

Environmental PROGRESS  
made in a  
BUSINESSLIKE way



NRA

*National Rivers Authority*

ANNUAL REPORT & ACCOUNTS  
1992/93



**Establishment** ~ The National Rivers Authority (NRA) came into being following Royal Assent of the Water Act 1989 on 6 July 1989, taking up its full statutory duties at vesting on 1 September 1989. The appointed role was that of an independent watchdog to regulate water undertakers and protect the aquatic environment. **Responsibilities** ~ The Authority has statutory duties and powers under the 1991 Water Resources Act for water resources, pollution control, flood defences, fisheries, recreation, conservation and navigation throughout England and Wales. Its water quality and fisheries responsibilities extend into coastal waters. The NRA is also the Competent Authority for twenty European Community Environmental Directives. **Status** ~ The Authority is a Non-Departmental Public Body. Its sponsor in Government is the Department of the Environment. It also has important policy links with the Ministry of Agriculture, Fisheries and Food (MAFF) and the Welsh Office. The Authority has established itself as the strongest Environmental Protection Agency in Europe and a very effective 'Guardian of the Water Environment'. **Organisation** ~ The Authority has a Head Office located in London and Bristol and operates through 8 regions and 26 areas. The Head Office is primarily concerned with policy development and performance monitoring and the regions and areas with policy implementation and day to day operations. **Management** ~ The Authority has a Board of 14 members appointed by the Secretaries of State for the Environment and Wales and the Minister of Agriculture, Fisheries and Food. Each region has three statutory Regional Committees and a Regional Advisory Board. **Resources** ~ In 1992/93 the Authority spent £437 million and employed 8,195 staff. Approximately 75% of the Authority's costs were recovered from charging schemes and 25% from Government grants.

## CONTENTS

Mission Statement	1	25	Water Resources
Financial Summary	2	28	Flood Defence
Letter to the Secretaries of State and the Minister of Agriculture, Fisheries and Food	2	31	Fisheries
Chairman's Statement	4	34	Recreation
Report of the Board and Regional Committees	6	36	Conservation
Chief Executive's Review	8	39	Navigation
Integrated Approach and Achievements	10	41	Business Support Services
Water Quality	21	45	Financial Statements
		68	Appendices

**Our Mission** ~ We will protect and improve the water environment by the effective management of water resources and by substantial reductions in pollution. We will aim to provide effective defence for people and property against flooding from rivers and the sea. In discharging our duties we will operate openly and balance the interests of all who benefit from and use rivers, groundwaters, estuaries, and coastal waters. We will be businesslike, efficient and caring towards our employees.



ENVIRONMENT AGENCY

NATIONAL LIBRARY &  
INFORMATION SERVICE

SOUTHERN REGION

Guildbourne House, Chatsworth Road,  
Worthing, West Sussex BN11 1LD

ENVIRONMENT AGENCY



054396



# Financial Summary

## RECEIPTS: WHERE THE MONEY CAME FROM

	Operational Receipts £m	Government Grants £m	Total £m	% of Total Receipts
Water Quality	39.8	39.0	78.8	17.1
Water Resources	81.7	0.0	81.7	17.7
Flood Defence	211.8	34.8	246.6	53.4
Fisheries	10.9	13.7	24.6	5.3
Recreation & Conservation	0.4	6.7	7.1	1.5
Navigation	3.4	6.5	9.9	2.1
Sub-Total	348.0	100.7	448.7	97.1
Capital Restructuring	0.4	1.4	1.8	0.4
Unfunded Pensions	0.0	11.5	11.5	2.5
<b>Total</b>	<b>348.4</b>	<b>113.6</b>	<b>462.0</b>	<b>100.0</b>

\*Operational receipts represent cash generated from business activities and raised through charging schemes, licence fees, precepts, levies and interest receivable.

## SOURCE OF GOVERNMENT GRANTS

	£m
DoE Grant-in-aid	78.8
MAFF Grant	34.0
Welsh Office	0.5
Other	0.3
<b>Total</b>	<b>113.6</b>

Note: MAFF, Welsh Office and "other" grants apply exclusively to Flood Defence activities (£34.8m total).

## PAYMENTS: WHERE THE MONEY WAS SPENT

	£m	Net cash surplus/ (deficit) - £m
Water Quality	76.7	2.1
Water Resources	76.7	3.0
Flood Defence	231.0	15.6
Fisheries	24.2	0.4
Recreation & Conservation	5.2	1.9
Navigation	10.3	(0.4)
Sub-Total	424.1	24.6
Capital Restructuring	1.8	0.0
Unfunded Pensions	11.5	0.0
<b>Total</b>	<b>437.4</b>	<b>24.6</b>
<b>Net Cash Surplus</b>		<b>£24.6m</b>



NRA

National Rivers Authority

TO THE SECRETARIES OF STATE AND THE  
MINISTER OF AGRICULTURE, FISHERIES AND FOOD

National Rivers Authority  
30-34 Albert Embankment  
London SE1 7TL

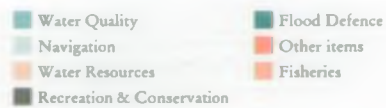
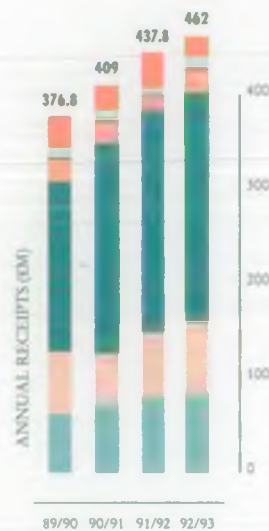
We have the honour on behalf of the National Rivers Authority of submitting  
our fourth Annual Report and Accounts for the financial year commencing  
1st April 1992 to 31st March 1993.

CHAIRMAN  
Lord Crickhowell

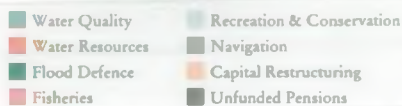
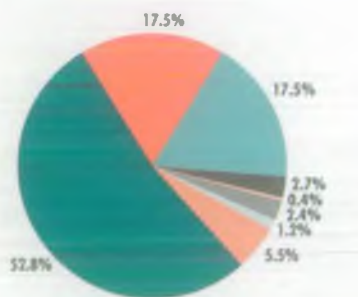
CHIEF EXECUTIVE  
Mr Edward Gallagher

8th July 1993

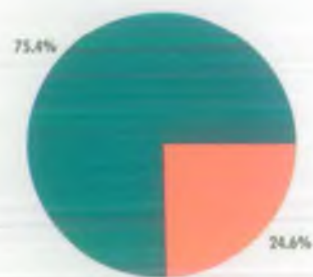
Laid before Parliament under Section 187 of the 1991 Water Resources Act



ANALYSIS OF PAYMENTS FOR THE YEAR ENDED 31/3/93



ANALYSIS OF RECEIPTS FOR THE YEAR ENDED 31/3/93



# Chairman's Statement~

*We have successfully lowered our expenditure by £7.6m whilst maintaining and improving our operational performance through improved efficiency. We continue to contribute to Government's thinking on the proposed Environment Agency. We will continue to support the creation of the Agency and assist in its planning.*



~ I am delighted to be able to report that by pursuing our Mission and Aims we have achieved most of the key priorities we set ourselves in our third Corporate Plan during 1992/93. For example we successfully:

- ~ Lowered our expenditure by £7.6m, whilst maintaining and improving our operational performance, through improved efficiency.
- ~ Completed our public consultations about the principles that will underlie SWQOs and have recently received Government approval to prepare proposals for consultation and approval at 20 sites around England and Wales.
- ~ Developed and commenced implementation of a groundwater protection policy.
- ~ Prosecuted 435 polluters, resulting in over £1m in fines and received approaching £300,000 in costs.
- ~ Developed and implemented practical solutions to low-flow problems at 5 sites, and made significant progress at other sites including the River Darent in Kent.

*Europe continues to be increasingly important to our work.*

*In this context, I was delighted at the success of the European Water Quality Symposium held in Brussels during August 1992, and the subsequent establishment of the EC Environmental Regulatory Agencies network.*

Numerous other examples of operational successes and policy achievements are given in the Report.

In last year's Annual Report I announced the appointment of a new Chief Executive, Mr Ed Gallagher. It is with great pleasure that I am able to report that Ed Gallagher has significantly

improved the overall management of the Authority and initiated further actions to improve our efficiency, effectiveness and value for money.

Amongst the most important of these are the mergers of our Northumbria and Yorkshire Regions and Wessex and South West Regions. In due course, this will realise significant efficiency savings.

I have had a number of positive meetings with Ministers from the Department of the Environment, Ministry of Agriculture, Fisheries and Food, and the Welsh Office. After lengthy and detailed discussions with them and the Treasury, I am pleased we have now secured their approval to implement a voluntary severance policy and to make changes to senior managers' bonus arrangements. These measures will further enhance our efficiency.

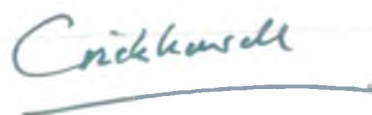
Throughout the year we continued to contribute to Government's thinking on the proposed Environment Agency. We would be disappointed if the Agency Bill were to be delayed. We will continue to

Environmental Regulatory Agencies network.

I would like to take this opportunity to express my thanks to Peter Coverdale who retired from the Board during the year, and to welcome Rosamund Blomfield-Smith who was appointed to the Board in March 1993.

I am also indebted to other fellow Board members for their continued support and commitment and the individual contributions they have all made, both nationally and in our regions.

I am pleased to be able to report that my fellow Board members have been re-appointed for a further term of office. We are all determined to pursue our Mission and Aims with continued vigour.



LORD CRICKHOWELL

Chairman

8 July 1993

support the creation of the Agency and assist in its planning.

Europe continues to be increasingly important to our work. In this context, I was delighted at the success of the European Water Quality Symposium held in Brussels during August 1992, and the subsequent establishment of the EC



# The Board and Regional Committees

## *The Board*

During 1992/93 the Board met on 10 occasions to consider a wide range of policy and operational issues. Site visits throughout England and Wales have continued to provide us with a valuable insight into many important environmental issues with which the NRA is actively involved.

Proposals to create an Environment Agency have featured regularly on our agenda and, as a result, we have been able to channel our views and advice to the Government. We also resolved that it was good management practice to test the value for money of our activities, and we have developed a 5 year programme of market testing.

The improvement of water quality remains our highest priority. Following extensive public consultation, we submitted proposals for the system of Statutory Water Quality Objectives to Government. In order to achieve full cost recovery, as required by Government, we approved a 20% increase in charges for discharge consents, and also approved a groundwater protection policy to safeguard both its quality and quantity.

With another year of low rainfall and continuing drought in parts of England, we regularly discussed the availability of water resources. We agreed a public statement on the drought situation, together with a supporting leaflet. A £12m water resources capital expenditure programme and a new abstraction charges scheme which will enable the Authority

to influence increasingly the use of water resources, were approved.

Following a number of major flooding incidents, we reviewed our standards of service for flood defence activities prior to consultation with the Ministry of Agriculture, Fisheries and Food. We also approved a £128.5m capital expenditure programme for 1993/94 and endorsed a small increase in levies for that year. We have continued to review major capital expenditure projects critically. Proposals for the market testing of certain flood defence activities were agreed.

Fisheries issues have featured prominently during the year, including agreeing our response and recommendations to the Government on proposals for the management of the North East Coast Salmon Fishery to reduce offshore drift netting in order to preserve migratory salmon stocks.

Proposals to recoup a proportion of our operating costs from riparian fishery owners to fund improvement work has taxed staff and Board members alike. Public consultation will be followed by further consideration of the proposals. We also approved new rod licence duties for 1993/94, and debated the most appropriate means of retailing angling licences. We have decided to retail them from existing outlets with the addition of a trial use of the Post Office in Thames Region.

In relation to navigation, we approved the retention, within the NRA, of the management of Rye Harbour, together

with a strategic plan for its management.

We approved the NRA's operating budgets and other charges for the year 1993/94, and have continued to seek improvements in operational efficiency and monitoring and reporting mechanisms. Procedural controls for project management, procurement and management of meetings to improve their value for money, were amongst many such considerations we debated and approved for implementation.

A wide range of personnel issues were considered. We have continued to pursue, with Government, a revised pay structure for the NRA based on performance related pay. We have implemented the public sector pay policy announced by Government in the Autumn of 1992.

We have placed considerable emphasis on the training and development of staff, as well as being committed to continuous improvement within our management culture. A skill-enhancing programme for management teams is strengthening individual skills to provide value for money without sacrificing quality. The Board is delighted that for the second year running the NRA won a National Safety Award for its low accident rate due to the priority given to Health and Safety at work.

The amalgamation of Northumbria and Yorkshire and Wessex and South West has reduced the number of regions to eight. Re-organisation to promote an area structure within all regions during 1993/94 has also been effected, to improve the delivery of service to customers.



Throughout the year, individual Board members contributed particular expertise to the development of various initiatives in Board Sub-Committees. The Audit, Remuneration and Pensions Committees continued to carry out their delegated responsibilities and have performed invaluable work. Those members with regional responsibilities have played very active roles in chairing Regional Advisory Boards, attending Regional Committees and advising on regionally specific issues.

#### **Regional Advisory Boards**

Key issues regularly discussed by RABs (usually held monthly) included the Environment Agency, market testing, the national review of regional structures and the proposed mergers of some of the regions. RAB members have continued to have useful liaison meetings with local authorities, the Country Landowners Association, National Farmers Union, Office of Water Industries Consumer Committees, the Confederation of British Industry, Members of Parliament and various conservation bodies.

#### **Regional Fisheries Advisory Committees**

Most RFACs met 4 times during the year. The issue with highest priority for discussion was proposals for a new fishery charging scheme under Section 142 of the Water Resources Act 1991. Many RFACs reviewed current byelaws and promoted the use of new fisheries byelaws. Other national strategic issues, upon which advice has been provided, have included Statutory Water Quality Objectives, Catchment Management Plans, abstraction licensing policy, and the Water Resources Development Strategy.

In terms of specific regional issues, the Yorkshire, Anglian and Northumbria RFACs reviewed the East Coast Salmon

Fisheries and the new Net Limitation Order. The Welsh RFAC produced a strategy document relating to the management of brown trout in the Welsh Region. The Severn Trent RFAC emphasised the need to review differing regional rules for coarse fish close seasons highlighted by the national licence.

#### **Regional Flood Defence Committees**

RFDCs met between 2-6 times during the year in order to consider flood warning systems and flooding incidents; monitor capital schemes; consider maintenance works; discuss standards of service; agree funding and set levies, and consider conservation issues. In discussions on market testing, RFDCs were concerned that an adequate in-house workforce should be retained in order to maintain a rapid response to emergencies.

In terms of specific Regional Committees, the problems created by debris in urban watercourses were highlighted in the North West with a £50,000 public relations campaign. The Thames RFDC considered proposals to extend the Docklands Light Railway under the River Thames and up the river corridor of the Ravensbourne River to Lewisham. It was also decided that the Maidenhead Flood Defence Scheme Project office should be closed pending the outcome of the public inquiry which finished in December 1992. In Yorkshire Region the RFDC deferred the Ilkley Flood Alleviation Scheme at the request of the local council and residents. The South West RFDC considered public objections to the proposed scheme at Bideford Quay, for which a public inquiry will now be held.

#### **Regional Rivers Advisory Committees**

RRACs generally met 4 times during the year and received regular reports on water quality and water resources issues, with particular emphasis on major pollution incidents and prosecutions.

Advice was also provided on EC Directives Statutory Water Quality Objectives, catchment management plans, new charging schemes, water resources development strategy, Groundwater Protection Policy and the influence of agriculture on Water Quality.

A number of RRACs assessed potential river quality problems in the light of cessation of minewater pumping following proposed mine closures.

In Anglian Region, water resources issues dominated. Reports on the drought and long term water resource strategy were considered at every meeting. The River Darent water shortage situation was of particular concern to Southern RRAC who discussed the joint NRA/Thames water proposals. North West RRAC gave approval for the solution to low-flow problems on the River Lowther.

The Thames RRAC received reports on the progress of the DoE review of NRA and British Waterways Board navigations and of the outcome of extensive customer consultation on navigational matters which had been taking place in the region.

#### **The Secretary of State For Wales' Advisory Committee**

The Committee established by the Secretary of State for Wales to advise him on matters affecting the NRA in the Principality, met 4 times during the year and published a report in December 1992.

# Chief Executive's Review

*We have made a real difference to the quality of the environment in a cost-effective way. We have made significant strides in innovation and automation and we have developed an effective R&D programme delivering useful products which are at the forefront of science and technology.*





~ It is with great pleasure I report that in 1992/93 the NRA continued to achieve many notable successes in improving the water environment.

This is due to the enormous dedication and commitment of all our employees, to whom I am deeply indebted for all their hard work and energy, particularly in implementing the changes I felt were necessary after a period of extensive consultation following my appointment in April 1992.

During my first year I have travelled extensively around England and Wales to view all our operations, meet staff on the ground and to visit a wide variety of the people and organisations we serve.

From these visits I have initiated the three themes which I hope will characterise my period of office as Chief Executive. They are as follows:

~ Making a real difference to the water environment.

~ Integrating our services for the benefit of all those who use them.

~ Providing value for money.

By pursuing these themes, we have made a significant difference to the quality of the environment in a cost-effective way.

The public now have better access through our area offices. We have saved significant sums through national procurement initiatives and we have reduced internal meetings and paperwork.

We have also made significant strides in innovation and automation and we have developed an effective R&D programme which is focused on delivering useful products which are, at the same time, at the forefront of science and technology.

*Although much has been achieved in 1992/93, there are numerous challenges ahead, such as the elimination of badly polluted rivers, which will take some years to achieve.*

We are now using much more automated in-situ sampling and analytical equipment, and we have obtained our first successful prosecution using this approach. Our National Communications Network has improved emergency responses and made telephone and data transmission quicker and cheaper.

In our corporate planning process I have reduced the number of priorities and projects and encouraged more cross-functional working under a new project management framework. This is increasing our effectiveness and value for money. A 5 year market testing programme has been developed for our support services and core functions and this has been promoted to our staff via roadshows and newsletters.

Although much has been achieved in 1992/93, there are numerous challenges ahead. Some of these are long-standing and will take some years to achieve, such as the elimination of badly (Class 4) polluted rivers. Others will need to be tackled over a shorter time frame, such as maximising the benefits from our new area organisation and implementing the results of initial market testing activities.

To help prepare for these challenges, our management teams have attended management development training courses organised in conjunction with Ashridge College, the benefits of which are already becoming apparent. Training of other employees has also been given

priority, particularly in relation to Health and Safety at work.

By working together, I am confident we will tackle these challenges as productively as we have done others in the past and ensure 1993/94 will be an even more successful year for the NRA.



**ED GALLAGHER**

Chief Executive

8 July 1993

# Making a Difference ~

The challenge for the NRA as 'Guardian of the Water Environment' is to ensure a sustainable and cost-effective balance between the amount of water abstracted from rivers and underground sources and the amount to be retained to protect the environment and other interests ~ *Water quantity, already reduced by*



*abstraction, is further reduced by drought. Water quality, affected by low river flows, is at greater risk from pollution by industry and agriculture.*

*Polluted water puts aquatic life and abstraction for public supply at risk.*







~ The NRA believes that the best way of arriving at sustainable solutions is to take an integrated approach to river management. This approach is not new - the NRA and its predecessors have laid the foundations for it over a period of time - but the means of achieving it is new. This approach is called catchment management planning. Catchment management plans are the most efficient cross-functional means of identifying future priorities. Work has been completed on the revision of our catchment management planning guidelines. During 1992/93, work continued on the development, public consultation and final production of catchment management plans in each region. 15 consultation reports and 3 action plans were produced. Each region produced at least one Catchment Plan and will continue to produce draft consultation documents at the rate of at least 2 per year per region.

#### Citizen's Charter

Following the launch of the Government's Citizen's Charter initiative in July 1991, which aims to improve the quality of service provided by public organisations, the NRA has incorporated the principles of the Charter into its way of doing business ~ Setting standards and

monitoring performance ~ Information and openness ~ Choice and consultation ~ Courtesy and helpfulness ~ Putting things right ~ Delivering value for money ~ Progressive implementation of initiatives embodying these principles will result in continuing improvement at no additional cost.

Successes in 1992/93 include ~ The development of a customer care programme ~ A customer complaints procedure ~ Standards of service for dealing with public enquiries and correspondence to make sure an efficient and helpful reply is given ~ Name badges for all our staff, so that customers know with whom they are dealing ~ Performance measured against targets and published in the Corporate Plan and Annual Report ~ Continuing public consultation on catchment management plans and other key policies, for example Section 142 and Water Resources Development Strategy ~ The initiation of a programme for market testing.

#### Customer Services

~ Responded to over 2,000 emergencies ~ Developed a customer care programme ~ Introduced new complaints procedures.

#### Personnel

~ Won European and British Health and Safety Awards ~ Introduced a comprehensive Occupational Health Scheme for our employees and completed 6,800 health screening examinations.





# Water Resources

~ Carried out over 19,000 abstraction

licence inspections and undertook 31

prosecutions for abstraction offences ~ Identified solutions

to low-flow problems at 14 sites ~ Completed 5 low-flow

alleviation schemes ~ Published and obtained European

wide recognition for our Groundwater Protection Policy

~ Developed a £12m improvement scheme for the River

Darent in Kent in collaboration with ThamesWater ~

Published a new national water abstraction charging scheme

for implementation in April 1993 ~



# Flood Defence ~ Constructed

*165km of new defences ~ Issued 1,330*

*flood warnings to the police to advise the*

*general public ~ Set standards of*

*service for non-tidal waters ~*

*Contributed to the National*

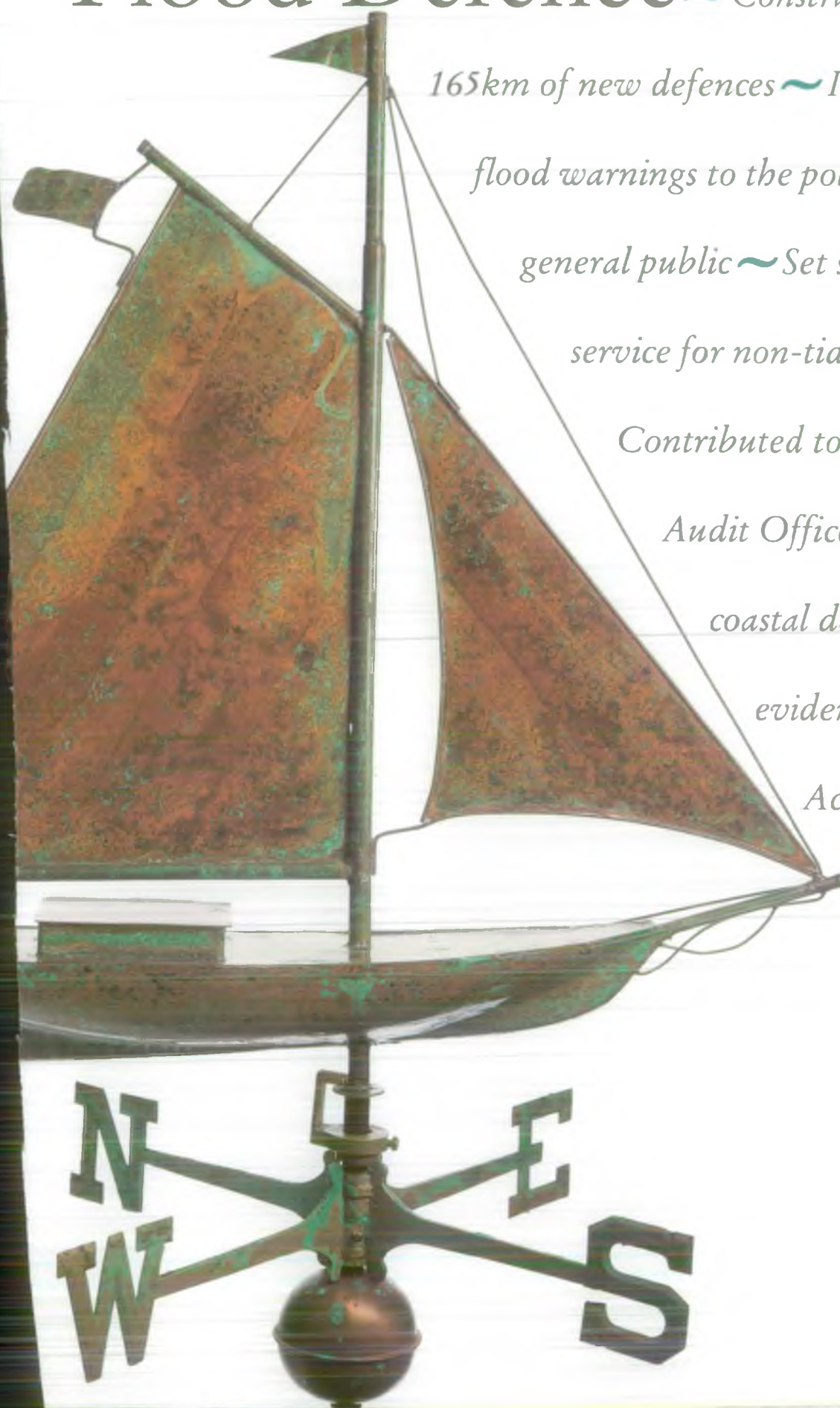
*Audit Office study into*

*coastal defences and gave*

*evidence at Public*

*Accounts Committee*

*inquiry ~*



# Water Quality ~ RESPONDED TO OVER

32,000 REPORTED POLLUTION INCIDENTS, TOOK 456,000 WATER SAMPLES

AND CARRIED OUT OVER 6 MILLION ANALYTICAL MEASUREMENTS ~

SECURED OVER 400 CONVICTIONS AGAINST WATER POLLUTERS WITH FINES

TOTALLING OVER £1M ~ OBTAINED OUR FIRST PROSECUTION USING

EVIDENCE COLLECTED BY AUTOMATED IN-SITU

SAMPLING EQUIPMENT ~

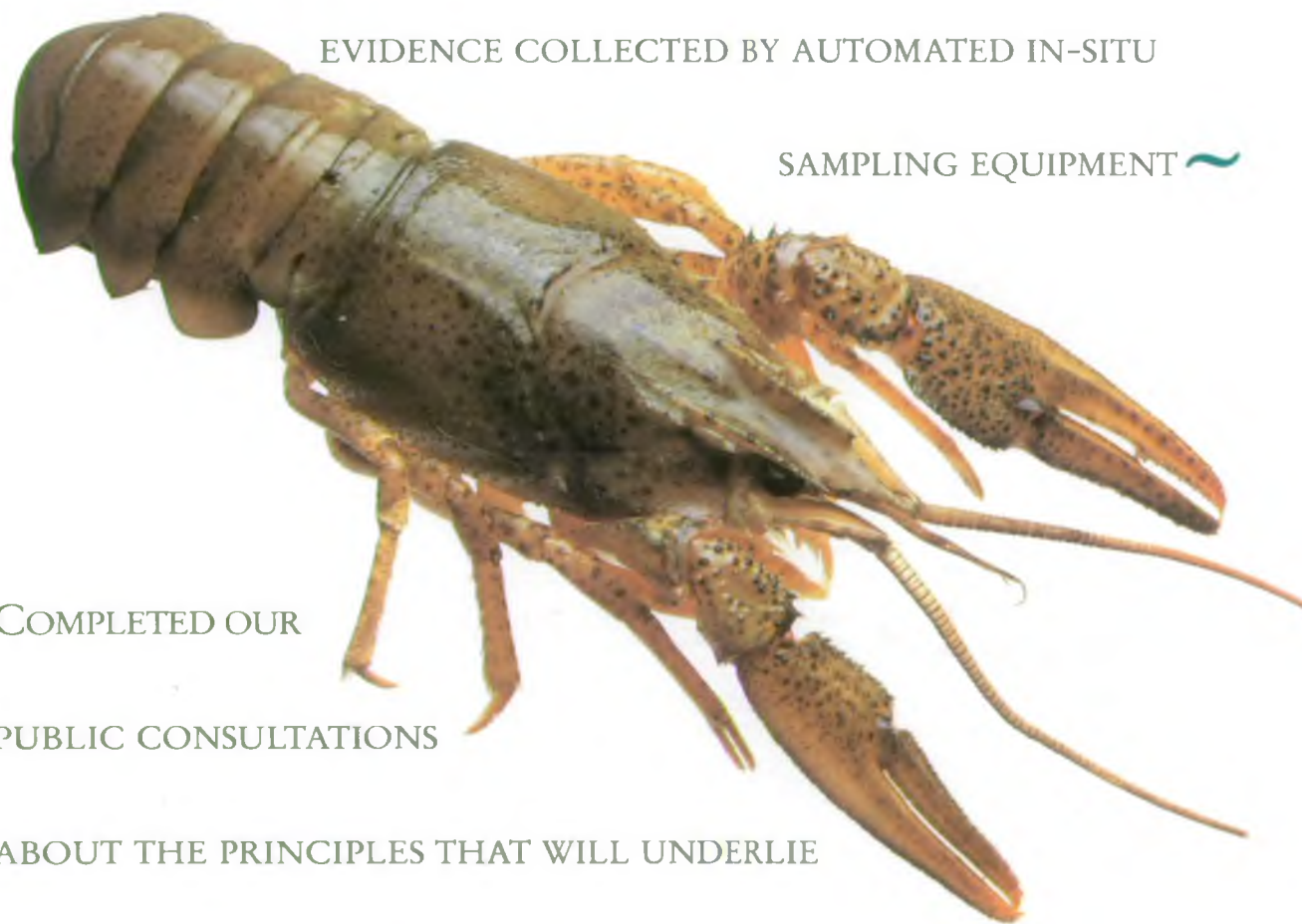
COMPLETED OUR

PUBLIC CONSULTATIONS

ABOUT THE PRINCIPLES THAT WILL UNDERLIE

STATUTORY WATER QUALITY OBJECTIVES (SWQOs) AND HAVE RECENTLY

RECEIVED GOVERNMENT APPROVAL TO PREPARE PROPOSALS FOR CONSULTATION





AND APPROVAL AT 20 SITES AROUND ENGLAND AND WALES

~ DEVELOPED NATIONAL STANDARDS FOR MONITORING  
THE COMPLIANCE OF DISCHARGES AGAINST THEIR CONSENTS

~ ISSUED POLICY ADVICE TO INFLUENCE THE WATER  
COMPANIES' SECOND TRANCHE OF ASSET MANAGEMENT  
PLANS ~ PUBLISHED OUR SECOND ANNUAL REPORT ON THE  
QUALITY OF COASTAL BATHING WATERS AND WATER  
POLLUTION INCIDENTS IN ENGLAND AND WALES ~

DEVELOPED HIGHLY SOPHISTICATED AERIAL SURVEILLANCE  
TECHNIQUES FOR MONITORING SUBSTANCES IN OUR COASTAL

WATERS **R&D** ~ Completed 64 Research &  
Development projects ~ Published 4 Research and  
Development reports, together with newsletters and  
a list of outputs ~



# Finance ~

Issued an advisory booklet  
on the financial memorandum to over 5,000 staff ~

Improved project management and financial controls

~ Developed a 5 year programme of market testing  
to achieve improved value for money ~

# Navigation ~

CHECKED OVER  
758,000 CRAFT LICENCES AND OBTAINED ALMOST 100%

COMPLIANCE ~ DEVELOPED HARMONISED BOAT SAFETY

STANDARDS IN LIAISON WITH BRITISH WATERWAYS BOARD AND THE BROADS

AUTHORITY ~ COMPLETED PHASE 1 OF THE HAMBLEMEN LOCK

RE-FURBISHMENT OF THE RIVER THAMES ~ DEVELOPED PROPOSALS

FOR THE MANAGEMENT OF

NAVIGATION ON THE RIVER WYE







# Fisheries~

*Prosecuted the perpetrators of over 5,600*

*licence offences, maintained rod licence compliance at 96% and*

*obtained over 1,000 convictions for other statutory and byelaw*

*offences ~ Surveyed over 9,000km of fisheries and built 25 new*

*fish passes ~ Reared approximately 5.5 million fish and stocked*

*out 5.7 million fish to maintain, improve and develop fisheries ~*

*Consulted widely over proposals for a Section 142 fisheries charging*

*scheme ~ Introduced an East Coast Net Limitation Order after*

*public consultation and liaison with MAFF ~*



# Recreation~

IMPROVED LIAISON

WITH RECREATION AND SPORTS ORGANISATIONS

AND CARRIED OUT 123 COLLABORATIVE

PROJECTS WITH OTHER NATIONAL

AND REGIONAL BODIES, LOCAL

AUTHORITIES, PRIVATE

SECTOR ORGANISATIONS

AND CLUBS~

## Forward Planning~

Produced our

third Corporate Plan. Produced 18 Catchment

Management Plan documents and consulted local

communities on these and other policy proposals~

Commented on over 60,000 planning applications to statutory  
planning authorities.



# Conservation~

*Developed and published a river corridor*

*survey methodology and surveyed over 8,000km*

*of aquatic wildlife habitats~ Incorporated conservation*

*works into 536 capital schemes~ Improved liaison with*

*English Nature and other conservation bodies~*

# Information Systems~

COMPLETED A NATIONAL COMMUNICATIONS NETWORK~ REVIEWED

AND REDUCED THE DUPLICATION OF SOFTWARE APPLICATIONS~

INTRODUCED REVISED CHARGING FOR DISCHARGES AND ABSTRACTION

BILLING SYSTEMS~

# The Integrated Approach

## Emergencies

Our emergency workforce responded to over 2,000 incidents, varying from the aftermath of pollution incidents, to flooding events.

Significant flooding occurred on the east coast overnight on the 20/21 February 1993 after one of the highest sea levels for many years. Following the flooding, the NRA immediately repaired the critical stretch of the tidal flood defences, placing 1,500 tonnes of material before the next tide. The NRA's forecasting methods and well-tested emergency procedures helped to minimise the impact of the flooding and prevent a major disaster and loss of life.

On the 22 February 1993, two incidents required immediate response from the pollution control team based at Shrewsbury in the Severn Trent Region and their Birmingham-based control room staff. The first incident was a tanker spillage of 7,000 litres of petrol into the River Severn; the second incident, a few hours later, was a blaze at a chemical company where contaminated run-off water posed serious risks to a nearby river that feeds drinking water supplies. Thanks to the close liaison between fire fighters and NRA staff, there was no significant pollution of surface waters. Longer-term analysis will determine the degree of groundwater contamination.

During the year, a Head Office Operations Room has been established and equipped to co-ordinate national emergencies. Each region has established standard support teams, which include personnel and equipment, ready to provide assistance to any other region within which a major emergency occurs.

The NRA is participating in a review of the process by which flood warnings are disseminated and has entered into national discussions with the Police, MAFF, Welsh Office, Home Office and Local Authorities to establish an effective procedure which will ensure that accurate and timely warnings are passed to those members of the public and industry who are at risk from flooding.

## Planning Liaison

As a statutory consultee of the Planning Authorities, the NRA commented on over 60,000 planning applications in 1992/93. Although development pressures have eased, the complexity of problems arising from our environmental responsibilities has not.

A review of NRA involvement in planning liaison and the production of development plans, is almost complete. Meetings have been held with the Department of the Environment and Welsh Office to discuss NRA policies and how they relate to Town and Country planning policies.

## National Centres

The process of establishing National Centres has been developed within the NRA. National Centres, where specialist areas of our work are concentrated within one location rather than being carried out in a small scale across several regional locations, will potentially bring considerable benefits. Each National Centre will be subject to a full business case appraisal.

## Environmental Policy

In addition to pursuing its statutory responsibilities, the NRA has established sound environmental practices throughout all its functions.

The NRA have set Environmental Policy objectives which will be constantly monitored and reviewed. Every region has been tasked with specific savings in relevant areas of energy, water, stationery and fuel usage.

A phased approach has been taken towards measures which will focus on responsible environmental practice throughout all our functions.

Notable achievements in 1992/93 include:

- ~ The use of peat by the NRA and its contractors has been eliminated.
- ~ Most NRA sites have had water meters fitted.
- ~ An all-diesel policy for badged vehicles is being implemented.
- ~ An audit of energy tariffs for NRA buildings has been initiated and a reduction in energy is now being sought.
- ~ All pumping operations are being reviewed, including studies of the efficiency of pumping capacities.
- ~ Trials using recycled paper have commenced on our regional office reprographic equipment.

## Research and Development

The NRA's R&D programme, in addition to providing useful functional outputs, has developed a cross-functional approach in areas such as:

- ~ Environmental assessment.
- ~ Environmental economics.
- ~ Lone worker alarms.



# Water Quality

We look to achieve a continuing overall improvement in the quality of rivers, estuaries and coastal waters through the control of pollution.



## Statutory Water Quality Objectives

The main reason for maintaining and improving water quality is to make it suitable for particular users.

In order to provide a sensible framework for the maintenance and improvement of the quality of controlled waters, the 1989 Water Act allowed the Secretary of State to set Statutory Water Quality Objectives (SWQOs).

After publishing a discussion document on the SWQO system and, having considered some 160 responses, the NRA provided Government with its advice in September 1992 that SWQOs should be set for a range of use-related categories and applied to specified stretches of water.

The primary use categories were classed as: fisheries ecosystem (to apply to all rivers), abstraction for potable supply, abstraction for agricultural and industrial supply, watersports, commercial fisheries, and the protection of special ecosystems.

By defining uses for any stretch of water and setting standards and future targets for them, a basis for a rational and considered programme of water quality management is reached.

In December 1992, the Government used the NRA's advice to consult publicly on a SWQO scheme. Responses were required by 26 February 1993.

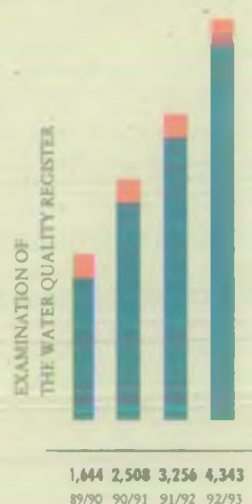
Looking to the implementation of SWQOs, it is the NRA's intention to

recommend potential objectives for individual river stretches to the DoE via catchment management plans.

## Monitoring of Controlled Waters

In order to assess the overall state of controlled waters, the NRA suggested that a General Quality Assessment Scheme be adopted, which essentially amounted to viewing the aquatic environment through different 'windows'. These views would provide information on the quality of rivers with respect to their chemical, biological, nutrient and aesthetic status.

The NRA is now seeking to draw other aspects such as fish stocks and the quality of the entire river corridor into the same comprehensive scheme. Data on the new chemical part of the scheme are currently being collated for the years 1990, 1991 and 1992 and the results will be published during 1993/94.



## Discharge Consent and Compliance

The NRA consents a large number of discharges, ranging from septic tanks to the non-radioactive content of the nuclear fuel reprocessing plant at Sellafield.

The more complex chemical discharges are now being incorporated into



authorisations issued by Her Majesty's Inspectorate of Pollution (HMIP) under the Environmental Protection Act 1990. A Memorandum of Understanding (MOU) exists between the two organisations, and close co-operation and collaboration has been developed to ensure that the discharges are well regulated and that the public is confident that this is the case.

The NRA retains powers to ensure that water quality is protected by setting

which are developing the new systems of consenting which will be required. These include composite sampling of effluents. Our own requirements for spot sampling against standards to protect the environment from acute polluting events – which is not an EC Directive requirement – will be retained. The Directive also requires the identification of areas which are particularly sensitive to eutrophication, as does another new EC Directive, on the protection of waters against pollution caused by nitrates from agricultural sources. The NRA has been gathering data on inland, estuarine and coastal waters in order to advise the Government on the delineation of such areas.

The EC Urban Waste Water Treatment Directive will be a major influence on capital spending by the water companies for the next decade. In order to ensure that the implementation of the Directive is to the maximum advantage of the rivers and estuaries of England and Wales, the NRA

## The NRA is responsible for some 20 EC Directives which have a direct environmental monitoring requirement.

minimum standards for discharges to water with which the HMIP authorisations must comply. The NRA also retains primary responsibility for environmental monitoring and assessment of total quantities of certain substances entering coastal waters each year.

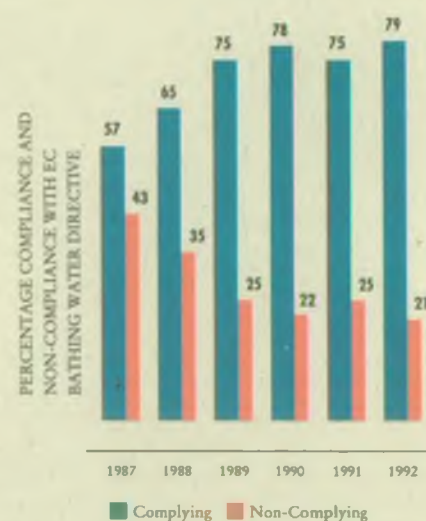
Control of discharges from sewage treatment works will also be subject to substantial change because of the introduction of the EC Urban Waste Water Treatment Directive. The NRA has been deeply involved in working groups

has expended considerable effort in drawing up guidelines for the purposes of the water companies' second tranche of Asset Management Plans (AMP2). These also include measures to attain a very high percentage of compliance with discharge consents.

The means by which compliance with discharges is assessed has been reviewed and, in order to remove inherited regional inconsistencies of practice, a new national standard method was adopted in January 1993.

### Environmental Monitoring

The NRA is responsible for some 20 EC Directives which have a direct environmental monitoring requirement. Of these, the one with the highest public profile is that concerned with the quality of bathing waters. In 1992 the NRA took further steps to update and standardize the procedures used for all of these Directives. For bathing waters, changes were made such that all samples tested for *total and faecal coliforms* were 'confirmed' for the presence of these organisms (the analysis of samples was previously based on a 'presumptive' classification). In addition, comprehensive sampling for *faecal streptococci* was also undertaken for all identified beaches.



The percentage compliance with the EC Directive standards increased from 75 per cent in 1991 to 79 per cent in 1992; more importantly, the number of beaches which consistently comply increased significantly.

Compliance is based on assessment against 'imperative' standards, but bathing waters are also tested relative to higher 'guideline' standards for the purposes of the awarding of Blue Flags which denote



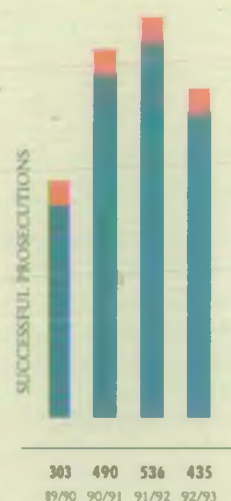
safe bathing areas. In 1992, 118 of the 416 EC designated beaches had water quality which met the microbiological 'guideline' standards.

In addition to monitoring water quality against set standards, the NRA also undertakes large-scale surveillance exercises. The most difficult area to cover is the three mile wide strip of coastal waters for which the NRA has responsibility. Following a successful R&D project, trials are now underway to monitor such coastal waters by ship for a wide range of substances, as required by the EC Dangerous Substances Directive. Levels of nutrients and chlorophyll are also measured and coupled with data obtained

attitudes and behaviour regarding illegal discharges. Pollution incidents arise from both regulated and unregulated discharges, from accidents and from mismanagement. Quite often the cause remains undetected.

The number of reported incidents increased to over 32,000 this year; however, about 8,000 of these incidents were unsubstantiated. The number of serious (Category I) pollution incidents, 362 in 1992/93, was only slightly higher than in 1991/92 and still significantly lower than the number reported in previous years.

Some 435 successful prosecutions were taken in 1992/93 for both breaches of consent conditions and pollution



In order to improve the NRA's effectiveness in identifying and dealing with pollution problems, it has actively promoted the use of field-based technology to make on-site assessment of water quality. The successful production of a hand-held monitor, a further 140 of which were purchased in 1992/93, has been matched by the development of instruments for use in remote situations.

Monitors which can be placed on the river bank ('Sherlock') or in the river itself ('Merlin') are now in use and a further development over this period has seen the introduction of an instrument which is capable of continuously monitoring an effluent stream. Known as 'Cyclops', the machine measures key parameters and, if preset limits of concentration are exceeded, sampling of the effluent stream can be triggered automatically and a local control room alerted, along with the transmission of information by fax.

Although still at the prototype stage, Cyclops was used to provide evidence for the successful prosecution in early 1993 of a chemical company, found to be exceeding its discharge consent conditions. This development is seen as a potential means for auditing as self-monitoring

## We aim to ensure that dischargers pay the costs of the consequences of their discharges and, as far as possible, to recover the costs of water environment improvements from those who benefit.

simultaneously by aircraft using a compact spectral imager in order to obtain two-dimensional information.

In 1992 the NRA completed its initial assessment of the total quantities of persistent substances entering coastal waters from land-based sources in England and Wales – the first such assessment in Europe. The results indicated that the inputs vary from some 150,000 tonnes per year of nitrate to perhaps a few tens of kg per year of pesticides such as aldrin, dieldrin and endrin.

### ***Pollution Incidents and Enforcement***

The NRA has always taken a strong line on enforcement in order to change

incidents, resulting in total fines against offenders of over £1m and costs awarded approaching £300,000. Of these successful prosecutions, 28 were against water companies with total fines in excess of £125,000.

The NRA successfully prosecuted, for the first time, a groundwater pollution offence, after contamination of the Fell Sandstone aquifer near Berwick (Northumbria Region) was discovered. A second groundwater prosecution followed in Anglian Region, where groundwater pollution was caused through the discharge of plating waste containing chromium, nickel and zinc.



practices are introduced via the EC Urban Waste Water Treatment Directive.

#### ***Pollution Prevention***

**Groundwater Protection:** In December 1992 the NRA published its Groundwater Protection Policy. This is a comprehensive guide for potential developers, landowners, industrialists and others from which they can deduce the likely response of the NRA to a particular proposal or activity which might affect groundwater. Groundwater stored in aquifers is the principal source of water supply in many places and provides about one third of the total public demand for water in England and Wales. The policy document is accompanied by a map showing the vulnerability of underground water in different areas. The use of this guide by developers and the NRA will help prevent pollution of this valuable resource.

**Farm Pollution:** In January 1992 we published a report on the Influence of Agriculture on the Quality of Natural Waters in England and Wales. One of its principal recommendations was a proposal that farm waste management plans should be drawn up as part of any grant application. MAFF/WO took up the idea of encouraging farmers to produce farm waste plans and set up a pilot study in 4 catchments during 1992. A 70% take-up by farmers in these catchments was a very positive response and MAFF have identified further trial areas. At the same time, the Control of Pollution (Sludge, Slurry and Agricultural Fuel Oil) Regulations 1991 have continued to bring more facilities under the control of the NRA. During the course of the application of the Regulations, farm waste plans have been adopted voluntarily at over 800 farms

and the Regulations are becoming accepted practice by the farming community.

**Contaminated Land and Abandoned Mines:** Problems arising from contaminated land and solid waste management have come under increasing attention. The proposed introduction of the waste management provisions of the Environmental Protection Act 1990 - which will involve the NRA in consultations on the pollution potential of waste sites for licensing purposes, both during the lifetime of a facility and during closure - has involved the NRA in a great deal of deliberation on the proposals. This included the setting up of a cost recovery regime in anticipation of the launch of the scheme in mid-1993. The NRA has continued work on a report identifying the problems of contaminated land which, in view of the retraction of proposals for a contaminated land register, will now provide valuable information for the Government's review of this subject.

conventional treatment system has been installed at the mine to reduce the polluting effects of its effluent, with costs exceeding £1m per year. The search for a more cost-effective solution continues, utilising the extra grant-in-aid of £8.26m agreed by the DoE.



**Farm waste plans have been adopted voluntarily at over 800 farms and the Regulations are becoming accepted practice by the farming community.**

On the issue of pollution from abandoned mines, the NRA commented upon the Government's closure plans for the coal industry and employed consultants to assess the likely impact in some regions. Again, work was carried out for a report covering the whole of this issue ranging from metalliferous mines, such as Wheal Jane, to the coal industry.

Following the Wheal Jane pollution incident, reported last year, a temporary

# Water Resources

The NRA aims to manage water resources to achieve the right balance between the needs of the environment and those of the abstractors.

## *Resource Management*

The protracted drought which gripped the greater part of the South and South East of England from 1989, continued well into 1992. Particular problems were caused by extremely low groundwater levels, many of which remained well below the long-term average throughout the drought.

In dealing with these resource shortages, the NRA has worked at the forefront of drought management. By liaising closely with Water Undertakers and other interested organisations, we were able to balance the needs of abstractors and the environment.

During 1992/93 a total of 13 Drought Orders were issued in Southern, Thames and Yorkshire Regions. 10 hosepipe/sprinkler bans were also issued in these areas and in parts of South West, Anglian and Severn Trent Regions.

In May 1992 North West Water's licence to abstract from Ennerdale Water was varied and an associated management agreement granted to authorise abstraction from a new intake 300 metres into the lake. Negotiations were initiated in the Severn Trent Region with PowerGen and National Power to secure reductions in protected entitlements on the River Trent. One third of all water abstracted is taken by the electricity generating companies for cooling purposes.

During the latter part of 1992 and

the beginning of 1993 there has been a significant increase in the rainfall received in drought affected areas. As a result, many of the depleted aquifers have undergone appreciable recharge. Nevertheless, whilst the drought appears to be over, its impact is still felt in some areas, particularly parts of Kent, where some isolated pockets of groundwater have as yet shown no sign of recovery.

Throughout the year the NRA has continued to actively augment resources through the operation of major river regulation schemes. These schemes include the Ely-Ouse Essex transfer scheme located in the Anglian Region, where up to 334 mega litres per day is transferred for the primary benefit of public water supply, and releases from reservoirs such as Clywedog for the regulation of flows in the River Severn.

## *Low-Flows*

Throughout the year considerable attention has been given to the problem of unacceptably low-flows in some of our rivers. These are problems caused by excessive authorised abstractions rather than due to drought, although the severe drought will have exacerbated such problems. In most cases the cause of the low-flows has been groundwater abstractions which have resulted in groundwater seepage to the surface being reduced or halted.

Following the identification of the 'Top 40' national low-flow sites, an R&D study was implemented to both assess and to establish a priority scoring system for tackling the problem. Initial investigations have now been completed at all the affected locations. 5 sites have been eliminated from the list; solutions have been identified at 14 sites (in 10 of these



the solution has been implemented or completed) and further investigation work is proceeding at the remaining 21 sites. During 1992/93, 5 low-flow alleviation schemes were completed at a combined cost of some £750,000 at sites on the River Pang and Letcombe Brook

and enforcing compliance with licence conditions through a programme of inspections. In 1992/93 a total of over 19,000 licence enforcement checks were carried out. Prosecutions for failing to comply with licence conditions or for operating without a licence were taken

needed to offset a deficit or repay a surplus from a previous year.

During 1992/93 the Secretary of State for the Environment approved a new Scheme of Abstraction Charges which will apply to all abstraction licence holders in England and Wales with effect from 1 April 1993. This new national scheme will replace the 10 different regional schemes which the NRA inherited from the former Regional Water Authorities when it was formed in September 1989. The scheme provides a consistent method of charging throughout the NRA, although the quantum of charge is still regionally based.

The new scheme has been the subject of extensive consultation with customers and relevant organisations. The new charges will reflect the impact of each abstraction on water resources and the associated level of NRA activity.

#### Resource Planning

Following the publication of the NRA's report 'Water Resources Development Strategy – A Discussion Document' in March 1992, work has continued on the preparation of a national strategy for the management and development of water resources. This strategy will be completed for publication in early 1994. It will consider the future demand for water up to the year 2021 allowing for the potential impact on demand through the introduction of domestic meters and appropriate price tariffs or through improved leakage control by water companies and their customers.

The strategy will identify options for meeting forecast deficits which may include the development of local resources, new storage reservoirs to hold surplus winter water and inter-regional transfers. Public consultation has already started at a

## The NRA manages the terms and conditions of about 50,000 licensed rights to abstract water throughout England and Wales.

(Thames Region), Battlefield Brook and Leomansley Brook (Severn Trent) and on the lower River Glen (Anglian).

In addition, the NRA negotiated an improvement scheme for the River Darent with Thames Water Utilities over their abstractions from boreholes for public water supply. This major scheme will require DoE approval and is expected to cost £12m. It will involve both the NRA and the water company in works to bring about a solution to the problems of low river flow.

An alleviation scheme has also been launched for the River Lowther in Cumbria. This centres on an agreement with North West Water over the provision of compensation water to protect the river environment at times of low-flow. The NRA is to carry out channel improvement work and fish re-stocking following the recovery of flow.

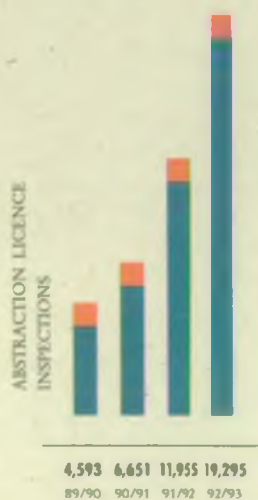
#### Abstraction Licensing and Enforcement

The NRA manages the terms and conditions of about 50,000 licensed rights to abstract water throughout England and Wales. This involves reviewing and, where necessary, revising or revoking licences

for 31 abstraction offences. Serious abstraction offences by major water companies included exceeding prescribed flow requirement for the River Leam, Leamington, Warwickshire, and non-compliance of compensation releases from the Gorphey and Mixenden Reservoirs, Yorkshire.

#### Charging Schemes

The funding for carrying out the NRA's water resources activities is derived from charges levied on abstractors. Charges are set to recover expenditure on a year by year basis subject to any adjustments





more local level on resource development options through the publication of regional strategies. Further regional and national consultation will follow as the national strategy is developed.

Discussions have been held with the DoE on the future financing, promotion and development of new resources. This will be followed by wider consultation with those directly concerned, including representatives of the water industry.

The NRA has responded positively to the Government's consultation report '*Using Water Wisely*', highlighting the need to conserve water through a range of options as an alternative to the development of new resources.

#### Resource Protection

The protection of water resources is a fundamental requirement for maintaining and developing a sustainable water resources strategy. The protection of groundwater stored in aquifers is particularly important due to the protracted time it takes for aquifers to recover from pollution. Groundwater is the principal source of water supply in many areas and, in aggregate, provides over one third of the total public demand for water in England and Wales.

In the past, there were many different approaches to groundwater protection, which has led to differences in practice across England and Wales. In December 1992 the NRA published its *Policy and Practice for the Protection of Groundwater* report which ensures that there is a consistent national approach to the prevention of groundwater pollution. The NRA's policy covers all types of threat to groundwater and helps the NRA and other authorities to implement

controls which can be used to protect this valuable source of supply.

The NRA has also made significant headway in the Government plans to implement the EC Nitrate Directive with progress being made on defining zones based on catchments of public supply boreholes.

Monitoring of existing Nitrate Sensitive Areas (NSAs) has continued throughout the year as part of a 5 year study programme on the effectiveness of land use controls.

#### Hydrometry

Hydrometry is vital to the efficient running of the water resources function

**The protection of water resources is a fundamental requirement for maintaining and developing a sustainable water resources strategy.**

and involves the measurement and recording of rainfall, river flow and groundwaters. The NRA currently operates over 10,500 hydrometric stations which are essential for the measurement and allocation of resources and for the operational management of national and regional water resource schemes. The data is held in national archives by the Institute of Hydrology, British Geological Survey and the Meteorological Office, where it is available for research and other purposes. During the past year, 33 new gauging stations have been constructed throughout the country to improve the measurement and management of resources at critical locations.

# Flood Defence

Our aim is to provide effective defence for people and property against flooding from rivers and the sea. A vital part of this is to provide adequate arrangements for flood forecasting and warning.

## Flooding Incidents

1992/93 was punctuated by a series of tidal and fluvial flood events. In August 1992 high spring tides resulted in severe shingle loss to the Kent and Sussex sea defences. Emergency replenishment to the Kent and Sussex coasts helped prevent greater damage during similar tidal conditions in October, when 35,500 tonnes of shingle, lost particularly at Sandwich and east of Reculver in Kent, and 20,000 tonnes lost at Cooden, East Sussex, was replenished.

The severe storm which traversed the eastern side of the country in September, triggered the wettest 5 consecutive months since 1880 in some areas, resulting in severe flooding from rivers and inundation of some 750 properties in Anglian, Thames and Severn Trent Regions. Further severe fluvial flooding occurred in December in the Carmarthen, Pontypridd and Abergavenny areas of South Wales. Flood water affected many thousands of hectares of agricultural land in the floodplain and disrupted road and rail services and caused localised flooding of property. However, extensive flood alleviation schemes constructed after the floods of 1979 prevented widespread flooding of property.

In February, Anglian Region experienced its worst tidal event since

1978, when a major surge and strong north-westerly winds caused damage to sea and tidal defences. Flooding occurred at several locations and necessitated the evacuation of almost 600 residents from Great Yarmouth, Hunstanton and Heacham areas. Conversely, in March, the highest predicted tide for the period passed without major incident when the critical days enjoyed high pressure and light winds.

Newly commissioned flood alleviation schemes in Axminster, Newton Abbot and Trowbridge were successful in containing floodwater and preventing property inundation and graphically demonstrated the importance of maintaining the many existing flood defence schemes to a high standard of performance.

## Forecast and Warning Systems

A nationally consistent system of yellow, amber and red location-specific warnings, covering flooding ranging from washlands to property, was instituted to provide information to the police and other bodies who have a role in warning and providing assistance to the public. As well as the 24 hour Regional Communications Centres, Area Emergency Rooms were manned continuously during significant flooding events to receive, disseminate and act upon information.

Northumbria Region used a 'snow pillow', a 3m diameter flexible envelope connected to instrumentation via its liquid contents, to measure water equivalent of fallen snow. Although used successfully in North America, Northumbria's use is the first in the UK and probably in Europe.

Yorkshire Region's *River Flow Forecasting System* achieved international interest after a paper on it was given at a Flood Management Conference in Italy.





Cobbacombe Cross Weather Radar Station in Devon, jointly undertaken by NRA, the Meteorological Office, Devon County Council and MAFF, was opened in October by The Rt. Honorable John Gummer, the then Minister for Agriculture, Fisheries & Food.

An R&D project to consider target levels of service for flood warning and response, which will be used during 1993/94 to determine consistent standards for this activity, has been completed.

#### Capital Works and Maintenance Programme

In July the Parliamentary Secretary to MAFF, Earl Howe, formally opened Severn Trent Region's £20m River Tame flood alleviation scheme. More than 2000 properties are protected by this scheme, which was completed over a period of 12 years. The Yarm Flood Alleviation Scheme, Northumbria's largest such project, was completed in January 1992. Other important works completed during the year include:

- ~ Phase 10B of the River Hull Comprehensive Scheme was substantially completed in Yorkshire Region.
- ~ In South West Region, major sea defences were completed at Beesands, Instow and Dawlish Warren.

~ The Thames Region completed major weir reconstruction works at a total cost of £1.4m at Shepperton and Teddington on the River Thames and at Huntsmore on the River Colne.

~ Phase 1 of the Haverigg tidal defence scheme in South West Cumbria, North West Region was completed.

~ Phases 2 and 3A of Pennington Sea Wall, Hampshire, Southern Region were completed at a cost of £2.5m.

Major new improvement works included construction of shore parallel rock breakwaters and shingle refurbishment by Southern Region to protect Elmer near Bognor Regis. Approximately 150,000 tonnes of gneiss

## The Authority produced major policy and operational initiatives to assist with the logical, objective and robust control of flood defence services.

rock is being shipped from Larvic, Norway in loads of 9,000 tonnes per ship. Other important works started during the year include:

- ~ North Street Flood Alleviation Scheme, York - estimated cost £1m.
- ~ River Roding Tidal Defence Scheme, Thames Region - estimated cost £1.5m.
- ~ Keadby Pumping Station, Severn Trent Region - refurbishment at £2m.
- ~ Hopkinstown Flood Protection Scheme on the River Rhondda, Welsh Region - estimated cost £0.7m.
- ~ Preston Sea Wall (Weymouth), Wessex Region - estimated cost £6m.
- ~ St. Mary's Bay Sea Wall, Dymchurch, Kent, Southern Region - estimated cost £4.5m.

~ Ditton Brook Flood Alleviation Scheme, North West Region. This will protect large numbers of residential and commercial properties in Widnes.

~ A 20 year protection enhancement project for Lincolnshire's Mablethorpe to Skegness coastline. 60 million tonnes of offshore dredged sand will be used in this scheme to recharge beaches.

Thames Region's £63m Maidenhead flood alleviation scheme progressed to a Public Enquiry in October and the outcome is awaited. Yorkshire Region's Ilkley scheme has been cancelled, as residents voted to retain the riverside vista and the flooding problems, rather than accept a large but essential floodbank.

#### Management of Fluvial Defences

The Authority produced major policy and operational initiatives for main river, standards of service, asset management and prioritisation of capital work, to assist with the logical, objective and robust control of flood defence services. The draft main river policy provides a consistent approach based principally on floodplain use, the focus now being on urban or intensive agricultural interests. North West Region is presently testing the policy to assess performance and resource implications; interested bodies will be consulted.

Standards of service and prioritisation of works are integral parts of an overall flood defence management framework, which is being developed to assist effective resource

utilisation. The Standards of Service policy has introduced land-use bands and discrete lengths of main river, against which achievement of target levels of service can be determined.

Measures to demonstrate value for money from the in-house workforce are being implemented through the NRA's market testing programme.

Post project appraisal was introduced during the year and draft guidance published. Regions have appraised one major project each during the year, and will use the technique to an increasing extent in future years to confirm the economy and engineering.

The Prioritisation of Works system and the asset management programme are central to the formation of the Authority's 10-year needs capital and maintenance programmes. All identified needs require an economic appraisal before proceeding.

Continuing vigilance is necessary to ensure flood warnings reach those that need them, and liaison to achieve this is continually taking place.

## Management of Sea Defences

Following a hearing on 22 June, the Public Accounts Committee published its report on Coastal Defences in England. Their Report praised the NRA's visual Sea Defence Survey and confirmed the necessity of continued surveillance and communication in critical cases. They also identified steps to be carried out to all defences in need of 'significant' works and this work is either completed or included in work programmes.

The Authority contributed to important MAFF publications entitled 'Coastal Defence and the Environment', which contain environmental guidelines for all coastal defence works.

The NRA has been represented on a number of Coastal Groups throughout England and Wales. The Cardigan Bay Group has prepared a strategy document for the Meirionnydd coastline which will be available shortly. In the North West, the NRA supported MAFF in the

## Continuing vigilance is necessary to ensure flood warnings reach those that need them.

establishment of the West Cumbria Coastal Cell Group. A Coastal Cell Group, of which Wessex NRA is a member, was set up for the Severn Estuary from Foreland Point, west of Porlock to Avonmouth. There is also a Severn Estuary Coastal Cell Group, of which the NRA is a member. Coastal Cell Groups provide a forum for the exchange of ideas and information relating to coastal issues.

## Barriers and Barrages

Major work has started on a joint scheme being promoted with Sutton Harbour Company to protect the Barbican area of Plymouth. This tidal defence barrier will be similar to plans drawn up by Isambard Kingdom Brunel 150 years ago. The total cost of this work is around £6m with scheduled completion in 1993/94.

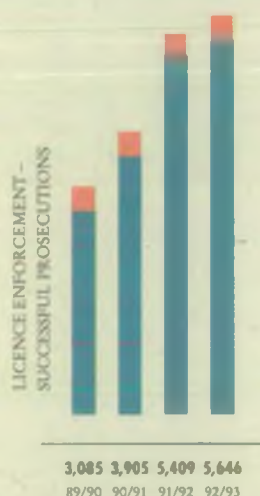
Substantial progress has been made on the Colne Barrier in Anglian Region, which is now two-thirds complete. River diversion works have been completed in Northumbria Region where the Tees Barrage is under construction and due for completion in 1994. The NRA has been consulted on both the Cardiff Bay and Usk barrages.





# Fisheries

We have undertaken to maintain, improve, and develop fisheries.



## Regulation

**Licensing:** We have continued to ensure that river and coastal fisheries in England and Wales are regulated by a sound system of licensing to help conserve and maintain stocks. We have backed this up with strong measures against licence offenders.

In January 1992, we introduced the national rod licence. Subject to riparian owner permission, this allows the holder to fish for any species, including salmon and sea trout, anywhere in England and Wales.

The first licence was valid for 15 months to take into account the different expiry dates of existing regional licences.

Subsequent annual licences will be issued from 1 April each year.

Following the success of the national rod licence, we have now initiated a commercial fishing licence review to examine the various existing regional systems of licensing and to provide recommendations for the simplification of licence types and duties. Discussions will be held with parties regarding commercial fishing interests during 1993/94.

**Charging Schemes:** In July 1992, the NRA issued a public consultation document '*A Fair Assessment*' in which we sought views on a proposal to obtain financial contributions from fishery owners and occupiers. The NRA is empowered to do this under Section 142 of the Water Resources Act 1991 and, hence, the proposals have become known as the Section 142 Charging Scheme.

A substantial and valuable response was

received to the consultation document from a wide range of organisations and individuals and, on the basis of this, a second public consultation document, '*Section 142 Fisheries Contributions*', was issued on 2 February 1993. This allowed 3 months for views to be expressed on a detailed charging proposal before a final decision was taken as to whether to proceed with a Section 142 Charging Scheme. Following public consultation, we have now decided not to progress the Section 142 proposals and we are now considering other options for funding our future activities.

During the year the attribution of fisheries costs between the major beneficiaries, riparian owners, anglers and the public was examined. An established cost attribution system will assist the development of sound charging schemes.

**Legislation & Byelaws:** Following the publication of the Government's North East Coast Salmon Net Fisheries Review, plans for the harmonized regulation of the East Coast salmon and sea trout fisheries were prepared. A new Northumbria and Yorkshire Net Limitation Order was introduced for the 1993 season which will reduce the number of licences as current licence-holders leave the fishery. This is forecast to reduce the number of licences by half within 10 years. A similar order is being prepared for the Anglian fishery and should come into force in 1994. A new byelaw was put forward to restrict fishing in and around the Humber estuary, and further byelaws harmonizing the entire East Coast fishery were drafted.

In the Severn estuary off Newport, and the Dee estuary in North Wales, NRA byelaws controlling driftnetting came into force. As a result, major illegal



fisheries for salmon have been brought under control.

### Enforcement

The first of a two-phase review of fisheries enforcement was undertaken, during which a number of issues were addressed, including standard uniforms for NRA bailiffs, the use of dogs during enforcement activities and conditions of service for water bailiffs. Our aim is to increase effectiveness of enforcement



through a more consistent operation across England and Wales.

There were more than 273,000 licence checks carried out with some 5,646 prosecutions for fishing licence offences, resulting in fines of approximately £187,000 and costs awarded of £171,000. A further 1,077 prosecutions were taken for byelaw and other offences with fines of approximately £48,000 and costs awarded of £18,000.

The largest fine for a single offender was £4,500 for a person convicted of 10 charges of poaching and dealing in illegally caught salmon.

### Catch Statistics

The collation of the 'Salmonid and Freshwater Fisheries Statistics for England

and Wales 1991' was carried out to produce the third NRA publication in the series. It reported that, for the third consecutive year, the principal influence on catches of both salmon and sea trout during 1991 was the climate. Low rainfall and the resulting low-flows led to poor commercial and rod catches in many regions. Some rivers, nevertheless, reported very good rod catches in 1992.

In Thames Region, numbers of returning salmon were the highest recorded since the start of the Thames Salmon Trust project in 1979. Other noteworthy catches included: a 26lb salmon, River Tyne, Northumbria Region; an 18lb 2oz zander, Fen Drain, Anglian Region; a 37lb pike, Esthwaite Water, North West Region; an 8lb 8oz chub, River Trent, Severn Trent Region; a 30lbs+ carp, several venues, South West Region, and Yorkshire Region reported enormous catches of chub from the River Ure.

An R&D project *Use of Catch Statistics to Determine Fish Stock Size* continues to help us evaluate the use of migratory salmonid, eel and freshwater fish catch statistics for the management of these stocks in England and Wales, and to determine how such statistics can best be used to estimate stock size.

## The introduction of fish into the wild in England and Wales will continue to be regulated by the NRA.

### Fish Diseases

The EC Directive on Fish Health (91/67/EEC) was introduced on 1 January 1993 as a consequence of the Single European Act. The United Kingdom was one of the very few parts of the EC to



achieve Approved Zone status under this Directive, as a result of the country being certified free of a number of significant diseases. Although the import of fish into the United Kingdom will be easier as a result of the Directive, it will be tightly controlled by the relevant Government agencies. The introduction of fish into the wild in England and Wales will continue to be regulated by the NRA.

### Fish Kills and Rescues

Large losses can occur as a result of disease and bacterial infections. In Severn Trent Region *Flexibacter columnaris* killed 6,200 roach at Draycote Reservoir, near Rugby in June/July 1992.

Most recorded fish kills, however, are as a result of pollution and other incidents.

10,000 fish were killed when the River Uck, Southern Region, was de-oxygenated due to sewage pollution; an estimated 12,000 coarse fish were lost in the rivers Aire and Calder following a fire at a chemical works in Yorkshire Region.

Prompt and effective response by the NRA often averts greater losses. In the South West Region 517 fish were killed through cattle slurry pollution of the Hole Brook, River Torridge; however, due to the speed and skill of NRA staff, 1,344 fish were saved.

#### ***Rearing and Stocking***

A fish culture review was completed during the year with the aim of determining the demand for coarse and salmonid fish within the NRA. In a significant policy development, the NRA will cease to rear trout for sale on a

trials to be undertaken into the long-term holding of large salmon broodstock and subsequent kelt reconditioning. In the South West Region, a major refurbishment of Endsleigh hatchery was completed.

The NRA replaced fish lost through pollution in the River Lark, Anglian (10,000) and the River Blackwater, Thames (6,000). There were many such incidents around the Regions. In Anglian Region there has been re-stocking to overcome the effects of drought: 1,000 dace to River Welland and 1,500 grayling to River Witham.

management activities towards national goals and will include setting targets for fishery performance and/or stock levels for individual rivers. Further work will allow the management framework to be applied to salmon as well as sea trout.

A national study to determine the current status of sea trout in England and Wales, including many unknown aspects of sea trout biology, commenced during the year under the NRA's R&D programme. In addition, this project will seek to establish a network of monitoring sites so that population trends can be



planned basis and will seek to meet its trout re-stocking needs from commercial suppliers. Genetic integrity and diversity will continue to be important criteria especially in the stocking of migratory salmonids. A further outcome of the review was the establishment of 2 research projects to assess the effectiveness of restocking practices for coarse fish and salmonids and to determine optimum strategies for future NRA restocking programmes.

Many initiatives to improve fish stocks have succeeded. Special tanks were installed at Cynrig hatchery to enable

## **We aim to improve public understanding of the water environment and the NRA's work.**

A number of specific re-stocking activities have been carried out in order to support rehabilitation programmes, examples being the introduction of 240,000 juvenile salmon to the River Tees, Northumbria and 600,000 produced for the Rivers Test and Itchen, Southern Region.

Many of the fish were microtagged in a joint NRA/MAFF exercise to assess the effectiveness of re-stocking operations.

In the main coarse fish Regions, large numbers of fish were reared, e.g. 207,000 barbel, chub and dace were reared at Calverton Fish Farm, Severn Trent. In total around 5.5 million fish, salmonid and non-salmonid, were reared by the Authority and 5.7 million fish restocked to specific sites.

#### ***Improvement and Development***

Following the publication of 4 technical reports on sea trout in 1991, a national strategy for sea trout management was developed in 1992. Much of the strategy relies on the co-ordination of existing

determined. Under its Fellowship scheme, the NRA is also funding a 2 year study of sea trout genetic diversity in selected parts of England and Wales, to aid proper management.

There have been many habitat improvements, fish passes and rehabilitation projects. In Southern Region, the old technique of horse-drawn harrowing to rake beds to improve the chances of successful spawning for salmon and trout eggs was introduced.

The aim of raking is to break up the compacted stream bed to improve the flow of water around the eggs, supplying oxygen and removing metabolic waste. There was extensive riffle creation in Anglian Region. In Wales construction of the £410,000 Conwy Falls fish pass commenced in March and is expected to be operational by Spring 1994.



# Recreation

The NRA is committed to developing the amenity and recreational potential of inland and coastal waters and associated lands.

## Facility Management

### **Site Improvements and Developments:**

The NRA manages approximately 1,000 sites which offer recreation facilities and amenities. In 1992/93, NRA regions initiated a rolling programme to review all NRA landholdings with a view to improving existing sites and developing new sites.

Regional examples of site improvement and new site development include the opening in December 1992 of Caldy Valley Nature Park in Welsh Region. This has been developed largely with the aid of NRA finance and features wetlands, footpaths and interpretive facilities. Also in Welsh Region, course improvements at the Canolfan Tryweryn National White Water were completed in preparation for the 1995 World Championships and, as part of the overall management of the site,

database was completed in March 1993. Its findings will help the NRA in developing an inventory of recreation sites and facilities. This will assist the review of NRA landholdings, aid strategic planning and facilitate the production of reports for the Department of Environment on the Code of Practice for Conservation Access and Recreation.

An R&D project *Water-related Recreation: Participation, Trends and Issues* was completed and will form an integral part of the review and development of NRA policy on recreation. The project report emphasised the planning need for integration of recreation and conservation. It indicated that 10-15% of all countryside trips involve water, with walking being the most popular activity, followed by angling and boating.

The findings of the R&D project *Recreation Survey Methodology*, which was also completed during the year, may, in future, form part of a standardised NRA approach to the gathering and recording of information about diverse recreational activities and facilities occurring in a wide range of river corridors and estuaries.

10-15% of all countryside trips involve water, with walking being the most popular activity, followed by angling and boating.

an interpretive nature trail has also been prepared. In Southern Region, parking facilities and the first part of a disabled access footpath were completed at Park Wood, a 60 hectare ancient semi-natural woodland.

**Management Plans:** A feasibility study for a Recreation and Conservation

## Planning and Development Control

During the year, recreation staff continued to screen our capital and maintenance works in order to identify recreation implications and opportunities. In addition, local authority statutory plans were commented upon to identify and promote recreation potential. A draft set

of model planning policies was produced and will be used to influence and provide guidance for local authorities.

Recreation staff in Northumbria completed a draft Recreation and Amenity Plan on behalf of Teeside Development Corporation and local authorities. Influencing the statutory planning process is an effective means of fulfilling the NRA's recreational duties and achieving integrated catchment management.

#### Collaborative Projects and Management Advice

The NRA continued to maintain and develop liaison with relevant organisations at national and regional level. High level meetings were held with the Sports Council and the Central Council for Physical Recreation. From these meetings, the need for a study of the socio-economic value of angling was identified. Discussions were held with other interested organisations and joint funding principles were established.

At regional level, collaboration with local and county councils has been widespread. Thames Region, in a joint venture with Vale of White Horse District Council, produced the *Abingdon Riverside Walk* leaflet, and with Runnymede Borough Council, Truss Island on the River Thames has been restored as a public amenity area.

In Southern Region, following an approach through the district council from a disabled persons' group, disabled access has been provided to a vantage point over the bay at Seaford, East Sussex.

A canoe launch was constructed in collaboration with Hereford and Worcester County Council on the River Avon in Severn Trent Region.

The Wye project report '*Conservation*

*and Recreation: the Wye Challenge*' was launched by the NRA and English Nature at the Royal Welsh Show in July 1992.

The NRA's North West and Northumbria Regions entered into discussions with the Sports Council on a watersports study which will collate data on water-based recreation use across the whole of Northern England, covering the counties of Cumbria, Northumberland, Durham and Cleveland.

The study will assess demand and review provision for a wide variety of activities from established sports, such as angling to new activities, such as dragonboat racing and jet-skiing. A major aspect of the study will be to establish the factors which currently constrain participation and to identify opportunities for developing the necessary level of dedicated provision for a wide range

NRA performed its role as 'honest broker' and assisted in negotiations between canoeists and anglers at a local level.

An informal access agreement has operated in recent years between the Welsh Canoeing Association (WCA) and representatives of fishing and riparian interests (the United Usk Fisherman's Association). In Autumn 1992 a leaflet '*Access on the River Usk*' was produced which describes this informal agreement. It includes a set of NRA requirements and was printed and distributed by the WCA, with support from the NRA.

## At regional level, collaboration with local and county councils has been widespread.

of activities. The study will provide the collaborating organisations with information for developing policies and strategies to address the upsurge of interest in water-based leisure.

A policy note *Canoeing and Fisheries: Guidance for NRA Bailiffs* was produced and implemented in the latter part of the year. It advises staff of legislation concerning the promotion of recreation, access to water and associated land and the protection of fisheries, and provides guidelines for encouraging the responsible use of rivers by canoeists.

The leaflet *River Canoeists and the National Rivers Authority*, first issued in the preceding year, proved very popular and a new print-run was distributed. The



# Conservation

Our role is to conserve and enhance wildlife, landscape, and archaeological features associated with inland and coastal waters of England and Wales.

## Projects and Collaborative Work

Over 72% of all conservation projects carried out by the NRA are undertaken in collaboration with external bodies and other specialist conservation organisations.

The NRA has continued to support National RiverWATCH, a 3 year educational project to promote awareness of rivers and river valleys. The project is sponsored by National Power and organised by the Royal Society for Nature Conservation (RSNC). It produces activity packs aimed at 8 to 16 year olds. The River Bank Pack was launched in May 1992 and explores how valuable river banks are for wildlife and considers the way rivers shape the land and develop their channels. The River Valley Pack was launched by Sir David Bellamy in January 1993. This takes a closer look at the catchment area of the river, how different land uses affect rivers in the landscape and how water use at home could be modified to help the river environment.

Together with English Nature and the Royal Society for the Protection of Birds (RSPB), the NRA provided substantial technical input to 3 MAFF publications on Environmental Guidelines for Inland and Coastal Flood Defence. In collaboration with RSPB and RSNC, the NRA is now involved in the second edition of the *Rivers and Wildlife Handbook*, which is

due to be published in early 1994.

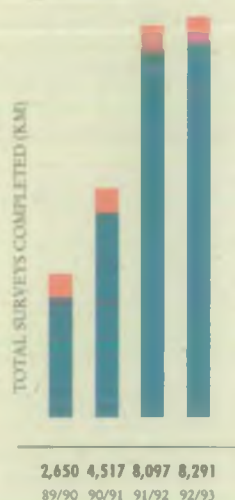
A bird survey of the Pevensey Levels, East Sussex, has been jointly organised by the NRA, English Nature and the RSPB. Bird counts have been made by volunteers from November 1992 to February 1993 to assess the use of the area by wintering birds. Pevensey Levels cover 10,000 hectares to the North East of Eastbourne and comprises mostly of grazing marsh. In winter it attracts important numbers of birds, notably lapwings and golden plover. Surveys of waterbirds have also been undertaken in other regions. To assess the numbers and distribution of cormorants and sawbill ducks, surveys have been commissioned and completed in Northumbria, Welsh and North West Regions.

The NRA continued to be involved in otter conservation and has funded projects in all regions. A handbook on river management and otters was progressed and will be published as Conservation Technical Handbook No 3 in 1993.

The NRA and Countryside Council for Wales have jointly commissioned the Otter Project Wales to produce a strategy for otter conservation in Welsh rivers. A survey of 'stick pile' otter holts in South East Wales, many of which were built by NRA Flood Defence and Conservation staff, revealed that 43% had been occupied by otters within 18 months of construction. New habitats have been created in many of the NRA regions, for example, a partnership approach to the North Northumberland Otter Project resulted in the creation of an extensive wetland habitat in a derelict oxbow beside the River Till.

A study to establish the rationale for a river rehabilitation programme to further

conservation, improve fisheries and promote recreation was completed. This will provide a framework for future work programmes needed for both strategic and opportunistic approaches to rehabilitation activities. Collaboration with outside



organisations, with a common interest in river rehabilitation, will be a key factor in the success of the river rehabilitation programme.

Dr Derek Langslow, Chief Executive of English Nature, stressed the importance of working together with the NRA when he addressed an NRA Conservation Forum attended by more than 60 staff in October. Speakers from the NRA, English Nature and the Countryside Council for Wales provided overviews of national issues and initiatives. This was followed by a workshop which investigated a case study involving the appraisal of a consent application.

In March 1993, an international conference *The Ecological Basis for River Management* was held jointly by Leicester University and the NRA. The conference was particularly concerned with the knowledge required for effective river management into the 21st century. Due

emphasis was placed on the need to liaise with conservationists and consider habitat, flora and fauna in all aspects of the NRA's work.

A collaborative project with the Farming and Wildlife Advisory Group (FWAG) was launched in Yorkshire. A conservation officer from the NRA has been seconded to FWAG to undertake conservation projects with farmers and landowners on the Rivers Ure and Swale. More than 700 farmers and landowners have been invited to take part in the project.

#### Archaeological Conservation

The conservation duties of the NRA also extend to the archaeological and historical features associated with river corridors and floodplains.

There have been 2 major finds at sites under the NRA's control. Research is underway to verify the age of a possible

## Collaboration with outside organisations, will be a key factor in the success of the river rehabilitation programme.

medieval roadway discovered during investigations requested by the NRA prior to issuing land drainage consent for a river crossing in Northumbria. Archaeologists working on behalf of the NRA in Yorkshire (at a site which will be used for a river level measuring station) found a 3,000 year old bronze-age sword in what was thought to be a Roman site established about 80 AD.

#### Sites of Special Scientific Interest (SSSIs)

Although the NRA is not responsible for designating SSSIs, it has a crucial part to play in protecting the special habitat features and water quality of such

sites associated with rivers. In some instances, the NRA owns land which is of SSSI status.

The Rivers Nar and Wensum (both flowing through NRA owned land) were designated Sites of Special Scientific Interest during 1992/93.

The importance of other NRA owned sites was also recognised, including sites on the River Derwent and the Humber estuary which were nominated for Ramsar (Wetlands of International Importance) and SPA (Special Protection Area) designation.

#### Appraisals and Surveys

During the year, strategic surveys focused on catchments within the catchment management planning programme, while reactive surveys continued to concentrate on sites subject to flood defence works. In all, 7,000km of river corridor were surveyed.

In August, a standard methodology for surveying river corridors was formally implemented and published as Conservation Technical Handbook No 1. This is to be used by those employed by or under contract to the NRA.

A standard methodology for river landscape assessment was made ready for publication as the Conservation Technical Handbook No 2.

An R&D report was completed which collated and reviewed knowledge on the habitat requirements of major riverine species. This research highlighted the need for improved objectivity in the



interpretation of habitat-based river corridor surveys.

A prototype for a simple cost-effective system to assess riverine features of value to wildlife, was developed in close association with the nature conservation agencies through their project SERCON (System for Evaluating Rivers for Conservation). Field testing will take place in the summer of 1993. The system will enable river reaches to be classified on the basis of physical habitat, thus complementing the water quality classification. Aerial photography will play a crucial role in providing a strategic overview.

Aerial surveys have become an increasingly important tool for assessing the conservation features and enhancement potential of river catchments and estuaries. Yorkshire staff have used aerial photography and remote imaging in order to make rapid assessments of sites and to target field survey work more effectively. In the South West, aerial surveys and analysis have been undertaken for 50% of North Cornwall and areas of South Devon. Flood alleviation schemes for Shrewsbury and Lydney in Severn Trent have been surveyed to determine the conservation impact of the works and aerial photographs of Pevensey Levels, East Sussex, have been taken to provide information for an operational management study undertaken by Southern staff.

The NRA continued to appraise NRA flood defence capital works including surveys on all schemes subject to environmental assessment requirement for conservation implications and opportunities. Where appropriate, the NRA undertakes environmental enhancement work. In 1992/93, over 200

improvement projects were undertaken, compared to 186 in 1991/92.

About 19,000 NRA authorisations (discharge consents, land drainage consents etc.) were screened by conservation staff in order to assess potential environmental impact and safeguard conservation interests.

Information on best current practice for objective assessment and response to applications for abstraction licences, discharge, land drainage and fisheries consents has been collated in a report. This guidance will form the basis for standard procedures and criteria for NRA authorisations to be developed in 1993/94 as a matter of priority.



About 19,000 NRA authorisations were screened by conservation staff in order to assess potential environmental impact and safeguard conservation interests.

#### Conservation Databases

A feasibility study for an NRA recreation and conservation database was completed in March 1993. The second phase of the R&D project *Database of Aquatic Plants in the British Isles* was completed. The database contains distribution maps for emergent water plants providing accurate, up-to-date information on their occurrence and distribution. This will be combined with the results of the first phase and published in early 1994 as the *Atlas of Aquatic Plants of Britain and Ireland*. The information will facilitate appropriate river management to protect rare species, sustain more common plants and counter the spread of the many nuisance species which have been introduced.

# Navigation

Our aim is to improve and maintain inland waters and their facilities for use by the public where the NRA is the navigation authority.

## Responsibilities

Responsibility for inland navigation in England and Wales is shared between the NRA and a number of other authorities. Navigation powers are granted to the NRA by specific Acts of Parliament.

The principal inland waters where the NRA is the statutory navigation authority are the non-tidal Thames and Medway, plus the East Anglian rivers comprising the Great Ouse and Nene systems, Ancholme, Glen, Welland and Stour. These waters comprise approximately 800km of navigable waterways, for which we issue about 40,000 boat licences.

During the year, the NRA accepted delegated navigation responsibilities for the Tees Barrage and upstream river. Navigation byelaws were drafted after a detailed process of consultation. A River Master has been appointed to control the navigable river above the Barrage.

The Department of Transport propose to transfer additional navigation responsibilities to the NRA for the tidal Dee.

A review of navigation finance was initiated and this will enable the NRA to develop a national charging scheme and pricing policy. Account is also being taken of the opportunities to move towards a scheme which will harmonise with those of other inland navigation authorities.

## Operational Activities

A number of capital expenditure schemes were completed during the year at a total cost of around £1.5m. The largest was the refurbishment of Hambleton lock, Phase I of the Thames Region lock rebuild programme.

A substantial start has been made on the installation of 32 landing stages at locks along the River Nene, between Northampton and Peterborough, to enable navigation locks to be operated safely, especially in view of the increased use expected in August 1993 when the area will be the venue for the Inland Waterways Festival.

In Welsh Region, a contract was let in early 1993 to repair the navigation light on the Dee North training wall and design work for this project highlighted the need for refurbishment of the training wall itself.

Bank protection works, using gabion baskets and local ragstone, were carried out upstream of Hartlake Bridge, Golden Green near Tonbridge in Southern Region. This work was financed by the 'Medway Project' sponsored by the NRA, Kent County Council, local borough councils and local industry.

NRA staff routinely undertake repair, maintenance and enforcement activities. Extraordinary activities that averted a potential crisis last year included the removal of a sunken 70ft barge from its mooring at Allington Castle on the River Medway. It could have obstructed the navigation channel or broken free and damaged Allington sluice and lock. In a further incident on the Thames, the hotel barge 'Actief' broke adrift but was boarded and brought under control by NRA staff thereby averting likely damage



to Windsor bridge and a potential flood risk to Windsor.

## Management Plans and New Developments

Following public consultation in June and July 1992, a new management plan for Rye Harbour, where the NRA is the port authority, was drawn up and agreed by the Board in November. The management of the harbour will remain within the NRA with the situation being reviewed in 5 years.

In pursuit of improving the service for users, the NRA began discussions with the British Canoe Union (BCU) to establish the feasibility of providing a licensing arrangement for BCU members. The outcome of these negotiations will become clear later in 1993.

The River Wye and the Wye Valley provide a unique resource for sport and recreation. There is an established right of navigation over much of the river. Unlike many other major rivers, navigation on the Wye is almost entirely unregulated, with no speed limit or restriction on the type or number of craft that can use the river. This situation can create problems for other river users and impose pressure on the environment. The publication of a report by the Wye Project, *'Conservation and Recreation: The Wye Challenge'*, focused attention upon the NRA's permissive byelaw making powers which can be used in certain instances where there is a public right of navigation to maintain order, regulate craft, maintain the navigation, register and charge users under the 1991 Water Resources Act. Further consideration is now being given to the use of these powers on the Wye and, indeed, the implications of using these powers nationally.

The NRA has provided representatives

and given advice at national and district committees which were established by the Department of Transport during the year to provide a co-ordinated approach to the safety of vessels and their users on inland waters, rivers, estuaries and harbours.

## Liaison and Collaboration

The NRA continued to support and develop liaison with other inland navigation authorities. In July, the NRA, British Waterways and the Broads Authority identified areas of common interest and agreed to hold regular meetings to progress joint initiatives, facilitate mutual understanding and rationalise the confused arrangements for the administration of inland navigation in England and Wales.

## The NRA has continued to support and develop liaison with other inland navigation authorities.

This tripartite group, in consultation with user groups, developed a harmonised set of Boat Safety Standards which will apply to craft on waterways under their jurisdiction. The standards relate to: inboard engines; electrical installations; electrical propulsion; outboard and portable engines; fire prevention and extinguishing equipment; liquefied petroleum gas installations; cooking; heating; refrigerating and lighting appliances and sanitation systems. Additional standards concerning hire boats and new boats include requirements for life-buoys and handrails. Some revision of the existing NRA licensing conditions, which are determined by local statutes and byelaws, will now be required before the

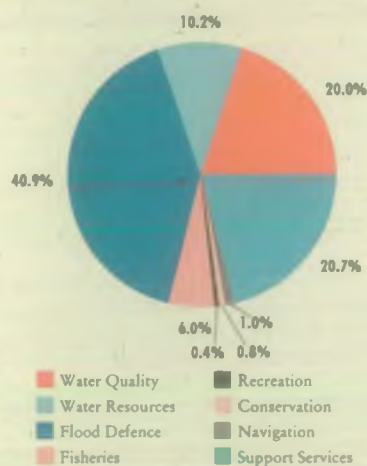
standards can be fully implemented. The new standards were launched in January 1993 at The Earls Court Boat Show on a stand shared by the NRA, British Waterways and the Broads Authority.

The close working relationship between the three authorities enabled them to prepare a co-ordinated response to a European Community draft Directive concerning the construction of recreational craft.

# Business Support Services

The NRA aims to improve efficiency in the exercise of its functions and to provide challenge and opportunity for employees and show concern for their welfare.

STAFFING BY FUNCTION –  
% DISTRIBUTION AS AT 31ST MARCH 1993



## Research & Development

**R&D Programme:** During 1992/93, the R&D Programme benefited significantly from the more business-oriented research needs identified by the individual core functions. This resulted in a more targeted range of projects, together with outputs which are more readily implemented by the end-user. Of the 83 projects the NRA proposed to carry out in 1992/93, 67 were successfully started, the remainder being either delayed or deleted from the programme. Similarly, of the 110 projects due for completion in 1992/93, 64 were successfully concluded with the remainder either extended or not undertaken.

Nationally important projects started since the last Annual Report include a project designed to translate existing discharge consents from sewage treatment works into the new format required by the EC Directive on Urban Waste Water Treatment, involving all Water Service Plcs and a number of other regulators. A major collaborative initiative with the British Geological Survey has been developed to provide the first national manual of aquifer properties. This work will provide essential information for the implementation of the groundwater protection policy. Close liaison has been developed with MAFF in the area of coastal flood defences, particularly in relation to beach management as

environmentally-friendly defences.

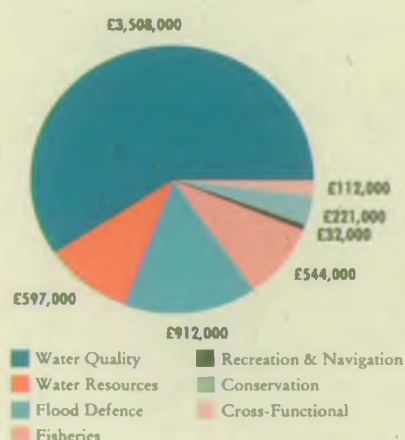
Significant projects have been started to provide better information for managing coarse fisheries and sea trout.

The NRA is supporting the national River Restoration Project, launched by the Prime Minister, which will provide a nationwide focus for the rehabilitation of degraded river environments. Continuing the cross-functional theme, the NRA is developing through the Foundation for Water Research a major environmental economics project to provide a practical means of assessing the value of improvements to different types of water environment.

**R&D Outputs 1992/93:** Substantial emphasis has been put on the quality of outputs from the Programme. The R&D Report series included a laboratory manual for the analysis of bacteria and viruses and an expert system for calculating abstraction licences. The use of airborne remote sensing techniques to monitor coastal water quality was highlighted in the National Geographic Magazine. The NRA's use of mussels to monitor the toxic effects of water quality was featured on the BBC television programme, 'Tomorrow's World'. Another water quality monitor, 'Cyclops', provided information for the prosecution of a polluting discharger. The NRA's duty to undertake R&D in support of its functions was the subject of a presentation to the House of Commons Select Committee on the Environment.

In order to create a greater awareness of both projects and outputs from the R&D Programme, a quarterly newsletter and a comprehensive list of R&D outputs were produced as a reference for NRA staff, as



COSTS OF THE R&D PROGRAMME 1992/93  
BY FUNCTION

well as being on sale to the general public. *'The Annual R&D Review - 1992'* was also published, providing more forward details of the R&D programme and outputs.

The NRA has maintained its support through its Research Fellowship Scheme for areas of science and technology, which will provide important underpinning information to the NRA in the longer-term. 5 fellowships were underway in 1992/93 in aquatic biology, sea trout genetics, principles of sustainability, effects of land use change, and river corridor survey techniques.

**External Collaboration:** The planned level of external collaboration has been exceeded, with over 30% of projects having some level of funding provided by other research-commissioning organisations, particularly the regulators in Scotland and Northern Ireland. Liaison with other research funders has been continued and has ensured that the NRA has been able to benefit from a broader context to its research.

A prime example of such collaboration has been the development of a project to provide a transportable estuarine water quality model in association with DoE and

Natural Environmental Research Council under the latter's national Land Ocean Interaction Study.

### Personnel

**General:** Significant progress has been made in all personnel areas this year, particularly in health and safety training. Work to produce a national manual on personnel policies and procedures is now bearing fruit with the progressive introduction of a number of Policy Implementation Notes.

Although some new staff and replacements for leavers were recruited, whilst arrangements for market testing were under consideration by the Board, we decided to introduce a recruitment moratorium on permanent employment in Autumn 1992.

Considerable work was undertaken in late 1992 and early 1993 in order to prepare for the introduction of a new common management organisation in the regions. Whilst retaining technical expertise, the delivery of service will be focused through Area Managers and Integrated Catchment Management.

**Employee Relations:** National agreements were negotiated with the Trade Unions of the two negotiation bodies and implemented with effect from 1 July 1992. Representatives from both the national negotiating bodies now meet in a tripartite forum to deal with issues arising as a result of the market testing programme and to discuss management of change arrangements. Although common ground was established on the basic principles of such an agreement, it could not be concluded in the absence of approval of a national severance scheme for the NRA. Such approval was reached after the year end.

Differences over terms and conditions of employment unresolved in regions may now be referred to national level discussions. Two such issues outstanding from the previous year were settled. One further difference was raised and resolved during the year.

Our Job Evaluation exercise has made further progress, with a national rank order being developed and largely finalised. Proposals on a new job grading structure and the introduction of performance related pay were evolved on the basis of job evaluation, and detailed proposals submitted to the DoE. The introduction of the public sector pay policy caused a delay in the implementation of the proposed scheme, meaning we have not yet been able to introduce a single national grading scheme for our employees.

**Equal Opportunities:** During the year, an audit into the effectiveness of the Authority's equal opportunities policy produced recommendations for further improvement, both nationally and with specific actions for each region. These are being progressively implemented.

**Health and Safety:** Health and Safety throughout the NRA has had another successful year, seeing a further reduction in reportable accidents against an increase in total staffing compared to the previous year. This encouraging trend downwards has resulted in a second British Safety Council Award. A number of Health and Safety audits were carried out and have resulted in further improvements.

An occupational health scheme was introduced and some 6,800 screenings/examinations were carried out to help identify potential work-related health areas, thereby enabling early



remedial action to be carried out.

Northumbria Region's water safety video won an award in the finals of the European Safety Festival in Thessaloniki during the European year of safety, hygiene and health protection at work.

**Training and Development:** Significant progress has been made in the training of senior managers via a major national training programme for all members of management teams which was organised in conjunction with Ashridge College. It has resulted in many organisational improvements and will be followed up during the next 12 months. A further national initiative aimed at the third tier of managers will be launched during 1993/94. A national performance appraisal scheme was developed and will be fully implemented during the coming year. A number of regions also held similar courses for senior and middle managers.

Recognising the importance of the consistent implementation of new policies, a national training programme was arranged for staff implementing the Ground Water Protection Policy, Abstraction Licence Enforcement, and Charging for Abstraction scheme.

Over 1,000 staff have also received training in the Financial Memorandum/Scheme of Delegation internal control arrangements. Project management training has been arranged for a similar number of staff based on the PRINCE methodology. In order to identify priorities for technical and professional training and to promote a consistent approach, a technical and professional steering group has been established with representatives from the Board, Head Office and the regions.

In the course of the year, Severn Trent

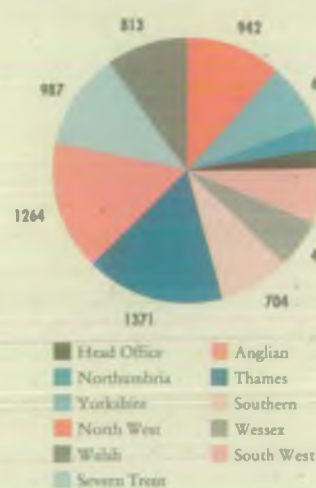
Region received the Investors in People Award. We are one of the first to gain national recognition of the standard of excellence the training provides.

**Pensions:** Employees have once again been sent a members' benefits statement. Regulations were implemented to restore pensionable service lost when some employees joined alternative pension schemes for a time before the NRA vesting date of 1 September 1989.

**New Offices:** In order to meet the needs of operational staff, new depots were opened at Northfleet, Kent, Southern Region and Rothley office and depot in Lower Trent, Severn Trent Region.

Coverdale House on the outskirts of York, Yorkshire Region, was opened in March 1993 to replace the Skeldergate office in the city centre.

STAFFING BY REGION AS AT 31ST MARCH 1993



**Improved Services:** A customer care programme was identified in 1992/93 and administrative staff were at the forefront of this initiative that will help us improve our reputation as a customer friendly, caring and efficient organisation. Guidelines for 'Standards of Correspondence' and 'Standards of Service - Guidelines for

*Responding to Customer Complaints and Members of Parliament'* have been produced.

A multi purpose questionnaire has been designed to get feedback from our customers. This will help us ascertain whether or not we are fulfilling their expectations in the service provided and also give indications of what we could do to meet their expectations of us.

### Legal Services

**Legal Services and Secretariat:** The Authority continues to follow a policy of rigorous enforcement. In particular the year has seen further successful developments in the use of automatic sampling devices.

Legal support has been supplied for training of multi-functional enforcement teams. Legal Services also ran a national series of very successful flood defence seminars and continues to supply support in respect to the proposed Section 142 Order relating to fisheries' contributions. The East Coast Net Limitation Order was also completed and came into effect on 7 January 1993.

The Secretariat's major achievements during the year included the development of standing orders and terms of reference for the Board, development of national guidance on management of meetings and the implementation of revised administrative procedures resulting in a reduction in overheads and increased effectiveness of meetings.

**Estates Management:** The Authority commissioned a national review of office accommodation requirements, taking into account staffing levels, future investment in infra-structure, location and suitability to needs. The Estates Department also continued in its activities in obtaining



possession of land for the Authority's substantial capital and revenue programmes, including the valuation and payment of compensation to affected landowners and acquisition of property required for capital schemes. Land holdings continued to be reviewed in order to identify unused or under-utilised land for sale or estate management.

### **Finance**

**Corporate Planning:** Following a Board strategy workshop, we have continued to develop our corporate planning and performance reporting processes.

Our third Corporate Plan was published in 1992 and significant progress has been made in restructuring Head Office and our regions to deliver improved performance and value for money.

Over 18 draft catchment management plans were issued for public consultation. An improved suite of output and performance measures was developed and is now being implemented.

Towards the end of the year increasing emphasis was placed on efficiency savings, and future planning during the transition of the NRA into the proposed Environment Agency.

**Financial Systems:** We prepared a full business case for the implementation of an integrated personnel and accounting system (IPAS). Although the Authority has yet to receive formal approval to proceed from the Department of the Environment and Treasury, agreement has been reached on the recommended approach, and approval to proceed with the next stages is expected shortly. In the meantime, progress has been achieved through the development and provisional application of a national chart of accounts.

**Financial Management:** During the year,

we put a great deal of effort into establishing more rigorous financial controls and improving our project management procedures.

This has primarily been achieved by implementing, in October 1992, a revised Financial Memorandum and Scheme of Delegation which clearly prescribes the authority levels available to managers and staff throughout the Authority.

A policy implementation manual and summary booklet were prepared and widely distributed, giving detailed guidance on how the new rules should be interpreted and applied. Full training was supplied to over 1,000 staff and a summary guide of the key points issued to over 5,000 staff.

**Procurement:** In December we produced a national procurement manual designed to provide the commercial framework within which expenditure is committed. The prime objective of the past year has been to implement our procurement strategy, resulting in a review and strengthening of each region's procurement activity. Significant savings exceeding £2m have been achieved through implementing national and regional contracts. These include commercial vehicles, laboratory consumables and chemicals, printing and stationery with a total contract value of £7m.

**Environmental Economics:** Following the appointment of an Economist, substantial progress has been made on reviewing various R&D projects concerned with economics, and on the production of an economic appraisal manual to ensure a consistent framework for the evaluation and determination of the many and varied environmental decisions which the Authority has to address.

**Information Systems:** The controlling framework for information systems has demonstrably improved the control of our IS plans and expenditure. The major focus of effort for information systems has been on the national priority business projects, and this has been reflected in the movement of resources from regional applications systems to the development and implementation of national applications. A nationally-agreed and coordinated development plan has been produced. Work is progressing on the nationally-approved software development and selection.

Completion of the national communications project has improved the efficiency of internal voice communications by the provision of desk-to-desk dialling between all regions and head office and by the integration of the cellular telephone network and private mobile radio systems. A national data communications network was set up, with increasing use being made of the network for national and regional applications.

**Internal Audit:** In 1992/93, Internal Audit produced over 100 reports. These included computer security, fixed asset control, water quality sampling, equal opportunities, budgetary control, transport and plant and use of consultants. The Authority's Audit Committee has ensured that our financial and other systems and controls are working effectively and, where appropriate, made recommendations for improvements.

# Financial Statements

for the Year Ended 31 March 1993

## CONTENTS

I	Foreword
II	Auditors' Report
III	Statement of Accounting Policies
IV	Income and Expenditure Account
V	Balance Sheet
VI	Cash Flow Statement
VII	Notes to the Financial Statements
VIII	Supporting Statements
IX	Direction on the Annual Accounts



# I Foreword

## HISTORY AND STATUTORY BACKGROUND OF THE NATIONAL RIVERS AUTHORITY (NRA)

The Authority was created as a result of the Water Act 1989, which was subsequently superseded by the Water Resources Act 1991 and other consolidating legislation. It is a non-departmental public body with statutory powers and duties relating to flood defence, water resources, pollution control, fisheries, recreation, conservation and navigation, and it came into operation on 1 September 1989.

The Department of the Environment is the sponsor government department for the Authority and has primary responsibility for administering the controls over the Authority. The Ministry of Agriculture, Fisheries and Food (MAFF) has specific policy responsibilities for flood defence and fisheries in England and so the Authority deals directly with the Ministry on policy issues relating to those functions. The Authority also has direct dealings with the Welsh Office on matters associated with its functions as they affect Wales.

The primary sources of funding for flood defence activities are levies, and MAFF and Welsh Office grants towards the costs of capital projects. Charges to customers cover the entire costs of the water resources function. The funding of the Authority's remaining obligations relating to pollution control, fisheries, navigation, recreation and conservation relies on grant-in-aid from the Department of the Environment and increasingly on charges. The Authority's allocation of grant-in-aid is included in Class VII, Vote 5 of the parliamentary supply estimates.

## RESULTS

The Authority had a surplus of £43.9m for the year. There were transfers of £25.0m to the capital reserve and £0.3m to the special asset replacement fund (see Note 11), respectively and the remainder of the surplus (£18.6m) was carried to the income and expenditure account. Financial information on a receipts and payments basis is to be found in Section VIII.

## REVIEW OF ACTIVITIES

### Water Resources

The Authority is required to ensure that, taking one year with another, income from abstraction charges equals expenditure (including current cost depreciation on water resources assets, a rate of return of 2% on the net current cost value of water resources assets transferred to it on 1 September 1989 and 8% on such assets acquired since then). Cash surpluses at the year end can be carried forward only to the extent that they cover net repayments due to abstractors, short term creditors and accrued liabilities. All other cash surpluses must be offset against the grant-in-aid requirements of the general pollution control, fisheries, navigation, conservation and recreation functions.

Income from abstraction charges exceeded expenditure in the year by £2.7m. Net accumulated surpluses, returnable to abstractors

by means of reducing future charges, consequently rose from £11.4m to £14.1m over the period (see Section VIII(c) of the Financial Statements).

Water resources closing cash in hand totalled £21.0m. An amount of £17.4m was required to cover creditors, accruals, the provision referred to in Note 9 and repayments due to abstractors. The remaining cash surplus of £3.6m arose because it was not used to offset the call on grant-in-aid on other functions within the year. The Authority has been permitted to retain £2.0m from the surplus to supplement the grant-in-aid provision for 1993-94, leaving £1.6m to be repaid to the Department of the Environment.

### Grant-aided Functions

The principal financial duty for each of the grant-aided functions is to balance receipts (including grant-in-aid) with payments in each financial year. Any cash surpluses relating to such a function to be carried forward from one financial year to the next must not exceed 2% of the original grant-in-aid for that function.

Financial performance has to be measured in cash accounting terms. The following table, derived from the analysis of receipts and payments, summarises the position on grant-aided functions:-

	Payments	Operating Receipts	Grant-in-aid Requirement
	£m	£m	£m
Pollution control	76.7	39.8	36.9
Fisheries	24.2	11.0	13.2
Navigation	8.3	1.2	7.1
Recreation & conservation	5.2	0.4	4.8
Sub total	114.4	52.4	62.0
Restructuring activities	1.8	0.4	1.4
Unfunded pensions	11.5	~	11.5
	127.7	52.8	74.9

The figure for navigation receipts excludes navigation licence income, which is payable to the Treasury.

The Authority's final allocation of grant-in-aid for the year (£78.8m), which excludes an allocation of £5.0m for staff buy-outs, exceeded its actual requirement by £3.9m.

After taking account of the surplus of £0.2m brought forward from 1991-92, aggregate grant-in-aid in hand was £4.1m at the year end. The surplus stemmed mainly from lower than anticipated tender prices for goods and services, efficiency savings, and a re-profiling of the

programme for the treatment of polluted water from the disused Wheal Jane tin mine in Cornwall.

The Authority has made application to carry forward £3.0m of the surplus to 1993-94. £1.6m of that sum represents 2% of the original grant-in-aid allocation of £81.8m and the remaining £1.4m constitutes the extent to which the earmarked grant-in-aid budget for the Wheal Jane project has been re-profiled. The rest of the surplus, £1.1m, must be repaid to the Department of the Environment.

#### *Flood Defence*

The Authority is required to break even, taking one year with another, on income and expenditure. It must also extinguish, within five years from 1 April 1992, cash reserves transferred to it on 1 September 1989 other than those representing the balance on the income and expenditure account.

The consolidated flood defence account comprises the individual accounts of Flood Defence Committees through which the Authority, under Section 106 of the Water Resources Act 1991, arranges its flood defence functions to be carried out.

The surplus for the year was £29.9m. An amount of £11.6m relating to the financing of fixed asset purchases was transferred to capital reserve. There was also a transfer of £0.3m to the special asset replacement fund. The transfers to reserves left a sum of £18.0m to be carried to the income and expenditure account.

The Authority received capital grants of £34.0m from MAFF, £0.5m from the Welsh Office, and £0.3m from the European Regional Development Fund.

#### *Fixed Assets*

Expenditure of £59.5m was incurred on tangible fixed assets in the year. Grants, contributions and depreciation together provided funding of £34.5m. The remaining financing of £25.0m was generated by transfers from the surplus on the income and expenditure account. The balance sheet shows a net increase of £31.6m in tangible fixed assets from the opening position.

#### *Research and Development*

The furtherance of research is specified as one of the Authority's duties in the Water Resources Act 1991. The aims of the research and development programme are to improve the Authority's efficiency in the exercise of its functions and to provide new knowledge and techniques which increase its ability to discharge its duties. The programme covers all core functions but pollution control attracts the largest proportion of financial resources. Expenditure in the year was £6.8m.

#### *Future Developments*

The Financial Memorandum, the document setting out the framework of controls on the financial, staffing and related matters for the Authority was revised with effect from October

1992 and had a significant impact on the Authority's financial duties.

The Authority is specifically prevented from creating provisions in the future. A programme for applying the only current provision, relating to water resources, is to be agreed with the Department of the Environment.

As regards pollution control, the Authority must in future ensure that, taking one year with another, income from applicants for and holders of discharge consents equals expenditure (including current cost depreciation on relevant assets) incurred in connection with the granting and monitoring of direct discharges of effluent to water courses. Any cash surpluses arising on monitoring and consenting activities, after allowing for net repayments to charge payers, short term creditors and accrued liabilities, must be offset against the grant-in-aid requirements of the other grant-aided functions. The principal financial duty for general pollution control remains as for other grant-aided functions: there is an obligation to balance cash income (including grant-in-aid) and expenditure in each financial year, subject to specified carry-forward provisions.

The revised Memorandum stipulates that cash balances arising on all functions must be deposited with the National Loans Fund or other approved public sector bodies. Previous practice was to deposit such cash balances in the sterling money market. The transition to the new arrangements commenced in 1992-93 and is due to be completed in the ensuing financial year.

The 1993-94 Corporate Plan sets out the Authority's mission, aims and future targets for its core functions and support services. The key features of the plan relate to the furtherance of catchment water management, increasing allocations of resources to water quality, and the development of management structures, planning processes, and information systems in line with the likely requirements of the proposed Environment Agency. The plan also gives details of cost saving initiatives and increased funding through charging schemes, leading to a lower level of reliance on grants from Government.

#### *Events since the End of the Financial Year*

There have been no events since the end of the financial year which impact materially on these financial statements.

#### *Board and Committee Members*

Particulars of Board members are given in Appendix 1 of the report, and Committee members in Appendix 2.

#### *Disabled Persons*

If any employee becomes disabled, every effort is made to allow that person to continue in the Authority's employment, and to offer an alternative job and provide re-training where necessary.

The Authority considers applications for

employment from individuals with disabilities on the same basis as other applicants, having regard to the nature of the disabilities and vacant posts.

#### *Employee Involvement*

The Authority has national and regional joint committees for consultation and negotiation with industrial and non-industrial employees. The committees are also means of keeping employees' representatives informed of developments affecting employment with the Authority.

#### *Insurance of Directors and Staff*

During the year, the Authority maintained insurance for all staff in respect of their duties as employees.

CHAIRMAN

CHIEF EXECUTIVE AND ACCOUNTING OFFICER

8TH JULY, 1993



## II Auditors' Report

Report of the Auditors to the Board of the National Rivers Authority, the Secretary of State for the Environment, the Secretary of State for Wales and the Minister of Agriculture, Fisheries and Food.

We have audited the financial statements on pages 48 to 67 in accordance with Auditing Standards.

In our opinion the financial statements give a true and fair view of the state of affairs of the National Rivers Authority at 31 March 1993 and of its surplus and cash flow for the year then ended and have been properly prepared in accordance with section 121 (2) of the Water Resources Act 1991 and the Accounts Direction dated 31 March 1992 given thereunder.

**Coopers & Lybrand**

Chartered Accountants and Registered Auditors

Bristol

8th July 1993

## III Statement of Accounting Policies

### *(a) Basis of Accounting*

The financial statements have been prepared in accordance with the Direction on the Annual Accounts made by the Secretary of State for the Environment, the Secretary of State for Wales and the Minister of Agriculture, Fisheries and Food under Section 121(2) of the Water Resources Act 1991. A copy of the Direction is included in Section IX below.

The Authority's financial statements must meet, in so far as they are applicable, accounts requirements of current companies legislation and best commercial accounting practice, including accounting standards adopted or issued by the Accounting Standards Board. The Authority has adopted the provisions of Financial Reporting Standard 3 to the extent that they are relevant to the Authority's circumstances. Comparative figures have been re-stated where appropriate.

### *(b) Accounting Conventions*

The financial statements are prepared using the historical cost convention.

### *(c) Income*

Income represents total income, exclusive of VAT, receivable for functions undertaken and grant-in-aid received from the Department of the Environment (DoE). Grant-in-aid is received from the DoE in respect of capital and revenue expenditure on pollution control, fisheries, navigation, recreation and conservation activities, and also the costs associated with setting up the Authority as a separate entity from the former water authorities.

### *(d) Capital Grants and Contributions*

Grants that relate to specific capital expenditure are treated as deferred income which is then credited to the income and expenditure account over the asset's useful life.

*(e) Special Asset Replacement Fund*

The Fund was originally set aside against the future need for major capital works on the Thames Barrier, but may now be used for other capital works in the Thames Region and is to be extinguished no later than March 1997. Transfers to the Fund from the income and expenditure account represent interest receivable on reserve balances and transfers are made from the fund to meet capital costs incurred.

*(f) Capital Reserve*

Tangible fixed assets were transferred to the Authority at vesting free of debt. The written down value of such assets in the opening balance sheet was recorded in a capital reserve. Annual transfers to the reserve since vesting represent the excess of capital expenditure net of disposals over historical cost depreciation.

*(g) Intangible Fixed Assets*

Expenditure on intangible fixed assets is charged to the income and expenditure account in the year in which it is incurred. Intangible fixed assets are defined as river bank, channel and related works which are of no economic value to the Authority or works on structures and properties belonging to third parties where the ownership of the works undertaken does not vest in the Authority.

*(h) Tangible Fixed Assets*

Pre vesting assets are included in the financial statements at the values at which they were transferred to the Authority in its opening balance sheet less depreciation charged in subsequent years. Fixed assets acquired since the opening balance sheet are stated at cost less accumulated depreciation. The cost of tangible fixed assets is their purchase cost, together with any incidental expenses of acquisition. Depreciation is calculated so as to write off the cost of tangible fixed assets on a straight line basis over the expected useful economic lives of the assets concerned. The principal economic lives used for this purpose are:

Buildings 10-60 years

Vehicles and mobile plant 3-20 years

Operational structures 20-100 years

Computers and equipment 5-10 years

Freehold land is not depreciated

*(i) Water Resources Surpluses*

The surpluses which have accumulated on the aggregate water resources account (see Section VIII(c) of the Financial Statements) are treated as liabilities for sums repayable to abstractors. This is credited to the income and expenditure account as water resources costs exceed charges to abstractors through adjustments to tariffs.

*(j) Leases*

Costs in respect of operating leases are charged on a straight line basis, over the lease term.

Finance leases are treated as if the asset had been purchased outright. The assets are included in fixed assets and the capital element of the leasing commitments is shown as an obligation under finance leases. Depreciation on the relevant assets is charged to the income and expenditure account on a straight line basis to write the assets off over their expected useful lives. Finance lease payments are treated as consisting of capital and interest elements, and the interest is charged to the income and expenditure account using the annuity method. All obligations under finance leases were inherited from the predecessor water authorities.

*(k) Research and Development*

Research and development expenditure is charged to the income and expenditure account in the year in which it is incurred.

*(l) Pensions*

The Authority is the statutory administering body of the pensions fund for new employees and transferees from the former water authorities. The fund is a defined benefits scheme administered in accordance with local government pensions scheme regulations. The Authority's regular contributions to the fund are charged to the income and expenditure account and are based on the expected pension costs over the service lives of the employees.

The Authority also effects payment of certain unfunded pensions to former water industry employees on behalf of the Government. Such pensions payments are met entirely from grant-in-aid.



# IV Income and Expenditure Account

for the year ended 31 March 1993

	See Note	1992-93 Total £m	1991-92 Total £m	1992-93 Service Accounts (See Note 18) £m	1991-92 Service Accounts (See Note 19) £m	1992-93 Flood Defence £m	1991-92 Flood Defence £m
<b>Gross Operating</b>							
<b>Income:</b>							
Income from activities		317.0	284.5	125.8	104.4	191.2	180.1
Government grant-in-aid		59.6	80.5	59.6	80.5	~	~
Capital grants and contributions		34.8	34.0	0.3	0.1	34.5	33.9
Sale of assets		1.3	1.2	0.2	0.2	1.1	1.0
<b>Total income</b>		<b>412.7</b>	<b>400.2</b>	<b>185.9</b>	<b>185.2</b>	<b>226.8</b>	<b>215.0</b>
<b>Expenditure:</b>							
Staff costs	4.3	151.8	139.4	86.0	77.5	65.8	61.9
Depreciation and expenditure on intangible fixed assets		106.3	110.5	14.4	11.8	91.9	98.7
Other operating costs		125.8	123.3	74.3	73.5	51.5	49.8
<b>Operating costs</b>		<b>383.9</b>	<b>373.2</b>	<b>174.7</b>	<b>162.8</b>	<b>209.2</b>	<b>210.4</b>
Operating surplus	4	28.8	27.0	11.2	22.4	17.6	4.6
Interest receivable	5	15.1	16.6	2.8	3.6	12.3	13.0
<b>Surplus for year</b>		<b>43.9</b>	<b>43.6</b>	<b>14.0</b>	<b>26.0</b>	<b>29.9</b>	<b>17.6</b>
<b>Transfer to reserves:</b>							
Capital	11(a)	25.0	30.4	13.4	18.4	11.6	12.0
Special asset replacement fund	11(c)	0.3	2.7	~	~	0.3	2.7
		18.6	10.5	0.6	7.6	18.0	2.9
Income and expenditure account brought forward		37.2	26.7	4.0	(3.6)	33.2	30.3
<b>Income and expenditure account carried forward</b>		<b>55.8</b>	<b>37.2</b>	<b>4.6</b>	<b>4.0</b>	<b>51.2</b>	<b>33.2</b>

**Note:**

There is no separate statement of total recognised gains and losses as all such items are included in the income and expenditure account. Movements in reserves are detailed in Note 11 to the Financial Statements.

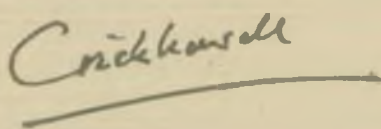
# V Balance Sheet

as at 31 March 1993

	See Note	1992-93 Total £m	1991-92 Total £m	1992-93 Service Accounts £m	1991-92 Service Accounts £m	1992-93 Flood Defence £m	1991-92 Flood Defence £m
<b>Fixed Assets</b>							
Tangible assets	6	480.2	448.6	199.7	186.5	280.5	262.1
<b>Current Assets</b>							
Stocks and work in progress		2.6	2.6	0.3	0.3	2.3	2.3
Debtors	7	32.0	30.7	14.1	14.7	17.9	16.0
Cash at bank and in hand		146.1	115.9	28.4	18.4	117.7	97.5
<b>Total current assets</b>		<b>180.7</b>	<b>149.2</b>	<b>42.8</b>	<b>33.4</b>	<b>137.9</b>	<b>115.8</b>
Creditors amounts falling due within one year	8	66.7	56.9	25.9	20.1	40.8	36.8
<b>Net current assets</b>		<b>114.0</b>	<b>92.3</b>	<b>16.9</b>	<b>13.3</b>	<b>97.1</b>	<b>79.0</b>
<b>Total assets less current liabilities</b>		<b>594.2</b>	<b>540.9</b>	<b>216.6</b>	<b>199.8</b>	<b>377.6</b>	<b>341.1</b>
<b>Financed by:</b>							
Creditors: amounts falling due after more than one year	8	10.6	8.4	9.8	7.4	0.8	1.0
Provision	9	2.5	1.9	2.5	1.9	—	—
Deferred grants and contributions	10	22.6	16.0	4.4	4.6	18.2	11.4
<b>Reserves:</b>							
Capital reserve	11(a)	457.6	432.6	195.3	181.9	262.3	250.7
Income and expenditure account	11(b)	55.8	37.2	4.6	4.0	51.2	33.2
Special asset replacement fund	11(c)	45.1	44.8	—	—	45.1	44.8
		<b>594.2</b>	<b>540.9</b>	<b>216.6</b>	<b>199.8</b>	<b>377.6</b>	<b>341.1</b>

**Note:**

The financial statements on pages 48 to 67 were approved by the Board on 8 July 1993 and were signed on its behalf by:



CHAIRMAN



CHIEF EXECUTIVE AND ACCOUNTING OFFICER



# VI Cash Flow Statement

for the year ended 31 March 1993

	See Note	1992-93 Total £m	1991-92 Total £m	1992-93 Service Accounts £m	1991-92 Service Accounts £m	1992-93 Flood Defence £m	1991-92 Flood Defence £m
<b>Operating Activities</b>							
Grant-in-aid received		74.7	83.8	74.7	83.8	~	~
Cash received from customers		331.8	291.2	134.4	108.0	197.4	183.2
Cash payments to suppliers		(131.4)	(132.1)	(77.3)	(82.0)	(54.1)	(50.1)
Cash paid to and on behalf of employees		(151.9)	(135.9)	(86.0)	(74.0)	(65.9)	(61.9)
Other cash payments		(11.5)	(11.2)	(11.5)	(11.2)	~	~
<b>Net cash inflow from operating activities</b>	20	111.7	95.8	34.3	24.6	77.4	71.2
Net cash inflow from returns on investments – interest received		15.1	16.6	2.8	3.6	12.3	13.0
<b>Investing Activities</b>							
Payments to acquire tangible fixed assets		(59.5)	(60.9)	(27.3)	(31.3)	(32.2)	(29.6)
Receipts from sale of tangible fixed assets		1.3	1.2	0.2	0.2	1.1	1.0
Payments for intangible fixed assets		(79.8)	(89.1)	(0.4)	(2.7)	(79.4)	(86.4)
<b>Net cash outflow from investing activities</b>		(138.0)	(148.8)	(27.5)	(33.8)	(110.5)	(115.0)
<b>Net cash (outflow)/inflow before financing</b>		(11.2)	(36.4)	9.6	(5.6)	(20.8)	(30.8)
<b>Financing</b>							
Capital grants and contributions (tangible)		(7.2)	(5.7)	(0.4)	–	(6.8)	(5.7)
Capital grants and contributions (intangible)		(34.2)	(29.0)	–	–	(34.2)	(29.0)
<b>Net cash inflow from financing</b>		(41.4)	(34.7)	(0.4)	–	(41.0)	(34.7)
Increase/(decrease) in cash and cash equivalents	20	30.2	(1.7)	10.0	(5.6)	20.2	3.9
		(11.2)	(36.4)	9.6	(5.6)	(20.8)	(30.8)

## VII Notes to the Financial Statements

### 1 Service Accounts

The term 'Service Accounts' incorporates the water resources, pollution control, fisheries, navigation, recreation and conservation functions.

### 2 Information Regarding Board Members

	1992-93 £000	1991-92 £000
Members' emoluments:		
Total fees and salaries of Board members	323	392
The emoluments, excluding pension contributions, of:		
the Chairman	51	49
the Chief Executive		
- the present postholder	98	7
- his temporary predecessor	~	12
- the previous postholder	~	146
(including £125,000 compensation for loss of office)		

The numbers of Board members (including the Chairman and Chief Executive) who received emoluments, excluding pension contributions, were:

	1992-93 Number	1991-92 Number
£1-5,000	~	5
£5,001-10,000	3	2
£10,001-15,000	2	8
£15,001-20,000	5	1
£20,001-25,000	2	~
£25,001-30,000	~	1
£30,001-35,000	1	1
£35,001-40,000	1	~
£40,001-45,000	~	1

### 3 Information Regarding Employees

(including Chief Executive)

	1992-93 £m	1991-92 £m
Salaries and wages	116.2	93.2
Social security costs	9.3	8.1
Other pension costs	8.7	10.3
Other staff related costs	17.6	27.8
	151.8	139.4

Scale of emoluments of senior employees, excluding pension costs:

	1992-93 Number	1991-92 Number
£30,001-40,000	94	107
£40,001-50,000	47	20
£50,001-60,000	11	7
£60,001-70,000	5	~
£70,001-80,000	1	~
£80,001-90,000	~	1

Average numbers of persons employed during the year:

	1992-93 Number	1991-92 Number
Senior managers	182	173
Other non-manual employees	5,758	5,132
Manual employees	2,188	2,286
Total	8,128	7,591

No material transactions, arrangements or contracts entered into in which a Board member, an executive, a higher paid employee, or a person connected with these, at any time during the year, had a direct or indirect material interest, were brought to the attention of the Authority.



**4 Operating Surplus**

The operating surplus is arrived at after charging:

	1992-93 £m	1991-92 £m
Auditors' remuneration:		
Audit work	0.2	0.1
Non-audit work	0.2	0.4
Research and development	6.8	8.2
Operating lease rentals	4.2	3.6
Depreciation on tangible fixed assets	26.5	21.8
Expenditure on intangible fixed assets	79.8	88.7
Travelling, transport, subsistence and hospitality costs:		
Board members	0.1	0.1
Employees	10.6	10.5
Losses and special payments (818 in number, 661 in 1991-92)	1.0	0.4

**Note:**

Losses and special payments encompass cash and stores losses, claims waived and abandoned, and fruitless, exgratia and compensation payments. The 1992-93 figure contains two debt write-offs of £115,000 and £62,000 respectively, the theft of a vehicle with a written down value of £26,000, and fire damage valued at £50,000 to a property.

**5 Interest Receivable**

	1992-93 £m	1991-92 £m
Interest receivable from short-term fixed interest deposits	15.1	16.6

## 6A Analysis of Tangible Fixed Assets

	See Note	Total £m	Freehold Land and Buildings £m	Plant and Machinery £m	Fixtures and Fittings £m	Assets under Construction £m
<b>Cost:</b>						
At 1 April 1992		587.1	369.4	125.7	52.6	39.4
Additions		59.5	16.5	15.3	8.1	19.6
Reclassification		~	17.8	0.4	1.6	(19.8)
Disposals		(4.4)	(0.1)	(4.1)	~	(0.2)
At 31 March 1993	6B	642.2	403.6	137.3	62.3	39.0
<b>Depreciation:</b>						
At 1 April 1992		138.5	65.4	32.7	20.4	~
Provided during the year		27.2	7.9	7.7	11.6	~
Disposals		(3.7)	~	(3.7)	~	~
At 31 March 1993	6B	162.0	73.3	56.7	32.0	~
<b>Net Book Value:</b>						
At 31 March 1993		480.2	330.3	80.6	30.3	39.0
At 31 March 1992		448.6	304.0	73.0	32.2	39.4

## 6B Analysis of Tangible Fixed Assets by Function

	See Note	Total £m	Flood Defence £m	Service Accounts Total £m	Water Resources £m	Pollution Control £m	Fisheries £m	Recreation £m	Conservation £m	Navigation £m
<b>Cost:</b>										
At 1 April 1992		587.1	342.9	244.2	107.4	71.9	19.5	3.2	1.1	41.1
Additions and reclassification of usage		59.5	31.9	27.6	12.7	8.1	2.6	0.1	0.4	3.7
Disposals		(4.4)	(3.5)	(0.9)	(0.2)	(0.5)	(0.2)	~	~	~
At 31 March 1993	6A	642.2	371.3	270.9	119.9	79.5	21.9	3.3	1.5	44.8
<b>Depreciation:</b>										
At 1 April 1992		138.5	80.8	57.7	28.9	15.7	4.8	0.6	0.2	7.5
Provided during the year		27.2	12.9	14.3	5.1	6.6	1.3	0.1	0.1	1.1
Disposals		(3.7)	(2.9)	(0.8)	(0.3)	(0.3)	(0.1)	~	~	(0.1)
At 31 March 1993	6A	162.0	90.8	71.2	33.7	22.0	6.0	0.7	0.3	8.5
<b>Net Book Value:</b>										
At 31 March 1993		480.2	280.5	199.7	86.2	57.5	15.9	2.6	1.2	36.3
At 31 March 1992		448.6	262.1	186.5	78.5	56.2	14.7	2.6	0.9	33.6



**7 Debtors**

Less than one year:	1992-93 £m	1991-92 £m
Trade debtors	5.3	7.1
Other debtors:		
Grants	8.4	5.7
VAT	8.3	8.2
Other	2.2	1.5
Water resources expenditure recoverable from abstractors	~	0.1
Prepayments and accrued income	5.8	6.0
	30.0	28.6
<b>More than one year:</b>		
Employee Loans	2.0	2.1
	32.0	30.7

**8 Creditors**

Amounts falling due within one year	1992-93 £m	1991-92 £m
Trade creditors	8.4	8.6
Other creditors	4.3	4.2
Capital creditors	30.0	26.5
Due to Government:		
Grant-in-aid returnable	1.1	~
Water resources surplus	1.6	2.1
Navigation licence income	2.2	2.0
Potentially returnable to Government:		
Water resources surplus to be used to fund grant-aided functions in 1993-94	2.0	~
Grant-in-aid carried forward	3.0	~
Water resources income repayable to abstractors	4.7	4.2
Tax and social security	3.4	3.5
Customer deposits and receipts in advance	1.2	1.6
Accruals	4.5	3.8
Finance leases	0.3	0.4
	66.7	56.9

**Amounts falling due after more than one year:**

Water resources income repayable to abstractors	9.4	7.3
Finance leases	0.2	0.5
Other creditors	1.0	0.6
	10.6	8.4

**9 Provision**

	1992-93 £m	1991-92 £m
At 1 April 1992	1.9	1.6
Movement in the year	0.6	0.3
At 31 March 1993	2.5	1.9

The provision relates to the Authority's liability for future infrastructure maintenance under the Clywedog operating agreement with Severn Trent Water plc.

**10 Deferred Grants and Contributions**

	1992-93 £m	1991-92 £m
At 1 April 1992	16.0	8.8
Amounts receivable in the year	7.2	7.5
Amortisation in year	(0.6)	(0.3)
At 31 March 1993	22.6	16.0

In addition to the deferred grants and contributions receivable in respect of tangible fixed assets, there were grants receivable of £34.2m relating to intangible assets written off in the year.

**11 Reserves and Retained Surpluses****(a) Capital Reserve**

	Total £m	Service Accounts £m	Flood Defence £m
At 1 April 1992	432.6	181.9	250.7
Movements in the year:			
Transfer from income and expenditure account	25.0	13.4	11.6
At 31 March 1993	457.6	195.3	262.3

Note:

The transfer to capital reserve is calculated as follows:

	Total £m	Service Accounts £m	Flood Defence £m
Purchase of fixed assets	59.5	27.6	31.9
Grants and contributions (net)	(6.6)	0.2	(6.8)
Depreciation (including capitalised depreciation)	(27.2)	(14.3)	(12.9)
Disposals	(0.7)	(0.1)	(0.6)
	25.0	13.4	11.6

**(b) Income and Expenditure Account**

	Total £m	Service Accounts £m	Flood Defence £m
At 1 April 1992	37.2	4.0	33.2
Surplus for year	18.6	0.6	18.0
At 31 March 1993	55.8	4.6	51.2

**(c) Special Asset Replacement Fund**

	£m	£m	£m
At 1 April 1992	44.8	—	44.8
Movement in the year:			
Transfer from income and expenditure account	0.3	—	0.3
At 31 March 1993	45.1	—	45.1

**Note:**

The transfer to the fund is calculated as follows:

Interest receivable	3.9	—	3.9
Capital costs incurred	(3.6)	—	(3.6)
	0.3	—	0.3

**12 Contingent Liabilities**

The Authority has the following unprovided contingent liabilities:-

	1992-93 £m	1991-92 £m
(a) Staff bridging loan guarantees	0.6	1.1
(b) Disputed contractors' claims	8.9	3.0
(c) During the year, the Authority announced its intention to merge its South West Region with Wessex, and Northumbria Region with Yorkshire. The impact on any costs associated with rationalisation is still being assessed and has not been provided for in the financial statements: savings directly attributable to the mergers are expected to outweigh those costs.		
(d) There was an obligation on vesting for the Authority and one of the water services plc's to conclude a reservoir operating agreement by March 1990. The agreement is being negotiated and the financial impact on the Authority has not been determined. No provision has been made in the financial statements.		

**13 Capital Commitments**

	1993 £m	1992 £m
Contracted for but not provided in the financial statements	24.3	32.2
Authorised but not yet contracted for	110.0	157.2

**14 Operating Leases**

At 31 March 1993 the Authority had annual commitments under operating leases as follows:-

	1993 Land & Buildings £m	1993 Other £m	1992 Land & Buildings £m	1992 Other £m
Leases expiring:				
Within one year	0.1	0.2	0.1	0.2
In the second to fifth years incl.	0.3	1.0	0.2	0.4
Over 5 years	2.3	0.1	1.8	0.6
	2.7	1.3	2.1	1.2

**15 Pension Obligations**

The Authority operates a defined benefit pension scheme. It is a statutory scheme under the Local Government Superannuation Regulations 1986.

The total pension cost for the Authority was £11.5m (1992 - £11.0m). The pension cost relating to the scheme is assessed in accordance with the advice of an independent qualified actuary using the projected unit method. The latest actuarial valuation of the scheme was at 31 March 1992. The assumptions that have the most significant effect on the valuation are those relating to the rate of return on investments and the rates of increase in salaries and pensions. It was assumed that the investment return would be 9½% per annum, that salary increases would average 7% per annum and that present and future pensions would increase at the rate of 5½% per annum.

At the date of the latest actuarial valuation, the market value of the assets of the United Kingdom schemes was £297.5m. The actuarial value of the assets was sufficient to cover 152% of the benefits which had accrued to members. The independent consulting actuaries to the fund have issued a certificate to the effect that liabilities were fully funded within Inland Revenue regulations. The regulations governing the pension scheme prevent surpluses from being applied to reductions in members' contributions or improvements to pensioners' benefits.

**16 Insurance**

Apart from statutory insurance requirements and certain risks covered with the approval of the DoE, the Authority follows a strategy of self-insurance in accordance with the Financial Memorandum.

**17 Corporation Tax**

On 27 July 1988 the Inland Revenue confirmed that the Authority was exempted from tax because it met the definition of a local authority for tax purposes set out in Section 519(4) of the Taxes Act 1988, which was subsequently replaced by Section 842A of the same Act. Accordingly no amounts for corporation tax have been provided in the financial statements.



## 18 Analysis of Income, Expenditure and Surpluses by Function

	Total Service Accounts	Water Resources	Pollution Control	Navigation	Fisheries	Recreation and Conservation	Restructuring Activities
	£m	£m	£m	£m	£m	£m	£m
<b>Income</b>							
Abstraction charges	74.3	74.3	~	~	~	~	~
Tolls	0.2	~	~	0.2	~	~	~
Fishing licence duties	9.8	~	~	~	9.8	~	~
Charges	37.1	~	36.6	~	0.3	0.2	~
Other income	4.4	0.7	2.2	0.8	0.5	0.2	~
Income from activities	125.8	75.0	38.8	1.0	10.6	0.4	~
Grant-in-aid	59.6	~	34.5	6.2	13.0	4.5	1.4
Capital grants and contributions	0.3	~	0.3	~	~	~	~
Sale of assets	0.2	0.1	0.1	~	~	~	~
<b>Total income</b>	<b>185.9</b>	<b>75.1</b>	<b>73.7</b>	<b>7.2</b>	<b>23.6</b>	<b>4.9</b>	<b>1.4</b>
Interest receivable	2.8	2.6	0.1	~	0.1	~	~
<b>Total income, including interest</b>	<b>188.7</b>	<b>77.7</b>	<b>73.8</b>	<b>7.2</b>	<b>23.7</b>	<b>4.9</b>	<b>1.4</b>
<b>Expenditure</b>							
Staff costs	86.0	26.9	40.1	3.2	13.4	2.4	~
Depreciation and expenditure on intangible fixed assets	14.4	5.2	6.4	1.0	1.5	0.3	~
Other operating costs:							
Contracted services	41.9	23.2	14.4	0.6	2.4	1.3	~
Materials	12.6	4.2	6.0	0.3	1.9	0.2	~
Other	19.8	7.4	7.9	0.7	3.1	0.7	~
<b>Operating costs</b>	<b>174.7</b>	<b>66.9</b>	<b>74.8</b>	<b>5.8</b>	<b>22.3</b>	<b>4.9</b>	<b>~</b>
<b>Surplus for year</b>	<b>14.0</b>	<b>10.8</b>	<b>(1.0)</b>	<b>1.4</b>	<b>1.4</b>	<b>~</b>	<b>1.4</b>

**Note:**

Restructuring activities refer to expenditure on fixed assets necessary to set up the Authority as a separate entity from the former water authorities.

## 19 Analysis of Flood Defence Income and Expenditure

	Total £m
<b>Income</b>	
Local authority levies	176.4
General drainage charges	3.0
Internal drainage boards	7.5
Contributions from beneficiaries	0.2
Other income	4.1
Income from activities	191.2
Capital grants and contributions	34.5
Sale of assets	1.1
<b>Total income</b>	<b>226.8</b>
Interest receivable	12.3
<b>Total income, including interest</b>	<b>239.1</b>
<b>Expenditure</b>	
Staff Costs	65.8
Depreciation and expenditure on intangible fixed assets	91.9
Other operating costs:	
Contracted services	26.6
Materials	10.9
Internal drainage boards	2.2
Other	11.8
<b>Total operating costs</b>	<b>209.2</b>
<b>Surplus for year</b>	<b>29.9</b>

## 20 Notes to the Cash Flow Statement

## (a) Reconciliation of Operating Surplus to Net Cash Inflow from Operating Activities

	1992-93 Total £m	1991-92 Total £m	1992-93 Service Accounts £m	1991-92 Service Accounts £m	1992-93 Flood Defence £m	1991-92 Flood Defence £m
Operating surplus for the year	28.8	27.0	11.2	22.4	17.6	4.6
Depreciation and expenditure on intangible fixed assets	71.5	76.5	14.1	11.7	57.4	64.8
Other non cash movements	1.4	1.2	(0.2)	2.4	1.6	(1.2)
Sale of assets	(1.3)	(1.2)	(0.2)	(0.2)	(1.1)	(1.0)
Decrease/(increase) in stocks and work in progress	~	0.3	~	0.2	~	0.1
(Increase)/decrease in debtors	(1.3)	(2.9)	0.6	(0.2)	(1.9)	(2.7)
Increase/(decrease) in creditors	12.6	(5.1)	8.8	(11.7)	3.8	8.6
<b>Net cash inflow from operating activities</b>	<b>111.7</b>	<b>95.8</b>	<b>34.3</b>	<b>24.6</b>	<b>77.4</b>	<b>71.2</b>

## (b) Analysis of Balances of Cash and Cash Equivalents as shown in the Balance Sheet

At 31 March 1993	146.1	115.9	28.4	18.4	117.7	97.5
At 1 April 1992	115.9	117.6	18.4	24.0	97.5	93.6
<b>Change in year</b>	<b>30.2</b>	<b>(1.7)</b>	<b>10.0</b>	<b>(5.6)</b>	<b>20.2</b>	<b>3.9</b>

## Note:

Cash equivalents include short-term deposits for which repayment notice is required.



# VIII Supporting Statements

(a) Analysis of Receipts and Payments for the Year Ended 31 March 1993

	Total	Flood Defence	Total Service Accounts	Water Resources	Pollution Control
	£m	£m	£m	£m	£m
<b>Receipts</b>					
Precepts, levies	199.5	199.5	—	~	~
Abstraction charges	78.8	—	78.8	78.8	~
Navigation licence receipts	2.2	—	2.2	—	~
Other operating receipts	52.6	~	52.6	~	39.7
Capital grants:					
Ministry of Agriculture Fisheries and Food	34.0	34.0	—	—	—
Welsh Office	0.5	0.5	—	—	—
Other	0.3	0.3	—	~	~
Interest received	15.3	12.3	3.0	2.9	0.1
Grant-in-aid	78.8	~	78.8	~	39.0
<b>Total receipts</b>	<b>462.0</b>	<b>246.6</b>	<b>215.4</b>	<b>81.7</b>	<b>78.8</b>
<b>Payments</b>					
Operating costs	283.6	120.2	163.4	62.0	70.2
Fixed assets	138.2	110.8	27.4	12.6	6.5
Unfunded pensions	11.5	~	11.5	~	~
Repayments to Government re 1992-93	4.1	~	4.1	2.1	~
<b>Total payments</b>	<b>437.4</b>	<b>231.0</b>	<b>206.4</b>	<b>76.7</b>	<b>76.7</b>
Cash surpluses/(deficits)	24.6	15.6	9.0	5.0	2.1
Opening bank balance	121.5	102.1	19.4	16.0	0.6
<b>Closing cash at bank and in hand</b>	<b>146.1</b>	<b>117.7</b>	<b>28.4</b>	<b>21.0</b>	<b>2.7</b>
<b>Analysis of closing cash at bank and in hand</b>					
Flood defence balances	117.7	117.7	—	—	~
Water resources purposes	17.4	~	17.4	17.4	~
Special fisheries funds	1.1	~	1.1	—	~
Carried forward for general purposes (for grant-aided functions)	5.0	~	5.0	2.0	2.7
<b>Sub-total</b>	<b>141.2</b>	<b>117.7</b>	<b>23.5</b>	<b>19.4</b>	<b>2.7</b>
<b>Payable to Government</b>					
Navigation licence receipts	2.2	~	2.2	—	~
Water resources cash surpluses	1.6	~	1.6	1.6	~
Surplus grant-in-aid	1.1	~	1.1	—	~
<b>Closing cash at bank and in hand</b>	<b>146.1</b>	<b>117.7</b>	<b>28.4</b>	<b>21.0</b>	<b>2.7</b>

**Note:**

During the year the Authority changed the basis for calculating its grant-in-aid requirement from a bank balance basis to cash book. The opening cash figures are, therefore, according to the bank balance whilst the closing cash at bank and in hand represents cash book balances.

<i>Fiseries</i>	<i>Navigation</i>	<i>Recreation and Conservation</i>	<i>Restructuring Activities</i>	<i>Unfunded Pensions</i>	
<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	
~	~	~	~	~	<b>Receipts</b>
~	~	~	~	~	Precepts, levies
~	~	~	~	~	Abstraction charges
~	2.2	~	~	~	Navigation licence receipts
10.9	1.2	0.4	0.4	~	Other operating receipts
					Capital grants:
~	~	~	~	~	Ministry of Agriculture Fisheries and Food
~	~	~	~	~	Welsh Office
~	~	~	~	~	Other
~	~	~	~	~	Interest received
13.7	6.5	6.7	1.4	11.5	Grant-in-aid
<b>24.6</b>	<b>9.9</b>	<b>7.1</b>	<b>1.8</b>	<b>11.5</b>	<b>Total receipts</b>
					<b>Payments</b>
21.7	4.9	4.6	~	~	Operating costs
2.5	3.4	0.6	1.8	~	Fixed assets
~	~	~	~	11.5	Unfunded Pensions
~	2.0	~	~	~	Repayments to Government re 1992-93
<b>24.2</b>	<b>10.3</b>	<b>5.2</b>	<b>1.8</b>	<b>11.5</b>	<b>Total payments</b>
0.4	(0.4)	1.9	~	~	Cash surpluses/(deficits)
0.6	2.5	(0.3)	~	~	Opening bank balance
<b>1.0</b>	<b>2.1</b>	<b>1.6</b>	<b>~</b>	<b>~</b>	<b>Closing cash at bank and in hand</b>
					<b>Analysis of closing cash at bank and in hand</b>
~	~	~	~	~	Flood defence balances
~	~	~	~	~	Water resources purposes
1.1	~	~	~	~	Special fisheries funds
(0.1)	(0.1)	0.5	~	~	Carried forward for general purposes (for grant-aided function)
<b>1.0</b>	<b>(0.1)</b>	<b>0.5</b>	<b>~</b>	<b>~</b>	<b>Sub-total</b>
					<b>Payable to Government</b>
~	2.2	~	~	~	Navigation licence receipts
~	~	~	~	~	Water resources cash surpluses
~	~	1.1	~	~	Surplus grant-in-aid
<b>1.0</b>	<b>2.1</b>	<b>1.6</b>	<b>~</b>	<b>~</b>	<b>Closing cash at bank and in hand</b>



## (b) Flood Defence Income and Expenditure Account for the Year Ended 31 March 1993

	Anglian					North West		Southern				South West	
	Welland & Nene	Lincs	Essex	Norfolk & Suffolk	Great Ouse	Northumbria	Severn-Trent	Isle of Wight	Hamp- shire	Sussex	Kent		
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
<b>Income</b>													
Local authority levies	3.6	6.1	10.3	5.8	5.7	2.6	18.6	23.5	0.3	2.0	6.8	9.0	7.0
General drainage charges	0.3	0.8	0.5	0.7	0.7	~	~	~	~	~	~	~	~
Internal drainage boards	0.6	1.7	~	0.5	2.1	~	~	0.7	~	~	0.1	0.7	~
Contributions from beneficiaries	~	0.1	~	~	~	0.1	~	~	~	~	~	~	~
Other income	0.4	0.2	0.3	0.1	0.2	~	0.1	0.2	~	~	~	0.7	~
Capital grants and contributions	0.6	8.5	1.7	4.3	3.1	0.3	1.2	0.2	0.1	1.2	1.9	1.7	4.7
Sales of Assets	~	~	0.1	0.1	0.1	~	0.1	0.1	~	~	0.1	0.1	~
Interest receivable	0.3	0.6	0.6	(0.2)	0.5	0.1	0.9	0.8	~	0.1	0.2	0.2	0.2
<b>Total income, including interest</b>	<b>5.8</b>	<b>18.0</b>	<b>13.5</b>	<b>11.3</b>	<b>12.4</b>	<b>3.1</b>	<b>20.9</b>	<b>25.5</b>	<b>0.4</b>	<b>3.3</b>	<b>9.1</b>	<b>12.4</b>	<b>11.9</b>
<b>Expenditure</b>													
Main river:													
Inland waters	2.2	1.9	1.7	1.2	3.2	1.4	11.1	7.9	0.1	0.7	2.0	2.7	2.3
Tidal waters	0.1	0.3	2.3	1.2	0.5	0.3	0.8	0.5	0.1	0.1	0.6	0.6	0.8
Sea defence	~	0.4	1.1	0.5	0.1	~	0.2	~	~	0.3	1.4	2.7	0.1
Flood warning	~	0.1	~	0.1	~	~	1.0	~	~	~	~	0.1	0.3
Other works	0.8	0.3	0.6	0.3	0.3	~	~	6.3	~	~	~	0.5	~
Depreciation and expenditure on intangible assets	2.1	11.7	4.4	6.7	7.1	1.0	6.1	2.7	0.1	2.1	3.9	4.9	8.2
Internal drainage boards	~	0.3	~	0.2	0.9	~	~	0.4	~	~	0.1	0.1	~
<b>Total expenditure</b>	<b>5.2</b>	<b>15.0</b>	<b>10.1</b>	<b>10.2</b>	<b>12.1</b>	<b>2.7</b>	<b>19.2</b>	<b>17.8</b>	<b>0.3</b>	<b>3.2</b>	<b>8.0</b>	<b>11.6</b>	<b>11.7</b>
Surplus (deficit) for year	0.6	3.0	3.4	1.1	0.3	0.4	1.7	7.7	0.1	0.1	1.1	0.8	0.2
Transfers to reserves:													
Capital	(0.4)	(0.1)	(2.8)	(0.1)	(0.3)	(0.1)	(0.1)	(6.5)	~	~	(0.1)	(0.2)	0.2
Special asset replacement fund	~	~	~	~	~	~	~	~	~	~	~	~	~
	0.2	2.9	0.6	1.0	~	0.3	1.6	1.2	0.1	0.1	1.0	0.6	0.4
Income & expenditure account brought forward	0.7	0.9	1.8	(0.4)	4.3	0.7	4.1	2.4	0.4	1.2	0.9	1.0	0.5
Income & expenditure account carried forward	0.9	3.8	2.4	0.6	4.3	1.0	5.7	3.6	0.5	1.3	1.9	1.6	0.9
<b>Analysis of:</b>													
Capital expenditure	2.6	12.1	11.2	7.0	7.5	1.1	6.3	10.2	0.1	2.1	4.1	5.2	8.1
Grant receipts – MAFF	0.7	7.5	5.9	3.5	2.2	0.1	0.7	0.7	~	1.1	1.9	1.8	3.5
Grant receipts – Welsh Office	~	~	~	~	~	~	~	0.1	~	~	~	~	~

Thames	Wesb						Wessex			Yorkshire		Total	
	Dee & Chwyd	Gwynedd	Wye	Usk	Glam-organ	Sth West Wales	Bristol & Avon	Avon & Dorset	Somerset				
£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	
<i>Income</i>													
43.8	2.2	1.6	1.0	1.1	2.2	1.9	1.9	3.0	4.0	12.4	176.4		Local authority levies
~	~	~	~	~	~	~	~	~	~	~	3.0		General drainage charges
~	~	~	~	0.4	~	~	~	~	0.2	0.5	7.5		Internal drainage boards
~	~	~	~	~	~	~	~	~	~	~	0.2		Contributions from beneficiaries
0.6	~	~	~	~	0.1	0.1	~	0.1	0.3	0.7	4.1		Other income
0.7	~	~	(0.1)	~	0.7	~	0.2	0.6	0.8	2.1	34.5		Capital grants and contributions
0.1	~	~	0.1	0.1	~	~	~	~	~	0.1	1.1		Sales of Assets
6.1	0.1	0.2	~	0.2	0.3	0.1	0.1	0.1	0.2	0.6	12.3		Interest receivable
51.3	2.3	1.8	1.0	1.8	3.3	2.1	2.2	3.8	5.5	16.4	239.1		Total income, including interest
<i>Expenditure</i>													
Main river:													
17.4	1.6	1.1	0.5	0.4	1.4	1.3	0.8	1.2	1.4	2.1	67.6		Inland waters
6.4	0.1	0.1	0.1	0.2	~	0.1	0.1	0.1	0.5	0.6	16.5		Tidal waters
~	~	~	~	0.1	~	~	0.1	~	0.1	0.3	7.4		Sea defence
0.5	~	~	0.1	0.1	0.1	0.1	~	~	0.1	0.5	3.1		Flood warning
5.8	0.3	~	~	0.2	0.1	0.1	0.3	0.3	1.1	3.3	20.6		Other works
15.0	0.2	0.3	0.1	0.1	1.4	0.2	1.0	1.9	2.0	8.6	91.8		Depreciation and expenditure on intangible assets
~	~	~	~	~	~	~	~	~	~	0.2	2.2		Internal drainage boards
45.1	2.2	1.5	0.8	1.1	3.0	1.8	2.3	3.5	5.2	15.6	209.2		Total expenditure
6.2	0.1	0.3	0.2	0.7	0.3	0.3	(0.1)	0.3	0.3	0.8	29.9		Surplus (deficit) for year
Transfers to reserves:													
0.8	~	(0.1)	~	~	(0.1)	~	~	(0.2)	(0.2)	(1.3)	(11.6)		Capital
(0.3)	~	~	~	~	~	~	~	~	~	~	(0.3)		Special asset replacement fund
6.7	0.1	0.2	0.2	0.7	0.2	0.3	(0.1)	0.1	0.1	(0.5)	18.0		
7.2	0.1	0.2	(0.2)	0.7	1.5	0.5	0.7	0.7	1.3	2.0	33.2		Income & expenditure account brought forward
13.9	0.2	0.4	~	1.4	1.7	0.8	0.6	0.8	1.4	1.5	51.2		Income & expenditure account carried forward
Analysis of:													
14.9	0.2	0.3	0.1	0.1	1.5	0.3	2.3	0.9	2.4	11.0	111.6		Capital expenditure
1.0	~	~	~	~	~	~	0.6	0.2	0.8	1.8	34.0		Grant receipts – MAFF
~	0.1	~	~	~	0.1	0.2	~	~	~	~	0.5		Grant receipts – Welsh Office



## (c) Water Resources Account by Region for the Year Ended 31 March 1993

	Total	Anglian	Northumbria	North West	Severn Trent	Southern	South West	Thames	Welsh	Wessex	Yorkshire
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
At 1 April 1992	11.4	0.9	2.8	(0.1)	3.8	0.1	1.1	0.7	1.0	~	1.1
Income Receivable	80.4	13.6	11.6	5.7	11.4	7.4	4.4	10.3	9.3	3.3	3.4
	91.8	14.5	14.4	5.6	15.2	7.5	5.5	11.0	10.3	3.3	4.5
Expenditure	77.7	13.5	11.0	5.6	11.8	6.5	4.2	8.7	9.9	3.3	3.2
At 31 March 1993	14.1	1.0	3.4	~	3.4	1.0	1.3	2.3	0.4	~	1.3

## Note:

Expenditure shown in the table includes current cost depreciation and rate of return.

Each Region of the Authority maintains its own water resources account and implements charging schemes and expenditure plans which are determined from local circumstances and approved by the Board. This table shows the water resources income and expenditure account by Region.

In its charges to abstractors, the Authority is required to provide for a 2% rate of return on the current cost value of water resources assets which were transferred to it on 1 September 1989 and an 8% return on assets purchased subsequently. Charges must also provide for current cost depreciation on water resources assets. The rate of return and current cost depreciation have been calculated as follows:-

## Rate of return:

	Current cost value	Required rate of return	Amount of return
	£m	%	£m
Assets transferred on 1 September 1989	162.4	2	3.3
Assets acquired since 1 September 1989	36.4	8	2.9
<b>Totals</b>	<b>198.8</b>		<b>6.2</b>

## Current cost depreciation:

	£m
Water resources asset values at 1 April 1992	185.8
Additions	22.7
	208.5
Water resources asset values at 31 March 1993	198.8
<b>Current cost depreciation for year</b>	<b>9.7</b>

## (d) Grant-in-Aid received in the year

The following statement shows the amount of grant-in-aid received from the Department of the Environment according to the budgetary provision in Class VII, Vote 5 of the Parliamentary supply estimates:

	£m	£m
Grant-in-aid received in the year		74.7
Offset of amounts due to the DoE in respect of previous year:		
Navigation licence income	2.0	
Water resources surplus	2.1	4.1
Gross entitlement in analysis of receipts and payments		78.8
Water resources surplus for current year:		
To be returned to DoE	(1.6)	
To be used to fund grant-aided functions in 1993-94	(2.0)	(3.6)
Grant-in-aid surplus to requirements for 1992-93:		
Grant-in-aid to be returned to DoE	(1.1)	
Grant-in-aid to be carried forward to 1993-94	(3.0)	(4.1)
Grant-in-aid received for unfunded pensions		(11.5)
<b>Grant-in-aid included in income and expenditure account</b>		<b>59.6</b>

## (e) 4 Year Summary of Results: Income and Expenditure Account

	1992-93	1991-92	1990-91	1989-90	1992-93	1991-92	1990-91	1989-90	1992-93	1991-92	1990-91	1989-90
	Total	Total	Total	Total	Service Accounts	Service Accounts	Service Accounts	Service Accounts	Flood Defence	Flood Defence	Flood Defence	Flood Defence
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
Gross income	412.7	400.2	347.0	343.3	185.9	185.2	155.1	165.2	226.8	215.0	191.9	178.1
Operating costs	383.9	373.4	324.8	281.0	174.7	162.8	137.9	125.8	209.2	210.4	186.9	155.2
Operating surplus	28.8	27.0	22.2	62.3	11.2	22.4	17.2	39.4	17.6	4.6	5.0	22.9
Interest receivable (net)	15.1	16.6	21.4	6.0	2.8	3.6	5.3	(0.2)	12.3	13.0	16.1	6.2
Surplus for year	43.9	43.6	43.6	68.3	14.0	26.0	22.5	39.2	29.9	17.6	21.1	29.1
Transfers to reserves	25.3	33.1	55.2	51.4	13.4	18.4	33.4	31.9	11.9	14.7	21.8	19.5
Retained surplus/(deficit) for year	18.6	10.5	(11.6)	16.9	0.6	7.6	(10.9)	7.3	18.0	2.9	(0.7)	9.6
Income and expenditure account brought forward	37.2	26.7	38.3	21.4	4.0	(3.6)	7.3	—	33.2	30.3	31.0	21.4
Income and expenditure account carried forward	55.8	37.2	26.7	38.3	4.6	4.0	(3.6)	7.3	51.2	33.2	30.3	31.0

## (f) 4 Year Summary of Results: Balance Sheet

	1992-93	1991-92	1990-91	1989-90	1992-93	1991-92	1990-91	1989-90	1992-93	1991-92	1990-91	1989-90
	Total	Total	Total	Total	Service Accounts	Service Accounts	Service Accounts	Service Accounts	Flood Defence	Flood Defence	Flood Defence	Flood Defence
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
Fixed Assets	480.2	448.6	411.7	365.0	199.7	186.5	168.8	138.6	280.5	262.1	242.9	226.4
Net current assets	114.0	92.3	78.4	87.4	16.9	13.3	4.5	16.7	97.1	79.0	73.9	70.7
Total assets less current liabilities	594.2	540.9	490.1	452.4	216.6	199.8	173.3	155.3	377.6	341.1	316.8	297.1
Financed by:												
Creditors: amounts due after more than one year	10.6	8.4	8.0	11.7	9.8	7.4	6.5	9.4	0.8	1.0	1.5	2.3
Provision	2.5	1.9	1.6	—	2.5	1.9	1.6	—	—	—	—	—
Deferred grants and contributions	22.6	16.0	8.8	1.9	4.4	4.6	3.0	0.2	18.2	11.4	5.8	1.7
Reserves:												
Capital reserve	457.6	432.6	402.9	363.1	195.3	181.9	165.8	138.4	262.3	250.7	237.1	224.7
Income and expenditure account	55.8	37.2	26.7	38.3	4.6	4.0	(3.6)	7.3	51.2	33.2	30.3	31.0
Special asset replacement fund	48.1	44.8	42.1	37.4	—	—	—	—	45.1	44.8	42.1	37.4
	594.2	540.9	490.1	452.4	216.6	199.8	173.3	155.3	377.6	341.1	316.8	297.1



# IX Direction on the Annual Accounts

The Secretary of State for the Environment, the Secretary of State for Wales and the Minister of Agriculture, Fisheries and Food, with the consent of the Treasury and in accordance with Section 121(2) of the Water Resources Act 1991, hereby notify the National Rivers Authority of the following requirements in respect of its annual accounts.

1. The annual accounts, which it is the duty of the National Rivers Authority (hereinafter referred to as "the Authority") to prepare in respect of each financial year, shall comprise:
  - (a) a foreword;
  - (b) an income and expenditure account;
  - (c) a balance sheet;
  - (d) an analysis of receipts and payments; and
  - (e) a cash flow statement;
 including in each case such notes and additional information as may be necessary for the purposes referred to in paragraphs 2 and 3 below. The Authority should observe all relevant guidance given in "Government Accounting" and in "Trading Accounts: a Guide for Government Departments and Non-Departmental Public Bodies" as amended or augmented from time to time.
2. The annual accounts referred to above shall give a true and fair view of the income and expenditure, state of affairs and cash flow of the Authority. Subject to the foregoing requirement, the annual accounts shall also, without limiting the information given, and save as described in Schedule 1 to this direction, meet insofar as they are applicable to the Authority:
  - (a) the accounts requirements of companies legislation for the time being in force;
  - (b) the best commercial accounting practice including accounting standards adopted or issued by the Accounting Standards Board.
3. The annual accounts mentioned in paragraph 1 above shall include the information set out in Schedule 2 to this direction.
4. A copy of the accounts direction shall be published with the annual accounts.
5. This direction replaces that dated 30 March 1990.

Signed on behalf of the Secretary of State for the Environment

B Redfern  
A Grade 5 Officer in the Department of the Environment  
Date 31st March 1992

Signed on behalf of the Secretary of State for Wales

A H H Jones  
A Grade 5 Officer in the Welsh Office  
Date 31st March 1992

Signed on behalf of the Minister for Agriculture, Fisheries and Food

J R Park  
A Grade 5 Officer in the Ministry of Agriculture, Fisheries and Food  
Date 31st March 1992

## Schedule 1

1. The disclosure exemptions for small and medium-sized companies permitted by the Companies Act 1985 shall not apply to the Authority unless specifically authorised by the Secretaries of State and the Minister, with the approval of Treasury.
2. References in the Companies Act 1985 to "Directors" shall be taken to be references to board members of the Authority.
3. In preparing its balance sheet the Authority shall adopt format 1 as prescribed in Schedule 4 to the Companies Act 1985 and that format shall be applied in such a manner that the items set out in paragraph 3 of Schedule 2 to this direction are separately disclosed. In the balance sheet, totals shall be struck at the item "Total Assets less Current Liabilities". The balance sheet shall be signed and dated by the Accounting Officer and a member of the board (normally the Chairman).
4. The profit and loss account formats in Schedule 4 to the Companies Act 1985 shall not apply to the Authority's income and expenditure account which shall be in such a format as is necessary to disclose separately the information set out in paragraph 2 of Schedule 2 to this direction.
5. The cash flow statement shall be drawn up using the "direct" method of reporting, and following the illustrative example 2 in the accounting standard.

## Schedule 2

1. There shall be a foreword to the annual accounts which shall contain the information required by the Companies Act 1985 to be disclosed in the Directors' Report. The foreword shall be signed and dated by the Accounting Officer and a member of the board (normally the Chairman).
2. The income and expenditure account or the notes thereto shall show inter alia for each class of business:
  - (a) under "Income" the following items -
    - (i) Government grant-in-aid,
    - (ii) abstraction charges,
    - (iii) flood defence levies,
    - (iv) contributions from flood defence beneficiaries,
    - (v) Local Authority levies,
    - (vi) general drainage charges,
    - (vii) contributions from internal drainage boards,
    - (viii) discharge consents,
    - (ix) fishing licence duties,
    - (x) interest receivable,
    - (xi) proceeds from sales of fixed assets,
    - (xii) other income.
  - (b) under "Expenditure" the following items -
    - (i) staff costs,
    - (ii) contracted services,
    - (iii) materials,
    - (iv) contributions to internal drainage boards,
    - (v) interest payable,
    - (vi) depreciation,
    - (vii) expenditure on intangible assets,
    - (viii) other expenditure.

- (c) the income and expenditure account balance brought forward, movements in the year and balance carried forward, which for flood defence, shall be calculated in accordance with Section 47 of the Land Drainage Act 1976.
3. The balance sheet shall show inter alia:
- (a) an analysis of reserves between -
    - (i) income and expenditure account for service accounts,
    - (ii) income and expenditure account for flood defence,
    - (iii) capital reserve for service accounts,
    - (iv) capital reserve for flood defence,
    - (v) special asset replacement fund.
4. The cash flow statement shall show, under operating activities, the total grant-in-aid drawn down during the year.
5. The analysis of receipts and payments or the notes thereto shall show inter alia for each class of business:
- (a) under "Receipts" similar headings to those used for income in paragraph 2 to this Schedule and, in addition, the following items -
    - (i) navigation licence receipts,
    - (ii) capital grants from the Ministry of Agriculture, Fisheries and Food,
    - (iii) capital grants from the Welsh Office,
    - (iv) other capital grants.
  - (b) under "Payments" the following items -
    - (i) revenue payments,
    - (ii) capital - ordinary,
    - (iii) capital - restructuring,
    - (iv) unfunded pensions,
    - (v) navigation licence receipts paid to Government,
    - (vi) grant-in-aid repaid.
  - (c) cash balance brought forward and carried forward.
6. For the purposes of this Schedule, the classes of business shall be Water Resources, Flood Defence, Pollution Control, Navigation, Fisheries, and Recreation and Conservation. Headquarters, central services, and research and development shall be apportioned to each class of business.
7. The notes to the annual accounts shall include:
- (a) an analysis of flood defence income and expenditure by local flood defence districts, demonstrating that revenue raised in a district is spent only on flood defence functions in that district or for certain other purposes as specified in Section 118(3) of the Water Resources Act 1991;
  - (b) analysis of flood defence capital expenditure and grant receipts by local flood defence districts;
  - (c) analysis of fixed assets by class of business with separate disclosure of additions, reclassifications and disposals;
  - (d) a statement of the number of employees during the year, other than board members, whose emoluments excluding pension contributions, fell in each bracket of a scale in multiples of £10,000 starting at £30,000;
  - (e) a statement of the total emoluments of board members during the year, including salaries, fees, pension contributions, compensation payments, and estimated money value of non-cash benefits;
  - (f) a statement showing the emoluments of the Chairman, the highest paid board member and the Chief Executive during the year, excluding pension contributions, with separate disclosure where more than one person occupied those offices during the year;
  - (g) a statement of the number of all board members during the year whose emoluments, excluding pension contributions fell in each bracket of a scale in multiples of £5,000;
  - (h) a statement of the average number of persons employed during the year, including part-time employees, excluding non-executive board members, analysed between senior management, non-manual, and manual employees;
  - (i) a statement of employee costs during the year, excluding non-executive board members, showing separately:
    - (i) wages and salaries
    - (ii) social security costs
    - (iii) other pension costs
  - (j) particulars of any material transaction, arrangement or contract entered into in which a board member, an executive, a higher paid employee, or a person connected with these, at any time during the year, had a direct or indirect material interest;
  - (k) a statement of the total expenses paid, and payable for the year to board members and employees respectively, expenses being reimbursements and payments in respect of travelling, subsistence and hospitality;
  - (l) a statement of losses and special payments during the year, being transactions of a type which Parliament cannot be supposed to have contemplated. Disclosure shall be made of the total of losses and special payments if this exceeds £25,000, with separate disclosure and particulars of any individual amounts in excess of £25,000. Disclosure shall also be made of any loss or special payment of £25,000 and below if it is considered material in the context of the Authority's operations;
  - (m) a summary of the Water Resources account by region showing balances brought forward, income, expenditure and balances carried forward;
  - (n) a summary of financial statistics covering the last five years. This should be prepared using accounting policies consistent with those used in the latest year shown and using similar formats to the income and expenditure account and balance sheet;
  - (o) a statement of grant-in-aid received in the year, referring to the appropriate Vote and Class, and analysed by the headings in the relevant Supply Estimates, and reconciled to the income and expenditure account and to the analysis of receipts and payments;
  - (p) an analysis of the movements on all reserves during the year;
  - (q) for water resources, a statement showing separately, the calculations of (a) the required rate of return and (b) current cost depreciation.



# I The Authority's Board and Head Office Management

## CONTENTS OF APPENDICES

<i>Appendix I</i>	<i>Page</i>
The Authority's Board and Head Office Management.	68
<i>Appendix II</i>	
Regional Offices and Regional Committees.	70
<i>Appendix III</i>	
Principal Professional Advisors to the Authority.	74
<i>Appendix IV</i>	
New Legislation, Byelaws and other Statutory Instruments affecting the NRA.	75
<i>Appendix V</i>	
Publications and Publicity Material.	77
<i>Appendix VI</i>	
Research Publications and Project Completions.	81
<i>Appendix VII</i>	
Selected Statistics.	83
<i>Appendix VIII</i>	
Glossary	88



## BIOGRAPHICAL NOTES ON THE NATIONAL RIVERS AUTHORITY BOARD MEMBERS

### LORD CRICKHOWELL

*Chairman, age 59*

Created life peer in 1987. As Nicholas Edwards was MP for Pembroke from 1970-1987 and Secretary of State for Wales from 1979-1987. Director of HTV Group plc, Associated British Ports Holdings plc and other companies. President of University of Wales College of Cardiff. Member of the Committee of the Automobile Association.

### ED GALLAGHER

*Chief Executive, age 48*

Chief Executive of NRA since 6 April 1992. Executive with Black and Decker UK, 1971-1981; Director of Business Analysis and then Director of Market and Product Development, Black and Decker United States, 1981-1986. From 1986 Director of Corporate Development, Amersham International, subsequently Divisional Chief Executive and then Manufacturing Director; Chartered Engineer; Fellow of the Institution of Electrical Engineers (FIEE); Member of the Royal Institution; Member of English Heritage and National Trust; Friend of Kew.

### ROSAMUND BLOMFIELD-SMITH

*age 44*

J Henry Schroder Wagg & Co. Limited, since 1979, Assistant Director since 1986. Member of Wandsworth Borough Council since 1989; Chairman, Accepting Houses Export Finance Committee 1986-87; Member of London Chamber of Commerce Export Finance Panel 1987-1991.

### PETER BRANDT

*age 61*

Chairman of Atkins Fulford Ltd, Formerly Chief Executive of Merchant Bankers, William Brandt's Sons & Co. Ltd. Chairman of Anglian Regional Advisory Board.

### LADY DIGBY DBE DL

*age 59*

Member Wessex Water Authority 1983-89, Chairman of Avon & Dorset Customer Consultative Committee 1984-89; non-executive Director, Western Advisory Board of National Westminster Bank 1986-92; Member of the Council Exeter University from 1981; Chairman of the South and West Concerts Board from 1989; President of Council and Board Member Bournemouth Orchestras from 1991; DBE for services to the Arts, 1991. Chairman of Wessex Regional Advisory Board.

### PROFESSOR RON EDWARDS CBE

*age 62*

Professor Emeritus, University of Wales; Member Welsh Water Authority 1973-1989; Deputy Chairman 1983-89. Member Natural Environment Research Council, 1970-73, and 1980-83. Chairman National Parks Review Panel 1989-91. Chairman of the Secretary of State for Wales' Advisory Committee for Wales and Welsh Regional Advisory Board.

**LORD GREGSON DL Hon F ENG**

*age 69*

Non-Executive Director of Fairey Group plc and British Steel plc; member of the House of Lords Select Committee on Science and Technology since 1980; Vice President of the Association of Metropolitan Authorities since 1984; Pro-Chancellor, Southampton University 1993; Chairman of the NRA Audit Committee.

**DENNIS MITCHELL**

*age 62*

Member South West Water Authority 1974-89 and Chairman of its Regional Fisheries Advisory Committee and Environmental Panel. Also Chairman of Water Authorities' Association National Fisheries Committee from 1983-89. Deputy Managing Director and Technical Director of Watts, Blake, Bearne & Co plc. Chairman of the South West Regional Advisory Board. Chairman of Regional Fisheries Advisory Committee Chairmen.

**KAREN MORGAN**

*age 47*

Director, Southern Regional Board, Leeds Permanent Building Society; Member of Board of Governors, University of the West of England; Member of Council, Water Aid. Chairman of the Southern Region Advisory Board.

**JOHN H M NORRIS CBE DL**

*age 63*

Farms 1,500 acres in Essex. Involved in the administration of Flood Defence and Land Drainage in Anglian Water Authority's area from 1971. National President of the Country Landowners Association 1985-88; Crown Estate Commissioner since 1991. Chairman of the Thames Regional Advisory Board. Vice Lord-Lieutenant of Essex 1992; Hon FIWEM 1992.

**WYNDHAM J ROGERS-COLTMAN OBE**

*age 60*

Arable farmer farming 330 acres near Berwick-on-Tweed; Managing Director of Lowick Farmers Silos Ltd 1969-1990; County Councillor for Berwick North, Northumberland County Council; Chairman of the Country Landowners' Association, Northumberland Branch 1986-89; Chairman of Northumberland Farming and Wildlife Advisory Group 1987-90; Minister of Agriculture's Appointee on Northumbria Water Authority Land Drainage Committee 1984-89. Chairman, Board of Governors, Berwick High School, 1992-to date. Chairman Northumbria and Yorkshire Regional Advisory Board.

**R JULIAN F TAYLOR**

*age 63*

Chief Executive, Manchester Ship Canal Company 1980-87; Director of Ocean Transport and Trading 1964-80; Chairman The Groundwork Trust St Helens; Deputy Chairman Harwich Haven Authority, Polar Medallist, Chairman of North West Regional Advisory Board.

**PROFESSOR R KERRY TURNER**

*age 44*

Executive Director of Centre for Social and Economic Research on the Global Environment (CSERGE), School for Environmental Sciences, University of East Anglia and University College London; Professor of Environment Economics and Management, University of East Anglia; Fellow of Royal Society of Arts.

**JOHN WHEATLEY CBE**

*age 65*

Director General Sports Council 1983-88; has worked for Sports Council and its predecessor, Central Council for Physical Recreation, since 1954. Chairman of the Severn-Trent Regional Advisory Board. Chairman National Small-bore Rifle Association. NRA Chief Executive from June 1991 to April 1992.

**HEAD OFFICE DIRECTORS AND HEADS OF FUNCTION**

*(as at 30 June 1993)*

**Chief Executive's Office**

Mr S Egan (Head of Audit)

Ms G Griffith (Environment Agency Co-ordinator)

**Water Management Directorate**

Dr C J Swinnerton (Director of Water Management)

Mr J D Sherriff (Head of Water Resources)

Mr C Birks (Head of Flood Defence)

Mr D Jordan (Head of Fisheries, Recreation, Conservation and Navigation)

**Water Quality and Chief Scientist's Directorate**

Dr R J Pentreath (Chief Scientist)

Mr M E Bramley (Head of Research and Development)

Mr P Chave (Head of Water Quality)

Mr J Seager (Head of Environmental Quality)

**Personnel Directorate**

Mr P J Humphreys (Personnel Director)

Mr M D Usher-Clark (Head Office Personnel Manager)

Mr I L Graham (Head of Employee Relations)

Mr R Skipp (Training and Development Manager)

Mr P Parkinson (Head of Health & Safety)

**Finance Directorate**

Mr N Reader (Finance Director)

Mr H G Pearce (Head of Corporate Planning)

Mr R Gall (Head of Financial Management)

Mr J Ashworth (Head of Systems Development)

Mr M Spicer (Head of Business Services)

Mr M Yeomans (Head of Procurement)

Mrs S Timbrell (Pension Fund Manager)

Mr L F Gray (Head of IPAS Development)

**Operations Directorate**

Dr K Bond (Director of Operations)

Ms C White (Operations Co-ordinator)

**Legal Services Directorate and Secretariat**

Mr C F Martin (Secretary and Director of Legal Services)

**Market Testing Directorate**

Dr G Mance (Director of Market Testing)

**Public Affairs Directorate**

Mr M W Wilson (Director of Public Affairs)

Ms E F O'Donnell (Manager Media and External Affairs)

Ms J M Jupe (Manager Corporate Communications)



## II Regional Offices and Regional Committees

This Appendix lists the addresses of the Regional offices and the members of the three statutory Regional Committees in each of the NRA's ten Regions at March 31st 1993.

Members of the Regional Rivers Advisory Committees and the Regional Fisheries Advisory Committees are appointed by the NRA. Members of the Regional Flood Defence Committees are appointed by local authorities, and the Minister for Agriculture, Fisheries and Food or the Secretary of State for Wales as appropriate, and the NRA. Each Committee is represented on the other two Committees in the Region, usually by the Chairman.

The Regional General Manager in each Region is advised by the Regional Board Member and the Chairmen of the three statutory Regional Committees.

The Committees' terms of reference to report annually to the Authority have been fulfilled through reports in end of year Regional Reviews used to compile this Annual Report.

### ANGLIAN REGION

#### *Regional Office Address*

Kingfisher House  
Goldhay Way  
Orton Goldhay  
Peterborough  
PE2 0ZR  
Tel: (0733) 371811  
Fax: (0733) 231840

#### *Regional General Manager*

Mr G Davies

#### *Regional Board Member*

Mr P Brandt

#### *Fisheries Advisory Committee*

Mr P Tombleson OBE (Chairman)  
Mr S Amos  
Mr S Alden  
Mr K Ball  
Mr L Cass  
Mr C Clare  
Ms I Floering-Blackman  
Mr M Foster  
Mr C Groome  
Mr P Lambley  
Mr D Lloyd  
Mr J Martin  
Mr P Peachey-Edwards  
Mr A Wheeler  
Mr T Wilson

#### *Flood Defence Committee*

Mr J Martin (Chairman)  
Mr J Childs  
Mr H Duffield  
Mr J Ellis  
Mr D Fisher  
Mr F Gales  
Dr M George  
Mr R Gibson  
Mr W Grant  
Mr C Groome  
Mr J Horrell  
Mr D Hoyes  
Mr R Lord  
Mrs S Marler  
Mr A Northen

Mr D Riddington  
Mr R C Rockliffe  
Mr W H Squier  
Mr P Tombleson OBE

#### *Rivers Advisory Committee*

Mr C Groome (Chairman)  
Mrs S Ashford  
Mr R Bennett  
Mr R Burgin  
Hon R Godber  
Mr R Hardman  
Dr I Laing  
Mr J Loveys  
Mr B Isaacs  
Mr D King  
Mr J Martin  
Dr P Matthews  
Mr R Murfitt  
Mr A Prater  
Dr D Simpson  
Mr G Searle  
Mr C Stratton  
Mr P Tombleson OBE  
Mr R Watts

### NORTHUMBRIA

#### *Regional Office Address*

Eldon House  
Regent Centre  
Gosforth  
Newcastle-Upon-Tyne  
NE3 3UD  
Tel: (091) 2130266  
Fax: (091) 2845069

#### *Regional General Manager*

Mr R Hyde

#### *Regional Board Member*

Mr W Rogers-Coltman OBE

#### *Fisheries Advisory Committee*

Mr P Tennant (Chairman)  
Mr H Becker  
Mr J Browne-Swinburne  
Dr T Crisp  
Mrs M Dickinson

Dr S Haile  
Mr D Hall  
Mr D Heselton  
Mr K Hewitson  
Mr M July  
Mr R Kirton-Darling  
Lord R Percy  
Mr E Thomas  
Mr C Warwick  
Mr E Wrangham  
Mr K Young

#### *Flood Defence Committee*

Mr E Wrangham (Chairman)  
Cllr D Bates  
Mr J Browne-Swinburne  
Cllr R Dunn  
Cllr G Fisher  
Mr J Gibson  
Cllr F Gill  
Cllr K Hall  
Mr R Howell  
Hon A Joicey  
Mrs A Lough  
Cllr G Nugent  
Cllr D Sleightholme  
Cllr G Spring  
Mr D Stewart  
Mr P Tennant  
Cllr E Walker

#### *Rivers Advisory Committee*

Mr J Browne-Swinburne (Chairman)  
Mr M Bird  
Dr J Carrick  
Cllr J Coulthard  
Mr D Dunlop  
Mr J Foster  
Mr K Hale  
Mrs J Johnson  
Prof M Newson  
Cllr D Nicholson  
Mr J Ogilvie  
Mr E Palmer  
Mr R Pepper  
Mr H Sanderson  
Mr P Tennant  
Mr H Watson  
Mr E Wrangham  
Mrs P Wynne

# NORTH WEST REGION

## *Regional Office Address*

Richard Fairclough House  
Knutsford Road  
Warrington  
WA4 1HG  
Tel: (0925) 53999  
Fax: (0925) 415961

## *Regional General Manager*

Dr C Harpley.

## *Regional Board Member*

Mr R J Taylor

## *Fisheries Advisory Committee*

Mr T Barnes OBE (Chairman)  
Mr R Bailey  
Mr D Bridgewood  
Dr R Broughton  
Mr A Brown  
Mr J Carr  
Mr J Castle  
Mr S Griffiths  
Mr B Irving  
Mr K Lambert  
Mr E Le Cren  
Mr W Madine  
Mr P Neal  
Mr S Payne  
Mr W Wannop OBE  
Mr R Weston  
Mr H Whittam

## *Flood Defence Committee*

Mr W Wannop OBE (Chairman)  
Mr R Addison  
Mr A Anderson  
Mr T Barnes OBE  
Mr K Bury  
Mr F Dolphin  
Mr V Earnshaw  
Mr P Entwistle  
Mr P Fisher\*  
Mr J Foster\*  
Mr S Hill  
Mr J Hilton  
Mr B O'Hare  
Mr H Petrie\*  
Mr W Ramsey\*  
Mr G Roper  
Mr R Slack  
Mr B Wallsworth  
Mr R Weston

\*Deputy Members

## *Rivers Advisory Committee*

Mr R Weston (Chairman)  
Mr B Alexander  
Mr T Barnes OBE  
Mr P Barton  
Mr M Berry  
Mr I Brodie  
Mrs C Crawshaw  
Mr G Doughty  
Mr T Featherstonhaugh  
Mr G Hammersley

Mr E Harper  
Prof S Jones  
Mr J Lucas  
Mr R Pocock  
Mr R Reynolds  
Mr A Richardson OBE DL  
Mr R Sharland  
Mr W Wannop OBE  
Mr A Wright  
Mrs J Yates

# SEVERN TRENT REGION

## *Regional Office Address*

Sapphire East  
550 Streetsbrook Road  
Solihull  
West Midlands  
B91 1QT  
Tel: (021) 711 2324  
Fax: (021) 711 5824

## *Regional General Manager*

Mr D N Rainbow

## *Regional Board Member*

Mr J Wheatley CBE

## *Fisheries Advisory Committee*

Mr F Jennings (Chairman)  
Mr G Ayres  
Mr R Baker  
Dr P Bottomley  
Mr G Chambers  
Mr E Collin  
Mr K Fisher  
Mr G Flinn  
Mr G Hawthorne  
Mr A Jones  
Mr P Kavanagh  
Mr D Morgan  
Dr A Richards  
Mr A Sparrow  
Dr H Tebbutt  
Mr A Walsh  
Mr R Williams  
Mr T Wilson

## *Flood Defence Committee*

Mr G Hawthorne (Chairman)  
Cllr B Booth  
Cllr G Bullock  
Cllr J Carter  
Mr J Chamberlayne  
Cllr D Chapman  
Cllr D Chater  
Cllr W Cody  
Mr J Dainty OBE  
Mr D Dale  
Cllr J Ellis  
Mr A Fraser  
Mrs J Gilman  
Cllr J Griffiths  
Mr F Jennings  
Cllr G Manku  
Mr R Prosser  
Cllr D Sherriff

Dr H Tebbutt  
Cllr J Wardle MBE JP  
Mr J G Markwick

## *Rivers Advisory Committee*

Dr H Tebbutt (Chairman)  
Mr J Bettendige  
Cllr Mrs G Ferguson  
Cllr Mrs S Foster  
Mrs V Gillespie MBE  
Mr D Grigg  
Mr G Hawthorne  
Mr F Jennings  
Cllr D Jones  
Cllr P Kellie  
Cllr Mrs R Merritt  
Mr P Mitchell  
Mr P H Mitchell  
Mr C Nicholson  
Mr D Pryor  
Mr S Sim  
Mr J Thompson  
Mr F Walmsley  
Mr M White  
Mr M Upstone

# SOUTHERN REGION

## *Regional Office Address*

Guildbourne House  
Chatsworth Road  
Worthing, West Sussex  
BN11 1LD  
Tel: (0903) 820692  
Fax: (0903) 821832

## *Regional General Manager (from 1.2.93)*

Mr K Whiteman

## *Regional Board Member*

Mrs K Morgan

## *Fisheries Advisory Committee*

Mr A Humbert (Chairman)  
Mr B Aldrich  
Mr P Cockwill  
Mr A Costen  
Mr M Drummond  
Mr J Ferguson  
Mr A Hodges  
Dr B Lindsay  
Mr C Neame  
Mr D Owen  
Mr J Parkman  
Mr F Reader  
Maj J Thomas  
Mr A Williams

## *Flood Defence Committee*

Mr C Neame (Chairman)  
Dr T Bines  
Mr R Cowley  
Mr M Drummond  
Mr I Hammond  
Lt Col G Hart  
Maj T Holden  
Mr A Humbert



Mr S Leyland  
Mr R Millard  
Mr D Monnington  
Mr M Odling  
Mr S Ranger  
Mr H Richards  
Mr T Sqbey  
Mr C Tandy  
Mr D Whyberd

## *Rivers Advisory Committee*

Mr M Drummond (Chairman)  
Mr H Barnhoorn  
Mr W Cutting  
Dr M Clarke  
Mr C Dempster  
Maj I Duffin  
Mr D Gibson  
Mr D Harvey  
Mrs E Haselden  
Mr A Humbert  
Ms L Leeson  
Mr D Martin  
Ms L Matson  
Mr C Neame  
Mr E Pipe  
Mr C Saunders-Davies  
Mr E Shilling  
Mr B Tarling  
Mrs S Whitley  
Mr J Wilkinson

## **SOUTH WEST REGION**

### *Regional Office Address*

Manley House  
Kestrel Way  
Sowton  
Exeter  
EX2 7LQ  
Tel: (0392) 444000  
Fax: (0392) 444238

### *Regional General Manager*

Mr G Bielby

### *Regional Board Member*

Mr D Mitchell

### *Fisheries Advisory Committee*

Mrs A Voss-Bark (Chairman)  
Lt Col P Badham  
Mr M Baker  
Lord Clinton  
Mr S Day  
Mr P Edwards  
Mr P Gompertz  
Mr O Gilbert  
Prof C Kennedy  
Mr G Manning  
Mr H Maund  
Mr M Mountjoy  
Mr T Mutton  
Mr R Retallick  
Mr J Stevens  
Mr M Weaver

## *Flood Defence Committee*

Mr G Manning (Chairman)  
Mr P Butler  
Mr B Costello  
Mr P Edwards  
Mr M Hughes  
Mr T Laity  
Mr E Moore  
Mr H Northcott  
Mr M Stanbury  
Mr R Stratton  
Mr K Taylor  
Mrs A Voss-Bark  
Fl Lt B Wills-Pope

## *Rivers Advisory Committee*

Mr P Edwards (Chairman)  
Mr P Barson  
Dr P Beale  
Mr V Bowles  
Mr R Bull  
Mr J Chappell  
Mr A Coulter  
Mr W Dickens  
Mrs J Edwards  
Lt Col W Elliott  
Mr E Hughes  
Mr G Manning  
Mr E Newton  
Dr M Pemberton  
Mr J Thomas  
Mrs J Thomson  
Mr M Turner  
Mrs A Voss-Bark  
Prof D Walling

## **THAMES REGION**

### *Regional Office Address*

Kings Meadow House  
Kings Meadow Road  
Reading  
RD1 8DQ  
Tel: (0734) 535000  
Fax: (0734) 500388

### *Regional General Manager*

Mr L Jones

### *Regional Board Member*

Mr J Norris CBE DL

### *Fisheries Advisory Committee*

Dr A M Powell (Chairman)  
Dr J S Alabaster  
Mr P E Davidson  
Mr M Davies OBE  
Mr M A Gregory OBE  
Mr R M Hatcher  
Mr A E Hodges  
Mr B Knights  
Mr G G Lee  
Mr T Mansbridge  
Mr R J Oake  
Mr C I Peters  
Mr D Wales  
Mrs J K Wykes

## *Flood Defence Committee*

Mr M Davies OBE (Chairman)  
Mr J Y Anani  
Mr R H Blanchard  
Mrs C E Broom  
Dr Y O Barton  
Mr D S Candy  
Mr E A Godfrey  
Mr A J Gray  
Mr A Q Hitchcock CBE  
Dr D A Hoyle  
Lt Col J L Jack  
Mr T A Jenkinson  
Mr J B Joseph  
Mr A L Manners  
Mr G W McEwen  
Mr M L Ounsted  
Mr J G Peel  
Dr A M Powell  
Mr H Scantlebury  
Dr D N Simpson  
Mrs J Venables  
Mr J I Wood  
Mrs J K Wykes

## *Rivers Advisory Committee*

Mrs J K Wykes (Chairman)  
Miss J D Bowden  
Mr J A G Coates CBE DFC  
Mr P Coyne  
Mr M Davies OBE  
Mr A G Davis  
Mr K French  
Mrs N P Harris JP  
Mr B S Hurley  
Mr J B Ibbott  
Mr G Lee-Steere  
Mr P T McIntosh  
Mr D W Moss  
Dr K P Parry  
Dr A M Powell  
Miss S Priest  
Mr J R Sexton  
Mr W R Sheate  
Mr M Shefras  
Mr D E T Try  
Mr D Turner  
Mr J W Veitch  
Mr W A Wiseman

## **WELSH REGION**

### *Regional Office Address*

Rivers House/Plas-yr-Afon  
St Mellons Business Park  
St Mellons  
Cardiff  
CF3 0LT  
Tel: (0222) 770088  
Fax: (0222) 798555

### *Regional General Manager*

Dr J Stoner

### *Regional Board Member*

Professor R Edwards CBE

**Fisheries Advisory Committee**

Lord Moran (Chairman)  
Mr A Baylis  
Mr I Edwards-Jones  
Mr D Hides  
Mr M Johnston  
Mr J Mayers  
Mr R Millichamp  
Mr M Morgan  
Mr R Phillips  
Mr A Protheroe  
Mr A Rees  
Mr J Rhydderch  
Mr A Roberts  
Mr G Roberts  
Mrs J Spence  
Dr S Tyler  
Mr N Waters

**Flood Defence Committee**

Mr M McLaggan (Chairman)  
Mr R Simon Jones  
Mr L Chase  
Cllr H Cotterell  
Cllr J Davies  
Cllr F Evans  
Cllr K Griffiths  
Mr J Hughes  
Cllr J Humphreys  
Cllr B Huxley  
Cllr R Jenkins  
Mr J Llewellyn  
Mr R Millichamp  
Mr P Perkins  
Cllr D Thomas  
Cllr J Thompson  
Cllr M Vaughan  
Mr N Waters  
Cllr C Watkins

**Rivers Advisory Committee**

Mr L Taylor (Chairman)  
Mr N Annett  
Dr N Caldwell  
Cllr E Conway  
Mr J Fenwick  
Mr J Harrison  
Mrs C Hayward  
Cllr J Hereford  
Dr R Howells  
Mr D Hughes  
Mr J Hughes  
Mr A Jones  
Mr I Mercer  
Mr M Morgan  
Dr A O'Connor  
Mr M Owens  
Mr B Thomas  
Cllr J Thompson  
Dr S Tyler  
Dr L Warren

**WESSEX REGION**

**Regional Office Address**

Rivers House East Quay  
Bridgwater Somerset  
TA6 4YS  
Tel: (0278) 457333  
Fax: (0278) 452985

**Regional General Manager**

Mrs K Bryan

**Regional Board Member**

Lady Digby DBE DL

**Fisheries Advisory Committee**

Mr C R Rothwell (Chairman)  
Mr R H Baker  
Mr D Gifford  
Mr K Hall  
Mr R Hayward  
Maj A E Hill  
Mr K W Lacey  
Mr P W Lacey  
Dr M Ladle  
Mr J J Mathrick  
Maj J M Mills OBE TD JP DL  
Mr J S Parker  
Mr M J Stoodley  
Col C L Tarver MBE  
Mr G A Topp

**Flood Defence Committee**

Mr R H Baker (Chairman)  
Mr J B Bush  
Mr S H Chedzoy  
Mr P Cookson  
Mr G E Hine  
Mr P W Lacey  
Maj G W Lamb  
Mr R J A Martin  
Mr G S Morris  
Mr D Pearce  
Mr A G Phillips OBE  
R Adm G Pritchard CB  
Mr C R Rothwell  
Mr T E Turvey OBE  
Mr R Willis

**Rivers Advisory Committee**

Mr P W Lacey (Chairman)  
Mr R C Adlam  
Mr R H Baker  
Mr P G Barson  
Capt I A Campbell  
Mr E Erdmanis  
Mr M J Hudson  
Mr J R Little  
Capt J Lofts  
Mrs I H Peckham  
Miss W Pettigrew  
Mr E Potter  
Mr C R Rothwell  
Mr T Rymell  
Mr C F Skellett  
Mr M J Stoodley  
Mr A Swindall  
Mr R S Trench  
Mr N J Yeatman-Biggs

**YORKSHIRE REGION**

**Regional Office Address**

Rivers House  
21 Park Square South  
Leeds  
LS1 2QG  
Tel: (0532) 440191  
Fax: (0532) 461889

**Regional General Manager (from 1.6.92)**

Mr R Hyde

**Regional Board Member**

Mr W Rogers-Coltman OBE

**Fisheries Advisory Committee**

Mr J A Fawcett (Chairman)  
Mr J Austerfield  
Mr T D Collier  
Mr G Copley  
Mr A R Dalby  
Mr A Evans  
Mr P Hayton  
Mr W Jackson  
Mr H G Mackrill  
Mr J H Mitchell  
Mr M O'Donnell  
Dr R F G Ormond  
Mr M E Stewart  
Mr G H Traves  
Mr J W Whitworth

**Flood Defence Committee**

Mr T D Collier (Chairman)  
Cllr J Bradley  
Cllr J M Bramley  
Mrs J M Burnett  
Cllr J Butler  
Cllr M Crampton  
Mr B R Croft  
Mr J A Fawcett  
Cllr J Goodhand  
Cllr H Sheldon  
Cllr J M Sully  
Mr J R Welford  
Mr J W Whitworth

**Rivers Advisory Committee**

Mr J W Whitworth (Chairman)  
Mr J S Armitage  
Dr S Bucknall  
Mr R D Clarke  
Mr T D Collier  
Mr J C Cooke  
Mr J A Fawcett  
Mr M Konrad-Kosicki  
Mr J Lunn  
Ms S Marsden  
Dr W R Middleton  
Cllr R Mitchell  
Mr R I Pigg  
Miss M E Rooker  
Dr A J Shuttleworth  
Cllr C D Swinglehurst  
Mr J N Thompson  
Mr I A White  
Mr G A Wilford



### III Principal Professional Advisors to the Authority

#### PRINCIPAL BANKERS

National Westminster Bank plc  
13 Bishopsgate  
London EC2P 2AP

#### AUDITORS

Coopers & Lybrand  
1 Embankment Place  
London WC2N 6NN

Coopers & Lybrand  
66 Queen Square  
Bristol BS1 4JP

#### INSURANCE ADVISORS

Alexander Stenhouse UK Ltd  
Norman Insurance House  
Kings Road  
Reading RG1 4LW

#### PARLIAMENTARY AGENTS

Dyson Bell Martin and Co  
1 Dean Farrar Street  
Westminster  
London SW1H 0OY

#### TECHNICAL SERVICES

Water Research Centre  
PO Box 16  
Henley Road  
Medmenham  
Bucks SL7 2HD

#### PENSION SCHEME ADMINISTRATORS

Hartshead Ltd  
St Peter's House  
Hartshead  
Sheffield S1 1EU

#### PENSION FUND INVESTMENT

Gartmore Pension Fund Managers Ltd  
PO Box 65  
16 - 18 Monument Street  
London EC3R 8QQ

Queen Anne's Gate Asset Management Ltd  
1 Queen Anne's Gate  
London SW1H 9BT

M&G Investment Management Ltd  
Three Quays  
Tower Hill  
London EC3R 6BQ

Phillips and Drew Fund Management Ltd  
Triton Square  
14 Finsbury Square  
London EC2A 1PD

#### PENSION FUND AUDITORS

Price Waterhouse  
Cornwall Court  
19 Cornwall Street  
Birmingham B3 2DT

# IV New Legislation, Byelaws and other Statutory Instruments affecting the NRA

## EC DIRECTIVES

1992	
92/3/EEC	on the transfrontier shipment of radioactive waste.
92/43/EEC	to contribute towards the maintenance of biodiversity in the EC through conservation of natural habitats of wild flora and fauna.
92/112/EEC	procedures for harmonizing the programmes for the reduction and eventual elimination of pollution caused by the titanium oxide industry.
92/146/EEC	adoption of Summary Notification Information Format for products containing GMOs.

## UK LEGISLATION

<b>Public Acts</b>	Competition and Service (Utilities) Act 1992
<b>Private Acts</b>	River Humber (Upper Pyewipe Outfall) gained Royal Assent 16th July 1992

## BYELAWS

<b>North West Region</b>	Cumbria Coastal Waters Byelaw confirmed 19/5/92.
<b>South West Region</b>	Sea Fisheries Byelaw (SW1) prohibits use of nets in Camel and Fowey estuaries from May to December inclusive. Confirmed 2nd April 1992.
<b>Welsh Region</b>	Byelaws authorising the placing and use of fixed engines in the former Welsh Water Authority area. Confirmed 11/08/92. Sea Fisheries Regulation Act 1966, Salmon Act 1986. Byelaws to regulate use of instruments, other than fixed engines, in sea fisheries. Confirmed 11/08/92.

## ORDERS

<b>Anglian Region</b>	Reconstitution of the Welland & Deepings Internal Drainage Board. Came into force 17th September 1992. Reconstitution of the Alford Drainage Board. Came into force 4/1/93. Reconstitution of the North East Lindsey Internal Drainage Board. Came into force 4/1/93. Reconstitution of the Louth Drainage Board. Came into force 4/1/93. Reconstitution of the North Level Internal Drainage Board. Came into force 1/3/93. Reconstitution of the South Holland Internal Drainage Board. Came into force 25/2/93. Reconstitution of the Witham Third District Internal Drainage Board Order No 910. Came into force 20.03.93.
<b>Northumbria Region</b>	NRA North East Coast Limitation Net Licences Order. Came into operation 16th December '92. Fishing Net Licence Duty Order. Came into operation 1st March 1993.
<b>Yorkshire Region</b>	Alteration of Boundaries of the Beverley and North Holderness Internal Drainage district Order 1993. Came into effect 25 February 1993.
<b>North West Region</b>	Net Limitation Orders for rivers Ribble (5 yrs), Duddon, Kent and Leven (10yrs). Confirmed 19th May 1992.
<b>Southern Region</b>	Reconstitution of the Romney Marsh Levels Internal Drainage Board Order no 815. Came into force 12.03.93. Reconstitution of the River Stour (Kent) Internal Drainage Board Order no 817. Came into force 12.03.93. Reconstitution of the Upper Medway Internal Drainage Board Order no 824. Came into force 18.03.93. Reconstitution of the Lower Medway Internal Drainage Board Order no 825. Came into force 18.03.93
<b>Severn Trent Region</b>	Reconstitution of the Newark Area Internal Drainage Board Order no 829. Came into force 18.03.93.
<b>South West Region</b>	Net Limitation Order for River Camel came into operation 13th January 1993 for 5 years.

## STATUTORY INSTRUMENTS

Statutory Description Instrument Number	Made	Coming Into Force
451 The National Rivers Authority (Severn-Trent Region) (Reconstitution of the South Gloucestershire Internal Drainage Board) Order 1992.	04/11/92	26/02/93
588 The Controlled Waste Regulations 1992	09/03/92	01/04/92
609 The Town and Country Planning General Development (Amendment) Order 1992	10/03/92	01/04/92
610 The Town and Country Planning (Use Classes) (Amendment) Order 1992	10/03/92	31/03/92
614 The Environmental Protection (Prescribed Processes and Substances) (Amendment) Regulations 1992	10/03/92	01/04/92
654 The Financial Assistance for Environmental Purposes (England and Wales) Order 1992	06/03/92	01/06/92
657 The Town and Country Planning (Use Classes) (Amendment) (No.2) Order 1992	11/03/92	01/06/92
658 The Town and Country Planning General Development (Amendment) (No. 2) Order 1992	11/03/92	01/06/92
665 The Planning and Compensation Act 1991 (Commencement No.8) Order 1992	10/03/92	
816 The Reconstitution of the Finningley Internal Drainage Board Order 1993.	26/01/93	12/03/93
829 The National Rivers Authority (Severn-Trent Region) (Reconstitution of the Newark Area Internal Drainage Board) Order 1993.	03/02/93	18/03/93
1083 The Peak Rail Light Railway Order 1993	25/03/93	26/03/93
1096 The Spray Irrigation (Definition) Order 1992		
1279 The Planning and Compensation Act 1992 (Commencement No.9 and Transitional Provision) Order 1992	18/05/92	27/04/92
1280 The Town and Country Planning Development (Amendment) (No.3) Order 1992	01/06/92	
1296 The Transfer of Functions (Science) Order 1992	02/06/92	27/07/92
1347 The Transport and Works Act 1992 (Commencement No. 1) Order 1992	04/06/92	06/07/92
(C.45) 1360 The Competition and Service Utilities Act 1992 Designated Order 1992	08/06/92	01/07/92
1421 The Harbour Works (Assessment of Environmental Effects) Regulations 1992	16/06/92	15/07/92
1491 The Planning and Compensation Act 1992 (Commencement No.10 and Transitional Provision)	23/06/92	
1492 The Town and Country Planning General Regulations 1992	24/06/92	17/07/92
1493 The Town and Country Planning General Development Amendment (No. 4) Order 1992	24/06/92	17/07/92
1494 The Town and Country Planning Assessment of Environmental Effects (Amendment) Regulations 1992	24/06/92	17/07/92
1508 The Food Safety (Live Bivalve Molluscs) (Derogations) Regulations 1992	24/06/92	01/07/92
1563 The Town and Country Planning General Development (Amendment) (No.5) Order 1992	29/06/92	27/07/92
1583 The Environmental Protection (Controls on Injurious Substances) (No.2) Regulations 1992	30/06/92	31/07/92
1630 The Planning and Compensation Act 1991 (Commencement No.11 and		
(C.54)		



	Transitional Provisions)	19/06/92		3240	The Environmental Information Regulations 1992	18/12/92	31/12/92
1817	The Town and Country Planning (Fees for Applications and Deemed Applications) (Amendment) Regulations 1992	20/07/92	27/07/92	3253	The Environmental Protection Act 1990 (C.101) (Commencement No.12)		
1903	The Town and Country Planning (Enforcement) (Inquiries Procedure) Rules 1992	29/07/92	01/09/92		Order 1992 Draft 1992	18/12/92	
1904	The Town and Country Planning (Enforcement Notices and Appeals) (Amendment) Regulations 1992	27/09/92	01/09/92		The Transport and Works (Descriptions of Works Interfering with Navigation) Order 1992		01/01/93
1982	The Town and Country Planning General (Amendment) Regulations 1992	17/08/92	19/08/92		Environmental Information Regulations		31/12/92
1991	The Local Government Superannuation (National Rivers Authority) Regulations 1992	18/08/92	15/09/92	49	The Control of Pollution (Anglers' Lead Weights) (Amendment) Regulations 1993	13/01/93	10/02/93
2038	The Town and Country Planning (Inquiries Procedure) Rules 1992	24/08/92	30/09/92	53	The National Rivers Authority (Anglian Region) (Reconstitution of the Alford Drainage Board) Order 1992	23/10/92	04/01/93
2039	The Town and Country Planning Appeals (Determination by Inspectors) (Inquiries Procedure) Rules 1992	24/08/92	30/09/92	54	The National Rivers Authority (Anglian Region) (Reconstitution of the North East Lindsey Internal Drainage Board) Order 1992	20/10/92	04/01/93
2287	The National Rivers Authority (Anglian Region) (Reconstitution of the Welland and Deepings Internal Drainage Board) Order 1992	22/07/92	18/10/92	55	The National Rivers Authority (Anglian Region) (Reconstitution of the Louth Drainage Board) Order 1992	20/10/92	04/01/93
2350	The Wildlife and Countryside Act 1981 (Variation of Schedules 5 and 8) Order 1992	11/10/92	29/10/92	61	The National Rivers Authority (Levies) Regulations 1993	14/01/93	16/01/93
2413	The Planning and Compensation Act 1991 (C.81) (Commencement No.13 and Transitional Provision) Order 1992	12/10/92	-	82	The Environmentally Sensitive Areas (North Kent Marshes) Designation Order 1993	15/01/93	13/02/93
2414	The Town and Country Planning (Simplified Planning Zones) Regulations 1992	12/10/92	09/11/92	83	The Environmentally Sensitive Areas (Exmoor) Designation Order 1993	15/01/93	13/02/93
2450	The Town and Country Planning General Development (Amendment) (No. 6) Order 1992	14/10/92	13/11/92	84	The Environmentally Sensitive Areas (Avon Valley) Designation Order 1993	15/01/93	13/02/93
2633	The Sea Fish Licensing Order 1992	22/10/92	13/11/92	85	The Environmentally Sensitive Areas (Lake District) Designation Order 1993	15/01/93	13/02/93
2674	The Wildlife and Countryside Act 1981 (Variation of Schedule) (No.2) Order 1992	27/10/92	25/11/92	86	The Environmentally Sensitive Areas (South Wessex Downs) Designation Order 1993	15/01/93	13/02/93
2683	The Town and Country Planning (Crown Land Applications) Regulations 1992	27/10/92	26/11/92	87	The Environmentally Sensitive Areas (South West Peak) Designation Order 1993	15/01/93	13/02/93
2784	The Transport and Works Act 1992 (C.84) (Commencement No.3 and Transitional Provisions) Order 1992	06/11/92	-	165	The General Drainage Charges (Relevant Quotient) Regulations 1993	31/01/93	02/02/93
2831	The Planning and Compensation Act 1991 (C.87) (Commencement No.14 and Transitional Provision) Order 1992	06/11/92	-	273	The Housing and Planning Act 1986 (C.6) (Commencement No.18 and Transitional Provisions) (Scotland) Order 1993	15/02/93	
2832	The Town and Country Planning (Modification and Discharge of Planning Obligations) Regulations 1992	09/11/92	10/12/92	274	The Environmental Protection Act 1990 (C.7) (Commencement No.13) Order 1992	15/02/93	
3010	The Wildlife and Countryside Act 1981 (Variation of Schedules 2 and 3) Order 1992	02/12/92	01/01/93	545	The Local Authorities (Members' Allowances) (Amendment) Regulations 1993	09/03/93	01/04/93
3038	The Wash Fishery Order 1992	30/11/92	04/01/93				
3079	The Internal Drainage Boards (Finance) Regulations 1992	17/12/92	30/12/92				
3138	The Transport and Works Applications Regulations 1992	09/12/92	01/01/93				
3163	The Food Safety (Fishery Products) Regulations 1992	11/12/92	15/01/93				
3164	The Food Safety (Live Bivalve Molluscs and Other Shellfish) Regulations 1992	11/12/92	01/01/93				
3165	The Food Safety (Fish Products on Fishing Vessels) Regulations 1992	11/12/92	18/12/92				
3230	The Transport and Works (Descriptions of Works Interfering with Navigation) Order 1992	18/12/92	01/01/93				
3231	The Transport and Works (Guided Transport Modes) Order 1992	16/12/92	01/01/93				

## DIRECTIONS

The Secretary of State for the Environment, as respects waters in or adjacent to England and the Secretary of State for Wales, as respects waters in or adjacent to Wales and the Minister of Agriculture, Fisheries and Food, after consultation with the National Rivers Authority, and in exercise of powers conferred on them by Section 5 of the Water Resources Act 1991 ("the Act"), directed the Authority on the following during 1992/93:

### *Monitoring of controlled waters.*

(Direction relating to Council Directive 76/160/EEC).

### *Protection of groundwater against pollution caused by certain dangerous substances.*

(Direction relating to Council Directive 80/68/EEC).

### *Discharges of dangerous substances.*

(Directive relating to Council Directives 90/415/EEC, 87/217/EEC and 86/280/EEC).

Full copies of the above Directions are available from NRA offices.

# V Publications and Publicity Material

## HEAD OFFICE

### Books

The Law of the National Rivers Authority by William Howarth.

### Brochures

National Rivers Authority Corporate Plan 1992/93  
National Rivers Authority Annual Report & Accounts 1991/92  
Fisheries Statistics 1990  
Fisheries Statistics 1991  
Toxic Blue-Green Algae: The Report of the National Rivers Authority  
Discharge Consents and Compliance Policy: A Blueprint for the Future Under Section 143(2)(a) Water Act 1989.  
The Quality of Rivers Canals and Estuaries in England and Wales.  
Proposals for Statutory Water Quality Objectives.  
The Influence of Agriculture on the Quality of Natural Waters in England and Wales.  
Water Resources Development Strategy  
NRA Facts 1990  
Water Resources Development Strategy: A Discussion Document  
Proposed Scheme of Abstraction Charges 1993/94  
Bathing Water Quality in England & Wales 1991  
Bathing Water Quality in England & Wales 1992  
Water Pollution Incidents in England & Wales 1991  
Fisheries Technical Report 1 – Sea Trout in England & Wales  
Fisheries Technical Report 2 – Sea Trout Catch Statistics  
Fisheries Technical Report 3 – Sea Trout Literature Review  
Fisheries Technical Report 4 – Sea Trout Gene Banks  
Conservation Technical Handbook 1 – River Corridor Surveys  
Conservation Technical Handbook 2 – River Corridor Surveys  
Groundwater Protection Policy Document  
Low Flows and Water Resources  
R&D Report 1 – Diversion and Entrapment of Fish at Water Intakes and Outfalls  
R&D Report 2 – Manual of Standard Methods for Microbiological Analysis  
R&D Report 3 – Expert Systems for Water Resources Management  
R&D Report 4 – Airborne Remote Sensing of Coastal Waters  
R&D Annual Review 1992  
R&D Programme 1993/94  
Graduate Recruitment Brochure  
Section 142 Fisheries Contributions – A Second Consultation Document  
A Fair Assessment – A Discussion Document  
NRA Response to Using Water Wisely – A Consultation Published by the DoE/Welsh Office July 1992

### Leaflets

List of R&D Outputs  
Weather Radar and Flood Warning Services  
Canoeists Leaflet  
Environmental Policy Leaflet  
R&D Newsletters 1 & 2  
Chlorinated Solvents and Water  
National RiverWatch  
Farm Pollution  
Water Wisdom  
Abstraction Licensing and Water Resources  
Blue Green Algae  
Scheme of Abstraction Charges

### Displays

Innovation in the R&D Programme

## ANGLIAN

### Catchment Management Plans

Ely/Ouse Catchment Management Plan  
Gipping/Stour Catchment Management Plan  
Louth Coastal Catchment Management Plan  
The River Cam Catchment Management Plan

### Leaflets

Guardian of the Water Environment (Anglian Region)  
Information Wallet Folder  
24 Hours a Day  
Directory of Addresses  
Protecting the Water Environment  
The Anglian Region/Facts at a Glance  
Contacting the NRA  
Tide Tables Volume 1 – Lincolnshire and Humberside  
Tide Tables Volume 2 – Norfolk, Suffolk and Essex  
Authority Consents  
Development in Flood Risk Areas  
Protecting and Improving the Water Environment – Model Policies  
Fisheries Byelaws  
The Denver Complex/The Ely Ouse Essex Water Transfer Scheme  
Clacton Sea Defence Scheme  
Happisburgh to Winterton Sea Defences  
Burnham Sea Wall  
Hunstanton and Heacham Sea Defences  
Thames Tidal Defences  
The Colne Barrier  
Ipswich Flood Defences  
Ouse Washes Barrier Banks Improvements  
Woodbridge and Melton Flood Defences  
Aldeburgh Sea Defences  
Kings Lynn Tidal Defences  
Sea Defence Management Study  
Lincshire '97 – A Strategy for the Lincolnshire Coast  
Lincshire '97 – An Environmental Statement

Battling the Tide – Flood Defences in Anglian Region  
Broadlands – A Flood Alleviation Strategy – Options and Impacts  
Water in Broadland  
East Anglian Salt Marshes  
Welland and Glen River System  
The 1953 East Coast Floods  
Water Resources – Abstraction Register  
Drought in Anglia – The Dry Facts  
Managing Water Resources  
Water in the Thetford Area  
Lodes-Granta Groundwater Scheme  
Water in Anglia – Water Resources in Britain's Driest Region  
Cley Sea Defences  
Monitoring the Coast for Sea Defences.  
Pollution – Together We Can Beat It  
Farm Pollution – The Safe Way with Silage  
Blue-Green Algae  
Water Pollution – Causes and Control  
River Pollution and How to Avoid It  
Water Quality – Public Register  
Water Quality – Discharge Consents  
Water Quality – Marine Monitoring  
Chlorinated Solvents and Water  
Waterways – A Code of Conduct  
Roy of the Rivers  
NRA – Navigation in the Anglian Region (A4 book available on request)  
Map – Navigation in the Anglian Region  
Navigation Notes – Advice to Boat Owners  
Navigation – The Anglian Experience  
Guide to Fishing Clubs – Great Ouse, Cam and Fenland Waters  
Guide to Freshwater Fishing in Norfolk and Suffolk  
Guide to Fishing Clubs – Northern Area (in production)  
A Brief History of the River Stour Navigation – 1705 to Present Day (being updated)

### Videos

Watercarers – An Educational Video  
Liquid Asset – Water Resources

### Posters

Water Resources  
NRA (Anglian Region) Colouring Chart  
NRA Educational Wallchart  
Wildlife on the Riverbank

## NORTHUMBRIA

### Brochures

Regional Brochure  
Angling Guide  
Developers Guide  
Regional Plan Summary  
River Litter Monitoring Brochure



## Leaflets

Buyer Beware Poached Salmon  
Chlorinated Solvents and Water  
Control of Pollution Regulations  
Farm Pollution  
Flood Warning Service  
Kielder Salmon Hatchery  
Marine Monitoring  
Ouseburn Catchment Management Plan – Consultation Leaflet  
River Canoeists  
River Pollution  
River Tees  
River Tyne  
Rod Fishing Byelaws  
Roy of the Rivers  
Silage Pollution  
The Tees – an Improving River  
Understanding the Drought  
Wise Water Ways  
Yarm at Risk

## Newsletters

Aquarius (staff newsletter)

## Videos

Regional Video  
Northumbrian Salmon  
Yarm Flood Defence Scheme  
Water Safety  
Tideflex Valves – Fish Tests

## Information

Pollution Notes for Students  
River Facts – Guardians of the Water Environment  
River Facts – Environmental Quality & Pollution Control  
River Facts – Fisheries, Recreation & Conservation  
River Facts – Land Drainage & Flood Defence  
River Facts – Water Resources  
River Information Sheets  
Fisherman's Telephone Information Service

## Posters

Duties & Responsibilities of NRA  
Avoiding Farm Pollution  
Silage Pollution Kills  
Kielder Salmon Hatchery

## Displays

Regional Display (two versions)  
The Good, The Bad and The Ugly (Farm Pollution)  
The Tees – An Improving River  
North Northumberland Otter Project  
National RiverWATCH

## NORTH WEST

### Leaflets

Fact File – North West  
The National Rivers Authority  
About the North West Region  
Keeping You Informed  
Public Register  
On Duty Round the Clock  
Maintaining Water Courses  
River Classification  
Paying for Flood Defence  
Main River  
EC Directives and Control of Water Pollution  
Environmental Protection and Pollution Control  
Windemere (Anti-Pollution guidelines for boat owners)  
Water Resources  
River Ribble  
River Alt  
River Lune

### Newsletters/Magazines

Newstream (2 Editions, external regional newspaper)  
Splash (12 Editions – internal staff newsletter)

### Videos

Flood Defence  
Fisheries  
Water Resources

## SEVERN TRENT

### Catchment Management Plans

River Stour Catchment Management Plan

### Brochures

River Tame  
Trent Catchment  
Severn Catchment  
Lea Marston  
Llyn Clywedog

### Leaflets

NRA Facts at a Glance  
Severn Bore  
Trent Aegir  
Navigation in the Severn-Trent Region  
Pollution and Its Effects  
Pollution and How to Spot It  
Pollution We're All Responsible  
Pollution Kills  
Silage Effluent  
Sheep Dip and Pollution  
Slurry Storage  
Slurry and Dirty Water Disposal  
Fuel Oil  
Nitrates in Groundwater  
The Tame Catchment  
Water Abstraction

### Spray Irrigation

Flood Defence  
Chemicals  
River Severn  
Chlorinated Solvents  
Pesticides  
Blue Green Algae  
River Trent  
Water Quality  
Shrewsbury Town – The Flooding Problem  
Chlorinated Solvents and Water  
NRA Recreation Sites  
Agricultural Activity and Pollution Prevention

### Displays

Revised Mobile Exhibition  
Pilot Riverside Display

### Videos

Groundwater Protection

### Posters

NRA General  
Oil Pollution

## SOUTHERN

### Catchment Management Plans

River Itchen Catchment Management Plan, Consultation Report and summary  
River Test Catchment Management Plan, Consultation Report and leaflet  
River Medway Catchment Management Plan, Consultation Report and leaflet

### Brochures

Policy and Practice in the Protection of Groundwater – Regional Appendix  
A Guide to Bank Restoration and River Narrowing  
Fishing in the South  
Guide to the Southern Region  
Guide to the Medway Navigation  
Harbour of Rye  
Rye Harbour Byelaws  
Pond Pack  
Boating on Sussex Rivers  
Land Drainage and Sea Defence Byelaws

### Leaflets

River Darent Action Plan  
River Darent Conservation Project  
Sustaining Our Resources – Southern Region  
Water Resources Development Strategy  
Sustaining Our Resources – Summary  
Drought in the South  
Irrigation of golf courses  
Predicted High Tide Tables 1993  
Chlorinated Solvents and Water – How Can You Help Avoid Pollution  
River Medway River Arun

Kentish Stour River Rother  
Cuckmere River River Meon  
River Ouse River Test  
River Adur River Itchen

Rivers of the Isle of Wight

The Medway Navigation

Drought – The Dry Facts

The Southern Angle

Flood Warning Service – Emergency Procedures

River pollution and how to avoid it

River and effluent quality and consents

Is your farm really safe?

Are you storing animal wastes safely?

Are you disposing of animal wastes safely?

Is your oil storage safe?

Is your sheep dipping safe?

Information sheets – Education Series

#### **Newsletter**

On Stream (staff newsletter)

#### **SOUTH WEST**

##### **Books**

The Guide to Angling in South West England 1992/93 (published by Westcountry Tourist Board in co-operation with the NRA).

##### **Brochures**

Water for the South West – a consultation document

Exeter Flood Defence Scheme

Sea Defences for Dawlish Warren and

Teignmouth

##### **Leaflets**

Cobacombe Cross Weather Radar Station

Pollution Prevention Guidelines (set of seven)

Chemical Pollution and How to Avoid It

Chlorinated Solvent Pollution and How to Avoid It

Oil Pollution and How to Avoid It

Cleaning up the Culm

Tidal Defences for Instow

Fishing 1993 (North Devon)

##### **Newsletter**

The Guardians (employee newsletter)

##### **Videos**

Wheal Jane – A Clear Way Forward

##### **Information Sheets**

Bathing Waters (1992 edition)

Beesands Tidal Defences

Barbican Tidal Defences

Water – An Introduction

##### **Posters**

Preventing Oil Spills

#### **THAMES**

##### **Catchment Management Plans**

Blackwater Catchment Management Plan (report and leaflet)

Kennet Catchment Management Plan (report, leaflet, and poster)

##### **Brochures**

Guardians of the Water Environment (Regional Brochure)

Thames Review

Fobney Mead Brochure

##### **Leaflets**

Fact Files

– Blackwater

– Cherwell

– Chess

– Colne

– Kennet

– Lee

– London

– Mimram

– Mole

– South London's Urban Rivers

Locks and Weirs on the River Thames – How do they work?

The Thames Navigation – Charting the Future

River Thames Handbook

Thames Launch Safety Specification

Cruising on the River Thames – A Boating Guide

Navigation Levels of Service

Thames Navigation – Improving the Flow

Hambleden

Blue-Green Algae

River Pollution and How to Avoid It

Oil Pollution and How to Avoid It

Chemical Pollution and How to Avoid It

Chlorinated Solvent Pollution and How to

Avoid It

The Control of Pollution (Silage, Slurry &

Agricultural Fuel Oil) Regulations 1991

Looking After Our Rivers

Fact File: Pollution Control

Pollution Notes – We're All Responsible

Your Right to the Facts

Fishery Byelaws 1978

Annual Fisheries Report

Guide to Weir Permit Fishing

Emergency Procedures: Fact Sheet

The Thames Barrier 8th Wonder of the World

Cascade – Flood Forecasting and Monitoring

Sea Defence Survey

Flood Forecasting and Flood Warning

Riverside Owners Guide

Weather Radar and Flood Warning Services

Thames Path – National Trail – C.C.

Enjoying the Waterside – Amenities and

Recreation in the NRA Thames Region

Water Wisdom

Hurley Walks

Pinkhill Meadow Nature Reserve

Abingdon Riverside Walk

Alleviation of Low Flows in Rivers

Drought '92 – Reserves at Risk

Understanding the Drought

Project Summary – Upper Kennet River Levels Study

Informal Consultation on New Abstraction

Charges April 1993

Demands and Resources of Water Undertakers in England and Wales

##### **Newsletters**

Banknotes (staff newsletter)

Thames Review

Newscast

The Thames Path Newsletter

Annual Navigation Newsletter

##### **Posters**

Pollution Poster

Guide to Fluvial Flood Warning (local authorities only)

Guide to Tidal Protection and Warning (local authorities only)

#### **WELSH**

##### **Catchment Management Plans**

The Ogmore Catchment Management Plan

##### **Brochures**

Regional Brochure

Juvenile Salmonid Monitoring Programme Report

River Wye Angling Guide

Angling Guide for the Rivers Dee and Clwyd 1992/93

Canoeist Guide to the River Wye

##### **Leaflets**

Clean Rivers Cup

Silage is Deadly

Oil, Chemicals and Pesticides

Rod Fishing Byelaws

Buyer Beware of Poached Salmon

Rewards for Tagged Fish

Llyn Brianne Acid Waters Project

Safeguard the Environment – a guide for developers

Dee Stock Assessment Programme

Tidy Riverbank Cup

River Ebbw Catchment

##### **Newsletters**

Glas-y-Dorlan Newspaper

Pont (staff newsletter)



## Videos

As Nature Intended  
Acid Waters in Wales  
Guarding the Dee  
Flood Defence  
Rearing of Salmon & Sea Trout

## Display Panels

NRA Welsh Region  
Is Your Farm Pollution Proof?  
The River Llynfi  
Acid Rain  
Barrage Developments  
Micro Tagging of Fish  
Fish Tracking  
Flood Defence  
Water Resources  
Catchment Management Plans  
Farm Management Plans

## WESSEX

### Catchment Management Plans

Hampshire Avon Catchment Management Plan  
(Report & Leaflet)

### Brochures

Regional Brochure  
Somerset Levels & Moors

### Leaflets

Brinkworth Brook Restoration Project  
Careers  
Code of Practice on Matters Relating to Land  
Development Control Fact Sheets (1-14)  
Fishing Leaflets – 1993 (Somerset, Avon &  
Dorset, Bristol Avon)  
Flood Defence Law (Training Course Document)

## Freshwater Fish of the Wessex Region

Guidelines – Oil Interceptors on Surface Water  
Discharges  
Guidelines – Oil Interceptors, Garages & Filling  
Stations  
Looking at the River Tone  
'Operation Streamclean' (wrong connections  
leaflet)  
Pollution (Extract from River Pack)  
Pond Pack  
River Corridor Surveys (limited stock)  
River Pack  
River Pollution (ex Thames Region)  
Rod Licence Leaflet  
Roy of the Rivers (fishing comic ex Yorks  
Region)  
Silage Liquor  
Water (Extract from River Pack)  
Weather Radar & Flood Warning Services  
Wildlife Along Rivers (Extract from River Pack)

## YORKSHIRE

### Catchment Management Plans

River Aire Catchment Management Plan

### Brochures

Rivers Swale and Ure – Conservation within the  
Catchment  
Yorkshire Region brochure (all functions)  
Humber Strategy – Goole Sector Flood  
Alleviation Scheme

### Leaflets

"Roy of the Rivers"  
River Ouse in York  
Foss Barrier

## Water Weed Control

Fisheries Byelaws  
Yorkshire's Waterways  
Groundwater Protection Policy – Regional  
Appendix  
Water Resources  
Emergency Arrangements  
Public Water Quality Register  
Environmental Biology  
River Quality Management  
River Aire River Calder  
River Wharfe River Derwent  
River Esk River Rother  
River Don River Dearne  
River Foss – Environmental Liaison Group  
High Eske Nature Reserve  
Farm Pollution Kills River Life  
Silage  
Slurry  
Pesticides & Chemicals  
Oil Pollution  
Flood Defence General Information  
Flood Warning Service (Emergency Procedures)  
River Sheaf  
Humber Estuary

## Newsletters

"Catch" Magazine – 2 Editions  
"The Bridge" Yorkshire internal staff newsletter  
"Watermark" Northumbria and Yorkshire staff  
newsletter

## Videos

Humber Estuary Strategy (May 1992)  
Pollution of the River Rother (June 1992)  
River Aire Catchment Management Plan (Nov  
1992)  
Vale of York Groundwater Scheme (Feb 1993)

# VI Research Publications and Project Completions

Project No.	Output Ref.	Title			
COMMISSION A: WATER QUALITY					
007	Note 118	Pollution risk assessment	226	Note 15	Foaming in rivers: An initial assessment of the problem
010	Project Record	Environmental Quality Standards to protect identified uses of controlled waters	227	Note 69	Metal speciation in rivers and estuaries
	010/8/N	- General and special ecosystems	251	Note 138	Quality control of sampling procedures
	Project Record	Environmental Quality Standards to protect identified uses of controlled waters*	253	Note 37	Economic value of changes to the water environment*
	010/9/N	Environmental Quality Standards to protect identified uses of controlled waters*	259	Report 9	Farm waste storage*
	Project Record	Environmental Quality Standards to protect identified uses of controlled waters*	267	Note 113	- Guidelines for construction
	010/10/N	- Uses 9-14	273	Note 92	Development of an analytical method for blue-green algal toxins (2 vols)*
013	Note 123	Intermittent Pollution	290	Note 119	Environmental impact of sewer sediments
		- Combined sewer overflows, ecotoxicology and water quality standards*	323	Project Record	Pathogenic microorganisms in temperate environmental water*
016	Note	Investigation of partitioning of contaminants between water and sediment*	323/3/HO		Dissolved oxygen and ammonia in tidal waters related to WQOs
023	Note 82	Toxicity of common pollutants to freshwater aquatic life - A review of the effects of ammonia, arsenic, cadmium, chromium, copper, cyanide, nickel, phenol and zinc on endogenous species.	332	Note 101	A unified information system to satisfy the NRA's requirements for ecotoxicology information
	Note 83	Predicting the toxicity of ammonia to freshwater fish			- The specification study
024	Project Record	Methods for assessing the toxicity of sediment-bound contaminants	343	Project Record	Development of a biotic index for the assessment of the pollution status of marine benthic communities
062	Report 2	Manual of standard methods for microbiological analysis	347	Note 32	Review of R&D priorities
051	Note 125	The implementation of the EC freshwater fish directive in member states	360	Note 102	- Agricultural impacts on water quality
109	Note 108	Nitrate reduction for protection zones: The role of alternative farming systems*		Note 103	Constructed wetlands to ameliorate metal-rich minewaters*
114	Note 77	Forestry impact on upland water quality*			- Review of existing literature
130	Project Record	Review of groundwater pollution of the Chalk and Triassic sandstone aquifers by the halogenated solvents - Annexes to R&D Notes 46 and 47	361	Note 183	Constructed wetlands to ameliorate metal-rich minewaters*
	Note 46	Review of groundwater pollution of the Chalk aquifer by the halogenated solvents	381	Note 181	- Study of natural wetlands
	Note 47	Review of groundwater pollution of the Triassic sandstone aquifer by the halogenated solvents	399	Note 111	Analysis, storage and archiving of water quality data*
208	Project Record	The disposal of sheep dip waste: Effects on water quality	411	Note 188	Pollution potential of contaminated sites*
216	Note 88	Determination of trace metals in saline waters by high performance liquid chromatography			- A review
219	Note 86	The transport and fate of organic pollutants in rivers	422	Note 156	The estuarine modelling shell ECoS
	Project Record	The transport and fate of organic pollutants in rivers			- An evaluation for use by the NRA
220	Note 62	NRA instrumentation assessment and demonstration facility report			The estuarine modelling shell ECoS
					- Approval of Evaluation
					Correlation between enterovirus concentrations and faecal indicator bacteria*
					A review of the water quality implications of conifer harvesting in the UK
					- Literature review and recommendations for research
COMMISSION B: WATER RESOURCES					
			108	Note 109	A comparison of groundwater sampling by pore-water extraction and packer testing
				Project Record	A comparison of groundwater sampling by pore-water extraction and packer testing
				108/6/Y	Remote sensing of snow by satellites
			207	Note 13	Expert systems for water resources*
			241	Report 3	Effect of sea level rise on water resources
			277	Note 74	Methodology for monitoring and sampling groundwater
			284	Note 126	Review of hydrometric field techniques used in the NRA
			303	Note 59	



329	Project Record 329/4/NW	Review of hydrometric data processing systems within the NRA – Vol 1 – Main text
	Project Record 329/5/NW	Review of hydrometric data processing systems within the NRA – Vol 2 – Regional reports
398	Note 114	Water resource management and the protection of wetland functioning – Research and development priorities for the NRA*
401	Note 136	Evaluation of the costs and benefits of low flow alleviation

## COMMISSION C: FLOOD DEFENCE

213	Note 14	Review of existing practices for fluvial maintenance operations throughout the NRA – Volume 1 – Overview
	Project Record 213/1/Y	Review of existing practices for fluvial grass management throughout the NRA
221	Project Record 221/2/A	Consequences of climate-induced sea level rise
232	Project Record 232/1/T	Sediment and gravel transportation in rivers
234	Note 27	Lone worker alarm – Feasibility Study
245	Note 7	Techniques for identification of flood plains
252	Note 44	Design methods for straight compound channels
262	Note 127	Flood Defence levels of service – Final recommendations – (7 vols, including annex A to E and summary)
269	Note 51	Viability of emergency plant and vehicles
278	Note 65	NRA emergency communications strategic study
288	Project Record 288/1/T	Flood Channel Facility – Phase C evaluation report
293	Project Record 293/2/S	Efficiency and effectiveness of planning activities
300	Project Record 300/2/T	Design and operation of trash screens
309	Note 57	Non-aggregate marine materials for beach recharge – Stage-1

## COMMISSION D: FISHERIES

124	Note 41	Turbidity and plant growth in large slow flowing rivers*
296	Note 33	Description of NRA tracking projects*
	Note 34	Evaluation of NRA tracking projects
307	Report 1	Diversion and entrapment of fish at water intakes and outfalls*
326	Note 105	Restoration of riverine fisheries habitats*

## COMMISSION E: RECREATION AND NAVIGATION

276	Note 117	Water-related recreation – Participation, trends and issues*
-----	----------	---

## COMMISSION F: CONSERVATION

028	Project Record 028/1/N	Database of aquatic plants in the British Isles*
274	Project Record 274/3/ST	River landscape assessment methodology
291	Project Record 291/4/W	Riparian and instream species – Habitat relationships
340	Note 87	Buffer zones for conservation of rivers and bankside habitats*
387	Note 154	Draft guidelines for the design and restoration of flood alleviation schemes
	Note 155	River engineering works in gravel-bed rivers: summary of results, conclusions and recommendations
	Project Record 387/1/W	River engineering works in gravel-bed rivers - Phase 1

## COMMISSION G: CROSS-FUNCTIONAL

328	Report 4	Airborne remote sensing of coastal waters
351	Note 75	Environmental assessments undertaken by external developers – Outline recommendations for policy, procedures and training
	Note 76	Environmental assessments undertaken by external developers – An interim handbook for staff
376	Note 73	Evaluation and opportunities for the use of expert system
	Note 81	How to identify expert systems applications

## TECHNICAL SERVICES OUTPUTS

TS	Note 80	Summary report on environmental developments 10*
TS	Note 145	Summary report on environmental developments 11*
TS	Note 153	Summary report on environmental developments 12*
TS	Note 78	Review of advances in wastewater treatment Vol 1
TS	Note 79	Review of advances in wastewater treatment Vol 2
TS	Note 80	Review of advances in wastewater treatment Vol 3
TS	Note 84	NRA Monitoring equipment database – User Guide

\* = Available Externally

# VII Selected Statistics

## SELECTED STATISTICS

Please note that the reporting period for all statistics relates to the NRA financial year from 1st April 1992 to 31st March 1993

### WATER RESOURCES

#### \*Rainfall

Region	Annual Total (mm)		Annual Total as a % of Long-term Average		Total Drought Orders		Total Abstraction Licence Inspections	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	721	780	82	89	0	0	126	309
Yorkshire	635	791	77	96	12	1	1,890	3,900
North West	1,068	1,472	88	121	0	0	909	1,445
Welsh	1,064	1,260	80	95	0	0	1,077	1,508
Severn Trent	631	786	82	102	0	0	2,197	3,343
Anglian	470	637	77	102	0	0	1,789	3,448
Thames	582	861	79	116	0	1	1,020	1,310
Southern	614	801	78	101	27	11	1,536	1,590
Wessex	681	829	79	96	0	0	1,057	1,001
South West	898	1,165	75	98	0	0	354	567
Weighted overall average	728	991	80	108	Total 39	13	11,955	19,295

\*These are the best available Figures from the Met Office at each year end.

### WATER QUALITY

#### Pollution Incidents

Region	Total No of Reported Incidents		Major (Category 1) Incidents	
	91/92	92/93	91/92	92/93
Northumbria	1,421	1,284	18	6
Yorkshire	2,333	2,542	81	51
North West	3,974	4,203	61	83
Welsh	3,317	3,763	16	27
Severn Trent	6,222	6,182	72	109
Anglian	2,290	3,393	15	18
Thames	3,238	3,513	14	3
Southern	1,762	2,211	7	8
Wessex	1,644	2,028	13	18
South West	3,323	3,135	41	39
Total	29,524	32,254	338	362

#### Enforcement

Region	Number of Successful Prosecutions				Total Fines (£)	
	Cat 1		Cat 2		91/92	92/93
	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	8	6	22	15	48,650	60,250
Yorkshire	33	30	16	13	44,725	83,900
North West	22	19	77	55	162,450	167,700
Welsh	9	11	67	41	280,750	91,775
Severn Trent	6	3	70	51	151,115	139,550
Anglian	10	3	38	45	87,030	164,850
Thames	3	2	68	43	168,800	202,000
Southern	2	7	18	15	24,500	80,540
Wessex	6	9	21	21	50,950	80,810
South West	16	9	24	12	32,950	19,650
Total	115	99	421	336	1,051,990	1,091,025

Category 1 = Major; Category 2 = Significant.



### Sampling and Analysis

Region	Total Number of Water Samples Taken		Total Number of Determinands	
	91/92	92/93	91/92	92/93
Northumbria	16,313	18,285	205,410	248,939
Yorkshire	35,575	32,175	443,619	416,034
North West	33,898	36,336	447,482	501,590
Welsh	67,277	81,564	914,664	1,191,748
Severn Trent	83,246	75,057	1,064,862	999,700
Anglian	50,975	51,107	485,873	533,955
Thames	25,689	26,142	254,554	393,237
Southern	28,733	29,947	434,797	389,160
Wessex	39,210	37,699	415,216	395,839
South West	55,835	68,089	847,710	1,028,652
Total	436,751	456,401	5,514,187	6,098,854

### Designated EC Bathing Waters

Region	Number of Bathing Waters Complying with Directive							
	Pass (No)		Fail (No)		Total (No)		% Complying	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	21	20	12	14	33	34	64	59
Yorkshire	19	20	3	2	22	22	86	91
North West	10	11	23	22	33	33	30	33
Welsh	45	39	6	12	51	51	88	76
Severn Trent	0	0	0	0	0	0	0	0
Anglian	29	31	4	2	33	33	88	94
Thames	2	3	1	0	3	3	67	100
Southern	45	51	22	16	67	67	67	76
Wessex	36	36	3	3	39	39	92	92
South West	105	117	28	17	133	134	79	87
Total	312	328	102	88	414	416	75	79

### Enquiries about Water Quality Data

Region	Examinations of Water		
	Prior to Water Act	Act Register	
		91/92	92/93
Northumbria	88/89	198	195
Yorkshire	210	543	727
North West	103	215	359
Welsh	46	248	268
Severn Trent	N/A	384	462
Anglian	115	549	670
Thames	120	436	536
Southern	32	195	484
Wessex	100	248	353
South West	N/A	240	289
Total	751	3,236	4,343

# FLOOD DEFENCE Land Drainage Consents

Region	Determined (No)		Flooding			
			Major Flooding Incidents (Fluvial and Coastal)		Flood Warnings Issued to Police	
	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	343	325	2	1	11	6
Yorkshire	356	339	2	2	54	41
North West	870	756	4	3	41	60
Welsh	737	863	0	7	47	284
Severn Trent	801	1,042	2	3	90	280
Anglian	1,101	1,162	0	2	22	149
Thames	639	594	0	2	78	93
Southern	308	310	0	0	58	174
Wessex	208	214	0	1	1	58
South West	264	254	0	0	23	185
Total	5,627	5,859	10	21	331	1,330

† Estimate.

## Flood Defence Works Maintained/Improved

Region	Main River (km)		Flood Embankment (km)		Sea Defence (km)		Total (km)	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	612	675	240	240	5	5	857	920
Yorkshire	2,355	2,355	152	152	16	16	2,523	2,523
North West	4,040	4,447	398	141	12	48	4,450	4,636
Welsh	1,952	2,159	NA	444	52	72	2,004	2,675
Severn Trent	1,400	1,400	765	765	35	35	2,200	2,200
Anglian	3,866	5,002	2,407	*716	†154	335	6,427	6,053
Thames	1,872	2,038	4	4	0	0	1,876	2,042
Southern	2,748	2,648	191	191	281	281	3,220	3,120
Wessex	1,036	1,036	570	570	20	20	1,626	1,626
South West	1,221	1,221	196	196	8	8	1,425	1,426
Total	21,102	22,981	4,923	3,420	583	820	26,608	27,221

† Estimate. \* Tidal and estuary embankments..

## New Defences Constructed

Region	Main River (km)		Tidal (km)		Sea Defence (km)		Total (km)		Planning Applications Dealt With	
									Total	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	2	1	1	0	0	0	3	1	1,533	1,837
Yorkshire	11	6	2	10	0	0	13	16	7,840	8,539
North West	13	4	0	1	1	1	14	6	5,417	7,662
Welsh	2	3	0	0	1	0	3	3	9,974	8,510
Severn Trent	10	19	8	2	0	3	18	24	12,544	7,225
Anglian	14	11	28	17	10	8	52	36	*58,195	14,175
Thames	84	51	24	1	0	0	108	52	3,743	3,391
Southern	3	0	3	4	6	6	12	10	3,060	3,105
Wessex	7	3	3	5	2	5	12	13	2,974	2,990
South West	3	1	2	2	0	1	5	4	3,541	3,880
Total	149	99	70	42	21	24	240	165	108,821	61,114

\*91/92 figure represents all applications examined. All 92/93 figures represent applications where written comments were given to Planning Authorities.



# FISHERIES

## Licences Sold

Region	Rod (No)		Net (No)		Total (No)		Licence Enforcement	
							Successful Prosecutions	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	44,370	29,200	191	176	44,561	29,376	184	285
Yorkshire	111,000	97,870	57	52	111,057	97,922	321	624
North West	109,970	92,455	232	232	110,202	92,687	775	966
Welsh	92,201	49,481	356	322	92,557	49,803	428	597
Severn Trent	303,053	196,393	810	853	303,863	197,246	1,072	847
Anglian	275,938	146,958	1,246	1,130	277,184	148,088	1,199	683
Thames	210,000	115,000	160	233	210,160	115,233	943	902
Southern	118,893	61,660	6	6	118,899	61,666	126	360
Wessex	63,269	47,500	317	300	63,586	47,800	325	298
South West	34,433	16,732	97	97	34,530	16,829	36	84
Total	1,363,127	853,249	3,472	3,401	1,366,599	856,650	5,409	5,646

# Fish Kills and Fish Rescues

Region	Fish Kills Total (No.)		Fish Kills Attended (No.)		Fish Rescues (No.)		Fish Saved (No. thousands)	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	24	18	24	18	1	3	0.6	2
Yorkshire	164	148	106	138	40	28	45	42
North West	103	119	103	119	33	64	100	145
Welsh	70	69	70	69	12	10	25	20
Severn Trent	239	168	239	168	38	31	40	20
Anglian	196	214	196	214	61	60	182	223
Thames	93	84	93	84	69	46	60	20
Southern	99	83	99	83	44	23	100	140
Wessex	37	30	29	25	9	6	150	40
South West	180	33	180	9	17	9	82	14
Total	1,205	966	1,139	927	324	280	785	666

# Fishery Maintenance, Improvement and Development

Region	Fishery Protection Vessels		Fishery Improvement Structures Built		Fixed Traps Management/Scientific	
	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	1	1	5	6	1	1
Yorkshire	1	2	0	2	1	1
North West	6	6	0	3	3	4
Welsh	12	12	12	0	11	12
Severn Trent	0	0	6	27	0	1
Anglian	0	0	12	28	0	0
Thames	3	3	11	6	3	3
Southern	1	1	4	1	2	2
Wessex	5	5	3	6	0	0
South West	6	6	9	7	5	5
Total	35	36	62	86	26	29

# Total Net Catches

Region	Salmon (No.)		Sea Trout (No.)		Total (No.)	
	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	22,525	18,567	24,869	23,073	47,394	41,640
Yorkshire	2,904	1,557	15,784	8,996	18,688	10,553
North West	4,540	3,143	2,942	3,180	7,482	6,323
Welsh	3,033	2,895	2,661	1,646	5,694	4,541
Severn Trent	1,661	2,117	0	0	1,661	2,117
Anglian	34	12	2,293	2,955	2,327	2,967
Thames	0	0	0	0	0	0
Southern	46	38	50	0	96	38
Wessex	167	188	313	246	480	434
South West	2,730	5,333	1,950	1,647	4,680	6,980
Total	37,640	33,850	50,862	41,743	88,502	75,593

Total Rod Catches  
Not Available at  
Time of Going to Print

### Fish Reared by NRA

Region	Salmonid (No)		Non-Salmonid (No)		Total (No)	
	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	945,249	1,130,000	0	0	945,249	1,130,000
Yorkshire	609,000	489,190	0	0	609,000	489,190
North West	2,759,680	1,922,900	102,500	305,500	2,862,180	2,228,400
Welsh	640,000	607,500	0	0	640,000	607,500
Severn Trent	100,000	50,000	189,250	207,000	289,250	257,000
Anglian	1,500	0	480,000	325,000	481,500	325,000
Thames	179,105	87,000	36,000	42,000	215,105	129,000
Southern	89,000	92,800	26,000	59,900	115,000	152,700
Wessex	0	0	5,600	0	5,600	0
South West	307,000	205,000	0	0	307,000	205,000
Total	5,630,534	4,584,390	839,350	939,400	6,469,884	5,523,790

### Fish Stocked by NRA

Region	Salmonid (No.)		Non-Salmonid (No.)		Total (No.)	
	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	495,249	632,900	0	2,500	495,249	635,400
Yorkshire	114,000	165,666	75,000	31,785	189,000	197,451
North West	2,025,858	2,198,664	366,539	91,975	2,392,397	2,290,639
Welsh	660,000	630,000	5,000	5,000	665,000	635,000
Severn Trent	100,000	50,000	124,250	123,900	224,250	173,900
Anglian	385	6,002	454,126	299,685	454,511	305,687
Thames	153,605	217,000	115,322	99,600	268,927	316,600
Southern	459,000	822,900	144,000	192,900	603,000	1,015,800
Wessex	5,200	0	76,400	66,160	81,600	66,160
South West	164,500	104,300	0	0	164,500	104,300
Total	4,177,797	4,827,432	1,360,637	913,505	5,538,434	5,740,937

### CONSERVATION

#### Capital Schemes Incorporating Conservation Work

Region	Capital Schemes		Surveys								Total Surveyed	
			River (km)		Estuary (km)		Coast		Other			
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	1	2	450	440	0	0	0	0	0	0	450	440
Yorkshire	24	35	90	250	125	75	0	0	0	0	215	325
North West	19	7	800	600	30	20	12	15	0	0	842	635
Welsh	1	10	372	803	38	8	1	2	0	4	411	817
Severn Trent	75	98	735	871	0	0	0	0	0	0	735	871
Anglian	250	250	2,000	2,000	75	450	300	150	0	400	2,375	3,000
Thames	98	103	365	763	0	0	0	0	0	0	365	763
Southern	6	6	393	352	0	0	0	0	0	0	393	352
Wessex	13	5	89	314	0	0	0	3	0	0	89	317
South West	9	20	1,900	700	130	21	160	25	32	25	2,222	771
Total	496	536	7,194	7,093	398	574	473	195	32	429	8,097	8,291

### NAVIGATION

#### Licences Issued and Enforcement

Region	Licences In Force (No)		Licence Checks (No)		Licences Complying (No)		Licences Complying (%)	
	91/92	92/93	91/92	92/93	91/92	92/93	91/92	92/93
Northumbria	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Yorkshire	107	121	N/A	N/A	N/A	N/A	N/A	N/A
North West	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Welsh	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Severn Trent	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Anglian	5,838	5,327	4,235	3,425	3,909	3,131	92.3	91.4
Thames	31,870	31,975	793,475	748,437	791,525	746,704	99.8	99.8
Southern	2,650	2,520	13,000	6,800	12,600	6,575	97	96.7
Wessex	0	0	N/A	N/A	N/A	N/A	N/A	N/A
South West	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Total	40,465	39,943	810,710	758,662	808,034	756,410	99.7	99.7



## VIII Glossary

<b>BCU</b>	British Canoe Union
<b>BGS</b>	British Geological Survey
<b>BWB</b>	British Waterways Board
<b>DoE</b>	Department of the Environment
<b>FWAG</b>	Farming and Wildlife Advisory Group
<b>HMIP</b>	Her Majesty's Inspectorate of Pollution
<b>IoH</b>	Institute of Hydrology
<b>IPAS</b>	Integrated Personnel and Accounting System
<b>IS</b>	Information Systems
<b>MAFF</b>	Ministry of Agriculture, Fisheries and Food
<b>MOU</b>	Memorandum of Understanding
<b>NAO</b>	National Audit Office
<b>NERC</b>	Natural Environment Research Council
<b>NSA</b>	Nitrate Sensitive Area
<b>OFWAT</b>	The Office of Water Services
<b>PAC</b>	Public Accounts Committee
<b>RAB</b>	Regional Advisory Board
<b>RFAC</b>	Regional Fisheries Advisory Committees
<b>RFDC</b>	Regional Flood Defence Committees
<b>RRAC</b>	Regional Rivers Advisory Committees
<b>RSNC</b>	Royal Society for Nature Conservation
<b>RSPB</b>	Royal Society for the Protection of Birds
<b>SERCON</b>	System for Evaluating Rivers for Conservation
<b>SPA</b>	Special Protection Area
<b>SSSI</b>	Site of Special Scientific Interest
<b>SWQOs</b>	Statutory Water Quality Objectives
<b>WCA</b>	Welsh Canoeing Association





