issue within the same correspondence.

**3.1 Further Action**

New partnerships have been developed following the surgeries with key groups and interested individuals. The promotion of the issues in the Consultation Report have identified activities which forms the basis of the action plan for 1998 - 2003.

## ACTION PLANS

### Implementation

Implementation of this action plan is based on the 15 issues set out and discussed in the Consultation Report. Resolution of these issues will result in real improvements in the area.

### Issues

The issues are presented with a number of actions, a target timetable and the identification of responsible parties. Where possible, costs have been outlined for the period covered by the plan. This does not necessarily reflect the total cost of the schemes and is sometimes a projected estimate to be more accurately costed later. This document recognises current priorities, both within the Agency and other organisations. The issues are not numbered in any order of priority or importance.

### List of Abbreviations used in tables

The Agency	-	Environment Agency
LA	-	Local Authority
RO	-	Riparian Owner
MAFF	-	Ministry of Agriculture, Fisheries and Food
NWW	-	North West Water Ltd
RSPB	-	Royal Society for the Protection of Birds
BW	-	British Waterways
BCU	-	British Canoeing Union
NFU	-	National Farmers Union
ADAS	-	Agricultural Development Advisory Service Consulting Ltd
EN	-	English Nature
WDA	-	Waste Disposal Authority
CLA	-	Country Landowners Association
FWAG	-	Farming Wildlife Advisory Group
LWT	-	Lancashire Wildlife Trust
CC	-	Countryside Commission
AMP	-	Asset Management Plan
CWT	-	Cumbria Wildlife Trust
YDNP	-	Yorkshire Dales National Park
FRCA	-	The Farming and Rural Conservation Agency
AC	-	Angling Club
LCC	-	Lancashire County Council
UWWTD	-	Urban Wastewater Treatment Directive

NB: Organisations listed within the responsibility column are not shown in any order of priority.

## Key to estimated costs

- > Greater than
- < Less than
- Action in the year indicated

R Recurring non-additional cost to annual budgetary provision.

U Unknown cost at this time.

U(i) Individual costs will be identified and agreed during negotiations.

U(ii) Capital costs will be identified and agreed during negotiations.

\* Only Agency costs (other than normal working costs) identified here. Costs to other organisations unknown.

K £, 000

**Issue 1: The protection and restoration of existing and degraded important habitat types and their associated species, to protect and increase bio-diversity and landscape quality.**

**1.1 Increase tree and bankside vegetation to improve habitat and reduce accelerated levels of erosion.**

To tackle accelerated erosion we propose to increase bankside vegetation through a variety of measures:-

The Lune Tree Strategy, to be produced by the Agency, in consultation with the Forestry Authority, County Forestry Officer and LCC's "Strategy for Forestry in Lancashire", Cumbria County Council and North Yorkshire County Council Forestry Officers, Borough Council Arboricultural / Woodland Officers, Wildlife Trusts, English Nature and the Countryside Commission. The aim is to establish those areas of the catchment which have the greatest need or potential, so that areas can be prioritised for tree planting and utilise the Lune Tree Strategy to encourage riparian landowners to plant trees through grant aided national schemes.

The Sustainable Rivers Management Project has now been in progress for a year. Demonstration stretches have been set up on Easington Brook in the Ribble catchment to obtain scientific data to prove (or disprove) whether vegetated buffer zones actually work. Several evening talks have been held to launch the concept of Sustainable Rivers in Hornby, Sedbergh and Tebay. We hope to have increased numbers of landowners signing-up to stewardship agreements for sustainable riparian management within whole farm schemes.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Increase tree and bankside vegetation to improve habitat.	RO Farmers The Agency FWAG	AC MAFF YDNP YDMT LCC CCC NYCC	£600k	—	—	—	—	—	—
Produce Lune Tree Strategy.	The Agency								
Sustainable Rivers Management Project to promote changing farming practices including the installation of fencing to prevent livestock over-grazing and poaching of banks.	RO Farmers FWAG The Agency		£10 k	—	—	—	—	—	
Control and removal of Japanese Knotweed and other alien invasive species. Eradicate competition with native riparian species.	RO The Agency CWT Sedbergh	YDNP South Lakes District Council LCC Lancaster City Council	£10 k	—	—	—	—	—	



## 1.2 Creation of Otter Habitat

Otters (*Lutra lutra*) are short-listed in the UK Bio-diversity Action Plan and are protected under the Wildlife and Countryside Act 1981. Although otter activity is regularly recorded within the Lune catchment the large scale removal of trees and bankside vegetation and extensive drainage of wetlands has affected otter populations on the River Lune. The creation of suitable habitat is required to ensure any long-term viability of breeding populations of otters within this catchment. Eels are the staple food of the otter. Much more control of eel and elver exploitation is required if otters are to thrive.

The proposed tree planting and increased bankside vegetation (see 1.1) will be of great benefit to otter populations in the future. More short-term initiatives include the creation of otter holts. The Wildlife Trusts, National Park and local conservation groups will have the best knowledge of suitable, quiet sites for holt creation and the Lune Tree Strategy should hopefully indicate suitable tree planting areas to benefit otters.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Promote and support habitat creation initiatives for otters.	LWT CWT The Agency YDNP RO Local Interest Groups		R	—	—	—	—		

## 1.3 Protection of native crayfish populations.

The Lune is an important catchment for native crayfish (*Austropotamobius pallipes*). This species is highlighted in the Department of the Environment, Transport and the Regions (DETR) Bio-diversity Challenge document. Healthy populations exist within the catchment but are under threat from the spread of non-native signal crayfish (*Pacifastacus leniusculus*). This signal crayfish can carry crayfish plague to which the native crayfish is particularly susceptible. In recent years the Rodwell Fishery has been infested with alien crayfish. They are also present in the Pedder Pots Reservoir on the upper reaches of Swarth Beck. A programme of eradication needs to be established to protect the native population.

The "known" areas of signal crayfish within the catchment have been submitted to the National R&D project to research the effectiveness of eradication of signals. To date it is not known whether any of these sites have been selected for this trial.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Protection and management of existing native crayfish populations.	The Agency MAFF		U	—	—	—	—		
National joint R&D project on eradication of non-native species in watercourses	The Agency EN		U(i)						

## 1.4 River Rehabilitation and Management

Lower sections of the River Keer underwent extensive engineering works in the late 1960s. The riverine and bankside habitats of this lower section are very degraded. The rehabilitation project aims to increase habitat variation and flow types and features to improve the stretch for fisheries, wildlife and recreation.

Problems associated with the engineering of rivers occur in many areas covered by this LEAP. Historically a number of artificial reaches have been created, straightening and deepening the existing channels. On the River Wenning below Hornby, immediately above its confluence with the Lune, a large meander was removed. Sediment accumulation on this stretch has led to inundation of the flood plain upstream and the farmer undertaking dredging works.

An artificial reach upstream of Kelleth on the upper Lune has created an unsightly, severely degraded habitat with suspected instability problems downstream. Both Austwick Beck and Clapham Beck have been subject to considerable works in the past and as a result have little or no bank side vegetation and ongoing stabilisation works are required to maintain the status quo. An associated difficulty is the control of the practice of fly tipping, by a number of landowners throughout the catchment, under the guise of erosion control.

Currently the Sustainable Rivers Management Project is focusing on sites with accelerated erosion problems within the Lune, Wyre, Keer and Ribble catchments. Of course any site will be examined and targeted according to its merit.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
River Keer Rehabilitation Project	RO The Agency AC	FWAG FRCA RSPB Local Interest Groups	R	—	—	—	—		
Sustainable Rivers Management Project	RO The Agency FWAG	FRCA AC	£30k p.a.	—	—				

## 1.5 Improving in-river habitat

Over the past 10 years there has been a reduction in the numbers of salmonid fish spawning in some tributaries. This has occurred partly because of a lack of suitable spawning habitat and in some cases to extreme fluctuations in river flows. The maintenance of fish populations is important to support the recreational and commercial fisheries of the Lune and to ensure continuing enjoyment for future generations. The Agency will attempt to increase the effectiveness of existing spawning areas and create new areas where necessary. In particular addressing and resolving fisheries habitat problems in the river should result in a significant increase in fish populations.

There has been a loss of spawning habitat for salmonid and coarse fish. Spawning areas have been lost through compaction, being loose or mobile. There is poor habitat for salmonids and coarse fish fry.

The Agency is seeking to rectify these issues in partnership with angling clubs, farmers and riparian owners and YDNP, by assisting their bid for European funding under the EAGGF Objective 5B Scheme.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Creation of in-river structures.	AC RO The Agency		£46k	—	—	—	—		
Creation of improved coarse fish habitat in the Lower Lune.	AC MoD Farmers RO LCC The Agency		£10k	—	—	—	—		



## Issue 2: Locations at risk of flooding within the Lune area.

There are a number of sites throughout the area, which are susceptible to flooding from watercourses. It should be noted that a number of these sites are under the responsibility of the Local Authority. The main river sites will require further investigation following a prioritisation exercise.

In addition to these, there are a number of locations on the Estuary and coast where a combination of high astronomic tidal surges and strong onshore winds can result in tidal defences being overtopped and property flooded. Locations that are particularly susceptible are at Aldcliffe, Brick Croft, Conder Green, Thurnham Mill and Glasson on the south side of the Estuary and Sunderland Point, Keer Estuary and Teal Bay to the North.

Lancaster City Council has schemes in hand to address similar problems in Morecambe and at St George's Quay in Lancaster.

Non Main River Location	Description of property affected
Shap Wells, un-named watercourse.	House and surrounding land.
Orton, Chapel Beck.	Flooding problems in centre of village.
Old Tebay, small un-named watercourse.	Houses.
Firbank, run off from fells.	Houses and highway
Sedbergh, Settlebeck	Houses and agricultural land.
Millthrop	Highway.
Millbeck.	Farmhouse.
Kirkby Lonsdale.	Houses
Bolton le Sands, Red Bank Dyke.	Flooding of land above railway.
Claughton	Land.
Morecambe.	Generally poor drainage behind embankments leads to isolated flooding problems.
Lancaster, Burrow Beck.	Surrounding land.
Halton Village, Cote Beck	House, Public House, Highway
Carnforth, Back Lane Watercourse	House, Highway, Land.

Main River * Location	Description of property affected
Greenholme, Birk Beck.	Highway.
Newbiggin on Lune, Lune confluence with Bessy Beck.	Houses.
River Dee floodplain	Agricultural land
Dent, Dee floodplain	Agricultural land.
Barbon, Black Beck.	Land
Keerholm	Agricultural land.
Carnforth, Millhead.	River Keer. Houses, commercial premises, sewage pumping station.
Keer above A 6.	Land on left bank.
Greta	Land adjacent to Greta Bridge.
Gressingham, Lune floodplain.	Highway.
Crag Bank, Carnforth, Black Dyke System.	Galley Hall, low lying area liable to tidal flooding.
High Bentham, River Wenning.	Highway and playing field. House close to being affected
Low Lanshaw, Fen Beck.	Low lying area behind flood protection embankment
Galgate, Conder	Property affected

The schemes can only be carried out where benefits exceed the costs and the solution is environmentally acceptable.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Implement development control policy to maintain status quo.	LA The Agency		£24k	—	—	—	—	—	—
Non Main River Consider extending lengths of main river to include sites currently designated non-main.	The Agency		£10k	—	—				
Undertake investigations, identify solutions.	LA MAFF		£105k	—	—	—	—	—	
Main River Undertake investigations, identify solutions and implement works.	The Agency MAFF LA		£105k	—	—	—	—	—	
Tidal Flooding Improvement of existing defences at: Teal Bay - North Morecambe Slyne Sunderland Point Aldcliffe Embankment	The Agency LA Land Owners		£85k	—	—	—	—	—	
Glasson and the Thurnham area.			(included in the above figure)	—	—				



**Issue 3: Low flow conditions within the catchment adversely affecting wildlife due to historic rights of abstraction.**

Historical rights of abstraction of water from the River Conder result in low flows. These historic rights are enjoyed by British Waterways (BW) for maintaining levels in the Glasson branch of the Lancaster Canal, particularly the basin at Glasson. Detrimental effects have been identified in the fauna and flora in the River Conder for several kilometres downstream of the BW point of abstraction.

The Agency is working with BW to identify solutions and policies to reduce or remove the detrimental effect in the River Conder. It is important to reach agreement on abstraction from the River Conder.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	01	FUTURE
	LEAD	OTHER		99	00	01	02	01	
Evaluate effective control of BW abstraction from River Conder.	The Agency		£10k	—	—				
Carry out works to alleviate problem.	The Agency		£20k						_____

## Issue 4: Adverse impact of discharges from North West Water (NWW) Ltd Wastewater Treatment Works and Sewerage Systems on water quality.

### 4.1 Impact of Wastewater Treatment Works

#### River Wenning - High Bentham WwTW

Discharges from High Bentham WwTW contribute to the significant failure to meet the long-term objective of RE1 in the River Wenning due to BOD and ammonia. Public complaints due to poor aesthetics, for example foaming, have also been received. A new WwTW is presently being constructed. This is due to be commissioned by 5th October 1998. The consent for the new WwTW includes an ammonia condition to prevent deterioration in river quality downstream.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Provision of new WwTW providing improved secondary treatment.	NWW		U (Not made available)	—					

#### Lune Estuary - Lancaster (Stodday) WwTW

Wastewater flows generated in Lancaster and Heysham presently receive primary treatment only and are discharged on an ebb tide from the Stodday WwTW to the Lune Estuary. Since the publication of the Consultation Report a consent application was submitted by NWW Ltd in June 1998 in support of a proposed scheme to provide secondary treatment. Completion of this scheme is expected early in the year 2000.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Provision of secondary treatment. Timetabled to be completed by Spring 2000	NWW		U (Not made available)	—	—				

**Constraints:** The proposed scheme is being designed solely to meet the requirements of the UWWTD. The need to control ammonia levels has been identified by the Agency. Discussions are on-going.

Nether Beck/tributary of River Keer - Nether Kellet WwTW & Over Kellet WwTW

The effluents from Nether Kellet WwTW and Over Kellet WwTW presently discharge to very small streams/ditches and cause poor water quality and poor aesthetic conditions. The Agency considers these watercourses to be unsuitable for receiving discharges of sewage effluent and would like to see wastewater generated in these areas transferred to Carnforth WwTW for treatment and discharge to the Keer Estuary

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
A bandonment of Nether Kellet WwTW and Over Kellet WwTW and transfer of flows to Carnforth WwTW for treatment (preferred solution).	NWW		U (Not made available)						
Provision of additional treatment at present sites	NWW		U (Not made available)						

Constraints : Appropriate treatment is required to comply with the UWWTD by 2005. Options are presently under consideration.

4.2 Adverse impact of overflows from combined sewerage systems on water quality.

There are presently around 30 unsatisfactory CSOs requiring improvement out of a total number of around 60 overflows within the Lune LEAP area. These unsatisfactory overflows have been highlighted to North West Water (NWW) Ltd as requiring resolution and as part of the agreed programme of work to be undertaken during the Asset Management Plan AMP2 period, 13 of the unsatisfactory overflows in the Lancaster area should be resolved by the year 2001. The remaining unsatisfactory overflows are under consideration for Asset Management Plan AMP3 period.

Location of unsatisfactory overflows :

Due to the intermittent nature of storm overflow discharges, impacts on receiving waters are not always picked up by routine chemical sampling. In addition many CSOs discharge to minor watercourses which are not routinely monitored by the Agency. The unsatisfactory CSOs within the Lune LEAP area are described below:

- i) 11 unsatisfactory CSOs discharging to the Lune Estuary and /or Overton Dyke in Lancaster City Centre. NWW Ltd plan to address these overflows by March 2000. 2 overflows were improved in 1997, the remainder will be resolved by 1999/2000.
- ii) 5/6 unsatisfactory CSOs discharge to Overton Dyke or Lades Pool or their tributaries in the Overton/Middleton area.
- iii) 3 unsatisfactory CSOs that discharge to the River Lune upstream of Skerton Weir.
- iv) 2/3 unsatisfactory CSOs discharge to the River Keer/ Black Dyke near Carnforth.
- v) 1 unsatisfactory CSO discharges to Morecambe Bay near Hest Bank
- vi) 4 unsatisfactory CSOs discharge to the River Rawthey in Sedbergh.
- vii) 2 unsatisfactory CSOs discharge to Chapel Beck in Orton. These discharges may contribute to the marginal failure to meet the long term objective of RE1 for BOD in this reach.
- viii) 1 unsatisfactory CSO discharges to Galloper Pool near Tebay.
- ix) 2 unsatisfactory CSOs discharges to Artle Beck in Caton.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Ensure resolution of unsatisfactory CSOs within present AMP2 programme. (This will number 8 CSOs in Lancaster City Centre by March 1998 and 3 CSOs by March 2000).	NWW		U (Not made available)	—	—	—			
Review designations for remaining CSOs and prioritise problems to be resolved in AMP3. (This will involve ii to ix above)	NWW The Agency		U	—					
Pursue further improvements to sewerage network to resolve problem of remaining unsatisfactory CSOs	NWW The Agency		U(ii) (Depends on solution)						— *

**Constraints :** \*Exact details of the programme of improvements for AMP3 (2000 - 2005) not yet known.

#### 4.3: Adverse impact of contaminated surface water discharges from separate sewerage systems on water quality.

A list of contaminated surface water discharges from NWW surface water outfalls was produced and forwarded to NWW for rectification. These CSWs were investigated over a three-year period, ending in March 1995, during which time NWW sought to eliminate these sources of pollution. Although the three year project finished some time ago a number of CSWs originally identified are not totally resolved and some wrong connections do still exist. Local Authority environmental health departments are following up some of these.

A number of new CSWs have also recently been identified in the Lune area, although at present it is not clear that the responsibility for these solely rests with NWW. All the CSW problems in the NW region have been jointly re-considered by the Agency and NWW Ltd. An agreed timescale for investigating and improving these CSWs has now been produced. Around 60 of the top priority CSWs are to be investigated over the next 2 years. Outstanding problems, including those listed below will be included in the AMP3 programme.

#### Water quality problems :

i) Three contaminated surface water discharges at Abbeystead Drive, Newlands Avenue and Gressingham Drive in Lancaster cause poor aesthetic conditions in a tributary of Burrow Beck and parts of the top reach of Burrow Beck. These discharges may contribute to the marginal failure to meet the short term and long term objectives of RE2 for this reach.

ii) Contaminated surface water from Kirkby Lonsdale town centre causes localised poor aesthetics at the point of discharge into the River Lune.

iii) Contaminated surface water from Caton discharges to Artle Beck and causes poor aesthetics in the vicinity of the outfall.



ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Resolution of CSW problems by investigating sewer connections and remedying problems found.	NWW Agents Environmental Health The Agency Householders		£1.5 Million to be spent investigating other high priority CSWs in the NW Region over the next 2 years.				*	*	_____*

\* The prioritised AMP 3 programme will not be known until the end of 1998.

#### 4.4 Adverse impact of crude sewage discharges from Glasson and Galgate on water quality.

At present wastewater flows from Glasson village are discharged crude via two outfalls at Fishnet Point and Victoria Hotel into the Lune Estuary close to Glasson Docks. Until recently a further discharge of crude sewage was made at Conder Green into the tidal River Conder from Galgate village and a small number of houses may still be connected up to this outfall. These discharges cause nuisances due to the presence of gross sewage solids in discharges into high amenity areas.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Transfer of flows to Lancaster WwTW for treatment	NWW		U (Not made available)						_____*
or									_____*
Construction of new treatment facilities and extension of existing outfalls.	NWW		U (Not made available)						

**Constraints:** \*Appropriate treatment is required to comply with the UWWTD by 2005. An earlier resolution to the problems will be pursued through the AMP3 prioritisation programme.

## **Issue 5: Failure to comply with Water Quality Objectives and impact on water quality due to agricultural activities.**

Agricultural activity is widespread throughout the Lune area. In the upper Lune area the emphasis is on sheep farming. The emphasis shifts towards dairy farming in the Keer catchment and in the middle and lower parts of the Lune area. There is also some arable farming around Galgate. Farms in certain parts of the area are situated above permeable limestone ground and if spillages or specific problems occur pollution can often be found several kilometres away.

Diffuse run off from agricultural land associated with cultivation, fertilizer usage and slurry spreading can result in pollution and is believed to contribute to a number of failures to comply with water quality objectives.

### **Failures to meet objectives :**

- i) Marginal failure to meet the short-term and long-term objectives of River Ecosystem (RE1) for the upper reach of the River Lune for BOD.
- ii) Marginal failure to meet the short-term and long-term objectives of RE1 for the upper reach of the River Keer for BOD.
- iii) Marginal failure to meet the long-term objective of RE1 in Swarth Beck for BOD.
- iv) Significant and marginal failures to meet the long-term objectives of RE1 in the River Wenning for BOD and ammonia. Discharges from High Bentham WwTW and Bentham fish farm also contribute to these failures.
- v) Significant failure to meet the long-term objective of RE1 in Claughton Beck for BOD and ammonia.
- vi) Significant failure to meet the long-term objective of RE2 in the River Conder for BOD.
- vii) Significant failure to meet the long-term objective of RE1 in Fen Beck for BOD.
- viii) Significant failure to meet the long-term objective of RE1 in Bull Beck for BOD.
- ix) Significant failure to meet the long-term objective of RE1 in Cant Beck due to BOD. Septic tank discharges in Tunstall may be partly responsible for this failure.

Concern has been growing recently over the increased use of synthetic pyrethroids, most notably cypermethrin, as sheep dip chemicals and the potentially harmful effects of these substances on the environment. Increased use of these synthetic pyrethroids has come about because of the concern about the effects of organophosphorus pesticides on the health of farmers involved in sheep dipping. However, synthetic pyrethroids can be up to 100 times more toxic to aquatic organisms than organophosphorus pesticides.

In 1996 significant deterioration in biological quality believed to be due to discharges of sheep dip were detected in Clapham Beck, the upper reaches of the River Wenning and in Deepdale Beck. Cypermethrin was detected in a discharge to Clapham Beck at a concentration that wiped out invertebrates for several kilometres. More recently the upper reaches of the River Conder have similarly been affected. Awareness of the environmental effects of sheep dip are currently being raised through a recently launched campaign.

There are also concerns over drainage from a large mushroom farm to a tributary of the River Conder. Biological monitoring indicates that there are toxic materials present in the discharges from this farm that are having a significant adverse impact on ecology in the receiving watercourses. Investigations and discussions with the owners are presently on going.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Where appropriate carry out intensive surveys and ecological monitoring to identify and quantify inputs, e.g. Rivers Keer, Conder and Fen Beck catchments.	The Agency		U	—					
Continue farm inspections and where necessary carry out farm pollution control campaigns to identify and rectify point sources of farm pollution, e.g. Rivers Keer, Conder, Fen Beck.	The Agency	Farmers MAFF FRCA HSE	U	—					
Promote sustainable /best management practices.			U	—					

## **Issue 6: Adverse impact of contaminated land on the environment.**

There are four particularly significant areas of contaminated land within the Lune LEAP area. These are the former Trimpell site and former ICI fertilizer site, Middleton Business Park which are included in Lancaster City Council's Middleton Community Wood proposals. The other two are the former Great Lakes Chemicals site at Halton and R & W Howards at St Georges Quay.

### Former Trimpell Site

Since the publication of the Consultation Report (February 1998) negotiations with the Local Authority, regarding remediation of the above site, are continuing. Further site investigation works are now completed and a scheme for remediation is currently under discussion.

The Local Authority is seeking funding for the scheme through English Partnerships. The timescale is as follows:

1998/99 - Local Authority to make application to English Partnerships for funding.

1999/00 - Implementation of scheme. This will carry on through to and beyond the next five years

The Lead organisation is the Local Authority

Options for resolution include Actions 2a and 2b.

### Former ICI Fertilisers site. Middleton Business Park

This site is currently being demolished. Once this aspect of the works are complete the site will undergo an investigation into the types and extent of contaminative sources on the site. Contaminated surface water is currently collected and pumped to Lades Pool and this is continuously monitored.

The Lead organisation is the Local Authority.

Options for resolution include Actions 1& 2

### Former Great Lakes Chemicals

A remediation scheme is currently in place to deal with the volatile organic compounds in groundwater and monitoring is continuing. The timescale is as follows:

1998/99 - Implementation of scheme

1999/00 - Monitoring and review of completed performance

The Lead on this is the Landowner.

### R & W Howards

Since the publication of the Consultation Report the Waste Management operation at this site has now ceased and the Agency is pursuing the landowner/ licence holder to undertake investigations with a view to remediating the site. The timescale is 1999/00 for site investigation work to be carried out.

Options for resolution include Actions 1 & 2a and b.

## **Failures to meet objectives:**

i) Significant failure to meet the long term objective of RE4 for BOD and dissolved oxygen in Trimpell Dyke. Discharges of contaminated surface water from the adjacent contaminated land contributes to this failure.



ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
1.Undertake detailed investigations to determine extent of contamination.	The Agency		U	—	—	—			
2a Remedy situation by removal of contaminated areas.	LA Developer Site Owner		U	—	—				
2b Remedy situation by treating pollutants.	LA Developer Site Owner		U	—	—	—			

**Constraints :** Costs to land owners/developers

## Issue 7: Deterioration in water quality due to lack of adequate sewerage/sewage treatment facilities.

Section 22 of the Environment Act 1995 places a new duty on sewerage undertakers, via Section 101A of the Water Industry Act 1991, to provide, where appropriate and cost effective, first time sewerage facilities in areas suffering from environmental or amenity problems caused by the existing sewage disposal arrangements. Developments in these areas will be restricted due to the present inadequate drainage facilities.

### Failure to meet Objectives:

- i) Significant failure to meet the long term objective of RE4 in Oxcliffe Dyke due to BOD, ammonia and dissolved oxygen below the septic tank discharges in Green Lane.
- ii) Significant failure to meet the long term objective of RE1 in Cant Beck due to BOD. Septic tank discharges in Tunstall may be partly responsible for this failure.

### Examples of Other Potential Water Quality Problems;

- i) Melling
- ii) Cantsfield
- iii) Leck
- iv) Cowan Bridge
- v) Barbon
- vi) Gressingham Beck
- vii) Clapham Station
- viii) Caton Green
- ix) Conder Green

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Additional ecological /chemical monitoring to assess extent of problems.	The Agency		U	—	—	—			
Pursue provision of first time sewerage facilities for known problem areas, e.g. Oxcliffe Dyke.	House-holders LA	The Agency	U	—	—	—			
Provision of sewer connection or new WwTW or improvements to existing treatment facilities.	NWW	House-holders	U	—	—	—	—	—	—
Design and distribute a questionnaire to Parish Councils to measure any willingness amongst householders to apply to NWW Ltd for connection to the sewerage network.	The Agency		U	—					

**Constraints :** Mechanism for progressing/prioritising areas not fully established. Dependant upon householders applying to NWW Ltd for connection to the sewerage network.

## Issue 8: Failure to meet Bathing Water Directive Standards at Morecambe South and Heysham Half Moon Bay beaches.

Prior to March 1997 crude sewage generated in the Morecambe area was discharged twice daily, after receiving fine screening only, from the Schola Green pumping Station into Morecambe Bay. It is thought that largely as a result of these discharges the designated bathing waters at Morecambe North, Morecambe South and Heysham Half Moon Bay historically failed to comply with the Bathing Water Directive mandatory bacteriological standards.

A new WwTW was commissioned in spring 1997 at Middleton and flows are now transferred to this new works and are discharged out into the Heysham channel after receiving secondary treatment. The Schola Green outfall has been retained to allow infrequent discharges of storm sewage during exceptionally wet weather (around one discharge per bathing season is anticipated).

Following the abandonment of the crude sewage discharge at Schola Green there have been some improvements in bathing water quality with the designated bathing water at Morecambe North having passed the mandatory bathing water standards in 1997 and 1998. However, water quality at Heysham failed to comply with the bathing water standards in 1997 and a number of breaches of the bacteriological standards have been observed during the 1998 bathing season at the designated bathing water at Morecambe South. Investigations into the reasons for these failures are being carried out.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Investigations into reasons for continued poor bacteriological water quality.	NWW The Agency		R	—					
Undertake full budget study into inputs bacteriological loads entering Morecambe Bay.	The Agency		£100k – £200k (ongoing)	—					
Implement any further work identified as being necessary to improve water quality.	NWW The Agency		U	—					

## **Issue 9: Adverse impact of industrial site and trading estate drainage on the environment.**

Most incidents of pollution originating from industrial sites and trading estates arise from accidents, negligence, poor storage and the mishandling of oil, chemicals and waste. As well as spillages, a common problem on more modern estates occurs from wrong connections to surface water drains resulting in, for example, wash waters, process effluents, contaminated yard washings all discharging to the nearest watercourse. Where industrial units have been converted from older premises and sub-let drainage systems have not usually been updated. These older systems are also more prone to blockages and leaks. The major industrial sites in the Lune area are situated on the outskirts of Lancaster and Heysham.

In the Lune Catchment and sited specifically on the White Lund Industrial Site, are two waste oil storage and recovery sites. There are little or no controls at present to ensure that the waste is kept in a manner that would minimise pollution either to groundwater or surface water.

Failures to meet objectives:

The following failures to meet objectives may be due, in part to contaminated surface water from industrial sites and trading estates

- i) Significant failure to meet long term objective of RE4 in Oxcliffe Dyke due to discharges of contaminated surface water from the Vickers and White Lund Industrial Estates contribute to this failure.
- ii) Significant failure to meet the long term objective of RE4 for BOD and dissolved oxygen in Trimpell Dyke. Discharges of contaminated surface water from the Trimpell Industrial Estate contributes to this failure.

Other Water Quality Problems

- i) Drainage from the White Cross Industrial Estate affecting the Lancaster Canal. Regular complaints have been received about the impact of discharges from this estate on the Canal.
- ii) Drainage from the industrial estate at Tebay affecting Old Tebay stream. Old Tebay Stream used to suffer from sewerage as well as industrial drainage problems. Whereas improvements to the sewerage network have now been carried out the watercourse still receives contaminated discharges, particularly of oil, from the industrial estate plus also the motorway services area, a fuel storage depot and run-off from the motorway slip roads and other highways.



ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Identify and rectify any site drainage problems and site contamination including remediation where appropriate.	The Agency Owners Occupiers LA NWW		U	—	—	—			
Promote good housekeeping on sites. Promote initiatives e.g. Aire /Calder waste minimisation project.	The Agency	Owners Occupiers LA	U	—	—	—			
Installation of surface water interceptors, e.g. on White Lund Estate.	NWW Owners Occupiers LA		Not made available	—	—	—			

Constraints: Costs to Owner/Occupiers/NWW

## Issue 10: Reduced runs of the mature salmon and sea trout stock.

The River Lune was at one time one of the best salmonid fisheries in England and Wales with very high catches to both anglers and netmen. During the 1960s, the stock was decimated by the disease Ulcerative Dermal Necrosis that caused a dramatic reduction in catches. Most fishermen believe that the fish stocks have not recovered to pre-disease levels.

In August 1997, the Agency carried out a public consultation exercise for the Lune Salmon Action Plan (draft) to discuss some of these problems. The tables below detail the information consulted upon. Following consideration of the responses and further discussions, the Lune Salmon Action Plan has now been formulated and this updated document is now available along with this LEAP.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Implement the recommendations of the Lune Salmon Action Plan.	The Agency	RO LA MAFF Netmen	£1m	—	—	—	—	—	
Consider Net Limitation Order for Lune	The Agency		£50k	—	—				

Constraints: Co-operation of Angling Club, netmen, riparian owners

## Issue 11: The impact of barriers restricting the distribution of fish in the River Lune area.

Several barriers, either full or partial, to fish migration have been identified including:

Skerton and Forge weirs for elvers  
 Skerton Weir for coarse fish fry.  
 Winterscales road crossing  
 Havrah beck and Bellow End beck road culverts  
 Canal abstraction weir -River Conder  
 Old fish trap at Capenwray on the River Keer

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Fit elver passes at Skerton and Forge weirs.	The Agency		£10k	—					
Assess effects of other obstacles and improve where necessary.	AC RO The Agency		£25k	—	—				
Install fish pass at canal abstraction on River Conder.	BW The Agency AC		£5k	—	—				
Improve fish access through old fish trap at River Keer.	RO The Agency AC		£5k	—	—				

## Issue 12: The conflict of interests between different types of recreational users.

There is good access to most of the River Lune catchment for most recreational groups. Some groups impact on wildlife and other recreational users.

The Agency works with the different user groups in educating users, maintaining and improving access to the watercourse and by encouraging users to utilise less sensitive areas. This is done in co-operation with the Local Authorities, English Nature and user groups e.g. BCU, Angling Associations.

As part of the pre consultation exercise, several respondents raised the issue of a lack of a formal access agreement to the river for canoeing.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Education of user groups.	The Agency	LA EN User groups		—	—	—	—		
Investigate new attractions	The Agency	LA RSPB EN		—	—	—	—		
Identify areas where canoe access to the river can be improved and facilitate negotiations for the use of the river for canoeing in suitable areas and periods.	The Agency	BCU Owners AC LA		—	—	—	—		
Identify areas where pot holing is causing a reduction in the base flow and carry out remediation works.	The Agency Pot Holing Clubs			—	—				



### Issue 13: Adverse impacts of fly tipping at Oxcliffe Marsh.

There is a high incidence of fly tipping in the Oxcliffe Marsh area. The wastes tipped include demolition/excavation waste, tyres, general skip waste and black bin bags. It is very difficult to prove who the culprits are and fly tipping tends to encourage more fly tipping. The tipping is polluting to land and water, creates a hazard to the public and increases the risk of vermin and malodours.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Increase monitoring and enforcement if possible.	The Agency LA		U	—	—	—	—	—	
Site clean up.	Landowner LA	The Agency	U	—					

Constraints : Cost of clean up may be high for landowner and cost of monitoring and enforcement will be high for the Agency

### Issue 14: Adverse impacts of land spreading of controlled waste in the Lancaster area.

Land spreading is a form of waste recycling which is exempt from the need for a waste management licence. The spreading of waste can lead to the potential to pollute watercourses and groundwater and may be dusty or malodorous. The wastes include abattoir waste, agricultural wastes, construction and demolition wastes, sewage sludge and paper pulp.

There are a number of paper pulp producers and landspreaders based in the Lancaster area. Therefore, there has been an increasing incidence of paper pulp spreading in and around the Lancaster area, which could lead to pollution of surface water courses and dust impact on local amenities. The Agency is seeking to negotiate and agree a code of good practice for landspreaders that will minimise any adverse environmental impact of this activity.

#### Failures to meet objectives:

Lack of control of the methods and timing of land spreading which due to the concentration of the activity in the Lancaster area has a greater potential to pollute watercourses and increases the adverse impact of dust and odour emissions to the locality.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Seek to agree a code of practice for land spreading.	The Agency Land - spreaders Waste Producers		U	—					

## Issue 15: The lack of knowledge of archaeological and historical interest within the riparian zones.

The Lune catchment area has never been densely populated but has a long history of settlement. These range from prehistoric enclosures in the area, the majority of which are on the fells. Evidence from Roman settlement includes a road and Roman forts at Lancaster and Burrow. There are also Norman motte and bailey structures along the length of the river at Halton, Hornby, Arkholme, and Kirby Lonsdale. Old bridges such as Devils Bridge at Kirkby Lonsdale form a major feature along the river.

The area thus has a wealth of archaeological features. The Agency has a duty to protect riverine features of historic value. However, given the apparent archaeological richness of the area the Agency has little knowledge of the riverine archaeology. Consequently, there is a danger that important features may be inadvertently destroyed by maintenance operations. Other sites may be deteriorating because no one knows of their existence. Therefore a survey, of the riparian archaeology, would help us to protect sensitive sites during capital and maintenance works and also set in motion restoration for deteriorating sites.

The Yorkshire Dales National Park is also involved with archaeological surveys. In particular, the Kingsdale and Chapel-le-Dale areas have been covered in connection with the Farm Conservation Programme.

ACTIONS	RESPONSIBILITY		ESTIMATED COST	98	99	00	01	02	FUTURE
	LEAD	OTHER		99	00	01	02	03	
Archaeological Survey within 10m of River Lune and its tributaries.	The Agency LCC CCC NYCC YDN P		£10,000 (Total Cost)	—	—	—	—	—	

## **5. Protection and Partnership**

### **Introduction**

Much of the day to day work of the Agency is aimed at protecting the environment through education, pollution prevention and improvement.

This important work does not feature in the LEAP because the plan is primarily intended to address environmental problems and these are highlighted within the section detailing issues. Much of this routine work is undertaken by the Agency to fulfil its duties and responsibilities. Examples include routine inspection at landfill sites to ensure licence conditions are being complied with, anti poaching activities by Agency bailiffs, routine river sampling to detect trends in water quality and site visits to factories/sewage works to ensure discharge authorisation are being complied with.

However, the Agency recognises that it is not the only body operating in the field of environmental protection and improvement and that our responsibilities often overlap with those of other organisations.

Where appropriate the Agency will work with partners to achieve environmental protection and improvements. Much of this co-operation goes on at a day to day level between officers in the field and does not require any formal setting up.

However, in some cases the Agency does get involved in more formal partnerships and some of those which are relevant to this LEAP area are outlined below.

### **Liaison with Local Planning Authorities (LPAs)**

The Environment Agency is taking a pro-active role in the land-use planning system. We have published our national document 'Liaison with Local Planning Authorities 1997'. The document explains our role and contribution to the land use planning system .

### **KEY PARTNERS**

#### **Other Local Authority Departments**

Other departments consulted on aspects of the Agency's work include: Environmental Health, Public Rights of Way and Access, Tourism, Drainage, Ranger Services, Ecologists and Archaeologists. This liaison occurs at County, Borough, District and City Council level. Strategic waste advice is also provided by the Agency through inputs to the Local Waste Management Plans in local authorities. The Agency also consults with, whenever appropriate, Lancashire Sites and Monuments Record (SMR), which is held by Lancashire County Council, previously by Lancashire University Archaeology Unit.

#### **Local Agenda 21**

The lead in developing Local Agenda 21 is taken by Local Authorities. The Local Authorities in Lancashire and Cumbria are developing 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.

#### **Education Establishments**

The Agency provides education packs for schools and colleges covering areas of its work



## **Lancaster University Archaeological Unit**

Form part of the routine planning consultation process within the Lune area.

## **The Morecambe Bay Partnership (MBP)**

MBP brings together public, private and voluntary bodies to work for the good of the Bay. A Standing Conference of over 150 different interests meets regularly, and, together with a smaller Management Committee, oversees the work of the Partnership. The Morecambe Bay Strategy, published in October 1996, was developed through a process of consultation with local managers and users. Now its implementation is being targeted through the Agenda for Action, published in March 1998. The Environment Agency is an active member of the Partnership and is involved as a lead agent in many of the action areas arising out of the strategy.

## **Morecambe Bay Conservation Group**

This is an informal group organised through Lancaster City Council and is intended to focus public attention on the conservation value of the bay. Various activities are organised annually to increase public knowledge about the bay and its management. The Agency is on the group that steers the annual programme.

## **Shoreline Management Plans (SMPs)**

Shoreline Management Plans are produced by maritime local authorities and provide a strategic framework for sustainable coastal defences and to set objectives for management of the shoreline locally. Lancaster City Council is acting as the lead authority on behalf of the members of the Morecambe Bay Shoreline Management Group. The Agency is represented on the group. A consultation draft has been issued and the final plan is expected to be developed by end of 1998.

## **Coastal Zone Management Plans (CZMPs)**

An initiative of the Department of the Environment, Transport and the Regions (DETR). The Agency will be involved but will not be the lead.

## **Site Emergency Plan**

As part of the County Council's emergency planning procedures, certain industrial sites have specific emergency plans. The Agency is involved in these plans to deal with any potential pollution problems that may arise. Exercises designed to test and improve procedures are held regularly, and include staff from the Agency.

## **The Fire Service and Pollution Incidents**

The Agency is working closely with Lancashire Fire Service in providing a first line pollution prevention service at road traffic accidents. The Fire Service is 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 has agreed to undertake this role where practicable and the Agency has provided training and materials such as oil absorbents.

The Agency will also be notified of any potentially polluting spillages so that Agency staff can be on site to deal with follow-up action.

## **Highways Agency**

Liaison meetings in respect of highways issues.

## **Annual Conservation Liaison Meeting**

Staff from the Agency meets 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.

The other organisations represented include English Nature, Lancashire Wildlife Trust and the Royal Society for the Protection of Birds. The Agency also has an annual meeting with the National Trust with a view to working together on matters of mutual interest.



## **Flood Warning Zones**

The Environment Agency takes the lead in the dissemination of Flood Warnings, but other organisations including the Local Authorities and the Police are also involved.

The Environment Agency has also identified sites most likely to suffer from flooding and have put into place systems to give those people living in these areas advanced warnings. The Agency calls these sites Formal Flood Risk Zones. In the Lune catchment there are 3 such zones at Hornby, on the River Wenning, Skerton in Lancaster, on the River Lune, and the Castle Ward area of Lancaster also on the River Lune.

In providing the Core Flood Warning service, the Environment Agency makes use of Local Media (TV and Radio), a recorded message system (Flood call), loud hailers and for the Flood Risk Zones above Automatic Voice Messaging. All of the above enable the Environment Agency to give the best possible Flood Warning Service to those who live in Formal Flood Risk Zones.

The Flood call Message Service mentioned above is a local rate telephone number that is continually updated to provide the public with up to date Flood Warning Information. The telephone number is: 0645 881188

## **River Valley Initiatives**

The Agency, would like to work in partnership with groups from the private, public and voluntary sector, in establishing a series of new River Valley Initiatives (RVIs) throughout its Central Area. One such initiative could work alongside this LEAP. RVIs use the river corridors as a focal point for their activity, and provide detailed actions on the ground to further the broad range of environmental issues highlighted within the LEAP and develop these further. In doing so, they contribute to the practical delivery of Local Agenda 21.

Each RVI has its own unique identity, created by the partners and largely determined by the nature of the area concerned. However topics such as education, habitat creation and improvement and access tend to be common to all RVIs. Joint ownership of each initiative by all the partners including local businesses and community groups, is essential for the RVIs long term success.

All the essential ingredients for an RVI are present within the Lune catchment. Hence during 1998 we would like to explore this opportunity, and expand on the local issues raised through this document and subsequent consultation process. We are interested to hear from anyone in the area who feels that they have an interest or active role to play in the formation and development of this initiative.

## **Industrial liaison**

Routine liaison and progress meetings are held between The Agency and industrialists. For example: North West Water Ltd and waste site operators.

## **Farming Wildlife Advisory Group (FWAG)**

### **Pond Life Project**

Liaison in respect of pond issues.

### **Barn Owl Conservation Group**

Liaison in respect of bio-diversity and conservation issues

### **MAFF Liaison Groups**

Liaison in respect of flood defence responsibilities, farming aspects and other Agency interests.

### **Country Landowners Association**

Liaison as appropriate.

### **National Farmers Union**

Liaison as appropriate.

### **Recreational Organisations**

British Canoe Union and Ramblers Association.

Ad-hoc meetings to discuss recreational issues.

### **River Keer Rehabilitation Project**

River Keer Rehabilitation Group consists of representatives from the Environment Agency and local angling clubs. Flood defence works on the River Keer in 1959-60 led to the loss of 24 pools and associated habitat as the banks have been straightened and reformed.

The group was created to improve the River Keer salmonid fishery. In 1995, a study was undertaken to summarise rod catch, redd count and fisheries survey data. Fisheries and habitat surveys were undertaken to establish what factors were limiting the salmonid population. The report made recommendations of actions which might lead to improvement.

### **Lune and Wyre Fisheries Association**

Quarterly meetings are held to discuss fishery issues in the Lune and Wyre

### **North West & North Wales Sea Fisheries**

Enforces National and European legislation pertaining to sea fisheries and makes local byelaws as appropriate. The area of jurisdiction extends from Cemaes Head in Dyfed to Haverigg Point in Cumbria covering an area 1700 sq nautical miles.

## **6. Future Review and Monitoring**

The Environment Agency will be jointly responsible, with other identified organisations and individuals, for implementing this Action Plan. Progress will be monitored and normally reported annually. These Annual Reviews will examine the need to update the Plan to reflect local change. The period between major revisions will normally be five years.

## APPENDIX 1: The Routine Work of the Agency

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

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

Regulating the environment takes place through licensing and consents. The Agency regulates the abstraction of water from rivers and boreholes, releases to air, land and water, the carrying and disposal of waste and to carry out work in, over, under or near a watercourse.

We monitor the environment to ensure that pollution is controlled and resources are adequately protected. We regularly monitor the quantity and quality of rivers, estuaries and the sea and check emissions from the processes we regulate. Results are reported on a public register that can be inspected at the Agency's main offices. We run a 24-hour service for receiving reports of and responding to flooding and pollution incidents and emergencies in the air, water or on land. We also work with others to reduce the risk of harm from contamination and to bring back land into good use.

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

The Agency also has the role of reducing risk to people and the environment from flooding by providing effective defences. Protecting life is our highest priority and to meet this aim we provide a flood forecasting and warning service and discourage development in flood-risk areas.

We are responsible for maintaining, improving and developing fisheries. We regulate fisheries by issuing licences for rod angling and net fishing. We carry out improvements to fisheries by improving the habitat and fish stocks and providing advice to fishery owners. The Agency seeks to ensure that wildlife, landscape and archaeological heritage are protected both in any work we carry out and also in work carried out by others.

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



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

**General Information**

An Environmental Strategy for the Millennium & Beyond  
Customer Charter - September 1997  
Corporate Plan Summary 1997/98  
The Environment of England and Wales, a Snapshot  
The Environment of England and Wales - Now on the World Wide Web  
The Environment Agency in the North West of England  
Environment Agency - Aim, Objectives, Work  
About the North West - fact file  
Guardians of the Environment  
A Guide to Information Available to the Public  
Our Complaint and Commendations Procedure  
Who's Who in the Environment Agency - North West  
Agency Emergency Hotline - 0800 credit card size  
River Watch Card  
Your Rights when Agency Warranted Officers Take Action  
Corporate Plan Summary  
Annual Report and Accounts 1998 - 99  
Corporate Plan 1998 - 99  
Annual Report and Accounts 1996 - 97

**Education**

Activity Book - for Primary School Children  
Pack for Key Stages 1 and 2 for Primary School Children  
Helping protect the Environment - (colour in) poster  
Understanding your Environment - poster

**Waste Regulation**

Classification of Special Waste - Information Sheet 1  
Use of the Consignment Note - Information Sheet 2  
Special Waste Regulations 1996 - How they affect you  
North West Statistics 1995-96  
New Packaging Regulations - How they affect you  
Farm Waste Minimisation  
What a Waste! Leaflet  
Will you be technically competent to run a licensed waste site in 1999?

**Fisheries and Recreation**

Fisheries North West - brochure  
Fisheries in the North West - fact file  
Rod Fishing Licences - 1996-97  
Have Fun Have a Care (River Canoeists)  
Have Fun Have a Care - poster  
Anglers and the Agency



A boaters guide to Navigation signs

## **Ecology**

Mink

Guidance for the Control of Invasive Plants near Watercourses

Conservation

Understanding Riverbank Erosion

Riverlife from Source to Sea

Trees and Shrubs native to Lancashire

Ponds and Conservation

Pond Heaven

The Habitat's Directive

Aquatic Weed Control

Phytophthora disease of Alder

## **Flood Defence**

Flood Defence - North West - brochure

Paying for Flood Defence

Main River - fact file

Maintaining Watercourses - fact file

Paying for Flood Defence - fact file

Understanding Buffer Strips

Development with Flood Risk Implications

Flood Warning Information - For the Deaf and Blind

Flood Warning Information - What to do If Your Property is at Risk

0645 Floodcall Credit Card Size

Who's on My Land?

Policy and Practice for the Protection of Floodplains

## **Pollution Control**

Environmental Protection and Pollution Control - North West - brochure

EC Directives and the Control of Water Pollution - fact file

Bathing Water Quality Summary Report 1996

A Guide to Environmental Quality & Pollution Control - booklet

Looking After Our Rivers

Agricultural Pesticides and Water

Pollution Prevention Pays

Building a Cleaner Future

Blue Green Algae

Discharges to Controlled Waters - charges - 1997-98

Home Pollution and how to avoid it

River Pollution and how to avoid it

Silage Pollution and how to avoid it

Farm Pollution and how to avoid it

Farm Waste Management Plans

Farm Waste Regulations

Chemical Pollution and how to avoid it

Solvent Pollution and how to avoid it

Making the right connection

Natures Way - Designs that prevent water pollution

Whats Hidden Behind your Garden Fence? (Water Watch)

Groundwater Pollution  
Oil Care Code stickers  
The Use of Licences to Prevent Pollution

### **Water Resources**

Water Resources - North West - brochure  
Annual Abstraction Charges 1997-98  
Spray Irrigation

### **IPC/RAS**

Integrated Pollution Control 1997/98 - Fees and Charges  
Radioactive Substances Act Regulation 1997/98 - Fees and Charges  
Best Practicable Environmental Options Assessments for IPC - A Summary

### **Catchment Management / Environment Agency Action Plans**

Alt / Crossens Catchment Management Plan - Consultation Report/Action Plan/First Annual Review  
Douglas Catchment Management Plan - Consultation Report/ First Annual Review/Second Annual Review  
Ribble Catchment Management Plan - Consultation Report/First Annual Review/Second Annual Review  
Lune Local Environment Agency Plan - Consultation Report/ Action Plan  
Wyre Local Environment Agency Plan - Consultation Report/ Action Plan/First Annual Review

## **APPENDIX 3: List of Respondents**

### **British Association for Shooting and Conservation**

The Agency expresses thanks for comments made during the consultation period.

### **British Canoe Union - Water Facilities Technical Advisory Panel**

The Agency expresses thanks for comments made and for the additional information provided.

### **Dr R.B. Broughton**

The Agency expresses thanks for comments made.

### **Mr J Carr - RFAC Chairman**

Issue 1 - this does not include angling clubs within the responsibility table and the Agency is working closely with the Association on the EAGGF 5B bid.

Over-enthusiastic hill drainage - The Agency has been advised by FWAG that most hill drainage will eventually fall into disrepair and as grant aid will no longer be available most will be too expensive to repair, except the best upland grazing land. On some upland estates the grips have been blocked off to create "ponds" providing more insects for game birds.

Sheep dips - considering the levels at which synthetic sheep dips are toxic the Agency agrees that recently dipped sheep could pose a significant risk to water quality.

The Agency notes the comments made concerning the existing unsatisfactory crude outfalls at Glassson and Galgate. The timetables for the required improvements to these discharges are determined by EC/EU legislation.

The Agency notes the comments made concerning the potential for any chemical spillages on the M6 to effect the River Lune. The Agency believes that the risks of pollution to the River Lune in this area are no greater than the risk associated with any highway drainage. There is no evidence of any adverse impact from highway drainage in this area at present.

### **Council of Northern Caving Clubs - Mr L. Sykes (Secretary)**

The Agency expresses thanks for comments made and notes the representation made on Issue 12.

### **Cumbria County Council - Economy and Environment**

In relation to consultation with the County Archaeologist the Agency points out that this issue was a late addition to the first draft and full consultation with the three County Councils and National Parks will be made prior to submission for funding to carry out the survey.

### **Forestry Commission - North West England Conservancy**

The Agency expresses thanks for comments made and welcomes the contribution to the Lune Tree Strategy.

### **The Hawk and Owl Trust**

Currently the Agency is working closely with FWAG to encourage more tussocky bankside habitat, which will encourage more rodents, thus providing food for the Barn Owl. Many farms have stewardship agreements for barn owl habitat on the River Wyre. It is hoped that the Sustainable Rivers Management Project will also encourage tussocky vegetation and consequently increased numbers of barn owls resulting from a higher rodent food population in other catchments throughout the North West Region.



We would welcome working in partnership with the Hawk and Owl Trust and are interested to find out what partnership schemes the Trust would find suitable in the North West Region.

### **The Inland Waterways Association**

There is no biological classification scheme presently in routine use for canals within the North West Region of the Agency. Research into this area is presently being undertaken at a national level, with pilot trials due to start soon. The consultation document did, however, include Chemical River Ecosystem Class water quality objectives for the Lancaster Canal.

### **Lancashire County Council - Environment Directorate**

The Agency welcomes the Council's support to the work being undertaken to investigate and improve poor bathing water quality in Morecambe Bay.

The Lune Tree Strategy will include full consultation with a wide range of appropriate organisations. The strategy will primarily identify those areas with very sparse tree cover where tree planting would increase habitat. However, the Agency does not want to encourage tree planting to the detriment of other habitat types, therefore full consultation would be included.

The Sustainable River Management project is not merely promoting fencing and total exclusion livestock from river banks but is trying to promote changing farming practices which often necessitates a significant reduction in stocking rates able to graze the river bank in order to enable effective vegetation establishment. The Agency is aware that a lack of grazing will reduce the botanical interest and FWAG and ourselves are promoting winter grazing with much reduced stocking rates to maintain botanical diversity. The project aims to target those sites where accelerated erosion and silt input is a significant problem and as an alternative to where fly tipping would be a possible solution.

The Agency does have CBHS details in its GIS but only for Lancashire. Unfortunately the scale of the map is too small for showing the CBHS sites clearly. As we have relatively scant details of CBHS sites for Cumbria and North Yorkshire it was considered that a "half" map with the site details cramped together did not do justice to the sites. It is hoped in future LEAPs to produce full maps when we have a complete data set on our forthcoming new GIS. In relation to Map 13 "Landscape, Heritage and Conservation Areas" the Agency is aware that the SAM information is incomplete and we will address this issue with English Nature.

Archaeology - A riparian archaeological survey will provide us with knowledge and data to protect potential sites from the bulk of our work, e.g. planning applications, flood defence works, land drainage consents. The Agency is aware that its remit is not confined solely to the aquatic environment and would welcome support from the County Councils, national parks and local authorities to run a joint catchment wide survey where all parties would benefit from the information derived. Also, future descriptions of a LEAP area will have a greater emphasis on archaeology.

In relation to the report to the County Council Committee-Planning, Industrial Development and Tourism Committee- the Agency's response to each of the specific items listed in the consultation response is as follows:

Archaeology - The Agency has neither the remit nor resources to carry out surveys beyond the riparian zone. However, we would be interested in forming a partnership with others who wish to carry out survey works both within the riparian zone and beyond.

When considering any proposal the Agency has a duty under the Environment Act to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural engineering or historic interest. therefore any works that will effect archaeologically important features will be properly assessed.

Landscape - Our duties under the Environment Act relate to inland and coastal waters and associated land. While we recognise the importance of landscape quality and character and the fact that the quality of the surrounding landscape



will influence how people perceive the quality of the rivers that flow through them, we have no statutory powers further than 8 metres from the river. Beyond this we would support the initiatives and where possible be partners in the initiatives of others to restore or improve the landscape. The Agency employs an in-house chartered landscape architect and makes extensive use of consultants when considering any capital or maintenance works that may alter the character of a river.

### **Lancashire Fly Fishing Association**

The Agency expresses thanks to the Association for its comments.

### **Lune and Wyre Fisheries Association**

The Agency notes the comments made concerning the impact of the present discharges from Lancaster WwTW on migratory fisheries.

The Agency does not accept that discharges from NWW WwTWs discharging to the upper catchment should be treated to drinking water standards. Present monitoring indicates that the impact from many of these works is negligible. Those works contributing to poor water quality have been identified for improvement.

The Agency notes the comments made concerning the potential for any chemical spillages on the M6 to effect the River Lune. The Agency believes that the risks of pollution to the River Lune in this area are no greater than the risk associated with any highway drain. There is no evidence of any impact from highway drainage in this area at present.

In relation to Juvenile Salmon Counts the Agency is considering these as part of the Lune Salmon Action Plan.

The Agency welcomes the comments regarding the need for education in conservation issues and will consider the targeting of educational establishments for Consultation Reports.

### **Ministry of Agriculture Fisheries and Food**

The Agency is and has always worked within the Project Appraisal Guidance Notes to apply for MAFF Grant Aid. It is our policy to treat major Sea Defence schemes in this way. The Agency also welcomes the additional information provided.

### **Mr B Mayson**

The Agency expresses thanks and notes the comments made.

### **Middleton Estate Grimes Hill Fishing**

The Agency expresses thanks and notes the comments made.

### **Morecambe Bay Partnership**

Flood risk - during the planning and design process for flood defence schemes, the Agency would undertake an Environmental Assessment and consult all interested parties regarding the proposed works. Any future works in Morecambe Bay will be approached in this way. Furthermore, in relation to the landscape quality of flood defence schemes we have a duty under the Environment Act to further the conservation and enhancement of natural beauty. The Agency acknowledges the importance of landscape quality and character to a local populace. To reflect this acknowledgement the Agency directly employs a chartered landscape architect (Landscape, Heritage and Recreation Officer). This officer works on flood defence schemes.

Issue 2 - with reference to the historical value of Sunderland Point the Agency has a statutory duty under section 7(1) (c) of the Environment Act when "considering any proposals relating to any function of the Agency to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural, engineering

or historic interest". Therefore we will take into account the historic value of this area and design our scheme to reflect this.

Issue 15 - the Agency has a Landscape, Heritage and Recreation Officer on the Morecambe Bay Partnership Heritage Group and will possibly be co-ordinating the archive survey.

#### **Morecambe Neighbourhood Council**

The Agency expresses thanks for the interest expressed in the Consultation Report.

#### **Morecambe Tourism**

The Agency expresses thanks and notes the comments made.

#### **North Western and North Wales Sea Fisheries Committee**

The Agency welcomes the support of the North Western and North Wales Sea Fisheries Committee to the approach being taken to tackle the issues within the Lune LEAP area.

The Agency is aware that any designation of existing shellfish harvesting areas as designated Shellfish Waters under the 1997 Shellfish Waters Regulations will lead to the need for a further review of any necessary actions required to improve bacteriological quality. This will need to be taken into account in future reviews of the Lune LEAP document.

#### **North Yorkshire County Council - Environmental Services**

The Agency expresses thanks for the comments and additional information.

#### **North West Water Ltd**

The Agency welcomes the updated information provided.

#### **The Ramblers - Lancaster Group**

The Agency expresses thanks for comments and additional information provided.

#### **Rapid Canoe Supplies**

The Agency expresses thanks for the information provided.

#### **Ribble Canoe Union**

The Agency expresses thanks for comments made to the Consultation Report. In answer to the comment on Navigable Length the Agency has been advised that public right of navigable length is to the limit of ordinary tide.

#### **Sedbergh and District Angling Association**

The Agency notes the comments made and recognises the problems over access.

#### **South Lakeland District Council - Amenities and Development**

The Agency expresses thanks for the interest shown during the consultation process.

#### **Southport Fly Fishers**

The Agency expresses thanks for comments made regarding the Consultation Report and notes concerns expressed over the different recreational uses of the River Lune.

### **Thurnham Parish Council**

The Agency notes the comments made concerning the existing unsatisfactory discharges from Lancaster WwTW and from the crude outfalls at Glasson and Galgate. The timetables for the required improvements to these discharges are determined by EC/EU legislation. The UWWTD requires secondary treatment to be provided by the year 2000 at Lancaster WwTW and for improved treatment to be provided by the year 2005 at Glasson/Galgate.

### **Mr R Walters**

The Agency expresses thanks for the interest shown during the consultation period.

### **Mr J Watkins**

The Agency expresses thanks for the additional information supplied.

### **The Wildlife Trust - Cumbria**

The Agency welcomes the support of the Trust for the actions identified in the plan.

The River Keer is one of several projects the Agency hopes to tackle within the catchment during the next five years. The Keer project had a feasibility study carried out in 1997 and is currently the most advanced within the Lune LEAP area. The Agency intends to work with Lancaster City Council and Lancaster University on improving straightened and habitat poor stretches of Burrow Beck in Scotforth, Lancaster.

The Agency has produced a document, which outlines Policy and Practice for the Protection of Floodplains. It is recognised that the flooding of floodplain areas is both natural and desirable, where this can occur without risk to human life. Any future proposals to alleviate flooding problems will be in line with this policy document.

### **Mr B E Woodhouse**

The Agency notes the comments made and information provided.

### **Wray with Botton Parish Council**

The Agency welcomes the opportunity to consult with the Parish Council on the draft Lune Tree Strategy.

The Agency notes the concern raised over water quality of the River Wenning and the request that the Rivers Hindburn and Roeburn are designated as bathing waters. The Agency is presently undertaking investigative monitoring of two sites on the River Lune with a view to potential designation as inland bathing waters. However, the sites on the rivers Hindburn and Roeburn would not meet the required criteria in terms of, for example, changing facilities and numbers of bathers.

### **Yorkshire Dales National Park Authority**

Any otter habitat creation would utilise information from Lune fisheries surveys, river habitat survey and specialist /local knowledge to identify the most suitable sites.

Archaeology - The Agency's information on SAMs and the list published by English Heritage are both out of date. Little is known of riparian archaeology but several sites are known:-

SAM 699 - Apron Full of Stones Round Barrow, Kingsdale Beck, Thornton -in-Lonsdale.

SAM 1105 - Clapham Market Cross, Clapham Beck, Clapham.

SAM 35 - Arten Gill Viaduct, Arten Gill.

SAM 36 - Dent Head Viaduct, Fell End Gill.

The Agency expresses thanks for updating our current SAM records. These sites have been added to the map.



Archaeological sites adjacent to watercourses - The Agency expresses thanks for the suggestion made and confirms that the archaeological survey within 10m of River Lune and its tributaries will involve the Agency contacting those agencies responsible (e.g. English Heritage and Historical Monuments for England) for holding such records. A similar survey was carried out on the River Ribble in 1996/97.

Flooding - Where possible soft engineering options are used to reduce the impact of any maintenance or improvement works. It is recognised that the flooding of floodplain areas is both natural and desirable, where this can occur without risk to human life. An Environmental Assessment is undertaken in advance of any proposed engineering works and all interested parties consulted.

Low flow: The Agency is not aware of any abstractions in the park which may be causing low flow problems. However, as part of our duty under the Habitats Directive we will be reviewing abstractions that may be influencing water levels in SACs and SPAs (Special Areas of Conservation and Special Protected Areas). Working with English Nature we shall also be reviewing licences which may be impacting on SSSIs (Sites of Special Scientific Interest).

All new proposals for abstractions are dealt with to ensure sustainable management of water resources, and protection of the environment. This is done in conjunction with Agency colleagues and external consultation.

The Agency acknowledges the comments made concerning synthetic pyrethroid sheep dips. Any work necessary to address unsatisfactory combined storm overflows (CSOs) in Sedbergh will be prioritised in NWW's AMP3 capital programme.



## **Appendix 4: Glossary**

### **Abstraction Licence**

Licence to abstract water from a surface or underground source. The maximum annual, daily and hourly abstraction rates are set by the licence.

### **AMP2 - Asset Management Plan**

The second set of Asset Management Plans produced by Water Companies. The Plans cover the Water Companies' known investment of existing and other obligations (such as the operation and maintenance of existing water and wastewater systems) for the 10 year period 1995 to 2005. The Environment Agency is involved in setting priorities for work necessary for environmental improvements within allowed expenditure limits. Prices are controlled by an independent regulator, the Director General of Water Services (OFWAT). AMP 3 follows as the next planning period.

### **AONB**

Area of Outstanding Natural Beauty, notified by the Countryside Commission.

### **BOD**

Biochemical Oxygen Demand. A measure of the polluting potential.

### **Coarse Fish**

See FRESHWATER FISH, CYPRINIDS, SALMONIDS.

### **Consumptive Use**

Water which is abstracted but not returned to the catchment, either because it evaporates (as in spray irrigation) or is exported for use in another catchment.

### **County Structure Plans**

Statutory documents produced by County Councils outlining their strategy for development over a 10-15 year timescale.

### **Cyprinids**

Fish of the carp family. (See also COARSE FISH, FRESHWATER FISH, SALMONIDS).

### **Effective Rainfall**

Total rainfall minus direct evaporation and the water used by plants for transpiration. This is equivalent to the total resource of a catchment.

### **EIFAC**

The European Inland Fisheries Advisory Commission. An Agency of the United Nations Food and Agriculture Organisation (FAO).

### **Fish Age**

0+ - less than 1 year. >0+ - more than 1 year.

### **Flow Measurement Units**

m <sup>3</sup> /s	Cubic metres per second
l/s	Litres per second
Ml/d	Megalitres per day. A megalitre is equivalent to a ten metre cube (approximates to a 4-bedroom detached house).
mg/d	Millions of gallons per day.

## Flow Conversion Table

m <sup>3</sup> /s	l/d	mg/d
0.012	1	0.224
0.06	5	1.12
0.12	10	2.24
0.24	20	4.48
0.6	50	11.2
1.2	100	22.4

## Freshwater Fish

For the purposes of the Salmon and Freshwater Fisheries Act 1975, fish other than salmon, brown trout, sea trout, rainbow trout and char (see also COARSE FISH, FRESHWATER FISH, SALMONIDS).

## FWL

Freshwater Limit

## Hectare

Unit of area 100m x 100m, equal to 2.471 acres.

## HSE

Health and Safety Executive

## Impoundment Reservoir

Surface water storage area formed by construction of a dam and supplied only by natural inflow from the upstream catchment.

## List 1 Substances

Dangerous substances which are particularly hazardous on account of their toxicity, bioaccumulation potential and persistence and which require special controls. Environmental quality standards have been set by the EC.

## List 2 Substances

Dangerous substances which are less hazardous than List 1 substances. Environmental quality standards are shortly to be introduced into UK law by regulations.

## Local Nature Reserve

A nature reserve designated by a Local Authority, frequently owned or managed by a voluntary conservation organisation.

## Local Plans

Statutory documents produced by Borough or City Councils to implement the development strategy set out in County Structure Plans. Specific land use allocations are identified.

## LTA

Long term average

## Main River

The Agency has permissive powers to carry out works of maintenance and improvement on these rivers.

**National Nature Reserve**

A nature reserve of national importance, designated and managed by English Nature.

**Potable Water Supply**

Water supplied for domestic use, including human consumption.

**Pool: Riffle**

A stretch of river with sections of shallow, fast-flowing water and deeper slow-moving pools.

**Ramsar Site**

A wetland site of international significance for conservation, notified under international treaty.

**Redd**

Spawning area.

**SAC**

Special Area of Conservation. A European legislation classification.

**Salmonids**

Fish classified by the Salmon and Freshwater Fisheries Act 1975 as belonging to the salmon family - salmon, brown trout and char. (Summer-spawning salmonid species such as grayling are classified by the Act as Freshwater Fish.) (See also COARSE FISH, FRESHWATER FISH, CYPRINIDS.)

**SNCI**

Site of Nature Conservation Interest. A site of local importance for wildlife or geology, identified by the County Wildlife Trust or the County Council.

**SPA**

Special Protection Area. A European legislation classification.

**Spate Flows**

Episodic fresh water flood flows.

**SSSI**

Site of Special Scientific Interest. A site designated by English Nature as being in need of protection to conserve its outstanding ecological or geological features. Land use and management operations within SSSIs are subject to control.

**WwTW**

Wastewater Treatment Works.

**APPENDIX 5:**
**Issues arising from the Lune Salmon Action Plan**


ISSUE	LIMITING FACTORS	OPTIONS	RESPONSIBILITY	COST £	PRIORITY
Lack of juvenile habitat	1. Poor riparian vegetation	Fencing off buffer zone and planting of trees. Proposed 10km per year Utilisation of FWAG to target grants for this project.	The Agency/ Angling clubs/ Local farmers/ FWAG	EA committed to £2,500 per year. Additional funding required.	High
	2. Lack of in-river habitat	Raking of gravels and in-river improvements in conjunction with work parties from angling clubs	The Agency/ Angling clubs/ Local farmers	2K per year	High
		Advice and contributions to Angling Clubs concerning in-river works to improve juvenile habitats	The Agency/ Angling clubs	2K per year	High
Farming Practices (see Lune Salmon Action Plan- Table 18 & "Lack of juvenile habitat" above)	1. Impact of land drainage on whole river catchment	Encourage a change in farming practices	The Agency/ Local farmers/FWAG	100K, cost of FWAG officer over 5 years	High
	2. Impact of slurry and chemical fertilisers on whole river catchment				High
	3. Impact of cattle and sheep access and poaching of banks				High
	4. impact of forestry on the Rivers Rawthey and Hindburn				Medium



Farming Practices	5. Impact of pyrethrin sheep dips	Raise awareness of dangers to aquatic biota, take enforcement action where necessary, raise awareness of deactivation methods	The Agency/ Local farmers/FWAG	20K over 5 years	High
Adult run size erratic and may fail target	1. Rod exploitation rate may be too high	Promote catch and release Promote voluntary bag limits by clubs Byelaws to reduce length of season	The Agency/ Angling clubs The Agency/ Angling clubs The Agency	5K 5K 10-100K	High High High
	2. Net exploitation may be too high	A reducing net limitation order A change to the fishing season A restriction on net mesh size	The Agency	10-100K	High
Fish eating birds	1. Populations possibly impacted by goosanders and cormorants feeding on juvenile salmon.  2. Problem is compounded by the problems associated with identifying the impact of these birds on whole river systems.	Persons seeking advice should first contact MAFF  Should a party wish to apply to MAFF for a licence to shoot birds, the EA will supply available data which the party may use to support their application  Await results from 3 year study commissioned by MAFF on fish eating birds	The Agency	1K	High

High seas and Irish drift net fisheries	1. Marine exploitation rate of River Lune stock unknown	Continue to monitor through the national microtagging programme particularly to assess the impact of the recent constraints imposed on the Irish Drift Net fishery .	The Agency/ MAFF	minimal	High
Lack of information on in-river populations	1. Survival of juveniles unknown, particularly following two dry summers and the closure of Hatchery	Electric fishing survey of main river and becks to assess fry and parr populations	The Agency part of 5 year rolling survey programme	40K	Medium
Spring salmon stock	1. Spring salmon present in very low numbers	Investigate/ Identify spawning and nursery areas of spring salmon	The Agency/ Angling clubs	5K	High
		Consult with clubs/ Associations on a workable methodology for preservation of spring run salmon	The Agency/ Angling clubs	1K	High
Impact of potholers	1. Potholing activities affect river flows on River's Dee, Clough, Twiss and on Barbon Beck	Meet potholing groups and discuss implementation of better practices	The Agency/ Interested parties	1K per year over 5 years	Medium
Ingress of rainbow trout into the River Wenning	1. Potential impact of adults on salmon juveniles through predation or competition	Monitor catches in river and evaluate following production of R&D report on the Impact of stocked rainbow trout on resident salmonid populations in 1997	Environment Agency/ Angling clubs	1K	Medium

	2. Impact of trout farm intakes on salmon smolts	EA becomes enforcement agency for fish farm screens in 1999. Fish farms with high impact on migratory salmonid populations will be prioritised for upgrade/ remedial action on screen arrangements	Environment Agency/ Fish farms	1K	Medium
Impact of man made structures on river ecology	1. May affect the stability of the river bed and the whole river ecology	Investigative work ongoing with PhD project at Lancaster University and R&D project on flow requirements for fish.	Environment Agency/ University of Lancaster	10K per year over 3 years for PhD project.	Medium



**Regional Headquarters:**  
PO Box 12  
Richard Fairclough House  
Knutsford Road  
Warrington WA4 1HG  
Tel 01925 653 999  
Fax 01925 415 961

**All enquiries:**  
Central Area Office  
Lutra House  
PO Box 519  
South Preston  
PR5 8GD  
Tel 01772 339882  
Fax 01772 627730

