EA-Southern LEAPS

BOKS

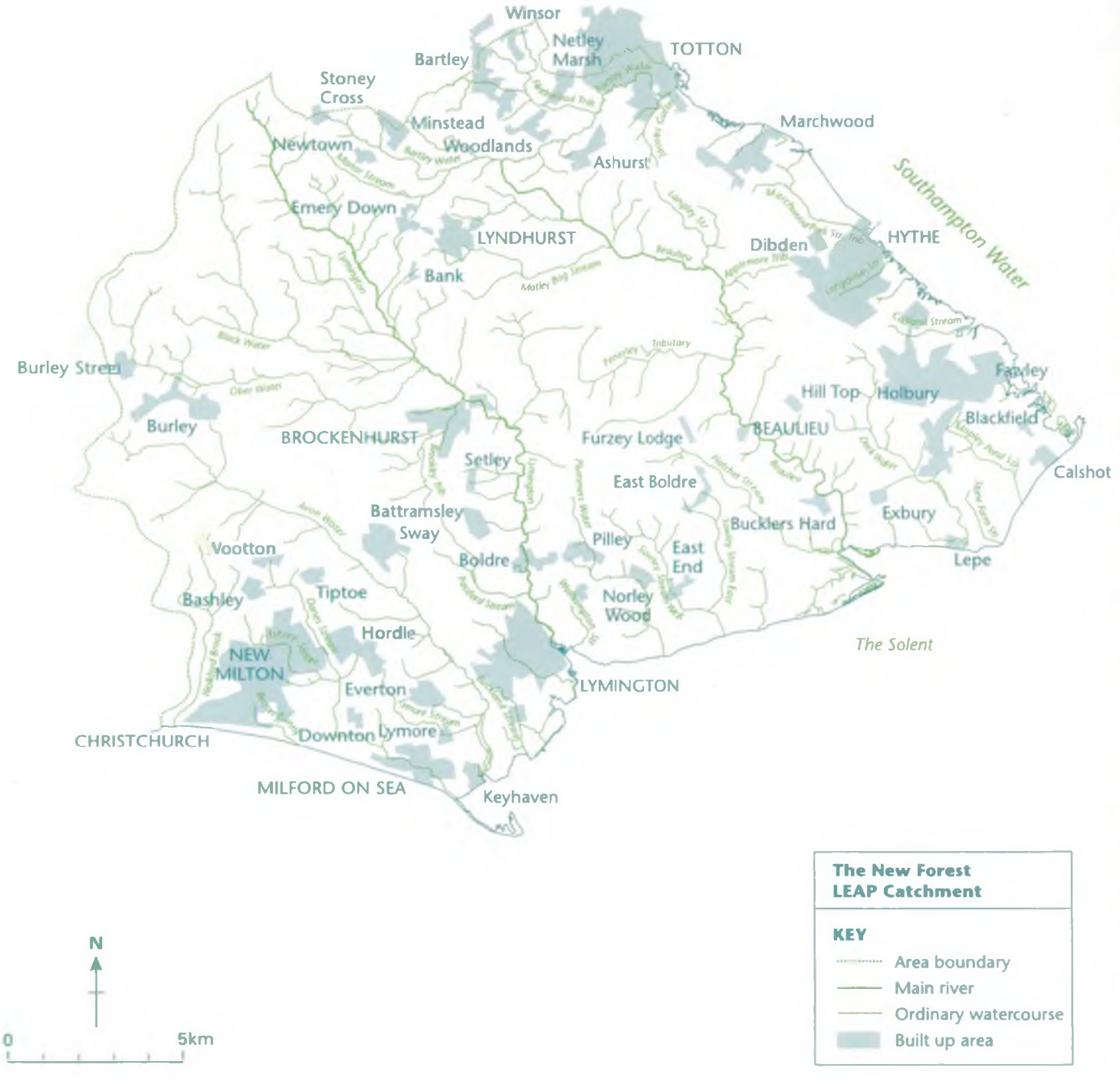
local environment agency plan

NEW FOREST

MARCH 1999

ENVIRONMENT AGENCY

Catchment Overview



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Foreward

The New Forest Local Environment Agency Final Plan provides the opportunity for the Agency to address the important environmental issues in the area. We have consulted widely with the local community to make sure all views are heard and to help us to focus our efforts in improving the environment. This Plan will help to strengthen and build partnerships with other local groups and organisations so that we can all work together to achieve a better environment for present and future generations.

The issues highlighted in this Plan have developed from those raised in the New Forest Consultation Report and actions to progress and to resolve the issues are timetabled over the next five years. Annual reviews will provide a chance to amend actions, add new issues and monitor the progress made towards our goals.

I would like to thank everyone who contributed to the consultation process. Issues will take time to resolve and new issues will come to our attention during the lifetime of this Plan. However we now have in place an agenda of integrated action which can achieve real benefits for the whole community.

Peter Quarmby
Area Manager
Hampshire & Isle of Wight

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1 INTRODUCTION

This Final Plan is the third stage in the process for the New Forest area as shown in Figure 1, and follows on from the Consultation Report which was published in April 1998. The plan sets out a programme of actions which the Environment Agency and partner organisations intend to carry out over the next five years, to protect and enhance the local environment. Progress against the plan will be monitored and reported annually.

1.1 Role of the Environment Agency

The Agency has wide-ranging responsibilities to protect and, where necessary, improve the environment in England and Wales. In carrying out our work, the Agency is guided by our duty to protect the environment in a way that works towards achieving sustainable development. This involves meeting the needs of the present without compromising the ability of future generations to meet their own needs.

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

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

- promoting openness and accountability,
- developing liaison and partnerships with key groups,
- educating the public on local environmental issues,
- tackling issues and establishing an action plan for managing and improving the environment of the local area over a period of five years.

This document is therefore part of a process that will enable a shared vision to be developed, along with a strategy for the area's management.

1.2 Strategic Environmental Management

The Agency recognises that environmental problems invariably need to be dealt with together. To achieve this, we have adopted an integrated approach to understanding, managing, regulating and improving air, land and water. The Agency has set out environmental goals across nine themes which have been published in 'An Environmental Strategy for the Millennium and Beyond' (Sept 1997).

The nine environmental themes which will be delivered at a local level through LEAPs are:

- addressing climate change
- regulating major industry
- improving air quality
- managing waste
- managing our water resources
- delivering integrated river-basin management
- conserving the land
- managing freshwater fisheries
- enhancing biodiversity

1.3 The Local Environment Agency Plan (LEAP) Process

Each LEAP will take a long term view of the local environment and set out a five year plan of action for solving local issues. Published Draft Consultation reports will cover all parts of England and Wales by the end of 1999, but this is only the first milestone in what will be an on going national programme of LEAPs, which will be regularly up dated, developed and improved.

As Figure 1 indicates, the LEAP process includes the production of a number of documents.

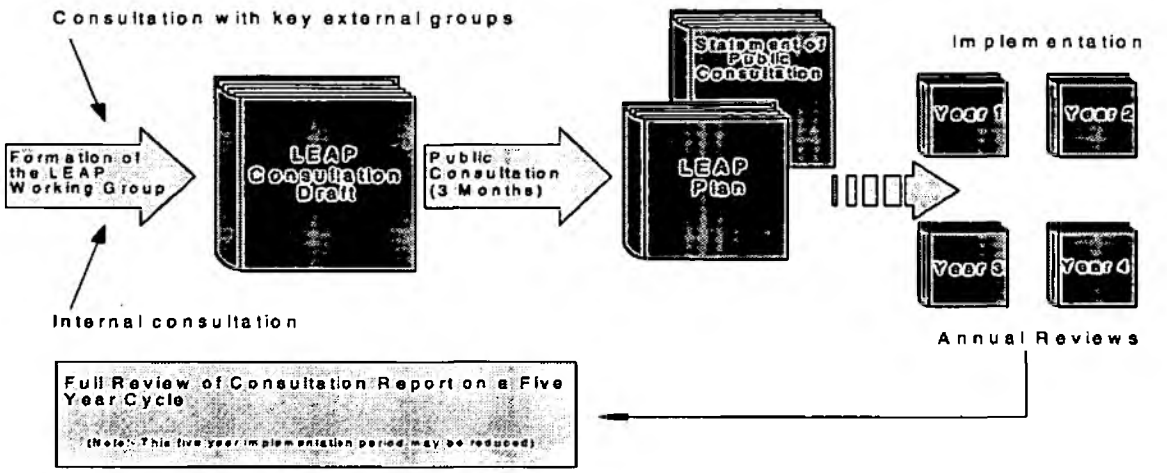

Figure 1

1.3.1 The Consultation Report

The New Forest Area Consultation Report was published in April 1998. It concentrated on the prioritisation of environmental issues, and identified possible options for action necessary to restore/improve the local environment. The Report was distributed to a wide variety of people and groups who have an interest in the area, to allow them to comment on the issues and options for action.

1.3.2 The Statement on Public Consultation

This was published in December 1998 and summarised the responses received to the Consultation Report. A brief summary of the responses is detailed in Section 3.

1.3.3 The LEAP Action Plan

This Action Plan firms up the issues and actions following external and internal consultation from the draft report. The plan contains a list of actions that take account of costs and benefits, identifying timescales for delivery, over the 5 year lifespan of the plan, and partner organisations.

1.3.4 Annual Reviews

These monitor the progress of the LEAP actions and report on any changes in the programme. It is critical that these Reviews are integrated into the Agency's internal Business Plans so resources can be allocated to undertake the actions. Consequently, in the Southern Region we will be reviewing our LEAPs to coincide with the Business Planning cycle resulting in all the Reviews being published in March each year. One Review document will be produced for each of the three Agency Areas ie Hampshire and Isle of Wight, Sussex and Kent. Each LEAP catchment will still be reported upon individually within the report.

1.3.5 LEAPs and the Area Environment Group (AEG)

The Hampshire AEG comprises of 20 members who have a broad experience and interest in environmental matters. We regard the group as fundamental in assisting us in building relationships with the local community, as it is a forum through which we seek local opinion on environmental issues. The group meets 4 times a year as a committee and some of its members are also involved in particular working sub groups to help and advise us on issues in the LEAP area.

1.3.6 The New Forest Stakeholder Group

The Agency is always striving for improvement to forge closer links with the local community and to take on board their views. With this in mind the Agency undertook a pilot study to prioritise the issues in the New Forest LEAP through consensus building using a stakeholder group. The group comprised members from the voluntary, private and public sector who had an interest in environmental issues in the LEAP area. The issues were ranked using a cost benefit analysis taking into account the constraints of limited resources. This trial was extremely successful and the Agency will continue to examine more effective approaches to involving stakeholders, building on the innovative research conducted in the New Forest LEAP.

2 OVERVIEW OF THE AREA

2.1 Brief Description of the Area , Uses and Resources

The New Forest LEAP area is defined by the rainfall catchment of the River Lymington and the River Beaulieu and covers 450.49km^2 - from Walkford Brook in the West to Beulieu in the East.

This LEAP covers a large proportion of the New Forest Heritage Area; the remainder of the Heritage Area, principally in the north and west, is to be covered by the Hampshire Avon LEAP. The LEAP catchment lies almost entirely within the administrative area of New Forest District Council, with the exception of a very small area in the south-west which lies within Christchurch District. The Heritage Area, whose status is equivalent to National Park under Government policy, is designated by New Forest District Council as an area intended to ensure continuity of ecological habitats and to prevent development in adjacent areas which may have an adverse effect on the Forest.

The principal economic activities within the catchment are tourism, leisure, agriculture and the petrochemical complex and power station at Fawley. The population of the area increases dramatically in summer months, with the attendant pressures upon the New Forest habitats and the local highway system. The large estates in the south are agricultural and continue to be so; commoning is part-time and managerial agriculture associated with it may be reducing. The Fawley complex is an important local employer involving major long-term investment in plant which does, however, have the potential to impact upon aspects of the environment in the catchment. A wide variety of retail and small-scale manufacturing activities are also present in the area.

The New Forest is protected by a range of national and international statutory designations. There are 12 Sites of Special Scientific Interest and the New Forest is designated as a candidate Special Area Conservation, an Special Protection Area and a Ramsar site.

2.2 Flood Defence

The threat from flooding is always with us. While flood risks can never be eliminated completely, they can be reduced. There are over 155.9km of "Main River" within the LEAP Area, flowing through agricultural, residential and industrial areas.

The Flood Defence function through its regional and local flood defence committees delivers a 24-hour service managing flood risk.

The flood defence powers, duties and responsibilities of the Agency are set out in the Water Resources Act 1991, Land Drainage Act 1991 and the Environment Act 1995.

The Agency has a major operational role to maintain, operate and improve flood defences where appropriate. Frequently, objectives are met by working in partnership with local authorities and central government which provide the majority of funding for flood defence work. Environmental assessment is an integral part of all our activities, together with decision making based on cost-benefit analysis and widespread consultation. Our responsibilities include the following:

Supervision - duty to exercise a general supervision over all matters relating to flood defence (which includes land drainage and water level management);

Flood warning - responsibilities to disseminate flood warnings directly to the public;

Maintenance and operations - powers to maintain and operate flood defences and associated structures to reduce the incidence of flooding;

Improvements - powers to build defences to reduce the risk of flooding. This includes the replacement of defences reaching the end of their effective life;

Regulating and Influencing - consent is needed from the Agency for certain works that may affect the watercourses and flood defences. Planning authorities, with the benefit of the Agency's advice, are responsible for protecting the flood defence interests of people whose property may be affected by development proposals.

2.3 Water Quality

The report shows that the "Main Rivers" in the LEAP area are generally of good or very good biological quality whilst the quality of the tributaries is varied. The tributaries generally have a satisfactory quality but some do show the effect of low flows and intermittent pollution inputs. In particular the data shows that:-

The Beaulieu river is of very good quality both with respect to biology and chemistry. Applemore Stream, Hatchet Stream and Pennerly Water have shown a variable quality with instances of lower gradings mainly related to low flows.

The River Lymington is of very good biological quality whilst the quality of the tributaries varies from very good to fairly good.

Bartley Water and its tributaries are all of good or very good biological quality.

The Waterside streams are generally of good or fairly good biological quality with the exception of Langdown Stream which is biologically poor.

Avon Water, Lymore Stream and Danes Stream are of good or very good biological quality whilst Ashley stream, Walkford Brook and Becton Bunny are of fair or poor biological quality.

2.4 River Quality Objectives

Although at the present time there are no Statutory Water Quality Objectives proposed for rivers within the New Forest LEAP area, the Agency has proposed non-statutory River Quality Objectives (RQOs) and the River Ecosystem system of water quality standards has been applied in setting these objectives.

Ultimately, RQOs for different water uses will be set, although currently only the River Ecosystem (RE) scheme has been developed. This sets standards relating to the chemical quality requirements for different aquatic ecosystems.

Short-term objectives are proposed, along with a date by which compliance will be achieved. These objectives must be achievable within a ten-year horizon of committed investment or by the actions of the Agency or others.

Long-term objectives have also been proposed which reflect the achievable aspirations for water quality. Achievement of these objectives may take more than ten years and require currently uncommitted expenditure.

Views on the proposed short and long-term objectives are welcome. Where justifiable reasons exist, objectives may be amended in the LEAP Annual Review.

These objectives can be made statutory by direction of the Secretary of State but the timescale for implementation is uncertain at this time.

By setting RQOs the Agency aims to:-

- protect and, if practicable, improve current water quality;
- achieve sustainable standards for future uses of the Resource;
- improve the riverine and aquatic habitat.

2.5 Air Quality and Integrated Pollution Control

In the New Forest LEAP area there are 23 Authorised Part A processes regulated under Integrated Pollution Control (IPC) operated on nine sites. One of these, the Esso plant, undoubtedly dominates sulphur dioxide emissions for the area. These processes are concentrated along the eastern side of the LEAP area.

There are also 27 Part B processes authorised by the New Forest District Council, most of which are in the LEAP area. The majority are small waste oil burners, which will not be significant sources of pollutants, and a concrete batching plant, which will be a source of dust and particulate matter of less than 10μm diameter (PM_{10}). The other main emission sources affecting the area are traffic and emissions from heating plant in domestic and commercial premises.

2.6 Water Resourses

There is a need to control the use of water within the area, to create a balanced and sustainable resource. The Agency achieves this by licensing abstractions from and discharges to the river system and through its "Policy and Practice for the Protection of Groundwater".

With no major aquifers in the LEAP area, the natural storage of water is limited. Rivers react quickly to rain in winter and flows in summer can be low. The only resource development in recent years have been relatively small reservoirs or the modest use of minor aquifers for irrigation.

To enable it to carry out its duties, the Agency maintains a network of recording stations where hydrometric information such as rainfall, river flows and levels is collected. This information provides the basis for water resource assessments and management as well as wider application in the Agency's other functions such as flood defence and water quality. The long term gauging station in the River Lymington at Brokenhurst was rebuilt in 1995 to measure a wider range of flows and to allow fish migration.

Rainfall is monitored more extensively, with three daily gauges operated by private observers and three Agency automatic gauges, two of which are connected to telemetry and provide data in real time for flood defence purposes.

Spot flow measurements are taken on a monthly basis at five locations in the LEAP area. Water level gauges in the Lymington estuary provide warnings of extreme high tides and monitor the operation of the tide gates.

2.7 Waste Management

Statistics on waste arisings and recycling are not collected or collated within the geographic boundary of the LEAP area. However, the New Forest District Council collect an estimated 44,500 tonnes of household and commercial waste (Municipal Year Book 1997), and the majority of this will arise within the LEAP area. There are no comparable figures available for commercial, industrial or other types of waste.

There are a number of licensed waste management facilities in the LEAP area taking inert waste and biodegradable waste together with 2 Waste treatment /processing plants, 6 transfer stations and one incinerator.

The main facility which has the potential for significant environmental impact is the landfill site at Efford adjacent to the Pennington Marshes. This is a large site that has received substantial quantities of household and other wastes over many years. The excavation of gravels and replacement with waste partly in contained areas has led to a number of environmental problems inluding reduced surface water quality and reduced groundwater flow.

2.8 Fisheries

An electric fishing survey of the five main running waters in the LEAP area, conducted by the National Rivers Authority in January - February 1993, indicated the presence of 12 species of freshwater fish plus flounders (a marine/brackish water species) in the lowermost reaches. Further fish known to be present include spined sticklebacks, bass, thick lipped mullet and thin lipped mullet (marine/brackish water species, in lowermost reaches).

Non-migratory brown trout and migratory sea trout occur in most of the New Forest streams and represent freely interbreeding fractions of a single population where they occur together.
The origin and history of the other freshwater species occurring in the streams of the LEAP area is uncertain, but some are likely to have been resident since the streams were tributaries of the Solent River which joined the Rhine when Britain was still joined to Europe by a land bridge, about 10,000 years ago. Others are likely to have arisen from introduction by humans. It is believed that stream fish communities within the LEAP area have been subject to very little stocking with genetic material from other streams. Such pristine river fish communities are rare in the UK.

Although there are over 300 ponds within the New Forest, the majority are man-made. Most were created as reservoirs for water mills or other industrial purposes, as ornamental landscape features, or are flooded pits from which gravel was extracted. Most are small in area; only one (Sowley Pond) exceeds 10ha, with perhaps a further 30 of over 1ha. Many have been stocked with fish, either brown and rainbow trout (e.g. Sowley Pond, Leominstead Lake, Hordle Lakes, Turcroft Farm Lakes) or coarse fish (e.g. Hatchet Pond, Mopley Pond, Roundhill Pond, Orchard Lakes and Sway Lakes). The Forestry Commission list pike, roach, bream, tench, carp, rudd and eels as being present in Hatchet Pond.

2.9 Conservation

Ecologically, the LEAP area can be broadly divided into three distinct sections - the Crown Land of the New Forest, the farmlands to the south, and the coastal zone. The coastal zone includes the western shore of Southampton Water and the coast of the north west Solent, stretching from Calshot Spit in the east to Walkford Brook and Highcliffe at the western extreme. The area as a whole forms part of the zone defined by the Countryside Commission and English Nature as the New Forest 'Natural Area', sharing a coherent heritage of wildlife, natural features, and cultural history. Most of this is now described as the New Forest Heritage Area.

The nature conservation value of the New Forest Crown Lands is afforded statutory protection in both a national and international context. having been designated under several national Acts and European habitats legislation. The New Forest is designated;

- A Ramsar site by virtue of its valley mires and adjacent wet heaths and the nationally rare plant and animal species that it supports.
- A Special Protection Area (SPA) for supporting internationally important populations of breeding and wintering bird populations. The bird species to which the Directive is relevant depend on the heathland habitat of the New Forest.

- A Site of Special Scientific Interest (SSSI).

Although the Forest has not been formally declared a National Nature Reserve (NNR), it has the status of an NNR through a Letter of Intent between the Forestry Commission (Forest Enterprise) and English Nature.

The New Forest has also been put forward to the EC as a candidate Special Area of Conservation (cSAC) for supporting both habitats and species of European Interest, and habitats of European Priority Interest. Listed species and habitats whose existence are not disputed include:-

Alder woodland on flood plains (priority interest),
Nutrient-poor, shallow waters with amphibious vegetation,
Wet heathland with Cross-leaved Heath,
Depressions on peat substrates, and;
Southern Damselfly *Coenagrion mercuriale*.

One listed habitat (Mediterranean temporary pools, priority interest) is disputed since New Forest ecology experts do not accept its occurrence.

3 REVIEW OF THE CONSULTATION PROCESS

This section reviews the consultation process and provides a brief summary of the responses received. A more detailed review of comments is given in the Statement of Public Consultation, available on request.

The New Forest LEAP Consultation Report was publicly launched in April 1998 when the formal 3 month consultation period began. The launch was held at Lyndhurst Park Hotel and was attended by 60 people representing local authorities, environmental organisations, industry and recreational clubs. The launch was publicised in the local press and local TV covered the event prior to the launch.

Copies of the Consultation Report and Summary leaflet were distributed prior to and following the launch to interested parties, libraries and other public premises to publicise the Consultation Report.

3.1 Informal Consultation

The New Forest Consultation Report was produced in consultation with a number of external organisations including local authorities and National Farmers Union.

As part of a National R&D project a stakeholder group was established for the New Forest Area. The group consisted of people who either lived, worked or enjoyed the Area and included representatives of the public, voluntary and private sectors. The main interests within the area were represented including industry, recreation, conservation and agriculture. The group reviewed the issues and established criteria for measuring their importance. The criteria were then applied to each of the issues and a score was derived which enabled them to be ranked in a priority order. This prioritised list was used as a focus for the consultation exercise.

3.2 Summary of Responses

The Agency received 34 written responses including those from RSPB, NFU, Country Landowners Association, RYA, Southern Marine Industries Association, English Nature and separate departments of Hampshire County Council.

These responses varied in their length and comments offered. Some consultees commented on the text and suggested inclusion of up to date / additional information. Many respondents welcomed and supported the issues and associated actions proposed by the Environment Agency.

The issues most frequently referred to in the written responses were the following:

Issue M7: Low summer flow rates in certain New Forest streams.

Issue X: Impact of the mineral extraction and land filling activities at Manor Farm

M15: The impact of sea level rise on intertidal areas - Coastal Squeeze

Errors and omissions were also highlighted. Although the Agency welcomes these corrections we must stress that the supporting text and maps within the Consultation Report will not be revised until the next Consultation Report is produced, in five years.

3.3 Future Action

Changes to some of the existing issues, options and proposals have been made as a consequence of consultation and are identified in the Final Plan tables in section 4. We have considered the reponses made and have developed the Final Plan so that there is a balance between the opinions expressed and need to ensure a workable, deliverable and feasible plan.

The promotion of the issues in the Consultation Report has identified activities that form the basis of the Final Plan for 1999 – 2003.

4. ACTION PLAN

4.1. List of Issues

M1, Excessive unlicensed surface water abstraction for trickle irrigation

M2, Clarification is required over the inter-relationship of powers and responsibilities between the Agency and the Forestry Commission within the New Forest

M3, Loss of biodiversity and the water resource associated with damage to valley mire systems

M4, Loss of biodiversity associated with engineering works on natural river courses

M5, Loss of biodiversity associated with recreational use of watercourses

M6, Limited knowledge on the nature of the water resource due to a lack of groundwater and surface water monitoring

M7, Low summer flow rates in certain New Forest streams

M8, Reduced stream water quality during summer low flows

M9, Disruption of stream ecology and processes due to the removal of debris dams from New Forest watercourses

M10, Reduced recreational water quality at Calshot

M11, Derogation of the Keyhaven Pond at the Lymington and Keyhaven Nature Reserve

M12, Continuing prohibition of shellfish production in the vicinity of the current Pennington WWTW outfall

M13, Improved management of urban and agricultural surface water run-off

M14, Development of the Flood Defence Management System (FDMS)

M15, The impact of sea level rise on intertidal areas (coastal squeeze)

M16, Inadequate understanding of the effect of acid deposition on ecology of the New Forest

M17, Inadequate understanding of the impact of sulphur dioxide emissions

M18, Inadequate understanding of the combined impacts of process emissions

M19, Public concern over odour control at industrial sites

M20, Status of sea trout population is unknown

M21, Obstructions to free passage of sea trout

M22, Poaching pressure on sea trout stocks

S1, Implications of the Habitats Directive on the Agency

S2, Fulfilling the Agency's biodiversity commitment

S3, Loss of biodiversity associated with deepening of ephemeral water bodies

S4, The threat to aquatic ecology of New Forest watercourses caused by the spread of alien flora and fauna

S5, Reduced nature conservation value of Lymington Reed Beds SSSI

S6, Groundwater contamination at Ampress Works public water supply

S7, The control and maintenance of privately owned flood defence structures

S8, Defining the role of the Agency in local air quality management

S9, Inadequate understanding of the effect on public health of PM_{10} arisings from waste handling facilities

S10, Lack of knowledge of fish stocks in still waters

S11, Low availability of free public fishing in the New Forest

X - Manor Farm

4.2. Addressing Climate Change

4.2.1. Issue No. M15, The impact of sea level rise on intertidal areas (coastal squeeze)

- **Background**

Climatic conditions are changing. Increasing storm severity, coupled with rising sea levels, exposes coastal zones to the risk of flooding. Extensive areas of the New Forest LEAP coastal zone between the Dorset border and Calshot are below high tide level. Subsequently defences of varying construction, ownership and responsibility have been constructed around this coastal zone. Sea defences are operated and maintained by the Agency, local authorities and/or private landowners. Where sea walls protect grazing marshes and low-lying housing from flooding by the sea, rising sea levels are squeezing the intertidal habitat caught by the sea wall, preventing the natural retreat of the habitat up the shore. The threatened intertidal habitat is protected under both the 1979 Birds Directive and the 1992 UK Habitats Directive and there is therefore an obligation on the Agency to retain a favourable conservation status for this habitat. However, the Agency also has functions relating to coastal flood defence, and there is therefore a conflict of interest between obligations under European Directives with specific conservation objectives, and coastal flood defence within the New Forest LEAP area.

- **Effects**

The construction of sea defences has resulted in conflict of interests between flood defence, fisheries and conservation issues in so far as that rising sea levels will eventually drown intertidal habitats lying immediately in front of the sea walls. Additionally, the erection of flood defence structures across river outlets has implications for the migration of sea trout. Furthermore, continuing sea level rises will eventually expose the existing sea defence to the risk of overtopping.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Conduct a strategic study based upon Shoreline Management Plans	15k	----	15k	----	----	----	Local Authorities	Flood Defence
Influence planning authorities through strategic plans	Manpower	MP	MP	MP	MP	MP	Local Authorities	Flood Defence

- **Further detail**

In addition to undertaking general maintenance and upgrading works, we can build new defences. New developments are nowadays only undertaken to protect built-up areas from flooding and we ensure that they are technically, economically and environmentally sound. However, we acknowledge that it is inappropriate to attempt to contain or interfere with natural processes that are beyond either our financial resources or present comprehension. We will therefore continue to develop our understanding of the implications of these changes and how the resultant natural processes effect our built environment, thus enabling us to co-ordinate our capital works and maintenance programme more efficiently.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 9.

4.3. Improving Air Quality

4.3.1. Issue No. M16, Inadequate understanding of the effect of acid deposition on ecology of the New Forest

- **Background**

National studies have identified some of the soils in the LEAP area as being particularly sensitive to acid deposition. There are major industrial sources of sulphur dioxide emissions in the LEAP area that will be making a contribution to acid deposition in the locality. There is, however, no information on either the contribution being made by local sources to acid deposition, or on the significance of the deposition to sensitive soils, flora and fauna of the New Forest.

- **Effects**

Acid deposition is in excess of the critical loads in the New Forest area and it may therefore be having an effect on the ecology. However, there is no specific information on the potential effects of the acid deposition on the area, so it is not possible to monitor the improvement that might be expected as sulphur dioxide emissions are reduced, nor to establish whether further emissions reductions may be required.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Do Nothing								

- **Stakeholder ranking**

The stakeholder ranking for this issue is 27. This was considered a low priority issue and no action will be undertaken unless additional resources become available.

4.3.2. Issue No. M17, Inadequate understanding of the impact of sulphur dioxide emissions

- **Background**

There is a new air quality standard in the UK for sulphur dioxide exposure over a 15-minute period. Several of the Part processes authorised by the Agency in the LEAP area are important emitters of sulphur dioxide.

- **Effects**

To protect human health, exposure to sulphur dioxide should not exceed the newly defined air quality standard of 100 ppb over 15 minutes. The Government's objective is to meet this standard as a 99.9 percentile by 2005. Currently the Agency has no information on whether or not the objective is being exceeded in the LEAP area and the extent to which Part A processes may be contributing, and therefore whether further control measures will be required to meet the objective by 2005.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Do Nothing								

- **Stakeholder ranking**

The stakeholder ranking for this issue is 27. This was considered low priority issues and no action will be undertaken unless additional resources become available.

4.3.3. Issue No. S8, Defining the role of the Agency in local air quality management

- **Background**

The Environment Act 1995 has given local authorities new responsibilities for managing air quality in their area. The Agency has agreed to work closely with the local authorities, helping them carry out their reviews and prepare an action plan if necessary.

- **Effects**

There are a number of industrial sources under the control of the Agency that will need to be considered by the New Forest District Council when it carries out its local air quality management functions. Information on the emissions from these sources and their impact on local air quality will be sought by the local authority.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Promote understanding through work with Local Authorities	Manpower	MP	MP	----	----	----	NFDC	Environment Planning

- **Further detail**

The Agency proposes to continue to develop links with New Forest District Council and to supply information relevant to their requirements. In addition, the Agency proposes to encourage local industries to assist by monitoring the local impacts of their own operations where this is appropriate.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 29. Low priority issue.

4.4. Managing Water Resources

4.4.1. Issue No. M1, Excessive unlicensed surface water abstraction for trickle irrigation

- **Background**

Trickle irrigation is an unlicensable activity and the Agency therefore has no powers to control or limit water abstraction for this purpose. However the Agency is supportive of the principle of trickle irrigation as it is inherently less wasteful than spray irrigation.

- **Effects**

The abstraction of water for trickle irrigation can legally be undertaken without any regard for minimum river flow levels in streams and rivers. This can result in the reduction of already low summer flows, degrading existing licensed abstraction and the value of riparian and aquatic habitats for plant and animal, directly affecting important species such as water vole, otter and sea trout populations.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Licence control following DETR licence review	Dependant on DETR						None	Water Resources

- **Stakeholder ranking**

The Stakeholder ranking for this issue was 23. It is ranked low but may become a legal requirement.

4.4.2. *Issue No. M6, Limited knowledge on the nature of the water resource due to a lack of groundwater and surface water monitoring*

- **Background**

There is no major aquifer in the LEAP area and there is only one public water supply source from groundwater. Similarly, there are no major users in the LEAP area and no public water supply source from any rivers. Against this background there has been little resource monitoring network developed in the area, except for a gauging station on the River Lymington at Brockenhurst, constructed in 1966 and rebuilt in 1996, and an abstraction centre on the Walkford Brook and the Beaulieu River.

- **Effects**

The public water supply at Ampress abstracts from a confined aquifer. The Agency has no facilities with which to determine the zone of influence of the borehole and hence appropriate groundwater protection zones. Groundwater protection zones enable the Agency to restrict and control potentially contaminating activities around public water supply boreholes. Additionally, because there is no groundwater monitoring the Agency is unable to establish whether groundwater abstraction is affecting any riverine or aquatic habitats by reducing stream flow levels or by lowering groundwater levels in the valley mires. Groundwater monitoring in the LEAP area will give us a greater understanding as to the main factors that influence river flows and water levels in the valley mires.

River flow rates and levels are heavily influenced by the historical drainage of valley mires and by abstraction for irrigation in the southern coastal belt. The Agency needs further continuous river flow monitoring and control facilities so as to be able to more closely control and monitor the effect of summer abstraction for spray irrigation on river flows.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Drill three observation boreholes to allow groundwater monitoring	20k	20	----	----	----	----	None	Water Resources

- **Stakeholder ranking**

The stakeholder ranking for this issue is 25. The low priority of this issue determines the level of funding for actions. Currently the groundwater is not monitored in the New Forest this action would enable a better understanding of the nature of the water resources.

4.4.3. Issue No. M7, Low summer flow rates in certain New Forest streams

- **Background**

There is a perception that low flows are increasingly becoming an issue in the New Forest. Issue M6 identifies that the hydrometric network is not well enough developed to fully understand the hydrology of the area or to detect these changes. Climate change predictions suggest that groundwater recharge may decline and summer flows may get even lower.
Low flows may have been exacerbated by drainage schemes and other practices that shed water off the forest reducing water storage in the headwaters of the stream.

The only control the Agency can exert to prevent flows getting lower is to reduce demand for spray irrigation from the New Forest streams in the summer months, opportunities must be taken to reduce or revoke Licences or Right. The DETR review of the abstraction licensing system will consider the issue of compensation for revoked licences.

Any new spray irrigation licences will only be permitted if winter storage is provided. These winter abstractions will be linked to minimum river flow conditions.

- **Effects**

Low flows in rivers are often accompanied by serious deterioration in water quality with detrimental effects on the riverine habitat and fish stocks.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Implement Regional water resources strategy	None	*	*	*	*	*	Abstractors	Water Resources
Reduce or revoke existing licenses	DETR dependant						None	Water Resources
Installation of monitoring boreholes	20k	20k					None	Water Resources

Further detail

All New Forest streams, including the Danes Stream, Plummers Water, the Beaulieu River, Dark Water, Stanswood Stream and Sowley Stream have naturally low base flows. Southern Region's general licensing policy of a presumption against summer abstraction for consumption purposes is therefore applied. There is no potential for major water resources development in the New Forest because of the characteristics of the catchment, and it is very unlikely that any summer abstraction would be considered sustainable. The DETR review of the abstraction licensing system will consider the issue of compensation for revoked licences.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 2. A high priority issue although actions are dependent upon DETR, therefore costs cannot be determined. A combination of actions will be used to address this high priority issue.

4.4.4. Issue No. M8, Reduced stream water quality during summer low flow

- **Background**

The New Forest rivers and streams are susceptible to low flows, especially in the summer months. At times of low flows any effluent discharges to streams will have a strong influence on the river water quality. For instance the effluent discharge from Brockenhurst Waste Water Treatment Works probably contributes to more than 50% of the flow in the Lymington River at Brockenhurst during very low flow periods.

- **Effects**

The effluent discharges from waste water treatment works during low flow periods can lead to eutrophic conditions in the rivers due to the higher levels of Biochemical Oxygen Demand and nutrients. There will also be corresponding high levels of faecal coliforms. Visitors use many New Forest rivers for bathing and, although the rivers are not designated bathing waters, the Agency is concerned that these waters may not be suitable for bathing. Eutrophication will also compromise the naturally nutrient-poor status of the New Forest rivers with implications for the ecology and diversity of the watercourses.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
See M7 for actions								
Ensure that, where appropriate, investigations are carried out on the effects of effluent discharge – through AMP 3 process	Manpower	----	----	MP	MP	MP	EN, Southern Water Services	Environment Planning

- **Stakeholder ranking**

The stakeholder ranking for this issue is 2. It has been determined that poor stream water quality is not result of effluent discharge. Therefore proposed actions are not appropriate. Actions to address low summer flows as shown in M7 will be used.

4.5. Enhancing Biodiversity

4.5.1. Issue No. S1, Implications of the Habitats Directive on the Agency

- **Background**

The Hampshire and Isle of Wight Area of the Environment Agency stands out over other Agency areas as having a disproportionate number and area of European-designated conservation sites.

As a result of the 1992 EU Habitats Directive, the New Forest SSSI has been submitted to the EU as a candidate Special Area of Conservation (cSAC), important for a number of habitat types and species of European Interest and European Priority Interest. The Directive has also resulted in the submission of the Solent and Isle of Wight Lagoons cSAC to the EU and the large majority of the marine and intertidal areas of the LEAP area is proposed as a possible cSAC.

In addition to sites protected under the 1992 Habitats Directive, the Crown Lands of the New Forest are designated a Ramsar site and a SPA under the 1971 Convention on Wetlands of International Importance and the 1979 Birds Directive respectively. In the coastal zone, much of the intertidal area is also included within the proposed Solent & Southampton Water SPA.

The Habitats Directive, through the Habitats Regulations and PPG9, invests a number of responsibilities on the Agency as a 'Competent Authority' in all its capacities as an operator, regulator and influencer.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Issue guidance, liaise with English Nature and contribute to management plan	Manpower	MP	MP	----	----	----	EN	FER

Further detail

The Agency will continue to train staff and raise internal awareness of the implications of the Habitats Directive. The Agency will also continue to liaise with English Nature and other 'Competent Authorities' to improve consultation procedures and will aim to fulfil all its various responsibilities as an operator, regulator and influencer under the Habitats Regulations and PPG9 in the LEAP area.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 14

4.5.2. Issue No., S2 Fulfilling the Agency's biodiversity commitment

- **Background**

The New Forest LEAP area includes a nature conservation resource of significance in a European context. This resource is under constant pressure from recreation, agricultural practices, industry, New Forest settlements and past inappropriate management, causing damage to fragile wetlands and localised losses of biodiversity.

The UK Steering Group Report (Anon, 1995) lists four key species of national conservation concern that occur in the New Forest, for which the Agency is the contact point. There are nine other species and 13 other habitats for which the Agency has other responsibilities in the New Forest area.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Deliver action plans for Biodiversity Action Plan key species	30k	15k	15k	----	----	----	FC,EN,HWT	FER

- **Further detail**

The Agency will support the Hampshire Biodiversity Action Plan Partnership to deliver and implement Species and Habitat Action Plans across the county. Within the New Forest LEAP area, the Agency will take a lead in purchasing plans for the water vole, otter, crayfish and southern damselfly and will support partners in producing and implementing plans for other species and habitats for which it shares some responsibility. We will aim to demonstrate best practice in fulfilling all our functions towards biodiversity in the LEAP area.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 22.

4.5.3. Issue No. S4, The threat to aquatic ecology of New Forest watercourses caused by the spread of alien flora and fauna

- **Background**

The aquatic ecology of many of the New Forest water courses and the marine and intertidal ecology of the coastal zone is threatened by the spread of exotic alien plant species that can cause profound changes with the respective ecosystems. The spread of American mink and signal crayfish is thought to be impacting on native species such as the water vole and native crayfish. The eventual dominance of alien species within an ecosystem results in a significant decline in biodiversity.

- **Effects**

Biodiversity within the New Forest LEAP area is threatened by the spread of alien species.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Provide advice on best practice for control of alien flora and fauna	2k	1k	1k	----	----	----	FC,EN	FER

- **Further detail**

The Agency will try to conserve biodiversity by contributing to the control of invasive species where they threaten aquatic, marine or intertidal ecosystems. Control of these species and advice to landowners will occur wherever other Agency work is taking place.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 1. This will be immediately addressed with provision of advice to landowners but action generally falls outside the remit of the Agency.

4.5.4. *Issue No. S5, Reduced nature conservation value of Lymington Reed Beds SSSI*

- **Background**

Historically, there was some concern that the Lymington Reed Beds SSSI was undergoing a decline in reed quality as a result of inefficient tidal flaps at the mouth of the River Lymington. This has permitted water to back up, flooding the reed beds and making them too wet to harvest for thatching purposes.

- **Effects**

The nature conservation value of the Lymington Reedbeds SSSI suffered a decline through on-site accumulation of reed biomass, with the increase in wet biomass possibly suppressing invertebrate levels, which in turn subsequently impacted upon important bird species dependent upon the reed-bed habitat.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Contribute to restoration project	5k	----	----	5k	----	----	HWT, EN	HWT

- **Further detail**

In response to this recognised decline, the Agency instigated the preparation of a Water Level Management Plan and, in association with English Nature and the Hampshire Wildlife Trust, devised a strategy to restore the nature conservation value of the reed bed. This included installing new structures at the mouth of the river and although the ecological quality of the SSSI is now improving, we will continue to monitor its recovery and performance.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 19.

4.6. Managing Our Freshwater Fisheries

4.6.1. Issue No. M20, Status of sea trout population is unknown

- **Background**

Knowledge of sea trout populations in the New Forest is scarce. Reported catches of sea trout have been lower in recent years than formerly, especially in the Lymington River.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Undertake investigation of Sea Trout population to produce an Action Plan	60k	20k	20k	20k	----	----	Southampton University	FER

- **Further detail**

To facilitate longer-term assessment of the status of sea trout stocks, strategic fish surveys will be repeated and a fish counter will be deployed on the Lymington River. A Sea Trout Action Plan will be prepared by the Agency.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 12.

4.6.2. Issue No. M21, Obstructions to free passage of sea trout

- **Background**

Agency assessments of potential obstructions to sea trout migrations in streams within the LEAP area have revealed that certain conditions of river flow and/or tidal height produce significant obstructions to migration.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Carry out area survey and produce proposals to overcome obstructions	20k	----	10	10	----	----	FC, Fishing Clubs	FER

- Stakeholder ranking

The stakeholder ranking for this issue is 15. Actions will be identified and partner organisations targeted after the survey is completed.

4.6.3. Issue No. M22, Poaching pressure on sea trout stocks

- **Background**

Illegal exploitation of sea trout on the Lymington River, Beaulieu River and Avon Water is a major concern to the Agency since it is a potentially significant impact on the adult sea trout spawning in the New Forest streams.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Target vulnerable poaching locations with covert and overt operations	20k Manpower	10	10	----	----	----	Fishing Clubs, Police	FER

- **Stakeholder ranking**

The stakeholder ranking for this issue is 7.

4.6.4. Issue No. S10, Lack of knowledge of fish stocks in still waters

- **Background**

Our knowledge of the populations of fish in most of the still waters within the LEAP area is poor, as discussed in Section 3.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Carry out Area survey	20k	----	10	----	----	----	Fishing Clubs, FC	FER

- **Stakeholder ranking**

The stakeholder ranking for this issue is 30.

4.6.5. Issue No. S11, Low availability of free public fishing in the New Forest

- **Background**

The Bartley Water holds fair populations of trout and coarse fish but is currently little fished by anglers.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Assess potential and produce a plan	5k	----	----	----	3k	2k	NFDC	FER

- **Stakeholder Ranking**

The stakeholder ranking for this issue is 32.

4.7. Delivering Integrated River Basin Management

4.7.1. Issue No. M2, Clarification is required over the inter-relationship of powers and responsibilities between the Agency and the Forestry Commission within the New Forest

- **Background**

Within the LEAP area, the implications of Agency responsibilities in our operational, regulatory and advisory activities, especially concerning flood defence, are not yet fully developed. This is largely due to shared responsibilities and the possibility of conflicting objectives between different competent Authorities. In particular, the Forestry Commission by virtue of its unique status as Manager of the Crown land within the LEAP area, has very specific responsibilities for drainage. These are laid down in the New Forest Acts of 1877, 1949, 1964 and 1970 and implemented through the Forestry Commission Management Plan of 1992.

- **Effects**

Many of the duties of the Agency is set out in principle in the Environment Act 1995 and Land Drainage Act 1991, particularly in respect of flood defence. Some of the duties however, overlap with the responsibilities of the Forestry Commission. The Management Plan for the Crown lands is currently under review with the intention of full revision by the year 2000. There are opportunities for Agency dialogue with the Forestry Commission in the interim, in order to ensure that the Plan sets out strategies that are mutually beneficial to duties and responsibilities of both organisations.

- **Action Table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Contribute to New Forest Committee	55k	11	11	11	11	11	NFDC, Committee Members	Customer Services
Enter negotiations with Forestry Commission	Manpower	MP	MP	----	----	----	FC	FER

- **Stakeholder Ranking**

The stakeholder ranking for this issue was 10.

4.7.2. *Issue No. M3, Loss of biodiversity and the water resource associated with damage to valley mire systems*

- **Background**

The Crown Lands of the New Forest are acknowledged as wetlands of international importance through their designation as a Ramsar site. This places particular obligations on the Agency, which is one of the principal organisations with responsibility for water levels. However, Agency responsibilities on the Crown Lands of the New Forest are not fully defined. [Issue No. M2].

The New Forest supports the largest mire resource in western Europe, although this is threatened by drainage of the mires themselves, and deepening of the streams into which they drain.

There is therefore a need to carry out a comprehensive review of Agency's regulatory and operational responsibilities within the LEAP area. Without definition of the extent of Agency responsibilities on the Crown Land of the New Forest, the extent of Agency responsibility for mire and stream restoration cannot be ascertained.

- **Effects**

Damage to the mire systems has detrimentally affected mire plant communities, threatening the current levels of biodiversity in the Forest. Species of note that are adversely affected include the southern damselfly for which the Agency is the national and local BAP Contact. The mires' water holding capacity and smoothing of flood peaks are reduced, leading to greater extremes of low/flashy flows and to resource and water quality implications. The spreading scrub on mires and the cessation of alder coppicing have caused the loss of more species and therefore need to be addressed. Grazing is particularly important for these communities.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Initiate search for appropriate projects.	Manpower	MP	----	----	----	----	EN, FC	Flood Defence
Participate in partnership projects – dependant on funding							EN, FC, landowners	Flood Defence
Partnership approach to water management in/below valley mires	40k + manpower	----	10k ----	10k	10k	10k	FC, landowners, EN	Flood Defence
Evaluate the success	5k	----	----	----	----	5	As above	Flood Defence

- **Further detail**

The Agency will support and contribute to the restoration of damaged mires and natural stream profiles within the Forest to a degree appropriate to the level of responsibility assumed by the Agency on Crown Lands.

The Agency will establish through the Hampshire Biodiversity Action Plan and by direct consultation with sources of biological data in the LEAP area, the damaged mire resource that occurs outside of the Crown land of the New Forest. Where damaged mires are identified, the Agency will consult with relevant bodies to ascertain their role in any restorative programme and contribute accordingly.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 5.

Issue No. M4, Loss of biodiversity associated with engineering works on natural river courses

- **Background**

The majority of the New Forest streams have been engineered to increase their drainage capacity, through deepening and straightening of the watercourse, particularly in their middle reaches and near settlements. This has increased the efficiency of drainage throughout the catchment of the stream and has had profound and detrimental effects on habitat diversity of the streams, and the hydrological gradients of valley mires, fundamental to the diversity of plant and invertebrate species that is found within this habitat.

- **Effects**

The increased drainage efficacy of New Forest streams has changed the hydrological regime of the area, and threatens the integrity of all wetland habitats. Streams, mires and permanent and ephemeral ponds are affected with subsequent loss of species diversity. Species that are adversely affected include the water vole, otter and native crayfish for which the Agency is the national and local BAP Contact. Additionally, stormwater falling within the upper reaches of the Forest streams flows more quickly out of the numerous tributaries into the principal arterial river, exposing the lower reaches to unnecessary extra flood risk.

- **Action Table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Investigate opportunities for funding	Manpower	MP	----	----	----	----	FC,EN	Flood Defence
Contribution to river restoration projects	40k	----	10	10	10	10	FC,EN	Flood Defence
Evaluate the success of the projects	Manpower	MP	MP	MP	MP	MP	FC,EN	Flood Defence

- **Further Detail**

The Agency will support and contribute to the restoration of natural stream profiles, with the back-filling of dredged watercourses, channel habitat enhancement schemes and the installation of weirs to a degree appropriate to the level of responsibility assumed by the Agency on Crown Lands.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 12

4.7.3. Issue No. M5, Loss of biodiversity associated with recreational use of watercourses

- **Background**

Riparian woodland is of Priority European conservation interest and is protected under the 1992 UK Habitats Directive.

Recreational pressures within the Forest are often focused on riparian habitats, which are of significant amenity value to the public.

- **Effects**

Recreational pressures can cause significant ecological damage through erosive processes and disturbance. This problem manifests itself as loss of ground flora and marginal vegetation, with impacts on species diversity.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Liaise with Local Authority to contribute to sustainable management of recreation & environment	Manpower	MP	MP	MP	MP	MP	NFDC, FC	FER

- **Further detail**

The Agency has a duty to promote water-based recreation and will aim to do so in collaboration with the Forestry Commission, New Forest District Council, landowners and others where appropriate. Limitation of environmental damage will be achieved by visitor management that is seen as a preferable alternative to the wholesale reduction of recreational uses.

Strategies for reducing recreational impact may consider relocation of car-park and camping facilities to more robust habitats than is currently the case, and instigating appropriate restorative and management plans for riparian habitats damaged by current recreational use.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 17. Restoration projects identified as actions for issues M3 and M4 will consider recreation.

4.7.4. Issue No. M9, Disruption of stream ecology and processes due to the removal of debris dams from New Forest watercourses

- **Background**

Debris dams form when woody material becomes trapped within the channel of a watercourse. This acts as an impediment to the passage of other debris, so resulting in an accumulation of material which can serve to dam the stream in which it has formed. Debris dams are very important to the ecology of the New Forest streams, diversifying opportunities for habitats and communities and supporting a range of specialist invertebrate fauna. They are the means by which a river restores its natural form, encouraging pools, riffles and meanders to re-establish in formerly dredged waters. The dams also hold back flood waters, reducing peak flows. Those that present total blockages may prevent the migration of sea trout. Flooding within the New Forest is vital to the ecology of the riparian woodlands, a Priority 1 habitat under the Habitats Directive.

- **Effects**

On formation, debris dams are frequently removed because of the localised flooding and the impediment to water flow that can result. This causes the loss of habitat diversity associated with the dams and a subsequent loss of specialised invertebrate faunas including the native crayfish that make an important contribution to biodiversity within the area of the New Forest LEAP. The material re-creation of pools, riffles and meanders is prevented and, during times of peak run-off, lower reaches of arterial rivers are exposed to unnecessary extra flood risk as a direct result of decreased land drainage response times.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Retain debris dams unless constituting a risk	None	*	----	----	----	----	FC, Commoners, EN, landowners	Flood Defence
Enter into talks with all relevant parties to negotiate agreed policy.	Manpower		MP	----	----	----	FC, landowners, Commoners, EN	Flood Defence (FER)

- **Further detail**

There is a need to prepare criteria for the management of debris dams in New Forest streams, after due consideration is given to the conflicting interests. The Agency will contribute to a review of the cyclical, phased or strategic management of debris dams and liaison with the Forestry Commission, English Nature, commoners and angling interests will be sought. These matters will also be addressed as part of the Flood Defence function's maintenance management programme.

- **Stakeholder Ranking**

The stakeholder ranking for this issue was 16. Although mid ranking this is a contentious issue requiring a joint approach.

4.7.5. Issue No. M10, Reduced recreational water quality at Calshot

- **Background**

Ashlett Creek Waste Water Treatment Works is located just north of Calshot on Southampton Water. Currently treatment is limited to preliminary treatment followed by discharge.

- **Effects**

Elevated levels of faecal and total coliforms have been recorded at the nearby Recreational Beach.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Provide secondary water quality treatment at Ashlett Creek – within AMP2 period	None	*	*				Southern Water Services	Environment Planning
Review for further treatment requirements (disinfection) – within AMP3 period	None			*	*	*	Southern Water Services	Environment Planning

- **Further detail**

Under the EC Urban Waste Water Directive, Southern Water Services must improve Ashlett Creek WWTW to meet the requirements of this Directive. It is proposed to build a primary and secondary treatment facility on the existing site. The Agency will ensure that, through consenting procedure, these standards are met.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 6.

4.7.6. Issue No. M13, Improved management of urban and agricultural surface water run-off

- **Background**

Historically, excess surface water after heavy rainfall has been transmitted direct to river systems via ditches and culverts.

- **Effects**

Excess surface water directly channelled into river systems can cause rapid overloading and exceedance of the river systems capacity. Urban run-off will also reduce the quality of the river waters through raised Biochemical Oxygen Demand, metals and oil contents. Rapid agricultural run-off introduces large amounts of silt into river systems that can severely degrade the riverine habitat and biodiversity. Poor quality of river waters has been identified in Langdown Stream, Ashley Stream, Walkford Brook and Becton Bunny and this may well be due to urban run-off.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Promote appropriate agri-environmental solutions	4k	2k	2k	----	----	---	NFU, landowners	Environment Protection

- **Further detail**

The Agency has a policy to encourage the retention of surface water run-off in suitable shallow holding features. These include long shallow ditches (swales), scrapes, reed beds and balancing lagoons. Buffer strips and appropriate riparian vegetation management is also encouraged and the Agency will promote agri-environmental solutions where appropriate. The Agency has a policy to actively promote these more environmentally sympathetic systems of water and riparian land management where clear environmental benefits may be identified.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 19.

4.7.7. Issue No. M14, Development of the Flood Defence Management System (FDMS)

- **Background**

The Agency's present understanding of flood related issues are summarised within the various Section 24 maps. These maps primarily provide us with both historical and conjectural flood events based upon a 1:50 year event frequency. These plans are used to compile lists of maintenance and capital works to meet the expectations of the public.

- **Effects**

Owing to urban intensification, historic flood defences are in some places at risk from overtopping. In some instances urban growth has resulted with the Agency's flood defence services being more reactive than proactive.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Establish FDMS	Manpower	MP	MP	MP	MP	MP	None	Flood Defence
Maintain FDMS	Manpower	MP	MP	MP	MP	MP	None	Flood Defence
Survey and review flood plain data	200k	100	100	----	----	----	None	Flood Defence
Expand Flood Warning Dissemination Service	MP	MP	MP	MP	MP	MP	None	Flood Defence

Further detail

In response to Section 105 of the Water Resources Act 1991, the Agency is statutorily required to exercise a general supervision over all flood defence matters, with powers and duties largely relating to "Main Rivers" and to sea defence works. Principal concerns are:-

- the natural catchment area of watercourses and rivers;
- the channels occupied by rivers and watercourses during times of normal flow;
- flood plains and washlands which accommodate water during periods of flood;
- coastal flood plains at risk from flooding from the sea or tidal lengths of rivers, whether or not protected by sea defences.

In response to this legislation, the Agency has embarked upon an exercise of updating its knowledge and understanding of the natural environment with respect to flood issues, a process culminating with the introduction of an integrated flood defence management process for targeting and prioritising both capital and maintenance works.

We believe that this system will become a multidisciplinary management tool used for a wide range of functions ranging from providing proactive planning advice to local authorities, to targeting capital works at sensitive river reaches

- **Stakeholder Ranking**

The stakeholder ranking for this issue was 18. The results of the Bye Report, produced as a result of the Easter Floods, have raised the profile of this issue.

4.7.8. Issue No. S3, Loss of biodiversity associated with deepening of ephemeral water bodies

- **Background**

A number of ephemeral water bodies away from the Forest watercourses have been damaged by deepening, often undertaken to create a more permanent water feature, of enhanced amenity value.

- **Effects**

Deepening of some ephemeral waterbodies has resulted in habitat loss for the very specialised faunal communities that exploit this habitat type, with subsequent impacts on biodiversity.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Investigative study	5k	----	5k	----	----	----	FC	Flood Defence

- **Further detail**

The Agency will support and contribute to the restoration of damaged ephemeral ponds within the Forest to a degree appropriate to the level of responsibility assumed by the Agency on Crown Lands.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 10. The Agency will ensure that consent for deepening of ephemeral water bodies are not issued in the future to allow natural recovery.

4.7.9. Issue No. S6, Groundwater contamination at Ampress Works public water supply

- **Background**

There are two aquifers from which groundwater has been extracted for public water supply at Ampress works just north of Lymington. The shallow, near surface aquifer has been contaminated by metals and solvents arising from old industrial works adjacent to the site. Public water supplies are now only abstracted from the deep aquifer.

- **Effects**

We are monitoring the Passford Brook, which runs by the site, regularly and there is no evidence of the river becoming contaminated by polluted groundwater from the shallow aquifer.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Do nothing								

- **Stakeholder ranking**

The stakeholder ranking for this issue is 24. Currently there is no evidence to suggest there is contamination resulting from Ampress Works.

4.7.10. Issue No. S7, The control and maintenance of privately owned flood defence structures

- **Background**

Privately owned structures are common on watercourses for a variety of traditional water uses, such as operation of mills, creation of navigation channels and fish farming and amenity. By law, these must be maintained and operated properly by their owners if they affect river levels and flows. Privately owned structures also exist at certain coastal locations.

- **Effects**

The general condition and the independent operation of privately owned structures can be of considerable concern with respect to how the Agency manages matters associated with river flows and flood defence.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Inspection of all structures and follow up actions	Manpower	MP	MP	MP	MP	MP	NFDC	Flood Defence
Produce Keyhaven WLMP	MP	MP	----	----	----	----	EN,NFDC, landowners	Flood Defence
Produce Lymington River WLMP	6k	6k	----	----	----	----	EN, NFDC, landowners,	Flood Defence
Produce Lymington Reed Bed WLMP	MP	MP	----	----	----	----	ND, NFDC, landowners	Flood Defence

- **Further detail**

Parallel to these works, the Agency will seek to instigate appropriate legislation which enables it to increase its authority and control over privately owned structures, thus ensuring that they are maintained and operated to the common good of ecological and flood defence issues.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 21 The Agency highlighted this within a National Action Plan resulting from the Bye Report.

4.8. Managing Waste

4.8.1. Issue No. M11, Derogation of the Keyhaven Pond at the Lymington and Keyhaven Nature Reserve

- **Background**

Keyhaven Marshes are an important coastal nature reserve with a mix of freshwater, brackish and saline habitats. Parts of the area are candidate Special Areas of Conservation, Special Protection Areas and a proposed wetland of international importance under the Ramsar Convention. These habitats are vulnerable to changes in groundwater and surface water conditions and in the scale, location and frequency of inundation by the sea. In the past 30 years, gravel has been extracted from adjoining land at Manor Farm, Pennington, and the voids have been filled with waste. Originally, the waste disposal operations were carried out on a dilute and disperse basis, which caused some localised leachate problems, although the marshes were rarely affected. More recently, deposited waste has been contained in clay lined cells designed to prevent the dispersion of contaminated water. In the early 1990s, a new sea wall was constructed along the edge of the marshes to protect them from high tides. The brackish habitats were originally salt pans, drained and used for rough grazing. Remaining saline lagoons on the landward side of the sea wall are important habitats for starlet anemones (*Nematostella vectensis*).

- **Effects**

In recent years Keyhaven Marshes appear to have suffered some adverse changes in the environment, the most significant of which relates to the reduction in the salinity of Keyhaven Pond. A recent study has shown that this is due to:-

- excessive input of freshwater from the dewatering of the adjoining gravel workings; and

- reduced inundation by seawater due to the new sea wall.

These changes have threatened the highly specialised invertebrate fauna (starlet anemones in Keyhaven Pond) and the site's potential status as part of the candidate Solent Lagoons SAC. Other changes in the marshes environment, which may be due to the gravel extraction and tipping operations at Manor Farm, are being examined as part of a comprehensive study which is nearing completion.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Complete appropriate assessments and agree remediation works	20k manpower (1FTE)	10 MP	10 MP	MP	MP	MP	HCC,EN	Environment Protection

- **Further detail**

The Agency, English Nature and Hampshire County Council are conducting a number of major investigations into the Marsh and the surrounding area to better understand the hydrological and hydrogeological conditions. The results of these will be available soon and appropriate actions may include the actions detailed above.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 8. Further actions will be identified following completion of assessment.

4.8.2. *Issue X - Impact of the mineral extraction and land filling activities at Manor Farm*

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Complete appropriate assessments and agree remediation works	20k	20k	----	----	----	----	HCC	Environment Protection

- **Stakeholder ranking**

This was a new issue raised by the stakeholder group.

4.8.3. *Issue No. S9, Inadequate understanding of the effect on public health of PM_{10} arisings from waste handling facilities*

- **Background**

The health effects of exposure to fine airborne particles have led the Government to set a stringent new standard for PM_{10} (particulate matter less than 10 micrometres). Waste handling operations are a potential source of PM_{10} emissions, however currently nothing is known about concentrations around such facilities in the UK.

- **Effects**

There are a number of waste transfer stations in the LEAP area, and one landfill site, that may be contributing to local PM_{10} concentrations.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Do Nothing								

- **Further detail**

The Agency proposes to carry out a qualitative assessment of the impact of PM_{10} emissions from waste handling facilities in the LEAP area. This should consider the proximity of the public to these facilities, the degree of particulate matter emissions being created and opportunities for reductions in emissions. The Agency also recognises that monitoring should be carried out to address this gap in knowledge for an important pollutant, but as this is not just a local problem, such work should be co-ordinated at a regional or national level.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 26

4.9. Regulating Major Industries

4.9.1. *Issue No. M18, Inadequate understanding of the combined impacts of process emissions*

There are a number of authorised Part A processes in close proximity to each other that emit the same pollutants. To date, these emissions have been assessed in isolation.

- **Effects**

The combined impact of the industrial emissions may be more significant than their individual impacts.

- **Action table**

Actions	Cost £ (to Agency)	Timetable 99	00	01	02	03	Partners	Agency Lead
Provide the Local Authority with appropriate data required to meet National Air Quality Targets	Manpower	MP	----	----	----	----	Local industries	Environment Planning

- **Further detail**

The Agency proposes to seek to establish a co-operative exercise between the local industries to determine the significance of the combined impact of their emissions on the surrounding area, both in relation to long-term average and short-term peak concentrations. It is proposed that this exercise should initially focus on sulphur dioxide and nitrogen dioxide.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 31

4.9.2. Issue No. M19, Public concern over odour control at industrial sites

- **Background**

The industrial operations in the LEAP area give rise to complaints about odour. The number of complaints is not excessive in relation to those received in general by the local authority across the whole of the LEAP area. Although they are predominantly related to one facility.

- **Action table**

Actions	Cost £ (to Agency)	Timetable					Partners	Agency Lead
		99	00	01	02	03		
Respond reactively to complaints	Manpower	MP	MP	MP	MP	MP	None	Environment Protection
Promote public awareness	3k	1k	1k	1k	----	----	NFDC	Environment Planning

- **Further detail**

The Agency will work closely with the industry concerned to develop further its strategy for tackling odours,in particular those associated with fugitive emissions.

- **Stakeholder ranking**

The stakeholder ranking for this issue is 28. This is a low priority issue resulting in reactive actions.

5. PROTECTION THROUGH PARTNERSHIP

5.1. Why Partnerships?

Partnership is a much used term, but essentially means a number of different interests willing to come together, formally or informally, to achieve some common purpose in the spirit of trust and commitment. Partnerships are desirable because they provide accountability, reduce duplication of work between agencies and provide a pooling of scarce resources and joint funding.

The Agency is well placed to influence many of the activities affecting the environment through the Environment Act 1995 and other legislation. For example, the Agency is the lead regulator for the water environment and also has regulatory powers over waste management activities. In addition, the Agency shares with local authorities the regulation of emissions to the air. However, the Agency has little direct control over land use which is primarily the responsibility of local authorities. The Agency will prepare LEAPs into the next millennium to demonstrate and reinforce our commitment to integrate environmental management and the partnership approach.

We are currently involved in a number of projects and activities that rely on partnerships. Close links have already been established with local authorities, water companies, industry, farmers, landowners, conservation bodies, angling clubs and recreation groups. More details on the type of partnership projects we are working on outside of the LEAP is detailed in the Consultation Report. However, we are always seeking opportunities for new partnerships with others. If you wish to find out more about becoming involved in a partnership with the Agency in the area please contact:

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6. FUTURE REVIEW AND MONITORING

The Environment Agency will be jointly responsible, with other identified organisations and individuals, for implementing this plan. Progress will be monitored and normally reported annually.

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

- Examine the need to update the LEAP in light of any changes in the plan area
- Compare actual progress with planned progress, and explain the reason for any changes to the content or timing of individual actions.
- Roll forward the detailed actions.

APPENDIX 1

glossary

Abstraction	Removal of water from surface water or groundwater, usually by pumping.
Abstraction Licence	Licence issued by the Agency under Section 38 of the Water Resources Act 1991 to permit water abstraction.
Asset Management Plan	The means by which the water companies plan the work and capital expenditure necessary, for improvements and maintenance of the water supply, sewage treatment works and sewerage systems. These are drawn up through consultations with the Agency and other bodies to cover a five year period, and must be agreed by the DETR, and OFWAT.
Aquifer	A layer of underground porous rock which contains water and allows water to flow through it.
Biochemical Oxygen Demand	A measure of the amount of oxygen in water during the breakdown of organic matter.
Catchment	The total area of land which contributes surface water to a specified watercourse or water body.
Coastal Protection	Natural or man made features protecting land above 5m AOD contour.
Combined Sewer Overflow	An overflow structure which allows discharge from the sewerage system to a watercourse during wet weather.
Controlled Water	Defined by the Water Resources Act 1991 Section 104, including groundwaters, inland waters and estuaries.
Cyprinid	Coarse fish of the carp family ie roach, dace, bream etc.
Cumecs	Cubic metres per second.
Discharge Consent	A statutory consent issued by the Agency under Schedule 10 of the WRA 91 to indicate any limits and conditions on the discharge of effluent to controlled water.

Dissolved Oxygen	The amount of oxygen dissolved in water. This measurement is an important, but highly variable, indicator of the "health" of a water.
Effective Rainfall	The rain remaining as runoff after losses by evaporation, interception and infiltration have all been allowed for.
Environmentally Sensitive Area	An area defined by MAFF for which grant aid is available for appropriate agricultural and water/land management.
Eutrophication	Presence of nutrients in aquatic systems leading to excessive growth of algae and other aquatic plants.
Floodplain	All land adjacent to a watercourse over which water flows or would flow, but for flood defences, in times of flood.
Flytipping	The unregulated and, hence, illegal, dumping of waste.
Green Belt	A zone of designated countryside immediately adjacent to a town or city, defined in development plans for the purpose of restricting outward expansion of the urban areas, and preventing the coalescence of settlements.
Greenhouse Gas	Natural and man-made gases which influence the greenhouse effect. Including CO^2, methane, ozone and CFCs.
Groundwater	Water which is contained in aquifers.
Heritage Coast	Stretches of the most undeveloped coastline, designated by the Countryside Commission, in order to protect and conserve the coast's vulnerable beauty, and enhance people's enjoyment of the coast without risking its conservation.
Hydrograph	Graph of groundwater levels, river levels, or river flow.
Landfill Tax	A levy per tonne or cubic metre of waste sent to landfill, to encourage recycling and waste minimisation.
Littoral (and sub littoral)	The zone at the edge of a lake or estuary which is periodically exposed to the air. The sub littoral zone is continuously submersed.

Main River	All watercourses which contribute significantly to a catchment's drainage. The Agency has powers to carry out works to protect land and property from flooding by improving drainage of Main Rivers only, under the WRA 91.
µg/l	Micrograms per litre.
mg/l	Milligrams per litre.
National Nature Reserve	Land designated by English Nature under Section 35 of the Wildlife and Countryside Act 1981, managed by, or on behalf of, English Nature for nature conservation.
PM_{10}	Particulate matter smaller than 10 microns in diameter.
Potable Water	Water of suitable quality for drinking.
Ramsar Sites	Internationally important wetland sites adopted from the Ramsar Convention on Wetlands of International Importance especially as waterfowl habitats (1971) and ratified by the UK government in 1976.
Return Period	Flood events are described by the frequency at which, on average, a certain severity of flood is exceeded. This is the return period in years, e.g. 1 in 100 years.
Riparian Owner	A person or organisation with property rights on a river bank.
River Corridor	Land which has visual, physical or ecological links to a watercourse and which is dependent on the quality or level of the water within the channel.
River Quality Objective	The water quality that a river should achieve in order to be suitable for its agreed uses.
Salmonid	Game fish of the salmon family, - Salmon, trout / sea trout.
Sea Defences	Natural or man-made features protecting land below 5 m AOD contour.
Special Areas of Conservation	Internationally important nature conservation sites designated under the EC Habitats Directive. All SACs are also SSSIs.
Special Protection Areas	Internationally important nature conservation sites designated under the EC Wild Birds Directive. All SPAs are also SSSIs.

Statutory Water Quality Objectives	Water Quality objectives set by the Secretary of State for the Environment, in relation to controlled waters.
Strata	Layers of rock, including unconsolidated materials.
Sustainable development	'Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs'
Swale	A shallow ditch containing vegetation that intercepts surface run-off from roads and removes suspended solids and other pollutants.

APPENDIX 2
Abbreviations

AMP	Asset Management Plan and Regions
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
AQMS	Air Quality Management Strategy Aquaculture Science
BOD	Biochemical Oxygen Demand
BAP	Biodiversity Action Plan
BATNEEC	Best Available Technique Not
BPEO	Best Practicable Environmental Option
CEFAS	Centre for Environment, Fisheries and
CFC	Chlorofluorocarbons
CHP	Combined Heat and Power
CO	Carbon monoxide
CO_2	Carbon dioxide
CPRE	Council for the Protection of Rural England
DETR	Department of the Environment, Transport
DWI	Drinking Water Inspectorate
EA95	Environment Act (1995)
EN	English Nature Entailing Excessive Costs
EPA 90	Environmental Protection Act (1990)
EQS	Environmental Quality Standard
ESA	Environmentally Sensitive Area
FA	Forestry Authority
FC	Forestry Commission
FRCA	Farming and Rural Conservation Agency
FWAG	Farming and Wildlife Advisory Group
GMOs	Genetically Modified Organisms
GQA	General Quality Assessment
HCC	Hampshire County Council
HNDA	High Natural Dispersion Area
HSE	Health and Safety Executive
HWT	Hampshire & Isle of Wight Trust
IPC	Integrated Pollution Control
LAAPC	Local Authority Air Pollution Control
LEAP	Local Environment Agency Plan
LFG	Landfill Gas
LNR	Local Nature Reserve
LPA	Local Planning Authority
MAC	Maximum allowable concentration
MAFF	Ministry of Agriculture, Fisheries and Food
MP	Manpower
MRF	Materials Recycling Facilities
NFDC	New Forest District Council
NFU	National Farmers Union
NNR	National Nature Reserve
NO_x	Nitrogen oxides
NRA	National Rivers Authority (now the Environment Agency)
NVZ	Nitrate Vulnerable Zone
OFWAT	Office of Water Services
PIR	Process Industry Regulation
PM_{10}	Particulate matter smaller than 10 microns in diameter
RCEP	Royal Commission on Environmental Pollution
RE	River Ecosystem
RQO	River Quality Objective
RSA	Radioactive Substances Act 1993
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SERPLAN	South-East Region Planning Conference
SINC	Site of Nature Conservation Importance
SMP	Shoreline Management Plans
SO_2	Sulphur dioxide
SPA	Special Protection Area
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWQO	Statutory Water Quality Objective
UDP	Unitary Development Plan
VOC	Volatile Organic Compounds
WCA81	Wildlife and Countryside Act 1981
WIA 91	Water Industries Act 1991
WLMP	Water Level Management Plans
WRA 91	Water Resources Act 1991
WTW	Wastewater Treatment Works

APPENDIX 3

FURTHER INFORMATION

Further information may be obtained from the following publications which have been produced by the Environment Agency:

Sustaining Our Resources. Southern Region, Worthing. 1997

An Environmental Strategy for the Millennium and Beyond. Bristol. 1997

Policy and Practice for the Protection of Floodplains. Bristol. 1997

Viewpoints on the Environment. Bristol. 1997

Waste Minimisation and Waste Management, Bristol. 1997

The Agency's Contribution to Sustainable Development, Bristol. 1997

Water Related Recreation Strategy for the Southern Region. Consultation Draft. Southern Region/English Sports Council, Worthing. 1997

Environment Agency Corporate Plan 1998-99. Bristol. 1998

Saving Water: Taking Action. Bristol. 1998

Saving Water: On the Right Track. Bristol. 1998

Fishing in the South. Southern Region, Worthing.

Policy and Practice for the Protection of Groundwater. Bristol. 1998

Guidance for the Control of Invasive Plants near Watercourses, Bristol.

Action Plan for Land Quality, Bristol. 1998

An Action Plan for Recreation, Bristol. 1998

Money for nothing - your waste tips for free, Bristol. 1998

MANAGEMENT AND CONTACTS:

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

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

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

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