



NATIONAL RIVERS AUTHORITY

CORPORATE PLAN

1990/1991

ENVIRONMENT AGENCY



099450

PUBLISHED
SEPTEMBER 1990



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

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NATIONAL RIVERS AUTHORITY

CORPORATE PLAN

1990/1991

September 1990

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FOREWORD

Public interest in the environment, and especially water, has never been greater. The passing of the 1989 Water Act has increased public awareness about the state of our rivers and coastal waters.

Issues such as :

- pollution of rivers and bathing beaches by industrial and sewage effluents,
- the impact of acid rain and blue-green algal blooms,
- reduced river flows due to over-abstraction in some catchments,
- waste tips and contaminated land polluting water supplies,
- the likelihood of increased flooding due to rising sea levels caused by the "greenhouse effect",
- illegal salmon fishing,

are of great concern to the public.

The Authority, charged with statutory duties in respect of water resources, pollution control, flood defence, fisheries, recreation, conservation, and navigation has much to do in its role as 'Guardian of the Water Environment' in order to protect and improve the state of our rivers, coastal and other waters for the benefit of society as a whole.

This, the Authority's first Corporate Plan, sets out our intentions and how we will use resources to pursue our mission during 1990/91. The Plan has been drawn up by the Authority's Board, Executive, and many staff in its Head Office and ten Regions. Whilst primarily an internal management tool, it has also been produced for discussion with Government, during the course of the Public Expenditure Survey, about the financial requirements of the Authority.

The Authority recognises that the full resource requirement as set out in this Plan would represent a very substantial increase on present levels of spending, and it may not be possible to achieve this level in the immediate future. But they hope that the Government will accept the objective should be to build up to this level of activity as resources become available.

The public wants and expects a clean and properly managed water environment. As the largest environmental protection agency in Europe, the NRA will seek to achieve this aim. The NRA recognises there are other organisations involved in the management of the water environment and it will seek to co-operate with these bodies in carrying out its statutory duties.



Lord Crickhowell
Chairman



Dr J C Bowman
Chief Executive

EXECUTIVE SUMMARY

INTRODUCTION

The National Rivers Authority (NRA) was established by the 1989 Water Act as a Non-Departmental Public Body with statutory responsibilities for water resources, pollution control, flood defence, fisheries, recreation, conservation, and navigation in England and Wales.

The NRA is funded through a variety of charges (water abstraction charges, flood defence levies, rod and net fishing licence fees, navigation fees) and government grants from the Department of the Environment, Ministry of Agriculture, Fisheries and Food, and Welsh Office. Currently charges account for 70% of the Authority's Income and Government grants 30%.

This is the Authority's first Corporate Plan. It sets out the Authority's aims, objectives and targets and describes how the Authority will use its resources over the next four years to succeed in its mission as "Guardians of the Water Environment".

The Plan is divided into five main sections:

- background information on the NRA
- the Authority's approach to corporate planning
- the Authority's key objectives
- programmes and plans for each core function and support service
- use of resources and future performance.

Throughout the plan, considerable emphasis is placed upon the Authority's varying inheritances from the ten Regional Water Authorities (RWAs). This has presented many opportunities and challenges as the Authority strives to become a fully integrated national body.

The Authority assumed its responsibilities on September 1st 1989. Consequently, this plan, which has been prepared from the consolidation of ten regional plans and one Head Office plan, has been completed in a time period considerably less than in a normal planning year and without the framework of a long term corporate strategy. Strategies for the core functions and support services will be formulated and consolidated into an overall corporate strategy in the first plan year. In the longer term, regional planning will be developed through the use of integrated catchment management plans.

It is important to note that the Plan is based on the Authority's existing duties and powers under the 1989 Water Act. It takes no account of additional responsibilities, not least those arising from Integrated Pollution Control (IPC), likely to be placed on the Authority by the Environmental Protection Bill currently before Parliament. Similarly, the Government's proposed

1990 White Paper on the Environment may have implications for the NRA; such implications are not considered in this plan.

KEY OBJECTIVES

The Authority's key objectives for its core functions in 1990/91 as agreed by the Board are:

Water resources

- Formulating a sustainable policy and plans for developing and augmenting resources to meet demands.
- Formulating and implementing an aquifer protection policy.
- Developing a policy to overcome low flows problems caused by over-abstraction in various catchments.
- Developing licensing, determination, enforcement and charging policies, charging databases and billing systems.

Pollution control

- Undertaking the 1990 Water Quality Survey and formulating Water Quality Objectives and Water Quality Standards.
- Improving procedures for responding to and dealing with pollution emergencies.
- Developing charging policy, including discharge databases and billing systems to generate income.
- Developing consent and compliance, and enforcement policies.
- Increasing the use of automated instrumentation for sampling and analyses.
- Undertaking increased pollution prevention activities and initiating site-specific clean up campaigns eg litter.

Flood defence

- Developing national planning and management systems for flood defence works.
- Formulating policies for tidal and sea defence works in response to rising sea levels.
- Extending warning systems and improving responses to flood emergencies.

Fisheries

- Assessing the status of fish stocks.
- Formulating policies to maintain, improve, develop, restore and rehabilitate fisheries.
- Reviewing licensing, regulatory, and charging policies, especially seeking additional income through S.28 orders for assessed fisheries.
- Developing response policies on actions following fish kills and disease outbreaks.
- Developing methods to prevent illegal fishing and to protect fisheries.

Recreation

- Formulating a recreation policy incorporating the statutory duty to promote recreation.
- Implementing the Code of Practice on access, conservation and recreation.
- Producing management plans for NRA controlled sites.
- Reviewing charging and regulatory practice and procedures.

Conservation

- Formulating a conservation policy.
- Implementing the Code of Practice on access, conservation and recreation.
- Reviewing and developing river corridor survey methodology for increased application in relation to river management generally.

Navigation

- Formulating a navigation policy.
- Reviewing licensing, charging and regulatory policies.

THE RESOURCES POSITION

The work undertaken since Vesting has been the most detailed and rigorous policy, manpower and financial planning exercise undertaken since the idea of creating the Authority was first mooted. It therefore presents a far more accurate picture of the nature and magnitude of the tasks facing the Authority, and the resources needed to tackle them, than any of the pre-Water Act estimates prepared by the NRA Advisory Committee (NRAAC).

In early 1989 the DoE, with advice from the NRAAC, drew up budgets of expenditure and income, including estimates of the need for grant-in-aid (GIA) for the NRA for the financial years 1990/91, 1991/92 and 1992/93. These budgets were based on information supplied by the ten former Water Authorities about the resources and operational arrangements they intended to pass to the NRA on 1st September 1989. They were also based on the draft Water Bill, which indicated the likely responsibilities and duties to be given to the NRA when established. The NRAAC budgets were modified through the spring and summer of 1989 as the Water Bill progressed through Parliament and were used in the 1989 Public Expenditure Survey (PES). In late 1989, the Government announced the GIA for the NRA: this was £93.25m, £83.24m and £71.64m for 1990/91, 1991/92 and 1992/93 respectively.

The Water Bill received Royal Assent in July 1989. The NRA came into being on 10th July and inherited ten Regional Executives from the ten Water Authorities on 1st September of that year. At that stage, the full range of the NRA's responsibilities, and the resources available

to carry them out, became clear. From that moment therefore, it was possible to make a proper assessment of the GIA need. In the late autumn of 1989, with this new information available, a major re-appraisal of the financial forecasts for the NRA indicated the need for a larger GIA in 1990/91. In consequence the Government announced in July 1990 that the NRA's GIA may rise to £104.25m in 1990/91, if required.

In the normal course of events, an NDPB would develop its Corporate Planning on the basis of the outturn for the previous year and the current year budget together with the baseline budgets for the following two years. It would expect to take a strategic long-term view of its aims, objectives, targets and resource needs, together with a more detailed and precise picture of the coming three years. The NRA decided that in the light of the circumstances described above the NRAAC budgets did not provide a sound basis from which to build future budgets. On this one occasion, therefore, the NRA have developed a Corporate Plan and associated financial plans 'ab initio', taking full account of Government requirements of the NRA, the resources inherited from the former Water Authorities and the GIA for 1990/91.

The Authority recognises that its planning is based on its own assumptions about the thoroughness with which it should carry out its aims and objectives and, in particular, about the timescales over which it should achieve them. Clearly it is possible to vary the number of aims and objectives and the timescales for achieving them and such variations will affect budgets. As a new organisation, the NRA has set out what it believes to be both necessary and manageable in order to carry out its aims and objectives. It realises that its proposals have to be considered alongside the other aspirations in society which are dependent on Government funds, and that Government and Parliament might take a different view in the overall setting of priorities.

The financial summary (Table FS1) shows the GIA estimated as needed by the NRA for its DoE-financed core functions (ie. excluding flood defence which is given in Table FP1 on page 98). Column 2 shows the outturn deficits for 1989/90 for the core functions and other expenditure items. Column 3 shows the budget use of the GIA in 1990/91 including monies for restructuring costs, buy-outs of staff benefits and unfunded pensions. Columns 4, 5 and 6 show the budget needs for GIA to meet the levels of activity proposed in this plan.

FINANCIAL SUMMARY 1989/90 - 1993/94 (Expressed as Deficits £'000 on DoE accounts only)					Table FS1
COLUMN 1	2	3	4	5	6
CORE FUNCTIONS	ACTUAL 1989/90	PLANNED 1990/91	PLANNED 1991/92	PLANNED 1992/93	PLANNED 1993/94
NET WATER RESOURCES	(16896)	(3301)	(2125)	(2786)	(3232)
POLLUTION CONTROL	47601	52983	60569	52214	50732
FISHERIES	7598	10195	13592	14049	13757
RECREATION	2332	1314	1958	3183	3031
CONSERVATION	}	1278	1626	2080	2045
NAVIGATION		6329	7433	8531	8828
	44641*	68798	83058	77271	75161
R&D	**	5100	9710	12193	14677
GIA NEEDED FOR CORE FUNCTIONS	44641	73898	92763	89469	89838
CAPITAL RESTRUCTURING	24072	14136	8557	191	1102
BUY OUT OF BENEFITS	-	3000	5000	5000	-
ADDITIONAL OFFICES	-	1466	409	437	459
ADDITIONAL STAFF	-	200	1308	1400	1470
IS STRATEGY PRE- IMPLEMENTATION STUDY	-	1300	-	-	-
UNFUNDED PENSIONS	5591	10250	11173	11955	12552
GIA NEEDED FOR RE-ORGANISATION	29663	30352	26447	18983	15583
TOTAL GIA NEEDED	74304	104250	119210	108447	105421
INDICATIVE GIA	74304	104250	83240	71641	73432
VARIANCE	-	-	35970	36806	31989

*Includes activities funded through Environmental Service Charge of £20.980k.

** Re-charged across core functions.

Two general assumptions have been made in preparing the budgets:

1) The Authority has been required to include assumptions about the future level of inflation and 9%, 7% and 5% have been assumed for the years 1991/92, 1992/93 and 1993/94.

2) Income from application and annual charges for discharges has been estimated as £10.0m, £18.7m and £19.7m respectively for 1991/92, 1992/93 and 1993/94. These estimates assume that Government approval for such charges will be forthcoming during 1990/91. It will be seen that income is expected to rise from a relatively low level in 1991/92, and that a full charging scheme is unlikely to generate substantial income, and therefore significantly reduce the Authority's GIA requirements, until 1993/94.

Against this background, the Authority has been examining its plans in order to determine the most urgent priorities and maximise the opportunities for efficiency savings and for generated income. A Corporate Plan that is derived primarily from allocated resources has the advantage that it imposes a very firm financial discipline and forces the organisation to do only what can be afforded. The NRA however has to fulfil statutory obligations that derive from the Water Act and will arise from the Environmental Protection Bill, and also has to carry out commitments under EC directives and as a result of undertakings given by Ministers. In addition, further demands have been made by Parliamentary Select Committees such as increased monitoring of bathing beaches. The extent to which these obligations can be fulfilled, in whole or in part, during the period of the Public Expenditure Survey is dependent on adequate funds being made available.

In addition to the budgets based on detailed targets as given in the Plan, there are several developing areas with significant budgetary implications which should be highlighted. The Authority has begun the task of identifying efficiency savings in all its activities, and in its next Plan will set a specific Authority-wide target for achieving efficiency savings. Central to these developments will be continued progress on the development of an **Information Systems Strategy** to replace existing inadequate and incompatible systems, **automated instrumentation** (which the NRA strongly pressed for during the passage of the Water Bill) together with **Marine Craft** and **Mobile Radio Systems** to improve efficiency. These developments relate

particularly to improvements in water quality but also to the NRA's other functions.

In addition, work will be needed on **Contaminated Land** which is a significant and worrying problem. The NRA is not yet clear about the way in which Government wishes to address the correction of past practice in waste dumping. However there is no doubt that major expenditure will be needed - and NRA involvement will be required - to prevent pollution of water resources from land on which waste has been dumped for hundreds of years.

The NRA is also placing priority on remedial work on low flows caused by **Over-abstraction**, river leakage and other causes. These costs are ultimately chargeable to the water resources account but could involve substantial capital outlays which could not reasonably be absorbed into charging schemes as incurred and under present arrangements would have to be funded by GIA. However the NRA cannot borrow for this purpose.

The table below (FS2) gives an indication of the estimated capital expenditure costs of such requirements over the Public Expenditure Survey Period.

Detailed programmes based on these estimates are critically dependent on decisions outside the Authority's control. It is clear however that if it is enabled to make a substantial start on its capital programmes, the Authority will be able to make significant progress towards achieving its objectives and fulfilling the responsibilities it has been given.

ESTIMATED ADDITIONAL CAPITAL FUNDING NEEDED 1991/92 TO 1993/94

TABLE FS2

	£m 1991/92	1992/93	1993/94
INFORMATION SYSTEMS	10.9	11.7	12.3
AUTOMATED INSTRUMENTATION FOR WATER QUALITY WORK	5.4	5.8	6.1
MARINE CRAFT FOR MONITORING COASTAL WATERS	1.1	1.2	1.3
PRIVATE MOBILE RADIO SYSTEMS FOR EMERGENCIES	1.1	1.2	1.3
CONTAMINATED LAND	10.9	11.7	12.3
LOW FLOWS/OVER-ABSTRACTION	5.5	5.9	6.2
TOTAL	£m 34.9	37.5	39.5

NATIONAL RIVERS AUTHORITY
CORPORATE PLAN
1990/1991

INTRODUCTION

September 1st 1989 represented a turning point in the history of environmental protection in England and Wales. On that date, the National Rivers Authority (NRA) fully took up its duties. This section describes the establishment of the Authority, its statutory duties and powers, and its organisation and management. It then goes on to briefly outline the Authority's inheritance from the Regional Water Authorities, and some of the challenges and opportunities facing the Authority immediately after its creation.

ESTABLISHMENT

The concept of a new national body with responsibility for rivers, estuaries and inland coastal matters arose out of the debate about a Government White Paper on the "Privatisation of the Regional Water Authorities (RWAs) in England and Wales" (Cmnd 9734 February 1986).

In early 1987 the Government announced its intention to create a new public body, the National Rivers Authority (NRA), which would inherit the main regulatory and water management functions of the RWAs, leaving the utility roles of water supply and sewage services for privatisation.

The proposal was subsequently promulgated in more detail in "The National Rivers Authority: The Government's proposals for a Public Regulatory Body in a Privatised Water Industry" (DoE, MAFF and Welsh Office, July 1987).

The Public Utility Transfers and Water Charges Act 1988 permitted the RWAs to reorganise themselves into shadow utility and regulatory divisions.

Following this, came the creation in August 1988 of the National Rivers Authority Advisory Committee (NRAAC) to advise the Government on the schemes of organisation and transfer, and the management of the proposed new National Rivers Authority.

With the passing of the 1989 Water Act, the National Rivers Authority came into being as a Non Departmental Public Body (NDPB) on 10th July 1989.

Initially it comprised only a small Head Office of 50 staff in London with 'shadow' NRA regional units in each Regional Water Authority area.

The regional units, with over 6000 staff and combined annual expenditure of over £300m, formally became part of the NRA on its vesting day on 1st September 1989.

STATUTORY DUTIES AND POWERS

The Authority has been charged with statutory duties and powers in relation to water resources, pollution control, flood defence, fisheries, recreation, conservation and navigation along with various other functions.

Whilst most of the Authority's duties and powers are exercised in respect of inland waters in England and Wales, it also has substantial responsibilities for the marine environment around the coast of England and Wales (see Figure 1). For pollution control and fisheries purposes it has duties and powers out to distances of three nautical miles and six nautical miles respectively, the six miles being for salmonid protection. For flood defence it is responsible for a large number of sea defences (but not coastal protection which falls within the remit of local authorities).

The Authority's sponsor department is the Department of the Environment. It also has policy links with the Ministry of Agriculture, Fisheries and Food (for flood defence and fisheries) and the Welsh Office.

As well as new duties, it has also inherited other duties and powers under earlier legislation such as the 1963 Water Resources Act, 1975 Salmon and Freshwater Fisheries Act, and 1976 Land Drainage Act. Further details are given in "The Law of the National Rivers Authority" (Howarth 1989) and later in this Plan to place the Authority's aims, objectives and targets in context.

The Authority also has responsibility for implementing a number of Statutory Instruments, Orders, Notices and Directions relating to the 1989 Water Act. Various EC Directives on the aquatic environment eg Bathing Water Quality, Surface Water Quality, and Freshwater Fishlife also strongly influence its work.

ORGANISATION AND MANAGEMENT

The Authority has a Head Office and ten Regions with a matrix system of management. (See Figure 2)

The Board of the Authority comprises the Chairman appointed by the Secretary of State for the Environment, the Chief Executive and 13 Board members (10 appointed by the Secretary of State for the Environment, one by the Secretary of State for Wales and 2 by the Minister of Agriculture, Fisheries and Food). Its main role is policy formulation and strategic business management.

Ten of the Board members have responsibilities as Regional Board Members and chair a Regional Advisory Board (RAB) in each Region whose role is to advise the Regional General Manager. The RABs' other members are the Regional General

NRA OFFICES Figure 1**Head Office**

30-34 Albert
Embankment
London, SE1 7TL
Tel: (071) 820 0101

North West Region

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

Welsh Region

Rivers House Plas-yr-Afon
St. Mellons Business Park
St. Mellons
Cardiff CF3 0EG
Tel: (0222) 770 088

Severn Trent Region

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

— — — England/Wales Border

**Northumbria Region**

Eldon House
Regent Centre
Gosforth
Newcastle-on-Tyne
NE3 3UD
Tel: (091) 213 0266

Yorkshire Region

21 Park Square South
Leeds LS1 2QG
Tel: (0532) 440191

Anglian Region

Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 0ZR
Tel: (0733) 371 811

South West Region

Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: (0392) 444 000

Wessex Region

Rivers House
East Quay
Bridgwater TA6 4YS
Tel: (0278) 457 333

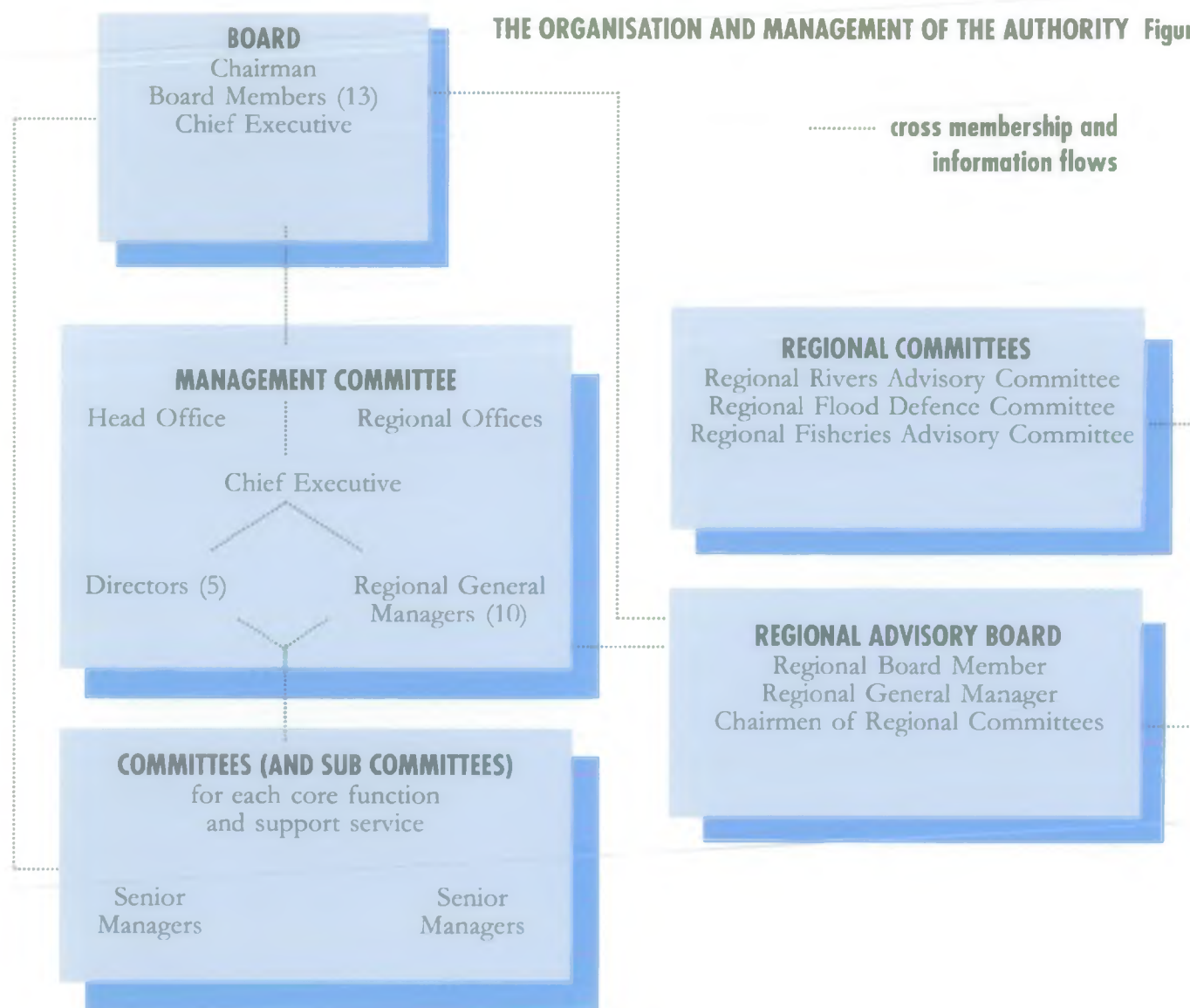
Southern Region

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: (0903) 820 692

Thames Region

3rd Floor
Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: (0734) 535 000

THE ORGANISATION AND MANAGEMENT OF THE AUTHORITY Figure 2



Manager and chairmen of the three statutory Regional Committees in each Region. In addition there is an Advisory Committee for Wales to advise the Secretary of State on Welsh issues. The remaining three Board members have national specialisations and are involved in various committees developing national policy.

The Management Committee comprises the Chief Executive (as Chairman), Head Office Directors and the ten Regional General Managers. Its role is to manage the business of the Authority, propose policy for consideration by the Board, and implement the decisions of the Board.

There are also various other committees and sub-committees for each NRA function which prepare papers for consideration by the Authority's Management Committee and Board.

The Authority's Head Office, which is in London, houses the

Chairman, Chief Executive and five Directors (with responsibilities for Technical, and Scientific matters, Corporate Affairs, Personnel and Finance) in a central policy unit with 60 members of staff. Within each Directorate there are Senior Managers with national policy responsibility for the Authority's core functions and support services.

The majority, over 6000, of the Authority's staff are based in ten Regions (see Figure 1) and are primarily concerned with the implementation of the NRA's policies. Within each Region there are Regional Headquarters, and various Divisional, Area or Local Offices, along with laboratories, workshops, depots and other operational facilities.

Each Region is managed by a Regional General Manager who reports directly to the Chief Executive. Reporting to each Regional General Manager are various Senior

Managers with responsibility for managing the core functions and support services in the Region.

Each Region is organised differently for each function and support service, reflecting the past structure of its 'parent' Regional Water Authority and the advice of the NRA Advisory Committee.

Generally, each Region has Senior Managers with responsibility for water resources, pollution control or environmental quality, flood defence, fisheries, recreation and conservation, administration, finance, legal matters and personnel services, and public relations.

THE CHALLENGE

At Vesting, on 1st September, the Authority inherited ten Regions each with different:

- river, estuarial and coastal water environmental management problems.
- assets, facilities, procedures, working methods, levels of activity and financial systems.
- staffing structures and numbers (up to ten fold differences) and organisational arrangements.

Amongst the many challenges facing the Authority soon after its establishment are :

- interpreting the 1989 Water Act and other UK and EC legislation influencing its work,
- uniting the ten Regions into a "seamless" national body,
- developing new management information systems,
- continuing to operate past practices and procedures, whilst formulating and implementing new policies.

There are also many opportunities including :

- enthusiastic staff with expertise and experience,
- the regional variations in practice from which to select good practice for national adoption or application,
- the possibility of efficiency savings through creation of centres of excellence, and
- scope for introducing new technology and installation of networked integrated management information systems.

CORPORATE PLANNING IN THE NRA

This section outlines the Authority's philosophy with respect to the corporate planning process, the background to corporate planning in the NRA, details of how this Plan was formulated, and how the Authority intends to develop its corporate planning to improve its effectiveness, efficiency and economy.

THE NRA'S PHILOSOPHY

The primary reason for the Authority undertaking corporate planning is for its own internal management.

It also has a statutory duty under the Water Act and its draft Financial Memorandum to undertake corporate planning, and its sponsor Department, the DoE has provided it with draft guidance (Corporate Planning - A Consolidated Guide for Sponsored Bodies, DoE, February 1989) which covers the Authority's input to the Public Expenditure Survey (PES).

Extract from Financial Memorandum

"The Authority shall introduce and maintain a system of corporate planning covering all the functions for which it is responsible and all its income and expenditure. The Authority shall submit its corporate plan to the Department by 1st April each year. The plan will:

- set out the Authority's aims, objectives and targets and comment on any change to them.
- review progress against a previously agreed strategy and against previously set targets; (Note: only limited review will be possible in the first (1990) plan).
- make proposals for the Authority's income (having regard to likely levels of grant-in-aid) and gross expenditure over the following three complete financial years, together with planned outputs.

The Department will send copies of the plan to the Ministry and the Welsh Office. In drawing up its plan the Authority shall have regard to any guidance that may be issued by the Department."

The Authority is strongly committed to the management discipline of corporate planning for the benefits it brings in terms of focusing the use of its resources to achieve its mission and aims.

The discipline involved includes:

- assessing the nature of the challenge facing the Authority,
- defining its mission and aims,
- setting objectives and targets,
- determining strategies, policies, priorities, and programmes of work to achieve the aims,
- allocating manpower and financial inputs,
- identifying outputs and performance measures,
- monitoring and analysing performance,
- reviewing and reporting achievement, and
- re-assessing the nature of the challenge facing the Authority.

The Authority believes that corporate planning provides an important strategic focus for all its activities and staff and a clear but not inflexible framework for day to day management. It fully recognises that for corporate planning to be successful it requires effective inputs and commitment from the Chairman and Board concerned with strategic matters and policy, Regional Committees, the Directors and Regional General Managers, to personnel on the ground dealing with day to day operations.

It is also of value in helping underpin the Authority's relationship with the Department of the Environment, Ministry of Agriculture, Fisheries and Food (in respect of flood defence and fisheries), Welsh Office and Treasury, as well as providing the factual basis for Ministerial discussions about the grant aid needs of the Authority, and input into the annual Public Expenditure Survey.

For the purposes of PES and the Authority's statutory annual accounts, its "DoE functions" are water resources, pollution control, fisheries, recreation, conservation, and navigation; and its "MAFF function" is flood defence. Vote provision in the PES for grant-in-aid to the Authority is on Class VIII, Vote five for its DoE functions and vote three for capital grant for its flood defence function.

PROCESS 1989/90

After its creation on 10th July 1989, one of the first tasks of the Authority's Board was to agree its Mission Statement and Aims. These are reproduced on the inside cover of the Plan.

Subsequently, at the end of August, a Corporate Planning Policy Group was established to take forward corporate planning within the Authority.

The Group, which meets monthly, is chaired by the Chief Executive with representation from the Board, Head Office Directorates, and the Regions. Its terms of reference are as follows:

- to act as a steering group for all aspects of corporate planning policy for the Authority,
- to make proposals on the philosophy, methodology, timescale, content, preparation, and production of the Authority's corporate plan and strategies,
- to facilitate liaison between Head Office and the DoE, Welsh Office, and MAFF; and between Head Office Directorates, Function Management Groups, and Regions; over all matters in relation to corporate planning policy,
- to consider the philosophy and priorities for allocating

financial and manpower resources within the corporate plan and strategies,

- to advise on the development of management information systems for corporate plan and strategy preparation and production,
- to advise on the implementation of the corporate plan and strategies and links with job appraisal and performance evaluation schemes,
- to undertake overall performance monitoring in respect of the corporate plan and strategies and to advise on the contents and production of the Annual Report.

Within the Authority, overall responsibility for corporate planning, performance monitoring and reporting at national level lies within the Directorate of Corporate Affairs through a Corporate Planning Coordinator and Assistant who liaise closely with the Chief Executive, Directors and Regional General Managers over corporate policy, personnel and financial planning.

In the Regions, responsibility for corporate planning varies reflecting each Region's different organisation. Three regions (Anglian, Welsh and Thames) have discrete planning sections, three regions (Northumbria, Wessex and South West) have it as a finance function, one region (Severn Trent) has no discrete section responsible but all managers are involved, in one region it is a flood defence function (Southern), one region an Information Systems function (Yorkshire), and one region an Administration function (North West).

The Board have also agreed that the Authority's Corporate Planning should :

- broadly adopt the methodology and corporate planning terminology in the DoE corporate planning guidelines,
- embrace all core functions and support services including personnel and finance,
- be based on an integrated system of strategic and operational planning (see Figure 4),
- be closely linked with performance monitoring, development of new management information systems, research and development, and the production of monthly progress reports from the Regions and the Authority's Annual Report,
- aim at producing high quality, informative documents and summary versions for staff, Government, other organisations and the general public.

PRODUCTION OF THIS PLAN

Work on this Plan began in September 1989 through the preparation of detailed Guidelines for Regions to produce Regional Plans. These were issued to Regions in early October 1989. Draft Regional Plans were produced by early November and were circulated to the Board and Management Committee. During December the data within the Regional plans were consolidated and aggregated by Head Office Senior Managers into a draft of this document for consideration by the Management Committee and the Board.

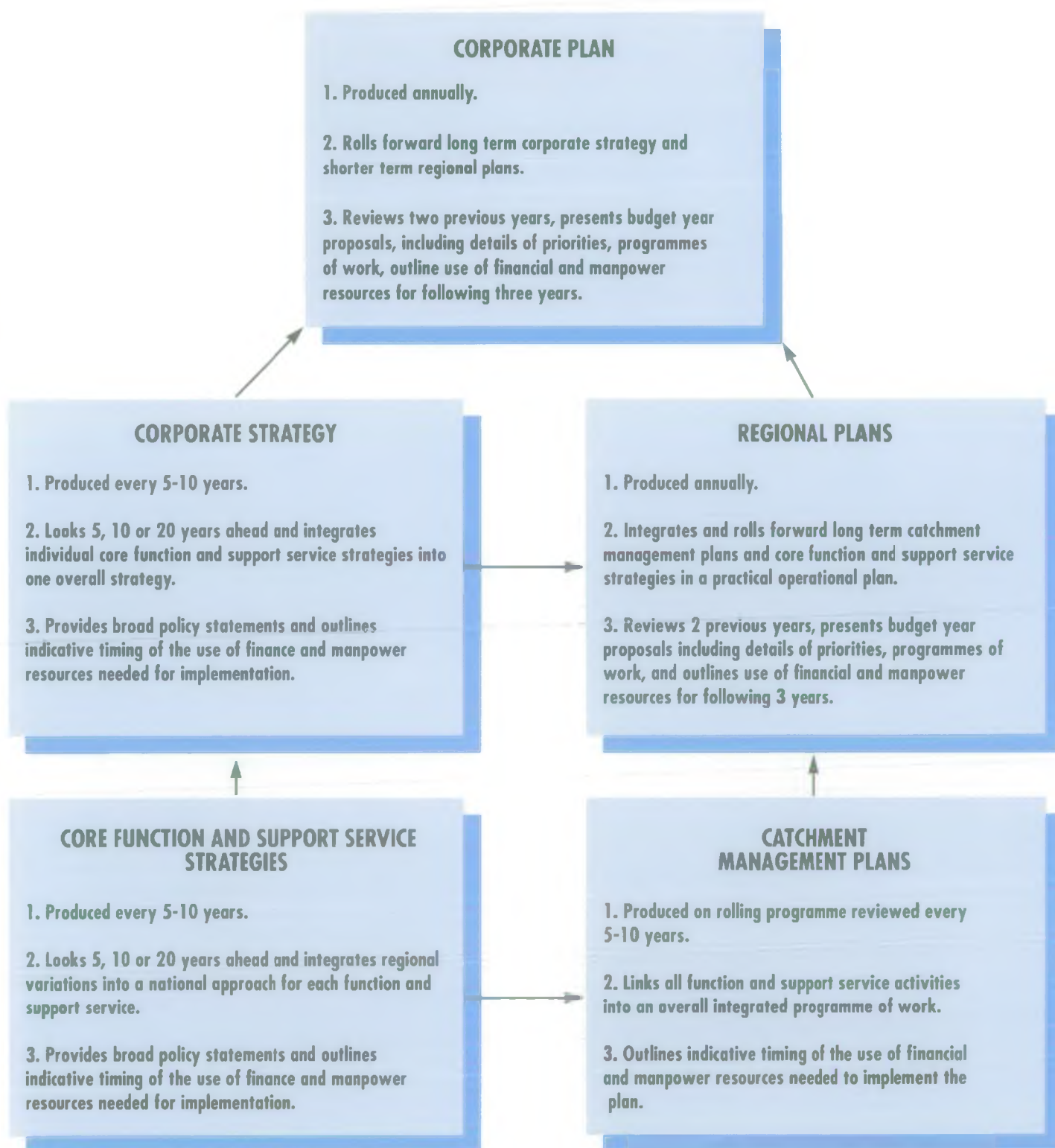
After the Board agreed the Authority's key objectives, the Regional Plans (and a Head Office plan) were rigorously appraised through a "star chamber" process involving the Chairman and several Board members, Chief Executive, Directors, and Regional General Managers and their Management Teams in order to harmonise the Regions' plans with the Authority's overall Corporate Plan and phase expenditure accordingly.

Subsequently, a number of iterations took place between the Regional (and Head Office) Plans and this Plan, particularly in relation to finance and manpower and known grant aid in 1990/91 and beyond, to target the use of resources towards achieving the Authority's key objectives. Further drafts of the Plan were considered and approved by the Board before submission to the DoE.

As well as involving the Board and Management Committee, it is estimated more than 500 senior staff were involved in this Plan's preparation. It is important to note however that this Plan is based on the consolidation of ten Regional Plans and a Head Office plan only. The other three corporate planning 'building blocks' ie a long term overall corporate strategy, core function and support service strategies, and catchment management plans will be developed in 1990/91 and beyond. Summaries of the Regional Plans have also been published.

Work on the first of the Authority's support service strategies, the Information Systems Strategy, was carried out concurrently, and in close liaison with work on this Plan.

A draft of this Plan was presented to the Secretary of State for the Environment in April 1990. It was subsequently discussed with Ministers in June and July 1990. The material within it is being used by the DoE, MAFF and Welsh Office in the early stages of the 1991 Public Expenditure Survey. The Authority's grant from Government, and hence its ability to fulfil its plans in 1991/92 and beyond, will not become clear until the Chancellor's Autumn Statement to Parliament in November 1990 when indicative levels of Government grant for 1991/92 to 1993/94 will be announced. These figures will then be used in the Authority's next Corporate Planning round.

CORPORATE PLANNING IN THE NRA Figure 3**Notes to Figure 3**

The NRA's corporate planning system is based around five "building blocks". The aim is to produce an overall long term policy-orientated corporate strategy based on strategies for each core function and support service. These strategies will then be utilised in the preparation of annual regional plans and long term catchment management plans. The overall corporate strategy and regional plans will then be rolled forward in each year's Corporate Plan.

PROCESS 1990/91

During 1990/91 particular emphasis will be placed upon:

- reviewing the “successes and failures” of the 1989/90 process and improving the robustness of the methodology for preparing the Authority’s second corporate plan.
- closer integration between the corporate planning process, the PES exercise, (both for DoE and MAFF functions), and financial budgeting.
- producing key elements of the strategies for each core function and support service and an overall corporate strategy.
- finalising and implementing the Authority’s information systems strategy.
- developing the concept and methodology for producing integrated catchment management plans (their increased use in regional planning and financial management will be pursued over a longer time span).
- producing NRA wide output and performance measures for all functions and support services.
- developing management information systems to collect, aggregate and analyse the above for future planning and monthly and annual reporting of performance.

KEY OBJECTIVES FOR 1990/91

This section sets out and summarises the Authority's key objectives for 1990/91 and beyond. It is divided into three sub-sections.

The first section presents corporate objectives which are fundamental to and run through all the Authority's work. The second section presents prioritised key objectives for the Authority's core functions, and the third section prioritised key objectives for the Authority's support services.

All the key objectives are derived from later sections presenting detailed programmes and plans for each core function and support service. Objectives which are considered continuous and which go beyond the Plan period, are differentiated by **bold type** from those considered to be finite and achievable within the Plan period.

It is implicit that the achievement of these key objectives is dependant upon the financial and manpower resource requirements set out later in the Plan.

CORPORATE

Duties and Powers

- **Clarifying and interpreting its statutory duties and powers and promulgating these to all its employees and relevant external bodies.**

- Establishing the Authority's capability to comment on and influence UK and EC environmental legislation.

Policies

- Developing national policies for all its core functions especially for water abstraction and polluting discharges and developing new charging registers, billing systems and enforcement methods.

- **Seeking to influence land use planning in order to prevent undesirable development in river catchments likely to cause flooding or pollution with long term socio-economic consequences.**

- **Improving the Authority's response to pollution, flooding and drought emergencies.**

Corporate Planning

- Producing an overall corporate strategy and individual strategies for each core function and support service.

- **Developing a multifunctional approach to regional and catchment management, through the development and introduction of integrated catchment management plans.**

- Developing output and performance measurement and links with job appraisal.

Human Resources

- **Ensuring compliance with Health and Safety objectives to create a secure working environment for all the Authority's employees.**

- **Resolving staff terms and conditions and improving employee relations.**

- **Identifying the training needs of staff, implementing development programmes and introducing a graduate recruitment scheme.**

- Ensuring the staffing of Regions and Head Office are sufficient to carry out the Authority's statutory duties, involving relocating the majority of the Authority's Head Office to Bristol and recruiting additional personnel to the Regional offices, laboratories and other facilities.

Finance

- Developing new charging schemes and billing systems for the Authority's core functions to increase income and reduce dependance on grant-in-aid.

- Introducing new accounting and financial management procedures, including improved identification of cost centres, allocation of support service costs and audit systems.

Efficiency

- **Ensuring the flexible, efficient and effective use of manpower and financial resources.**

- **Reviewing the use of inhouse workforce, contracted services and competitive tendering.**

Information Systems

- **Implementing the Information Systems Strategy.**

Research and Development

- **Developing a scientific and technical research programme to support the Authority's functions.**

Corporate Image

- **Increasing public awareness of the Authority's activities through various media.**

CORE FUNCTIONS

Water Resources

- Formulating a sustainable policy and plans for developing and augmenting resources to meet demands.
- Formulating an aquifer protection policy.
- Developing a policy to overcome low flows problems in various catchments caused by over-abstraction.
- Developing licensing, determination, enforcement and charging policies, charging databases and billing systems.

Pollution Control

- Undertaking the 1990 Water Quality Survey and setting Water Quality Objectives and Water Quality Standards.
- Improving procedures for responding to and dealing with pollution emergencies.
- Developing charging policy, including discharge databases and billing systems.
- Developing consent and compliance policies.
- Undertaking increased pollution prevention activities and the initiation of site-specific clean up campaigns eg litter.
- Increasing the use of automated instrumentation for sampling and analysis.

Flood Defence

- Developing national planning and management systems for flood defence works.
- Formulating policies for tidal and sea defence works in response to rising sea levels.
- Extending national flood warning systems and improving responses to emergencies.

Fisheries

- Assessing the status of fish stocks.
- Formulating policies to maintain, improve, develop, restore and rehabilitate fisheries.
- Reviewing licensing, regulatory, and charging policies, especially seeking additional income through S.28 orders for assessed fisheries.
- Developing response policies on actions following fish kills and disease outbreaks.
- Developing methods to prevent illegal fishing and to protect fisheries.

Recreation

- Formulating a recreation policy incorporating the statutory duty to promote recreation.
- Implementing the Code of Practice on access, conservation and recreation.
- Producing management plans for NRA controlled sites.
- Reviewing charging and regulatory practice and procedures.

Conservation

- Formulating a conservation policy.
- Implementing the Code of Practice on access, conservation and recreation.
- Reviewing and developing river corridor survey methodology for increased application in relation to river management generally.

Navigation

- Formulating a navigation policy.
- Reviewing licensing, charging and regulatory policies.

SUPPORT SERVICES

Administration

- Harmonising procedures for Regional Committee management.
- Formulating and implementing a Welsh language policy.

Legal Services

- Providing staff training on the Water Act 1989.
- Further developing enforcement and prosecution procedures.

Estates Management

- Developing a national asset register.
- Formulating policies for the management of the Authority's property portfolio.
- Reviewing licences, leases and other agreements, conditions and fees.

Information Systems

- Formulating an IS strategy and implementation plan.
- Effectively managing and coordinating interim IS arrangements prior to implementation of the IS Corporate Strategy.

Research & Development

- Developing the R&D programme management framework.
- Reviewing the inherited R&D programme and developing the portfolio in line with the Authority's objectives for its core functions.

Laboratory Services

- Establishing a system of networked laboratories.
- Developing areas of specialisation and expertise.
- Developing standard instrumentation and National analytical quality control.

Public Relations

- Establishing the staff newspaper and journal, and developing school information packs.
- Achieving a high level of awareness of the Authority and undertaking an annual public awareness survey.

PROGRAMMES AND PLANS 1990/91

This section sets out the Authority's plans and programmes for 1990/91. The following format is adopted for each function and support service:

- an introduction,
- a brief review of activity and progress in 1989/90,
- a summary of the Authority's statutory duties and powers to place the programmes and plans in context,
- the Authority's aims, objectives and prioritised targets,
- details of the planned input of resources to achieve the objectives and targets,
- details of planned outputs and performance assessment.

WATER RESOURCES

INTRODUCTION

With the implementation of the Water Act 1989 the opportunity now exists to take a fresh look at water resources management and planning from the viewpoint of environmental protection.

The 1989 drought highlighted the significant role that the NRA has in developing strategies for conserving and re-distributing water resources during times of shortage.

A key issue is the establishment of a consistent water resources policy throughout the NRA as a whole. This need has arisen due to additional powers resulting from the Water Act 1989 and also due to the ten Regions inheriting different procedures and policies relating to water resources management. Included amongst the issues requiring a consistent approach are:

- abstraction licensing policy and procedure
- aquifer protection policy
- abstraction charges scheme

Whilst recognising the important role the Authority plays in the provision of water for abstraction, it is also required to balance these legitimate demands against others, such as flows to estuaries to enable migratory fish passage, as well as protect inland and underground waters from over-use.

Provision of water resources to meet future demands for domestic, industrial and agricultural supplies will involve the Authority in detailed liaison with existing and potential water users, to ensure that balanced plans are developed. Water resources planning is closely linked with water quality planning and development of close relationships between these two functions is essential.

The principal mechanism for management of the water environment is the granting or otherwise of abstraction licences. The NRA has inherited existing lawful abstractions and in some instances it is apparent that the magnitude of these abstractions has resulted in detriment to the river environment or groundwater resources. The NRA is intent upon alleviating such problems and although powers exist to revoke existing licences (subject to compensation payments) it will be necessary to consider other solutions, including engineering options and voluntary agreements with existing abstractors.

As part of the environmental protection process, powers exist to set minimum acceptable flow (MAFs) at specified control points. Such flows would be used to prevent abstractions reducing flows below a specified rate or level. MAFs have not been set before, although similar powers have existed previously. Consideration of the need to set MAFs will be carried out at an early stage. The designation of Nitrate

Sensitive Areas (NSAs) and Water Protection Zones (WPZs) is also another tool to protect the integrity of water resources.

REVIEW OF 1989/90

Achievements of the NRAAC included:

- consideration of and comment upon water resources implications relating to the Water Bill including charging powers for water abstraction, transfer of reservoir assets, and water resources management schemes.
- determination of the NRA's position with respect to seeking reservoir operating agreements with the plcs.
- assessment of the role of NRA in connection with the reported rise in groundwater levels in London.
- determination of NRA policy regarding ownership of water resource augmentation schemes.
- establishment of guidelines relating to the manner in which the Water Resources Account is comprised.
- consideration of MAFF proposals concerning nitrates and pesticides in connection with the development of Water Protection Zones and resolution of the NRA's position in the matter.
- implications of the judgement concerning Keilder Reservoir upon the NRA charging scheme policy.
- consideration of the NRA's input to the proposed MAFF study into Nitrate Sensitive Areas.

Achievements of the Authority post-vesting include :

- establishment of working groups to tackle water resources issues,
- development of a consistent basis for the allocation of costs to the water resources account for each Region,
- initial consideration of the need for national policy in relation to:
 - a scheme of abstraction charges and the incorporation of fish farming into the existing charging schemes.
 - groundwater protection policies and planning liaison in connection with the water resources function.
 - rivers where over-abstraction is perceived and NRA involvement in water resource planning.

- implementation of powers in relation to the management of resource deficiencies resulting from the 1989 drought,
- submission of NRA views on Nitrate Sensitive Areas, the EEC Nitrate Directive, and rising groundwater levels,
- establishment of an R&D programme for water resources,
- maintenance of an efficient service in relation to the day to day operation of the water resources function.

STATUTORY DUTIES AND POWERS

Duties - Under Water Act 1989

S.103(3) To make maps of the fresh-water limit of relevant rivers and watercourses available to the public.

S.125(1) To undertake measures to conserve, redistribute or augment water resources and to secure the proper use of water resources in England and Wales.

S.7(6) To have regard to the duties imposed on any water or sewerage undertaker likely to be affected by the Authority's powers.

S.126(1) To make arrangements, where reasonably practical, with water undertakers for securing the proper management and operation of water resources and associated works used in connection with the carrying out of their functions. The Authority is required to send a copy of such arrangements to the Secretary of State.

S.127(2) If directed by the Secretary of State, to consider whether a minimum acceptable flow for a particular inland water ought to be determined or reviewed.

S.129(8) To bring the provisions of an abstraction charges scheme, which is in force to the attention of persons likely to be affected by them.

S.130(1) To provide water undertakers with information which they reasonably request in connection with their functions and which is in the possession of the Authority.

S.130(6) To provide reasonable facilities to all persons for the inspection of specified records kept by the Authority and for the taking of copies of such records.

S.143(2a) To collate and publish information from which assessments can be made of actual and prospective demand for water and the availability of water resources.

Powers - Under Water Act 1989

S.129 The Authority may require payment for abstraction licences in accordance with its scheme of charges. Schemes made by the Authority following the period ending two years after the transfer date will require approval by the Secretary of State following a period in which the proposals have been

published in the form of a notice.

S.131/132 To apply to the Secretary of State for a drought order to be made containing specific provisions relating to conservation or augmentation of water resources which are required due to an exceptional shortage of rain. Such provisions include suspension or variation of consent conditions and abstraction licences together with provision for securing additional resources. Provisions apply when the exceptional shortage of rain is accompanied by a situation likely to impair the economic or social well being of persons in the area.

S.111 To apply to the Secretary of State to designate areas as water protection zones within which specified activities may be restricted or prohibited for the purposes of preventing or controlling pollution of controlled waters.

S.112 To apply to the relevant Minister to designate nitrate sensitive areas within which provisions are made to prevent or control the entry of nitrate into controlled waters.

S.127(1) To submit a draft statement to the Secretary of State to determine, amend or replace a minimum acceptable flow following consultation with specified bodies and individuals.

S.130(5) To charge, in specified instances, for the use of facilities in connection with the provision of information.

Powers and Duties relating to Water Resources Act 1963

Although it has been amended by subsequent legislation, the 1963 Water Resources Act is the most important piece of legislation affecting the water resources activities of the NRA. The Act, as amended, is concerned with:

- Assessment of water resources and related matters.
- General provisions as to abstraction of water.
- Control of impounding.
- Revocation and variation of licences.
- Enforcement of restrictions and protected rights.
- Charges for licences to abstract or impound water.

AIM, OBJECTIVES AND TARGETS

Aim

- The Authority aims to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.

Objectives

- To develop and implement a water resources strategy which takes appropriate account of both environmental and abstraction requirements and which ensures that water resources plans are developed in a consistent manner throughout England and Wales.
- To collect, process and maintain water quantity and water quality data for the management and planning of surface and groundwater resources by effective and efficient methods.

- To review the extent of over-abstraction of catchments and to develop and implement proposals to alleviate the problems where justified.
- To review rising groundwater problems and their possible solutions.
- To develop and implement a nationally consistent approach to abstraction and impounding licenses including their determination, charging, policing, enforcement and registration.
- To develop and implement consistent aquifer protection and land use management policies to protect water resources, including the identification and monitoring of Nitrate Sensitive Areas.
- To ensure proper consideration of water resources issues by RRACs.

Targets

- To produce a function strategy for water resources management by March 1991.
- To review the status and management of the national hydrometric network by March 1991.
- To implement a plan of action for overcoming the impact of existing over-abstraction on certain catchments where justified. This will be an ongoing task, but priority catchments will start in 1990.
- To develop proposals for monitoring, modelling and evaluating possible solutions, in connection with control of rising groundwater where applicable by December 1990.
- To commence development of a national abstraction charges scheme in early 1990 and for this to be implemented by April 1992.
- To produce a framework for the consistent determination, variation, revocation and policing of abstraction licences by March 1991.
- To develop a national aquifer protection policy by December 1990.

INPUTS

		Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Actual	1989/90	452*	65.8	82.7	+16.9
Planned	1990/91	526	60.5	63.8	+3.3
Planned	1991/92	530	75.2	77.3	+2.1
Planned	1992/93	531	73.8	76.6	+2.8
Planned	1993/94	530	77.5	80.7	+3.2

* Forecast only

The increase in manpower and expenditure proposed is to carry out essential work on licence determination and enforcement, resource planning, hydrometry and tackling over-abstraction problems in certain catchments and will be funded from charging schemes. The drop in income in 1990/91 is due to modified charging policy in Welsh and Northumbria Regions in particular. The table also takes no account of a new charging scheme to be introduced from 1992. However, note these data exclude possible expenditure of £40m that has been identified in order to resolve over-abstraction problems in the top 20 priority catchments.

OUTPUTS

- Water resources function strategy.
- Report on the status and future management of the national hydrometric network.
- Field investigations and commencement of schemes to alleviate low river flows resulting from over-abstraction in selected catchments.
- Submission to the Board of progress on development of abstraction charges scheme, proposed work programme in connection with rising groundwater levels, proposed abstraction licensing framework, and proposed aquifer protection policy.

PERFORMANCE ASSESSMENT

The NRA has inherited a variety of performance indicators for water resources in its ten Regions none of which can be meaningfully consolidated for national purposes. Pending the development of new nationally applicable performance measures for the water resource function during 1990/91, only the following activity indicators are available:

WATER RESOURCE PERFORMANCE INDICATORS*						Table WR 1
	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
No of new abstraction licences	760	760	1,200	1,200	1,200	1,200
No of new impoundment licences	110	110	110	110	110	110
Licensed average water abstraction/MID (1)(2)	26,000	26,000	26,390	26,790	27,190	27,600
Number of gauging stations for data submission to National Archive	787	787	787	787	787	787
Number of studies commenced on measures to alleviate low flow problems (3)	-	-	19	-	-	-

* Note these are only interim activity indicators pending the development of new nationally applicable output and performance measures for the water resources function of the NRA. The data presented will be subject to revision and validation in future years.

(1) Based on an extrapolation on a 1.5% increase per year basis from data in "Water Facts 88" published by the Water Authorities Association.

(2) Estimate excludes CEGB abstractions for water power, saline and tidal abstraction.

(3) The number of studies commenced will be dependent on the availability of resources.

POLLUTION CONTROL

INTRODUCTION

The Authority has inherited a wide range of different approaches to pollution control and water quality management in its ten Regions. One major difficulty with regard to water quality management is that there are, as yet, no formal water quality objectives against which to determine the water quality standards or consents to discharge.

The NRA inherited some water quality standards in the form of EC Directives; but these address only limited objectives. Similarly, the NRA has inherited a legacy of consents to discharge; for industrial wastes these required compliance with absolute standards, but for sewage treatment works, consents have had a tortuous history going beyond the Control of Pollution Act (COPA) of 1974. During the late 1970s and early 1980s many existing consent conditions were "rationalised" to reflect contemporary performance of sewage treatment works.

On implementation of COPA Part 2, outstanding applications for discharge consents made under the 1951-1961 Acts were given "deemed" status pending determination of conditions under the terms of COPA. Certain pre-1974 discharges of sewage and industrial wastes were exempt from control until October 1986, when such exemption was lifted and dischargers were invited to apply for consents. Applications for consents were received for such discharges between October 1986 and October 1987, and each discharge was granted a deemed consent - known as "COPA Variation Order Deemed".

Finally, in the run up to the Water Act of 1989, a further set of discharges requiring consent has emerged. These discharges have either been consented by the DoE under interim arrangements or are currently being given deemed status by the NRA under direction by the Secretary of State, pending subsequent review by the NRA.

Thus the NRA has inherited a wide range of consents (approximately 139,000 in total), which are placed on ten separate regional registers. The system needs to be radically overhauled. Some consents will also have to be transferred to HMIP under the Environmental Protection Act. Similarly, all of the data relating to EC Directive compliance needs to be rationalised such that the information can be compiled centrally and evaluated.

The NRA is still developing the necessary instrumental and analytical facilities required to monitor discharges and receiving waters; some analytical work is being contracted out. Most of the laboratories are in place or under construction but have yet to be drawn into a fully integrated national network, with regional areas of specific expertise.

Prosecution policy has also been very varied in the past. In addition, the NRA has new powers which in turn require policies for prosecution. It also wishes to recover charges for discharges and devise a monitoring, accounting and publication procedure to report on its actions to Government and the public in general. Many of the key issues were addressed by the NRAAC and the NRA has to carry on this task.

REVIEW OF 1989/90

The NRAAC set up the following policy working groups:

- Consent compliance and enforcement policy
- Discharge charging
- Sampling regimes (and equipment)
- Water Quality Survey 1990/91
- North Sea conference

Of these, the first has been replaced by the Kinnersley Review Group, and the second has continued under a different structure, chaired by the Financial Director. The remaining three have continued but report to the Chief Scientist via the Water Quality Committee, along with other groups, chaired by the Water Quality Manager.

Other topics addressed in detail by the NRAAC were discharges from, and consents of, sewage treatment works, laboratories, power of entry, interface with HMIP over prescribed processes (Red List substances), assessment of ground water quality, and Water Protection Zones.

Achievements since Vesting Day include:

- Policy working group set up to review the setting of discharge consents and demonstrating compliance.
- Steering group set up to oversee work on charging for discharges.
- Types of environmental pollution incidents reviewed and new set of categories defined for application in the Regions.
- Guidance notes prepared for prosecution in relation to environmental pollution events.
- Water Quality Committee set up to co-ordinate water quality management functions. (Various groups reporting through this committee are those on Water Quality Objectives and standards and the 1990/91 River Quality Survey, automated instruments and their application, Farm Wastes, Pesticides, Laboratory Services, Review of the 1989 blue-green toxic algal bloom event, North Sea and Red List substances, Severn Estuary Committee.
- Introduction of the use of hand-held instruments for field officers approved by Board, together with outline plan for further R&D for such equipment.
- Paper prepared for House of Commons Select Committee on the Environment Enquiry into Beach Pollution.

- Paper prepared for Royal Commission on Environmental Pollution Enquiry into Fresh Water Quality.
- North Sea Task Force meetings attended, North Sea Action Plan agreed, monitoring stations and sampling regimes approved.

STATUTORY DUTIES AND POWERS

In addition to general duties under Section 8 of the Water Act, relating to the promotion of conservation and enhancement of the natural beauty and amenity on inland and coastal waters, the conservation of aquatic fauna and flora, and the use of such waters and their adjacent land for recreational purposes, the NRA has specific duties which are spelled out in Chapter 1 of Part III of the Act. These are as follows:

- To keep deposited maps of controlled waters for public inspection (WA, Sect. 103).
- To conserve and enhance the amenity of inland and coastal water, and of land associated with such waters (WA, Sect. 8).
- To achieve Water Quality Objectives in all controlled waters (WA, Sect. 106).
- To monitor the extent of pollution in controlled waters (WA, Sect. 106).
- To maintain registers of water quality objectives, applications for consents, certificates, and sampling data, and make them available to the public (WA, Sect. 117).
- To advise and assist the DoE on water pollution matters (WA, Sect. 118).
- To exchange information with water undertakers on pollution matters (WA, Sect. 119).
- To determine and issue consents for discharge of wastes into controlled waters (WA, Schedule 12 (2)), plus a power to charge for such work, (WA, Sect. 145).

The NRA has powers to both control and remedy pollution. Its powers enable it to prosecute for the following offences, as specified in Section 107, subject to certain defences set out in Section 108. It is an offence to cause or knowingly permit:

- any poisonous, noxious or polluting matter or any solid waste matter to enter any controlled waters; or
- any matter, other than trade effluent or sewage effluent, to enter controlled waters by being discharged from a drain or sewer in contravention of a relevant prohibition; or
- any trade effluent or sewage effluent to be discharged :
 - (i) into any controlled waters; or

(ii) from land in England and Wales, through a pipe, into the sea outside the seaward limits of controlled waters; or

- any trade effluent or sewage effluent to be discharged, in contravention of any relevant prohibition, from a building or from any fixed plant on to or into any land or into any waters of a lake or pond which are not inland waters; or
- any matter whatever to enter any inland waters so as to tend (either directly or in combination with other matter which he or another person causes or permits to enter those waters) to impede the proper flow of the waters in a manner leading or likely to lead to a substantial aggravation of -
 - (i) pollution due to other causes; or
 - (ii) the consequences of such pollution.

The NRA also has powers to prosecute for polluting water, such that it is injurious to fish, under Section 4 of the Salmon and Freshwater Fisheries Act of 1975.

All applications for consents to discharge, records of consents given, related certificates under paragraph 1(7) of Schedule 12, samples of water or effluent, and any related information, must be entered on a Register which the NRA has to maintain and make available to the public under Section 117 of the Water Act. The NRA may recover the cost - by charging - for the issuing of such consents, but any charging scheme has to be approved (Schedule 12, paragraph 9) by the Secretary of State.

In addition to monitoring effluents to demonstrate compliance with consents, there is a general duty to monitor the extent of pollution in controlled waters (Section 106), particularly in relation to demonstrating compliance with any Water Quality Objectives (WQOs) which may be set by the Secretary of State (Section 105) and which, when set, have also to be entered on the Register (Section 117). The NRA can itself request under Section 105 that WQOs are reviewed, and has a duty under Section 118 to give advice to the Secretary of State, or the Minister of Agriculture, Fisheries and Food, on matters arising to water quality and pollution control.

The quality of water can also be affected by activities other than effluent discharges. Thus under Section 109 the NRA also has powers relating to offences of removing sedimentary deposits from inland waters, or the cutting and uprooting of substantial amounts of vegetation which could rot and obstruct such waters, without prior consent.

Wherever possible, it is sensible to prevent pollution at source. Section 110 enables the Secretary of State to make provision by regulations for those who have custody or control of poisonous, noxious or polluting matter, to take precautionary measures to prevent pollution from them. No such regulations have yet been made. The NRA itself can make by-laws under Section 114 to prohibit washing and cleaning activities in controlled waters and the use of sanitary appliances on vessels, but no such by-laws have yet been made.



NRA WESSEX REGION PLAN SUMMARY 1990/91

Errata

- | | | |
|------|----------|--|
| p. 3 | column 1 | paragraph 4 line 1 <i>for</i> first half of <i>read</i> first six months of |
| p. 3 | column 1 | paragraph 7 line 3 <i>for</i> strenthening <i>read</i> strengthening |
| p. 6 | column 1 | delete paragraph 1 |
| p. 7 | column 1 | paragraph 2 line 1 <i>for</i> wildlife landscapes <i>read</i> wildlife, landscapes |

The NRA can also carry out its own works and operations under Section 115 to prevent polluting matter from entering controlled waters and - except for waste water from abandoned mines - can recover the cost of such work from those who cause the pollution.

Nevertheless, polluting events will inevitably occur; Section 115 also entitles the NRA to remedy the situation and restore the water to its previous condition. Again any costs incurred may be recovered by the NRA.

The Secretary of State can, under Section 111, designate water protection zones and prohibit certain activities within them, but can only do so upon application by the NRA or a water undertaker; no such applications have yet been made. A special case is that of designating Nitrate Sensitive Areas (Section 112) for which the Secretary of State for Wales and Minister of Agriculture, Fisheries and Food have responsibility. Both the Secretary of State for Wales and the Minister acting jointly may also approve codes of good agricultural practice under Section 116, but can only do so after prior consultation with the NRA.

AIMS, OBJECTIVES, AND TARGETS

Aims

- To achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- 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.

Objectives

- To set water quality objectives (WQOs) for controlled waters and produce appropriate water quality standards (WQSs) (1992) and define water protection zones (WPZs) requiring special protection.
- To undertake monitoring and surveillance of all controlled waters in order to provide information on the national situation at routine intervals, and collate all relevant data and produce reports of the work undertaken.
- To ensure there is a close relation between water quality and water resources management.
- To implement measures to prevent potential pollution of controlled waters at source.
- To devise a consistent format for consenting certain discharges, such that WQ standards are met, and record them on a public register.
- To develop the use of instrumentation to measure compliance of discharges with consents, and to measure environmental compliance with WQ standards.

- To develop policy for recovering the costs of consenting discharges and associated monitoring.
- To establish policy for enforcing compliance with consents, and recording actions taken on a public register, plus a procedure for reporting compliance with consents at regional and national level.
- To provide enabling powers to mitigate and remedy the results of polluting events, or the presence of poisonous or noxious substances, and recover the costs from those responsible.
- To review procedures and produce plans of action to respond to emergencies involving large-scale polluting events.
- To establish an R&D programme to further the efficiency and effectiveness of the NRA's water quality functions.
- To ensure proper consideration of water quality issues by RRACs.

Of these, controlled waters have been defined in the Water Act but the Secretary of State has not yet set WQOs for them. The NRA has thus to formulate its own views of both WQOs and associated WQSs in order to allow further consultation with the DoE. It will be important to take account of other functions of the NRA, particularly those relating to water resources, freshwater fisheries, conservation and recreation. The NRA has inherited responsibility for some WQOs in the form of EC Directives, and non-statutory river quality objectives/standards have been in use. No WPZs have yet been defined, but action has been taken with regard to Nitrate Sensitive Areas. No specific statutory instruments have been issued with regard to activities involving potentially polluting material on land; the NRA is, however, empowered to take action to prevent such material entering a water course and to recover associated costs. A policy on implementing this power will be formulated.

The NRA has inherited a wide range of consents. At the suggestion of the NRAAC the DoE instigated a review, chaired by Mr David Kinnersley, an NRA Board Member, to consider both the means of consenting and compliance with such consents. In the meanwhile, however, new consents are being issued and an interim common approach across the regions has been introduced.

Powers to mitigate and remedy the results of pollution events exist, but there is still a need for a policy with regard to using them. Recovering resulting costs, however, is a complicated legal area. Recent experience with toxic algae has highlighted a need to define the interface between the NRA and other agencies.

Monitoring programmes have been in existence for a long time; these are primarily freshwater based. Surveillance studies of rivers and estuaries have also been undertaken quinquennially. The next review must be carried out in 1990 for the DoE, to

compare with that of 1985. This review will roll on into 1991 to provide a wider baseline against which the NRA can compare the future state of all controlled waters. There is a need to maintain and, where necessary, improve the quality of such waters. Priorities for improvement need to be set, and areas and sources of pollution targeted. Capital investment plans are already in place for many sewage treatment works.

Obtaining a national database requires substantial investment in information systems and technology which is currently being addressed. In the past, information on compliance with EC Directives was sent direct from the Water Authority regions to the DoE. These, and other relevant data, will be collated by Head Office prior to submission to the DoE in order to achieve a national picture of the NRA's work in this area. Related information - on polluting events, consents and prosecutions - have also to be collated centrally in order to appraise the NRA's overall performance, and to respond nationally to Parliament and the media.

Finally, the overall NRA R&D strategy needs to mature into one which reflects the aims and objectives of the NRA's water quality functions, and balances this with its other functions. Quite clearly, bringing all aspects up to a common level cannot be achieved immediately.

Thus the short-term aims are a mixture of filling important gaps, rationalising existing practices by drawing upon best past practice, dealing with previously-committed obligations, and planning in order to bring all necessary aspects into a common approach. The following short-term (1990/91) programme is envisaged.

Targets

- To produce policy guidance on dealing with existing consents, reviewing consent and compliance policy, enforcement, and specific pollution problems such as litter by June 1990.
- To produce policy on pollution prevention, identify areas in which specific Statutory Instruments are required to assist this objective, develop a consistent policy for cost-recovery with respect to giving advice, remedying and mitigating pollution, and taking precautions against pollution by October 1990.
- To develop a general policy for dealing with emergencies and unusual events, such as toxic algal blooms, including liaison with other bodies with specific responsibilities for matters concerning public and animal health by July 1990.
- To complete the 1990 Water Quality Survey by March 1991 as a basis for setting statutory water quality objectives (WQOs), and also to develop a means of classifying controlled waters.
- To develop a policy for identifying Water Protection Zones in controlled waters by October 1990.

- To introduce hand-held and portable automated instruments into field operation for evaluation by December 1990.
- To review means of collating EC Directive returns and supply results on a national basis to DoE as required by December 1990.
- To develop consistent catchment planning systems to integrate water quality with water resource functions by March 1991.
- To produce a function strategy for pollution control and water quality management by January 1991.

INPUTS

	Manpower	Expenditure	Income	Variance
	(No)	(£m)	(£m)	(£m)
Actual 1989/90	734*	48.7	1.1	-47.6
Planned 1990/91	800	53.7	0.7	-53.0
Planned 1991/92	941	70.6	10.0	-60.0
Planned 1992/93	994	70.9	18.7	-52.0
Planned 1993/94	991	70.4	19.6	-50.0

* Forecast only

Increased manpower and expenditure are primarily required for carrying out increased monitoring (compared to the activity levels of the RWAs) of controlled waters to fulfil the Authority's statutory duties. The additional resources are also needed for the 1990 Water Quality Survey, North Sea Task Force work, EC Water Quality and other environmental Directive work, increased automated instrumentation, setting WQOs and WQSs, deemed consent determination, and establishing the databases for charging for discharges, site specific clean-up campaigns, and liaison with HMIP over IPC.

Income figures include consent application fees from 1990/91, and a charging scheme for discharges from 1991/92, which is currently under development with an extremely high priority. Due to the poor status of the inherited discharge consents registers, and the costs and time to set up billing systems and enforcement methods, it is anticipated that it will take up to 1993/94 for significant income to be obtained and the deficit correspondingly reduced.

OUTPUTS

- Monitoring and sampling programmes of controlled waters and entry of the results of water analyses on the Water Act register.
- Complete 1990 Water Quality Survey.
- Policies on consents, enforcement, and pollution emergencies.
- Policies on pollution prevention and cost recovery.
- Policy and guidance on suitable action in relation to toxic algal blooms.

- Advice on the setting of WQOs and WQSs for controlled waters and policy for water protection zones.
- Increased use of automated field and laboratory instrumentation.
- Reviewed consents according to the Kinnersley Group proposals.
- EC directive returns and reports.
- Action plans for specific catchments arising from the North Sea Action Plan.

PERFORMANCE ASSESSMENT

The NRA has inherited a variety of performance indicators in its ten Regions. Pending the development of new NRA-wide output and performance measures, the only ones that can be meaningfully aggregated for national purposes are data on river water quality 1990-94, presented as river lengths in different water quality classes (on the same basis as the 1985 water quality survey) (table PC1 and figure 4), estuarial water quality (PC2 and figure 5) and compliance with the EC Bathing Water Quality Directive (PC3 and figure 6).

These data sets have missing data from some Regions; however, they represent the best current estimates of the likely future water quality status of our rivers, estuaries and coastal waters until the 1990 Water Quality Survey is completed and results become available.

Table PC1 shows the likely disposition and changes in water quality within each water quality class, and the total length of river in each of the different water quality classes between 1989/90-1993/94. The total length of river in each water quality class each year is derived by summation of all the lengths of the same water class category within each class.

Figure 4 shows that between 1990/91-1993/94 small increases in river lengths with good and fair water quality are expected, and a decline of river lengths of poor and bad quality. Summarised expected changes in river water quality between 1990/91-1993/94 are given in the following table:

Change in River Water Quality 1990/91-1993/94				
Class	km change 1990/91- 1993/94	% river length in class as % total classified river		% difference 1990/91- 1993/94
		1990/91	1993/94	
1A	+15.0	31.1	31.1	0.0
1B	+346.1	33.2	34.0	+0.8
2	+129.8	25.8	26.2	+0.4
3	-384.2	8.6	7.7	-0.9
4	-142.6	1.3	1.0	-0.3

These data need to be interpreted with caution, as they are based on estimates and there are missing data from some Regions. Other data on the number of pollution incidents as published in the Digest of Water and Environmental Protection statistics show an increase in recent years. The current and likely future status of our river water quality will not become clearer until after the completion of the 1990 Water Quality Survey and detailed comparisons have been made with earlier data.

Table PC2 and figure 5 show the likely disposition of estuary river lengths in four different water quality classes between 1989/90-1993/94. These data suggest a minor improvement in estuary water quality with a small increase in good and fair river lengths and a decline in poor and bad river lengths. Table PC2 is summarised below:

Change in Estuarial Water Quality 1990/91-93/94				
Class	km change 1990/91- 1993/94	% river length in class as % total classified length		% difference 1990/91- 1993/94
		1990/91	1993/94	
A	+50.0	62.6	64.7	+2.1
B	+12.0	27.5	27.9	+0.4
C	-40.0	6.2	4.4	-1.8
D	-17.0	3.6	2.9	-0.7

These data also need to be interpreted with some caution as they are only estimates and again there are missing data from some regions.

Table PC3 and figure 6 show the number of designated EC Bathing Waters, the number complying with the EC Bathing Water Directive, and the number achieving minimum aesthetic standards. These data suggest an expected improvement in bathing water quality, with an additional 40 (11% of the total number of designated waters) achieving the EC directive between 1990/91 and 1993/94. This should result from increased expenditure on coastal effluent treatment works and long sea outfalls in some Regions.

The data above suggest that the expected changes in river water quality, estuary water quality, and bathing water quality over the plan period are relatively small. Significant amounts of investment are needed to reduce pollution levels, over and above current estimates of expenditure, along with increased monitoring and regulatory activity by the Authority, in order to achieve the Authority's mission to reduce pollution substantially and improve water quality. Considerably more expenditure than set out in this plan may well be required by the Authority for this purpose. This will be assessed in the light of the results of the 1990/91 Water Quality Survey.

POLLUTION CONTROL PERFORMANCE INDICATORS

Table PC1

RIVER WATER QUALITY (Km of river)

River Class	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94	Long Term Target
1A	12190.7	12498	12543.9	12547.9	12558.9	12558.9	15098.4
1B	12914.2	13183.3	13388.5	14241	13670.7	13734.6	15018
2	9799.8	9277.9	10425.5	9775.2	10484	10555.3	9514.9
3	3509.2	3478.1	3485.1	3327.4	3155.1	3100.9	597.8
4	590.6	567.8	526	479.4	464.4	383.4	0
N/S	1363	1363	0	0	0	0	0
TOTAL LENGTHS CLASSIFIED	40367.5	40368.1	40369	40370.9	40333.1	40333.1	40229.1

Key to PC1

Class	Dissolved Oxygen (% saturation) 5 percentile	Biochemical Oxygen Demand (mg/l) 95 percentile	Ammonia (mgN/l) 95 percentile
1A Good Quality	80	3	0.3
1B Good Quality	60	5	0.7
2 Fair Quality	40	9	3.0
3 Poor Quality	10	17	-
4 Bad Quality	<10	-	-

Descriptions of Classes

- 1A-Waters of high quality suitable for potable supply abstractions and for all other abstractions. Game or other high class fisheries supported. High amenity value.
- 1B-Water of less high quality than Class 1A but usable for substantially the same purposes.
- 2-Waters suitable for potable supply after advanced treatment. Reasonably good coarse fisheries supported. Moderate amenity value.
- 3-Waters which are polluted to an extent fish are absent or only sporadically present. May be used for low grade industrial abstraction purposes. Considerable potential for further use if cleaned up.
- 4-Waters which are grossly polluted and are likely to cause nuisance.
- N/S-Not classified due to lack of data

Estuarial Water Quality (Km River Length)

Table PC2

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94	Long Term Target
Class A	1424.a)	1413	1432	1440	1457	1482	1419.b)
Class B	654	642	629	626	626	641	756
Class C	133	138	142	136	129	102	5
Class D	70	83	83	79	68	66	0
Total	2281	2276	2286	2281	2288	2291	2180

a) Data for South West Region unavailable throughout table.

b) Data for Wessex Region not included-objectives for estuaries set using different classes.

Key: Class A - Good Class B - Fair Class C - Poor Class D - Bad

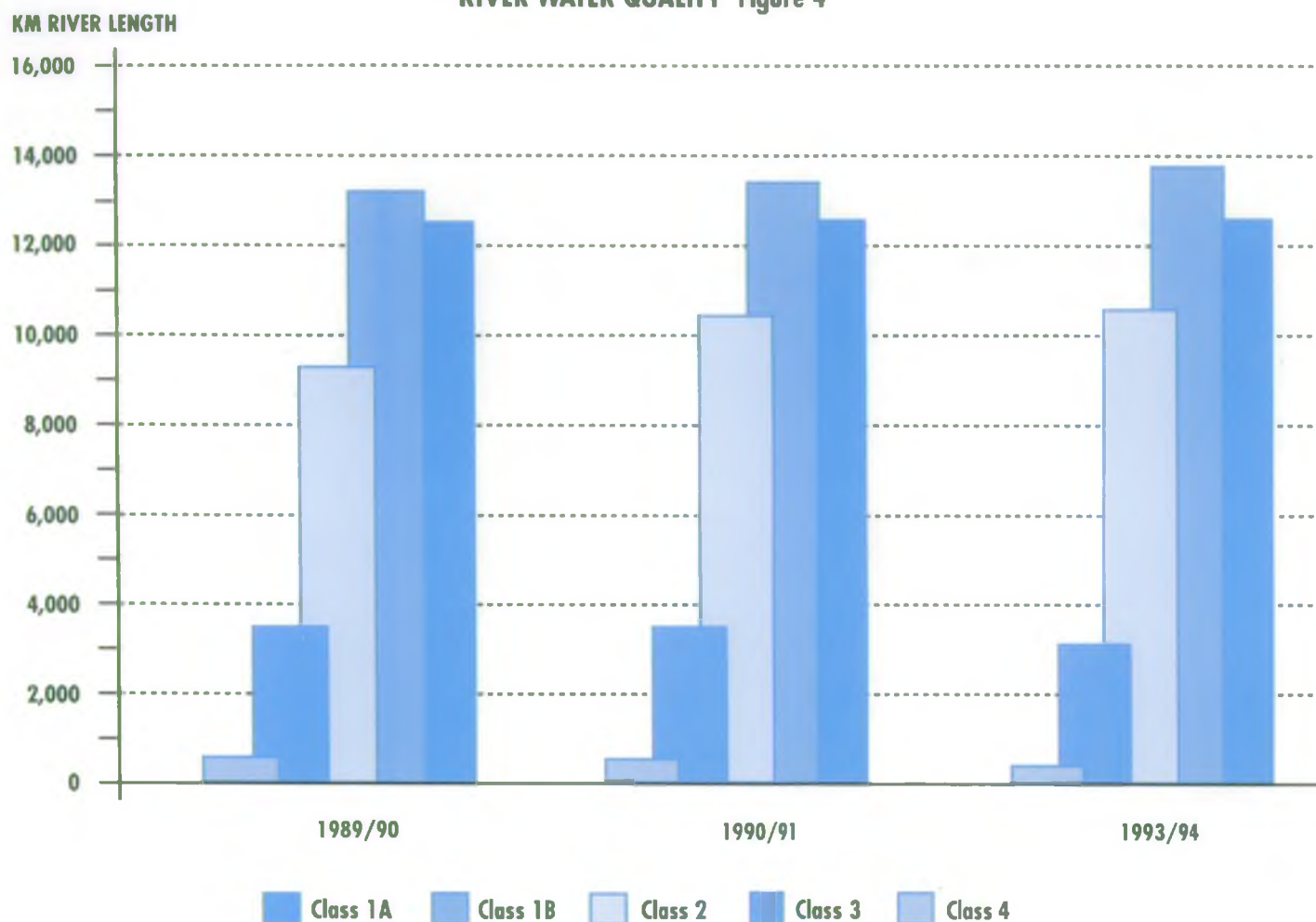
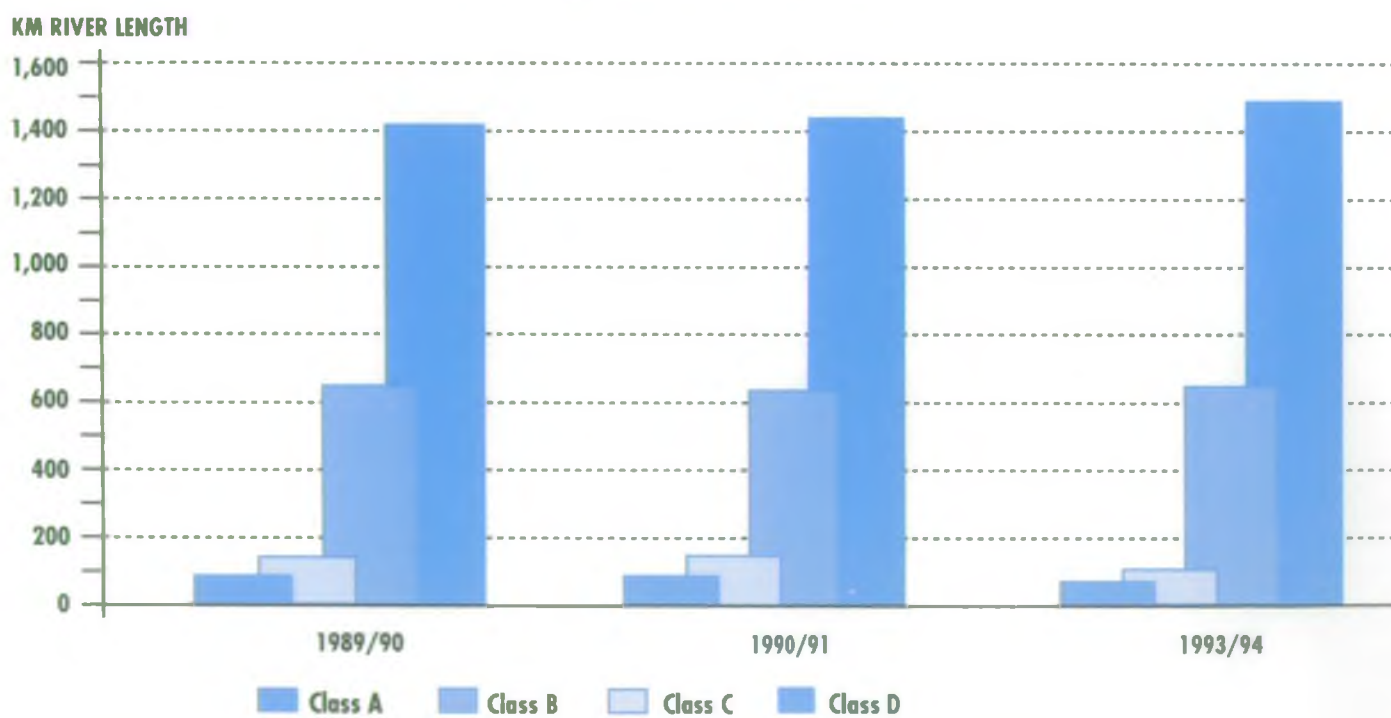
Bathing Water Quality

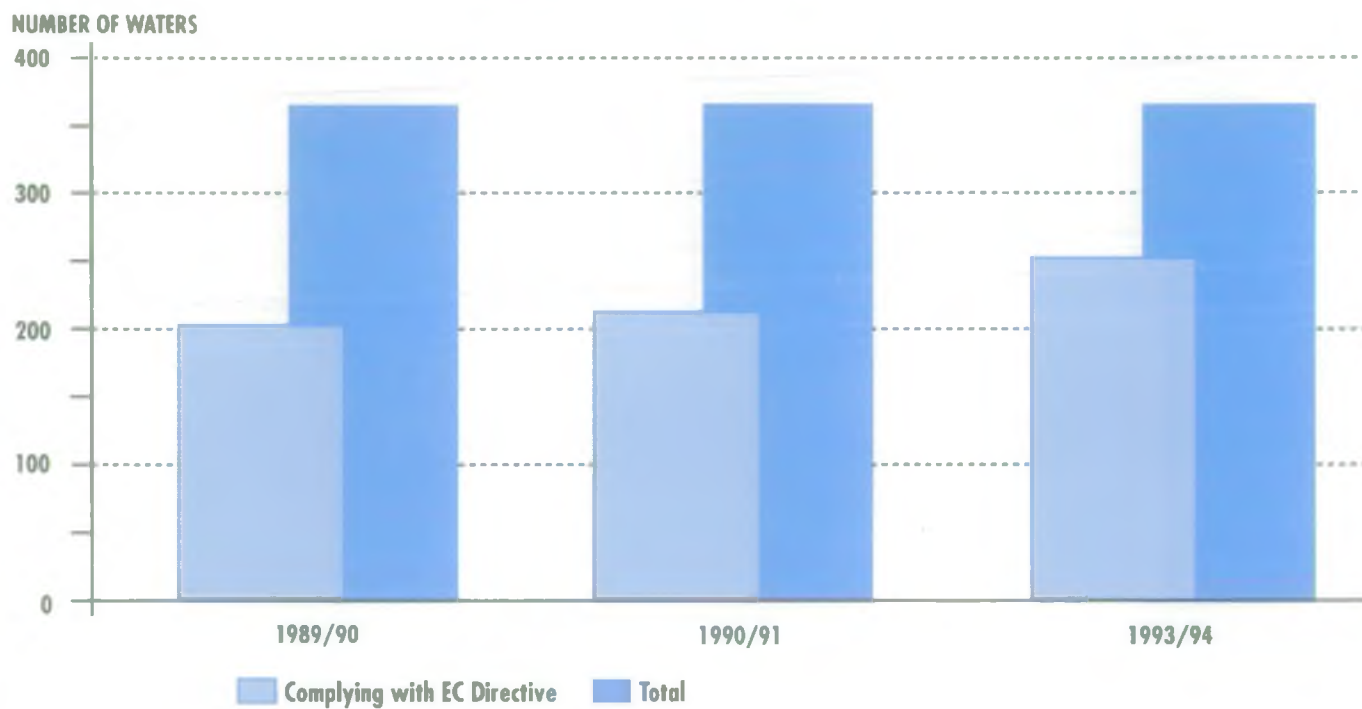
Table PC3

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
No of EC Bathing Waters	364	364	365	365	365	365
No of EC Bathing Waters achieving the Directive	202	166. ab	212	224	236	252
% compliance	55.5	45.6 ab	58.0	61.4	64.6	69.0
No achieving minimum aesthetic standard (a,b,c)	154	154	162	168	170	181
% compliance	42.3	42.3	44.4	46.0	46.5	49.6

Notes

a. No figures for North West Region available b. No figures for South West Region available c. No figures for Yorkshire Region available d. Minimum Aesthetic Standard is defined as: "No deposition of sewage solids, or the formation of sewage slicks, discolouration and foaming visible from foreshore areas frequented by the public".

RIVER WATER QUALITY Figure 4**ESTUARIAL WATER QUALITY Figure 5**

BATHING WATER QUALITY Figure 6

FLOOD DEFENCE

INTRODUCTION

The 1989 Water Act gives the Authority powers to exercise a general supervision over flood defence and land drainage matters which, with the exception of raising levies and other monies, are carried out through Regional and Local Flood Defence Committees formed from the Land Drainage Committees of the former Regional Water Authorities.

One of the major roles of the Regional Committees is the preparation and regional approval of the capital works programme. In 1989/90 the programme submitted to the Ministry of Agriculture, Fisheries and Food and Welsh Office for grant aid amounted to £67m. The Authority's Medium Term Plan (MTP), a five year rolling programme, allows for this expenditure to increase annually.

The MTP is to a great extent controlled by the availability of adequate funds from two sources: a) Government grants and b) council levies. Government grant is translated into a Grant Earning Ceiling (GEC) which enables a more ambitious programme of work to be undertaken for each Region. As the MTP expenditure increases, it is anticipated that the GEC will also increase. As the GEC rises, the financial demand made on the levied councils increases, and Committees may occasionally find the recommended programme too costly, even after deduction of grant. Thus reasonably high priority work may remain undone. An increase in the percentage rates of grant aid for sea defence works in future years will ease the financial burden.

Government has made provision for write-off of flood defence debts. Thus some Regions will be in a position to re-allocate finance and will either accelerate programmes or defer raising the level of income. Most Regions will settle on a combination of these options. To carry forward the necessary design work load, additional staff or additional consultancy facilities will be needed. Difficulties experienced in recruiting flood defence engineers may hinder the implementation of the MTP.

Scientists have predicted that over the next 50 years, sea levels are set to rise at a greater rate than previously predicted. Although the quantum and exact timing has not been universally agreed, the expenditure profile of the capital plan reflects an allowance to combat the early stages of the predicted rise. The level of capital expenditure already identified in the most recent MTP for flood defence up to 1995, is just under £1 billion at 1989 price base.

Much of the revenue raised by the Flood Defence Committees is expended on monitoring and maintaining some 35,000 km of main river, associated flood embankments and some 1000 km of NRA sea defences. The risk of a major flood event is always present and because the exact timing of such a natural

occurrence is unpredictable, all defences and channels have to be maintained at an optimum state of readiness. Mock exercises are held to test the Authority's plans for forecasting and warning about events, mobilising staff and plant, opening of control centres and supplies depots, implementing liaison procedures and communication networks with other emergency agencies.

Other flood defence functions paid for out of revenue include technical response to development proposals, catchment planning, policing by-laws, acquisition and operation of data-gathering facilities and support of research and development plans.

REVIEW 89/90

The NRAAC engaged the services of a consultant to advise on flood defence functions and to establish a Function Managers' Group. This group was able to make progress on a number of important issues including an initial review of the minimum work force needed for flood emergency operations, an identification of areas for research and development, and preliminary stages of an examination of the meteorological services provided by the Meteorological Office.

The consultant reviewed the structure of the engineering functions, the policy for engagement of consultants for designing schemes within the works programmes and he reported upon the location of the depots required for emergency operations.

Since Vesting day, 1st September 1989, the Function Group has reviewed the flood warning procedures in the Regions and by the end of this plan year will have prepared a national scheme. A number of Regions have undertaken exercises to test the effectiveness of the Head Office emergency liaison arrangements and communication systems, including the routing of messages through the Thames Barrier Control Centre which is used as a 24 hour contact point.

Regional flood defence capital programmes covering the five year period have been prepared and submitted to the Ministry of Agriculture, Fisheries and Food. An interim software system pending the IS strategy has been developed for aggregating these to form the national Medium Term Plan and this plan contains schemes costing some £450m, averaging £75m per annum.

Flood defence assets can be considered as river channels, control structures, river regulating and joint navigation/flood defence locks and weirs, together with a range of gauging weirs and telemetry and communications systems. Some of these assets are wholly owned, whilst others, although remaining in

private ownership, are managed by the Authority. Effective management and planning of flood defence requires much data about its assets. Foremost is the requirement for a robust system, applicable nationally, to set objectives and standards of defence appropriate to needs and cost benefit approach. For some years a suitable management system has been contemplated and in fact, some Regions had taken formative steps. The Function Group, in conjunction with consultants, has now embarked upon a programme for the creation of the planning and management system and the establishment of the necessary comprehensive data base.

The NRA is subject to EC regulations relating to the procurement of goods and services and failure to comply is, as has been demonstrated in a member state, treated as a serious offence. The Flood Defence function is a major spender and the group is working in conjunction with a Region's purchasing department and consultant to identify these constraints and ensure that all tendering and purchasing procedures comply with these requirements.

Liaison with local authority planning departments on planning applications and development proposals involves a high level of manpower resource. The need for close co-operation is of paramount importance and a draft guideline document for the function has been completed. The document is now being enlarged to include other aspects of NRA work which are relevant to planning liaison. It is anticipated that an agreed national approach will be implemented during the 1990/91 financial year.

STATUTORY DUTIES AND POWERS

The Authority, in Section 136 of the 1989 Water Act (The Act) is given powers to exercise a general supervision over all matters relating to flood defence. The Act provided for these functions to be transferred from the Water Authorities by making amendments to the 1976 Land Drainage Act.

The Act imposes on the Authority the duty to arrange for all of its functions relating to flood defence to be carried out through Regional Flood Defence Committees, except for the setting of precepts and raising of funds. The Act also provides the opportunity for Regional Flood Defence Committees to submit to the Authority proposals for creating or amending an existing local land drainage scheme.

The Authority is given powers to undertake surveys of the area in relation to which it carries out flood defence functions.

In respect of income, for flood defence functions, the Act makes provision for the Authority to apportion qualifying expenses among the relevant local authorities within local land drainage districts. The Act empowers the Authority to raise general and special drainage charges. The NRA may receive contributions from, and may contribute to, internal drainage boards. The Act empowers the Ministry of Agriculture, Fisheries and Food and Welsh Office to make grants towards

the costs of providing a flood warning system and towards the costs of improvements to existing, or the construction of new, drainage works.

Under the Act, the NRA may only undertake works on, or in connection with, main river and sea defences.

The Authority is required to issue a consent for the construction, raising or alteration of any structure or modification on any culvert which would cause culvert obstruction or otherwise affect any flow in any watercourse, except within the District of an Internal Drainage Board where the Board issues such approval. Where the works could affect "main river", the consent procedure is widened to include structures in, over or under the watercourse. The Water Act provides for the Authority to make a charge for the issue of consents.

Flood defence works can be undertaken by local authorities on non-main rivers, but only if consented by the Authority. The Authority is required to consult with an Internal Drainage Board before giving consent for works on a watercourse under the control of that Board.

AIMS, OBJECTIVES, AND TARGETS

Aims

- To provide effective defence for people and property against flooding from rivers and the sea.
- To provide adequate arrangements for flood forecasting, warning and for responding to flood events.

Objectives

- To produce a function strategy for Flood Defence through the development of a systematic approach for assessing capital and maintenance requirements and develop appropriate medium and long term plans.
- To develop a comprehensive survey of ownership and status of sea and coastal defences to ensure their integrity to prevent flooding.
- To support research and development which will identify future flood defence needs arising from climate change, improvements in best practices for operating methodology, increasing efficiency and enhancing value for money.
- To encourage development of information technology and extension of facilities which will further advance strategies and procedures for warning of, and responding to emergencies.
- To develop catchment management plans and review statutory regulations to heighten general awareness of need for development controls.

- To identify opportunities for the enhancement of the environment and recreational and amenity facilities when undertaking flood defence works.

Targets

- Develop a function strategy for flood defence activities within the existing legislation by March 1991.
- Develop a strategy for codifying the urgency and the priority for capital projects, by March 1991.
- Develop regional flood warning systems and improved responses to flood emergencies, based upon a consistent nationally approved methodology for implementation by March 1991.
- Undertake a condition survey of sea walls maintained by the Authority, extended to include those in other ownership by March 1991, and formulate policy for estuarial and sea defence works in response to rising sea levels.
- Prepare an MTP responding to known problems having regard to urgency and priority, and likely levels of funding, by September 1990.
- Ensure that all Regions commence the establishment of the database for a management information system by end of 1991.
- Ensure that all Regions have identified Land Use Bands for use with tables of performance indicators by September 1990.
- Ensure that all Regions have adopted the nationally agreed approach to planning and management of flood defence works, and have established systems for formulating objectives, setting targets and measuring outputs and performance by December 1990.
- Develop management software for monitoring quarterly expenditure and claims to MAFF for grant aid, by December 1990.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Actual 1989/90	3209*	167.5	188.1	+20.6
Planned 1990/91	3275	194.6	170.0	-24.6
Planned 1991/92	3275	223.4	190.0	-33.4
Planned 1992/93	3286	244.3	203.1	-41.2
Planned 1993/94	3270	259.7	212.9	-46.8

* Forecast only

The income data presented here for 1991/92 and beyond are based on current levies and include indicative future MAFF capital grant. Levies and MAFF grant will need to be reviewed each year in order to fund the planned increase in expenditure. Higher levies and grants along with the planned use of flood defence balances may be required to fund the existing

programme of planned work and eliminate the deficits suggested by this table. Although expenditure is planned to rise, manpower is planned to be constant over the plan period.

OUTPUTS

- Flood defence strategy.
- Flood warnings and emergency responses.
- Maintenance of existing, and construction of new fluvial (main river), estuarial, and sea defences.

The Flood Defence capital programme includes some 860 schemes. It is anticipated that nearly all these schemes will be finished within the Plan period. All the capital expenditure will be justified in benefit/cost terms, ie the assessment of discounted benefits must exceed all the discounted costs. All costs are taken into consideration (design, supervision, construction and future maintenance) as are the benefits, which may include one or more of the following: direct, indirect, intangible, environmental, amenity and recreational benefits.

Programmes for maintenance of some 35,000 km of main river water courses and some 1000 km of sea defences will be undertaken.

In order to prioritise needs, risk assessments, particularly for sea defences, have to be undertaken. A condition survey of the Authority sea wall assets will be undertaken in mid 1990. The effectiveness of these decisions can be measured only by relating the performance of defences to a series of climatic events.

PERFORMANCE ASSESSMENT

The NRA inherited various flood defence output and performance measures in its ten Regions, most of which cannot be meaningfully aggregated for national purposes. Only three interim performance indicators are presented here. New NRA-wide output and performance measures will be developed in 1990/91.

The output of the capital programme will be measured by comparing planned and actual expenditure. The impact of both capital and maintenance programmes on the length of main river bank protected, sea defences, and length of main river within flood warning lead time bands, are illustrated by Tables FD1, FD2 and FD3 and figures 7 and 8.

Tables FD1, FD2 and Figures 7 and 8 indicate considerably improved flood protection is planned for all land use categories for both main river and sea defences. Table FD3 indicates that the Authority will seek to increase flood warning times over the Plan period.

FLOOD DEFENCE LENGTH OF MAIN RIVER BANKS PROTECTED (Km) (2,3)						Table FD1
LAND USE BANDS (4,5)	FORECAST 1989/90	PLANNED 1990/91	PLANNED 1991/92	PLANNED 1992/93	PLANNED 1993/94	LONG TERM TARGETS
A	3316	3462	3601	3750	3911	4875
B	2316	2447	2573	2696	2793	3491
C	7587	7821	8102	8491	8855	10262
D	11622	11919	12215	12597	12790	15658
E	21330	21859	22345	22941	23317	27471
TOTAL	46171	47508	48836	50475	51666	61757.(1)

Notes

- 1) Not including figures for Welsh south western Division.
- 2) Figures obtained for Anglian and Southern Regions are approximate.
- 3) Each bank is considered separately so the total length is twice the length of 'Main' river.
- 4) Band allocation is for highest requirement where major and minor flood banks are to be found.
- 5) Description of Land Use Bands given opposite.

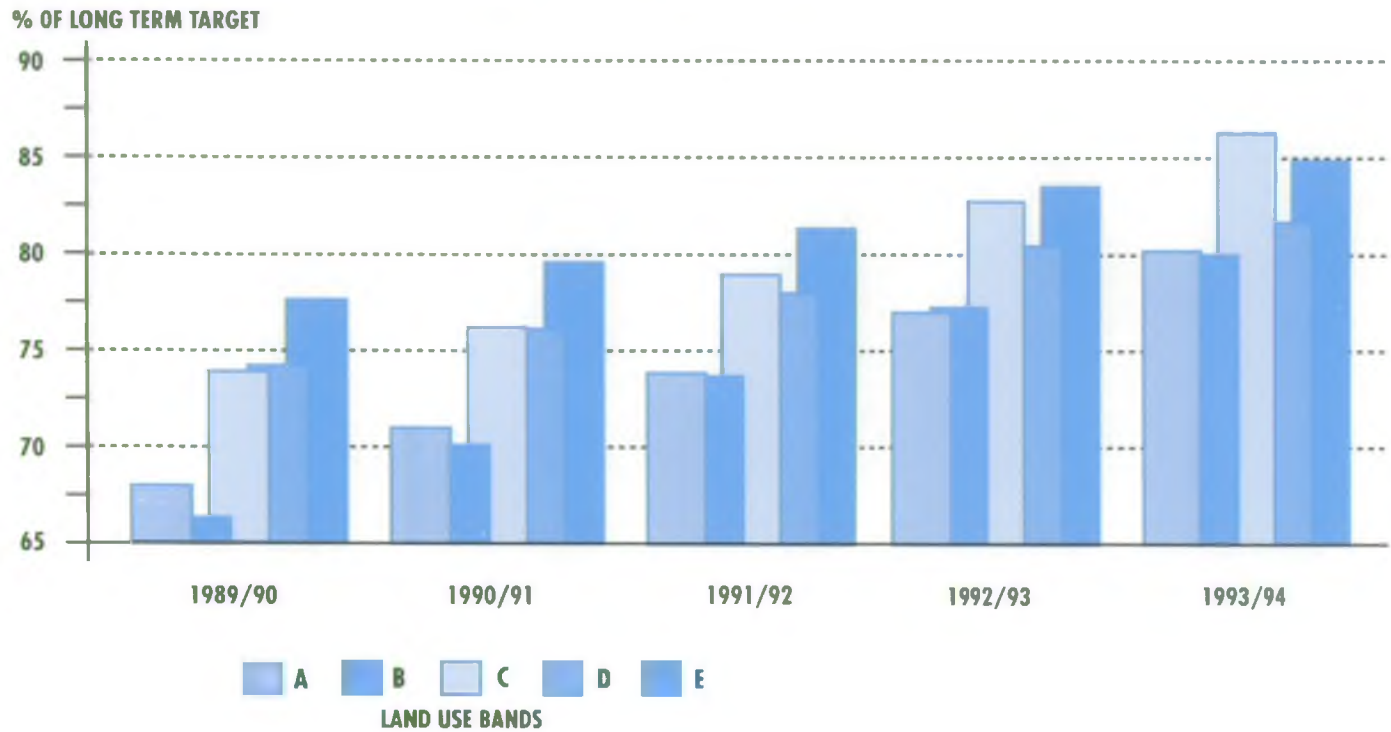
SEA DEFENCES - LENGTH PROTECTED (Km) (1,2,3)						Table FD2
LAND USE BANDS (4, 5)	FORECAST 1989/90	PLANNED 1990/91	PLANNED 1991/92	PLANNED 1992/93	PLANNED 1993/94	LONG TERM TARGETS
A	312	321	334	344	353	367
B	52	57	62	67	72	82
C	144	152	164	179	191	219
D	145	155	167	181	192	222
E	59	73	84	96	106	114
TOTAL	712	758	811	867	914	1004

Notes

- 1) Excludes figures for Welsh Region.
- 2) Figures for Northumbria Region included in FD1.
- 3) Band definition as for Rivers.
- 4) Sea defence defined as a defence to sea-ward of Schedule 4 Boundary Coast Protection Act 1949.
- 5) Description of Land Use Bands given below.

LAND USE BAND DESCRIPTIONS USED IN TABLE FD1 and FD2	
Land Use Band	Description of Typical Land Use
A)	A reach containing urban elements of residential and non-residential property, distributed over a significant proportion of its length, or densely populated areas over some of its length. Any agricultural influence is likely to be over-ridden by urban interests. Amenity uses such as parks and sports fields may be prominent in view of the floodplain's proximity to areas of population density.
B)	Reaches containing residential and/or non-residential property, either distributed over the full length of the reach, or concentrated in parts but characterised by lower densities than Band A.
C)	Limited numbers of isolated rural communities or urban fringe at risk from flooding, including both residential and commercial interests. Intensive agricultural use could also be included.
D)	Isolated, but limited numbers of residential and commercial properties at risk from flooding. Agricultural use will probably be the main customer interest, with arable farming being a feature. In developed pockets of largely urban use, amenity interest may be prominent.
E)	There are likely to be very few properties and major roads at risk from flooding in these reaches. Agricultural use will be the main customer interest with either extensive grassland or, where the flood plain extent is small, arable cropping being the most common land uses. Amenity interests are likely to be limited to public footpaths along or across the river.

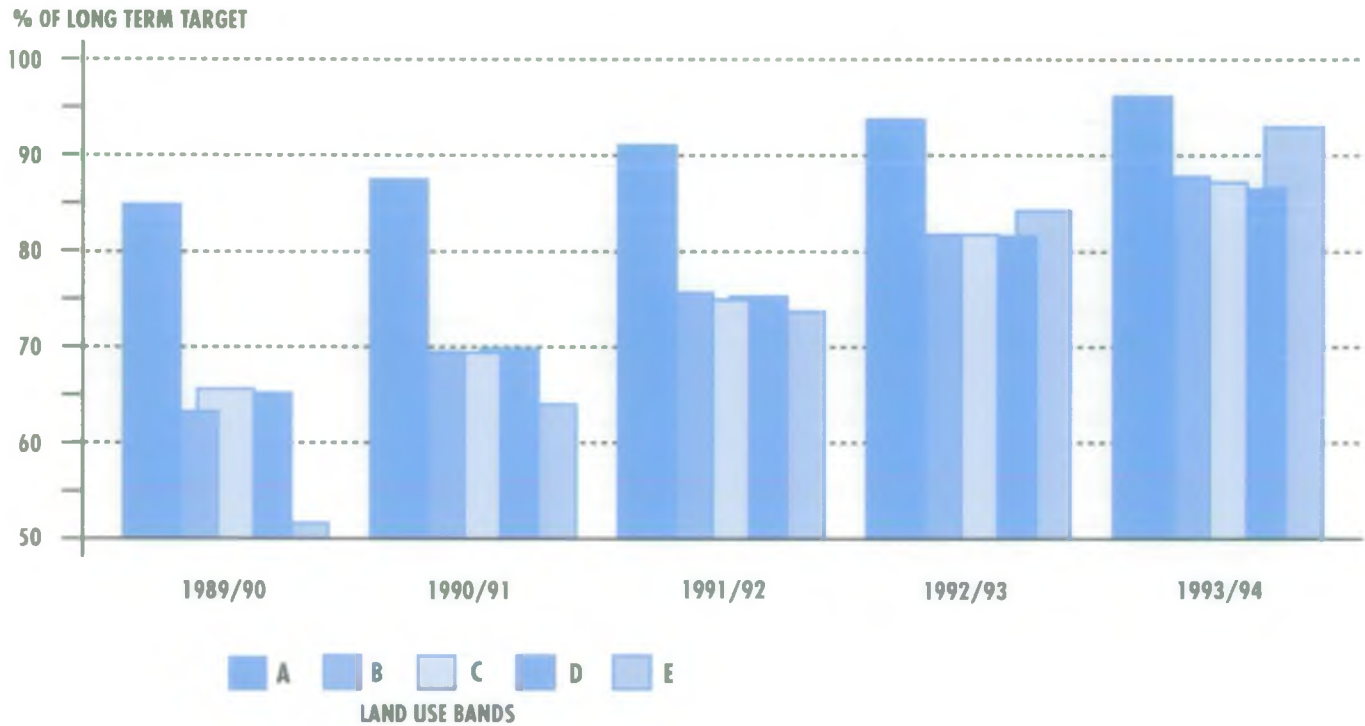
FLOOD DEFENCE - BY YEAR Figure 7
MAIN RIVER BANKS - LENGTH PROTECTED



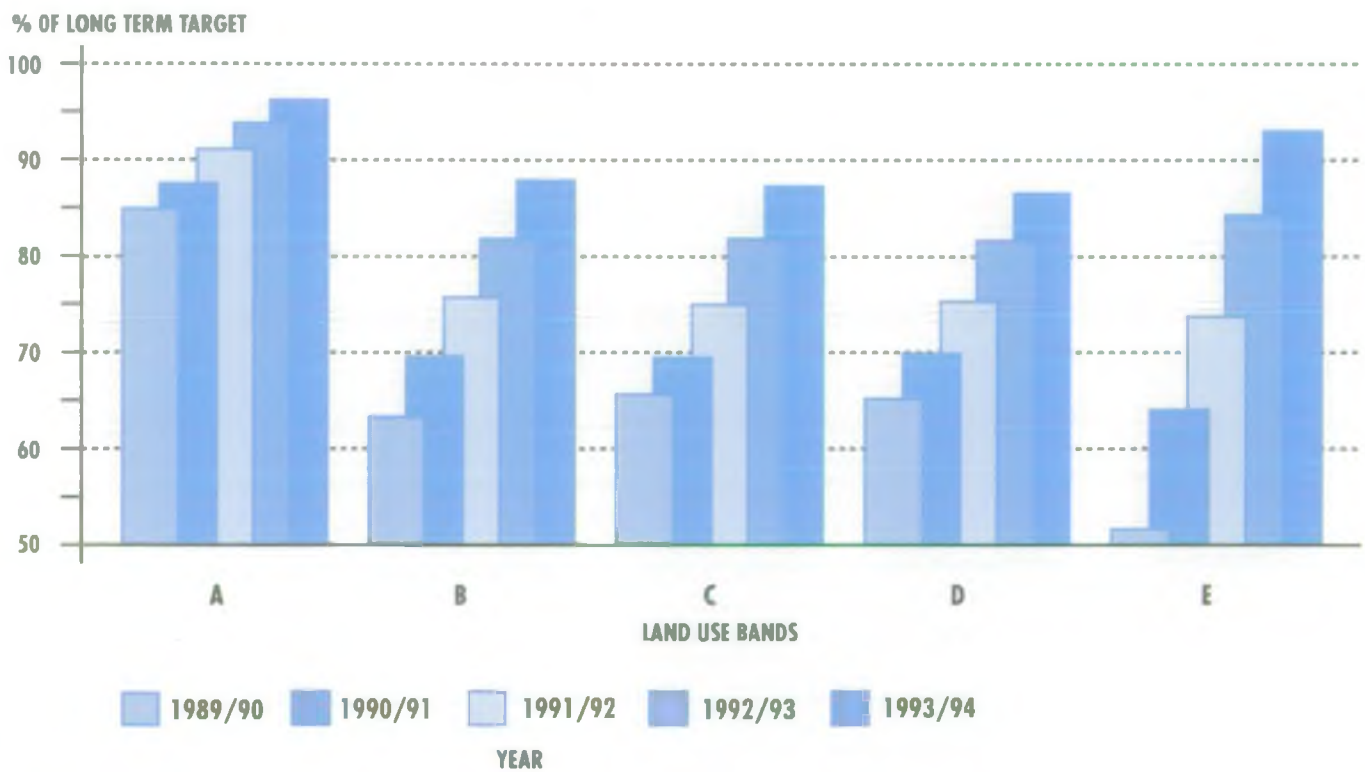
FLOOD DEFENCE - BY LAND USE
MAIN RIVER BANKS - LENGTH PROTECTED



SEA DEFENCE - BY YEAR Figure 8
SEA DEFENCES - LENGTH PROTECTED



SEA DEFENCE - BY LAND USE
SEA DEFENCES - LENGTH PROTECTED



FLOOD WARNING

Table FD3

LENGTH OF MAIN RIVER WITHIN FLOOD WARNING LEAD TIME BANDS
TOTAL LENGTH (km)

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94	Long Term Target(1)
FLOOD WARNING LEAD TIME BAND (hours)							
Over 4	2,662	4,865	4,865	4,865	4,865	4,865	4,355
2 - 4	4,662	6,656	7,061	8,689	8,898	9,323	9,875
Below 2	2,132	4,490	4,200	3,796	3,724	3,613	3,343
TOTAL (4)	9,416	16,011	15,559	15,233	16,671	17,295	17,573

Notes

- 1) Long term target figures not available for North West, Severn Trent and Yorkshire Regions.
- 2) Figures not available for Southern Region.
- 3) Figures for 2-4 hours and below 2 hours in Anglian Region are estimates.
- 4) All figures exclude Welsh Region south-eastern Division.

FISHERIES

INTRODUCTION

The fisheries resources inherited by the NRA are significant as a wildlife resource in need of conservation and protection, as well as a managed resource exploited commercially and for recreation.

The fisheries resource under NRA management is also a diverse one with salmon and trout (migratory and non-migratory) fisheries predominating in the north and west of the area of jurisdiction. Significant fisheries for these species do occur in some south-eastern rivers, but geography, geology and hydrology have determined that central, southern and eastern areas are generally less productive of salmonids. This lower level of abundance has been further reduced by pollution, poor water quality and the construction of in-river structures that are partly or wholly impassable to migratory fishes. Some of these constraints on salmonid population size are also found to affect specific river stocks in the north and west and there is a need to enhance or rehabilitate at least one stock or river in every Region of the NRA.

Coarse fisheries tend to predominate in the south, east and central parts of the NRA's jurisdiction where salmonids are generally less abundant. Nevertheless, significant coarse fisheries are to be found in all Regions including those better known for salmonids and some well known salmon rivers are also high quality coarse fisheries. Illegal fishing is not confined to game fisheries, and potential problems on coarse fisheries also have to be controlled through a system of fishery regulation.

There is a significant, although regionally variable, fishery protection problem since the illegal taking of salmon and sea trout remains a potentially profitable activity in those Regions where these species are more abundant. Poaching in rivers and estuaries and off the coast may pose almost as great a local threat to the conservation of stocks as persistent poor water quality and pollution. However, the size of the unreported catch (including the illegal catches) remains poorly quantified.

There are about 1080 licensed commercial salmon and sea trout instruments in rivers, estuaries and off the coast and, except for privileged engines, these are subject to limitation orders. Gear, season and use are all regulated. There are also regulations determining the methods and season of angling for migratory and freshwater fish.

Each year some 1.2 million angling licences are sold. The bulk of these are held by coarse fishermen, but it is difficult to separate out the proportions of game and coarse fishermen because of regionally diverse licence structures which may cover combinations of salmon, migratory trout and freshwater fish.

Salmon and sea trout catch statistics provide a significant time series of data which enables some evaluation of fish stocks when adequate survey data are absent. In the years 1982 to 1988, the total reported catch of salmon varied (but in no systematic way) between 80,000 and 117,000 individuals, with rods taking between 11,000 and 33,000. Similarly, the total catch of sea trout was between 100,000 and 126,000 with rods taking 30,000 to 56,000.

Commercial netting of eels and elvers is also licensed by the NRA and incomplete nominal catch data indicate that the annual take is about 60 and 21 tonnes respectively.

Commercial exploitation of coarse fish is insignificant and as they are generally returned to the water after capture, catch statistics are not generally collected.

The Regional Water Authorities undertook various surveys aimed at assessing the status of stocks and compiled regional catch statistics which were collated nationally by MAFF.

As a result, the NRA has inherited data from an uneven series of surveys which do not readily convey an accurate picture of the status of the fish stocks across England and Wales. In particular, there was an inconsistent approach to juvenile salmonid and coarse fish surveys, whilst catch statistics for adult migratory salmonids, although well collated, are in need of further development.

In order that effective conservation and management policies are developed, there is a need for appropriate and consistent monitoring of the status of the fish stocks across England and Wales.

The NRA fisheries service has inherited a diverse range of procedures and regulations which have arisen partly through lack of coordination between the separate Regions, and partly through local circumstances. A different duration of fishing season in separate Regions may still be necessary because of the timing of the availability of fish, but a more standard approach for procedural and regulatory activities should prove to be both more efficient and effective. A challenge for the fishery service will be to reconcile such issues whilst allowing for the real regional differences in fisheries across England and Wales.

In the main, the fisheries function resides within a Fisheries, Recreation and Conservation function represented on the regional senior management team. In a small number of Regions, fisheries resides within an environmental or water quality function. A further challenge for the fisheries function within the NRA will be for it to be effective in its own right and to provide valuable inputs to the assessment of water

quality. In the public's perception, fisheries are often the pivotal indicator of the balance of nature in our rivers.

REVIEW OF 1989/90

A Fisheries function managers' committee, comprising the Head Office Fisheries function manager and the ten regional fisheries managers, has been established to facilitate the development of national fisheries policies and to seek a consistent approach across England and Wales. This committee meets regularly to consider papers which are submitted via the Management Committee to the Board.

The work of the Fisheries function has been divided into 11 portfolios eg Enforcement, Disease, Monitoring, Licence structure, Finance, R&D etc. Each of these portfolios is held by a member of the function managers' committee, supported by a small team of colleagues selected from across the Regions on the basis of expertise. In this way, each regional fisheries manager acts as the focal point for a subject or group of subjects within the function and reports back to the committee in order to consult about the development and drafting of papers on the committee's behalf.

To date, this arrangement has enabled the following policy issues to be considered: Salmon Dealer Licensing proposals and a tagging scheme for salmon; a Memorandum of Evidence to the House of Commons Select Committee Agriculture Inquiry into fish farming in the UK; and a consistent policy for issuing general licences for angling throughout the NRA.

STATUTORY DUTIES AND POWERS

The NRA's fisheries functions and the area in which they shall be carried out are described in Section 141 of the 1989 Water Act. This Section reiterates the general duties as defined in Section 28 (1)(2) of the 1975 Salmon and Freshwater Fisheries Act (1975 SFFA) namely to:

- maintain, improve and develop salmon, trout, freshwater and eel fisheries under its jurisdiction
- to establish and maintain Regional Fisheries Advisory committees (RFACs)
- to consult these Committees as to the manner in which the general duties are performed

In addition, the provisions of other Fisheries Acts pertain and these outline further duties and powers. Amendments to these previous enactments (minor and of a technical nature) are given in Schedule 17 of the 1989 Water Act which also effects the transfer of the fisheries function to the NRA.

Further duties under the 1975 SFFA include those to make and maintain fish passes in waters frequented by migratory fishes, and to require others to build fish passes where a new dam or barrier is constructed, or an old one is reduced by half its length and then reinstated (Section 9).

Other powers enabling the NRA to secure the safe passage of migratory fish in respect of gratings, sluices and existing in-river barriers and fish passes are granted in Sections 10-18.

A duty to regulate salmon, trout, freshwater and eel fisheries by a system of licences is imposed in Section 25, whilst the power to limit the number of salmon and trout licences is given by Orders promoted under Section 26.

The movement and introduction of fish to waters not being fish farms is controlled under Section 30, whereby the written consent of the NRA is required before such introductions may take place.

The powers of Water Bailiffs appointed by the NRA are granted in Sections 31 and 32. Such bailiffs have powers of access, inspection, search and seizure to enable the examination of river sites and structures and instruments or bait where there is reason to suspect an offence. They also have powers to apprehend persons fishing illegally at night (Section 34) and to require a fishing licence to be produced (Section 35) and a name and address to be given.

The duty of the NRA to make by-laws fixing the annual close season and the weekly close time for fishing is described in Schedule 1, and duties and powers in respect of licensing are granted in Schedule 2.

The use of Orders and the purposes for which by-laws may be made by the NRA are covered by Schedule 3 and these are frequently made under Section 28 for the general regulation of fisheries and their maintenance, improvement and development. Under Section 28, only the NRA may now apply to the Minister for an Order to recover contributions from the owners or occupiers of fisheries regulated by the Order.

The procedure to be followed for making by-laws is described in Section 186 and Schedule 24 of the 1989 Water Act.

Fisheries offences are created in various parts of the 1975 SFFA and summarised in Schedule 4. The additional offence of "handling under suspicious circumstances" is contained in Section 32 of the 1986 Salmon Act. The 1968 Theft Act also creates an offence in respect of illegally taking fish in private waters.

In those Regions where it is appropriate for the NRA to manage sea fisheries, the duties and powers are contained in the 1966 Sea Fisheries Regulation Act and the 1967 Sea Fisheries (Conservation) Act.

Under the 1937 and 1983 Diseases of Fish Acts, the NRA has a duty to notify MAFF of the occurrence of fish diseases and duties may be placed upon the NRA if an area is designated by MAFF under these Acts. These last two Acts also give the NRA the power to remove dead or dying fish from waters, not being fish farms.

Under the EC Freshwater Fisheries Directive the NRA should designate the fishery classification of the waters under its jurisdiction, but this is done largely on water quality grounds.

AIM, OBJECTIVES AND TARGETS

Aim

- To maintain, improve and develop fisheries.

Objectives

- To prepare a function strategy for the fisheries function.
- To monitor the fishery status of rivers and inland, estuary and where appropriate, coastal waters.
- To regulate, protect and conserve salmon, trout, freshwater, eel and coastal fisheries (where appropriate) through the enforcement of fisheries legislation.
- To formulate policies to maintain, improve and develop fisheries and restore and rehabilitate damaged fisheries.
- To ensure proper consideration of fisheries issues by RFACs.
- To provide a fisheries service which is based on a sound charging system and which is sensitive to the needs of the public.

Targets

- To produce a fisheries function strategy and identify fisheries output and performance measures by September 1990.
- To review systems of licensing, regulatory, and charging policies (particularly in relation to S.28 Orders) by January 1991.
- To determine the current level of licence compliance and make recommendations for levels of licence checking by June 1990.
- To identify procedures for assessing and levying charges on fisheries by September 1990 (Section 28 Orders).
- To begin implementation of procedures that will lead to charges under Section 28 by January 1991.
- To develop a consistent policy on response to fish kills by May 1990.
- To develop a consistent policy on fish disease by January 1991.
- To develop fisheries monitoring and classification systems by January 1991.
- To implement a three year rolling programme of fisheries monitoring, that is consistent across England and Wales by March 1991.

- To review catch statistics procedures, in particular the need to collect fishing effort data by March 1991.
- To establish the level and extent of illegal fishing and to implement a strategy for its effective control by March 1991.

INPUTS

		Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Actual	1989/90	415*	15.0	7.4	-7.6
Planned	1990/91	425	16.7	6.5	-10.2
Planned	1991/92	447	20.7	7.1	-13.6
Planned	1992/93	452	21.8	7.7	-14.1
Planned	1993/94	454	22.5	8.8	-13.7

* Forecast only

The increase in manpower and higher expenditure proposed is to enable the Authority to fully carry out its duty to maintain, improve and develop fisheries and increase its regulatory activities to protect stocks from over exploitation. Pending the review of licensing arrangements, the income figures are based on known licence fees set up till 1991/92 and assume no contribution from S.28 Orders. Re-assessed licence fees and S.28 income will probably reduce the fisheries deficit from 1992/93.

OUTPUTS

- Licence enforcement.
- Fisheries surveys.
- Fish rescues.
- Fish rearing and stocking.
- Published annual summary of fisheries statistics.

This will be defined by the fisheries strategy but in draft would include:

- numbers and weights of migratory salmonids caught in England and Wales and where appropriate, summary statistics for eels and coarse fish,
- number of fisheries surveyed and report of current status (inclusive of fish counters and traps built and operated),
- number of fish kills attended and numbers and types of fish rescued,
- number, type and size of fish reared and stocked out by NRA,
- number of section 30 consents for fish introductions issued by the NRA,
- number of licence offence reports issued and prosecutions,
- number of by-law and statutory offence reports issued and prosecutions,
- number and type of fish passes and other habitat improvement works and structures built,
- number and type of licences sold,
- number of fishery Orders promoted (inclusive of Section 28 for assessing fisheries),
- number of by-laws made for the better protection and regulation of fisheries.

- Review and proposals for fish kill policy.
- New output and performance measures.
- Proposals for Section 28 procedures and charging scheme.
- Review of and proposals for licences and charges.
- Fish disease policy.
- Fisheries monitoring and classification systems.
- Report on illegal fishing control.
- Fisheries strategy.

PERFORMANCE ASSESSMENT

The Authority inherited a variety of performance indicators for fisheries in its ten Regions. Those presented here are only interim activity indicators. A priority for 1989/90 and 1990/91 is to develop appropriate indicators that will enable effective measurement of the fisheries function.

FISHERIES PERFORMANCE INDICATORS

Table F1

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
Length (km) of classified fishery - 1a) salmonid*	17,798	17,798	18,243	18,700	19,168	19,647
and 1b) non-salmonid (* includes mixed)	7,673	7,673	7,865	8,062	8,264	8,471
No of licences:						
2a) Rod (x1000)	1,174	1,174	1,186	1,198	1,210	1,222
2b) Net	3,621	3,621	3,621	3,621	3,621	3,621
No of prosecutions:						
3a) licence offences	2,094	2,094	2,094	2,094	2,094	2,094
3b) by-law/statutory offences	883	883	883	883	883	883
4) No of fishery survey sites	1,320	1,320	1,386	1,455	1,528	1,604
5) No of fish kills attended	710	710	710	710	710	710
6) Number of fish stocked out (x1000)	4,100	4,100	4,100	4,100	4,100	4,100

Note that the lengths of river classified represent those designated under the EC Freshwater Fish Directive in most, but not all cases. Moreover, the river lengths do not correspond to the total lengths of river available and vary in proportion from Region to Region. Note there is no meaningful forward extrapolation of the national aggregates of current levels of activity. Hence only current levels are shown. However, as a planning exercise, activities 1a) and b) have been projected at a 2.5% increase per annum; activity 2a) at 1% per annum and activity 4) at 5% per annum. Clearly larger percentage increases over the whole 5 year period will be necessary to effect significant changes.

RECREATION

INTRODUCTION

Canoeing, boating, other contact water sports and angling make up the bulk of the recreation both provided and regulated by the NRA. The use of towpaths and riverbank pathways for recreation are of increasing importance. The NRA's main role in recreation is to reduce pollution and facilitate a cleaner water environment, and thus to enable the full recreational enjoyment of our rivers and coastal waters by the general public.

The NRA's own direct involvement in recreation is unevenly spread across England and Wales. The clearest and most formal definitions of this involvement are to be found in the more south-eastern regions where there are Acts bestowing recreational duties and powers on the previous Water Authorities or their predecessors. Many of these activities are associated with boating, but other forms of recreation or leisure are also catered for. In addition to these inherited powers and duties, the NRA has a wider duty to promote recreation across all of the Regions of England and Wales insofar as the NRA considers this to be desirable.

The main tasks in recreation are to identify all NRA assets where recreational facilities are or could be provided and to produce management plans for all sites owned or leased by the NRA. In addition to assessing the potential for increasing visitor usage, the NRA needs to assess the income potential of each site. In developing and promoting recreational facilities throughout England and Wales, there is a need to establish and develop liaison arrangements with recreation bodies and to identify the scope for collaborative projects.

In promoting the development of such recreation, the NRA will prevent conflicts by securing the interests of riparian owners and other interested parties as well as providing relevant amenities and facilities to enable the public and users to correctly interpret the value of a site and to use it without detriment to its function or intrinsic beauty. Potential conflicts of use will need to be reconciled by the NRA and to this end the NRA will be guided by the Code of Practice on Conservation, Access and Recreation.

REVIEW 1989/90

A function managers' committee has been established for recreation, conservation and navigation, comprising the Head Office Fisheries, Recreation and Conservation Manager and the regional FRC managers (in those Regions where there is one). If a Region has no FRC manager, a senior conservation or recreation specialist is designated to attend. A Recreation task-group of five regional officers, led by a senior regional officer has been established in order to consider the main issues and to report to the function managers' committee.

STATUTORY DUTIES AND POWERS

Section 8 of the 1989 Water Act imposes upon the NRA a duty to make available for recreation the waters and associated lands to which it has rights. This Section also places upon the NRA a duty to promote the use of other inland and coastal waters and land associated with such waters for recreational purposes.

Section 10 of the 1989 Water Act refers to the Code of Practice on Conservation, Access and Recreation which provides guidance on both the kinds of provision that should be made as opportunities arise for access and recreation, as well as the need to consider management agreements with other bodies.

Section 157(1) of the 1989 Water Act indicates that an Order may be used to place upon the NRA a duty to make recreational facilities available when carrying out work in connection with the construction and operation of a reservoir where inhabitants may be affected. Section 157(2) indicates that in Wales there is a duty that such facilities should benefit inhabitants of the affected area. Section 157(3) places a duty for consultation with local councils in respect of (2).

Other duties and powers are to be found in miscellaneous Acts of which there needs to be a review. For example, the 1977 Anglian Water Act covers a variety of functions, but imposes duties in relation to recreation on waterways in the Anglian Region. Sections 11 and 12 are to ensure that recreational waterways are put to best use for recreation and leisure and that the recreational waterways of the Region are developed, improved, preserved and managed for recreation and leisure, including the provision of moorings and powers to dredge.

AIM, OBJECTIVES AND TARGETS

Aim

- To develop the amenity and recreational potential of waters and lands under NRA control.

Objectives

- To produce a corporate strategy for recreation and amenity for land and waters under the control of the NRA.
- To adopt and implement the Conservation, Access and Recreation Code of Practice as it applies to the NRA.
- To promote water recreation generally but in particular, the use of the NRA's own recreational facilities.
- To seek as far as practicable to recover from users the costs of providing NRA recreational facilities.
- To ensure proper consideration of recreational issues by RRACs.

Targets

- To produce a corporate strategy for recreation and identify recreation, output and performance measures by September 1990.
- To produce a report listing the recreational assets and the availability of recreational facilities at sites controlled by the NRA by September 1990.
- To identify the potential to increase the number of NRA sites and/or the area of land used for recreational purposes by March 1991.
- To identify the potential to increase recreational income by March 1991.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Actual 1989/90*	23**	2.5	0.2	-2.3
Planned 1990/91	26	1.9	0.6	-1.3
Planned 1991/92	29	2.6	0.6	-2.0
Planned 1992/93	29	3.9	0.7	-3.2
Planned 1993/94	29	3.7	0.7	-3.0

* Includes conservation

** Forecast only

The additional manpower and expenditure proposed is as a result of the NRA's increased responsibilities for recreation compared to the RWAs. An increase in income from higher fees is planned in 1990/91. Subsequently, little account is made for possible increases in income as this will depend on the preparation of management plans for the NRA-controlled sites.

OUTPUTS

- Review of the availability, use of and income from NRA recreational facilities.
- Recreation, output and performance measures.
- Recreation function strategy.

PERFORMANCE ASSESSMENT

Pending the development of new NRA performance measures, only one activity indicator (visitor numbers to NRA facilities) is presented here. Note the figures are only based on a selected number of sites where data is collected.

RECREATION PERFORMANCE INDICATOR Table R1

Visitor Numbers to NRA facilities	
Planned 1989/90	19,000
Forecast 1989/90	19,000
Planned 1990/91	21,125
Planned 1991/92	23,250
Planned 1992/93	25,375
Planned 1993/94	27,500

This is only an interim indicator for sites where data is available. A priority for 1989/90 and 1990/91 is to develop appropriate indicators that will enable effective assessments to be made of the NRA's performance in developing recreation.

CONSERVATION

INTRODUCTION

The conservation of the flora and fauna inhabiting the inland and coastal waters of England and Wales and their associated lands, landscapes and archaeology is an important responsibility placed upon the NRA.

The public and many countryside, nature and wildlife organisations have high expectations that the landscape, scenic and wildlife value of our rivers will be protected and enhanced as a clear indication that existing pollution is controlled and reduced, and that future developments in or near rivers are sympathetic to the needs of our flora and fauna, as well as to the built environment and our archaeological heritage.

The predecessor organisations made a variety of separate arrangements in respect of their duties to further conservation, and not all had clearly identified conservation staff.

All NRA Regions have officers who undertake specific conservation duties, although some of these have been in post only a short time. There are also differences in the levels of staffing between Regions which may, at least in part, be attributable to regionally specific conservation requirements.

With the formation of the NRA, conservation duties are now wider than before because there is a duty to promote as well as further conservation. The NRA's conservation duties pervade all of its activities.

There is a need to clarify how conservation is managed and financed within the NRA. Currently staff, organisational and scheme costs fall to a variety of functions, and the overall manpower and financial resources associated with conservation have proved difficult to identify clearly.

There is a further need to evaluate the implications of the new wider NRA duty to promote conservation. A major objective of the conservation function will be to ensure that all functions receive conservation advice that is relevant to their activities and thereby reconcile potential conflicts between the various water users and uses.

Similarly, advice from the conservation function will enable the NRA to effectively implement the Code of Practice on Conservation, Access and Recreation.

Existing River Corridor surveys, which form a substantial part of the function's work, have developed independently in different Regions. These surveys need to be reviewed and standardised to ensure efficient and cost-effective pre-scheme surveys.

In addition, the development of a strategic monitoring survey

programme will aid the conservation of our rivers by enabling the relevant conservation information to be input at an early stage in catchment management planning.

A function managers' committee has been established for recreation, conservation and navigation, comprising the Head Office Fisheries, Recreation and Conservation Manager and the regional FRC manager where there is one. In the absence of a regional FRC manager, a senior conservation or recreation specialist is designated to attend. A Conservation task group of four regional officers led by a senior regional officer has been established in order to consider the main issues and to report to the function managers' committee. A River Corridors technical task group has been established, comprising a conservation officer from each Region. This task group will report in 1990 to the FRC function managers' committee on ways of standardising river corridor surveys across England and Wales, and will identify technical and R&D requirements to develop survey techniques effectively and efficiently.

STATUTORY DUTIES AND POWERS

Section 8(1) of the 1989 Water Act imposes a duty to further conservation in respect of proposals relating to the NRA's functions, to protect sites of conservation interest and to take account of the effects that any proposals would have.

Section 8(4) of the 1989 Water Act imposes a general duty to promote conservation to the extent that the NRA deems desirable.

Practical guidance in respect of the NRA's environmental duties is given in a Code of Practice on Conservation, Access and Recreation approved by the Minister under Section 10 of the Act.

AIM, OBJECTIVES AND TARGETS

Aim

- To conserve and enhance wildlife, landscapes and archaeological features associated with waters under NRA control.

Objectives

- To develop a function strategy and output and performance measures for conservation.
- To adopt and implement the Conservation, Access and Recreation Code of Practice as it affects all other NRA functions.
- To undertake conservation management and further conservation as part of the NRA's other functions.

- To promote the conservation of the aquatic environment.
- To monitor the conservation status of rivers, estuaries, coastal waters and associated lands.
- To ensure consideration of relevant conservation issues by each of the statutory regional committees.

Targets

- To produce a function strategy and identify output and performance measures for conservation by September 1990.
- To produce a conservation policy incorporating the NRA duty to promote conservation and a report interpreting the NRA's responsibilities under the Conservation, Access and Recreation Code of Practice by September 1990.
- To ensure that appropriate conservation management has been incorporated into all NRA activities by March 1991.
- To review methodology, develop and implement a rolling programme of river corridor surveys by March 1991.
- To identify and prioritise appropriate activities to enable the NRA to fulfil its duties to promote conservation by September 1990.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Actual 1989/90*	12**	2.5	0.2	-2.3
Planned 1990/91	21	1.3	0.0	-1.3
Planned 1991/92	21	1.6	0.0	-1.6
Planned 1992/93	21	2.1	0.0	-2.1
Planned 1993/94	22	2.1	0.0	-2.1

* Includes recreation

** Forecast only

Additional manpower and expenditure is due to the Authority's increased responsibilities in relation to conservation under the Water Act compared to those of the RWA's. The expenditure shown here excludes that on specific conservation works carried out as part of flood defence projects.

OUTPUTS

- Completed conservation strategy.
- Report on the implementation of the Code of Practice on Conservation, Access and Recreation.
- Environmental assessments made in conjunction with all NRA operational activities.
- Completed river corridor surveys.
- Series of specific conservation projects.

PERFORMANCE ASSESSMENT

The Authority inherited a variety of performance indicators for conservation in its ten Regions. Only one activity indicator is presented here as none of the other indicators could be meaningfully aggregated for national purposes.

CONSERVATION PERFORMANCE INDICATOR Table C1

	River Corridor Surveys (km)
Planned 1989/90	2,095
Forecast 1989/90	2,095
Planned 1990/91	5,392
Planned 1991/92	5,753
Planned 1992/93	5,040
Planned 1993/94	4,586

This is only an interim indicator. A priority for 1990/91 is to develop appropriate indicators that will enable effective measurement of the Authority's work in relation to conservation. This planning requirement will be addressed in the conservation function strategy.

NAVIGATION

INTRODUCTION

Specific Acts grant navigation powers to the NRA in some Regions (Anglian, Thames and Southern) where it controls various river navigations and Rye Harbour. In addition, the NRA has by-law making powers in respect of inland waterways in England and Wales, where there is a public right of navigation but no other authority legitimately exercises navigation powers. However most of the canal network and some navigable rivers are regulated by other navigation authorities.

The navigation function is intimately associated with recreation and integrated with other functions and riparian interests. A common objective is a requirement to maintain water levels and conserve water.

Most of the NRA's existing navigation activities are subject to well established regulations and charges. Whilst these may have been appropriate to the previous Water Authorities, the NRA needs to establish whether these regulations and charges are appropriate to a national body and are consistent across England and Wales.

Where Regions have needed to organise a formal structure to manage the navigation function, different arrangements have been made. Either the flood defence function or fisheries, recreation and conservation have responsibilities for its management. This may prove to be appropriate if NRA navigation responsibilities remain at the current level.

However, should by-law making powers be used to extend the NRA's range as an active navigation authority, particularly if there is a need to protect or reconcile the interests of other river users with those of potential navigation users, a more standard arrangement for managing the navigation function across the whole NRA may be appropriate, especially if the closely related interests of fisheries, conservation and recreation can be integrated.

REVIEW OF 1989/90

A function managers' committee has been established for recreation, conservation and navigation comprising the Head Office Fisheries, Recreation and Conservation Manager and the regional FRC manager where there is one. Where a Region does not have an FRC manager, a senior conservation or recreation specialist is designated to attend. A Navigation task group of four regional officers led by a senior regional officer has been established in order to consider the main issues and to report to the function managers' committee.

STATUTORY DUTIES AND POWERS

Under Section 158 of the Water Act, the Authority has powers to make by-laws in respect of any waterway owned or managed by the NRA, or in respect of any inland waterway where there is a public right of way if the navigation is not currently subject to the control of a navigation authority. Such by-laws may be made for the maintenance of order, regulation and maintenance of the navigation and to prevent damage to the waterway or associated lands. By-laws may be made to regulate boats, bathing and fishing and may require registration of boats in exchange for a registration fee.

A suite of miscellaneous Acts govern the operation of navigations in Anglian, Thames and Southern NRA Regions and a full review of these is necessary before generalisation is legitimate. In broad terms, these Acts empower the NRA to maintain and improve the navigation and associated structures, to license works and remove obstructions and to regulate the navigation, making certain charges and enforcing relevant by-laws. Where the navigation involves a harbour, there may be duties to keep the harbour open as a Sea Fisheries harbour.

The Acts governing navigations in NRA Regions are:

Anglian region

- 1977 Anglian Water Act

Southern region

- 1911 Upper Medway Navigation & Conservancy Act
- 1914 Upper Medway Navigation & Conservancy Act
- 1979 Southern Water Authority (Transfer of Lower Medway Navigation Function) Order
- 1982 Southern Water Authority Act
- 1976 Harbour of Rye Revision Order
- 1951 Sea Fish Industry Act
- 1987 Pilotage Act

Thames region

- Thames Conservancy Acts (1932, 1950, 1959, 1966 and 1972)

AIM, OBJECTIVES AND TARGETS

Aim

- To improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.

Objectives

- To enforce navigation statutes and by-laws and to regulate navigation through a consistent series of licences.
- To seek to recover from users, as far as practicable, the specific identifiable costs of providing navigation facilities.

- To prepare a function strategy for navigation for those waters where the NRA is the navigation authority.
- To undertake programmes of repair and maintenance on NRA navigations.
- To achieve optimal use of NRA navigations and consider the need for the NRA to seek under S158(2) of the Water Act to become the navigation authority for other waters.
- To ensure proper consideration of navigational issues by the RRACs.

Targets

- To produce a function strategy and identify output and performance measures by September 1990.
- To review systems of licensing, regulation and charging by January 1991.
- To identify the need for change in intensity of use and increase in income from NRA navigations by January 1991.
- To identify by March 1991 additional areas of water where the NRA should consider seeking to become the navigation authority.

INPUTS

	Manpower	Expenditure	Income	Variance
	(No)	(£m)	(£m)	(£m)
Actual 1989/90	124*	6.0	2.0	-4.0
Planned 1990/91	125	6.9	0.5**	-6.4
Planned 1991/92	125	8.0	0.6**	-7.4
Planned 1992/93	125	9.2	0.6**	-8.6
Planned 1993/94	125	9.5	0.7**	-8.8

* Forecast only

** Net income retained by NRA. Other income is payable to the Treasury.

Increased staffing and expenditure is associated with urgent repair and maintenance work at specific sites and installation of sanitary facilities to prevent water pollution. Only a small increase in income is predicted in 1990/91 and beyond until completion of a review of licensing and charging policy to be undertaken in 1990/91.

OUTPUTS

- Regulated NRA navigations.
- A function strategy for navigation for NRA controlled navigations.
- Completed navigation repair and maintenance programmes.
- A report on the possible use of the Authority's S158(2) powers to become the possible navigation authority on other Waters.

PERFORMANCE ASSESSMENT

The Authority has inherited a variety of different performance indicators for navigation. Pending the development of new performance measures only one interim activity indicator is presented here.

NAVIGATION PERFORMANCE INDICATOR Table N1

	Number of Navigation Licences*	Length (km) of Navigation maintained
Planned 1989/90	31,269	743
Forecast 1989/90	31,269	743
Planned 1990/91	32,802	744
Planned 1991/92	32,762	744
Planned 1992/93	32,812	760
Planned 1993/94	32,812	760

* excluding Southern Region

ADMINISTRATION

INTRODUCTION

The primary challenge to the Administration Service throughout the NRA is one of bringing together the best practices from ten different inheritances. Throughout the Authority, there are different ways of approaching many administrative tasks; the aim therefore is to work towards standardised inter-regional practices where this is desirable, practicable and cost-effective and to introduce appropriate national standards.

Flowing from this, tasks that the Administration Service has to tackle include providing an efficient secretariat to the Board, ensuring that the Regional Committees are run smoothly so that the input of the Committees to the NRA is handled sensitively and that the Committees are consulted on subjects as necessary and services are provided to meet the needs of the Chairmen and Members.

It is also vital to ensure a good system of communication within Head Office and to enhance the day-to-day communications within the NRA, particularly through the contacts between Head Office and Regions, but also inter-regionally.

Alongside the work that has been going on by public relations staff on developing a corporate image for the NRA, a public image of high standard will only be achieved through attempting to develop high, common standards in letter writing, telephone manner and the appearance of offices in public reception areas.

National standards are required for the way in which the Authority handles particular types of work. Letters from Members of Parliament for example need to be handled sensitively and efficiently; a national system of ways of handling these letters and of measuring our performance to target will need to be established.

As the Authority develops as a national organisation, the opportunity will need to be taken to assess the amount of staff resource that goes into handling baseline activities eg handling correspondence from Members of Parliament and other sources, responding to requests for information from Government Departments for example for parliamentary questions and from members of the public and others.

An efficient system of management accounting should enable the Authority to decide on the management standards to be achieved in the carrying out of baseline activities, in relation to the amount of resources devoted to the task.

REVIEW OF 1989/90

Support and administration services were in the front-line during the process of setting up the NRA. Significant regional resources were devoted to securing a successful separation from the water authorities/plcs, with much effort devoted to achieving satisfactory Transfer Schemes by the target date of 31st August, establishing new office systems and rationalising office accommodation. Several moves to new accommodation were planned or completed.

The focus for this activity was the National Rivers Authority Advisory Committee. The NRAAC started work in May 1988 with the Chairman and a small group of seconded civil servants and consultants. The Committee proper was appointed in July, and between that time and June 1989, the Committee held twelve meetings and considered 54 formal papers. The Committee was established with the following terms of reference:

"to advise the Secretaries of State and the Minister of Agriculture, Fisheries and Food on the implications for the Water Authorities of the re-organisation needed to provide a separate organisational structure for their water supply and sewerage functions, and the functions that will be performed by the new National Rivers Authority; and to advise them on the acceptability of the scheme proposed by each Water Authority, and to ensure that it will enable the NRA adequately to fulfil the tasks proposed to be allocated to it".

The initial task of the NRAAC was to advise on the outline schemes of organisation for the NRA Regional Units which each Water Authority submitted to the Secretary of State during June 1988. Summaries of the schemes as agreed with the NRAAC were submitted to the Secretary of State and laid before Parliament in November/December 1988. The NRAAC also submitted advice to the Secretary of State on Regional Advisory Boards (July 1988), and Head Office structure and appointments (November/December 1988). Throughout the passage of the Water Bill, the Committee advised the Department on modifications and adjustments to the Bill's provisions to provide the NRA with satisfactory powers and resources. The Department published in May 1989 a consultation paper inviting views on the NRAAC's proposals for establishing the NRA's Regional Committee structure.

The results of this consultation exercise were considered by the NRAAC and subsequently the Board, who proceeded on July 17th 1989 to confirm the basic structure of the Regional Committees proposed. The terms of reference for the Committees were published, together with an invitation to interested organisations to suggest names of members for the RRAC and also RFAC. The NRAAC had set a target of selecting names of RRAC Chairmen before vesting day, and the

Chairman of the Authority announced the names of the Committee Chairmen on 31st August. During September and October 1989, the Members of these two Committees were announced from the Regions. As foreshadowed in the Water Act 1989, the membership of the RFDCs was carried over from pre-vesting arrangements to an appointed day or days to be determined by the Minister of Agriculture and the Secretary of State for Wales.

On 1st September 1989, the NRA fully assumed its functions. Administrative duties included the consolidation of secretariat arrangements for Board Meetings and also for the newly established Management Committee, consisting of Head Office Directors and Regional General Managers and chaired by the Chief Executive. Both the Board and Management Committee meet at monthly intervals, and a national framework of meetings has been established. Both the Board and Management Committee have established the practice of meeting at alternate months in London and in one of the Regions. Work on fleshing out the detail of the Regional Committee structure has also progressed, with the preparation of guidelines for the conduct of meetings, the declaration of members' interests and payment of remuneration and expenses. A very successful national conference of Regional Committee Chairmen was held at Coventry on 3rd November. The Chairmen of all the RFACS and RFDCs have continued to meet together at intervals; arrangements for similar meetings of RRAC Chairmen have also been put in place.

In relation to the office management function, studies have progressed on the re-location of Head Office in the light of resource and accommodation problems at 30-34 Albert Embankment. Alternative solutions in London were explored, before the decision was reached to re-locate most of Head Office to an out of town site near Bristol. Work has also been initiated on establishing systems for dealing with tasks on a national basis, for example systems for dealing with correspondence from members of the public, and for advising Departments on replies to Parliamentary Questions.

STATUTORY DUTIES AND POWERS

The legal framework of the organisation and proceedings of the Authority is set out in Schedule 1 of the 1989 Water Act. This covers the proceedings of the Authority, and the keeping of minutes by the Authority, its Committees and sub-committees. By virtue of Schedule 1, paragraphs 11 and 12, the National Rivers Authority is subject to the jurisdiction of the Parliamentary Commissioner for Administration in relation to all its functions other than its flood defence functions; in relation to the NRA's flood defence functions and Regional Flood Defence Committees, the Local Commissioners for Administration will investigate complaints. The Authority is also subject to the House of Commons Disqualification Act 1975 and the Northern Ireland Assembly Disqualification Act 1975 (Water Act 1989, Schedule 1, paragraph 13).

The Regional Committee structure of the NRA is determined by the Water Act 1989. Section 2 lays a duty on the Authority to establish and maintain Regional Rivers Advisory Committees, to consult the Regional Committee about Authority proposals relating generally to the manner in which the Authority carries out its functions in that Region, and to consider any representations made to it as to the manner in which the Authority carries out its functions in the Region. Section 141 lays the duty on the Authority to establish and maintain Fisheries Advisory Committees, and Section 137 establishes Regional Flood Defence Committees and, where appropriate, Local Flood Defence Committees. Provision is made for the payment of remuneration and expenses by the Authority to Chairmen and Members of Regional and formally constituted local Committees.

The proceedings of the Committees are open to the press and public under the provisions of Schedule 25 to the Water Act 1989. Chairmen and Members of Flood Defence Committees are required to declare their interests and those of spouses on a register, under the provisions of the Land Drainage Act 1976.

AIM, OBJECTIVES AND TARGETS

Aim

- To improve efficiency in the exercise of the NRA's functions.

Objectives

- To establish a function strategy for administration.
- To develop effective means of dealing with Parliamentary Questions, input to Committees, and general liaison with Government departments.
- To provide an efficient secretariat service to the Board of the Authority and the Management Committee, and harmonise administrative procedures for Regional Committees and Regional Advisory Boards.
- To provide administrative support, secretarial, registry, photocopying, typing and other communications, to enable efficient communication within and between Head Office, Regions and the Authority's core functions and support services.
- To provide office, library and information services appropriate to the needs of the Authority.
- To develop and monitor NRA communications, via telephone, facsimile and other means.
- To ensure that all moves to new accommodation are carried out efficiently, involving staff as appropriate.
- To establish a policy for the use of the Welsh language in the conduct of the Authority's business.

Targets

- To review by May 1990 the level of remuneration of Board Members and Regional Committee Chairmen from April 1990.
- To establish a Welsh language policy by September 1990.
- To draw up a function strategy for administration by September 1990.
- To establish output and performance measures for specified administration services by September 1990.
- To ensure that environmentally-friendly products are used wherever available at reasonable price, and that used paper and other products are recycled where possible.
- To establish monitoring arrangements for the time taken by telephonists to answer telephone calls and the response time for replying to letters from Members of Parliament and the public by September 1990.
- To undertake, by December 1990, a review of the best use of accommodation in each Region, including energy savings.

PERFORMANCE MEASUREMENT

The Authority inherited a variety of performance measures in each of its Regions which cannot be meaningfully aggregated for national purposes. New NRA output and performance measures will be developed in 1990.

INPUTS*

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	420	33.3	0.0	-33.3
Planned 1991/92	451	29.2	0.0	-29.2
Planned 1992/93	452	30.4	0.0	-30.4
Planned 1993/94	453	33.0	0.0	-33.0

* includes policy and management, administrative support and buildings, and offices and depots.

Additional posts in a number of regional offices and Head Office have been identified since vesting. Some of the increase in manpower is in relation to the proposed Head Office move to Bristol with retention of some staff in the London office. Expenditure rises in 1993/94 due to anticipated capital expenditure on offices and depot maintenance. Administration costs are re-charged across the core functions and other support services.

OUTPUTS

- Board and Committee papers and minutes.
- Public enquiries, photocopying and facsimiles handled.
- Replies to letters from MPs and others.
- Responses to Parliamentary Questions.
- Library and information services.
- Function Strategy.

LEGAL SERVICES

INTRODUCTION

The main challenge for the legal services of the NRA is to ensure national consistency across the range of its activities. The first priority was to establish a national enforcement policy in respect of pollution control with guidelines to be followed by all ten Regions. Having different approaches to enforcement and prosecution in the different Regions is not a defensible option. The legacy of the Water Authorities in this respect is one that the NRA will not expect to follow.

In policy terms, prosecution is not an end in itself: our aim is not to march as many people as possible through the Courts but to secure improvements in standards. Prosecution is however an important tool in the armoury of the NRA, which the Authority will not flinch from using. It is expected that the numbers of prosecutions to be taken by the NRA will increase significantly in relation to the activities of the predecessor Authorities.

As a national organisation, it is essential for the NRA to be operating in all Regions on the basis of consistent legal advice. A system therefore needs to be in place for collating and disseminating a national level of advice and opinion, as do national databases on, for example, previous conviction cases. Appropriate library facilities will be needed to back up this activity.

The NRA is not simply the sum of ten units that were previously part of the Water Authorities. The legislative framework within which the NRA operates is different. A key issue therefore is the education and training of NRA staff in the new legislative framework within which they operate. Written guidance is obviously essential, but this is not the whole story. A training programme is needed for the staff of the NRA throughout the Regions and at Head Office.

In its corporate activities, the NRA needs to act in a legally sound fashion. Officers therefore have to be mindful of the need to seek legal guidance where appropriate, and to proceed in accordance with proper standards of conduct in their day-to-day activities. Again the training input from the legal function is very important.

REVIEW OF 1989/90

The main thrust of legal input to the work of the NRAAC was in relation to the Transfer Schemes and the Water Bill on its passage through Parliament. Many comments were made to the Department on improvements to the Water Bill. Access to Sewage Treatment Works was but one issue which gave rise to some contention. A major task for the NRAAC and NRA Head Office up to 1st September was the formulation of an Enforcement Policy that would be consistent across all Regions.

Guidance was prepared on this in relation to pollution control for all Regions to follow. This policy was made public as part of the material issued at the launch of the Authority on 1st September.

Work began on establishing a national basis for collating legal opinion and advice so as to achieve consistency of approach across the NRA as a whole.

A major task was to establish a firmer understanding for staff of the implications for the NRA of the 1989 Water Act; a study of the provisions was commissioned from the University of Wales and published as a book "The Law of the NRA". Seminars and other training efforts were also initiated. Levels of delegation for the Scheme of Delegation were determined.

STATUTORY DUTIES AND POWERS

The primary duties and powers of the NRA are set out in Part III of the 1989 Water Act. Schedule 1 of the Act contains provisions relevant to the execution of the Authority's legal responsibilities in relation to delegation of powers to Members, officers, employees or Committees of the Authority, the application of the seal of the Authority, and the serving of documents by the Authority.

AIM, OBJECTIVES AND TARGETS

Aim

- To improve efficiency in the exercise of the Authority's functions.

Objectives

- To provide professional, comprehensive, consistent and timely legal advice for the Authority, using both in-house and consultant legal services.
- To undertake civil and criminal litigation, conveyancing and other baseline activities efficiently.
- To provide guidance and training on the legislative duties and powers of the NRA, particularly new duties and powers contained in the 1989 Water Act.
- To monitor the NRA's enforcement and prosecution policy, amend and develop in the light of experience, and ensure that the NRA's corporate position on regulatory issues is clearly projected.
- To respond to appropriate outside bodies on consents and licence and planning applications within statutory consultation periods.

- To prosecute effectively cases where proceedings are instituted.

Targets

- To complete a function strategy and output and performance measures for Legal Services by September 1990.
- To develop a system to collate legal advice and establish national consistency by May 1990.
- To develop a computerised prosecution system for pollution and other offences by December 1990, including a database system of previous convictions against defendants prosecuted in the past for offences involving NRA functions.
- To complete the first phase of in-house training on the 1989 Water Act by September 1990.
- To establish procedures for the registration of NRA land with the Land Registry by December 1990.
- To respond to planning authorities on planning applications within the statutory timescale.
- To review identified categories of by-laws and introduce new by-laws as required, by March 1991.
- To review by September 1990 the timescales for sending warning letters (two months) and laying information in cases of prosecution (three months).

PERFORMANCE ASSESSMENT

The Authority inherited a variety of performance indicators for the legal function in each of its Regions, none of which can be meaningfully aggregated for national purposes. National output and performance measures will be developed in 1990/91.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	80	2.3	0.0	-2.3
Planned 1991/92	82	2.5	0.0	-2.5
Planned 1992/93	82	2.4	0.0	-2.4
Planned 1993/94	82	2.5	0.0	-2.5

The small increase in manpower and expenditure planned is in connection with work resulting from applying the Authority's enforcement policy, particularly in relation to pollution control. Additional staffing and expenditure may be needed in due course as the Authority increases its regulatory activity generally. No income is shown, as any legal costs recovered are allocated back to the appropriate function(s). The deficit on legal services is recharged across the Authority's main functions as an overhead cost.

OUTPUTS

- Legal advice.
- Conveyancing and other transactions.
- Litigation and successful prosecutions.
- Legal databases and archives.
- In-house legal training sessions.

ESTATES MANAGEMENT

INTRODUCTION

The Estates function manages the Authority's property and land ownership portfolio.

The NRA has to compensate people whose interests it damages under a series of statutes. Equally, if its activities are carried out either negligently or in a manner which causes nuisance, people are entitled to claim against the Authority in common law. Estates officer work is largely involved in getting agreement for access to land and in settling the terms on which such access and necessary subsequent occupation are given.

REVIEW OF 1989/90

During the year, NRA Estates Officers continued the work of facilitating the capital work programme inherited by the Authority largely, but not exclusively, in the field of flood defence. At the same time, much effort has been involved in seeking new locations for offices and depots throughout the Regions where it has been necessary for the creation of the NRA to split away from locations which were transferred to the Water and Sewage plc's.

STATUTORY DUTIES AND POWERS

Section 151 of the Water Act 1989 gives the Authority compulsory purchase powers and in relation to compensation, applies the standard powers and duties for compulsorily purchasing bodies set out on the Acquisition of Land Act 1981.

Land Drainage is covered by section 17(5) of the 1976 Land Drainage Act which provides that where injury is sustained by any person by reason of the exercise by the Authority of any of its powers under the section, the Authority is liable to make full compensation to the injured person. This is a more far-reaching provision than those contained in other compulsory purchase legislation.

AIM, OBJECTIVES AND TARGETS

Aim

- To improve efficiency in the exercise of the NRA's functions.

Objectives

- To develop an Estates Management Function Strategy.
- To draw up a national register of all fixed assets.
- To manage fixed assets in accordance with the Financial Memorandum and good estates management practices.
- To provide a surveying and valuation service to all functions.

- To maximise income consistent with operational requirements.

- To dispose of surplus assets where appropriate at the best possible price.

Targets

- To produce an Estates Management Function Strategy by September 1990.
- To produce a national property assets database by March 1991.
- To review practice and procedures for managing fixed assets and establish new policies in accordance with the Financial Memorandum by March 1991.
- To review surveying and valuation services and produce appropriate national guidelines by March 1991.
- To establish a national list of surplus assets by March 1991.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	27	0.9	0.0	-0.9
Planned 1991/92	29	1.0	0.0	-1.0
Planned 1992/93	29	0.8	0.0	-0.8
Planned 1993/94	29	0.9	0.0	-0.9

No increase in income is recorded here as it has been put into the relevant core function(s) (primarily flood defence). The deficit is also allocated across the functions as appropriate, as an overhead cost.

OUTPUTS

- Estates Management Corporate Strategy.
- National Estates Assets database.
- Surveying and Valuation national guidelines.
- Report on opportunities to increase income.
- List of surplus assets with management options.

PERFORMANCE ASSESSMENT

Currently a variety of performance indicators are used in the NRA's Regions which cannot be meaningfully aggregated for national purposes. Nationally applicable performance measures will be developed in 1990/91.

PUBLIC RELATIONS

INTRODUCTION

Publicity and the power of public opinion will be key to the success of the NRA in protecting and improving the water environment. The unprecedented interest in environmental matters, and deep public concern about damage being done to the environment, will extend the strength of the NRA and its ability to operate effectively beyond the powers vested in it by the Water Act 1989. The NRA recognises this, and will use the power of public opinion to give force and added impetus to its drive for a sustained improvement in water quality standards and the water environment.

Public Relations has a vital role to improve public understanding of the water environment and the NRA's work and to mobilise public support for NRA objectives. The NRA attaches the highest priority to this task and is committed to operating openly by publicising its policy and publishing available information.

The NRA will keep itself in public view by promoting its activities and actions through high profile public information campaigns and a steady flow of publicity material about its work.

REVIEW OF 1989/90

The NRAAC identified as an early public relations priority the need to establish a corporate image for the NRA with a clear visual identity. As the first step in this process, an NRA logo and basic guidelines for its application were produced.

The NRA was launched successfully on Vesting Day, 1st September 1989, and the logo unveiled at a planned series of simultaneous events in London and each of the NRA's operating Regions, attended by the media, environmentalists, MPs and other prominent people, and representatives of a wide range of organisations interested in the work of the NRA.

A corporate brochure, complementary brochures specific to each NRA Region, and a corporate video were produced for the launch, along with a wide range of publicity display material and speaker support slides.

Since the launch on Vesting Day, the video and other corporate materials have been used extensively at exhibitions and in a planned series of public presentations in the Regions about the NRA's work.

The NRA has also maintained in all of its Regions, a comprehensive public enquiry and media relations service. There has been a continuous output of News Releases and other publicity on NRA activities and actions, and heavy demand and take-up of requests for media interviews and

public speaking engagements. An in-house newspaper "The Water Guardians" has also been established.

AIM, OBJECTIVES AND TARGETS

Aim

- To improve public understanding of the water environment and the NRA's work.

Objectives

- To achieve a high level of public awareness of the NRA at home and overseas, particularly in Europe.
 - To encourage and support media, educational, political and other public interest in the work of the NRA.
 - To develop and promote the corporate image and work of the NRA through publicity material, the media, exhibitions, merchandise and other public events.
 - To foster good external relations with the media, Government departments, other public bodies, MPs, industry and agriculture, special interest groups, schools and the general public.
 - To establish and maintain good internal communications.
 - To provide the NRA with strategic advice and guidance on presentational and media issues, and provide a comprehensive media relations and monitoring service.
 - To act as an interface for the media and public in emergencies involving the NRA.
 - To review and update periodically the media training requirements of NRA staff.
 - To provide a public relations function strategy in support of, and in conjunction with, NRA policy development.
- #### Targets
- To produce a Design Manual of comprehensive guidelines for the visual identity elements of the corporate image by June 1990, and to ensure that the guidelines are applied correctly and consistently in as many applications as possible by March 1991.
 - To develop further the NRA's corporate image and establish an annual public awareness survey covering the NRA's main functions in all its Regions, the first survey to be carried out by March 1991.
 - To produce a monthly NRA staff newspaper - and a quarterly magazine about the work of the NRA.

- To examine the viability of developing NRA visitor centres in each NRA Region by March 1991.
- To produce a GCSE level schools pack by March 1991 as the first step in developing educational teaching packs for all school ages.
- To establish lists of approved speakers and speaker support materials in each NRA Region by March 1991.
- To develop a range of suitable promotional merchandise carrying the NRA logo by March 1991.
- To produce a "Who's Who in the NRA" by Summer 1990.

PUBLIC RELATIONS PERFORMANCE INDICATORS Table PR1

	No of press releases produced	No of documents produced
Planned 1989/90	398	70
Forecast 1989/90	398	70
Planned 1990/91	470	75
Planned 1991/92	600	68
Planned 1992/93	600	68

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	30	2.0	0.0	-2.0
Planned 1991/92	35	1.8	0.0	-1.8
Planned 1992/93	37	2.0	0.0	-2.0
Planned 1993/94	37	2.1	0.0	-2.1

The additional manpower and expenditure planned is to enable the Authority to increase public understanding of its work. All public relations costs and income (such as from the sale of publications), are allocated across the core function(s)

OUTPUTS

Corporate literature and videos.
Exhibitions.
Public meetings.
Display boards.
Posters.
Slides.
Staff newspaper.
NRA magazine.
News releases.
Talks.
Media interviews.
Responses to media and public enquiries.
Graphic design service.
Merchandise.
Advertisements.
Press conferences and briefings.
Maps.
Staff media training.
Articles for publication.

PERFORMANCE ASSESSMENT

Pending the development of NRA-wide performance measures for the public relations function in 1990/91, only interim activity indicators are presented here.

INFORMATION SYSTEMS

INTRODUCTION

All Regions depend to a significant degree upon Information Systems to achieve the Authority's aims and objectives. These systems range from the basic support functions such as payroll, to complex real-time telemetry systems collecting operationally essential information such as river flow data. Key opportunities exist to exploit Information Systems, particularly in evolving areas including Expert Systems and Geographic Information Systems.

Each of the ten regional NRA Units was set up with at least a minimum capability to coordinate its own provision for Information Systems. The number of staff and equipment transferred to the Information Technology sections of the new Units varied widely. This reflected a number of factors, including the extent of the uptake of Information Technology in the specific Water Authority and the perceived importance of the function.

The disparate nature of the hardware, software and communications systems in use within the Water Authorities is reflected in the Information Systems and supporting infrastructure contracted and transferred to the new NRA Units.

In planning and implementing the formation of the NRA from the Regional Water Authorities, it was deemed inappropriate that each NRA Region should merely duplicate the computing facilities of its parent Water Authority. This would likely be an expensive option which would not necessarily fulfill the corporate needs of the NRA. Hence to keep expenditure within bounds and to avoid short term changes which pre-empted future decisions, bureaux computer facilities were arranged with most of the plcs to cover the period while the NRA identified and developed its own requirements.

REVIEW OF 1989/90

Acting as advisors to the NRAAC, Peat Marwick McLintock (PMM) advised the NRAAC to undertake the formal development of an IS Strategy. PMM's Information Systems strategy company, Nolan Norton & Co. (NNC) was commissioned to undertake the study. This proposal was based on the fact that currently some £18m p.a. is spent on Information Systems with a likely need for this expenditure to increase significantly. A review of current systems and hardware demonstrated a clear need for a fundamental review.

The Information Systems strategy study consists of two phases:

Phase 1

- identification of the "Business Direction" of the NRA.

- a review of computing facilities inherited from the Water Authorities.

Phase 2

- development of an IS Strategy which defines the most appropriate computing structure required by the NRA to fulfill its business needs.

Phase 1 commenced before Vesting, and was completed with a presentation to the IS Steering Committee in September 1989. Progression onto Phase 2, was agreed and subsequently approved by the Board at its meeting in October.

For Phase 2, an IS Architecture Team has been formed, which, reporting through the Technical Director to the NRA Management Committee, worked full time for approximately five months (Oct '89 - Mar '90) in order to complete all the appropriate stages in the Phase 2 study.

The IS Strategy group developed a number of options in relation to achieving the NRA's business needs with the Board involved in deciding which option(s) will be implemented to meet the needs of hardware, software and communications systems.

STATUTORY DUTIES AND POWERS

There are no specific statutory duties in the 1989 Water Act in relation to IS systems. Other legislation eg: the Data Protection Act and various EC Directives and Decisions will influence the work of the IS function.

AIM, OBJECTIVES, TARGETS

Aim

- "To improve efficiency in the exercise of the NRA's functions" by the appropriate application of Information Technology to provide Information Systems and a supporting communications infrastructure.

Objectives

- To formulate and implement an IS strategy appropriate to the needs of the NRA.
- To ensure the co-ordination and provision of interim Information Systems during the transition to the corporate IS Strategy, in such a way as to meet essential needs without preempting the result of the strategy.
- To ensure the co-ordination and provision of interim Information Systems either by means of Information Technology service agreements with the Water plcs or directly by NRA Regions and Head Office.

- As a result of the IS Strategy, to ensure co-ordination and provision of IS Systems and their management as approved by the Board of the NRA.
- To ensure the co-ordination and provision of effective and appropriate communication systems for voice and data using the most cost effective, relevant technologies.
- To investigate and evaluate new techniques, technology and standards in Information Systems to ensure the provision of cost effective systems.

TARGETS

- The production of an IS Strategy and implementation plan by mid 1991.
- The phased implementation of the selected IS Strategy commencing in mid 1991 over a period to be determined by the strategy.
- To plan and co-ordinate as appropriate, the phased implementation of the trunked portable mobile radio systems, to be jointly operated with the Public and Private Water Companies during the period 1990-1994.
- To measure and monitor the effectiveness of the Information Technology Service Agreements with the Water plcs by mid 1991.
- To measure and monitor the effectiveness of the Communication Service Agreements with the Water plcs by mid 1991.
- To ensure by means of a selective regional audit, the appropriateness of security and confidentiality controls for Information Systems within the regional NRA Units by March 1991.
- To identify output and performance measures relevant to the management of the IS function by December 1990.
- To evaluate the appropriateness of schemes for recharging IS costs across all functions to enable a scheme to be implemented from April 1991, if required.

INPUTS

	Manpower (No)	Expenditure (£m)*	Income (£m)	Variance (£m)
Planned 1990/91	113	18.8	0.0	-18.8
Planned 1991/92	113	18.8	0.0	-18.8
Planned 1992/93	119	18.0	0.0	-18.0
Planned 1993/94	119	17.7	0.0	-17.7

* includes capital expenditure on replacement computers and communications.

The inputs are based upon current and planned expenditure at 1990/91 prices. All IS costs are recharged to the main functions of the Authority as an overhead cost. It does not include the implications of Board decisions regarding either the IS Strategy implementation, or the Authority's potential involvement in the infrastructure costs of a Water Industry Trunked Portable Mobile Radio system beyond 1990/91. Outline estimates for these items are covered later in these notes.

At Head Office, without prejudicing the outcome of the IS Strategy, the role of IS co-ordination throughout the NRA is likely to require between five and ten staff. These are not included in the table. The regional and Head Office staffing figures are subject to review in the light of the Information Systems Strategy Study.

The Authority's adoption of a comprehensive IS Strategy and supporting implementation plan is yet to be considered by the Board. It is therefore too early to make detailed estimates of the overall costs associated with the Strategy's implementation. However, estimates resulting from the early stages of the second phase of the Strategy process, indicate capital costs in the range £109-156m, $\pm 30\%$ over a seven year period.

These estimates however can be offset to some degree to account for proposed regional IS expenditure in later years of the Plan, since it is anticipated that certain regional applications will be provided by the national strategy implementation.

The potential implementation of major systems resulting from the IS Strategy Study, means that the revenue costs of IS and communications could increase over the period of the Plan to £30m p.a. to support the potential capital expenditure of £109-156m identified earlier. It is anticipated that corresponding cost savings in other function areas, together with other less tangible benefits, will offset these cost increases.

The Authority will consider the opportunity to invest in the Water Industry Trunked Mobile Radio System (PMR) infrastructure costs. This would allow the Authority to exercise more control over the system's management and to reduce its operational revenue costs. 'Stage A' estimates for the PMR infrastructure indicate the Authority would need to invest £8m, $\pm 30\%$, phased over the period of the Plan.

OUTPUTS

- An IS Strategy for the Authority.
- An IS implementation plan.
- Outputs and performance measures for Information Systems.
- Outputs and performance measures for communications systems.

- An appropriate Regional Trunked Portable Mobile Radio System jointly operated with the Water plcs and Private Water Companies providing an effective, secure system for both normal and emergency use.

PERFORMANCE ASSESSMENT

The Authority has inherited a variety of different performance indicators in its Regions which cannot be meaningfully aggregated for national purposes. Relevant and meaningful performance measures will be developed in 1990/91.

RESEARCH & DEVELOPMENT

INTRODUCTION

The NRA took over on-going programmes of research from the ten Regional Water Authorities and the DoE Water Directorate valued at £6.4m in 1989/90. The immediate tasks have been to inventorise and appraise the inherited projects in hand, to set up a new framework for the assessment and management of R&D, and to draw together and develop these on-going projects into a balanced national programme. Particular effort has been made to do this without causing a hiatus in R&D activity.

The programmes transferred from the Regional Water Authorities comprised each RWA's own regionally-managed programme (ranging in size from £50k to £700k for 1989/90) and the RWAs' collectively-funded programme of projects at the Water Research Centre (£2.9m in 1989/90) plus a further £270k commitment to the Water Research Centre to provide Technical Services, such as literature searches and analytical services, to the NRA.

The transfer of R&D from the DoE Water Directorate, which formally took place on 1st April 1990, comprised 26 projects on aspects of water resources and water quality now coming within the NRA's areas of responsibility and valued at £1.3m in 1989/90. During 1989/90, a total of 57 projects were underway in the programme with WRc and 114 projects were being undertaken through the former Regional programmes. Numbers of projects started and completed are shown in Table RD1.

The NRA intends that the future R&D programme should be driven by the policy objectives and technical needs of the different functions and Regions of the NRA. In this respect, the R&D programme is closely linked to the NRA's corporate planning objectives. The NRA also intends to undertake strong management of the future programme to ensure that work is objective and cost-effective. Mainstream staff have responded enthusiastically to their new involvement as research "customers".

REVIEW OF 1989/90

The NRAAC initiated actions to draw together the inherited R&D programmes, and establish co-ordinated R&D management. These activities have been continued and developed during the post-vesting period under the R&D Co-ordinator in the Chief Scientist's Directorate. Key achievements are summarised below:

- Inherited programmes of R&D initiated by the Regional Water Authorities drawn together centrally and assessed against NRA policy objectives. Work programmes amended on some projects.

- Effective interface of NRA programme with DoE, MAFF, Scottish regulatory authorities, DoE (NI), and relevant Research Council programmes confirmed. Agreement reached with the DoE to transfer identified projects, plus related funding (£1.5m in 1990/91), to the NRA on 1st April 1990.

- Policy paper on structure and management of the NRA R&D programme drawn up, and subsidiary guidance notes on management procedures (eg project development and contract award) produced.

- R&D programme subdivided into seven Commissions, each (but the last) of which reflects the NRA's functional areas:

- A Water quality
- B Water resources
- C Flood defence
- D Fisheries
- E Recreation and navigation
- F Conservation
- G General operations

Commissions are further subdivided into significant areas of work which have a common theme, called Topic Areas.

- The 38 Topic Areas in the 1989/90 programme are described in Table RD2. Sixty five projects completed and related reports disseminated to mainstream NRA staff.

- R&D Committee set up to assist R&D Co-ordinator in the development and management of the R&D programme. Mainstream technical and scientific staff, principally in the Regions, appointed as Commission, Topic and Project Leaders.

- Assessment system introduced whereby Topic Areas and subsequently projects are subjected to Investment Appraisal, monitoring and evaluation (both technical and financial) against a Master sheet identifying the policy issues and needs for that particular Commission. Computer-based R&D Information System developed as database for technical and management information.

- For the 1990/91 programme each Functional Manager Committee - as "customer" to the relevant Commission - and each Regional Management Team has reviewed its future R&D needs. Consultation on future proposals held with major external R&D organisations.

- Proposed Commission programmes reviewed, and content of 1990/91 programme agreed. Retrospective project investment appraisal of existing projects to assess suitability commenced, and project investment appraisal of new proposals identified for 1990/91 programme started.

- Recruitment of regional R&D co-ordinators initiated to assist mainstream regional staff in devolved management of R&D programme.

STATUTORY DUTIES AND POWERS

The NRA has a duty to make arrangements for the carrying out of research and related activities in respect of matters to which its functions relate (WA, Sect. 143).

AIM, OBJECTIVES AND TARGETS

Aim

- To improve efficiency in the exercise of the NRA's functions and to provide new knowledge and techniques which increase the ability of the NRA to discharge its duties.

Objectives

- To develop and maintain, as a statutory duty, an R&D programme which addresses the NRA's policy objectives in each function area, as well as improve its general operational performance.
- To implement R&D management practices in accordance with the policy set down by the NRA.
- To carry out an annual review of the R&D programme, and to develop new R&D projects which relate to identified needs in each function area.
- To maintain awareness of relevant R&D carried out by other organisations.
- To reflect regionally-identified R&D needs within the national R&D programme.
- To maximise the cost-effectiveness of the NRA's R&D programme by seeking collaborative funding where appropriate, by optimum utilisation of research resources, by carrying out technical and financial assessment of R&D, and through effective dissemination and implementation of the results.
- To increase awareness of the work undertaken by the NRA through effective dissemination practices, including publication of an Annual Review on the NRA's R&D programme.

Targets

- To complete the appointment and training of full-time R&D staff, in particular Regional R&D Co-ordinators, to achieve effective R&D management by September 1990.
- To appraise and establish effective management of all projects, through chosen Project Leaders assisted by Regional R&D Co-ordinators by December 1990, to be able to meet technical and financial objectives and complete work on time.
- To have an operational R&D Information System in each Region and Head Office, together with guidance notes on (a) project award, (b) project monitoring and (c) reporting by June

1990.

- To develop the long-term R&D programme strategy by March 1991.
- To develop and commence 120 new projects during 1990/91.
- To complete 115 projects during 1990/91.
- To complete reviews and identification of potential new project starts, including holding "Open Forum" meetings with external research organisations, and to confirm the prospective R&D programme for 1991/92 by March 1991.
- To increase external funding levels for 1991/92 programme to 5% of the NRA commitment to contract funding for 1990/91 by March 1991.
- To develop and appoint three NRA research fellowships by December 1990.
- To hold three open seminars on subjects of key interest to the NRA and researchers by March 1991.
- To publish an Annual Review on R&D by January 1991.

INPUTS

	Manpower (FTE) ^{1,2}	(FTE) ⁴	Expenditure ⁵ (£m)	Income (£m)	Variance (£m)
Planned 1989/90	2.5	11.5	6.0	0	6.0
Forecast 1989/90	4.5	7.5	5.8 ³	0	5.8
Planned 1990/91	14.0	7.0	9.8	0	9.8
Planned 1991/92	14.0	8.0	11.5	0	11.5
Planned 1992/93	14.0	8.0	13.2	0	13.2
Planned 1993/94	14.0	8.0	13.3	0	13.3

1. Covers Support Services manpower specifically allocated, either full-time or part-time, to R&D management - i.e. R&D Head Office staff; Regional R&D Co-ordinators. Clerical support to Regional R&D Co-ordinators not included.

2. Covers Main Functions' manpower, viz mainstream technical and scientific staff involved in R&D as R&D Contact Points, Commissioners, Topic Leaders and Project Leaders, included within Main Functions' statistics.

3. Includes expenditure (£1.3m) on projects to be transferred from DoE on 1st April 1990 and some Regional operational Investigations.

4. Inputs by regional staff working on in-house R&D.

5. Figures have been extracted from the core function expenditure and exclude technical services and manpower described over the page.

Manpower Inputs

In order to provide effective full-time management for the programme, R&D staff resources in the Regions and in Head Office will need to be increased by 7.5 full-time equivalents (FTE). Appointment of a Regional R&D Co-ordinator in each Region is essential to the effectiveness of the otherwise diffuse R&D management structure. The Regional R&D Co-ordinator will be the only officer in each Region whose principal responsibility is R&D management.

Four additional supporting staff are needed in Head Office for secretarial, word-processing and database management duties (2.5 FTE) and for dealing with external R&D affairs.

These additional permanent staff will bring the R&D management complement to 14 FTE. Inputs by mainstream staff (as Commissioners, Regional Contact Points, Topic Leaders and Project Leaders, and estimated at about 8 FTE in 1990/91) are devolved to approximately 200 persons and are included in Main Functions' input requirements, emphasising the fact that R&D is now strongly integrated into these functions' activities. Inputs by regional word-processor staff etc, providing office support to Regional R&D Co-ordinators are included in regional estimates.

Financial Inputs

In 1990/91, expenditure on R&D projects and technical services is planned to increase from £5.8m (1989/90) to £9.8m. As a percentage of the NRA's budget as a whole, this represents an increase from 2.0% to 2.5%, and reflects the importance which the NRA attaches to R&D as a means of achieving its policy objectives and technical needs.

With the consolidation of R&D into a national programme from 1 April 1990, R&D expenditure will be regarded as a central overhead on the function to which it relates, and will be charged through to regional budgets on a pro-rata basis. (Projects transferred from the DoE are covered by an accompanying transfer of funds.) Some projects necessarily address cross-functional objectives, and will be charged to more than one function.

The planned expenditure for each Commission in 1990/91 reflects the in-built commitment to projects on-going from 1989/90 (57% of all project costs), and provides increased budgets in each Commission over 1989/90 levels (See Figure 9)

The principal emphasis of the NRA's R&D programme over the duration of this plan will be placed on Commission A (Water Quality), reflecting both the priority which the NRA attaches to this function and the significant number of issues related to Water Quality in which new knowledge and techniques are needed. As a percentage of the overall programme, expenditure on Commission A will decrease to 62%.

The higher percentage increases in relation to 1989/90 levels for Water Resources (Commission B - 280%), Flood Defence

(Commission C - 200%), and Fisheries (D - 200%) reflect the limited funding committed to these areas by the Water Authorities. Steady funding levels are envisaged from 1992/93 onwards.

The build-up in each Commission's programme has been spread over 2 to 3 years both to retain a steady turnover in project starts and completions, and to allow time for NRA staff to familiarise themselves with their R&D management duties.

The overall balance of the NRA's programme should not however be seen simply as reflecting the priority which the NRA attaches to its different functions, but rather the relative benefits which officers in each of those functions have concluded can be provided by R&D undertaken by the NRA. Each proposed new project will, of course, be subject to an Investment Appraisal to confirm its worthwhileness before award of contract. Note also that there are significant parallel programmes of research, from which the NRA benefits, in the DoE Water Directorate (water quality, climate change), MAFF (flood defence) and Foundation for Water Research (UK water industry water quality) programmes.

OUTPUTS

Programme Details

In developing the R&D programme in each Commission, the NRA has had to balance the short-term need to carry out various tactical R&D projects with the requirement to initiate or consolidate longer-term strategic programmes of R&D in most Topic Areas. In many cases, the latter will involve carrying out short State-of-the-Art reviews and/or project definition studies to clarify the most appropriate programme of research. This accounts for the relatively large number of new project starts (120 c.f. about 100 a year in longer-term) planned for 1990/91 (see Table RD1).

The number of projects undertaken under each Commission in 1989/90 and 1990/91 are shown in Figure 10.

With several projects, the benefits of the R&D project will be shared between more than one function and only the principal beneficiary has been listed. Three broad areas of R&D - catchment planning, emergency procedures and information systems - will be addressed in the General Operations Commission.

The objectives of the R&D in each of the 38 Topic Areas within the 1990/91 programme, together with budget allocation for project (as distinct from management) expenditure and comments on key projects are listed in Table RD2.

PERFORMANCE ASSESSMENT

The Authority inherited a variety of performance measures for R&D. Interim performance indicators are presented in RD1. New NRA-wide output and performance measures for R&D will be developed in 1990/91.

RESEARCH AND DEVELOPMENT PERFORMANCE INDICATORS					Table RD1
	Number of Total projects started	number of projects completed	Post-completion evaluation ¹		
			(a) Good	(b) Marginal	(c) Poor
Planned 1989/90	106	71	See note 2		
Forecast 1989/90	101	65	See note 2		
Planned 1990/91	120	115	95	20	-
Planned 1991/92	110	115	115	-	-
Planned 1992/93	100	110	110	-	-
Planned 1993/94	100	100	110	-	-

Notes:

1. Qualitative evaluation carried out under R&D Assessment System to assess extent to which the project technical and financial objectives, as set in the project investment appraisal, have been achieved. (Quantitative indicators cannot apply to all types of R&D, and are excluded from this summary.)

2. R&D Assessment system operational 1990/91.

Table RD2 Schedule of R&D topics

Topic no.	Topic title/objectives	Project expenditure, £k 1989/90 1990/91 1991/92				Key elements or project
Commission A - Water Quality						
A1	Rivers general To investigate catchment-wide aspects of river quality management including the effects of sediments, diffuse inputs and the relationships with water resource schemes	Inherited	352	211	91	<ul style="list-style-type: none">Development of improved understanding of how best to monitor and quantify the effects of diffuse pollutantsInvestigations of economic issues related to water quality, incl. charging policies and benefits of water quality enhancementAssessment of the risk to water quality from (a) road runoff, and (b) abstraction
	New	-	100	110		
	Total	352	311	201		
A2	Uplands To develop an understanding of the processes governing water quality in upland areas, including the effects of forestry, other land use changes and atmospheric pollution, and to develop methods to ameliorate adverse impacts	Inherited	337	229	131	<ul style="list-style-type: none">Investigation of basic processes affecting upland water quality, incl. Llyn Brianne acid waters projectInvestigation of remedial techniques and improved management practicesDevelop practical catchment management guidelines
	New	-	68	68		
	Total	337	297	199		
A3	Agricultural catchments (including fish farms) To investigate the effects of agricultural activities, including fish farms, on water quality, and to influence and develop methods to ameliorate pollution and other adverse impacts	Inherited	404	476	148	<ul style="list-style-type: none">Investigation of sources, behaviour and impact of pollutantsDevelopment of field practices/procedures for control and monitoring of pollutionReviews/recommendations on design practices and operational procedures for collection, storage, treatment and disposal of farm wastes
	New	-	74	23		
	Total	404	550	171		
A4	Urban water quality To understand the basic science of the effects of urban areas and discharges of sewage and industrial effluents on water quality, and to develop techniques to determine consent standards and ameliorate pollution	Inherited	186	147	127	<ul style="list-style-type: none">Investigation of effects of effluents on receiving watersDevelopment of methods for assessing river quality for intermittent sewage discharges, incl. dynamic quality model (link with WS plcs)Development of methods for setting consent standardsAssessment of performance of new treatment methods/plant (link to industry)Development of aesthetic standards, incl. foaming and discolouration
	New	-	215	130		
	Total	186	362	257		
A5	Estuaries To improve understanding of the factors affecting the quality of estuarine waters, to assess the most effective methods of achieving improvements and to develop techniques for monitoring and control	Inherited	322	181	137	<ul style="list-style-type: none">Investigation of processes affecting environmental quality in estuaries incl. eutrophicationInvestigation of transport and fate of pollutants, incl. improvement of predictive modelsDevelopment of methods to assess compliance with environmental quality standardsDevelopment of water quality monitoring
	New	-	145	130		
	Total	322	326	267		

For Notes, see end of Table *see note 3

						and assessment techniques
A6	Coastal waters To improve understanding of the processes governing the quality of near-shore waters and to develop techniques to identify deleterious effects of waste disposal to coastal waters and the most effective means of controlling them	Inherited	45	45	45	<ul style="list-style-type: none"> Investigation of the processes affecting environmental quality in near-shore coastal waters Development of techniques for identifying any adverse effects from waste disposal practices, particularly with respect to discharge consents Investigations to support NRA pollution control practices and policy
		New	-	145	20	
		Total	45	190	65	
A7	Groundwater quality and protection (joint with Comm.B) To understand, monitor and control the groundwater quality environment by aquifer protection policies, effective pollution control measures and by the determination of geochemical, biochemical and hydrological processes, both natural and induced, which apply in differing hydrogeological environments in time and space	Inherited	370	557	424	<ul style="list-style-type: none"> Investigation and evaluation of landfill management practice, incl. studies of lining materials, leachate collection and leachate migration Investigation and determination of aquifer protection policies and pollution control measures in relation to identified activities and risks Identification of natural and artificially-induced geochemical and bio-chemical processes to produce water quality models and vulnerability maps
		New	-	115	135	
		Total	370	672	559	
A8	Lakes and reservoirs To develop methods for monitoring and control of environmental quality of lakes and other standing bodies of freshwater in response to the NRA's obligations and statutory duties	Inherited	79	59	59	<ul style="list-style-type: none"> Investigation of processes affecting environmental quality and the means of controlling adverse phenomena, incl. toxic algae and eutrophication Development of improved methods of quality monitoring and classification of bodies of water related to water quality objectives
		New	-	75	180	
		Total	79	134	239	
A9	Inorganic contaminants To improve understanding of the source, transportation, environmental impact and eventual fate of inorganic contaminants, including associated chemical species in the aquatic environment, and to investigate their control	Inherited	160	174	174	<ul style="list-style-type: none"> Development of procedures and techniques to determine partitioning of contaminants between waters and sediments, particularly metallic species Assessment of impact of contaminant partitioning on toxicity Investigation of effects of sediment metals on estuarine benthic organisms
		New	-	40	40	
		Total	160	214	214	
A10	Organic contaminants To improve understanding of the chemistry and biochemistry of organic contaminants to assess their significance for water quality management and fate in the aquatic environment, in order to facilitate their control and to develop responses to existing problems of contamination	Inherited	212	149	149	<ul style="list-style-type: none"> Review of the importance of organics as a cause of environmental problems Investigation of (a) persistence/stability of organic contaminants, (b) breakdown products, (c) pathways within the water, sediment and biota Investigations of environmental impact of specific pollutants, incl. pesticides, chlorinated hydrocarbons
		New	-	217	202	
		Total	212	366	351	

A11 Microbiology

To identify micro-organisms of concern in controlled waters, microbial standards related to legitimate water uses, and the practicalities and, where appropriate, the environmental impacts of methods of control

Inherited	460	436	248
New	-	210	395
Total	460	646	643

- Identification of pathogenic organisms of concern (links to public health)
- Development of monitoring and analytical techniques for micro-organisms
- Investigation of environmental behaviours of microbial contaminants
- Determination of environmental impact of available disinfection processes

A12 Mathematical modelling

To develop and assess mathematical modelling techniques for use in support of water quality planning and operational decision taking

Inherited	365	216	96
New	-	204	177
Total	365	420	273

- Development of consent-setting models for single/intermittent discharges
- Development of models for fate of pollutants, incl. metals and organics
- Review and development of water quality estuarine models
- Investigation and development of catchment management models for design of sampling programmes and water quality audit

A13 Biological methods

To provide biological information on aquatic environments for use in support of development of biological methods for the assessment and monitoring of environmental quality

Inherited	172	192	120
New	-	105	122
Total	172	297	242

- Investigation of biological environment of rivers incl. dead zone effects
- Further development of predictive tools for aquatic communities, including RIVPACS
- Development of classification schemes for controlled waters
- Assessment of effect of anthropogenic sources of damage and control methods

A14 Chemical analysis methods

To develop and improve methods of chemical analysis which enable the NRA to carry out, in an effective and efficient manner, the analyses required for environmental monitoring and control

Inherited	127	65	45
New	-	148	83
Total	127	213	128

- Development of analytical methods with limits of detection at not less than 10% of appropriate environmental standard
- Development of automated analytical procedures to reduce manual inputs
- Specific work incl. alternatives to BOD; methodology for organics and detergent analysis; determination of trace elements, metals and polyelectrolytes

A15 Instrumentation

To develop and appraise accurate, reliable and robust instruments which measure parameters used as indices for the monitoring and control of water quality and provide data in a readily usable format

Inherited	165	141	91
New	-	344	194
Total	165	485	285

- Specification and development of both hand-held and portable monitors
- Development of standard operating procedures for monitors and suitable methods of data transfer to storage systems
- Assessment and specification of suitable data processing techniques
- Operation of monitoring equipment evaluation and demonstration facility
- Review of sensing techniques and development of sensors

A16 Chemical monitoring programmes

To assess techniques and develop protocols and codes of practice for sampling and survey design, for the collection, preservation and storage of samples and for related data handling and information presentation tasks

Inherited	137	85	-
New	-	100	65
Total	137	185	65

- Development of improved sampling programmes for monitoring and enforcement of quality standards
- Development of Code of Practice for handling water quality data
- Investigation of variability in STW effluent quality
- Development of protocols for preservation,

- A17 Catchment control techniques**
To develop operational practice/ systems which provide an improved understanding of the use movement and possible impact of potentially polluting substances, together with techniques for protecting water quality on a catchment-wide basis

Inherited	24	20	-
New	-	110	60
Total	24	130	60

- transportation and storage of samples
- Feasibility study on micro data bases for Pollution Control field staff
- Development of concept of a River Protection Zone to a practical tool, incl. risk assessment and control measures in "at risk" catchments
- Development of enhanced system for handling pollution control data

- A18 Ecotoxicology**
To develop and apply techniques to determine the ecotoxicological and biological effects and bioavailability of contaminants discharged to rivers, estuaries and coastal waters

Inherited	244	216	174
New	-	50	-
Total	244	266	174

- Development of new chemical and biological procedures for assessing water quality, and lethal/sub-lethal effects of contaminants
- Investigation of effects of chemicals on aquatic environment at concentrations close to environmental quality standards to assist in setting EQSs
- Development of ecotoxicological tests for monitoring complex discharges

- A19 Standards and legislation**
To undertake strategic research on environmental quality standards and to appraise proposals for new standards and limit values for environmental waters, effluents and processes particularly related to EC Directives

Inherited	337	318	273
New	-	25	-
Total	337	343	273

- Evaluation of significance to NRA of European pollution control practices
- Development of EQS values for specific substances, incl. limit values
- Strategic research related to proposed legislation

Total Commission A

4498 6407 4666

Commission B - Water Resources

- B1 Hydrometric data**
To develop and improve hydrometric instrumentation and related techniques, including related data storage, retrieval and processing, to ensure that methods are consistent, cost effective and reliable throughout the NRA, and that output data can readily be utilised for management purposes

Inherited	1	-	-
New	-	107	150
Total	1	107	150

- Review of hydrometric field techniques used by NRA, plus state-of-art review to develop best practice and future development strategy
- Assessment and development of low velocity measurement techniques
- Development of remote sensing techniques for snow water equivalent

B2	Flow regimes To improve the understanding of the inter-relationship between river flow and environmental factors with regard to both availability of water resources and impact on the aquatic environment so as to achieve a balance between water consumption and environmental protection	Inherited	-	-	-	<ul style="list-style-type: none">Assessment of impact of land use change and urban developmentDevelopment of objective use-based methodology for determining minimum acceptable flows, including environmental indicators (link Comm. F)Review and standardisation of assessment of inherited low flow conditions
		New		130	60	
		Total		130	60	
B3	Water resources management To develop and improve water resource assessment and management techniques to secure optimum strategies and policies for the use of water resources taking account of both catchment-wide and national interests	Inherited	121	83	50	<ul style="list-style-type: none">Review of applicability of expert systems, incl. pilot applicationReview of resource assessment methodologies used by NRA, plus state-of-art review, to develop best standard method for NRADevelopment of understanding of Levels of Service (link DG Water Services)Evaluation of economic effects of water resource development
		New		145	-	
		Total	121	228	50	
B4	Groundwater quality and protection (joint with Comm.A) To understand, monitor and control the groundwater quality environment by aquifer protection policies, effective pollution control measures and by the determination of geochemical, biochemical and hydrological processes, both natural and induced, which apply in differing hydrogeological environments in time and space	Inherited	145	101	54	<ul style="list-style-type: none">Investigation and evaluation of landfill management practice, incl. studies of lining materials, leachate collection and leachate migrationInvestigation and determination of aquifer protection policies and pollution control measures in relation to identified activities and risksIdentification of natural and artificially-induced geochemical and bio-chemical processes to produce water quality models and vulnerability maps
		New		170	130	
		Total	315	231	164	
B5	Effects of climate change on water resources To assess the implications of climate change on water resources, through contributing to other climate change research programmes, so as to develop possible scenarios for the different regions of the NRA	Inherited	14	-	-	<ul style="list-style-type: none">Extension of DoE programme on effects of climate change on water resourcesAssessment of implications of sea level rise on surface and groundwater resources
		New		40	20	
		Total	14	40	20	
Total, Commission B			451	736	444	

Commission C - Flood Defence**C1 Engineering hydrology and hydraulics**

To provide a better understanding of the specialised fields of engineering hydrology and hydraulics for the practising engineer to improve design and maintenance techniques across the spectrum of flood defence installations

Inherited	66	36	30
New		70	70
Total	66	106	100

In several Topics, linkages have been developed with parallel work by MAFF

- Investigation of flood plain, meandering and sediment channel flow under large-scale laboratory conditions (link with SERC)
- Determination of performance of, and design method for, soakaways

C2 River flood forecasting

To develop a system for flood forecasting, including use of weather radar information, that will provide accurate forecasts of river stage heights with improved lead times

Inherited	85	49	-
New		69	50
Total	85	118	50

- Continued investigations into limitations and improvements in use of radar to measure rainfall, improve calibration, and provide rapid response
- Improvements to accuracy and reliability of flow forecasting models

C3 Catchment appraisal and control

To develop methods to optimise the NRA's flood defence investment strategy in relation to the overall catchment environment and other NRA functions, and to influence catchment development so as to maintain the economic and environmental integrity of that investment throughout its life

Inherited	45	22	21
New		80	150
Total	45	102	171

- Improvements in data collection and methods for assessment of FD needs
- Development of comprehensive investment planning and appraisal method
- Improvement and development of methods for assessing drainage implications of property, infrastructure and land development in any catchment
- Development of guidance on flood plain, incl. urban, management planning

C4 Operational management

To develop the framework for management of NRA flood defence maintenance so as to ensure that work programmes throughout the NRA are consistent, prioritised, adequately justified and cost-effective, and that the interests of other NRA functions are recognised

Inherited	160	139	68
New		110	-
Total	160	249	68

- Development of methods for surveying and classifying condition of assets
- Development of improved approach to monitoring and quantifying the need for FD improvement or maintenance (national "Levels of Service")
- Description of maintenance methods/frequencies ("Best practice surveys")
- Assessment of benefits of maintenance strategies by post-project appraisal

C5 River structures (design and construction)

To ensure that river structures are functional, flexible in concept, designed to harmonise with their environment, and cost-effective in terms of capital investment and recurrent operational and maintenance costs

Inherited	1	-	-
New		20	50
Total	1	20	50

- Review and development of improved understanding of sediment and gravel transportation processes in England and Wales, incl. effects on structures
- Survey methods of bank protection involving natural materials, and develop pilot sites

C6 Coastal and estuarine structures To ensure that cost-effective and environmentally sympathetic engineering options are adopted for coastal and estuarine flood defence, in particular through an improved understanding of processes in the coastal zone	Inherited	19	29	19
	New		80	90
	Total	19	109	109
C7 Effects of climate change on flood defences To assess the impact of sea level rise on existing flood defences and the coastal environment so as to develop future defence strategy, design standards and investment requirements	Inherited	24	16	-
	New	46	25	
	Total	24	62	25
C8 Response to emergencies To evaluate the overall standards required by the NRA in flooding emergencies and to establish the best methods of response, including flood and storm tide warnings, dissemination of information, and operational response procedures	Inherited	-	-	-
	New		75	30
	Total	-	75	30
Total, Commission C		400	841	603
Commission D - Fisheries				
D1 Fisheries resources To undertake relevant research into the individual or population biology of fishes in order to provide basic resource information for operational management	Inherited	43	177	37
	New		120	115
	Total	43	297	152
D2 Environmental and biological influences To develop an improved understanding of the effect of environmental and biological influences on fish populations so that results from monitoring programmes can be correctly interpreted and effective fisheries management carried out when natural or man-made changes occur	Inherited	124	26	26
	New		130	100
	Total	124	156	126
	Inherited			
	New			
	Total			

- Review of use/performance of (a) timber, and (b) revetment systems
- Development of an estimating manual for coastal engineering works
- Review of design/sources of beach nourishment, incl. economic aspects
- Continued investigation into management and regeneration of saltings
- Assessment of impact on coastal environment for different scenarios
- Investigation of sensitivity of performance of different structure/beach types to sea level rise, and identification of best defence strategies
- Development of consistent economic basis for assessing future strategies
- Assessment of requirements (political, legal etc.) for providing emergency services, and criteria against which NRA response is to be evaluated
- Review and development of communications and plant for use in emergencies
- Improvement in accuracy of warning, and extent of forewarning, of flooding
- Determination of distribution/ level of abundance of specified fish stocks, incl. rare and possibly endangered species of fish
- Identification of key parameters of fish populations
- Determination of biological characteristics of fish populations
- Development of an NRA fisheries classification system
- Investigation of effects of differing water quality on fish populations, in particular effects of pesticides and change in agricultural land use
- Investigation of effects of flow regimes on fish populations and migration
- Evaluation of fish disease as WQ indicator and its effect on populations
- Investigation of entrapment of fish at water supply and fish farm intakes

D3 Fisheries management

To develop and implement management strategies which assist the NRA to maintain, improve, regulate and develop fisheries in ways that are adequately justified and cost-effective

Inherited	57	41	26
New		135	155
<hr/>			
Total	57	176	181

- Evaluation and development of specific techniques for assessment and monitoring of fish stocks, incl. tracking individual fish
- Development of strategies for fish cultivation and restocking
- Review/evaluation of physical works (a) habitat improvement (b) fish passes
- Investigation of economic value of commercial and sporting fisheries

Total, Commission D

224	629	459
-----	-----	-----

Commission E - Recreation and Navigation

- E** To develop specific directions and guidelines that will enable the NRA to promote the amenity and recreational potential of water and associated land, and to manage effectively navigation on waters and their related facilities where it is navigation authority

Inherited	-	-	-
New		100	55
<hr/>			
Total		100	55

Single-Topic commission

- Identification of priority recreational activities for various NRA waters
- Development of measures to ameliorate and reduce adverse impacts on the riparian environment of significant activities, incl. erosion by boat wash
- Development of design guidelines for basic structures needed to support recreational and navigation use of rivers

Commission F - Conservation

- F** To develop methods and standards of working, which are consistent and effective from the conservation viewpoint, compatible with the NRA's other duties where possible, and justifiable in terms of costs and the NRA's statutory responsibilities

Inherited	510	385	134
New		266	94
<hr/>			
Total	510	651	228

Single-Topic commission

- Development of standard methodologies, incl. river corridor surveys and EA
- Assessment of environmental management techniques, incl. post-project appl.
- Development of systems for data storage and analysis (link with IS strategy)
- Assessment of ecological requirements for conservation of key species
- Further investigation of adverse impacts on wildlife (e.g. water quality, low flows, toxins, recreational activities - links with other commissions)

Commission G - General Operations

- G** The General Operations commission covers major cross-functional aspects which support more than one of the NRA's primary functions

Inherited	294	464	119
New		200	100
<hr/>			
Total	294	664	219

- Development of integrated catchment planning, and supporting technologies
- Development of strategy and technology for NRA response to emergencies
- Investigation of information technology for medium-term use, incl. remote sensing (link with IS strategy)

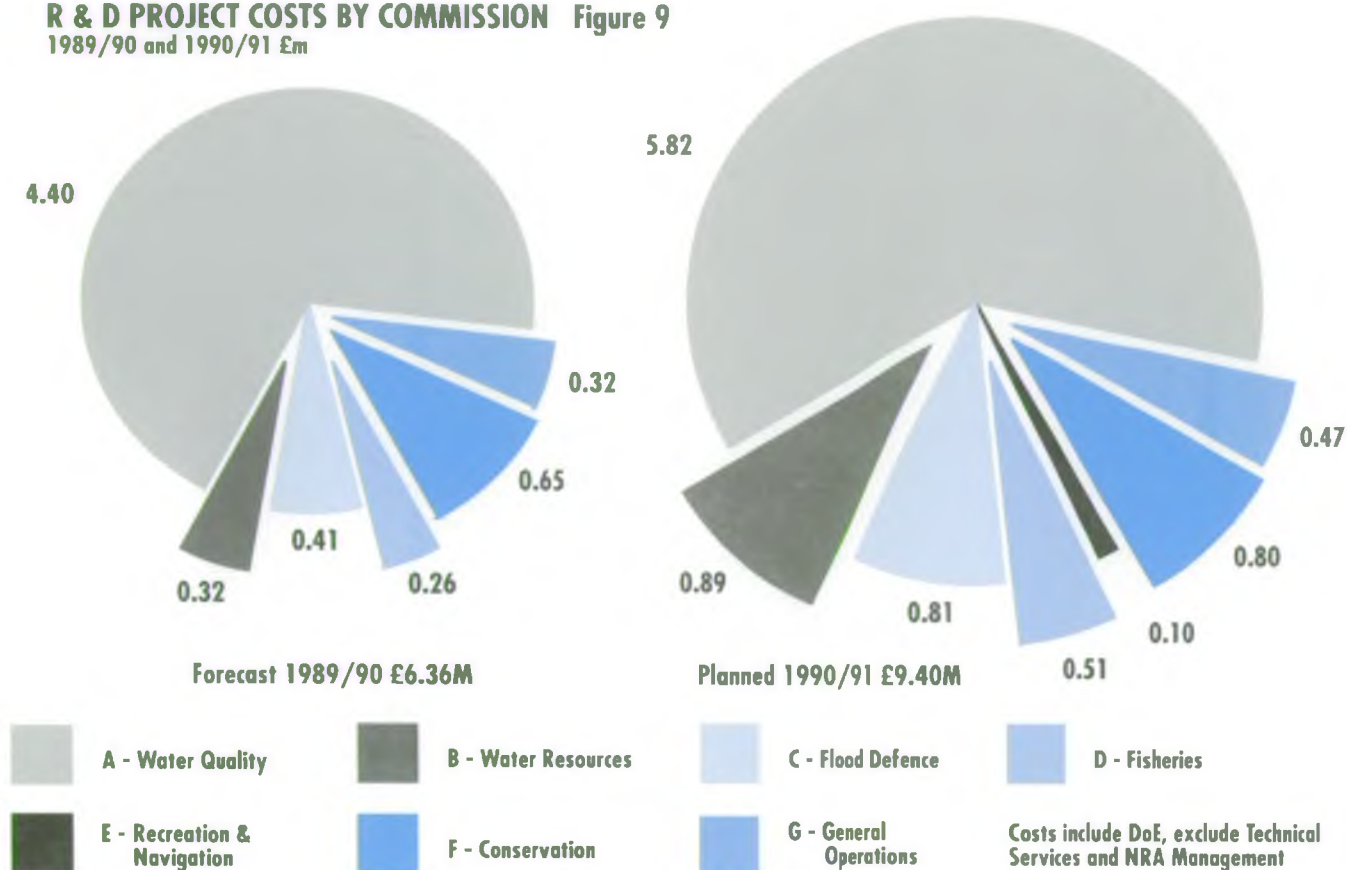
Total programme expenditure

6377	10028	6674
planned	9400	(see note 4)

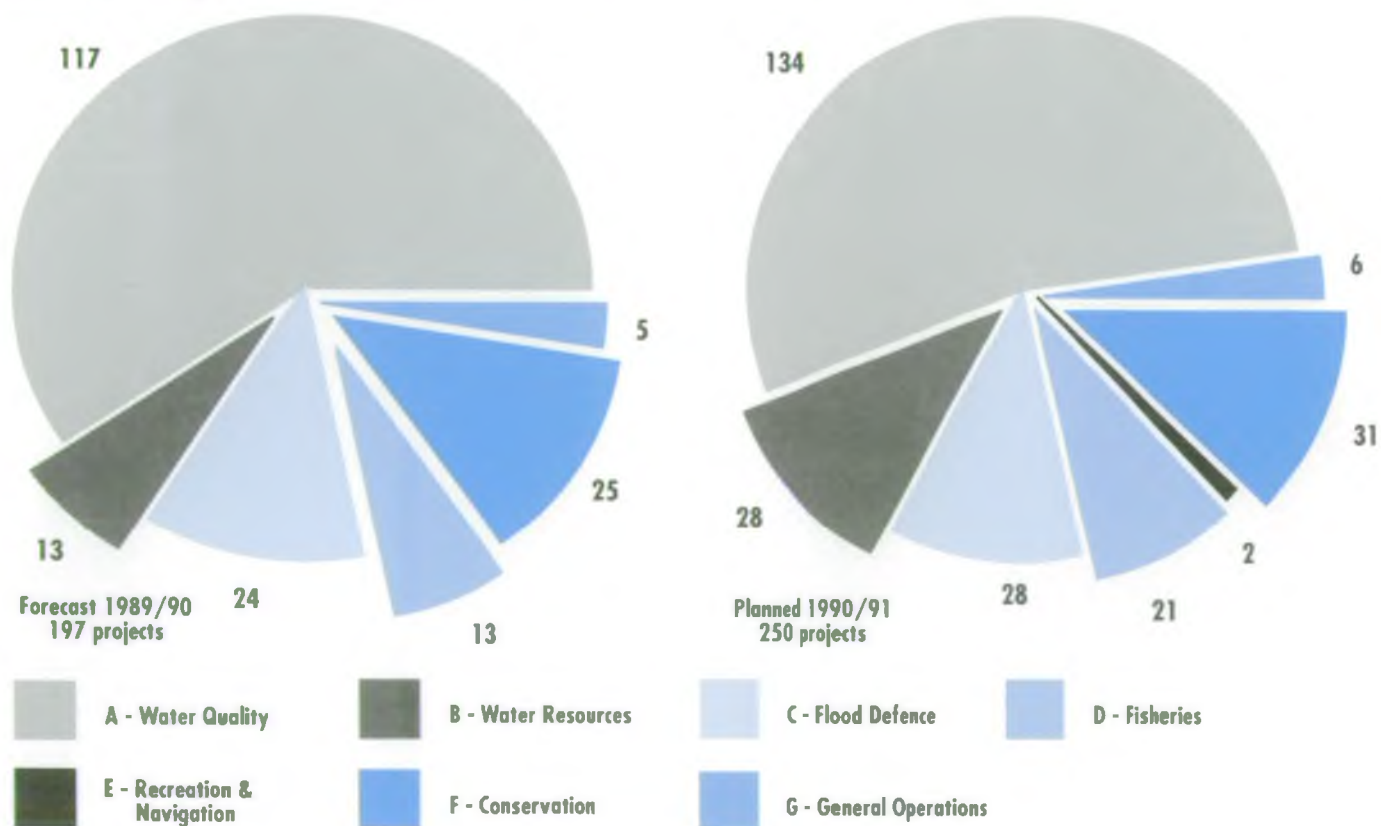
Notes on project expenditure:

1. 1989/90: Forecast expenditure on inherited programme, including projects transferred from DoE on 1 April 1990.
2. 1990/91 and 1991/92: Planned expenditure, generally as reported in Corporate Plan, but including amendments at February 1990 resulting from further development of projects.
3. Programme expenditure for 1991/92 generally **includes the cost of on-going projects from 1990/91 only** and excludes any provision for new starts.
4. Total programme expenditure includes £0.620m over-programming which will be taken up by scheduling of project start dates.

R & D PROJECT COSTS BY COMMISSION Figure 9
1989/90 and 1990/91 £m



R&D PROGRAMME NO OF PROJECTS BY COMMISSION Figure 10
1989/90 and 1990/91



LABORATORY SERVICES

INTRODUCTION

The NRA inherited a variety of laboratory facilities from the former Water Authorities, largely inadequate compared with the increased workload identified, with some Regions receiving no existing facilities but instead relying upon contract services provided by the Water plcs.

To analyse all types of sample and all determinands measured now and in the future, the NRA will set up a comprehensive laboratory service.

The number of samples and variety of measurements are constantly increasing, and to cater for this without increasing the sizes of laboratories, improved efficiency and greater sophistication in instrumentation is required.

REVIEW OF 1989/90

Between September 1989 and March 1990, the NRA identified the sites for its 11 laboratories, entered into contracts for their construction and commenced building in Thames, South West and Southern Regions, and moved into converted premises in Yorkshire, Northumbria and Anglian Regions.

AIM, OBJECTIVES AND TARGETS

Aim

- The national aim is to set up a network of laboratories at strategic locations, to operate as a coordinated service capable of dealing with the bulk of the NRA requirements, and to identify outside facilities to deal with short-term or highly specialised items for which in-house investment is not viable.

Objectives

- To set up a national mutually supportive network of 11 laboratories capable of dealing with the NRA's analytical workload, and to provide an effective reporting service from these laboratories.
- To achieve full in-house quality control including, as appropriate, NAMAS accreditation, and accreditation for international standards (eg North Sea Task Force).
- To develop specialised in-house expertise and set up suitable centres of excellence on a national basis.
- To identify areas of work for which in-house facilities are non-viable, and to arrange contracts for such work with outside bodies.
- To develop a national emergency analytical service.

Targets

- To have all 11 laboratories integrated into a mutually supportive network by March 1991.
- To establish initial in-house national quality control and obtain relevant accreditation by March 1991.
- To review in-house expertise and begin setting up centres of excellence by March 1991.
- To identify, and make arrangements with, outside organisations, to carry out work for which in-house facilities are not viable, by September 1990.
- To provide a national emergency analytical service by March 1991.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	392	13.1	0.0	-13.1
Planned 1991/92	392	8.8	0.0	-8.8
Planned 1992/93	426	9.5	0.0	-9.5
Planned 1993/94	427	10.1	0.0	-10.1

The additional manpower and expenditure proposed from 1991/92 is for increased work arising from additional water quality monitoring and staffing and equipment for new laboratories. The expenditure in 1990/91 is mainly associated with setting-up costs.

OUTPUTS

- An integrated national laboratory network providing a full routine analytical service.
- National quality control arrangements for laboratory analyses.
- Contracts for external laboratory services.
- An emergency analytical service.

PERFORMANCE ASSESSMENT

Currently there are various performance measures for laboratory services in the NRA's Regions which cannot be fully aggregated for national purposes. Such measures will be developed in 1990/91.

PERSONNEL

INTRODUCTION

The key issue facing the Personnel function is the consequence of the neglect of the rivers function by some of the former Regional Water Authorities. This includes manpower cuts immediately before transfer, and where Regions were staffed on a multi-functional basis, it has been difficult to create effective working NRA units. In some areas, the Water and Sewage plc's retained almost all of a function, for example, training, and each Region has evolved a different organisational structure. The Authority has also inherited ten different regional sets of terms and conditions which themselves contained a number of variations as a consequence of previous reorganisations in the water industry.

Looking to the future, the need for consistency throughout the NRA involves the development of new terms and conditions of employment and negotiating procedures. Changes in demography will impact on personnel policies, and recruitment practices will have to be developed to attract and retain an increasingly scarce resource.

Developments in the European Economic Community, especially proposals contained in the Social Charter, will give rise to the need to make changes in employment practices. This will be particularly so in the provision of welfare and the equal treatment of women in, for example, retirement policies.

The NRA will be required to follow the guidelines for Non-Departmental Public Bodies in meeting these challenges, and will be obliged to observe the requirements of the Financial Memorandum. The personnel function will need to implement and comply with any new legislation in its field, and in Health and Safety, for example, the Control of Substances Hazardous to Health Regulations, will require additional manpower to ensure compliance.

REVIEW OF 1989/90

Prior to Vesting Day, the principal work of the personnel function was in the design of a Head Office structure and, in conjunction with consultants, the evaluation of senior jobs both in Head Office and in Regions in order to produce a rank order.

A grading structure and salary scale for those jobs was established and preparatory work on the evaluation of non-salary benefits of senior staff commenced, with a view to introducing consistency within the NRA and to conform to the requirements for an NDPB. An interim bonus scheme for Senior Managers was introduced.

Work to recruit staff to Head Office, especially at senior level, and initial work on the terms and conditions of employment of

staff and manual grade employees was undertaken. Contacts with national officials of the unions to be recognised in the NRA were made, to establish the basis for future employee relations. Initial work was carried out in training and management development.

On Vesting Day, the Personnel function assumed responsibility for ensuring that the organisation operated in line with its status as a Non-Departmental Public Body and as a single national employer. To do so, it was necessary to establish the extent of the variation in terms and conditions of employment of Senior Managers and others in the different Regions.

A strategy also had to be developed in order to bring salaries into line with the results of the original job grading exercise and the first stage of this strategy was completed with the implementation of a new salary structure and the introduction of performance related pay for Senior Managers effective from 1st January 1990.

New recognition procedure agreements were negotiated and agreed with the unions representing employee groups in order to provide a basis for the conduct of employee relations in the future.

Health and Safety policies and procedures were urgently needed for the organisation, and the Health and Safety policy statement was drawn up, printed, and distributed to Regions; a brochure was published on the Control of Substances Hazardous to Health Regulations and similarly distributed ahead of the regulations coming into force in October 1989.

The function has, with the Chief Executive, designed and organised a number of important conferences. These were for Head Office staff immediately after Vesting Day; the first NRA National Conference for Senior Managers in October; and a conference for Regional Chairmen held in early November. A further conference for Head Office staff was held at the beginning of March and the second National Conference of Senior Managers at the end of that month.

A committee structure has been set up to enable the function to draw on the expertise and assistance available in regional personnel departments. Ad hoc task groups have been established to deal with specific problems and to co-ordinate the work done in Regions with the objective of improving the overall effectiveness of the function. Standing committees on training, Health and Safety and the Personnel Advisory Committee have been set up, and have met regularly since Vesting Day.

In addition, a great deal of groundwork has been done in recruiting staff for Head Office and in drawing up appropriate

manpower, training, graduate recruitment and employee relations policies which will be fully developed in 1990/91.

STATUTORY DUTIES AND POWERS

Under the 1989 Water Act the Authority has the following duties and powers:

- To pay its Board members such remuneration, travelling and other allowances, including pensions, as determined by the appropriate Minister.
- If special circumstances apply and if the appropriate Minister decides, to pay compensation for loss of office to a member.

The above shall be subject to Treasury approval.

- The Authority may also appoint such officers and employees as it may determine whose terms and conditions of employment shall be subject to the approval of the Secretary of State and the consent of the Treasury.
- The appointment of the Chief Executive is subject to the approval of the Secretary of State.
- The Authority, subject to the approval of the Secretary of State and the consent of the Treasury, may pay pensions, provide for pensions and provide and maintain pension schemes as it may determine.
- If an employee ceases to be an employee and becomes a Board member, he may continue to participate in the NRA pensions scheme, subject to the approval of the Secretary of State and the consent of the Treasury.

It also has responsibilities imposed by the Race Relations and Sex Discrimination Acts, and other employment legislation.

AIM, OBJECTIVES AND TARGETS

Aim

- To provide challenge and opportunity for employees and show concern for their welfare.

Objectives

- To pursue excellence in terms of employment practices by meeting the requirements of employment and other relevant legislation as a minimum standard, and monitoring and assessing developments in other organisations and adopting best practices for the NRA.
- To recruit, motivate and retain appropriately qualified employees and to ensure their full potential is realised through appropriate training.
- To take account of the Financial Memorandum in relation to staffing.

- To develop communications and to work in partnership with employees and their representatives in order to achieve the NRA's aims.

- To develop a Function Strategy for personnel management.

Targets

- To develop revised Head Office structure in London and Bristol by September 1990.
- To implement a graduate recruitment scheme by September 1990.
- To complete needs analyses from which to identify job skill levels, and develop a management development programme by March 1991.
- To restructure Senior Managers' salaries by September 1990.
- To restructure non-salary benefits for all employees by September 1990.
- To provide a consistent approach to other terms and conditions of employment for all staff by March 1991.
- To develop and co-ordinate consistent recruitment policies and practices by October 1990.
- To establish a training policy by December 1990.
- To produce a function strategy for the personnel function by September 1990.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	110	6.0	0.0	-6.0
Planned 1991/92	124	5.8	0.0	-5.8
Planned 1992/93	124	6.1	0.0	-6.1
Planned 1993/94	124	6.4	0.0	-6.4

As a support service, the personnel function has no income from its own operational activity.

The increased expenditure primarily relates to additional staffing in the Regions and Head Office, and some of the costs associated with the proposed relocation of the Authority's Head Office to Bristol. The two main areas for additional staffing are Health and Safety and Staff Inspection, both of which were under-assessed in the original structures of Head Office and the Regions. The personnel function deficit is recovered by allocating costs to the core functions and other support services.

OUTPUTS

A Health & Safety Policy and Procedures.

A statement of terms and conditions of employment.

Restructured salary scales for Senior Managers, staff and manual grades.

A statement of NRA Recruitment Policies and Procedures.

A statement of NRA Training Policies and Procedures.

Manpower, accident and staff turnover statistics.

A Staff Handbook.

Formal liaison and communication arrangements with staff and Trade Unions.

A Staff Appraisal System.

Completed training needs analyses and a management development programme.

A function strategy for the personnel function.

PERFORMANCE ASSESSMENT

The Authority has inherited a variety of different performance indicators in its Regions, none of which can be meaningfully aggregated for national purposes. National performance measures will be developed in 1990/91.

FINANCE

INTRODUCTION

At vesting, the Authority inherited a variety of financial systems and procedures in its Regions. In addition, separate systems had been established by the NRAAC in London in order to determine initial budgets for the Authority and make an initial input to the Public Expenditure Survey for the Authority's initial grant-in-aid requirements. One of the key issues facing the Authority is the integration and standardisation of its financial systems.

The Finance function must ensure that the NRA's business is conducted within the framework of the 1989 Water Act and the Financial Memorandum issued by the Government, and within the Scheme of Delegation approved by the Board.

Ensuring the solvency and financial health of the NRA including (in consultation with the Chief Executive as the Authority's Accounting Officer and the Board) the achievement of the financial duties of the NRA as to income set out in the Financial Memorandum, and the negotiation and obtaining of grant-in-aid, are key tasks.

It is also charged with the preparation of Annual Accounts as required by the Water Act 1989, the provision of Management Accounts and appropriate financial information to the Board as to the conduct of the NRA's business, and for the proper implementation and maintenance of accounting systems including Internal Audit.

At an operational level, it has responsibility for cash management, insurance and (in consultation with technical departments) the formulation and operation of appropriate Charging Schemes in accordance with the Water Act and other Statutes.

It is also responsible for the discharge of the NRA's obligations as administrator of the NRA's Superannuation Fund (formerly the Water Authorities Superannuation Fund), responsibility for which was transferred to the NRA on the 1st September 1989.

REVIEW OF 1989/90

Pre-vesting initiatives included:

- Arranging NRAAC and initial NRA financing, and staffing the London finance directorate.
- Determining the split of Assets and Liabilities between the NRA, and the ten emerging plcs, effective from 1.4.89. (the Statutory Scheme of Transfer Part I) including Reservoir Agreements relating to certain regulatory reservoirs, and Information Technology agreements where needed.
- The establishment of initial budgets for the embryo NRA

and input of this information to the Public Expenditure Survey (PES).

- Establishing with DoE the insurance status of the NRA as an NDPB, and effecting necessary insurances; also its status for VAT purposes.
- Establishment of the scheme of delegation for financial matters.

Achievements post-vesting include:

- The establishment of the NRA's actual Opening Balance Sheet at Vesting.
- The updating and revision of the Authority's PES Submission to Government to take account of the first and second stage schemes of transfer, capital re-structuring costs, unfunded pensions, and additional requirements pursuant to the proposed Bristol Office move, and the further requirements generated by this Corporate Plan.
- Alongside the revised PES figures, setting new budgets for the Authority and its individual Regions for 1990/91.
- The fixing of charges for water abstraction in light of substantial changes in the cost allocation inherent in the asset transfer arrangements.
- The development of proposals for an initial scheme of charging for discharges into controlled waters.
- An initial review of flood defence financing practice and procedures and the setting of new levies.
- The completion of the first full set of accounts for the Authority to 31st December, dealing with the 9 months from 1st April 1989, as a pre-run to the Annual Accounts for the Annual Report.
- Input to the IS strategy group's work in respect of accounting requirements.

STATUTORY DUTIES AND POWERS

The Authority's financial duties are set out in Schedule 1 Part II (Financial provisions) paragraphs 15 - 23 of the 1989 Water Act and its Financial Memorandum. The financial memorandum contains details of the Authority's duties with respect to the use of income and control of expenditure for its core functions, administration and staffing.

AIMS, OBJECTIVES AND TARGETS

Aims

- To ensure dischargers pay the costs of the consequences of their discharges, and as far as possible to recover the costs of water environment improvements.

- To improve efficiency in the exercise of the NRA's functions.

Objectives

- To prepare annual statutory accounts to comply with best accounting practice, incorporate sponsoring department requirements and publish necessary data as part of the first Annual Report.

- To produce in a timely fashion, monthly and quarterly financial and management accounts, to include balance sheet statements, consolidating the position for all Regions and Head Office.

- To prepare and consolidate such information relating to the financing of the NRA as is required of the NRA by DoE, MAFF or the Welsh Office.

- To provide financial input to the Authority's corporate planning process and ensure budgets are prepared to required timescales.

- To review and develop robust financial management information systems throughout the NRA and secure greater standardisation of policies and practice.

- To develop the audit function as a tool of management control.

- To provide national support services on specialist aspects of finance, such as insurance matters and competitive tendering for goods and services.

Targets

- To produce the Authority's first set of Annual Accounts by August 1990.

- To achieve the 1990/91 Audit Plan by March 1991.

- To manage the introduction of the initial stages of a charging for discharges scheme by September 1990.

- To complete input to the corporate planning process, PES submissions, and budgets for 1991 by January 1991.

- To review the efficiency and effectiveness of purchasing procedures by December 1990.

- To establish policy and practice for comprehensive tendering by the in-house work force by March 1991.

- To effect a smooth transfer of finance and audit staff and systems to the proposed new Head Office in Bristol by March 1991.

INPUTS

	Manpower (No)	Expenditure (£m)	Income (£m)	Variance (£m)
Planned 1990/91	290	8.7	0.0	-8.7
Planned 1991/92	317	9.5	0.0	-9.5
Planned 1992/93	322	9.0	0.0	-9.0
Planned 1993/94	323	9.4	0.0	-9.4

The finance function is a support service which does not generate any income from operational activity. Expenditure costs for providing the service are allocated over the core functions and other support services. The increase in manpower is for additional manpower at Head Office and the Regions for internal audit and accounting where a deficiency in staffing has been identified since Vesting.

OUTPUTS

Corporate Plan input.

PES submission and grant claims.

Budget statement.

Monthly financial reports.

Audit Reports.

Management Accounts.

Annual Accounts.

Annual Report input.

PERFORMANCE ASSESSMENT

The Authority has inherited a variety of financial performance indicators in its Regions, none of which can be meaningfully aggregated. New NRA-wide financial performance measures will be developed in 1990/91.

RESOURCES AND PERFORMANCE ASSESSMENT

Details of the planned use of manpower and finance between 1990-1994, together with interim performance indicators for the Authority's core functions and some support services have been given in the preceding chapters on programmes and plans. This section presents consolidated data and with notes outlining year to year variances. It is arranged in three sub-sections:

- a) Summary of Manpower Planning Data 1989-94.
- b) Summary of Financial Planning Data 1989-94.
- c) Summary of Performance Indicators 1989-94.

SUMMARY OF MANPOWER PLANNING DATA 1989/90 - 1993/94

This section presents summarised manpower data for the period 1989/90 - 1993/94. Table MP1 shows the total number (non-manual and manual) of core function and support staff (expressed as FTE) needed in the Authority's Head Office and Regions. It has been used as the main source of the manpower data presented on the inputs table for each core function and support service.

An additional 390 staff are required in 1990/91 to implement this Plan, an increase of some 5.8% on forecast 89/90 numbers. A further increase of 264 (3.7%) will be required in 1991/92 and 112 (1.5%) in 1992/93. Thereafter, in 1993/94, a small decline is forecast. The main reason for this increase in staffing is to rectify deficiencies identified since the Scheme of Transfer and to enable the Authority to fully undertake its duties under the Water Act.

CORE FUNCTIONS

For the core functions an additional 223 staff are needed in 1990/91 (compared to forecast 1989/90 numbers) broken down as follows: pollution control (66), water resources (74), flood defence (66), fisheries (10), conservation (4), recreation (2), navigation (1). Another 172 staff will be required in 1991/92 broken down as follows: pollution control (141), fisheries (22), conservation (5) and recreation (4). In 1992/93 an additional 73 staff will be required as follows: water resources (4), pollution control (53), fisheries (5), and flood defence (11). In 1993-94, only minor adjustments in staffing levels are proposed.

The extra staffing for pollution control is primarily to permit the Authority to undertake increased monitoring of controlled waters (compared to the inherited low levels of monitoring in some Regions, eg. Northumbria, North West and South West) and to implement a charging for discharges scheme as rapidly as possible. For water resources, the extra staff will undertake essential work on licence determination and enforcement, resource planning, hydrometry and tackling over-abstraction problems.

For flood defence it is to support increased sea defence project work. For fisheries it is to collect S.28 income and to permit greater fishery protection, enforcement and stock assessment than that carried out by the RWAs. The increased staffing for recreation, conservation and navigation are in connection with the Authority's increased duties for these functions compared to the RWAs. Figure 11 shows the manpower breakdown of the core functions for 1989/90, 1990/91 and 1993/94.

SUPPORT SERVICES

For the support services, an additional 167 staff are needed in 1990/91 broken down as follows: laboratory services (69),

administration (14), finance (17), "others" (16), personnel (13), information systems (17), estates (1), planning (4), research and development (9) and legal services (7).

An additional 93 staff will also be required in 1991/92 as follows: finance (27), personnel (12), planning (6), estates (2), "others" (10), public relations (5) and administration (31). In 1992/93 an additional 55 staff will be required as follows: finance (5), personnel (2), administration (1), legal services (2), information systems (6), R&D (1), public relations (2), laboratory services (36). Thereafter, in 1992-94, only minor adjustments in staffing levels are proposed.

The extra staffing for laboratory services is to enhance the efficient operation of the Authority's existing and new laboratories (currently under construction) and increase their output to enable increased monitoring of controlled waters. For administration, the additional staff will provide better support of core function staff, statutory committees, and the proposed new Head Office at Bristol.

In finance, additional accountants and auditors will improve the Authority's financial management. For "others" it is specifically to enable the Authority to improve its response to emergencies and provide better maintenance and transport services for the core functions. In personnel, the increase will enable Health and Safety and staff inspection obligations to be fulfilled, as well as allowing more training of existing employees together with graduate recruitment schemes for functions with staff shortages, such as flood defence.

For information systems, the staff will provide essential support for current hardware and software - additional staffing may be required to implement the IS strategy. For estates it is to establish asset registers and review the management of the Authority's property portfolio. For planning, the additional staff will undertake corporate and emergency planning and will coordinate advice to local authorities on planning applications. The R&D staff will enable the effective management of the inherited and proposed programme of work.

Additional legal staff are to deal with increased activity resulting from the Authority's increased regulatory and enforcement work, particularly in relation to pollution control. In public relations it is to enable an appropriate response to the increased public and media interest in the water environment and the Authority's work.

Figure 12 shows the changes in total staff numbers over the plan period, together with a function/support staff split. The ratio of support staff to core function is anticipated to be constant.

CORE FUNCTION AND SUPPORT SERVICES MANPOWER
TOTAL (NON-MANUAL AND MANUAL COMBINED)

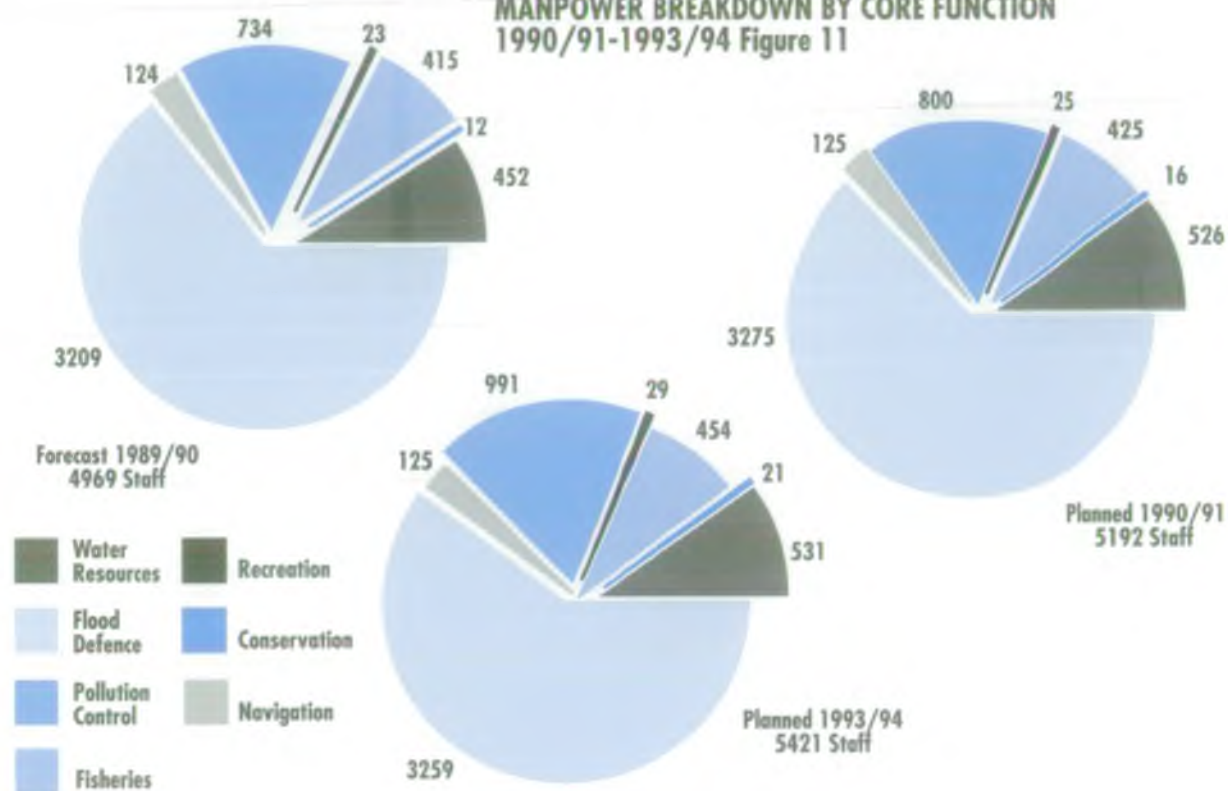
Table MP1

Number of Personnel (FTE) as at 31st March

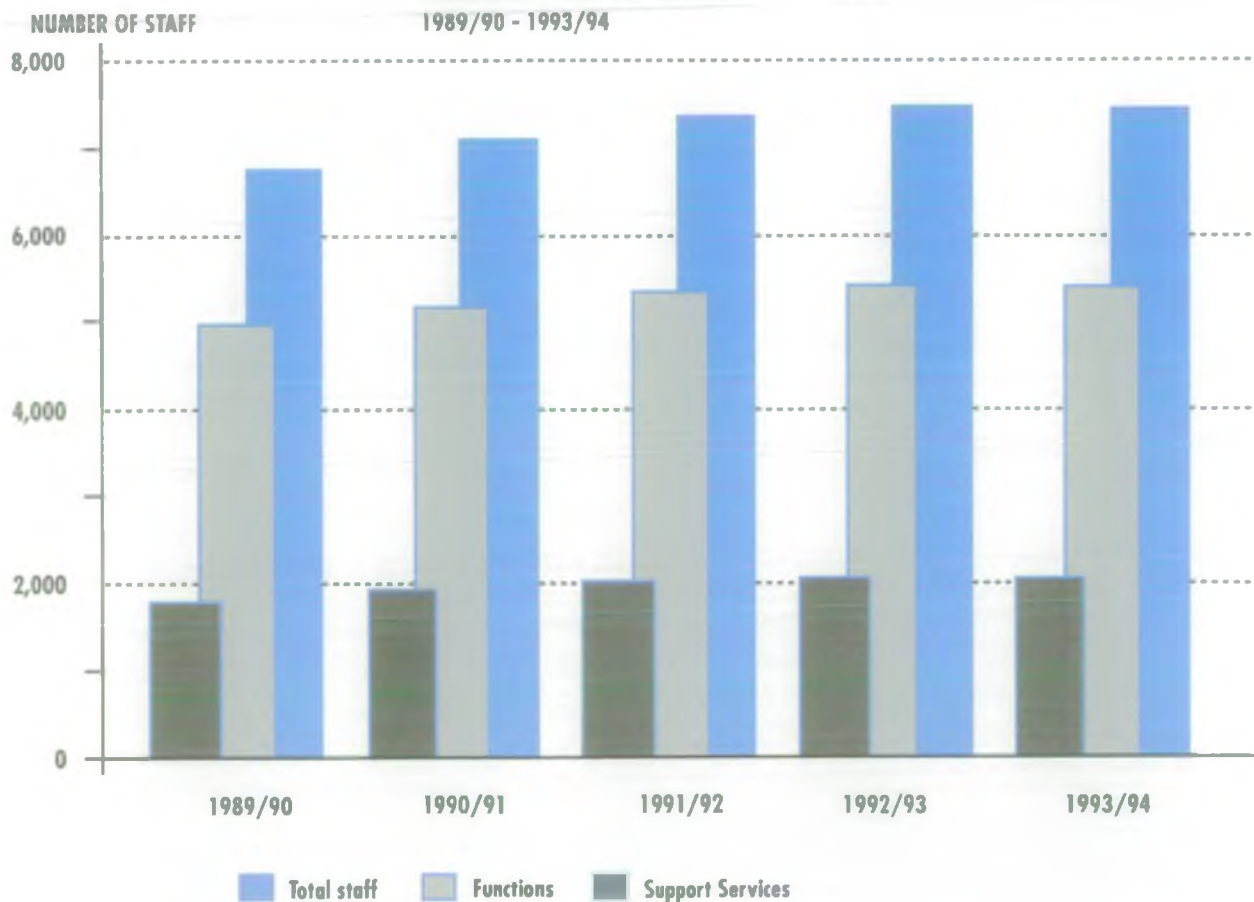
	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
MAIN FUNCTIONS					
Water Resources	452	526	526	530	531
Pollution Control	734	800	941	994	991
Fisheries	415	425	447	452	454
Recreation	23	25	29	29	29
Conservation	12	16	21	21	21
Navigation	124	125	125	125	125
Flood Defence	3209	3275	3275	3286	3270
SUB TOTAL	4969	5192	5364	5437	5421
Finance	273	290	317	322	323
Personnel/Management Services	97	110	122	124	124
Administration	406	420	451	452	453
Legal Services	73	80	80	82	82
Planning	12	16	22	22	22
Estates Management	26	27	29	29	29
Information Systems	96	113	113	119	119
Research & Development	12	21	21	22	22
Public Relations	30	30	35	37	37
Laboratory Services	323	392	392	426	427
Others*	420	436	446	431	420
SUB TOTAL	1768	1935	2028	2066	2058
TOTAL	6737	7127	7391	7503	7479

*Communication Centres/Control Rooms, Design Services, Electronics/other maintenance, Transport/Plant services.

MANPOWER BREAKDOWN BY CORE FUNCTION
1990/91-1993/94 Figure 11



TOTAL MANPOWER Figure 12
FUNCTIONS VS SUPPORT SERVICES
1989/90 - 1993/94



SUMMARY OF FINANCIAL PLANNING DATA 1989-94

This section presents summarised financial planning data for the period 1989/90 to 1993/94. More detailed commentary is provided below the "Inputs" tables in the individual sections for each core function and support service.

Table FP1 shows the Authority's total operating costs basis broken down by subjective budget headings together with an analysis between revenue and capital costs. Table FP2 shows the Authority's total operating costs (as a cash surplus/deficit after subtracting expenditure from income) by core function budget headings together with a number of other 'exception' budget headings. Figure 13 shows the Authority's total expenditure, income and predicted deficits, the latter requiring Government grant-in-aid. Table FP3 shows the Authority's total revenue and capital expenditure in terms of cash for its support services. All figures (except FP1) are cash and figures for 1991/92 to 1993/94 are based on 1990/91 prices plus 9, 7, and 5% inflation respectively.

The main feature of Table FP1 is the large increase in operating costs (£70m) in 1990/91 compared to 1989/90, with smaller increases from 1991/92 onwards. The additional expenditure is primarily additional staff costs (£25m) and external services (£45m) required to enable the Authority to fully undertake its duties under the Water Act following re-organisation of the water industry. The total expenditure on this table is different from that in FP2 because it is based on accruals accounting and includes depreciation (but not unfunded pensions), whilst FP2 is on a cash basis and excludes depreciation.

The data in Table FP2 showing the Authority's operating costs by core function is used as the main base data for the executive summary (Table FS1) and for the "Inputs" table showing income, expenditure and surplus/deficit for each core function. The main presentational difference between Table FS1 in the executive summary and Table FP2, is that the former includes some run down of water resources balances, and expenditure on research and development has been broken out as a separate budget from core function expenditure. FP2 does not include run down of water resources balances and the core function expenditure includes research and development.

Water resources shows a decline in income between 1989/90 and 1990/91 primarily due to modified charging policy in Welsh and Northumbria Regions in particular. Income from 1990/91 - 1993/94 increases, but as yet no account has been taken of new charging policies to be introduced from 1992. Increased expenditure is for essential work on licence determination, water resource planning, tackling low flow problems, and hydrometry. The data exclude a figure of £40m that has been identified to tackle low flow problems in the top 20 priority catchments. Monies owed to abstractors are taken

account of in FP2 and will be funded from water resources balances.

Pollution control income shows a slight decline from actual 1989/90 to planned 1990/91. This is due to the poor state of the inherited consents registers and the time needed to establish billing systems and other complexities associated with introducing a new charging scheme. Income from 1990/91 onwards includes income from application fees and a charging for discharges scheme. Due to the difficulties outlined above, the latter will take considerably longer to develop and implement and produce substantial income yields than suggested by the 1989 PES submission of NRAAC. However, the Authority will seek to introduce a charging for discharging scheme as rapidly as possible to reduce its grant aid requirements.

The £22m increase in expenditure on pollution control between 1989/90 and 1991/92 is for the following:

- a) additional resources needed for the 1991/92 Water Quality Survey, North Sea Conference work, and in relation to collecting and collating data on EC water quality directives (£3m),
- b) additional monitoring (from inherited extremely low levels eg bi-annually in some Regions such as Northumbria) of controlled waters (£10m),
- c) additional work on setting WQOs, WQs and on deemed consent determination, and establishment of consent registers/billing systems for charging for discharges (£3m),
- d) increased use of automated field instrumentation (£2m),
- e) increased R&D, particularly on impacts of discharges on receiving waters (£2m), and
- f) for undertaking site specific clean-up campaigns (£2m).

The expenditure is a mixture of revenue and capital, including new staffing, as well as round the clock 24 hour sampling and laboratory operation, travelling costs, support staff and equipment, consultants and other overheads.

Fisheries income shows a slight decline between 1989/90 and 1990/91. Pending a review of licensing arrangements and charges, later income figures are based on known licence fees already set until 1991/92. Potential income from S28 Orders (which is unlikely to be generated until 1992/93) is not included. It will reduce the fisheries deficit thereafter. The increase in fisheries expenditure between 1989/90 and 1990/91 and future years is to enable the Authority to carry out increased stock assessment and fishery protection work.

FINANCIAL PLANNING
TOTAL OPERATING COSTS - BY SUBJECTIVE ANALYSIS

Table FP1

£'000	Actual 1989/90	Forecast 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
SALARIES					
Costs	53,912	74,043	84,806	91,507	96,358
Superannuation	4,325	7,582	8,701	9,384	9,887
NIC	4,334	6,032	6,918	7,459	7,854
Other	3,081	1,195	1,333	1,430	1,494
WAGES					
Costs	22,844	27,995	30,470	32,337	33,744
Superannuation	1,582	2,324	2,523	2,671	2,784
NIC	2,046	2,056	2,235	2,366	2,465
Other	4,084	284	311	332	347
SUB-TOTAL	96,208	121,510	137,299	147,486	154,931
Power	3,166	3,995	4,180	4,489	4,687
Hired and Contracted:					
PLC Services	52,365	27,608	27,492	29,323	30,371
Other Services	94,352	151,816	165,497	176,843	186,379
Equipment, Tools & Materials	46,063	24,216	25,931	27,739	29,100
Rates	1,398	3,640	3,974	4,277	4,492
Travel & Subsistence	7,108	7,467	8,256	8,868	9,315
Insurance	1,415	1,790	1,951	2,088	2,192
Other Costs	24,346	34,593	37,189	40,553	42,521
H.C. Depreciation	15,808	35,514	38,751	43,273	48,036
Interest Charged/Received	(6,000)	(5,391)	(4,788)	(4,438)	(3,438)
SUB-TOTAL	240,021	285,248	308,433	333,016	353,655
TOTAL	336,229	406,758	445,731	480,501	508,587
ANALYSIS					
Revenue	223,563	263,062	290,193	313,601	331,872
Rechargeable		3,397	3,738	3,995	4,207
Capital Divided:					
F/Defence (MAFF)	74,536	101,085	118,884	131,890	140,707
Others (DoE)	38,130	39,214	32,916	31,015	31,802
TOTAL	336,229	406,758	445,731	480,501	508,587

TOTAL OPERATING COSTS - BY FUNCTION

Table FP2

£'000	Actual 1989/90			Forecast 1990/91					
	Income	Expend.	Deficit/ Surplus	Income	Expend.	Deficit/ Surplus			
FUNCTIONS									
Water Resources	82,686	65,790	16,896	63,772	60,471	3,301			
Pollution Control	1,093	48,694	(47,601)	701	53,684	(52,983)			
Fisheries	7,448	15,046	(7,598)	6,516	16,711	(10,195)			
Recreation	209	2,541	(2,332)	573	1,887	(1,314)			
Conservation					1,278	(1,278)			
Navigation	1,972	5,978	(4,006)	548	6,877	(6,329)			
SUB TOTAL	93,408	138,049	(44,641)	72,110	140,908	(68,798)			
Research & Development					5,100	(5,100)			
Restruct. Capital		24,072	(24,072)		14,136	(14,136)			
Personnel Buyouts					3,000	(3,000)			
Additional Premises					1,466	(1,466)			
Additional Staff					200	(200)			
I.S. Pre-impl. Study					1,300	(1,300)			
Unfunded Pensions		5,591	(5,591)		10,250	(10,250)			
SUB TOTAL	93,408	167,712	(74,304)	72,110	176,360	(104,250)			
Funded by: Grant in Aid E.S.C.	74,260 20,980		74,260 20,980	104,250		104,250			
	188,648	167,712	20,936	176,360	176,360				
Flood Defence	188,092	167,535	(20,557)	169,974	194,579	(24,605)			
TOTAL	376,740	335,247	(41,493)	346,334	370,939	(24,605)			
£'000	Planned 1991/92			Planned 1992/93			Planned 1993/94		
	Income	Expend.	Deficit/ Surplus	Income	Expend.	Deficit/ Surplus	Income	Expend.	Deficit/ Surplus
FUNCTIONS									
Water Resources	77,292	75,167	(2,125)	76,617	73,831	2,786	80,744	77,512	3,232
Pollution Control	10,000	70,569	(60,569)	18,725	70,939	(52,214)	19,661	70,393	(50,732)
Fisheries	7,094	20,686	(13,592)	7,766	21,815	(14,049)	8,779	22,536	(13,757)
Recreation	623	2,581	(1,958)	667	3,850	(3,183)	700	3,731	(3,031)
Conservation		1,626	(1,626)		2,080	(2,080)		2,045	(2,045)
Navigation	597	8,030	(7,433)	639	9,170	(8,531)	671	9,499	(8,828)
SUB TOTAL	95,606	178,659	(83,053)	104,414	181,685	(77,271)	110,555	185,716	(75,161)
Research & Development		9,710	(9,710)		12,193	(12,193)		14,677	(14,677)
Restruct. Capital		8,557	(8,557)		191	(191)		1,102	(1,102)
Personnel Buyouts		5,000	(5,000)		5,000	(5,000)			
Additional Premises		409	(409)		437	(437)		459	(459)
Additional Staff		1,308	(1,308)		1,400	(1,400)		1,470	(1,470)
I.S. Pre-impl. Study									
Unfunded Pensions		11,173	(11,173)		11,955	(11,955)		12,552	(12,552)
SUB TOTAL	95,606	214,816	(119,210)	104,414	212,861	(108,447)	110,555	215,976	(105,421)
Funded by: Grant in Aid E.S.C.	119,807		119,807	109,086		109,086	106,092		106,092
	215,413	214,816	597	213,500	212,861	639	216,647	215,976	671
Flood Defence	190,007	223,397	(33,390)	203,099	244,341	(41,242)	212,949	259,688	(46,739)
TOTAL	405,420	438,213	(32,793)	416,599	457,202	(40,603)	429,596	475,664	(46,068)

A slight increase in recreation income is predicted between 1989/90 and 1990/91. Generation of any further income will be dependent on the preparation of detailed site management plans. Increases in expenditure up to 1992/93 are for key development projects to generate more income. Expenditure then declines in 1993/94.

The conservation function generates no income. The increase in expenditure is in relation to the Authority's increased duties ie to promote conservation, compared to the RWAs. Expenditure on conservation as part of the Authority's other functions eg flood defence is not included here.

A small increase in net navigation income is projected from higher charges. Other income however is paid to the Treasury. The increase in navigation expenditure and the deficit over the plan period is due to essential maintenance and repair costs that the Authority has inherited from the RWAs.

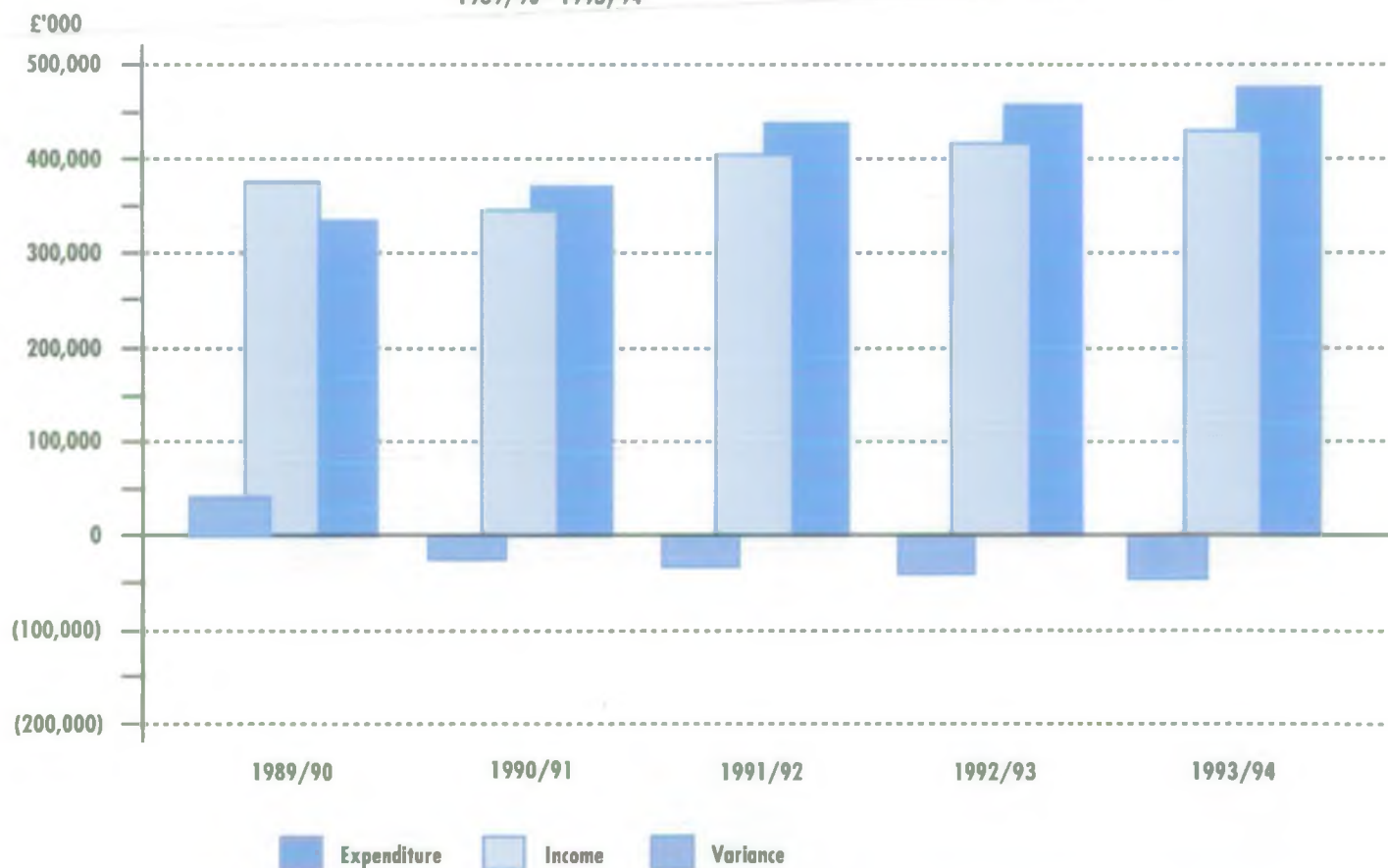
An increase in flood defence income (including MAFF grants) is projected from 1990/91 - 1993/94. The next MTP is likely to require additional expenditure to fund an increased work programme and levies may have to be increased accordingly. MAFF grant may also need to increase to fund the planned increasing expenditure, much of which is for additional sea defence work.

Other expenditure on capital restructuring, personnel buy-outs, and unfunded pensions which the Authority inherited, are as a result of the re-organisation of the water industry. The unfunded pensions are an on-going constant commitment requiring GIA beyond 1993/94. GIA required for capital restructuring to complete laboratories and other facilities, declines over the plan period. GIA is required in 1990/91 for buy-out of personnel benefits enjoyed with the RWAs, but not carried over into the NRA.

Other expenditure on additional premises and staff is for the planned re-location of most Head Office functions from London to Bristol in 1991. The IS strategy pre-implementation study is in connection with developing IS systems for charging for discharges and integrated accounting systems.

FP3 shows revenue and capital expenditure on the support services. Additional expenditure on finance is for extra staffing in the Regions and Head Office, particularly for audit and accountancy where a deficiency has been identified since Vesting. Increased administration expenditure is mainly on setting up costs, for example the proposed relocated Head Office in Bristol. Additional expenditure for personnel is to fulfil obligations in respect of Health and Safety and staff inspection.

NRA TOTAL EXPENDITURE, INCOME & VARIANCE Figure 13
1989/90 - 1993/94



Increased expenditure on laboratories is associated with setting-up costs and additional staffing for increased water quality monitoring. Increased legal expenditure is due to additional enforcement activity and prosecutions by the Authority compared to the RWAs. Increased expenditure on public relations is to increase public understanding of the NRA's work and to respond to increased public and media interest in the water environment.

Expenditure on Information Systems is to replace existing hardware and software, and maintain the current service which is recognised to be inadequate. The data excludes major capital expenditure that has been identified but not yet accurately quantified in detail, to implement the IS strategy and for portable mobile radio systems. Expenditure on vehicles and plant is to replace poor stock inherited from the RWAs.

SUPPORT SERVICE EXPENDITURE

Table FP3

£'000	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
Revenue Expenditure:				
Policy & Management	5,084	5,547	5,929	6,230
Finance	8,755	9,494	8,988	9,426
Legal	2,257	2,524	2,418	2,531
Estates	917	1,005	846	888
Admin. Support	14,602	16,002	16,186	17,152
Admin. Buildings	8,173	7,007	7,512	7,911
Public Relations	1,961	1,874	2,008	2,110
Personnel	5,999	5,768	6,108	6,407
Information Systems	14,580	13,856	15,021	15,807
Laboratory Services	9,689	8,168	8,873	9,479
TOTAL	72,037	71,246	73,889	77,941
Capital Expenditure				
Multifunctional :				
Computers	1,600	2,813	2,010	1,326
Laboratories	3,416	590	680	661
Vehicles and Plant	5,064	4,612	4,731	4,731
Offices and Depots	5,473	679	833	1,675
Communications	2,631	2,040	940	593
Others	1,548	670	770	931
TOTAL	19,732	11,405	9,963	9,917

SUMMARY OF PERFORMANCE INDICATORS 1989/90 - 1993/94

The Authority inherited a wide variety of output and performance measures in its ten Regions. It has been found that very few can be meaningfully aggregated for national purposes. Those data which could be consolidated are presented here as interim activity/performance indicators, pending the development of new NRA-wide output and performance measures related to the Authority's aims and objectives, which will be produced in conjunction with strategies for the Authority's core functions and support services. This section contains all the performance indicator data presented in the individual sections on each core function and support service.

WATER RESOURCE PERFORMANCE INDICATORS*						Table WR1
	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
No of new abstraction licences	760	760	1,200	1,200	1,200	1,200
No of new impoundment licences	110	110	110	110	110	110
Licensed average water abstraction/MID (1)(2)	26,000	26,000	26,390	26,790	27,190	27,600
Number of gauging stations for data submission to National Archive	787	787	787	787	787	787
Number of studies commenced on measures to alleviate low flow problems (3)	-	-	19	-	-	-

* Note these are only interim activity indicators pending the development of new nationally applicable output and performance measures for the water resources function of the NRA. The data presented will be subject to revision and validation in future years.

(1) Based on an extrapolation on a 1.5% increase per year basis from data in "Water Facts 88" published by the Water Authorities Association.

(2) Estimate excluded CEGB abstractions for water power, saline and tidal abstraction.

(3) The number of studies commenced will be dependent on the availability of resources.

POLLUTION CONTROL PERFORMANCE INDICATORS

Table PC1

RIVER WATER QUALITY (Km of river)

River Class	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94	Long Term Objective
1A	12190.7	12498	12543.9	12547.9	12558.9	12558.9	15098.4
1B	12914.2	13183.3	13388.5	14241	13670.7	13734.6	15018
2	9799.8	9277.9	10425.5	9775.2	10484	10555.3	9514.9
3	3509.2	3478.1	3485.1	3327.4	3155.1	3100.9	597.8
4	590.6	567.8	526	479.4	464.4	383.4	0
N/S	1363	1363	0	0	0	0	0
TOTAL LENGTHS CLASSIFIED	40367.5	40368.1	40369	40370.9	40333.1	40333.1	40229.1

Key to PCI

Class	Dissolved Oxygen (% saturation) 5 percentile	Biochemical Oxygen Demand (mg/l) 95 percentile	Ammonia (mgN/l) 95 percentile
1A Good Quality	80	3	0.3
1B Good Quality	60	5	0.7
2 Fair Quality	40	9	3.0
3 Poor Quality	10	17	-
4 Bad Quality	<10	-	-

Descriptions of Classes

- 1A-Waters of high quality suitable for potable supply abstractions and for all other abstractions. Game or other high class fisheries supported. High amenity value.
- 1B-Water of less high quality than Class 1A but usable for substantially the same purposes.
- 2-Waters suitable for potable supply after advanced treatment. Reasonably good coarse fisheries supported. Moderate amenity value.
- 3-Waters which are polluted to an extent fish are absent or only sporadically present. May be used for low grade industrial abstraction purposes. Considerable potential for further use if cleaned up.
- 4-Waters which are grossly polluted and are likely to cause nuisance.
- N/S-Not classified due to lack of data

Estuarial Water Quality (Km River Length)

Table PC2

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94	Long Term Target
Class A	1424.a)	1413	1432	1440	1457	1482	1419.b)
Class B	654	642	629	626	626	641	756
Class C	133	138	142	136	129	102	5
Class D	70	83	83	79	68	66	0
Total	2281	2276	2286	2281	2288	2291	2180

a)Data for South West Region unavailable throughout table.

b)Data for Wessex Region not included-objectives for estuaries set using different classes.

Key: Class A - Good Class B - Fair Class C - Poor Class D - Bad

Bathing Water Quality

Table PC3

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
No of EC Bathing Waters	364	364	365	365	365	365
No of EC Bathing Waters achieving the Directive	202	166. ab	212	224	236	252
% compliance	55.5	45.6 ab	58.0	61.4	64.6	69.0
No achieving minimum aesthetic standard (a,b,c)	154	154	162	168	170	181
% compliance	42.3	42.3	44.4	46.0	46.5	49.6

Notes

a. No figures for North West Region available b. No figures for South West Region available c. No figures for Yorkshire Region available d. Minimum Aesthetic Standard is defined as: "No deposition of sewage solids, or the formation of sewage slicks, discolouration and foaming visible from foreshore areas frequented by the public".

FLOOD DEFENCE LENGTH OF MAIN RIVER BANKS PROTECTED (Km) (2,3)

Table FD1

LAND USE BANDS (4,5)	LONG TERM TARGETS	FORECAST 1989/90	PLANNED 1990/91	PLANNED 1991/92	PLANNED 1992/93	PLANNED 1993/94
A	4875	3316	3462	3601	3750	3911
B	3491	2316	2447	2573	2696	2793
C	10262	7587	7821	8102	8491	8855
D	15658	11622	11919	12215	12597	12790
E	27471	21330	21859	22345	22941	23317
TOTAL	61757.(1)	46171	47508	48836	50475	51666

Notes

- 1) Not including figures for Welsh south western Division.
- 2) Figures obtained for Anglian and Southern Regions are approximate.
- 3) Each bank is considered separately so the total length is twice the length of 'Main' river.
- 4) Band allocation is for highest requirement where major and minor flood banks are to be found.
- 5) Description of Land Use Bands given opposite.

SEA DEFENCES - LENGTH PROTECTED (Km) (1,2,3)

Table FD2

LAND USE BANDS (4, 5)	LONG TERM TARGETS	FORECAST 1989/90	PLANNED 1990/91	PLANNED 1991/92	PLANNED 1992/93	PLANNED 1993/94
A	367	312	321	334	344	353
B	82	52	57	62	67	72
C	219	144	152	164	179	191
D	222	145	155	167	181	192
E	114	59	73	84	96	106
TOTAL	1004	712	758	811	867	914

Notes

- 1) Excludes figures for Welsh Region.
- 2) Figures for Northumbria Region included in FD1.
- 3) Band definition as for Rivers.
- 4) Sea defence defined as a defence to sea-ward of Schedule 4 Boundary Coast Protection Act 1949.
- 5) Description of Land Use Bands given opposite.

LAND USE BAND DESCRIPTIONS USED IN TABLE FDI and FD2

Land Use Band	Description of Typical Land Use
A)	A reach containing urban elements of residential and non-residential property, distributed over a significant proportion of its length, or densely populated areas over some of its length. Any agricultural influence is likely to be over-ridden by urban interests. Amenity uses such as parks and sports fields may be prominent in view of the floodplain's proximity to areas of population density.
B)	Reaches containing residential and/or non-residential property, either distributed over the full length of the reach, or concentrated in parts but characterised by lower densities than Band A.
C)	Limited numbers of isolated rural communities or urban fringe at risk from flooding, including both residential and commercial interests. Intensive agricultural use could also be included.
D)	Isolated, but limited numbers of residential and commercial properties at risk from flooding. Agricultural use will probably be the main customer interest, with arable farming being a feature. In developed pockets of largely urban use, amenity interest may be prominent.
E)	There are likely to be very few properties and major roads at risk from flooding in these reaches. Agricultural use will be the main customer interest with either extensive grassland or, where the flood plain extent is small, arable cropping being the most common land uses. Amenity interests are likely to be limited to public footpaths along or across the river.

FLOOD WARNING

Table FD3

LENGTH OF MAIN RIVER WITHIN FLOOD WARNING LEAD TIME BANDS
TOTAL LENGTH (km)

	Long Term Target(1)	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
FLOOD WARNING LEAD TIME BAND (hours)							
Over 4	4,355	2,662	4,865	4,865	4,865	4,865	4,865
2 - 4	9,875	4,662	6,656	7,061	8,689	8,898	9,323
Below 2	3,343	2,132	4,490	4,200	3,796	3,724	3,613
TOTAL (4)	17,573	9,416	16,011	15,559	15,233	16,671	17,295

Notes

- 1) Long term target figures not available for North West, Severn Trent and Yorkshire Regions.
- 2) Figures not available for Southern Region.
- 3) Figures for 2-4 hours and below 2 hours in Anglian Region are estimates.
- 4) All figures exclude Welsh Region south-eastern Division.

FISHERIES PERFORMANCE INDICATORS**

Table F1

	Planned 1989/90	Forecast 1989/90	Planned 1990/91	Planned 1991/92	Planned 1992/93	Planned 1993/94
Length (km) of classified fishery - 1a) salmonid*	17,798	17,798	18,243	18,700	19,168	19,647
and 1b) non-salmonid (* includes mixed)	7,673	7,673	7,865	8,062	8,264	8,471
No of licences:						
2a) Rod (x1000)	1,174	1,174	1,186	1,198	1,210	1,222
2b) Net	3,621	3,621	3,621	3,621	3,621	3,621
No of prosecutions:						
3a) licence offences	2,094	2,094	2,094	2,094	2,094	2,094
3b) by-law/statutory offences	883	883	883	883	883	883
4) No of fishery survey sites	1,320	1,320	1,386	1,455	1,528	1,604
5) No of fish kills attended	710	710	710	710	710	710
6) Number of fish stocked out (x1000)	4,100	4,100	4,100	4,100	4,100	4,100

Note that the lengths of river classified represent those designated under the EC Freshwater Fish Directive in most, but not all cases. Moreover, the river lengths do not correspond to the total lengths of river available and vary in proportion from Region to Region. Note there is no meaningful forward extrapolation of the national aggregates of current levels of activity. Hence only current levels are shown. However, as a planning exercise, activities 1a) and b) have been projected at a 2.5% increase per annum; activity 2a) at 1% per annum and activity 4) at 5% per annum. Clearly larger percentage increases over the whole 5 year period will be necessary to effect significant changes.

RECREATION PERFORMANCE INDICATOR* Table R1

Visitor Numbers to NRA facilities	
Planned 1989/90	19,000
Forecast 1989/90	19,000
Planned 1990/91	21,125
Planned 1991/92	23,250
Planned 1992/93	25,375
Planned 1993/94	27,500

*This is only an interim indicator for sites where data is available. A priority for 1989/90 and 1990/91 is to develop appropriate indicators that will enable effective assessments to be made of the NRA's performance in developing recreation.

CONSERVATION PERFORMANCE INDICATOR** Table C1

River Corridor Surveys (km)	
Planned 1989/90	2,095
Forecast 1989/90	2,095
Planned 1990/91	5,392
Planned 1991/92	5,753
Planned 1992/93	5,040
Planned 1993/94	4,586

**This is only an interim indicator. A priority for 1990/91 is to develop appropriate indicators that will enable effective measurement of the Authority's work in relation to conservation. This planning requirement will be addressed in the conservation function strategy.

NAVIGATION PERFORMANCE INDICATOR Table NI

	Number of Navigation Licences*	Length (km) of Navigation maintained
Planned 1989/90	31,269	743
Forecast 1989/90	31,269	743
Planned 1990/91	32,802	744
Planned 1991/92	32,762	744
Planned 1992/93	32,812	760
Planned 1993/94	32,812	760

* excluding Southern Region

**PUBLIC RELATIONS
PERFORMANCE INDICATORS Table PR 1**

	No of press releases produced	No of documents produced
Planned 1989/90	398	70
Forecast 1989/90	398	70
Planned 1990/91	470	75
Planned 1991/92	600	68
Planned 1992/93	600	68
Planned 1993/94	600	68

RESEARCH AND DEVELOPMENT PERFORMANCE INDICATORS**Table RD1**

	Number of Total projects started	number of projects completed	Post-completion evaluation 1		
			(a) Good	(b) Marginal	(c) Poor
Planned 1989/90	106	71	See note 2		
Forecast 1989/90	101	65	See note 2		
Planned 1990/91	120	115	95	20	-
Planned 1991/92	110	115	115	-	-
Planned 1992/93	100	110	110	-	-
Planned 1993/94	100	100	110	-	-

Notes:

1. Qualitative evaluation carried out under R&D Assessment System to assess extent to which the project technical and financial objectives, as set in the project investment appraisal, have been achieved. (Quantitative indicators cannot apply to all types of R&D, and are excluded from this summary.)

2. R&D Assessment system operational 1990/91.

HEAD OFFICE

ANGLIAN REGION

NORTHUMBRIA REGION

NORTH WEST REGION

SEVERN TRENT REGION

SOUTHERN REGION

SOUTH WEST REGION

THAMES REGION

WELSH REGION

WESSEX REGION

YORKSHIRE REGION



NATIONAL RIVERS AUTHORITY

SOUTHERN REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of Southern Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

The period since my appointment as General Manager-designate over 18 months ago has seen the effective establishment of the National Rivers Authority - Southern Region. Initially as an independent rivers unit within the existing Southern Water Authority organisation, we became part of the new National Rivers Authority on 1 September 1989.

Our intention in the Southern Region is to build on our inheritance, strengthening areas of weakness and adapting our ways of working as needs and opportunities are perceived. We aim to reinforce policing of water abstraction and enforcement of water quality standards, and to become self-sufficient in the critical area of laboratory analysis. We intend to develop our own Regional Emergency Control System and to withdraw progressively from shared premises wherever possible. Our approach has been evolution rather than revolution. We believe this will best serve the interests of internal stability and confidence, and of presenting a clear and unwavering image of a new organisation to the public. We shall nevertheless be responsive to changes in the climate of public opinion and to developments in technology.

The distinguishing features of the Southern Region are a continued pressure of development, heavy reliance on groundwater for supplies, a relatively small margin between demand and availability and a long and vulnerable coastline. With the drought and floods of last winter, we are conscious of the need for prompt and decisive response in emergency.

The proposals presented here represent a significant first step in a continuing process by which we in the NRA Southern Region will discharge our responsibilities as Guardians of the Water Environment independently and with determination.

Grainger Davies

Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- To achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



SOUTHERN REGION

Administrative Areas

The Southern Region includes the Isle of Wight, nearly all of Kent and Sussex and most of Hampshire together with a small part of Surrey and minor parts of other counties. Those parts of the London Boroughs of Bromley, Greenwich and Bexley and Sevenoaks District which form the catchments of the Rivers Cray and Darent are within the Region for flood defence purposes, and on 1 April 1990 responsibility for other NRA functions in this area passed to the Southern Region from the Thames Region.

Topography

The main features are the two chalk escarpments of the North and South Downs running east-west and merging into one chalk upland area in Hampshire. Running parallel between these is the Wealden Ridge, and between this and the two chalk escarpments are extensive lowland areas.

Rivers are typically short, rising in one of the upland areas running along the agricultural lowlands and making their way through one of the many gaps in the Downs to the sea or the Thames Estuary.

The Region has a considerable total length of low-lying sea defence frontage and of estuaries requiring protection from tidal flooding.

Population, Industry and Commerce

The Region's major conurbations are along the coast in the Southampton-Portsmouth, Brighton-Worthing and Medway Towns-Gravesend areas. In these and smaller coastal towns are concentrated most of the Region's population. Smaller inland concentrations are in Maidstone and Ashford, which is a designated development area. 89% of the area remains

relatively rural but nevertheless contains nearly one third of the population.

Agriculture and Fisheries

Of the agricultural land in the Region, approximately half is in permanent arable use, with the balance either permanent grassland or grass sown in rotation with arable crops. Almost all rivers are of some fisheries interest, with the Test and Itchen being nationally important game fishing rivers.

Development

With good communications to London, the Region has always been attractive to development and this has been reinforced recently by the completion of the M25 ring and the promotion of the Channel Tunnel. Nevertheless there are small pockets which are not as buoyant, such as the north-eastern corner of Kent, and efforts to promote these areas can be expected.

Some Key Statistics

Area: 10,500 sq km
Population (resident): 4.5 m
Length of Main River: 2,748 km
Length of Coastline: 898 km
Length of Maintained Sea and Tidal Defences: 281 km
Average Annual Rainfall: 790 mm
Number of Abstraction Licences: 2,715
Volume of Water Abstracted : 2,932 Ml/d
Number of Consented Industrial Discharges: 51
Number of EC Bathing Waters: 65

KEY ACHIEVEMENTS SINCE VESTING

Most of the processes of staff transfer and assumption of external responsibilities etc were completed well before 31 August 1989. The NRA unit was largely independent of the rest of the Southern Water Authority from 1 April 1989. Progress with the new organisation since then has consisted of the completion of outstanding matters including the recruitment of some new staff and the conclusion of the transfer of assets.

All external services are now provided directly by the NRA Southern Region, except for emergency response in Kent, Hampshire and the Isle of Wight. Here the service will be provided by Southern Water plc control rooms under contract until an NRA Regional facility is available later in 1990.

In the period 1 September 1989 to 31 March 1990 the NRA Southern Region has:

- Established its identity and purpose in the public mind by effective public relations.
- Built a team to lead a widely dispersed staff in a new cultural setting.
- Progressed towards physical separation from its predecessor Regional Water Authority and successor company.
- Made known to the public and specialist bodies its heightened interest in conservation and the environment.
- Instituted enforcement procedures for the regulation of water quality and resources.
- Prepared its contribution to the NRA's first Corporate Plan.
- Played an effective role in the welding together of the new national Head Office and the ten regional units into a single organisation.
- Co-ordinated the response throughout the Region to a major drought situation.
- Coped with a winter distinguished by unusually severe gales, high tides, rainfall and consequent flooding.
- Started a major fluvial flood relief facility at Ashford, and a major sea defence work at Pennington, Hampshire.

REGIONAL PRIORITIES 1990/91

Water Resources

- Reduce response time to abstraction licence applications.
- Establish effective policing of abstraction licences.
- Start work on providing telemetry links to key hydrometric stations (3 year programme).
- Establish water resource planning groups to co-ordinate water use throughout the Region.
- Implement more effectively an Aquifer Protection Policy, by intensifying measures to monitor and control pollution by nitrates, saline intrusion and from waste disposal sites.
- Prepare demand forecasts for the Region for the next 20 years.
- Respond to two major reservoir promotions.
- Act to reduce demands on over-abstracted catchments.

Water Quality

- Achieve improvements in specific waters to meet quality objectives set down in our Programme.
- Establish fully effective response to incidental pollution throughout the Region on 24 hour basis.
- Monitor all EC Bathing Waters in accordance with NRA improved monitoring requirements.
- Establish computer database for implementation of :
Charging for discharges,
Sampling and analysis programmes.
- Complete 1990 River Quality Survey.
- Undertake negotiations for major effluent quality improvements according to priority for compliance with Water Quality Objectives.
- Establish the Biology laboratory in Canterbury and complete construction and fitting of main laboratory in Havant area.
- Update and improve Groundwater Quality Archive.
- Implement land use controls for the protection of surface and groundwater quality.

Fisheries

- Maintain, promote and develop freshwater fisheries throughout the Region.

- Initiate increased fish stock assessment throughout the Region.
- Further the provision of fish passes at river structures.

Flood Defence

- Develop a comprehensive all-function Regional Emergency Control System including a 24 hour manned Control Centre.
- Assess the condition and adequacy of all tidal and sea defences on NRA maintained frontages.
- Establish effective liaison with local authorities for all Flood Defence functions, and in relation to development for all functions.
- Establish on a firm basis the engineering and management of capital investment.
- Complete work on the Ashford Flood Relief Scheme.
- Establish flood defence management policies for the River Adur following study.
- Complete work on Phase 1 of the Pennington Sea Wall Reconstruction.
- Reinstate sea defences damaged during the winter of 1989/90.

Recreation and Conservation

- Seek agreements for increased use of non-owned land for recreational purposes.
- Review the suitability of the Medway Project as a model for application elsewhere.
- Establish effective liaison with conservation bodies throughout the Region on NRA activities.
- Extend coverage of river corridor surveys to establish a comprehensive conservation database.
- Seek opportunities for joint projects to promote and enhance conservation.
- Act as appropriate in support of Tidy Britain Year 1990.

Navigation

- Enhance the income of the Medway Navigation from all sources.
- Consider the future management of Rye Harbour.

Support Services

- Supervise moves to NRA offices at Guildbourne House, Worthing and Leigh near Tonbridge.
- Transfer responsibility for safety to the Personnel Section.
- Withdraw progressively from the shared use of premises owned by Southern Water plc.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Southern Region employs a total of some 560 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

The Southern Region has a fourth Committee, the Harbour of Rye Advisory Committee, which advises on the NRA's activities in owning and operating Rye Harbour.

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- **Grainger Davies**

Regional Board Member

- **Karen Morgan**

Regional Flood Defence Committee Chairman

- **Henry Harris**

Regional Rivers Advisory Committee Chairman

- **Maldwyn Drummond**

Regional Fisheries Advisory Committee Chairman

- **Arthur Humleert**

Harbour of Rye Advisory Committee Chairman

- **Roger Breeds**

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

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Fax : (0903) 821 832

24 hour telephone numbers

Winchester District (0962) 714 585

Chichester and Pevensey District (0273) 606 766

Rye, Tonbridge and Canterbury Districts (0634) 830 655

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent to a main river.
- Build or plant within 8 metres of a main river or within 15 metres of the landward toe of a tidal or sea defence structure.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line to catch fish.

Please contact us if you have any doubt that you need NRA permission.

Public Register Access

Public access to data for the whole Region is available at Headquarters and to data for each district at the appropriate District Office.



NATIONAL RIVERS AUTHORITY

YORKSHIRE REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

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The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of Yorkshire Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

Our Regional Plan has been prepared ensuring that the aims and objectives associated with each of our functions are consistent with those that have been determined for the NRA nationally.

These aims and objectives have been derived with due regard for the Authority's legal responsibilities and the expectations of the public in respect of the water environment.

These expectations cannot be met overnight for the task is complex and they may be contradictory.

The Region cannot hope to provide instant solutions, nor be the panacea for all environmental problems, but the Regional Plan represents a coherent and structured approach to the task in hand.

Of course resources to carry out the role and responsibilities we have been set are a critical factor in ensuring the successful implementation of our Plan.

If the Region is to meet the level of trust the government and the public is placing in it then it is imperative that the targets associated with these aims and objectives are met.

I am certain that all of the Authority's employees within the Region are committed to the achievement of the Plan. This summary sets out its essential elements.

Ken Newham

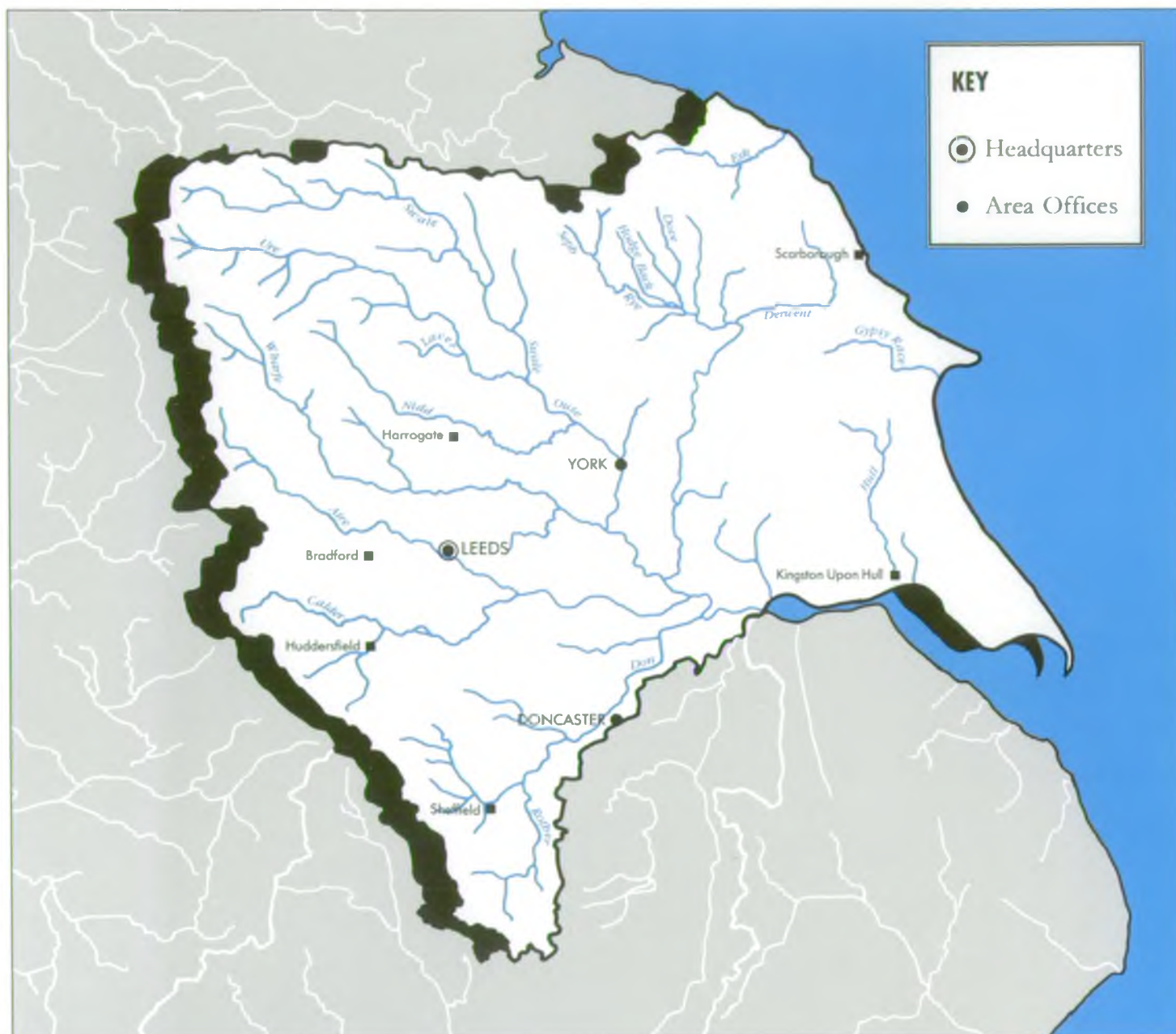
Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
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- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



Some Key Statistics

Area: 13,500 sq km
Population: 4.5 m
Length of Main River: 1,741 km
Length of Estuary: 110 km
Length of Coastline: 150 km
Area of Inland Lakes and Reservoirs: 247 sq km
Length of Constructed Flood Defences on Main River: 990 km
Length of Constructed Sea Defences: 75 km
Average Annual Rainfall: 823 mm
Number of Abstraction Licences: 3,750
Volume of Authorised Water Abstraction: 4,097 Ml/d
Number of Industrial Discharges: 2,300
Number of EC Bathing Waters: 22

YORKSHIRE REGION

The NRA Yorkshire Region comprises South and West Yorkshire, most of North Yorkshire, North Humberside and the northern part of Derbyshire.

The catchment of the Yorkshire Ouse constitutes most of the Region, the Ouse, with the Trent, forming the Humber Estuary.

Land levels rise to 700m in the Pennines in the west of the Region where there is an average annual rainfall in excess of 1,500mm in places. The Pennine area includes parts of the Peak District and Yorkshire Dales National Parks. The North York Moors National Park is the other significant upland area.

In contrast, areas of the City of Hull are below sea level and are defended from inundation by flood banks and a tidal surge barrier. The annual average rainfall in the east of the Region is as low as 600mm.

KEY ACHIEVEMENTS SINCE VESTING

Since becoming a fully operational NRA Region on 1st September 1989, our key achievements have been in the following areas:

Laboratories

New laboratories have been opened in Leeds which use robotics to determine the physical parameters, oxygen demand and nutrients in samples.

They include facilities for sampling waters taken from bathing beaches and testing for toxic chemicals.

Incident Room

A new Incident Room has been opened in our Regional HQ at Leeds which provides a communications centre and computerised modelling facility for the Region's flow forecasting service. This currently relates primarily to flood forecasting but will extend to other functions once the Regional Telemetry Scheme and River Flow Forecasting System are implemented during 1990/91.

Fisheries

More than 14,000 fry of the threatened species, Arctic charr have been bred at our fish farm in Pickering, North Yorkshire. This is thought to be the first successful attempt to breed such a stock away from its natural habitat.

Public Image

Extensive media coverage of a range of the activities has given the public a perception of NRA activities. As expected the interest has centred on environmental issues but fisheries, flood defence and water resources matters have also been featured.

Prosecutions

In line with the NRA's policy of taking polluters to court when necessary, the region has prosecuted on 27 occasions between 1 September and 31 March. Of these cases 18 were initiated by the NRA.

The prosecutions included that of Yorkshire Water plc for the spillage of a chemical used in water treatment which killed 1,000 fish. Total fines imposed amount to more than £25,000.

Rising Tide Levels

We have appointed consultants to investigate trends in tidal level changes in the Humber Estuary and to establish a correlation between those and open ocean trends. The project is managed by the Yorkshire Region and is jointly-funded with Anglian and Severn Trent Regions.

REGIONAL PRIORITIES 1990/91

Water Resources

It is important to ensure that the changing patterns of demand on water resources are recognised. Therefore the Regional Plan needs to reflect the impact of the 1989 drought.

The rebuilding of the Skelton flow measurement station will start in January 1991. The station will help control the proposed groundwater augmentation of low flows in the River Ouse which will be used largely for public supply.

Investigation of the Wolds Chalk will continue.

Current standards of service for dealing with applications for abstraction licences will be maintained.

Monitoring and archiving of hydrometric data will continue.

Two new river flow measurement stations are to be constructed on the River Foulness and River Crimble to aid river management.

Activity in investigating and monitoring groundwater quality will be increased, particularly in relation to Nitrate Sensitive Areas.

Water Quality

The prime regional objective is to achieve a substantial and sustainable improvement in the quality of surface, coastal, estuarial, and underground waters whilst protecting those waters which are already high quality. The implementation of consistent, rational policies for monitoring and enforcement is therefore of paramount importance.

Yorkshire has had a long history of poor quality in some of our industrial rivers and still 13% of the river network suffers from serious pollution.

The Region covers part of the Humber Estuary, the largest input of freshwater into the North Sea.

It is proposed to double the number of samples collected, building up through 1990/91 and press on with the provision of automatic field monitors.

Emphasis will also be given to the preventive side of inspection and catchment control.

Comprehensive biological monitoring and investigation will continue.

The use of mathematical water quality models will continue to expand and they will be used in the review of the strategy for protecting and enhancing water quality. The 1990 Water Quality Survey will be undertaken and along with preparatory work for recommending statutory Water Quality Objectives.

Effective communications with water users and pro-active public relations will remain a high priority.

The emergency service will be strengthened by improved communications.

A substantial increase in resources will be needed to accomplish these objectives and it is planned to increase the staffing of the Pollution Control function from its 1989/90 establishment of 78 (this excludes the chemical and microbiological analysts of the laboratory) to 100 by the end of 1990/91.

Flood Defence

The Region aims to provide a first class range of services for flood alleviation, sea defence, flood warning and planning

advice. Such services reduce the risk to life and property from flooding and the plan sets out our future activities to enhance the quality of life in flood prone areas.

Major Capital Schemes in progress

River Hull Comprehensive	£18.0m	Completion 1999
Batley Beck	£8.4m	Completion 1994
River Calder (Todmorden)	£1.4m	Completion 1991
River Spenn Comrehensive	£2.4m	Completion 1995
Fenay Beck	£2.6m	Completion 1993

Major New Capital Schemes

Lower Ouse Tidal Comprehensive Scheme - £6.0m

Lengths of flood defences between Goole and Hull are below current standards and the study into rising tide levels standards is likely to show these standards need revision. Work is programmed to start in 1992.

Upper Aire Comprehensive Scheme - £2.7m

The scheme will alleviate flooding problems between Castleford and Skipton and will follow the completion of the Aire and Calder mathematical model in 1990.

Work is programmed to start in 1992.

Ea Beck Comprehensive Scheme - £4.8m

The Ea Beck is an embanked high level watercourse which has been subsidised by up to 3m over the last 30 years. The scheme will bring the embankments up to current standards. More than half the cost will be funded by British Coal.

Work is programmed to start in 1990.

The inhouse workforce is managed to ensure value for money, but some changes will be needed to maintain its competitiveness.

It has become clear that the resources allocated to both Planning Liaison and Flood Defence Development Control need to be increased. Improved IT systems support is also to be provided.

A number of rivers are affected by mining subsidence each year and there is a significant programme of remedial works which is undertaken in liaison with British Coal.

Fisheries

The Region contains most fishery types from game to coarse fish in rivers, reservoirs, lakes and estuaries. There is a commercial salmon and sea trout net fishery along the coast to six miles out to sea and a commercial eel net fishery in the Humber.

A trend of increasing licence sales is expected to continue. Periods during which all anglers found fishing without a licence are recommended for prosecution, is one measure to reduce licence evasion. The Region will prosecute in the case of all serious offenses, especially poaching, given sufficient evidence.

A review of the Fisheries byelaws will be undertaken by January 1991. Illegal netting, snatching and gaffing for salmon and migratory trout continue to take place in the River Esk, so the enforcement effort to protect this valuable resource cannot

be relaxed.

There is a three year rolling programme of fisheries surveys on the rivers which provides invaluable data on the state and changes in fish stocks. The programme will continue, as will "ad hoc" surveys conducted as necessary. This data forms the basis of management advice or fish mortality assessment.

Experimental work will continue on the spawning and rearing of Arctic Charr and grayling at Pickering as will the production of 100,000 trout per year.

An off-river refuge unit will be constructed on the River Swale during 1990/91.

Recreation

Land in NRA ownership in the Region with recreational development potential is limited.

There is a need to identify the potential for further development of land owned by the Region which will be compatible with all our statutory responsibilities.

The quiet enjoyment of rivers through the development of riverside footpaths, car parks, picnic areas and view points together with interpretation facilities will be promoted.

The Authority will work together with other agencies if the land is not in the ownership of the Authority.

Conservation

During 1990/91 borrow pits will be enhanced for fisheries and other wildlife at High Esk and Wistow. Major planting and landscaping will take place at Figham Pastures and as part of the Fenay Beck Improvement Scheme.

Many recently changed operational practices such as dredging channels leaving meanders and shallow berms for reeds, the use of wild flower mixes in reinstatement, scrub clearance on a four year rotation, delaying mowing on flood banks to protect wild flowers and controlled flooding of selected washlands to retain wetland habitat will continue.

A programme of practical projects not associated with specific schemes to enhance conservation will be formulated and implemented. To achieve the best value for money some of the projects will "pump prime" larger projects and every opportunity will be taken to undertake work in collaboration with Conservation Organisations. A bird hide on NRA land in a National Nature Reserve is to be constructed.

The database of information on Sites of Special Scientific Interest and other conservation sites now held will be further developed and integrated into other databases on River Corridor Surveys and biological information.

Public Relations

Prompt release of information on incidents and the Region's work in general will remain the backbone of the public relations work.

Liaison with the media will again be a major area of work as will the initiation of coverage of specialised areas of work and areas not usually attracting media attention.

The production of a series of materials aimed at different target groups will continue.

These materials will be clear, simple and effective allowing us to respond quickly to requests for information without

producing over-elaborate materials.

The public relations aspects of internal communication will also be a priority in the coming year.

Information Systems

The Region will make significant moves towards independence from Yorkshire Water plc when it installs several major systems during the year, including a Regional Telemetry Scheme, a real-time River Flow Forecasting System, and Technical and End User Computing facility. These will be installed on computers housed in purpose-designed rooms at Rivers House and Olympia House.

A Regional Operational Database is urgently required to provide readily-accessible data relating to all technical aspects of the Region's activities, particularly water quality and quantity. Contracts will be let during the year for the first phases of this development.

Government legislation requires that the water industry as a whole should work together to provide its own private mobile radio facilities. The Region and Yorkshire Water Services have agreed to develop jointly a Private Mobile Radio System which will serve independently the requirements of the two organisations.

Research & Development

The Region will play a full role in the development and management of the NRA's R&D programme. Important areas of work include:

- Effects of land use change, agriculture and fish farms on water quality.
- Urban water quality, intermittent discharges, foaming and mathematical water quality modelling.
- Sources, fate and toxicity of trace metal and organic substances.
- Eutrophication and algae, biological methods of quality classification.
- Instrumentation, analytical methods and sampling techniques.
- Groundwater quality, including impact of waste disposal, modelling, pesticides and nitrates.
- Effects of climate change on flow regimes, quality and sea levels.
- Flood storage, run-off control techniques, snow melt and flood peaks, flood forecasting.
- Fish population survey techniques.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Yorkshire Region employs a total of some 510 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- Mr Kenneth Newham

Regional Board Manager

- Mr Peter Coverdale OBE

Regional Flood Defence Committee Chairman

- Mr Tom Collier

Regional Rivers Advisory Committee Chairman

- Mr John Whitworth

Regional Fisheries Advisory Committee Chairman

- Mr John Fawcett

WHERE TO CONTACT US

REGIONAL HEADQUARTERS:

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24 hour telephone number:

Leeds (0532) 440 191

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within a "main" river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line to catch fish.

Please contact us if you have any doubt that you need NRA permission.

Public Register Access

The Register of Applications and Consents for Abstraction Licences may be examined, during normal working hours, at our Regional Headquarters in Leeds (address above).

The Register of Water Quality and Effluents may be examined, during normal working hours, at our Regional Headquarters, our laboratories in Leeds and our Southern and Northern area offices.



NATIONAL RIVERS AUTHORITY

ANGLIAN REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of the Anglian Region's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

We intend to improve the quality of the water environment and the services we provide in the largest and fastest growing Region in the country.

We hold the vital balance between those who want to make improvements as an end in themselves and those who are legitimate users of the water environment. This Plan summary sets out our priorities for the next few years to fulfil our duty to improve the water environment and protect people and property against flooding.

The amount of money which could be spent on these improvements in both our regulatory and flood defence roles is more than is likely to be available. The resources which we have in 1990/91 are the minimum necessary to achieve an improving trend and ensure we comply with our statutory responsibilities. The role of the NRA is continuing to evolve and additional demands will require additional resources. Therefore the rate at which progress is made towards achieving environmental improvements must be debated not only because of the amount of money which will be required by the NRA to carry out its responsibilities but more importantly because abstractors and dischargers will have to invest in their own infrastructures to make their contribution to these improvements.

The Region is business like, keen to improve efficiency and achieve value for money. When improved value for money can be achieved a wide range of services will be contracted out.

Kevin Bond

Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



Some Key Statistics

Area: 27,200 sq km
Population: 5.3 m
Average Annual Rainfall: 595 mm
Length of Main River: 5,812 km
Length of Embanked Watercourses: 1,430 km
Length of Tidal and Sea Defences: 1,271 km
No of Abstraction Licences: 9,700
Quantity Abstracted (Licensed): 7,249 Ml/d
No of Consented Discharges: 27,000
No of designated Bathing Waters: 28

ANGLIAN REGION

The Region consists of rolling low lying terrain rising to higher land in the central and western areas where chalk and limestone outcrop. Four of the major rivers drain into the Wash, a shallow sea inlet, around which lie the Fens - a large area of land at or below sea level which has to be protected against tidal and river flooding. About 18 per cent of the Region is below high tide level.

Although predominantly rural, the Region is one of the fastest growing areas of the country and widespread commercial and service industry development has taken place in principal cities and towns in recent years, many of which are located on major rivers and estuaries.

KEY ACHIEVEMENTS SINCE VESTING

Our Region, which was established on 1st September 1989, is operating efficiently with our regulatory duties and other responsibilities being discharged competently by a dedicated team of professionals.

We have established a purpose built Regional Headquarters with computer and high technology laboratory services which supports the operational activities of 3 Area and 11 District Offices.

A Regional Communications Centre has been established to provide a 24 hour service for co-ordinating our response to emergencies and to maintain information on all incidents occurring within the Region.

We have adopted a robust approach to enforcement including greater use of the Courts.

The Region successfully avoided major water resource problems during the drought conditions of 1989 by extensive use of water transfer and support schemes and skillful water resource management.

We responded positively and effectively to the major environmental problem created by the widespread appearance of toxic blue green algae on reservoirs, lakes and pits in the Region.

Our commitment to independence and competitive tendering has been underlined by keeping contracted services to Anglian Water Services Limited (the other part of the former Regional Water Authority) to a minimum.

Guidelines were produced aimed at reducing the risk of contamination of underground water sources caused by the effects of new housing, industrial and commercial development.

The positive co-operation of local planning authorities was sought in curbing development in areas at risk from flooding. This remained a major issue of concern due to continuing regional pressure for development.

The Region was involved in the designation of two Nitrate Sensitive Areas and two advisory areas as part of the national programme to improve water quality by controlling nitrates in water.

Environmental improvements to the internationally famous Wicken Fen Nature Reserve, which were undertaken as part of a flood defence project, were commended by the National Trust.

REGIONAL PRIORITIES 1990/91

Our key initiatives for the year are to:

- increase enforcement activity to achieve our environmental objectives;
- begin to correct those licensed over abstractions which are environmentally damaging;
- press for increased capital investment in defences against flooding from rivers and the sea to maintain and improve the protection of life and property;
- respond to regional concerns over the control of pesticides and nitrates in the water environment;
- play a leading role in the development of measures to curb the nutrient enrichment of surface water sources;
- maintain and develop good working relationships with other regional statutory bodies and organisations.

These initiatives will be supported by the following actions:

Water Quality

We will be carrying out a regional survey of river water quality and beginning work on introducing water quality objectives together with a review of the consents granted to individuals and organisations to discharge effluent to the water environment. The outcome of this work will have financial implications for regional organisations, businesses and individuals.

As far as pollution is concerned we intend to target the 100 worst polluters to effect improvements and to work with other key sectors - industrial, commercial and agricultural - to bring about improvements in the management, handling and storage of wastes, chemicals, oils and other potential pollutants. We will prosecute offenders vigorously where this is seen as being the most effective means of achieving lasting improvements using the Crown Court if necessary to secure realistic penalties.

Our reaction to pollution incidents is vital and we will continue our high standard of reaction to the 1600 incidents likely in 1990/91.

Water Resources

Enforcement officers will be appointed to improve the policing and enforcement of conditions in water abstraction licences.

Our resource planning will continue to focus on the most economic programme to meet increasing demands both for abstraction and for maintaining and improving the water environment.

The management of a potentially difficult water resource situation during 1990 due to below average rainfall will be a major commitment.

There are increasing environmental pressures to protect rivers and wetlands against the effect of increasing abstraction and to restore those which are now perceived as being unacceptably depleted by existing abstractions. During 1990/91 we will

begin to correct the effects of licensed over-abstraction.

Flood Defence

Work will continue on our innovative Regional Sea Defence Management Study which will be not only the key to developing a comprehensive and cost effective strategy into the next century but will address the flood defence implications of climatic change. Schemes will be designed to take full account of environmental matters and, where appropriate, will incorporate new techniques and technology.

We intend to seek additional financial support to meet the pressing need to complete flood defence works which have the highest priority - the protection of life and property and the provision of flood warnings.

Fisheries

The Region will continue to maintain fisheries and seek to improve and develop them wherever possible.

Enforcement policies for the Region's substantial commercial eel fisheries will be developed further.

Our Regional Fisheries Laboratory will contribute specialist services to the whole of the NRA.

Recreation

We intend to continue to encourage a wide range of recreational and amenity uses to water and land which is under our control.

Although we will be involved in some direct management of activities we will, where it is more economic or effective, lease or license facilities to clubs or organisations.

Conservation

Conservation, landscape and environmental issues will be taken fully into account in all schemes and projects which we undertake.

Detailed survey work will continue on the development of a Regional Rivers Environmental Database. This will plot the distribution of plant species, habitat features and bird populations on the area's 6,500 kms of main river and help to improve the planning and carrying out of maintenance work and capital schemes.

Navigation

Water supply points and pump out facilities for boaters will be provided in conjunction with the private sector where possible.

We will achieve greater enforcement in respect of boat safety, speeding and non registration.

Support Services

Major investment in information systems for the electronic remote monitoring of our services will see the regional system of outstations expanded during the Plan period.

Public relations will focus on the way in which organisations, groups and individuals can contribute to an improvement of the water environment.

Our efforts in research and development will include investigations into improving water quality in Broadland, the use of weather radar in forecasting floods, and computer

modelling of pollution in groundwaters.

A comprehensive development control strategy reflecting Regional NRA requirements will be developed as a basis for liaison with the local planning authorities. This will include guidelines to minimise the risk of contamination of water resources from the effect of development. Such liaison is important because the objectives of the NRA cannot be achieved solely by the use of NRA powers. They are very dependent on, and complemented by, the wider powers of planning authorities.

All our activities will be operated on the basis of ensuring efficiency and cost effectiveness.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Anglian Region employs a total of some 1110 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- **Dr. Kevin Bond**

Regional Board Member

- **Peter Brandt**

Regional Flood Defence Committee Chairman

- **John Martin, CBE**

Regional Rivers Advisory Committee Chairman

- **Christopher Groome**

Regional Fisheries Advisory Committee Chairman

- **Peter Tombleson, OBE**

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

National Rivers Authority,
Anglian Region,
Kingfisher House,
Goldhay Way,
Orton Goldhay,
Peterborough, PE2 0ZR.
Tel: (0733) 371 811
Tel: (0733) 231 840

24-hour telephone number.

Peterborough (0733) 371 811.

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent to a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a boat on a waterway controlled by the NRA.
- Interfere with a sea defence.
- Fish in the region.

Please contact us if you have any doubt that you need NRA permission.

Public Register Access

The water quality public register can be consulted at Kingfisher House, Goldhay Way, Orton Goldhay, Peterborough from Monday to Friday (inclusive) between 10:00 and 16:30 hours (excluding Bank and public holidays).



NATIONAL RIVERS AUTHORITY
AWDURDOD

AFONYDD CENEDLAETHOL

WELSH REGION
RHANBARTH CYMRU

PLAN SUMMARY
CRYNODEB CYNLLUN
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of Welsh Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

CYFLWYNIAD

Breiniwyd yr Awdurdod Afonydd Cenedlaethol ar 1 Medi 1989 a daeth i fodolaeth o ganlyniad i Ddeddf Dŵr 1989. Cafodd ei greu fel corff cyhoeddus a'i brif dasg yw diogelu a gwella'r amgylchedd dŵr yng Nghymru a Lloegr a darparu diogelwch rhag llifogydd o'r afonydd a'r môr.

Yn Llundain mae Prif Swyddfa'r Awdurdod, ond mae ei weithgareddau gweithredol wedi eu canoli ar 10 Rhanbarth sy'n seiliedig ar ardaloedd yr hen Awdurdodau Dŵr.

Mae'r ddogfen hon, sy'n un o ddeg, yn ceisio egluro rhywfaint o gefndir Rhanbarth Cymreig yr Awdurdod a dangos sut y caiff amcanion cenedlaethol yr Awdurdod, fel y maent wedi eu gosod allan yn ei Gynllun Corfforaethol am 1990/91, eu trosi'n weithredu yn y Rhanbarthau.

FOREWORD

This first Regional Plan comes at a time of great concern for the water environment. The demand for clean rivers and beaches has never been more pressing and with our long coastline, popular bathing beaches and the finest salmon rivers in England and Wales, we face an exciting challenge.

The effective management of water resources, improvements in water quality and fisheries, and protection from flooding are all essential for the social and economic well being of the Region. As 'Guardians of the Water Environment' we have a clear sense of purpose and the programme of work set out in this Plan highlights the key priorities for action. In the coming year we will be effective in enforcing regulations for all our functions and will not hesitate to take whatever measures are necessary to protect and improve the catchments under our control.

The start of this decade will see not only the introduction of the Environmental Protection Bill, but also the results of our 1990 Water Quality Survey, which will serve as a significant benchmark for the NRA. Important work will continue on the management of water resources and measures will be taken to establish Water Protection Zones to protect potable supplies from hazardous chemicals.

Other initiatives will target on improvements to bathing beaches, a reduction in the discharge of 'Red List' dangerous substances and the development of catchment management plans. Flood defences will continue to be improved and a number of plans are in place for the improvement of the Region's fisheries.

There can be no doubting the skill and professionalism of our staff and now with the support of a national organisation, we can face the future confident we can meet the challenge.

Dr John Stoner

Regional General Manager

RHAGAIR

Daw'r Cynllun Rhanbarthol cyntaf ar adeg o ofid mawr dros yr amgylchedd yn ei chyfanrwydd. Ni fu erioed cymaint o angen am afonydd a thraethau glân, a chyda'n arfordir helaeth, ein traethau ymdrochi poblogaidd a'r afonydd eog gorau yng Nghymru a Lloegr rydyn ni'n wynebu her cyffrous.

Mae rheoli adnoddau dŵr yn effeithiol, gwella ansawdd dŵr a physgodfeydd a diogelu rhag llifogydd i gyd yn hanfodol i les cymdeithasol ac economaidd y Rhanbarth. Fel 'Gwarchedwyr yr Amgylchedd Dŵr' mae gennym syniad clir am ddiben ac y mae'r rhaglen gwaith yn y Cynllun hwn yn tynnu sylw at y blaenoriaethau allweddol ar gyfer gweithredu. Yn ystod y flwyddyn i ddod byddwn yn effeithiol yn gorfodi rheoliadau ar gyfer ein holl swyddogaethau, ac ni fyddwn yn meddwl ddwywaith cyn cymryd unrhyw gamau a fydd yn angenrheidiol i ddiogelu a gwella'r dalgylchoedd sydd yn ein gofal.

Ar ddechrau'r degawd hwn fe welwn nid yn unig gyflwyno Mesur Diogelu'r Amgylchedd, ond hefyd ganlyniadau ein Harolwg Ansawdd Dŵr 1990, a fydd yn ffon fesur arwyddocaol i'r Awdurdod Afonydd Cenedlaethol. Bydd gwaith pwysig yn parhau ar reoli adnoddau dŵr, a chymerir camau i sefydlu Ardaloedd Diogelu Dŵr er mwyn diogelu cyflenwadau dŵr yfed rhag cemegau peryglus.

Bydd mentrau eraill yn anelu at wella traethau ymdrochi, gollwng llai o bethau peryglus sydd ar y 'Rhestr Goch' a datblygu cynlluniau rheoli dalgylchoedd. Parheir i wella systemau amddiffyn rhag llifogydd, ac y mae nifer o gynlluniau ar y gweill i wella pysgodfeydd y Rhanbarth.

Ni all neb amau medr a gwaith proffesiynol ein staff, a chyda chefnogaeth corff cenedlaethol erbyn hyn gallwn wynebu'r dyfodol yn llawn hyder i allu curdd â'r her.

Dr John Stoner

Rheolwr Cyffredinol Rhanbarthol

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.

DATGANIAD O'R PWRPAS

Bydd yr Awdurdod Afonydd Cenedlaethol yn diogelu a gwella'r amgylchedd dŵr. Gwneir hynny drwy reoli adnoddau dŵr yn effeithiol a thrwy leihau llygredd yn sylweddol. Mae'r Awdurdod yn anelu at ddarparu amddiffynfa effeithiol i bobl ac eiddo rhag llifogydd o afonydd a'r môr. Wrth gyflawni ei ddyletswyddau bydd yn gweithredu'n agored ac yn cydbwyso buddiannau pawb sy'n elwa o ddefnyddio afonydd, dŵr tir, aberoedd a dyfroedd y glannau. Bydd yr Awdurdod yn gweithredu mewn ffordd drefnus, effeithiol a gofalus tuag at ei weithwyr.

Y NOD

- cael gwelliant parhaus yn ansawdd afonydd, aberoedd a dyfroedd y glannau drwy reoli llygredd dŵr.
- asesu, rheoli, cynllunio a diogelu adnoddau dŵr a chynnal a gwella ansawdd dŵr i bawb sy'n ei ddefnyddio.
- darparu amddiffyniad effeithiol i bobl ac eiddo rhag llifogydd o afonydd a'r môr.
- darparu trefniadau digonol i rag-weld llifogydd a rhoi rhybudd amdanynt.
- cynnal, gwella a datblygu pysgodfeydd.
- datblygu potensial mwynder a hamdden y dyfroedd a'r tir sydd o dan reolaeth yr Awdurdod.
- diogelu a gwella bywyd gwylt, tirwedd a nodweddion archaeolegol sy'n gysylltiedig â dyfroedd o dan reolaeth yr Awdurdod.
- gwella a chynnal dyfrffyrdd mewnol a'u cyfleusterau ar gyfer eu defnyddio gan y cyhoedd pan fydd yr Awdurdod yn awdurdod mordwyo.
- sicrhau bod pobl sy'n gollwng i ddyfroedd yn talu'r gost am ganlyniadau'r hyn a ollyngir, a chyn belled â phosibl i adennill y gost o wella amgylchedd dŵr oddi wrth y rheiny sy'n elwa.
- gwella dealltwriaeth y cyhoedd am amgylchedd dŵr a gwaith yr Awdurdod Afonydd Cenedlaethol.
- gwella effeithiolrwydd wrth ymarfer swyddogaethau'r Awdurdod a chreu her a chyfle i weithwyr a bod yn ofalus am eu lles.



Some Key Statistics

Area: 21,300 sq km	Number of abstraction
Population: 3.1m	licences: 4,030
Length of main rivers: 5,679 km	Volume of water
Length of estuaries: 411.8 km	abstraction: 29,642 Ml/d
Length of coastline: 1,100 km	Number of industrial
Area of inland lakes: 11.6 sq km	discharges: 11,227
Area of reservoirs: 61.8 sq km	Number of EC bathing waters: 48
Average annual	
rainfall: 1,267 mm	

Ystadegau Allweddol

Arwynebedd: 21,300 km sg	Cyfanswm glow ar
Poblogaeth: 3.1m	gyfartaledd: 1,267 mm
Hyd prif afonydd: 5,679 km	Nifer trwyddedau tynnu: 4,030
Hyd aberoedd: 411.8 km	Cyfaint dŵr a
Hyd arfordir: 1,100 km	dynnir: 29,642 Ml/d
Arwynebedd llynnoedd	Nifer gollyngiadau
mewnol: 11.6 km sg	diwydiannol: 11,227
Arwynebedd cronfeydd	Nifer traethau ymdrochi CE: 48
dŵr: 61.8 km sg	

WELSH REGION

The Welsh Region is one of the largest of the ten Regions of the National Rivers Authority. Scenically it is also one of the most spectacular, with the Snowdonia, Pembrokeshire and Brecon Beacons National Parks and an outstanding coastline.

With annual rainfall as high as 2,000mm over the mountains of mid and south Wales, and up to 4,000 mm in Snowdonia, the development of water resources features largely within the Region. In addition to supplying the needs of the resident population, rivers and reservoirs within the Region supply large conurbations in the midlands and the north west of England. Many of the large multi-purpose reservoirs are also important centres for recreation. With the high rainfall, however, comes the risk of flooding and all the major centres of population, including Cardiff, the capital city, have defences to protect them from severe events.

Land use within the Region is particularly diverse. In the mountains of North and West Wales, hill grazing and afforestation are the main uses and acidification of runoff is the main environmental issue. In the more fertile agricultural areas of Pembrokeshire and Herefordshire, strong farm effluents and diffuse inputs of nutrients and pesticides are the main concern. Industrial development is concentrated in the South Wales valleys and around the Wrexham and Deeside areas. In these areas, industrial effluents are a major problem and present a serious potential for pollution.

Recreation and tourism figure largely in the economy of the Region. The Wye is the principal salmon river of England and Wales and the only one designated as an SSSI for its whole length. Indeed, most of the rivers provide excellent fishing for both salmon and sea trout.

RHANBARTH CYMRU

Rhanbarth Cymru yw un o'r mwyaf o ddeg Rhanbarth yr Awdurdod Afonydd Cenedlaethol. O ran harddwch hefyd mae'n un o'r rhai mwyaf arbennig, gyda Pharciau Cenedlaethol Eryri, Sir Benfro a Bannau Brycheiniog ac arfordir eithriadol o hardd.

Bydd cymaint â 2,000mm o law yn disgyn ar fynyddoedd canolbarth a de Cymru a hyd at 4,000mm yn Eryri, ac o'r herwydd mae datblygu adnoddau dwr yn waith amlwg yn y Rhanbarth. Yn ogystal â darparu ar gyfer anghenion trigolion, mae afonydd a chronfeydd dŵr y Rhanbarth yn darparu hefyd ar gyfer ardaloedd poblog canolbarth a gogledd orllewin Lloegr. Mae llawer o'r cronfeydd dŵr mawr aml-bwrpas hefyd yn ganolfannau hamdden pwysig. Ond gyda'r glaw trwm daw perygl llifogydd, ac mae gan y mannau mwyaf poblog i gyd, gan gynnwys Caerdydd, y brifddinas, ddulliau i'w hamddiffyn rhag y digwyddiadau gwaethaf.

Ceir amrywiaeth helaeth yn y ffordd y defnyddir tir yn y Rhanbarth. Yn ardalodd mynyddig Gogledd a Gorllewin Cymru porï ar y bryniau a phlannu coedwigoedd yw'r prif ffyrdd o ddefnyddio'r tir ac asideiddio'r afonydd gan y ddŵr sy'n llifo o'r tir yw'r prif fater amgylcheddol. Yn yr ardaloedd amaethyddol gwell yn Sir Benfro a Swydd Henffordd y brif ofid yw elifant cryf o ffermydd a defnyddiau maeth a phlaleiddiaid yn llifo i'r afonydd. Mae'r datblygiadau diwydiannol, wrth gwrs, yn canolbwyntio ar gymoedd De Cymru ac o gwmpas ardaloedd Wrecsam a Glannau Dyfrdwy. Yn yr ardaloedd hyn mae elifant diwydiannol yn broblem fawr ac fe allai achosi llygru difrifol.

Mae hamdden a thwristiaeth yn amlwg iawn yn economi'r Rhanbarth. Afon Gwy yw'r brif afon eog yng Nghymru a Lloegr a'r unig sydd wedi ei phennu'n SSSI ar ei hyd. Yn wir, mae mwyafrif yr afonydd yn fannau pysgota gwyach ar gyfer eog a brithyll.

KEY ACHIEVEMENTS SINCE VESTING

The NRA formally came into existence on 1st September and by that time all the arrangements had been completed to enable the Region to discharge its functions effectively. Formal Agreements were set up to provide Information Technology services and Reservoir Operating Agreements were concluded with Welsh Water Plc to meet the NRA's requirements for the regulation of the rivers Dee, Wye, Tywi, Dwyfor, Aled and Clwyd.

The summer of 1989 proved to be one of the most severe droughts on record and a total of ten Drought Orders were required to conserve water resources to maintain supplies. Improved operational management of the South East Wales water grid delayed the need for a Drought Order to reduce flows on the river Usk until the first week of October, less than 2 weeks before the drought finally broke.

Emergency procedures for pollution incidents and flood warning have all been put into effect and a 24 hour incident room has been established at Regional Head Office. The system has now been tested several times by both major pollutions and severe floods. The Welsh station of the UK weather radar network has been commissioned and was formally opened by the Authority's Chairman and former Secretary of State for Wales, Lord Crickhowell.

At the direction of the Secretary of State for Wales, time limited relaxed discharge consents were issued for sewage treatment works and temporary consents were issued for storm sewer overflows, water treatment works and other miscellaneous discharges. A Regional Action Plan for reducing discharges of 'Red List' dangerous substances has been submitted, and three surveys have been completed to identify the locations of major discharges. The Regional Laboratory at Llanelli was also successful in winning a contract to analyse the national (ie NRA-wide) Red List metals samples, in open competition.

Three Statutory Regional Committees have been set up to advise the Region on its affairs: the Rivers Advisory Committee, the Fisheries Advisory Committee and the Flood Defence Committee (the Flood Defence Committee also having executive powers). Liaison procedures have also been established with Town Planning Authorities when it was established that the NRA would be a statutory consultee.

A robust approach to enforcement has been adopted by the Region and successful prosecutions have been made for water resources, fisheries and pollution offences.

The Region has been active in assisting with the development of national policy across all functions and with presenting evidence to the Environment Select Committee on Beach Pollution. Evidence has also been presented to the Lords and Commons Select Committees to safeguard the NRA's statutory responsibilities for the Cardiff Bay Barrage development.

During this period, a number of flood alleviation schemes have been completed including the major scheme at Monmouth on the river Wye at a cost of some £2.5m.

Y PETHAU ALLWEDDOL SYDD WEDI'U GWNEUD

Daeth yr Awdurdod Afonydd Cenedlaethol i fod ar 1 Medi ac erbyn hynny roedd yn rhaid gorffen yr holl drefniadau i alluogi'r Rhanbarth i gyflawni ei swyddogaethau'n effeithiol. Sefydlwyd Cytundebau ffurfiol i ddarparu gwasanaethau Technoleg Gwybodaeth a gwnaed Cytundebau Gweithredu Cronfeydd Dŵr gyda Dŵr Cymru ccc i fodloni anghenion yr Awdurdod ar gyfer rheoli afonydd Dyfrdwy, Gwy, Tywi, Dwyfor, Aled a Chlwyd.

Yn ystod yr haf 1989 cawsom un o'r cyfnodau sych gwaethaf erioed ac yr oedd angen cyfanswm o ddeg Gorchymyn Arbed Dŵr i ddiogelu ffynonellau dŵr er mwyn cadw'r cyflenwadau. Bu gwell rheolaeth gweithredu ar grid dŵr De Ddwyrain Cymru yn help i osgoi'r angen am Orchymyn Arbed Dŵr er mwyn lleihau'r llif ar afon Wysg tan yr wythnos gyntaf ym mis Hydref, sef llai na phythefnos cyn i'r sychdwr ddod i ben yn y diwedd.

Mae trefniadau brys pan ddigwydd llygru ac i rybuddio am lifogydd i gyd wedi eu gweithredu ac y mae stafell ddigwyddiadau 24 awr wedi ei sefydlu yn y Bencadlys Rhanbarthol. Erbyn hyn mae'r drefn wedi ei phrofi lawer gwaith mewn achosion o lygru difrifol a llifogydd trwm. Mae gorsaf Gymreig y rhwydwaith radar yn y Deyrnas Gyfunol wedi ei gomisiynu ac agorwyd hi'n ffurfiol gan Gadeirydd yr Awdurdod a chyn Ysgrifennydd Gwladol Cymru, yr Arglwydd Crughywel.

Ar gyfarwyddyd Ysgrifennydd Gwladol Cymru, rhoddwyd caniatâd rhyddhau wedi ei lacio am gyfnod penodol ar gyfer gweithfeydd trin carthion, a rhoddwyd caniatâd dros dro ar gyfer gorlifo o garthffosydd mewn stormydd, gweithfeydd trin dŵr ac amrywiol achosion eraill o ryddau i afonydd. Mae Cynllun Gweithredu Rhanbarthol i leihau achosion o oillwng defnyddiau ar y 'Rhestr Goch' wedi ei gyflwyno i Adran yr Amgylchedd, a chwblhawyd tri arolwg cenedlaethol i nodi mannau lle gollyngir llawer o ddefnydd i afonydd. Bu'r Labordy Rhanbarthol yn Llanelli hefyd yn llwyddiannus yn ennill contract i ddadansoddi'r samplau o fetelau ar y Rhestr Goch genedlaethol, (h.y. Trwy'r AAC) a hynny mewn cystadleuaeth agored.

Mae tri Phwyllgor Rhanbarthol Statudol wedi eu sefydlu i gynghori'r Rhanbarth am ei faterion: sef y Pwyllgor Ymgynghorol Afonydd, y Pwyllgor Ymgynghorol Pysgodfeydd a'r Pwyllgor Amddiffyn Rhag Llifogydd (mae gan y Pwyllgor Amddiffyn Rhag Llifogydd hefyd bwerau gweithredol). Mae trefniadau cyswllt wedi eu llunio hefyd gydag Awdurdodau Cynllunio Trefol, pan benderfynwyd y byddai'r Awdurdod Afonydd Cenedlaethol yn gorff statudol y byddid yn ymgynghori ag ef.

Mabwysiadwyd agwedd brwdfrydig tuag at cadw rheoliadau gan y Rhanbarth, a gynhelwyd droseddau llwyddianus am adnoddau dŵr, pysgodfeydd a llygredd.

Bu'r Rhanbarth yn weithgar yn helpu datblygu polisi cenedlaethol i gynnwys yr holl swyddogaethau a chyflwynodd dystiolaeth i'r Pwyllgor Dethol yr Amgylchedd ar Lygredd Traethau. Cyflwynwyd tystiolaeth hefyd i Bwyllgorau Dethol Tŷ'r Arglwyddi i ddiogelu cyfrifoldebau statudol yr Awdurdod mewn cysylltiad â datblygu Argae Bae Caerdydd.

Yn ystod y cyfnod hwn cwblhawyd nifer o gynlluniau i atal lligfogydd, gan gynnwys cynllun mawr yn Nhrefynwy ar Afon Gwy yn costio tua £2.5m.

REGIONAL PRIORITIES 1990/91

The NRA has clearly defined aims for each of its functions which provide a common framework for the national organisation. The main priorities which will be addressed within the Region to meet these aims in 1990 are summarised in the following section under each functional heading. In fact, much of the work is interdisciplinary and close co-operation between functions is necessary on most environmental matters.

Water Resources

Water Resources within the Region have been developed for purposes ranging from major public water supply schemes feeding Wales, the Midlands and the North West England, to local supplies for industry, domestic purposes and agriculture. The management of these resources is a major function of the NRA and a number of initiatives are proposed in this Plan to bring them under close control and to protect and improve water quality for abstraction.

Key priorities are:

- A review of licensing and enforcement policy will be undertaken.
- River regulating reservoirs, now owned by private supply companies will be managed under joint agreement with the NRA to balance the interest of water supply with those of the environment.
- The Region will contribute to the development of a national aquifer protection policy to protect our groundwater resources.
- The NRA will be seeking powers to delineate a formal water protection zone for the River Dee, which will restrict and control the use of hazardous materials within the catchment.
- A feasibility study is to be undertaken to investigate the possibility of augmenting flows in the River Alun in North Wales to improve the summer flow regime of the watercourse.
- A programme of installing an automatic computer based system for recording, transmitting and processing data from our network of river gauges is already under way, and will continue to improve operational efficiency.
- An investigation is to be carried out at the Llyn Brianne reservoir to study the problem of cold discharges of compensation and regulation water into an important salmon fishery.
- Changes to water resources legislation arising from the 1989 Water Act will be taken account of, particularly the need to license all agricultural abstractions exceeding 20m³/d which will include many fish farms.

BLAENORIAETHAU RHANBARTHOL 1990/91

Mae gan yr Awdurdod Afonydd Cenedlaethol amcanion penodol ar gyfer pob un o'i swyddogaethau sy'n rhoi fframwaith cyffredin ar gyfer y corff cenedlaethol. Ceir crynodeb yn yr adran sy'n dilyn o dan pob pennawd swyddogaethol o'r prif flaenoriaethau y delir a hwy yn y Rhanbarth i gyflawni'r amcanion hynny ym 1990. Yn wir, mae llawer o'r gwaith yn cynnwys llawer disgyblaeth ac mae cydweithriad agos rhwng swyddogaethau yn hanfodol yn y mwyafrif o faterion amgylcheddol.

Adnoddau Dŵr

Mae Adnoddau Dŵr o fewn y Rhanbarth wedi eu datblygu at ddibenion yn amrywio o gynlluniau mawr cyhoeddus i gyflenwi dŵr i Gymru, Canolbarth Lloegr a Gogledd Orllewin Lloegr i gyflenwadau lleol i ddiwydiant, dibenion domestig ac amaethyddiaeth. Mae rheoli'r adnoddau hynny'n un o brif swyddogaethau'r Awdurdod a chynigir nifer o fentrau yn y Cynllun hwn i ddod â'r rheiny o dan reolaeth agos ac i ddiogelu a gwella ansawdd dŵr ar gyfer ei dynnu.

Dyma'r blaenoriaethau allweddol:

- Ymgymmerir ag arolwg o bolisi trwyddedu a gorfodi.
- Caiff cronfeydd dŵr sy'n rheoli afonydd ac sy'n awr yn eiddo i gwmnïau cyflenwi preifat eu rheoli drwy gytuneb ar y cyd â'r Awdurdod i gadw cydbwysedd rhwng buddiannau cyflenwi dŵr a'r amgylchedd.
- Bydd y Rhanbarth yn cyfrannu ar ddatblygu polisi diogelu acwifferau cenedlaethol er mwyn diogelu'n ffynonellau dŵr tir.
- Bydd yr Awdurdod yn ceisio cael pwerau i bennu rhanbarth diogelu dŵr ffurfiol ar gyfer Afon Dyfrdwy, a hynny'n cyfyngu ac yn rheoli defnyddio pethau peryglus o fewn y dalgylch.
- Cynhelir astudiaeth posibilrwydd i ymchwilio i'r posibilrwydd o gynyddu llif Afon Alun yng Ngogledd Cymru er mwyn gwella llif y cwrs dŵr yn yr haf.
- Mae rhaglen ar y gweill eisoes i osod system awtomatig ar gyfrifadur i gofnodi, trosglwyddo a phrosesu gwybodaeth o'n rhwydwaith o feteri afonydd, a bydd hynny'n parhau i wella effeithiolrwydd gweithredu.
- Cynhelir ymchwiliad ar gronfa ddŵr Llyn Brianne i astudio problem gollwng dŵr lefelu a dŵr rheoli oer i bysgodfa cog bwysig.
- Cymerir i ystyriaeth newidiadau mewn deddfwriaeth adnoddau dŵr yn deillio o Ddeddf Dŵr 1989, yn enwedig yr angen amdrwyddedu'r holl ddŵr a dynnir ar gyfer amaethyddiaeth sydd dros 20m³/d. Bydd hynny'n cynnwys nifer o ffermydd pysgod.

Water Quality

The Welsh Region has developed a rigorous and systematic approach to water quality planning. For individual river systems, the development of Catchment Management Plans means that the Quality Objectives applied to a given reach take full account of the uses to which it is put, and also ensures that when remedial measures are needed all the relevant factors and options are considered. Similarly the development of strategies relating to specific problems means that they are tackled in a consistent approach across the Region.

In 1990, special attention will be given to:

- Planning improvements to EC designated Bathing Beaches.
- The reduction in 'Red List' dangerous substances.
- Determining deemed consents and prioritising remedial works at sewage and water treatment works which adversely impact upon the environment.
- The development of mathematical methods to predict the effects of estuarine discharge consents and to improve operational control by predicting the time of travel of pulses of pollution in rivers.
- A formal survey of water quality during 1990 and will subsequently be reported to the DoE for the setting of Water Quality Objectives.
- Organising a campaign with "Keep Wales Tidy" and other organisations to clean up the litter along the River Taff and reduce further inputs.
- Recovering part of its costs of pollution control through the developments of a system of charges based on the 'polluter pays' principle.

Flood Defence

Flood defence is a vital activity in the Region, protecting people and property from flooding.

Key priorities are:

- An ongoing programme of maintenance and new works will ensure that defences are secure and the flood warning system will be operational 24 hours a day throughout the year.
- Significant new flood alleviation schemes will be started at Tynceudd, Taffs Well and the final phase of the Dafen scheme in South Wales and at Hawarden in North Wales.
- This year will see significant advances in the use of weather radar from the new Welsh station in Dyfed, and improved data capture will improve the flow of information available to our flood forecasting teams.

Ansawdd Dŵr

Mae Rhanbarth Cymru wedi datblygu dull trwyadl a threfnus o gynllunio ar gyfer ansawdd dŵr. Ar gyfer systemau afonydd unigol, golyga datblygu Cynlluniau Rheoli Dalgylch fod yr Amcanion Ansawdd sy'n cael eu cymhwyso at bob darn yn cymryd ystyriaeth y defnydd a wneir ohono, ac mae hefyd yn sicrhau, pan fydd angen dulliau cywiro, fod yr holl ffactorau a'r dewisiadau perthnasol yn cael eu hystyried. Yn yr un modd, mae datblygu strategaethau'n ymwneud â phroblemau perthnasol yn golygu eu bod yn cael eu trin mewn ffordd gyson drwy'r Rhanbarth yn gyfan.

Ym 1990 rhoir sylw arbennig i:

- Gynllunio gwelliannau i Draethau Ymdrochi CE.
- Lleihau pethau peryglus sydd ar y 'Rhestr Goch'.
- Pennu caniatâd tybiedig a rhoi blaenoriaeth i waith adfer mewn gweithfeydd trin carthion a dŵr sy'n cael effaith andwyol ar yr amgylchedd.
- Datblygu dulliau mathemategol o rag-weld effeithiau caniatâd gollwng i aberoedd a gwella rheolaeth weithredol drwy rag-weld yr amser a gymer i lygredd deithio ar hyd afonydd.
- Arolwg ffurfiol o ansawdd dŵr yn ystod 1990, ac wedyn anfonir adroddiad i Adran yr Amgylchedd ar gyfer gosod Amcanion Ansawdd Dŵr.
- Trefnu ymgrych gyda "Cadw Cymru'n Dda" a chyrff eraill i lanhau'r sbwriel ar hyd Afon Taf ac atal rhagor rhag cael ei daflu yno.
- Adennnill rhan o'r costau o reoli llygredd drwy ddatblygu system o daliadau yn seiliedig ar yr egwyddor mai'r 'llygrwr sy'n talu'.

Amddiffyn Rhag Llifogydd

Mae amddiffyn rhag llifogydd yn un o weithgareddau hanfodol y Rhanbarth, i ddiogelu pobl ac eiddo rhag llifogydd.

Dyma'r blaenoriaethau allweddol:

- Bydd rhaglen barhaus o gynnal a chadw a gwaith newydd yn sicrhau bod y systemau amddiffyn yn gadarn, a bydd y system rybuddio'n gweithredu 24 awr drwy'r flwyddyn.
- Dechreuir cynlluniau sylweddol i leddfu llifogydd yn y Tynceudd, Ffynnon Taf a rhan olaf cynllun Dafen yn y De, a Phenarllog yn y Gogledd.
- Eleni gwneir cynnydd sylweddol wrth ddefnyddio radar tywydd o orsaf newydd Cymru yn Nyfed, a bydd casglu gwybodaeth well yn golygu y bydd gwell llif o wybodaeth ar gael i'n timau sy'n paratoi rhagolygon y tywydd.

Fisheries

The Welsh Region is one of the most important regions for salmonid fisheries with approximately 160 commercial licences and over half the reported angling catches for migratory fish in England and Wales. The main priorities for the fisheries function will be:

- The continuing enforcement of measures to protect fisheries from large scale, organised poaching.
- The determination of the impact on salmon and sea trout stocks of marine, coastal and freshwater exploitation.
- The assessment of water resource requirements of upstream migrating salmonids using acoustic and radio tracking.
- The investigation of restocking strategies, their cost benefits and the options to be used on industrialised catchments.
- The development of a response policy following fish kills and disease outbreaks.
- A review of potential income from net and rod licence duties, and from Section 28 Orders on fishery owners.

Conservation

The Welsh Region has a large number of riverine environments of high conservation value as well as National Parks and Sites of Special Scientific Interest (SSSI). With increasing public interest and concern for the environment, our priorities will be:

- To advise on and promote conservation measures such as habitat improvement programmes.
- To undertake river corridor surveys.

Recreation

The water resources in the Welsh Region form a major recreational asset. With an increasing demand for leisure activities we shall play a role in optimising the use of water and associated landholdings whilst ensuring that conflict between users or environmental degradation does not result.

Specific projects include:

- Developing the Canolfan Tryweryn White Water Canoe Centre.
- Planning a scheme for the River Wye, which offers a right of navigation for about half its length.

Pysgodfeydd

Mae Rhanbarth Cymru yn un o'r Rhanbarthau pwysicaf o ran pysgodfeydd eog gyda thua 160 o drwyddedau masnachol a dros hanner y nifer a gofnodir o ddal pysgod mudo yng Nghymru a Lloegr. Dyma fydd y prif flaenoriaethau ar gyfer y swyddogaeth pysgodfeydd:

- Parhau mesurau gorfodol i ddiogelu pysgodfeydd rhag potsio wedi'i drefnu ar raddfa eang.
- Pennu'r effaith ar stociau eog a brithyll môr o weithfeydd ar y môr, yr arfordir a dŵr croyw.
- Asesu gofynion adnoddau dŵr yr eog ifanc i fyny'r afon drwy ddefnyddio dulliau tracio acwstig a radio.
- Archwilio strategaethau ail-stocio, eu buddiannau o ran cost a'r dewisiadau i'w defnyddio mewn dalgylchoedd diwydiannol.
- Datblygu polisi ymateb pan fydd pysgod yn cael eu lladd ac afiechyd yn taro.
- Arolwg o'r incwm posibl o drethi trwyddedau rhwydo a dal â genwair, ac o Orchmynion Adran 28 ar berchnogion pysgodfeydd.

Cadwraeth

Mae gan Rhanbarth Cymru nifer o amgylcheddau afon sy'n werthfawr iawn o ran yr amgylchedd, yn ogystal â Pharciau Cenedlaethol a Safleoedd o Ddiddordeb Gwyddonol Arbennig (SSSI). Gan fod diddordeb a gofid y cyhoedd am yr amgylchedd yn tyfu, ein blaenoriaethau fydd:

- Rhoi cyngor a hybu mesurau cadwraeth megis rhaglenni gwella cynefinoedd.
- Trefnu arolygon coridorau afonydd.

Hamdden

Mae'r adnoddau dŵr yn Rhanbarth Cymru yn ased sylweddol o ran hamdden. Gan fod mwy a mwy o alw am weithgareddau hamdden, byddwn yn cymryd rhan flaenllaw yn y broses o ddefnyddio dŵr a thir cysylltiedig i'w heithaf, gan sicrhau na fydd gwrthdaro rhwng defnyddwyr neu is-raddio amgylcheddol yn digwydd.

Ymhlith y cynlluniau arbennig mae:

- Datblygu Canolfan Canwio Dŵr Gwyn Tryweryn.
- Trefnu cynllun ar gyfer Afon Gwy, sy'n cynnig hawliau mordwyo dros tua hanner hyd yr afon.

Support Services

A full range of services support the Region's activities in line with the needs of an organisation employing some 711 staff across the Region.

Our priorities include:

- The streamlining of all support services to improve efficiency.
- The measurement of performance to maintain a business like approach.
- The investment in Information Systems to improve productivity.
- The support of the national R&D programme, taking a lead on acid waters research.
- The development and implementation of a Welsh Language policy.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Welsh Region employs a total of some 711 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- **Dr John Stoner**

Regional Board Member

- **Prof Ron Edwards**

Regional Flood Defence Committee Chairman

- **Mr Murray McLaggan**

Regional Rivers Advisory Committee Chairman

- **Prof Mick Bruton**

Regional Fisheries Advisory Committee Chairman

- **Lord Moran**

Gwasanaethau Cynnal

Mae amrywiaeth lawn o wasanaethau'n cynnal gweithgareddau'r Rhanbarth, yn unol ag anghenion corff sy'n cyflogi tua 711 o staff ar hyd a lled y Rhanbarth.

Mae ein blaenoriaethau'n cynnwys:

- Addasu'r holl wasanaethau cynnal i fod yn fwy effeithiol.
- Mesur perfformiad i sicrhau dull trefnus.
- Buddsoddi mewn Systemau Gwybodaeth i wella cynhyrchedd.
- Cefnogi'r rhaglen R&D genedlaethol gan roi arweiniad mewn gwaith ymchwil ar ddyfroedd asid.
- Datblygu a gweithredu polisi ar yr Iaith Gymraeg.

TREFNIADAETH RANBARTHOL

Rheolwyd pob rhanbarth Awdurdod Afonydd Cenedlaethol gan Rheolwr Cyffredinol Rhanbarthol a bydd yn ateb yn uniongyrchol i'r Brif Swyddog Gweithredol. Mae gan ei dîm rheolwyr cyfrifoldebau am rheoli'r brif gweithrediaidau a gwasanaethau cynhaliath yn y Rhanbarth. Cyflogwyd rhyw 711 o bobl gan Rhanbarth Cymru.

Caiff gyngor am faterion yn ymwneud a'r Rhanbarth gan tri phwyllgor statudol. Y rhain yw Pwyllgor Rhanbarthol Diogelu Rhag Llifogydd (dadlwythwyd yr Awdurdod ei ddyletswyddau diogelu rhag llifogydd a traenio tir trwy'r pwyllgor yma), Pwyllgor Rhanbarthol Ymgynghorol Pysgodfeydd a Pwyllgor Rhanbarthol Ymgynghorol Afonydd (cyfansoddwyd y dau pwyllgor yma o aelodau gyda chefnidiroedd perthnasol eang, ac maent yn cynghori'r Awdurdod ar rheolaeth dyffryn afon a bolisiau pysgodfeydd y naill y llall).

Yn ychwanegol, mae gan pob Rhanbarth, Bwrdd Ymgynghorol Rhanbarthol, ac arno mae'r Rheolwr Cyffredinol Rhanbarthol a'r tri Chadeirydd y Pwyllgorau statudol yn eistedd. Cadeirwyd y pwyllgor yma gan Aelod Bwrdd Awdurdod Afonydd Cenedlaethol gyda chyfrifoldeb am y Rhanbarth.

Rheolwr Cyffredinol Rhanbarthol:

- **Dr John Stoner**

Aelod o'r Bwrdd Rhanbarthol:

- **Athro Ron Edwards**

Cadeirydd Pwyllgor Rhanbarthol Diogelu Rhag Llifogydd:

- **Mr Murray McLaggan**

Cadeirydd Pwyllgor Rhanbarthol Ymgynghorol Afonydd:

- **Athro Mick Bruton**

Cadeirydd Pwyllgor Rhanbarthol Ymgynghorol Pysgodfeydd:

- **Arglwydd Moran**

WHERE TO CONTACT US

REGIONAL HEADQUARTERS & SOUTH EASTERN DIVISIONAL OFFICE

Rivers House
St Mellons Business Park
St Mellons
Cardiff
South Glamorgan CF3 0LT
Tel: (0222) 770 088
Fax: (0222) 798 555

24 hour telephone number:

Cardiff (0222) 770 088

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent to a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line to catch fish.

Please contact us if you have any doubt that you need NRA permission.

Public Register Access

The public registers of abstractions and discharges are available for inspection at the Regional Head Office during normal working hours.

GWYBODAETH ALLWEDDOL AM Y RHANBARTH

PRIF SWYDDFA RANBARTHOL A SWYDDFA LEOL Y DE DDWYRAIN

Plas Yr Afon
Parc Busnes Llancirwg
Llancirwg
Caerdydd
De Morgannwg CF3 0LT
Tel: (0222) 770 088
Ffacs: (0222) 798 555

Rhif teleffôn 24 awr mewn argyfwng:

Caerdydd (0222) 770 088

GWEITHGAREDDAU SY'N GOLYGU GORFOD CAEL CANIATÂD YR AWDURDOD AFONYDD CENEDLAETHOL

Mae angen caniatâd yr Awdurdod am rhai weithgareddau.

Mae'r rhestr yn rhy faith i'w chynnwys yma, ond dyma rai enghreifftiau:

- Tynnu neu gymryd dŵr
- Gollwng i unrhyw afon, llyn neu ddŵr llanw neu ar dir iddo gael suddo i'r tir, neu i ddyfroedd penodol o dan y ddaear
- Glanhau neu dynnu llaid o argae, cored neu lifddir
- Gwneud cwlfer ar unrhyw gwrs dŵr
- Ymyrryd ag unrhyw draenio tir drwy adeiladu neu addasu unrhyw adeiladau o fewn prif afon
- Adeiladu neu blannu o fewn 8 metr i brif afon
- Cyflwyno neu drosglwyddo pysgod i unrhyw ddyfroedd neu ddefnyddio rhwyd i drapio neu ddal pysgod.
- Defnyddio gwialen a gwifren i ddal pysgod

Byddwch cystal â chysylltu â ni os byddwch yn ansicr o gwbl a oes angen caniatâd yr Awdurdod arnoch.

Cofrestr Gyhoeddus yn Agored

Mae'r gofrestr gyhoeddus o dynnu dŵr a gollwng i afonydd ar gael i'w harchwilio yn y Brif Swyddfa Ranbarthol yn ystod oriau gwaith arferol.



NATIONAL RIVERS AUTHORITY

WESSEX REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of Wessex Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

This is a summary of the first Regional Plan of the NRA - Wessex Region. It takes as its starting point the range of activities and the corresponding level of resources which we have inherited from our predecessor Water Authority.

However, as the NRA, we are beginning to see the water environment from a new perspective. We must respond to the heightened public awareness of environmental issues. Furthermore the NRA's statutory duties are more extensive than those of our predecessors. As a result, the priorities before us have changed significantly in this first year.

Policies are being developed to provide for the increased range of responsibilities. But the public will not allow us to stand still until everything has been thought through. We must get on with the tasks which are already clear, making the most effective use of the resources we already have. At the same time we will seek to secure additional resources to enable us to meet the increasing expectations for environmental protection.

The Plan builds upon the Region's achievements during the first half of its existence.

We have established our infrastructure of people, property and procedures, ensuring our complete independence from Wessex Water and creating our new corporate identity as a vital limb of the National Rivers Authority.

We now look forward to a future in which we will begin to secure genuine improvements in the water environment.

We have set ourselves many important targets, but among the most critical I would list the following:

- *a strengthening of our endeavours to prevent the pollution of our water environment.*
- *a strengthening of our monitoring and enforcement of abstraction licences.*
- *a determination to investigate and resolve identified problems of poor quality and low river flows.*
- *the setting and progressive achievement of targets for flood defences.*
- *a major improvement in our knowledge and understanding of fisheries and fish habitats throughout the Region.*
- *progress towards our given duty to promote conservation in the aquatic environment.*

I believe our Plan provides a sound and systematic framework for the future - it maps out the direction and the priorities for our actions. It should ensure that substantial progress is made towards achieving the NRA's objectives in the Wessex Region.

I commend this first Plan as a major landmark in the NRA's development as Guardian of the Water Environment here in Wessex.

Nigel Reader

Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



Some Key Statistics

Area: 9,918 sq km
Population: 2.5 million
Average Annual Rainfall: 864mm
Main river: 2,312 km
Sea and tidal defences: 142 km
River water quality:
 good and fair: 95%
 poor and bad: 5%
Licences to abstract water:
 number: 3,400
 quantity: 1,760 Ml/d
Consented discharges: 9,100
EC Bathing waters: 38
Number complying: 31
Blue Flag beaches: 5

WESSEX REGION

The Wessex Region covers the counties of Avon, Dorset, Somerset and most of Wiltshire, with small parts of Gloucestershire, Hampshire and Devon. It encompasses the southern Cotswolds, the Mendip Hills, the Chalk downlands of Dorset and Salisbury Plain and the eastern slopes of Exmoor. The Somerset Levels and Moors are one of England's most important remaining wetland areas.

The Hampshire Avon, Dorset Frome and Piddle are typical high quality chalk fed rivers supporting populations of migratory salmonids. Other major catchments such as the Bristol Avon, Dorset Stour and Parrett drain catchments of mixed geology with

significant areas of clay.

The oolite limestone (Cotswold area), carboniferous limestone (Mendip area) and chalk (Dorset downs and Salisbury Plain) represent major aquifer areas which are important water resources and provide half of the public water supplies for the Region.

On the south coast, Poole and Christchurch harbours are important water habitats. On the north coast, the Bristol Channel/Severn Estuary with its large tidal range presents unique flood defence and water quality management requirements.

Some 15% of the Region is designated as nature reserves, sites of special scientific interest or nature conservation areas.

KEY ACHIEVEMENTS SINCE VESTING

NRA - Wessex Region was launched on 1st September 1989 with a successful presentation and press conference aboard the historic "SS Great Britain" in Bristol. Lady Digby (National Board Member and Chairman of the Wessex Regional Advisory Board) highlighted the NRA's role in protecting people, property and land from flooding and outlined initiatives aimed at both the protecting and improving of water quality and the management of water resources including the investigation of catchments where too much groundwater may be taken and used, to the detriment of the river.

In November, Lady Crickhowell, wife of the NRA's Chairman, launched Vigilance, a sophisticated new coastal survey vessel built for the Wessex Region. The use of this vessel has allowed a start to be made in stepping up the monitoring and investigation of estuarial and coastal water quality.

The Wessex Regional Rivers Advisory Committee (RRAC) met for the first time on 16th November. At the suggestion of the Chairman, Peter Lacey, a newsletter outlining the business of the meeting was prepared for circulation to interested organisations and individuals.

This initiative to enable the activities of the RRAC to reach a wider public has been well received.

At the beginning of February, Regional Headquarters and Somerset Area staff moved into a new, purpose designed building in Bridgwater. This has enabled, for the first time, all HQ staff to be located in a single building and will help to ensure smooth and efficient operation of the Region. The building includes a fully equipped Control Room which now enables incidents and emergencies to be handled effectively on a 24 hour per day basis.

During the first months of its existence, the Region has coped with both a serious drought and in contrast, during January and February with storms, high rainfall and consequent flooding. Whilst both have been dealt with effectively, such severe events so early in the NRA's existence have tested staff, procedures and management systems and many lessons have been learnt and future needs identified.

REGIONAL PRIORITIES 1990/91

Flood Defence

The overall aim is to provide effective defence for people and property against flooding from rivers and the sea and to provide adequate arrangements for flood forecasting, warning and for responding to flood events.

Flood Defence responsibilities relate to some 2400 km of main river, tidal and sea defences. The Bristol Channel is subject to one of the highest tidal ranges in the world and behind the Region's sea defences lie 635 square km of land below high tide level. Fluvial flooding also remains a threat to towns in some parts of the Region.

A distinctive feature of the Region is the Somerset Levels and Moors which include some of the most important remaining wetlands in the country in nature conservation terms. The Region is proud of its inheritance and recognises that conservation and enhancement of the environment are fundamental to its work in the Flood Defences field. It intends to continue to develop this aspect of its work.

The Plan will allow the sound base which already exists in this function to be consolidated and for the replacement by independent arrangements of some services previously provided on an integrated basis by the Water Authority (eg Control Room).

Specific regional targets include:

- to set and progressively achieve flood protection objectives across the Region.
- to improve the Region's flood forecasting system incorporating weather radar information.
- to provide an effective regional communication system.
- to achieve satisfactory liaison with planning authorities and developers.
- to carry out flood defence projects in vulnerable urban areas including Bridport, Christchurch and Taunton.
- to provide an emergency service for all functions at all hours ensuring swift action.

Water Resources

The Authority's overall aim in this area is to assess, manage, plan and conserve water resources for all those who use it.

The plan reflects a perceived need to place water resources management in the Region within a clearly defined framework based on rigorously derived criteria. It also provides for additional work arising from legislative changes in the Water Act and for greater attention to be paid to the Authority's enforcement role.

Water supply undertakers account for the majority of the water volume abstracted via some 200 surface and groundwater sources. In addition, there are currently some 280 abstractions for industrial use and approximately 2500 for agriculture.

There are a large number of fish farms in the Region which in 1990/91 will for the first time require an abstraction licence, necessitated by changes introduced in the 1989 Water Act.

Possible depletion of river flows which may be linked to the current levels of licensed abstraction have been identified in a number of catchments and investigation of these is a feature of

the Plan.

Possible depletion of river flows which may be linked to the current levels of licensed abstraction have been identified in a number of catchments and investigation of these is a feature of the Plan.

The plan implies a modest increase both in the manpower and resources directed to water resource management.

Specific regional targets include:

- to implement an enhanced programme of hydrometric data collection and licence monitoring and enforcement.
- to develop criteria for the proper management of water resources in the region.
- to bring within the licensing system additional abstractions (including fish farms) arising from the Water Act 1989.
- to formulate and implement source protection and aquifer protection policies.
- to investigate and seek to remedy alleged over-abstractions.
- to develop a water resources plan for the Region.

Water Quality

The overall aim is to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters of the Region through the effective control of water pollution. In addition the 'polluter pays' principle will be applied as far as possible by using the new powers under the 1989 Water Act for charging for consented discharges and by continuation of the policy of recovering the costs of dealing with pollution incidents from those responsible.

The Region is predominantly rural and much activity must be directed at the prevention and control of pollution from the agricultural sector. However, there are major concentrations of industrial development, notably in the Bristol and South East Dorset areas, which must also receive attention.

The Plan has been developed taking account of inherited deficiencies which have become apparent since the NRA came into being and the additional requirements which have been identified as a consequence of the introduction of the 1989 Water Act, additional EC legislation, government policies and development of NRA policy.

The Plan for the current year represents the first stage of significant upgrading of activity in a number of areas and reflects the high aspirations of the NRA in the field of water quality regulation and pollution control.

Specific regional targets include:

- to enhance chemical monitoring particularly in accordance with EC Dangerous Substances Directive and the Red List Action Plan.
- to enhance biological monitoring.
- to update the consents register in readiness for the proposed charging scheme.
- to increase investigative and remedial action on pollution incidents, in line with increased public awareness.
- to undertake an increased level of pollution prevention activities.

- to determine consents which have historically received little or no attention.
- to review consent conditions for major water company and industrial discharges.
- to monitor and enforce compliance with discharge flow conditions.
- to undertake investigations of perceived major water quality problems (rivers and bathing waters).
- to undertake initiatives to encourage local action to remove litter from watercourses and associated areas.

Fisheries

The overall aim is to maintain, improve and develop the fisheries of the Region. Rivers within the Wessex Region support some of the best game fisheries in southern England and coarse fisheries which are amongst the best in the country.

It is important and part of the NRA's statutory duty to maintain and, where necessary, to improve these fisheries against the pressures which arise from river and land uses and to identify the effects of possible constraints upon them.

This will be achieved by undertaking a number of actions as a priority to: assess the level, distribution and species range of fish stocks; identify natural and man made constraints upon them; undertake actions aimed at reducing the level of the illegal catch of migratory salmonids, both offshore and in the freshwater environment; assist in the national research project, investigating eel and elver populations and exploitation; and take steps in line with the national endeavour to improve the financial viability of fisheries.

Through a planned capital programme, schemes will be carried out to improve fisheries, construct fish passes and to provide the equipment necessary to undertake the management of fisheries.

Specific regional targets include:

- to improve significantly the Region's data base on fisheries and fish habitats.
- to assist the re-establishment of stocks to certain waters.
- to seek measures to prevent fish losses through entrapment at fish farms.
- to examine and police the offshore situation in the Avon and Dorset Area to prevent the illegal netting of migratory salmonids.
- to seek measures to prevent drift netting offshore.

Recreation

The overall aim is to develop the amenity and recreational potential of waters and lands under NRA control. The Region will implement its statutory duty and continue to make available water and land associated with water for recreation. Management Plans will be produced for existing sites (few in number) which will seek to identify if further uses can be permitted and look at the potential for the development of facilities.

The opportunities will be explored to increase general public access, if appropriate, to water and land in the Authority's ownership.

Specific regional targets include:

- to continue to operate and manage existing sites.
- to consider whether additional facilities can be provided and further user interests accommodated.

Conservation

The overall aim is to conserve and enhance wildlife landscapes and archaeological features associated with waters under NRA control. In recognition of the statutory duty under Section 8 and Section 9 of the 1989 Water Act to further the interests of conservation and to meet the public's high expectations in this area of the Authority's work, an active programme for achievement will be followed. The concepts of the duty to promote the conservation of flora and fauna which are dependent on an aquatic environment will be fully explored.

It is planned to increase the percentage of river corridor surveys undertaken in relation to flood defence maintenance works and the number of audit surveys to ensure compliance with recommendations.

The Region is faced with a major challenge to resolve the aims of conflicting interests on the Somerset Levels, a site of international importance as a wetland, where the need for drainage for agricultural purposes conflicts with nature conservation.

Specific regional targets include:

- to increase work on river corridor surveys and follow up audit surveys.
- to identify opportunities for creation and enhancement of water related wildlife habitat for possible future development.
- to achieve local recognition as a body concerned to protect the environment.

Support Services

Support services, which include Finance, Administration, Personnel, Public Relations, Legal and Estates are essential to the effective operation of the organisation. We have endeavoured to keep all support units lean and efficient. We aim to maintain and, where possible, improve upon the high standards of service already established. In addition we have set the following specific targets for 1990/91:

- to strive to maximise external income and progress towards self financing.
- to strengthen the Region's legal arm in relation to prosecutions and advisory support to management.
- to undertake pro-active public relations initiatives.
- to establish computer independence from Wessex Water plc.
- to provide a cost effective service for the chemical analysis of samples collected in the Region.
- to support the national R&D Programme.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Wessex Region employs a total of some 360 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- **Nigel Frederick Reader MA (Cantab) ACIMA**

Regional Board Member

- **The Lady Dione Marian Digby DL**

Regional Flood Defence Committee Chairman

- **Ralph Henry Baker**

Regional Rivers Advisory Committee Chairman

- **Peter William Lacey**

Regional Fisheries Advisory Committee Chairman

- **Major John Micklethwait Mills OBE TD JP DL**

WHERE TO CONTACT US

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**For information 24 hours a day about flooding, pollution,
fish mortalities and other emergencies, please telephone:**

NRA Wessex

Linkline: (0345) 078 378

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent to a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line to catch fish.

Please contact us if you have any doubt that you need NRA permission.

PUBLIC REGISTER ACCESS

The public registers of abstractions and discharges are available for inspection at the Regional Headquarters during normal working hours.



NATIONAL RIVERS AUTHORITY

NORTHUMBRIA REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of Northumbria Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

From Vesting Day, on 1 September 1989, the main objectives have been to undertake our statutory duties and to make a smooth and complete separation from our predecessor body.

This transition has been successfully achieved and we are now a fully independent NRA Region with our own office, laboratory and computer systems.

We have inherited a highly skilled, and efficient organisation but in this Regional Plan for 1990/91 we have planned to increase our resources to meet present and future demands of enhanced environmental awareness. Notwithstanding this need, in the short period since vesting we have already achieved much.

The Kielder scheme was used extensively during the driest year on modern record to prevent water supply shortfall.

Investigations into the influence of the Tees Barrage were carried out with a view to safeguarding the environment.

Three Regional Advisory Committees covering Rivers, Fisheries and Flood Defence have been set up and each committee has met twice. In our plans for 1990/91 we include the largest flood protection scheme carried out in the region for many years.

Increased work on pollution control and environmental water quality monitoring and surveys is required. With continuing improvements in estuary water quality our migratory fisheries will improve and we need to provide increased protection to the coarse fisheries of the region.

Our plans also include an integration with Yorkshire region of our fisheries bailiffing force to provide more effective cover to the coastal fishery down to Scarborough.

We have already shown that we will not hesitate to take polluters to court and as guardians of the water environment we mean business.

Doug Rainbow

Regional General Manager.

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



Some Key Statistics

Area: 9,324 sq km
Population: 2.6 m
Length of Main River (including estuarial lengths): 1,643 km
Length of coastline: 193 km
Area of inland lakes, reservoirs: 27.6 sq km
Length of constructed flood defences: 310 km
Average annual rainfall: 875 mm
Number of registered abstraction licences: 726
Volume of water abstracted: 28,013 MI/d
Number of industrial discharges: 369
Number of EC Bathing waters: 32

NORTHUMBRIA REGION

The Region's area is bounded by the River Tweed to the north, the Cheviots and Pennines to the west and North Yorkshire Moors to the south. The general drainage is from the high ground of the Pennines and Cheviots in the west to the east coast. The coast is in general one with only short lengths that require sea defences.

The Region is heavily industrialised and features in particular Teeside, which is the site of Europe's largest petrochemical complex (ICI, Philips etc) and the UK's second largest port, as well as Team Valley at Gateshead, Europe's largest industrial estate.

KEY ACHIEVEMENTS SINCE VESTING

Since becoming a fully operational NRA Region on 1st September 1989 our key achievements have been in the following areas:

- **Response to Pollution incidents** - improved reaction times to pollution incidents with better procedures, equipment and communications.
- **Public registers** - computerisation of all data on Consents and other water quality issues providing fast response to enquiries.
- **Laboratory** - establishment of in-house laboratory service for routine chemical and biological analysis.
- **Information Systems** - establishment of cost-effective and independent computer systems based on networked micro computers, covering financial and scientific information and out of hours communications.
- **Water Resources** - extensive use of the Kielder scheme during the driest year on modern record to prevent shortfall in any supply of water in the Region.
- **Flood Defence** - design and promotion with public consultation of a large flood defence scheme for the town of Yarm, enhancing the town's historical heritage and natural beauty of landscape.
- **Tees Barrage Bill** - extensive investigations into the influence of the amenity barrage, promoted by Teesside Development Corporation on estuary quality, fisheries, flood defence, recreation and conservation with a view to safeguarding the environment.
- **Fisheries Improvement Associations** - formation of a steering group with brief to set up a River Tees Improvement Association after a process of public and fishery interest consultation. It is intended to use this as a model for other catchments.
- **Regional Advisory Committees** - three Regional Committees covering Rivers, Fisheries and Flood Defence have been set up and each has met twice.
- **Enforcement Policy** - implementation of the NRA's enforcement policy for pollution legislation increased the number of prosecutions. Five cases were successfully brought after vesting day and a number of others were pending at the end of the year. Under the policy of the former Northumbrian Water Authority only one prosecution was conducted each year under pollution legislation.
- **Emergency planning** - procedures were established to deal with all types of emergency involving NRA responsibilities. Liaison with the emergency services was developed to improve understanding of the environmental implications of spillages.

- **Depots** - new area depots were established at Wooler, Blaydon and Crook.

- **Research and Development** - the Region has maintained involvement in the development of the national R&D programme and management systems. Project leadership of four ongoing Water Research Council projects has been undertaken by regional staff as has the management of the two proposed "new-starts" on the national programme. Two existing major R&D projects in the Region have been recommended for inclusion in the national programme: the effects of disposal of sheep-dip on surface and ground waters; the effects of Kielder Reservoir on the ecology of the River North Tyne. A number of other proposals have been made for new national R&D projects.

REGIONAL PRIORITIES 1990/91

Water Resources

Our main responsibility under the Water Act is to ensure proper management of water resources in the Region. There is a general need to take into account competing uses of water for abstraction and environmental (eg. fisheries, ecology) purposes.

Because of Kielder, overall water resources in the Region are adequate to meet projected demand during any droughts, but economically it may be expedient to develop and operate local resources in a few areas.

In the coming year, most effort will concentrate on further developing an agreement with the four Water Service Companies (Northumbrian Water plc, Newcastle and Gateshead Water Company, Sunderland and South Shields Water Company, Hartlepool Water Company), who supply all water to consumers, for managing water resources economically to the best overall benefit to the regional population. To underpin the agreement, the scientific and technical data base will be expanded and enhanced, and a regional water resource information system will be developed. To this end the gauging network, reduced in scope and effectiveness by NWA (Northumbrian Water Authority), will be rehabilitated, and there will be close cooperation with the Water Companies in collecting and collating water resource data for analysis.

An undertaking has been given to search for and develop a local borehole resource for Newcastle and Gateshead Water Company in the furthest northern part of the Region near Berwick.

Although groundwater only contributes 10% of the total water supplied, it is intended to extend licence control, strengthen policing procedure and develop proposals for monitoring the network.

Environmental Quality

Our main responsibility under the Water Act is to prevent deterioration of, and where appropriate improve, the quality of "controlled" waters (rivers, estuaries, coastal and underground) to prescribed target standards for abstraction and environmental uses within the Region.

To gain better knowledge of the existing quality of controlled

waters and to provide a more comprehensive data base for water quality management purposes, additional sampling sites will be established together with more intensive chemical and biological sampling and a wider range of chemical analysis.

Effluent discharges to controlled waters will be more vigorously regulated by increased sampling and inspections. Reviews of consent conditions will be undertaken where required to secure improvements in receiving water quality or to reduce inputs of polluting substances. Work will continue on the determination of consents for significant discharges which are at present subject to "deemed", ie unconditional, consents.

The programme of inspections at potential sources of pollution, including farms, waste disposal sites and storm sewage overflows will be stepped up. Localised sampling of controlled water at risk from such sites will be increased. Remedial action will be sought to deal with any deficiencies in pollution prevention measures.

Regulations concerning installations for the storage of slurry, silage and oil at farms are expected to come into force in the Spring of 1990. The Regulations, primarily directed at new installations, will be strictly enforced, to reduce the risk of farm pollution.

A rapid response capability will be maintained 24 hours a day to deal with pollution incidents caused by spillages, breaches of consent or otherwise. Serious or persistent offenders will be vigorously prosecuted. Additional equipment and materials will be deployed at key sites to improve the effectiveness of the response.

A programme of monitoring will commence related to the Tees Barrage project. Samples of water, sediments and biota will be taken to establish pre-barrage conditions throughout the Tees estuary. Progress will be made towards the installation of automatic quality monitors in the estuary. In liaison with Hydraulics Research Ltd further investigations will be made of the reductions in polluting inputs required to achieve satisfactory water quality in the estuary. Work will continue on the development of suitable operating criteria for the Barrage to protect water quality-related uses of the estuary.

Flood Defence

The NRA's main responsibility under the Water Act is to protect land, both urban and rural against floods of specified severity from "main" rivers including estuaries and the sea.

About 1500 km of "main" river will continue to be maintained by clearing away debris, collapsed banks, tree branches etc likely to cause flow restriction, to ensure that the rivers run freely to their natural capacity, thus helping to minimise flooding. In addition, 310 km of embankment, constructed as capital works to prevent flooding in certain low lying areas, will continue to be maintained in a sound structural condition.

A start will be made on the construction of the Yarm Flood Defence Scheme, a capital scheme costing about £1.75m involving embankments and sheet piling to protect farm land and the town of Yarm against large river floods.

Consultations will continue on the ongoing promotion of the Tees Tidal Barrage Scheme to safeguard the integrity of the

upstream Yarm Scheme and generally to protect the environment through the wider interests of the NRA.

The high level of protection afforded by the present flood warning service will be maintained and the cost effectiveness of more sophisticated systems will be kept under review.

NRA's wide remit to vet all proposed developments on "main" river and certain specified developments on "non-main" river will continue, and consents will be issued or refused as appropriate.

Fisheries

The NRA's main responsibility under the Water Act is to maintain, improve and develop fisheries in the Region.

The prime priority is to assess the status of fish stocks by surveys and monitoring in inland waters.

At present little or no data are available on freshwater fish and only limited data on salmonids. More information on the latter is particularly important as an input to the National Juvenile Salmonid Monitoring Plan on which future national policy is largely expected to be based. Reasons for the deterioration of the freshwater fish stocks in the River Tyne downstream of Kielder will be investigated and an electronic fish counter is planned for the River Wear.

The drift net fisheries in the coastal waters are an important commercial resource, regionally. Additional survey work and analysis will be carried out with a view to giving a basis for better control to prevent over-exploitation.

The very successful operation of the hatchery at Kielder will be maintained and expanded if necessary. At present over 500,000 juvenile salmon and sea trout are produced per year for restocking the vastly improved industrial rivers of the Region - the Tyne, Wear and Tees - and the Coquet.

It is planned to increase the number of bailiffs enabling wider policing and stricter control against poachers in inland and coastal fisheries leading to more prosecutions. The Region's responsibilities for coastal fisheries will be extended southwards towards Scarborough in cooperation with Yorkshire, and purchase of a second fast patrol vessel is required.

Recreation and Conservation

Cooperation with the Teesside Development Corporation will ensure appropriate development of recreation and conservation projects in the River Tees if the proposed Tees Amenity Barrage is built. Consultants will be appointed to conduct a pilot study on stretches of the Rivers Tyne and Wansbeck to derive suitable methodology for assessing recreation potential with a view eventually to developing a strategy document.

For conservation, the main responsibilities are to conserve and protect the aquatic flora/fauna when doing our own work and help ensure that others do the same; also to protect statutory conservation sites. River corridor surveys on parts of the Rivers Ouseburn, Blyth, Skerne and lower Tees will be commissioned.

Support Services

The Region's support services will contribute fully to the development of regional and national policies in relation to

income generation, utilisation of information systems, and provision of essential management information at both local and national level.

In addition they will provide appropriate financial, personnel, legal, IS and administration services to the appropriate level so that management can, more effectively, carry out their primary functions.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region.

Northumbria Region employs a total of some 140 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- Douglas Rainbow

Regional Board Member

- Wyndham Rogers-Coltman OBE

Regional Flood Defence Committee Chairman

- Edward Wrangham MA

Regional Rivers Advisory Committee Chairman

- John Browne-Swinburne DL

Regional Fisheries Advisory Committee Chairman

- Peter Tennant

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

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Telex: 53102 RIVWAT G

Fax: (091) 284 5069

24 hour telephone number:

Tyneside (091) 213 0266

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require NRA consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent to a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line for fishing.

Please contact us if you have any doubt that you need NRA permission.

PUBLIC REGISTER ACCESS

Registers are maintained of Applications for Consents, Consents, Licences to Abstract or Impound Water and the results of analyses of samples of water and effluent.

The registers may be inspected on Monday to Friday from 9.30-12.30 and from 13.30-14.30. A charge may be made for information supplied.

It helps us to deal with requests more efficiently if details of information requirements are given in advance and if an appointment to visit is made.



NATIONAL RIVERS AUTHORITY

NORTH WEST REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of North West Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

In the short time since the NRA was set up, we have taken the opportunity to look afresh at the job we have to do, the aims we have set ourselves, and the resources available to us in our efforts to make a serious impact on the water environment. Our forward plan now provides us with the chance to begin to tackle the serious and longstanding problems so apparent in the North West; problems which have received insufficient attention over so many years.

We have also taken the opportunity to put in place the facilities to enable us to operate efficiently in future. This has involved the reconstruction of a secondary school in Warrington as our Head Office and Laboratory, and the construction and extension of depot and office facilities in our areas. We are also examining the communications and computer systems we need for the future.

Our Region is notable for its variety. It has the most polluted rivers in the country at one end, and many of the best salmon rivers in the country at the other end. The North West is the third largest Region in terms of population, but has 57% of the NRA's polluted estuaries, 28% of the polluted rivers, and the lowest percentage beach compliance. It has the largest volume of trade effluent, and the largest known number of storm water overflows.

Some 53% of urban rivers in the Region have levels of flood protection which are below the standards required. We will need to invest some £100 million over the next 20 years to tackle this work.

Our approach must now be to address the real and substantial problems of our rivers in the North West, confident in our powers and with the support of the public at large. The proposals contained in this Plan Summary will set us on the right path.

Dr Chris Harpley

Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



NORTH WEST REGION

The North West Region covers an area of some 14,500 square kilometres extending from Crewe to Carlisle. It is bounded in the north by the Scottish border, in the east by the Pennines, by mid-Cheshire in the south and by the Irish Sea in the west.

The major centres of population and industry are in the Merseyside and Greater Manchester conurbations within the Mersey Basin. These areas, industrialised since the 19th Century, have a legacy of pollution and inadequate infrastructure. Around 20% of the Region's river length is in the poor/bad category, accounting for about 30% of the total for England and Wales.

Further north, the counties of Lancashire and Cumbria are home to areas of outstanding natural beauty, including the Lake District National Park and the Bowland Fells.

The Region has some of the most fertile land in the country in the coastal plains behind Formby, Southport and Blackpool and in the Central Cheshire plain. The land in these areas often lies below high tide level so that pumped drainage and sea defences are necessary.

Two-thirds of the Region's rivers support salmonids and there are high quality salmon and migratory trout fisheries in Cumbria. There is a high level of participation in angling throughout the Region. As a result, fishing resources are heavily utilised and therefore relatively scarce around the major population centres. A high level of enforcement is necessary to contain poaching in Cumbria and licence evasion is a problem in the coarse fisheries in the south of the Region.

The North West's main groundwater resources are located in the sandstone aquifers of the Lancashire and Cheshire plain and the Eden Valley in Cumbria.

Some Key Statistics

Area: 14,445 sq km

Population: 7 m

Length of main river: 5,947 km

Estuary: 193 km **Coastline:** 432 km

Length of constructed sea/tidal and fluvial flood defences: 545 km

Average Annual Rainfall: 1,110 mm

No. of Abstraction Licences: 3,510

Volume of Water Abstracted: 7.388 MI/d

No. of Industrial Discharges: 650

No. of EC Bathing Waters: 33

KEY ACHIEVEMENTS SINCE VESTING

NRA North West Region was launched successfully on 1 September 1989. Since then, our main effort has been geared towards the establishment of an effective regional body.

Organisation

Staff at Regional headquarters were accommodated temporarily at New Town House in Warrington whilst our new office and laboratory was completed at Richard Fairclough House, Latchford, Warrington. In addition, our Area Office at Sale has been extended, and new depots built at Winsford and St. Helens. A considerable effort has been made on the recruitment, and training of staff.

In the same period, separate computer systems have been set up and additional computer hardware put in place. A number of contracts have been let to secure the provision of mainframe computer services, telecommunication links, and maintenance of transport and mechanical and electrical services.

Public Awareness

A determined effort was made to establish a new and separate public image for the organisation with the public and the media. This was achieved by a programme of presentations and meetings with various bodies. We have also appeared frequently on radio, television and in local newspapers. In fact, the media have maintained a high level of interest in our affairs and our name has become well known.

Our objective has been to explain the role of the NRA to as wide a range of groups as possible, including local authorities and environmental pressure groups. We have collaborated with the Mersey Basin Campaign in organising a conference for voluntary sector bodies, which discussed ways in which our organisations can work together.

Environmental Quality and Pollution Control

High levels of media interest have also been shown in our Environmental Quality and Pollution Control function. Demand for water quality information has been consistently high, both for information on public registers and on specific incidents. Over 3000 pollution incidents were reported and there has been a marked increase in the number of prosecutions and the level of fines imposed. New chemical and biological laboratories have been set up at our Regional Headquarters which will improve our analytical capabilities.

Effective farm campaigns have also been carried out to assess the extent of polluting discharges from agricultural wastes, and to advise on remedial and preventive works. Proposals have been agreed with several major industries to improve effluent discharges, to meet new statutory classifications for inland and coastal waters in respect of dangerous substances.

Along with ICL and the Mersey Basin Campaign, we have carried out a joint project known as "The Mersey Measure" which will allow assessments to be made, and be presented in a readily understood form, of the general trends and improvements in water quality within the catchment of the River Mersey. We are also supporting the 'Stream Clean' project of the Campaign, designed to remove litter from watercourses by the use of volunteer groups.

Prosecutions

Implementation of the NRA's enforcement policy for pollution legislation resulted in 60 prosecutions, with many others pending.

Perhaps the single most significant event was the prosecution of Shell (UK) Limited, following an oil spillage in the Mersey Estuary. The incident was one of the first to be dealt with by our re-organised pollution inspectorate and by our newly established legal department, and resulted in a major success for the NRA when a fine of £1 million was awarded by Liverpool Crown Court. This fine was the largest ever awarded for a pollution offence and reflects the seriousness with which society at large views these issues.

Flood Defence

For our Flood Defence function, weather conditions, particularly in January and February posed severe problems, but defences mostly stood up to the test and flooding was limited compared to other Regions. However, appraisal of expenditure needed to provide appropriate standards of flood defence exposed the need for major investment in the coming years. A Technical Services team has been set up and has negotiated a series of agreements for maintenance of NRA equipment.

Water Resources

Our Water Resources function was influenced very much by climatic conditions, particularly by the drought and flood alerts. A combination of high tides and gales saw the flood warning system functioning for seven consecutive high tides, the highest number for ten years. Initiatives undertaken include a collaborative effort with Merseyside Chamber of Commerce to identify the possible effects of rising groundwater levels in Liverpool, and responding to heightened public awareness of "toxic tips" following extensive press coverage.

Of course, whilst all this change was taking place, the weather was not kind to us and we were faced with a range of operational problems. Continuing low levels of rainfall through the Autumn caused drought conditions under which North West Water applied for more than twenty drought orders. We were able to assist on proper safeguards to protect the river environment and water users, where compensation discharges were reduced or other measures taken. The drought was followed by severe storms which resulted in both coastal and fluvial flooding and some serious pollution incidents.

Fisheries, Conservation and Recreation

The Fisheries, Conservation and Recreation function received ministerial approval for new fisheries byelaws. Most significant was the removal of the statutory close season for freshwater fish and eels on stillwaters which provoked interest from anglers and the media. Anti-poaching activities were maintained. Two new hatcheries were set up in the north of the Region and a new depot facility in the south. Two new vessels are in use allowing extended patrolling. We have developed liaison with conservation and recreation groups and with the voluntary sector.

Regional Committees

A new regional Committee structure has been established and meetings have been held on a regular basis. The Regional Flood Defence Committee and Regional Fisheries Advisory Committee were already in existence and came into the NRA with little change. The Regional Rivers Advisory Committee, which provides the NRA with a forum for consultation on all matters affecting river catchment management and estuarial and coastal waters, is a new body to which appointments were made from a wide range of interest groups. A good start has been made in bringing together a group of people who can provide the informed comment which we need to help us with the difficult tasks facing our Region.

REGIONAL PRIORITIES 1990/91

The North West Region will play its full part in achieving the objectives and targets set out in the NRA national Corporate Plan. At a regional level, our intentions for next year include the following:

Water Resources

- To secure the proper use of water resources by developing plans for the integrated operation of major sources. This will require agreement with abstractors on their use of multi-source systems, with the objective of reducing the need for drought orders in future. This need was highlighted by the difficulties experienced in the drought year of 1989.
- To develop new procedures for abstraction licensing and enforcement especially with regard to small abstractors.
- To develop an aquifer protection policy which is consistent with national standards and which addresses both diffuse and point source pollution problems.
- To help establish national policies for leachate management to prevent pollution of water resources from landfill sites.
- To upgrade the provision of hydrometric data (rainfall, river flow, and groundwater) including replacement of chart recorders with data loggers. Data loggers provide better processing, manipulation and archiving of data which saves space for storage and time in answering enquiries from outside organisations.

Water Quality

- To establish new sampling and monitoring programmes for the assessment of water quality in controlled waters, including physical, chemical, biological and microbiological parameters.
- To increase the capacity of laboratory services by improvements to collection, labelling and automated methods of analysis; and by incorporating increased facilities for microbiology and biology.
- To extend enforcement activity in areas of non-compliance or illegal discharges.

- To establish an accurate data base for public registers, consent formulation, and discharge charging scheme.
- To establish co-ordinated regional procedures for responding to pollution incidents and emergencies.
- To provide chemical and biological data for the 1990 DoE and NRA river water quality surveys.
- To develop and extend continuous monitoring of surface water quality.
- To prepare catchment plans for development of future water quality objectives and discharge consent revisions.

Flood Defence

Some 53 % of the North West Region's urban rivers provide a level of flood protection below target standards, requiring the investment of some £100 million over the next 20 years to provide the desired protection levels.

Objectives

- To maintain and improve flood defence protection by continuing and increasing capital investment and effective maintenance of the Main River system.
- To improve our input to development control procedures which have increased in both volume and complexity. Our role in issuing consents, assessing development proposals and enforcing byelaws will ensure protection standards are met whilst allowing for welcome growth in the Region.
- To extend and upgrade the flood warning service to provide better forecasts for people at risk, and to provide an effective response to flooding and other emergencies.
- To promote environmental improvements through our activities in close co-operation with conservation agencies.

Fisheries

- To provide a service sensitive to the needs of the public which responds to requests for advice relating to the maintenance, improvement and development of fisheries.
- To increase detection of poaching offences and take action against offenders so that long term conservation of fish stocks and the interests of legal takers of fish are promoted.
- To promote free passage of migratory fish by provision of additional fish passes.
- To obtain improved information on fish stocks by the development of auto fish counting, technology, field surveys and by increasing the percentage of anglers making a catch return.
- To improve and develop trapping and hatchery facilities to reliably lay down adequate stocks of salmonid ova.

Recreation

- To develop the use of sites owned by the NRA for recreational activities.
- To encourage access for visitors to NRA facilities.
- To promote collaborative projects with other recreational bodies.
- To ensure that recreational interests are promoted in the wider range of NRA activity.

Conservation

- To produce management plans for NRA owned sites.
- To promote environmental awareness in all NRA functions.
- To increase our knowledge of the conservation value of our Region and the effectiveness of our conservation work by expanding the programme of river corridor surveys.
- To promote joint conservation projects, such as those with the Mersey Basin Campaign.
- To broaden consultations and liaison procedures with relevant bodies and individuals.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. North West Region employs a total of some 760 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- **Dr Chris Harpley**

Regional Board Member

- **R Julian F Taylor**

Regional Flood Defence Committee Chairman

- **Bill M Wannop**

Regional Rivers Advisory Committee Chairman

- **Ron E Weston**

Regional Fisheries Advisory Committee Chairman

- **Tom A F Barnes**

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

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WA4 1HG

Tel: (0925) 539 99

Telex: 628 425

Fax: (0925) 415 961

24 hour telephone number (calls automatically diverted from number above)

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent to a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line for fishing.

Please contact us if you have any doubt that you need NRA permission.

PUBLIC REGISTER ACCESS

Public Registers are available for inspection. Please contact our Regional Headquarters for details.



NATIONAL RIVERS AUTHORITY

SEVERN TRENT

PLAN SUMMARY

1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of Severn Trent Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.

FOREWORD

This has been a year of dramatic change to which my staff have responded with enthusiasm and hard work. With high calibre experienced staff who have volunteered for the challenge of improving the water environment, I am sure we will succeed. The coming year sees increased staff resources to allow us to improve our management and control of surface and groundwaters. Of most importance are the increases in pollution control inspectors and flood defence engineers.

To date, we have been tested by drought and floods to which we responded with confidence and sound professional judgement. In the next few years, I expect the public to recognise our success in all our activities as we move forward from an impressive first year of success as Guardians of the Water Environment.

Dr Geoff Mance

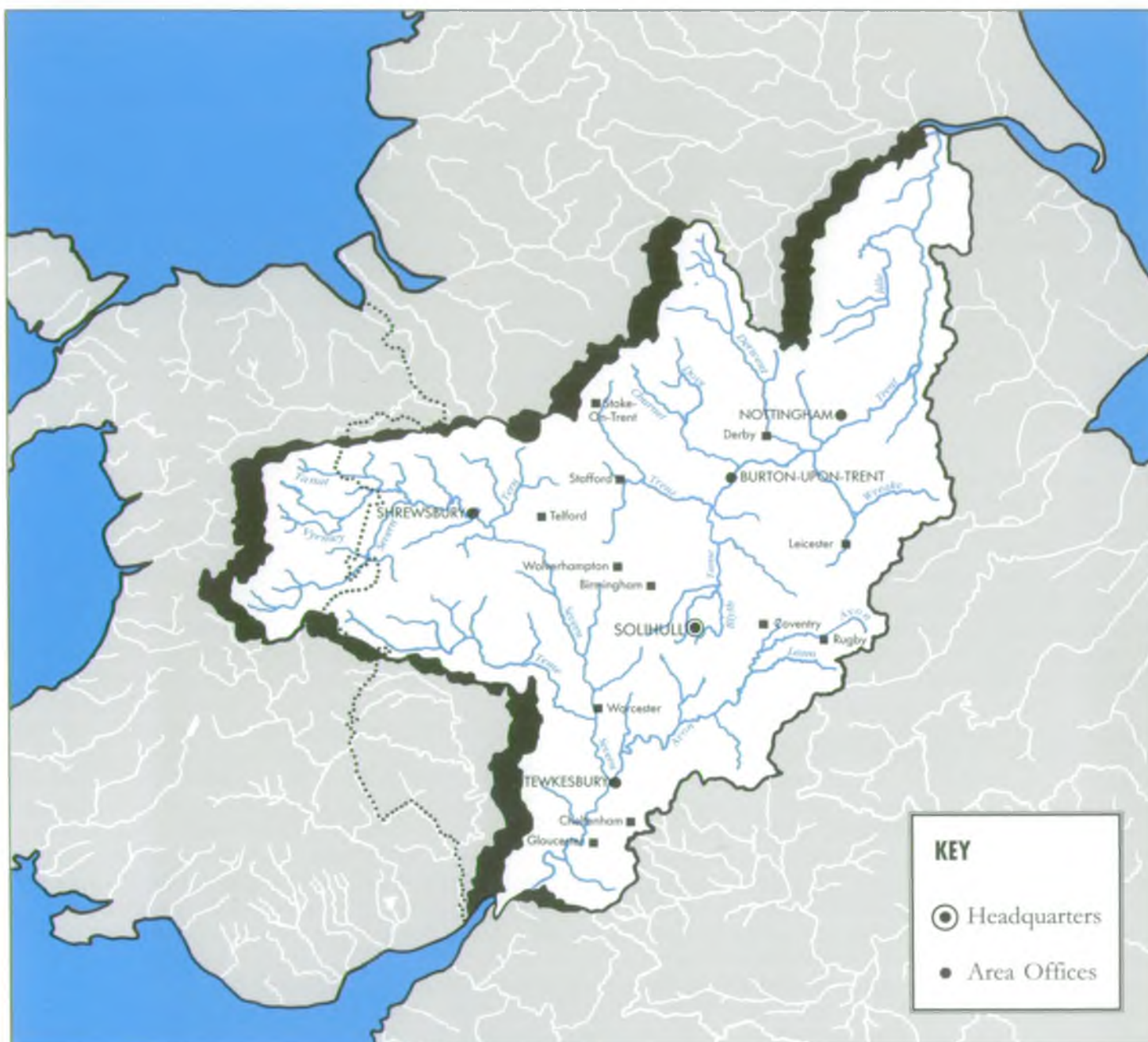
Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.



Some Key Statistics

Area: 21,600 sq km
Population: 8.25 m
Length of Statutory Main River: 3,673 km
Length of Constructed Flood Defences: 841 km
Average Annual Rainfall: 775 mm
Number of Abstraction Licences: 7,544
Volume of Water Abstracted: 10,821 Ml/d
Number of Industrial Discharges: 2,850

SEVERN TRENT REGION

Severn Trent is the second largest (in both area and population) of the NRA Regions, covering the middle of England from the Humber estuary to the Bristol Channel, and extending into mid-Wales.

The Region is diverse, with major industrial zones, extensive agricultural plains and upland headwater areas with major multi-purpose reservoirs. There are contrasts in climate and geology; the Welsh mountains and the Pennine Hills have high rainfall, whereas the lower Trent Valley and the Vale of Evesham are among the driest areas in Britain. Large urban and industrial conurbations are at the headwaters of major rivers in the centre and east of the Region. Consequently, environmental and quality regulation is particularly important.

Agricultural land use ranges from exclusively arable in the east through mixed farming to upland sheep farming and forestry.

KEY ACHIEVEMENTS SINCE VESTING

Vesting day on 1st September 1989 was the point of legal separation from the Water Authority. Completion of all legal documentation required to ensure the NRA received its full inheritance of staff, equipment and accommodation was a major achievement. All operational activities continued to function smoothly during and after the transitional period.

Highest priority was given to emergency responses with the establishment of a 24 hour communication centre and clear operational procedures. These were tested by a record number of pollution reports, although the number of serious pollutions did not change.

The autumn saw the occurrence of blooms of blue-green algae which caused much public alarm. At some locations, toxic forms were recorded and many recreational waters were assessed in an intensive survey.

1989 was a year of widespread drought and a new high technology weather and river flow monitoring and prediction system was in operational use as soon as it was commissioned. This enabled tight daily control of river flows in the Severn supported by water releases from Clywedog reservoir and the Shropshire Groundwater scheme, which was in full use for the first time. It also enabled Drought Orders to be postponed by four to six weeks until the end of September. The drought continued through the autumn, almost to Christmas. In December, contracts were let for the construction of the next phase of the groundwater scheme.

The drought ended in spectacular fashion with significant flooding in the River Severn, particularly upstream of Shrewsbury and around Worcester. This subsided in early January. The flooding returned for more than three weeks in February along much of the Severn Valley. At Gloucester, the floods were the worst for 40 years with the river several kilometres wide. Throughout this period, media interest was very high and culminated with the coverage of the Minister's aerial viewing of the floods. Once again the effectiveness of the 24 hour communication centre was clearly proven.

Whilst dealing professionally with these and other operational problems, substantial work has been completed in establishing good working practices and performance standards. A COSHH database has been created and staff instructed on necessary safety measures. The whole labour force has received basic first aid training. Bonus schemes for our emergency flood force have been rationalised from fifteen separate schemes to one applicable to the whole force.

REGIONAL PRIORITIES 1990/91

Our primary objective is to ensure maximum environmental benefit is obtained from the financial resources allocated to the Region. In carrying out all our normal duties, we will seek greater efficiency and will place particular priority on developing a number of initiatives and a rational framework of operation.

In doing this, the main activities and resource needs have been identified for each function. These have been translated into the support service initiatives required to ensure that operational targets are achieved.

Catchment Management

- Develop a Water Resources Plan.
 - Review the existing resource availability and extent of utilisation.
 - Identify problem areas and deficiencies.
 - Publish timetables for developing solutions and update at regular intervals.
- Review River Severn operational rules in light of 1989 drought.
 - Early indications are that modifications could extend the benefits available from Clywedog and Shropshire Groundwater.
- Develop Abstraction Control practice.
 - Establish policing of abstraction licences.
 - Develop a programme to (a) check licence returns, (b) inspect all chargeable abstractions at least once every three years, and (c) redress areas where river flows are reduced by past over-licensing of abstractors.
- Prepare for consent charging.
 - Review the inherited database of consents to ensure the accuracy of the information for charging purposes.
- Develop planning liaison and possible land use controls.
 - Develop more efficient systems for processing planning applications. Good planning control can prevent many future flooding and environmental problems.
 - Studies in support of Nitrate Sensitive Areas and control of upland afforestations have been initiated.

Environmental Quality

- Prepare initial Water Quality Plan with priorities.
 - Prepare a prioritised list of river quality improvements to be sought over the next five years to enable dischargers to plan investments.
- Improve pollution prevention and enforcement success.
 - Review existing practices and extend best practices with planned programmes of risk site inspections and targeted surveillance.
- Review consents.
 - Develop a programme of data collection and interpretation. This is necessary due to a large number of temporary consents issued by HMIP which now require long term determination.
- Extend use of instrumentation.
 - Employ modern techniques to improve the real time monitoring of water quality including extending the number of continuous river monitors.
 - Equip field staff with meters enabling better responses to and early detection of incidents.

Flood Defence

- Survey the condition of assets and plan renewal.
- Survey existing flood defence structures and assess the structural integrity. Results will be used to plan asset renewal and refurbishment.
- Extend the defences and review priorities.
- Construct complete new defences on the tidal Severn and at other locations where these are cost-beneficial.
- Develop standard to be provided and evaluate future needs on this basis.
- Revise Main River policy.
- Develop and apply a new policy as the inherited position lacks consistency.
- Development Control.
- Through planning liaison, seek to avoid flood plain developments which give rise to future protection problems.

Fisheries

- Improve success of enforcement and fisheries protection rehabilitation work.
- Review existing practices and extend the best practices to the whole Region taking account of any national policy.
- Expand the coarse fish farm.
- As rearing pond space is limiting the production of stockable fish, purchase neighbouring land to provide greater production at same staffing level and enable the operation to become self-financing.
- Implement revised fisheries byelaws.
- The review commenced in 1989/90 will be completed with new byelaws to be implemented from January 1991.

Recreation

- Develop a Recreation Plan.
- Conduct a review of present activities and Water Act duties, and extend to provide a structured basis for work over the next two years.
- Review potential of NRA land holdings.
- Initial activities to extend water related recreation will be focused on maximising the use of existing NRA assets.

Conservation

- Develop a Conservation Plan.
- Prepare environmental management plans for significant NRA landholdings and river corridor environmental strategies for main rivers.
- Increase river corridor surveys.
- Over a five year period, conduct and update surveys for Main Rivers in the Region to provide an objective basis for limiting any adverse effects from Flood Defence and other activities and for planning future work.
- Develop Environmental Assessment methods.
- Improve the quality and scope of data collection to ensure a sound basis for environmental assessment of major NRA operations and regulatory activities.
- Ensure NRA activities promote conservation.
- Through internal liaison, ensure all operational and regulatory departments are aware of NRA responsibilities and make early assessment of conservation aspects of individual activities.

Support Services

- Refine charging schemes and cost allocation.
- Review existing schemes and allocations and where necessary, conduct cost monitoring exercises.
- Develop policies to improve recruitment and staff development.
- Review existing schemes and modify where appropriate to overcome identified deficiencies and support new initiatives.
- Centralise operational alarms into 24 hour centre.
- Complete the separation from the Plc by transfer of remote alarms and computerised monitoring to NRA centre.
- Increase public awareness of the NRA and its work.
- Develop a structural campaign to build on the early high profile afforded by climatic events of 1989/90.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Severn Trent Region employs a total of some 750 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by the NRA Board Member with responsibility for that Region.

Regional General Manager

- **Dr Geoff Mance**

Regional Board Member

- **John Wheatley**

Regional Flood Defence Committee Chairman

- **Guy Hawthorne**

Regional Rivers Advisory Committee

- **Dr Hugh Tebbutt**

Regional Fisheries Advisory Committee Chairman

- **Fred Jennings**

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

Sapphire East
550 Streetsbrook Road
Solihull
West Midlands
B91 1QT
Tel: (021) 711 2324
Fax: (021) 722 5824

24 hour telephone number:

(021) 711 2324

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within or adjacent a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line for fishing (licences available from tackle shops).

Please contact us if you have any doubt that you need NRA permission.

Public Register Access

The formal Register of Environmental Information is held at our Regional Headquarters and may be examined during normal working hours.

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

Manley House

Kestrel Way

Exeter

Devon

EX2 7LQ

Tel: (0392) 444 000

Fax: (0392) 444 238

24 hour telephone number:

(0800) 378 500

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Public Register Access

If you wish to make any enquiry about registration under the Control of Pollution Act you should contact the Regional Headquarters at Manley House as shown above.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. South West Region employs some 400 people.

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Regional General Manager

- **Gordon Bielby**

Regional Board Member

- **Dennis Mitchell**

Regional Flood Defence Committee Chairman

- **Gerald Manning**

Regional Rivers Advisory Committee Chairman

- **Anne Voss-Bark**

Regional Fisheries Advisory Committee Chairman

- **Peter Edwards**

Fisheries

The current status of the stocks emphasises the need to develop a strategy for fisheries which allows a systematic approach to production of policy and will ensure the early development of catchment plans for the major river systems since this is an essential step in their co-ordinated rehabilitation.

A key initiative will be to establish a five year rolling programme for monitoring fish stocks. During 1990 juvenile fish population studies will be undertaken as part of a baseline study, which will also provide data for byelaws and net limitation orders.

Action plans for each catchment will ensure early improvements to fish passes, spawning gravel and rigorous control of illegal fishing, with priority attention to waters where fish stocks are most affected, while longer term actions are planned.

Recreation

It is intended to adopt and begin implementation of the Conservation Access and Recreation Code of Practice during 1990/91.

The present recreational use and potential of all land and waters under NRA SW control will be identified with the intention of developing a regional plan to make the best use of these areas.

Conservation

It is intended to develop a regional strategy for the conservation and enhancement, where appropriate, of wildlife, geological, physiographical and archaeological features.

Plans to extend the river corridor surveys and coastline survey programmes will be developed during 1990 with implementation at the earliest possible time.

Planning Liaison

The organisation is being strengthened to respond quickly and effectively to the increasing number of planning applications relating to NRA functions.

Organisation

The effectiveness and efficiency of the Western Area Office at Bodmin will be improved by moving into accommodation at Sir John Moore House when it is vacated by South West Water Services. A new operational depot will be established in Launceston.

Progress will be made towards the provision of the new laboratory at Manley House.

Continuing efforts will be made to improve upon and develop the training of newly-recruited and existing staff.

Finance

It is planned to further develop accounting and monitoring systems in order to provide an effective financial service within the Region and to Head Office. This will include participation in national initiatives such as work on a new integrated accountancy system.

Work is progressing on revised arrangements for billing abstraction licence charges and the introduction of discharge

consent application charges.

A new combined payroll and personnel system will become operational from April 1990.

Information Systems

Work will continue on the improvement of services to users on both the Plc bureau and the region's own DEC equipment.

Planned system developments include the implementation of an information management system for the joint laboratory and continued work on defining the functional and data requirement model for discharge consent billing.

Personnel

The training needs of our existing and newly appointed staff will be appraised and a training programme established.

In accordance with national policy and timetable, work will commence on the introduction of job evaluation and staff appraisal.

It is intended to set up consultative machinery for all staff.

Research and Development

Through various groups it is planned to play an active role in determining priorities for research and development. A new post of Research and Development Co-ordinator will be created. Other staff will be involved in projects as topic leaders and project leaders in those areas of national research particularly important to the Region.

Laboratory Services

Preliminary work will continue on the provision of a major laboratory complex planned to be operational in the early part of 1991/92 which will serve the South West and Wessex Regions. Staff appointments will commence later in the year and the equipment will be installed and tested before formal accreditation. The laboratory will be equipped to undertake a broad range of analyses and, subject to national policy is likely to provide a centre of expertise in virology, and marine and low level non-routine elemental analyses.

Automated analytical and data handling procedures will ensure that the annual throughput will be in excess of 20,000 determinands per laboratory employee.

KEY ACHIEVEMENTS SINCE VESTING

Since becoming a fully operational NRA Region on 1 September 1989, our key achievements have been in the following areas:

Organisation

The creation of a regional unit which, following its separation from South West Water, was capable of supporting all functions of the NRA.

The Regional Headquarters accommodation at Manley House was inadequate and an extension has been built and occupied. A new depot has been established in Bideford and a new site found for a depot in Launceston. An agreement has been made for the staff at Bodmin to take over from South West Water Services the accommodation at Sir John Moore House.

Approval has been given for the provision at Manley House of a joint laboratory serving both the South West and Wessex Regions.

Considerable effort has been expended on the recruitment, motivation and training of staff.

Public Awareness

Many presentations and talks on the aims and functions of the NRA have been given to a wide variety of audiences. Together with a sustained public relations effort through the press, radio and TV, this activity has done much to make the public aware of the NRA's existence.

Communications

A review of regional communications systems and needs has been carried out and a 24-hour control room set up at Manley House.

Pollution Incidents

The new organisation has responded to a large number of pollution incidents since 1 September. These have included major incidents on the River Okement where an estimated 100,000 juvenile salmonids were killed and on the Rivers Teign and Lyd. Action to minimise the harmful effects of pollution incidents by such methods as the installation of booms, creation of diversions and use of pumps is being given much greater emphasis than hitherto.

Flooding

Very heavy rainfall and severe storms were experienced in December 1989 and January and February 1990 resulting in extensive flooding. Existing flood defences operated as designed and additional emergency work was carried out at Bescands to restore the sea defences. More than 120 flood warnings were issued between December and February. The Flood Warning Control Room was in operation for over 600 hours during the period.

REGIONAL PRIORITIES 1990/91

Water Resources

The high level of environmental concern in the Region, together with the 'flashy' nature of the Region's rivers and the need to develop and maintain water supplies requires an effective water resources management strategy to balance and resolve these issues.

Such a strategy will be developed by October 1990. Work will continue on the impact of major water resources development schemes, and production of resource operating agreements.

Abstraction licensing and compliance monitoring strategies will be developed during the year, in line with national guidelines.

The scale of over-abstraction problems in the Region will be investigated and action plans will be drawn up for the most important catchments.

Resources protection will be progressed by formulation of a regional aquifer protection policy and by promotion of further nitrate sensitive areas for consideration by MAFF.

Water Quality

During the year it is intended to begin preparation of regional plans, based on a co-ordinated national strategy, for the maintenance and improvement of water quality. This process will progressively ensure that the natural waters are capable of supporting their identified uses.

One of the first steps will be to carry out a major chemical and biological survey of natural waters which will provide the baseline for setting water quality objectives; the targets for the future.

Action plans for each catchment will ensure the continuing drive to reduce pollution incidents and risk of pollutions through investigations and other preventative measures while the longer term plans are developed.

Special attention will be given to checking the operating performance of existing discharges and ensuring that new or improved discharges meet the necessary environmental standards.

Flood Defence

Progress will be made on planned schemes including work at Wadebridge, Truro and Plymouth in accordance with the medium term programme.

There will be a survey of all coastal locations to determine the effects on flooding of the projected secular rise in mean sea level. The resulting information will be priority-rated alongside existing identified flood problems.

There will be work to develop a long-term flood archive. Weather radar data is used at present to give Flood Defence Duty Officers an indication of the intensity and location of movement of rainfall. Proposals are being made to improve radar coverage of Devon. Once this is established good quality rainfall measurement will be available for the whole Region and it is intended to include the quantitative data in forecasting models in due course.



Some Key Statistics

Area: 10,884 sq km
Population: 1.5 m
Coastline: 700 km
Rivers (monitored for quality): 3,221 km
Rivers (maintained for flood defence purposes): 1,400 km
Estuaries: 349 km
EC Bathing Waters: 133
Average Annual Rainfall: 1,197 mm
Number of Abstraction Licences: 7,030
Volume of licensed Water Abstracted: 3,537 Ml/d
Number of Industrial Discharges: 450
Area of Inland Lakes and Reservoirs: 16.7 sq km

SOUTH WEST REGION

NRA South West covers the counties of Cornwall and Devon and parts of Dorset and Somerset.

The resident population is approximately 1,470,000 but during the summer months this figure is boosted by a considerable influx of holiday visitors. In the peak week, the number of visitors is about 500,000, equivalent to importing the population of a city the size of Liverpool.

The Region has been recognised as a major growth area. Important basic industries include agriculture, fishing and mineral extraction. Tourism attracts about 6 million visitors annually with a significant effect on the local economy.

The rivers, estuaries and coastal waters are important in maintaining and encouraging the tourist industry and considerable emphasis is placed on the quality of water and the effect of effluent discharges. 109 of the UK's EC bathing waters are situated in the area, nearly twice as many as in any other NRA Region.

The natural water quality reflects the varied geology of the Region. Many of the rivers are metalliferous, carrying a variety of minerals and this requires sampling for a wide range of determinands.

Intensive farming in the area brings particular pollution problems which have been significantly improved by a campaign of farm visits to advise on prevention measures.

Recreational fishing has considerable importance in the Region with visiting anglers contributing to the local economy.

Coastal commercial fishing is also significant, with 6 of the nation's top 20 commercial fishing ports being found in the Region.

Many of South West's rivers are short and fast flowing. Consequently, heavy rainfall on high ground can rapidly cause spate conditions. High importance is given to the need for transmission of flood warnings.

FOREWORD

This is the first Regional Plan of NRA South West. Its purpose is to set out the structure of the local organisation, to summarise the work which has been done in setting up the various functions and to propose the targets which we aim to achieve during the year. By reference to the Plan it will be possible to assess progress, monitor performance and recognise achievement.

Each regional target has been set to meet legislative requirements and to accord with national policies where these have been established. In several instances, because of the need to make progress, it has been necessary to put forward proposals in advance of such policies being set.

A major feature of our approach to the Plan is the high public profile of NRA South West. We now have to demonstrate that we are the 'Guardians of the Water Environment'. Public expectations are high and our performance is and will be under close and informed scrutiny. It is imperative that we succeed in our mission and are seen to be effective.

Our Plan is a positive response to the challenges facing all of us in the Region.

I commend it for action.

Gordon H Bielby

Regional General Manager

MISSION STATEMENT

The National Rivers Authority will protect and improve the water environment. This will be achieved through effective management of water resources and by substantial reductions in pollution. The Authority aims to provide effective defence for people and property against flooding from rivers and the sea. In discharging its duties it will operate openly and balance the interests of all who benefit from and use rivers, ground waters, estuaries and coastal waters. The Authority will be businesslike, efficient and caring towards its employees.

AIMS

- to achieve a continuing improvement in the quality of rivers, estuaries and coastal waters, through the control of water pollution.
- to assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all those who use it.
- to provide effective defence for people and property against flooding from rivers and the sea.
- to provide adequate arrangements for flood forecasting and warning.
- to maintain, improve and develop fisheries.
- to develop the amenity and recreation potential of waters and lands under NRA control.
- to conserve and enhance wildlife, landscape and archaeological features associated with waters under NRA control.
- to improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- to improve public understanding of the water environment and the NRA's work.
- to improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.

INTRODUCTION

Established on 1st September 1989, the National Rivers Authority came into being as a result of the 1989 Water Act and was created as a public body whose main task it is to protect and improve the water environment in England and Wales and provide protection against flooding from rivers and the sea.

The Authority's Head Office is in London, but its operational activities devolve on ten Regions based on the former Water Authority areas.

This document, one of a set of ten, seeks to explain a little of South West Region NRA's background and show how the Authority's national aims as set out in its 1990/91 Corporate Plan will be translated into regional action.



NATIONAL RIVERS AUTHORITY

SOUTH WEST REGION

PLAN SUMMARY
1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT

WHERE TO CONTACT US

REGIONAL HEADQUARTERS

Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: (0734) 535 000
Fax: (0734) 500 388

24 hour contact telephone number:

Reading (0734) 535 000

or

Pollution Control -

Freephone River Pollution (0734) 535 268

ACTIVITIES REQUIRING NRA CONSENT

Certain activities require the NRA's consent.

The list is too long to include here, but the following are examples:

- Abstract or impound water.
- Make a discharge to any river, lake or tidal water or onto land for a soakaway, or to specific underground waters.
- Clean or desludge a dam, weir or sluice.
- Culvert any watercourse.
- Interfere with land drainage by building or modifying any structures within a main river.
- Build or plant within 8 metres of a main river.
- Introduce or transfer fish into any waters or use a net or trap to catch fish.
- Use a rod and line to catch fish.

Please contact us if you have any doubt that you need NRA permission.

Public Register Access

As part of our duties under the 1989 Water Act, Thames Region maintains a Public Register with details of classifications, applications for consent to discharge, issued consents, sample information and details of action taken as a result of the samples.

Members of the public may inspect the Register for NRA Thames Region at Kings Meadow House, Reading, between the hours of 9:30 am and 4:30 pm. The Register was made public on 31st July 1985 and information from that date is available. Inspection is free but a charge will be made for copies of entries in order to cover costs. Written queries may be sent to the address above marked 'Water Act Register'. Enquiries may also be made by telephone to **Reading (0734) 535 000**.

context of the national IS Strategy to which Thames Region will contribute fully.

The NRA must be seen to be an effective body protecting the river environment. Consequently major initiatives will be directed towards developing the legal services to cope with a greater level of prosecutions likely under the 'polluter-pays' principle.

To promote greater awareness of the NRA Thames Region and its activities, our Public Relations Department will be identifying opportunities for positive media coverage.

For our Research and Development group the main tasks for the year 1990/91 are:

- to establish and develop the R&D programme as allocated to Thames Region.
- to establish an effective R&D library/information system.
- to assist, where required, Head Office in setting our guidelines for the operation of R&D within the Regions.
- to undertake R&D in Catchment Planning.
- to manage all on-going projects and new starts for 1990/91.
- to act as Project leader for one R&D project in 1990/91.

Other management initiatives to support the Region's business areas include:

- implementing effective and efficient financial management methods and procedures.
- improving planning and control process.
- contributing to the development of long-term strategies for all the main support services.
- rigorous procurement capability development, addressing fully the EC requirements for an 'open market' in 1992.

REGIONAL ORGANISATION

Each Region of the NRA is managed by a Regional General Manager who reports directly to the Chief Executive and whose management team has responsibility for managing the main functions and support services in the Region. Thames Region employs a total of some 1190 people.

There are three statutory Committees per Region through which the NRA achieves a wide base of consultation. These are a Regional Flood Defence Committee (through which the NRA discharges its flood defence and land drainage duties), a Regional Rivers Advisory Committee and a Regional Fisheries Advisory Committee (these two committees being composed of members from a wide range of relevant backgrounds who advise the NRA on river basin management and fisheries policy respectively).

In addition, each Region has a Regional Advisory Board, on which the RGM and the three statutory Committee Chairmen sit. This is chaired by an NRA Board Member with responsibility for that Region.

Regional General Manager

- **Les Jones**

Regional Board Member

- **John Norris**

Regional Flood Defence Committee Chairman

- **Michael Davies**

Regional Rivers Advisory Committee Chairman

- **Joan Wykes**

Regional Fisheries Advisory Committee Chairman

- **Hugh Parry**

fully operational by 1 September 1990.

As part of the ethos of making the polluter pay, a high priority is attached to the formulation and implementation of a charging scheme for discharges in accordance with the national scheme.

In more general terms it is the intention of NRA Thames Region to ensure that the quality of both surface and groundwater is maintained and, where appropriate improved, so as to be fit for all present and potential uses.

We will aim to monitor effectively all significant discharges and controlled waters, and will investigate and implement actions in actual or predicted cases of failure.

Thames Region acknowledges the importance of the 1990 River Quality Survey and will carry this task forward with vigour and determination.

Within the Thames Region we see prevention rather than cure as a more positive approach to improving water quality. Therefore, another priority for 1990/91 will be to instigate a programme of preventative inspections of significant dischargers. We also plan to establish a programme of advisory visits to potential dischargers.

In addition to the quality of water in our rivers, the quality of groundwater is also important, and in this respect it is intended to establish and implement a groundwater sampling programme with particular reference to Nitrate Sensitive Areas.

Flood Defence

The activities of the Flood Defence function within Thames Region fall naturally into five basic activities: Watercourses; River and Tidal Defence Structures; Response to emergencies; development control, Land Drainage Act and Byelaw enforcement; Catchment Planning.

Following identification in 1989 of the extent of works required to maintain flood defence and land drainage targets across the Region, a major task is to implement maintenance programmes and capital schemes to ensure targets are met.

Maintaining and providing an effective response to emergency situations and to keep damage to people's property and the environment to a minimum is a crucial part of our service to the general public in the Thames Region.

A priority for 1990/91 is to bring the Maidenhead, Windsor and Eton Flood Alleviation Scheme to the stage of formal planning approval, in consultation with all interested parties.

An important resource of the Flood Defence department is the workforce in the four operational areas, Upper and Lower Thames, Lee and Tidal Thames. It is a priority for 1990/91 to develop this workforce. One aspect is to develop within two areas a "Trading Centre", and to implement and monitor this scheme during the year. It is also planned to implement "Safe Systems of Work" in all areas.

Fisheries

With the creation of the NRA, a more positive approach to Fisheries is now practicable, desirable and part of the statutory duty of the NRA. The main priorities will be monitoring of the fish populations via surveys attempting to cover all watercourses in the Region, provision of sufficient fish for reinstatement, development and improvement of fishery work,

enforcement of licensing of rods and curbing of illegal practices.

With the assistance of the Thames Salmon Trust, new fish passes are planned for completion at Bell, Romney and Mapledurham weirs during the year.

Recreation

The major priority is to produce a recreation strategy for the River Thames. This will clearly establish, after full consultation, the NRA's role in the provision of facilities for recreation and in the management of recreation sites. The year will be used as an opportunity to establish a 'base' for future programmes and developments. It is therefore planned to produce a full inventory of our sites by December 1990.

Conservation

A priority for 1990/91 is to implement the recently agreed procedures for ensuring that there is input from environmental specialists to both maintenance and capital schemes. Our objective is to ensure that this includes consultation with relevant outside organisations, that up to date information is used and that it is sensibly interpreted.

During the first part of the year it is planned to recruit an additional two staff to work in the Conservation area. This will provide additional human resource to assist in important Conservation work such as the planned implementation of River Corridor surveys on 310 kilometres of river in response to proposed engineering works.

Navigation

We plan to maintain the navigation fairway to ensure that it is of appropriate depth and free from hazards and other obstructions, to ensure that water levels are maintained in each reach in line with the statutory requirements that are in place for land drainage, water resource and navigation purposes.

During 1990/91 a key priority for the Navigation department will be to implement a major review of all navigation objectives with the aim of ensuring all revised performance indicators are in place by April 1991.

We will also ensure that the aims of the National Task Group on Navigation are attained and implemented within Thames Region.

Support Services

Within Thames Region, much of the project management of major capital schemes and supervision of contracts is handled by the Technical Services department. It is a key priority to implement the Capital Programme Planned expenditure for projects managed by Technical Services; this expenditure is planned to total £17.75 million during 1990/91.

By the end of the year the Technical Planning Group aim to respond to 65 per cent of all planning applications received (estimated at 5,500 a year) within the appropriate time limit.

Also within the remit of Technical Services is the Information Technology department; strategic objectives for this year are to identify Business Area requirements and the funding for projects, assign priorities and carry out project work or supervise contracts. All this will be done in the

KEY ACHIEVEMENTS SINCE VESTING

A major achievement must be considered to be the transfer of responsibilities from the Thames Water Authority to the NRA. The period since Vesting Day has seen renewed vigour and enthusiasm from staff eager to help the NRA make its mark in the community we serve.

Key achievements during this period have included management of the catchment and river levels during the storms and heavy rainfall of January and February 1990. Though some flooding did occur, the efforts of NRA Thames Region staff was acknowledged in reducing disruption to a minimum and also highlighted the need for our planned flood alleviation work - particularly in the Maidenhead area. This brought into focus the work currently in progress on the largest single capital expenditure project within the NRA - the Maidenhead, Eton and Windsor Flood Alleviation Scheme. An important milestone was reached with this project in December 1989 when a Project Office was opened in Maidenhead. This also included an Information Centre to help explain to the public the reason behind the project and our plans for the scheme.

Early stimulus to the development of the Authority's position in water resources management was given by the drought of 1989. New, changed relationships with Thames Water Utilities and the other water companies were quickly forged, in which the Authority is seen to hold the balance. The Operating Agreements, negotiated as part of the Transfer Scheme, worked well.

The work of the Fisheries department has continued throughout the year and though returning salmon levels were disappointing, new fish passes have been opened or instigated. Stocking levels showed an increase of 70 per cent over the previous year. The period has seen the completion of several fish passes including Shepperton, Chertsey, Sunbury and Goring, and these will be operational for the 1990 Salmon run.

Despite low flows at times in the River Thames and high temperatures, pollution levels have been under control and significant fish kill has been avoided.

A major capital project completed was the River Brent Flood Defence scheme. This began in the era of the Greater London Council, was continued under Thames Water Authority and was finally finished under the auspices of the NRA at a total cost of £19 million. Also completed was the refurbishment of Goring Weir and this was opened in December 1989.

Given the high level of public concern with the quality of the environment, a key achievement has been the 16 prosecutions during the year for pollution incidents which resulted in fines totalling £13,400, and further emphasis will be placed on this aspect of our work during the forthcoming years. To assist in this and other environmental quality work in the future, a new laboratory is being constructed at Fobney. We aim to commence sample analysis by September 1 1990 and to terminate the current contract with Thames Water.

Much time and effort has gone into adapting previous work loads and procedures to have an "NRA aspect" and a great deal of work has gone into planning our future and providing value for money to those who contribute towards our expenditure.

REGIONAL PRIORITIES 1990/91

The Regional Plan, of which this is a summary, is the starting point in the business planning process within Thames Region. This is being enhanced with strategic objectives for each Regional Manager for implementation via the staff throughout the Region.

The overriding task in formulating our priorities for 1990/91 is to address those key issues identified in the Corporate Planning process and to provide an efficient and effective service to the public within budget.

The scale of the task can be indicated by the following:

- planning and licensing the abstraction of 850 million gallons per day of water, and the return of over 1000 million gallons per day of treated water from sewage treatment works.
- responding effectively to approximately 3,000 pollution incidents each year.
- providing adequate flood protection to 5,200 kilometres of main river.
- maintaining and operating 45 lock and weir complexes, and annually supervising a million lock passages by nearly 25,000 registered craft.
- being in the South East, handling the planning implications of nearly half of all the country's construction work.

Water Resources

From an environmental as well as an economic position, much concern has been raised about the problems of low flows in certain water courses. It is the intention of the NRA Thames Region to take such actions on licensing, abstraction monitoring and enforcement for the "Alleviation of Low Flows", and charging for water abstractions, as is consistent with or indicated by national policy; and to contribute fully to such policy formulation.

The NRA now owns the West Berkshire Groundwater Scheme and this asset needs to be brought up to standard, maintained and tested regularly. It is intended to develop our operating strategy for this scheme and the Enfield - Haringey artificial recharge scheme by March 1991.

With the increasing demand for potable water supplies in the Thames Region, an important task for water resources management is to examine and formulate policy regarding the strategic issues involved. This will entail involvement in the formulation of the national function strategy, and key local investigations such as the potential for a new reservoir or the transfer of water from other regions.

Other key priorities in this area include the updating of the telemetry network and the continuing development of the Hydrometric network of gauging stations across the Region.

Water Quality

The major target for the Water Quality function within Thames Region is to have independent analytical laboratory facilities



Area: 12,900 sq km
Population: 11.6 m
Length of Main River: 5,150 km
Length of Significant Rivers: 7,000 km
Length of Estuary: 96 km
Length of Constructed Flood Defences: 95% of watercourse length
Average Annual Rainfall: 740 mm above Teddington
 625 mm below Teddington
Number of Abstraction Licences: 3,193
Volume of Water Abstracted: 4,740 Ml/d
Number of Discharges: 15,150
Number of EC Bathing Waters: 3

The Thames Region is a geographically diverse area of lowland England. The area it covers is bounded by Cirencester in the west, London in the east, Luton in the north, and Crawley in the south. The Region encompasses both the large urban development of Greater London with its high concentration of population, and areas of outstanding natural beauty such as the Cotswolds and Surrey Downs.

The major watercourse is the Thames, but other significant catchments are the Lee and Roding in the east and the Mole and the Wey in the south. The Region also includes EC designated bathing beaches at Thorpe Bay, Southend and Shoeburyness.

FOREWORD

The National Rivers Authority came into being on the 1 September 1989. In the year up to that day, all NRA Unit staff in the Thames Region were involved in the frenzied activity associated with the formation of the NRA Thames Region. This work was directed to the practical aspects of splitting the water industry. It has therefore been a great pleasure for us to participate in the preparatory stages for the NRA's first Corporate Plan.

Our Regional Plan, of which this document is a summary, was prepared towards the end of 1989 and since then we have been putting in place detailed Action Plans for our business areas. We look forward to contributing to the development of national function strategies over the coming months, which will enable us to make maximum effective use of our resources.

The Regional Plan puts our work in the context of the 1989 Water Act, and identifies ways for realising the great expectations the country has of us, and for producing an effective and efficient outfit.

Our work is extremely important and vital to the well-being of the environment and the health of the country; it must succeed. Our Plan illustrates we have much to do; as "Guardians of the Water environment" we will dedicate ourselves to succeeding.

Les Jones

Regional General Manager

MISSION STATEMENT

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NATIONAL RIVERS AUTHORITY

THAMES REGION

PLAN SUMMARY

1990/91



NRA

GUARDIANS OF THE
WATER ENVIRONMENT