

*The State of the*  
**Water**  
**Environment**  
**SIX YEAR TRENDS REPORT**



**NRA**

*National Rivers Authority*

### **Further Information**

For further information about the NRA's Corporate Strategies, Corporate Plans and Annual Reports please contact:

Corporate Planning Section,  
National Rivers Authority,  
Rivers House,  
Waterside Drive,  
Aztec West,  
Almondsbury,  
Bristol. BS12 4UD.

These documents are also available from the NRA Regional offices listed on the inside back cover of this report.

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Aztec West,  
Almondsbury,  
Bristol. BS12 4UD.

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## Foreword

Since its establishment in 1989 the NRA has demonstrated that it is an effective and well respected environmental regulator. It has, through its own actions and through the influence it exerts on others, delivered real improvements to the water environment in a cost effective way.

This report gives an account of the NRA's performance and it records some of its most significant achievements.

The people who directly benefit from our work have increasingly provided the funding for our expenditure. Total income from charging schemes rose by 12% in the six year period as the NRA's reliance on income from Government grants in total has decreased by 6%. Grant in Aid from the Department of the Environment, our major source of income from Government, has dropped by 27%, but there has been a large increase in Ministry of Agriculture, Fisheries and Food (MAFF) and Welsh Office grants for flood defence projects.

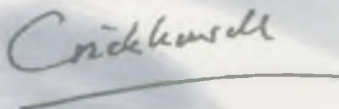
Delivering on the ground achievements has only been possible through the commitment of our staff. The outputs from both their day to day activities and specific environmental initiatives have continued to improve and be more efficient.

More licences have been determined for the whole range of NRA activities, more survey work has been undertaken, more improvements have been carried out and emergency response times have improved.

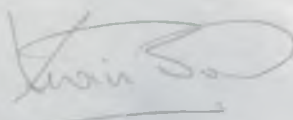
The extent of our staff's involvement with both our customers and their own jobs was fully recognised in October 1994 when we were awarded the Charter Mark for the quality of our public service by the Prime Minister.

As "Guardians of the Water Environment" we have striven to balance the needs of all water users whilst remaining true to our primary objective of protecting and improving the water environment.

Our approach will be to carry this forward into the new Environment Agency with no interruption. We are convinced that our legacy of improvements will be sustained and advanced for the benefit of future generations when the Agency begins its work on 1 April 1996.



CHAIRMAN Lord Crickhowell



CHIEF EXECUTIVE Dr. Kevin Bond

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## **The National Rivers Authority**

The National Rivers Authority, NRA, was created in 1989 as an independent environmental watchdog. Our prime purpose is to protect and improve the water environment in England and Wales. We have Head Offices in Bristol and London and operate through 8 regions and 26 areas based on natural river catchment boundaries.

## **Our Mission**

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

## **Our Aims**

- Achieve a continuing overall improvement in the quality of rivers, estuaries, and coastal waters, through the control of pollution.
- Manage water resources to achieve the right balance between the needs of the environment and those of the abstractors.
- Provide effective defence for people and property against flooding from rivers and the sea.
- Provide adequate arrangements for flood forecasting and warning.
- Maintain, improve and develop fisheries.
- Develop the amenity and recreational potential of inland and coastal waters and associated lands.
- Conserve and enhance wildlife, landscape, and archaeological features associated with inland and coastal waters of England and Wales.
- Improve and maintain inland waters and their facilities for use by the public where the NRA is the navigation authority.
- 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.
- Improve public understanding of the water environment and the NRA's work.
- Improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.

<b>Foreword</b>	<b>i</b>
<b>Introduction</b>	<b>2</b>
<b>Corporate Overview</b>	<b>3</b>
<b>Customer Service</b>	<b>5</b>
<b>Water Quality</b>	<b>6</b>
<b>Water Resources</b>	<b>12</b>
<b>Flood Defence</b>	<b>16</b>
<b>Fisheries</b>	<b>20</b>
<b>Conservation</b>	<b>25</b>
<b>Navigation</b>	<b>29</b>
<b>Recreation</b>	<b>32</b>
 <b>Glossary</b>	 <b>34</b>
<b>Maps and Addresses</b>	<b>Inside back cover</b>



This report has been produced at the request of the Department of the Environment to summarise the NRA's performance and use of resources since its establishment in 1989 prior to its cessation in April 1996, when it will become part of the new Environment Agency.

The main audiences for the report are UK and EC Government, NRA Board and statutory Regional Committees, NRA employees, the general public and the media.

### Structure of the report

The report consists mostly of graphs and commentary that show the trend in NRA actual income, expenditure, staffing and environmental achievements for each financial year (1st April to 31st March) between 1989/90 and 1994/95. There are a few graphs which show data for calendar years. These exceptions can be identified by looking at the horizontal axis of the graph. Where only a single year appears (eg 1992 rather than 1992/93), then the data relates to a calendar year.

The first two chapters of the report give an overview of the NRA as a whole, detailing its resources and main customers, together with some of its achievements in improving customer service.

The remaining chapters of the report consider each of the NRA's seven core functions separately. The information given in each of these chapters is laid out to give a storyline that tells of the pressures, the responses and the state of the water environment in the area that concerns the function. The outline structure for each chapter is given below:

- *NRA's aims for the function and key statistics on the scope of the work it had to carry out.*
- *Resources the NRA had available in each year and how they were employed.*
- *Some of the factors that affected the work which the NRA carried out in the function.*
- *Examples of the day to day activities that the function carries out.*
- *Some of the improvements made by the function, often with the help and investment of other parties.*
- *An assessment of the state of the environment with regard to the function.*

### Sources of data

The information presented here has largely been extracted from past Annual Reports and Accounts and Corporate Plans produced by the NRA Corporate Planning section, and various other publications produced by the NRA's Water Management and Science Directorate. Other data has come from the NRA Corporate Planning management information system.

Acknowledgement is also given to the Department of the Environment's Digest of Environmental Statistics No. 17, 1995 which provided data for the graphs on daily water abstraction in the Water Resources section and on otter presence in the Conservation section.

## Corporate Overview

### 1. Mission

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

### 2. Resources

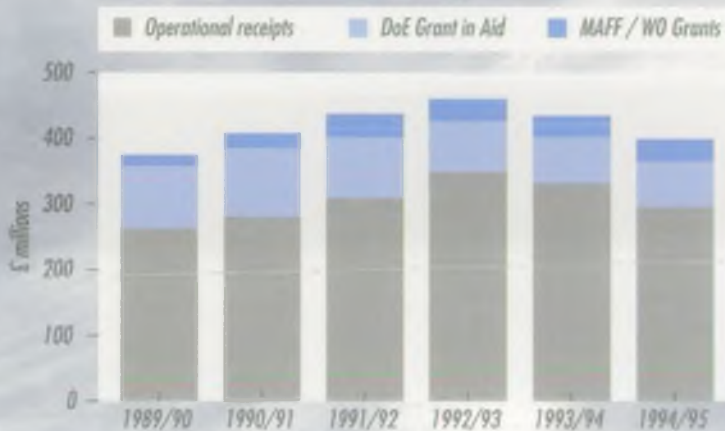
The amount of income generated through our own charging schemes increased by 12% during the first six years of operation. In the same period, total grants from Government have fallen by 6%. Grant in Aid, which bridges the gap between income and expenditure for the Department of the Environment functions, has been reduced by 27%. Capital grants from the Welsh Office and the Ministry of Agriculture, Fisheries and Food for flood defence projects have increased by 106%.

Over the six year period our spending has increased by 37%. When the effects of inflation are taken into account (25% over the same period), expenditure has increased in real terms by 12%. Within year differences between income and expenditure are managed through the use of balances.

#### Our Customers

- 100 000 consented dischargers
- 50 000 licensed water abstractors
  - 1 000 000 licensed anglers
  - 40 000 licensed boaters
- 850 000 properties protected by NRA flood defences
  - The general public
  - Business and industry
    - Farmers
  - Local communities and interest groups
    - Conservationists
    - Water sports enthusiasts
- Government at local, national and European levels

Total income



Total expenditure





## Corporate Overview

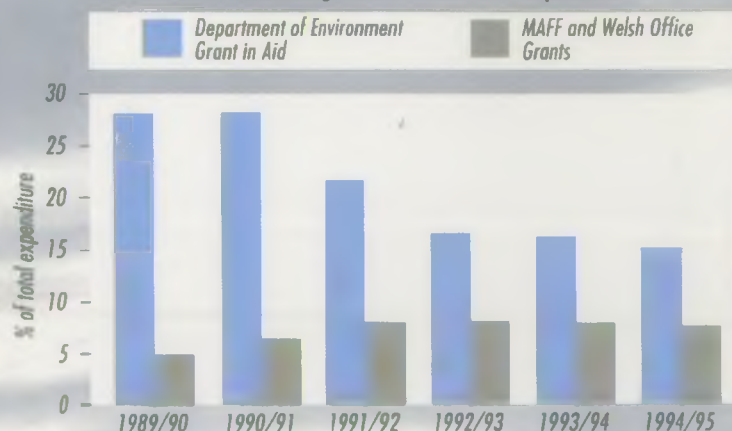
■ The NRA's reliance on total Government grants as a source of funding for its expenditure has decreased. The contribution of Grant in Aid has fallen by half from nearly 30% to 15% of our total expenditure.

Grants from the Ministry of Agriculture, Fisheries and Food (MAFF) and the Welsh Office have increased slightly from 5% to nearly 8% of the NRA's total spending. Our charging schemes have developed to ensure that more of the work we carry out is paid for by the people who directly benefit.

■ The NRA has continuously aimed to achieve greater efficiency. In 1993/94 we published an ambitious five year saving plan which, when fully implemented, will save about £200m of total previously planned expenditure by 1996/97.

■ During the first four years we increased staffing levels by 25% to cope with an increasing workload. This has come from European and British Government legislation requirements and for the need to substantially improve environmental standards. Since 1992/93, staff numbers have been reduced by 11% as we have improved efficiency and productivity.

Government grants as a % of total expenditure



Annual efficiency and cost savings



Total staffing

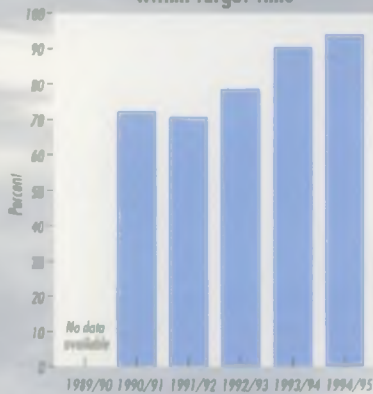




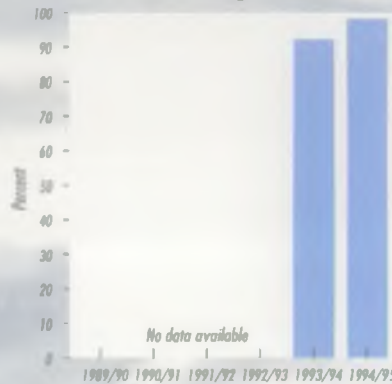
## Customer Service

In 1993 the NRA published a variety of service standards across the breadth of our work. These standards inform customers about the level of service we aim to provide and what they can reasonably expect from us. Our efforts to achieve these standards and our overall approach to the people who receive our services was rewarded with a Charter Mark in 1994 from the Prime Minister. The following graphs show some of the improvements in customer service that we have achieved and also highlight the commitment we have towards consultation and partnership when carrying out our duties.

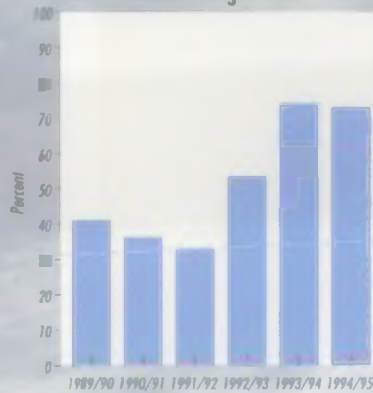
**Water Quality**  
% discharge consents determined within target time



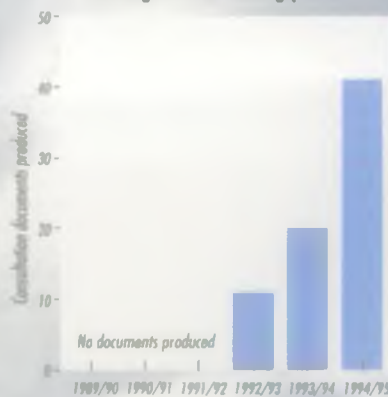
**Fisheries**  
% of fish kills attended within target time



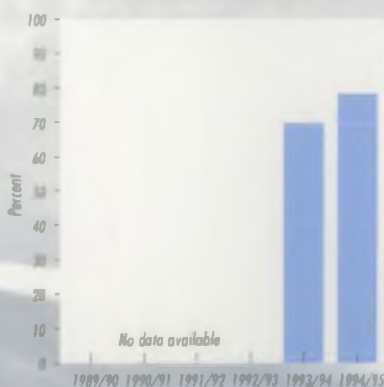
**Water Resources**  
% abstraction licences determined within target time



**Consultation in the Catchment Management Planning process**



**Complaints received**  
% answered within 5 days



# Water Quality

## 1. Aims

■ *"Achieve a continuing overall improvement in the quality of rivers, estuaries and coastal waters, through the control of pollution."*

■ *"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."*

## 2. Resources

■ We have applied the "polluter pays" principle. Our Charging for Discharges scheme, introduced in 1991, now accounts for around 55% of our Water Quality income. As a result, less than 50% of total Water Quality income is now supported by Grant in Aid.

■ Spending on Water Quality has risen by a total of 82% in the six year period. The rate of increase was sharpest in our early years as we expanded the range of our work.

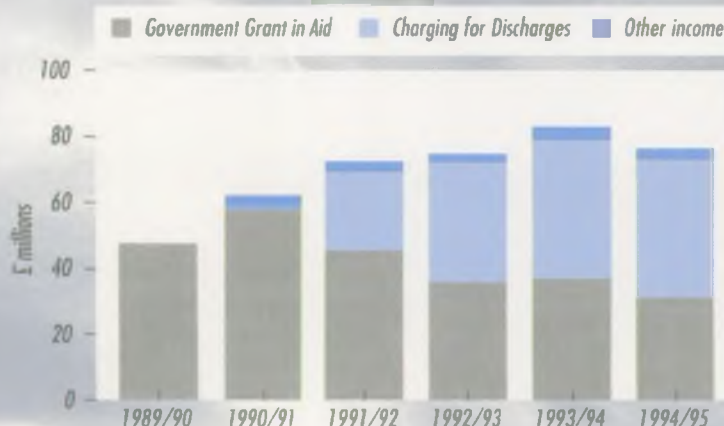
### The scope of the task

- Length of rivers and canals~ 40 000 km
- Number of water company sewage works> 6 000
  - Number of farms~ 186 000
- Number of consents to discharge~ 100 000

**Biochemical Oxygen Demand (BOD) of key pollutants** (BOD is a measure of how much oxygen, vital for aquatic life, could be removed from water when a substance is spilled into a river)

- Untreated domestic sewage 350 mg/l
- Animal slurry 30 000 mg/l
- Silage liquor 60 000mg/l
- Industrial waste, up to 100 000 mg/l

Income from Charging for Discharges and Grant in Aid



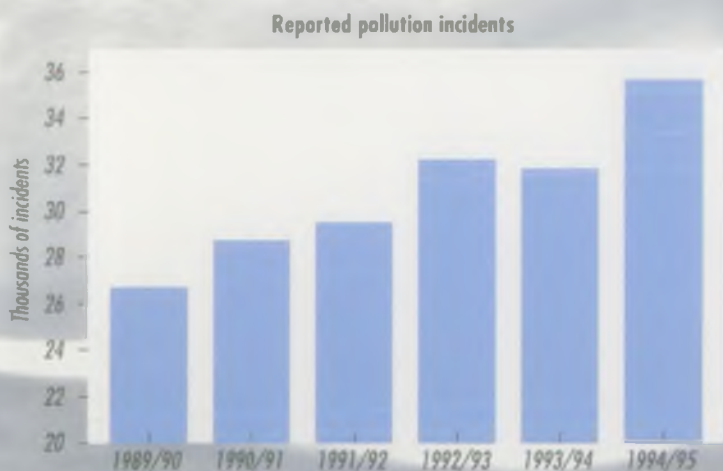
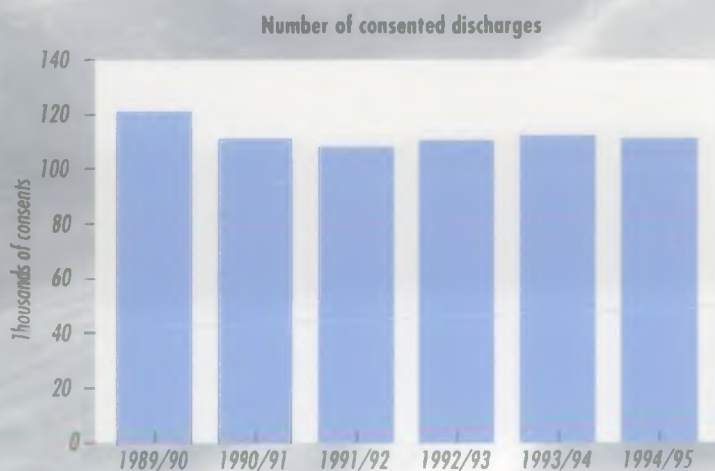
Capital and revenue expenditure





## Water Quality

■ The initial rapid expansion in our workload, particularly in relation to work on EC directives, required an increase in staffing. More recently, a slight reduction has been achieved by introducing a more efficient National Laboratory Service.



### 3. Pressures

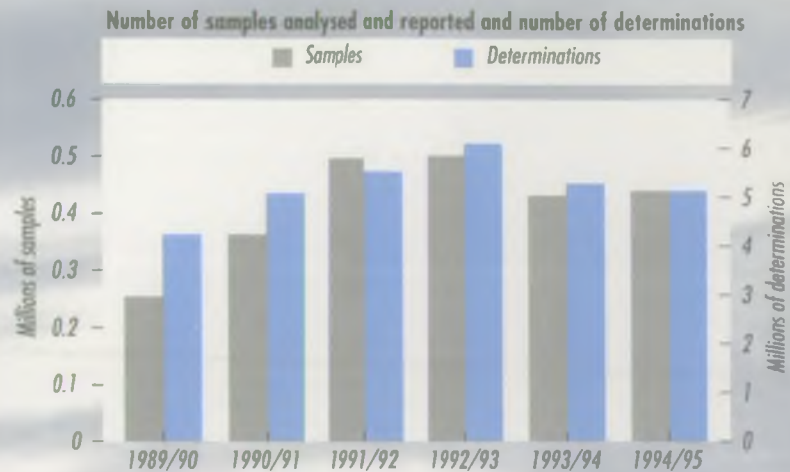
■ The number of consented discharges of effluent to the water environment has decreased slightly after we cleared obsolete consents from our registers. We have enforced conditions in consents to control the levels of pollutants that can be legally discharged into the receiving water. When setting or reviewing conditions we have borne in mind the water quality objectives that are appropriate for the receiving water. Our charging scheme recovers the costs of administering and monitoring consents.

■ The number of reported incidents of pollution has continued to rise, by 33% overall. The NRA has made pollution reporting easier by introducing a national freephone hotline to report suspected incidents. This innovation, together with the general public's greater awareness, has contributed to the increased number of reported incidents. Although the total number of reported incidents has risen, the number of major incidents has fallen significantly, this trend is shown on page 9.

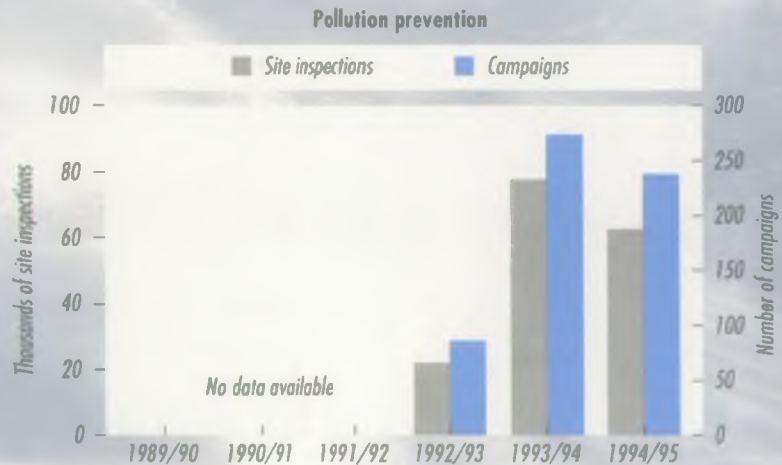
# Water Quality

## 4. Activities

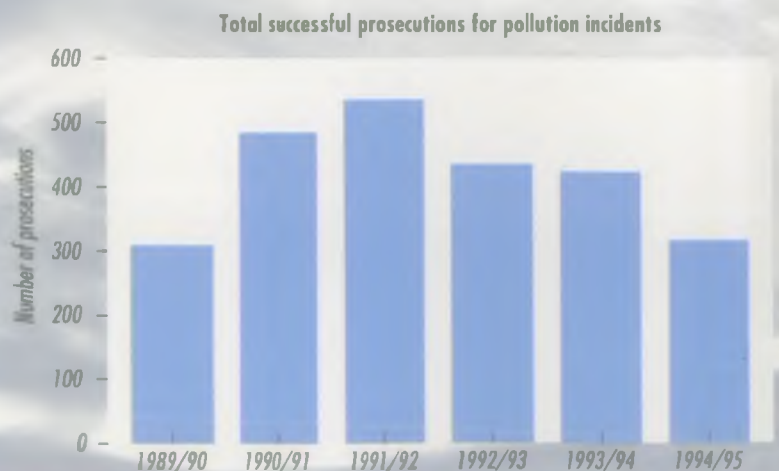
Environmental and discharge monitoring involves millions of analyses each year. The increasing workload over the first four years peaked in 1992/93 and is now decreasing. This is due to the implementation of a more effective national sampling programme and the greater use of automated systems, many of which have been developed as a result of NRA initiatives.



The NRA firmly believes that prevention is better than cure. In recent years we have carried out over 200 000 site visits to inspect premises and advise on pollution prevention measures. We have also carried out over 500 publicity campaigns to inform people on how to minimise the risk from potentially polluting activities and substances.

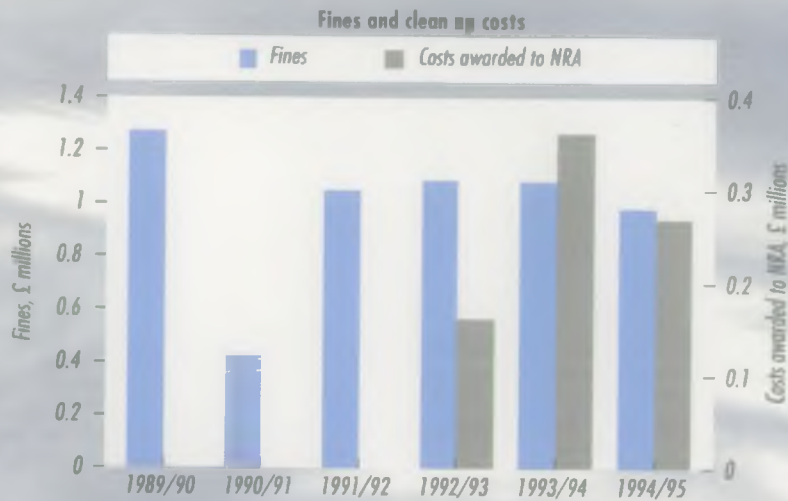


The NRA has always prosecuted polluters where this is appropriate. Prosecution is looked upon as being a very serious outcome. It has no doubt acted as a deterrent both by giving unwanted publicity and from the financial burden of fines and clean up costs awarded against offending companies and individuals. Fewer prosecutions have been carried out in later years as the number of serious pollution incidents has been reduced, due to the effort put into pollution prevention.

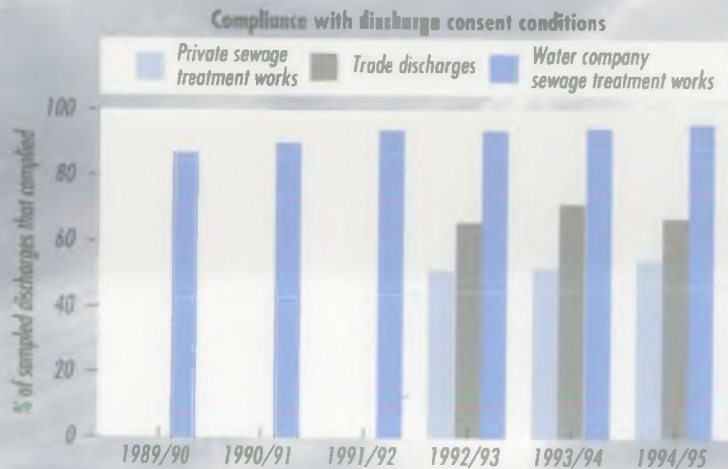




## Water Quality

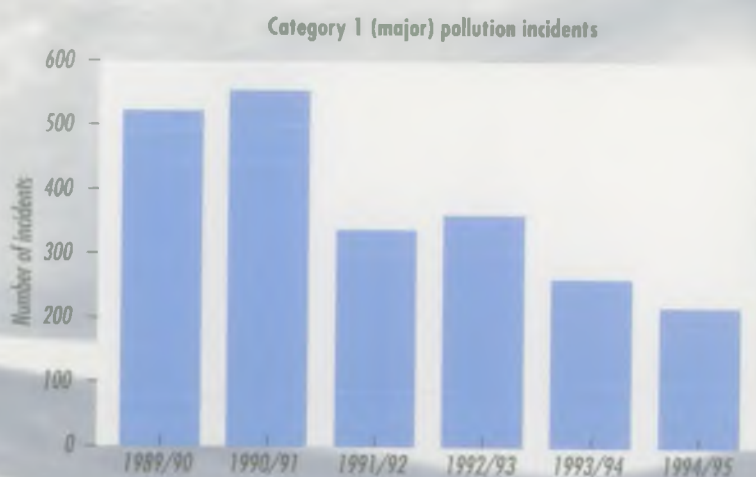


■ Polluters have been made to pay for the damage they caused. The courts have imposed total fines of around one million pounds each year. In addition, the NRA can recover the costs of clean up operations after pollution incidents. Since regular monitoring began in 1992, awards for clean up costs have in some cases exceeded the value of the fine.



### 5. Ongoing improvements

■ Water companies have maintained improvements in compliance. Compliance with discharge conditions at their sewage works has improved from a rate of 87% in 1989 to 96% in 1994/95. Trade effluent and private discharges appear to comply less often since a single exceedance is counted as a failure for these groups. Water company sewerage works must comply with two limits: an absolute limit, which the works must always comply with and a 95 percentile limit, which the works can fail on 5% of its samples.

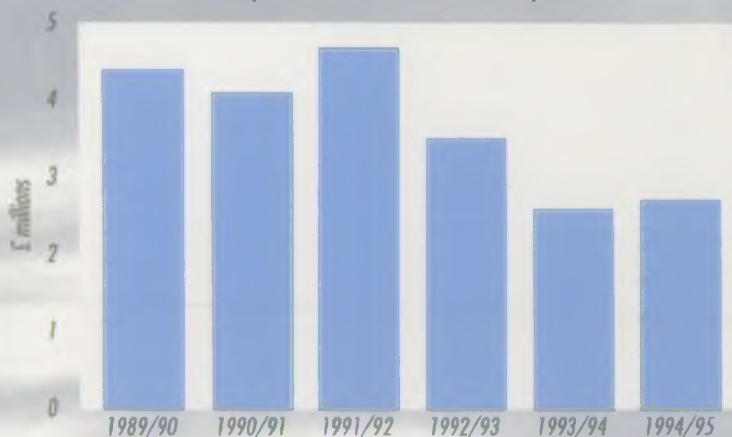


■ There are now 60% fewer major pollution incidents compared to 1989, though more incidents in total are being reported. The strong commitment of the NRA to preventing pollution before it occurs and greater awareness from the public, industry and agriculture has helped in this success.

## Water Quality

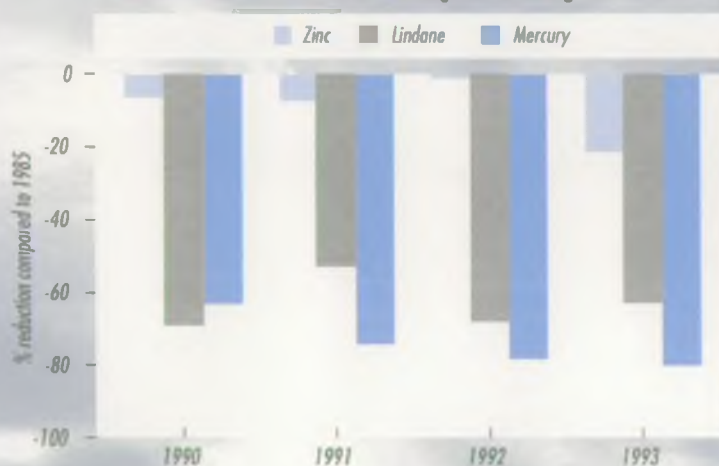
■ In total, we have spent over £21m on research into providing better solutions for monitoring, protecting and improving water quality. Our spending on Water Quality research has followed a downward trend, from 9% to 3% of annual Water Quality expenditure. However, more work is being done, by jointly funding research projects with other organisations.

Expenditure on Research & Development



■ Compared to baseline loads in 1985, some clear trends in the amounts of pollutants entering our coastal waters have emerged. There have been substantial reductions in loads for mercury and cadmium and some reductions in the loads of copper, lead, chromium and lindane. The exception is zinc, for which inputs have not yet been significantly reduced.

Reductions in contaminants entering the sea (England & Wales)

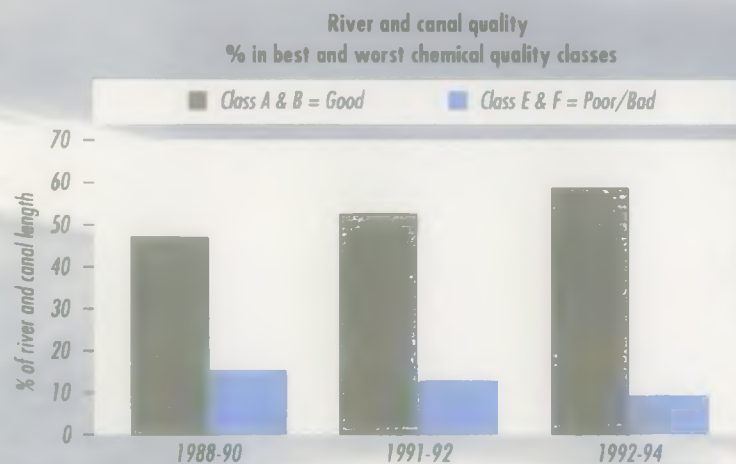




## Water Quality

### 6. The status of Water Quality

Water quality in our rivers and canals has improved as a result of the closure of polluting industries and improved effluent treatment. Improvements in chemical quality have occurred along 26% of the river and canal length in England and Wales. The length of good quality rivers and canals rose from 45% to nearly 60%. The length of watercourses with the poorest water quality has been reduced from 15% to less than 10%.



Coastal water quality has improved as water companies have completed sewerage and sewage treatment improvements. There has been a steady upward trend in the number of bathing waters complying with the quality standards set down in the EC Directive on Bathing Waters. In the seven bathing seasons shown in the graph, the number of beaches with compliant bathing water has risen by 18% to 89% of the total.

# Water Resources

## 1. Aims

■ *"To manage water resources to achieve the right balance between the needs of the environment and those of the abstractors."*

### The scope of the task

Daily use of water (Ml = millions of litres)

- Public water supply 17 500 Ml
- Power generation 33 500 Ml
  - Industry 5 500 Ml
  - Agriculture 500 Ml
  - Other uses 5 000 Ml

### Managing the resource

- Continuous flow measuring stations ~ 1 200
  - Rainfall gauges in operation ~ 900
  - River flow measurements taken ~ 25 000/yr
- Groundwater level measurements taken ~ 55 000/yr
  - Abstraction licences in force ~ 50 000

## 2. Resources

■ Water Resources income has varied between £64m and £83m a year, reflecting the size of our capital programme and the number of licences we have had to manage.

Income from abstraction licences



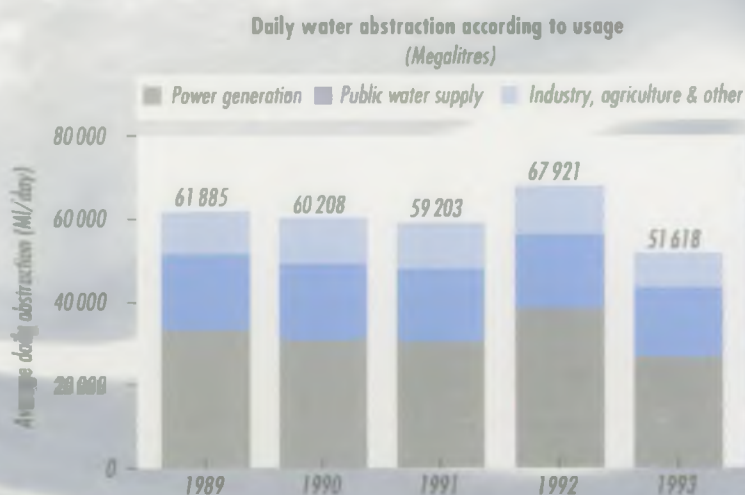
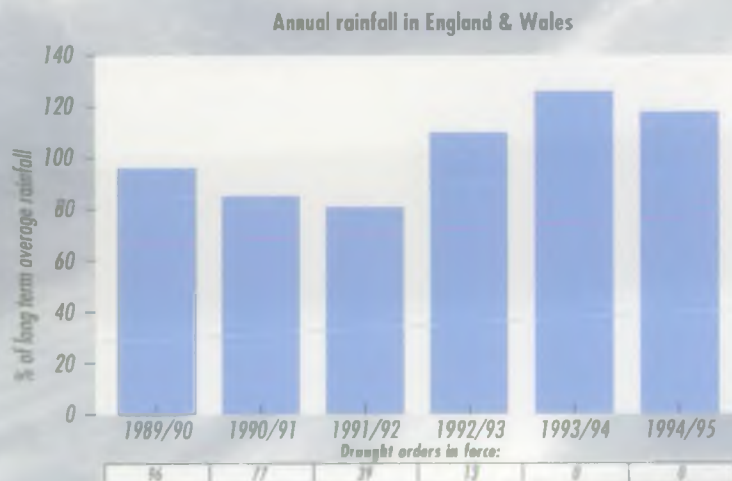
Capital and revenue expenditure



■ Expenditure on Water Resources has varied between £56m and £78m each year. The annual Water Resources capital budget has usually been in the region of £10m and £12m.



## Water Resources



Water Resources staffing has increased to cope with a wider range of tasks undertaken by the function. These extra tasks have included giving advice on the water companies' investment programmes and managing solutions for rivers affected by over abstraction.

### 3. Pressures

During our first three years the rainfall across England and Wales was well below its long term average. In the last three years this trend was reversed, with higher rainfall reducing the pressure on water resources. This is reflected by a drop in the number of drought orders that have been in place over the six year period. This graph covers the period up to April 1995, before the onset of the 1995 drought.

The pressures put on water resources by abstraction have remained high although water use by individual sectors has varied.

# Water Resources

## 4. Activities

■ The number of abstraction licences enforced by the NRA has remained constant. We have determined between one and two thousand new licence applications every year. The total number in force did not increase since many old licences were revoked. Licences have provided us with an important means of managing the pressures placed on the environment by water abstraction.

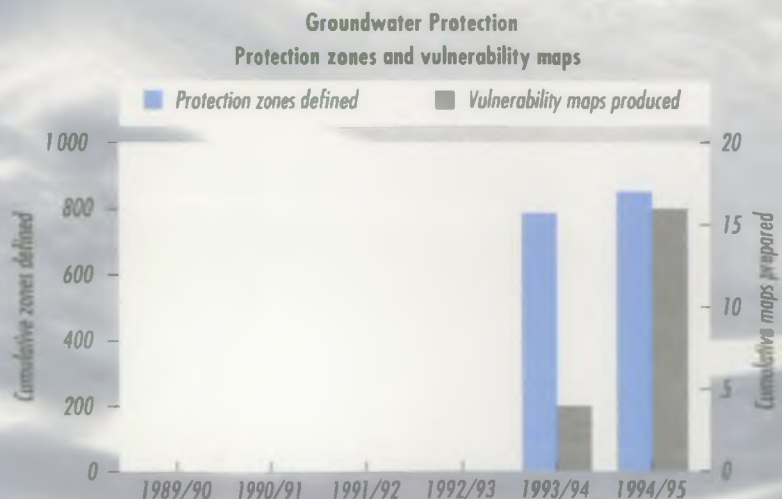


■ Our highly critical and critical licence inspection activity has risen by 500%, to meet our policy requirement of monitoring the most sensitive abstractions at least once a year. We have aimed to rigorously enforce the conditions set down in the licences.



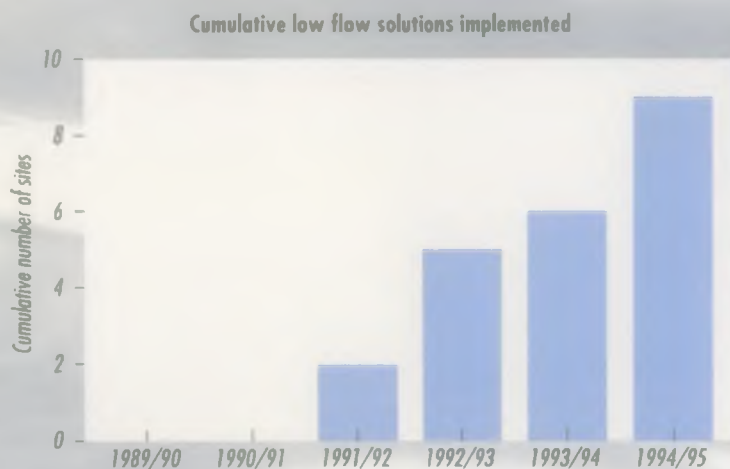
## 5. Ongoing improvements

■ Groundwater has received added protection. We have defined some 850 groundwater protection zones, covering many important groundwater abstraction points. In addition, 16 out of a total of 53 groundwater vulnerability maps have been prepared.

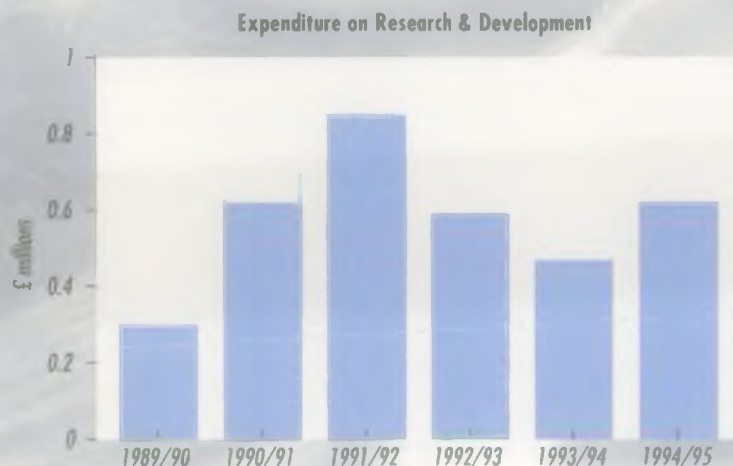




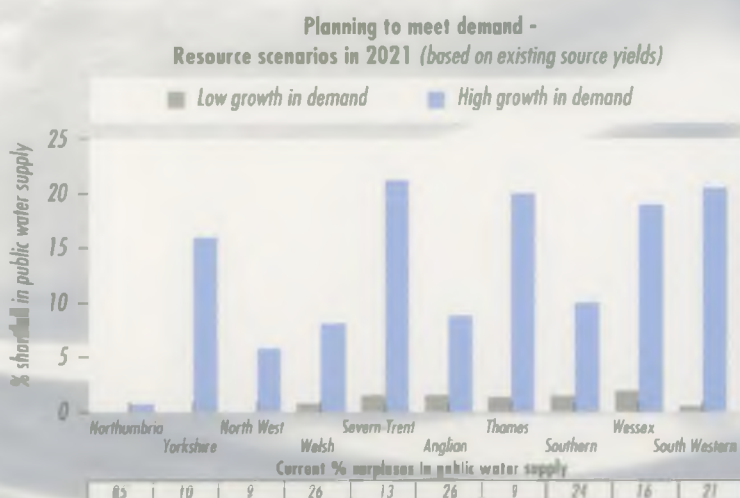
## Water Resources



■ We have restored river habitats that were affected by over abstraction. The NRA identified a priority list of 40 low flow sites. Of the original top 40, eight are now fully implemented (plus one other not in the original list), a further eight have solutions under way, ten have an identified solution, six have ongoing investigations and eight have been identified as no longer being an abstraction problem.



■ Research has been carried out into many aspects of managing our water resources. Around 1% of annual Water Resources expenditure is spent on research. Since 1989 a total of £3.5m has been spent on projects that have supported the NRA's business objectives in areas such as modelling the behaviour of groundwater in aquifers and predicting changes in the availability and demand for water resources.



### 6. The status of Water Resources

■ On average, most regions currently have enough water resources to meet the demands for public water supply. The NRA's Water Resources Development Strategy suggests that this will change by 2021. Failure to manage demand could lead to unnecessary pressures on our water resources.

# Flood Defence

## 1. Aims

- "Provide effective defence for people and property against flooding from rivers and the sea."
- "Provide adequate arrangements for flood forecasting and warning."

## 2. Resources

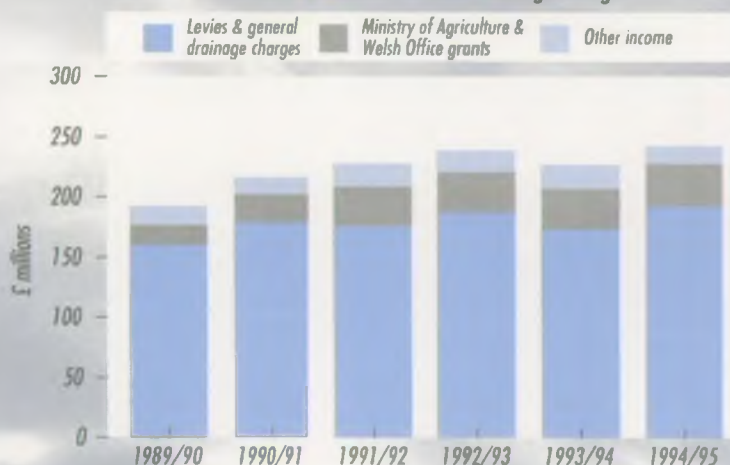
- Around 75% of our Flood Defence income comes from levies on Local Authorities and general drainage charges. The amounts collected each year have varied according to the size of the capital programme. Government grants, from the Ministry of Agriculture, Fisheries and Food (MAFF) and the Welsh Office, have risen from £17m to £35m.

- Revenue and capital spending have both risen. Total expenditure on Flood Defence has increased by 40% since 1989/90. Spending on capital projects has been maintained at around 50% of total Flood Defence expenditure.

### The scope of the task

- Area of unprotected floodplain 850 000 ha
- Land area protected by defences 1 200 000 ha
- Length of NRA main river defences ~ 36 000 km
  - Length of NRA sea defences ~ 805 km
- Number of properties protected 850 000
- Number of people protected > 2 000 000

Income from Levies and General Drainage Charges



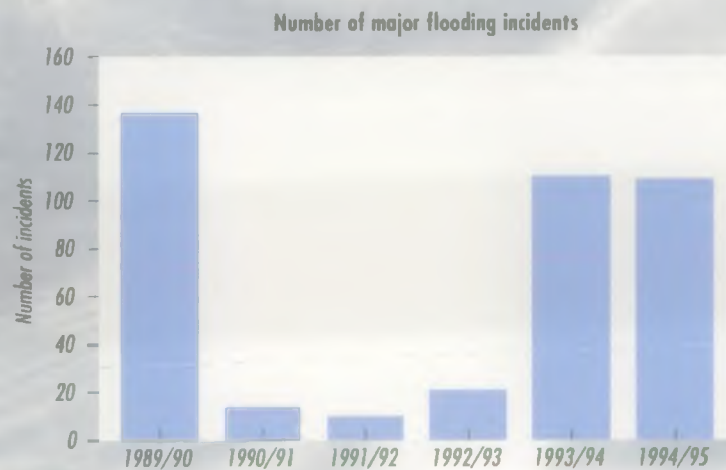
Capital and revenue expenditure





## Flood Defence

Flood Defence staffing has decreased by 13%. We have improved our efficiency and productivity and maintained our operational capabilities.



### 3. Pressures

Flooding incidents highlight the need for improved flood warning systems and also indicate priorities for new and improved flood defences. Severe weather conditions are the most common cause of flooding.

### 4. Activities

Preventing development in areas of high flood risk is better than curing the effects of flooding. We have offered advice on flood risk for up to 100 000 planning applications each year. From 1992/93 onwards, applications which we reviewed and decided to give no comment on were not counted in this statistic.

## Flood Defence

- The number of consents granted for proposed works that could impact on flood defences has risen by more than 50%.

Number of land drainage consents determined



- Each year we maintain many thousands of kilometres of flood defences.

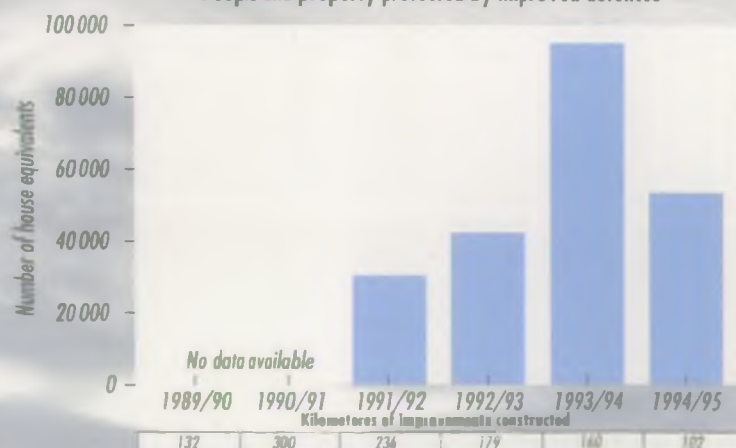
Length of flood defences maintained (km)



### 5. Ongoing improvements

- In the past four years we have built over 1 100 kilometres of new or improved flood defences. Property equivalent to over 200 000 houses has received improved flood protection as a result.

People and property protected by improved defences

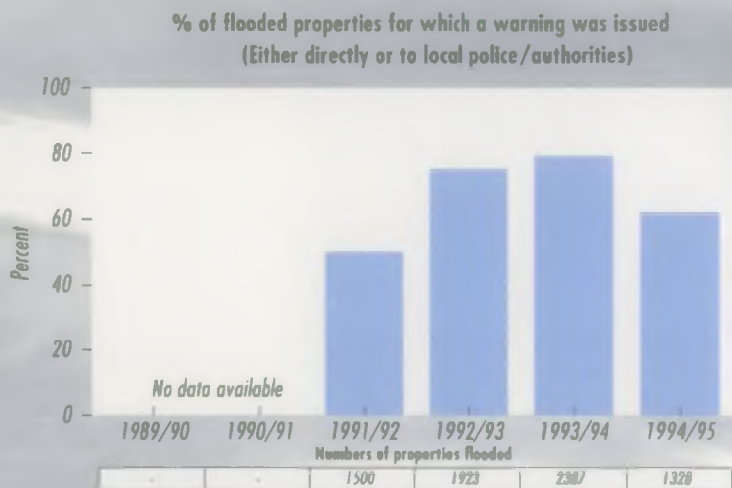


Kilometers of improvement constructed

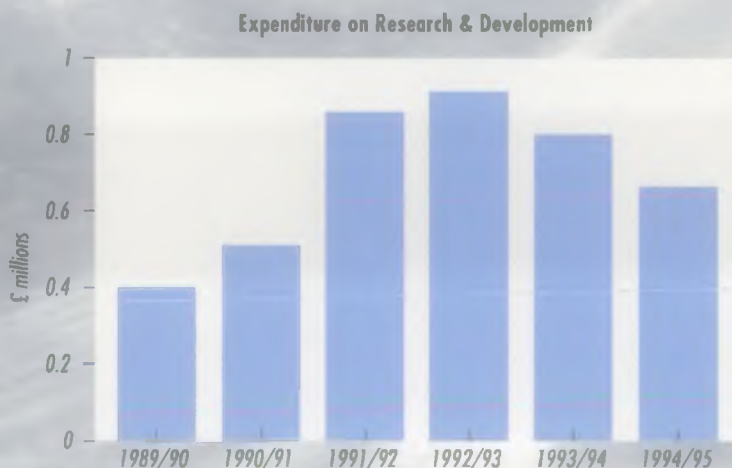
132	300	236	179	160	102
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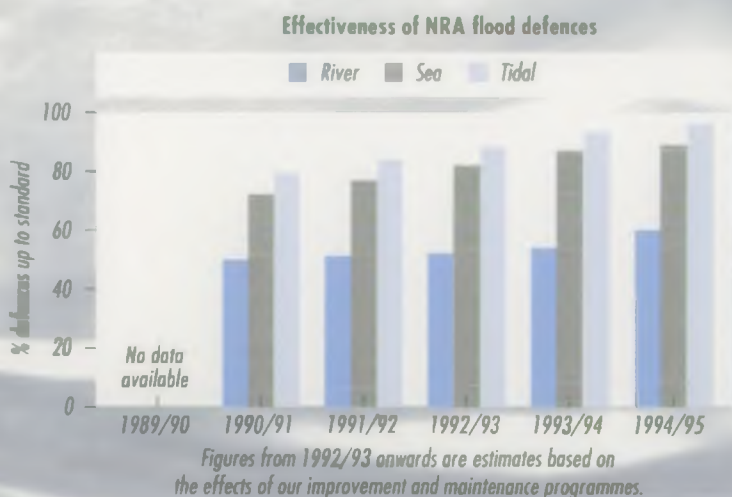
## Flood Defence



Each year, a small percentage of the properties protected by NRA defences do suffer from flooding. However, when flooding has threatened, we have issued advance warning, either directly to those under threat or to third parties such as the local police. Our warnings have been most effective in areas served by our flood warning networks.



A total of £3.5m has been spent on Flood Defence R & D. Research has supported the NRA's strategic and operational work, and produced supporting documents such as design guidelines, flood forecasting and emergency repair techniques.



### 6. The status of Flood Defences

The standard of NRA flood defences has improved. Our maintenance and improvement programmes have increased the effectiveness of our flood defences next to rivers, the sea and in tidal areas.

# Fisheries

## 1. Aims

- "To maintain, improve and develop fisheries."

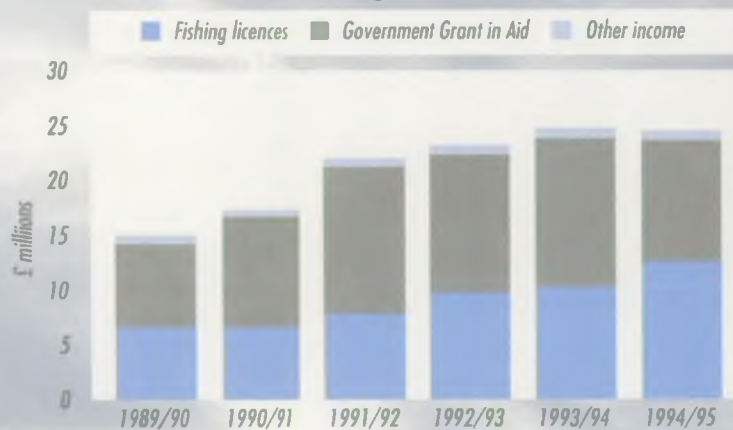
### The scope of the task

- Number of native species of freshwater and estuarine fish > 50
- Number of introduced species of freshwater fish > 10
- Length of river fisheries > 19 000 km
- Length of canal fisheries > 2 000 km
- Number of stillwater fisheries 15 000
- Area of coastal waters 3.6 million ha
  - Number of prosecutions for Fisheries offences ~ 5 000/yr
- Number of angling licences sold ~ 1 000 000/yr
- Number of netmen licensed ~ 3 500

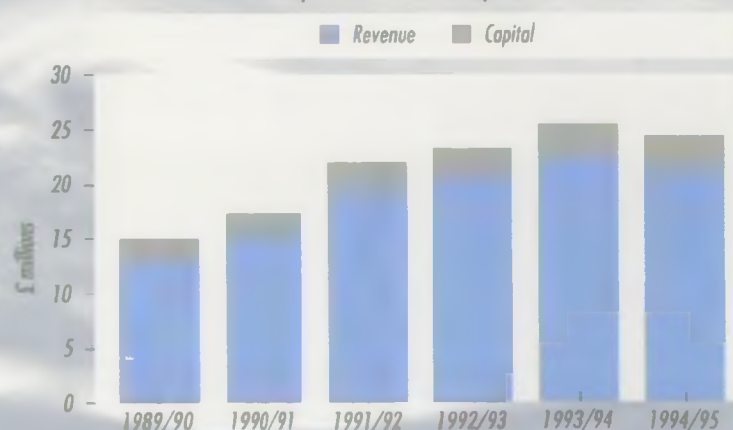
## 2. Resources

- The income we have raised from fishing licence sales has increased by 87% since our formation. Government Grant in Aid has also increased, by 46%. The contribution to total income from charging schemes has risen by 15% while the Government grant contribution has fallen by 10%.

Income from fishing licences and Grant in Aid



Capital and revenue expenditure

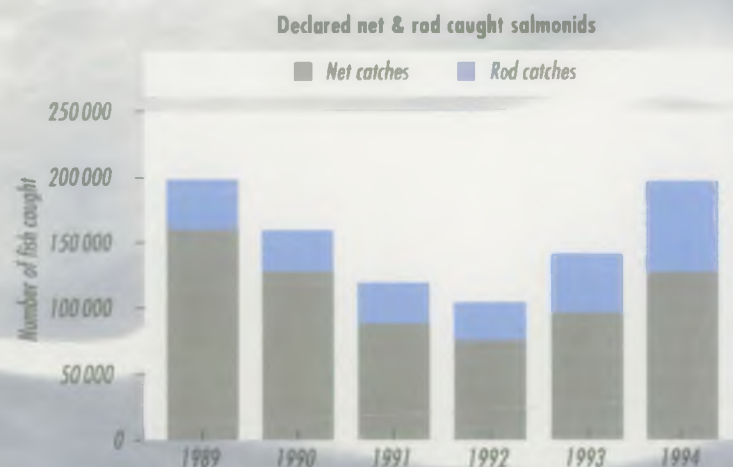
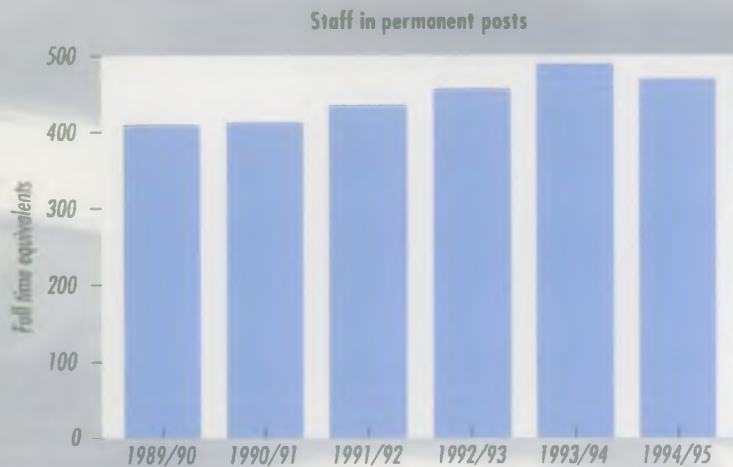


- Fisheries expenditure has increased by 62% since our first year of operation. The reduction in expenditure that occurred in 1994/95 was due to a reduction in Grant in Aid in this year.



## Fisheries

■ We have carried out more Fisheries work every year and this has resulted in a steady increase in Fisheries staffing up until 1994/95 when staff numbers decreased slightly.



### 3. Pressures

■ The NRA has sold around one million licences a year. Up until 1992 anglers often bought several licences for different regions. From 1992 this has not been necessary as we introduced national licences. Following their introduction, sales of national licences have increased by 16%.

■ The declared catch of salmonid fish was in decline during the first three years but since then it has been increasing. Our work has been aimed at allowing rod and net fishermen to catch fish without causing long term damage to fish stocks.

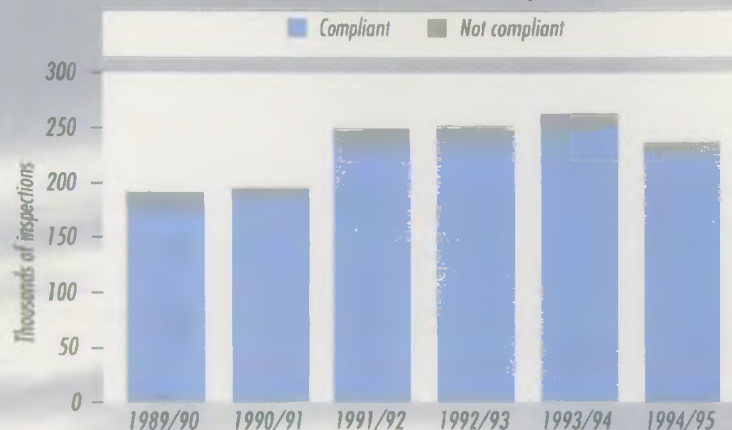
## 4. Activities

There has been an upward trend in the number of licence inspections that we carry out. We now check around one quarter of all the licences that are sold. Several thousand cases of fishing without a licence are detected each year.

We increased the number of prosecutions that were brought against licence offenders by 83% in the first four years but this has levelled in recent years. By carrying out prosecutions we have aimed to reduce the rate of licence evasion.

We have rescued more than seven million fish in the six year period. This has in part been achieved by our rapid attendance at pollution incidents and reports of fish kills.

Rod and commercial licence inspections



Number of successful fishing licence prosecutions



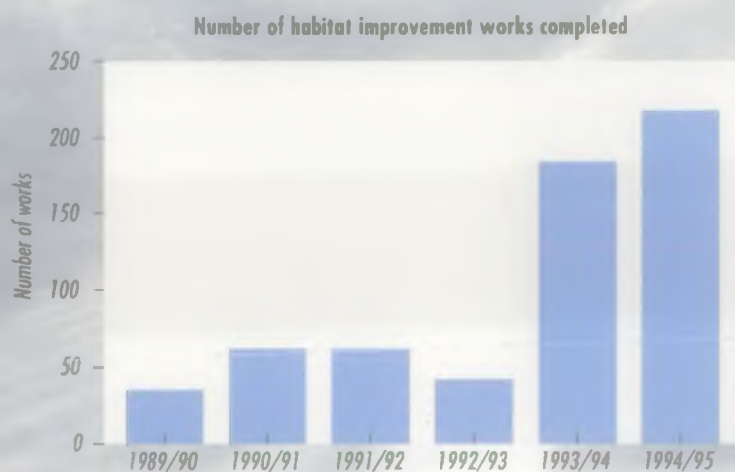
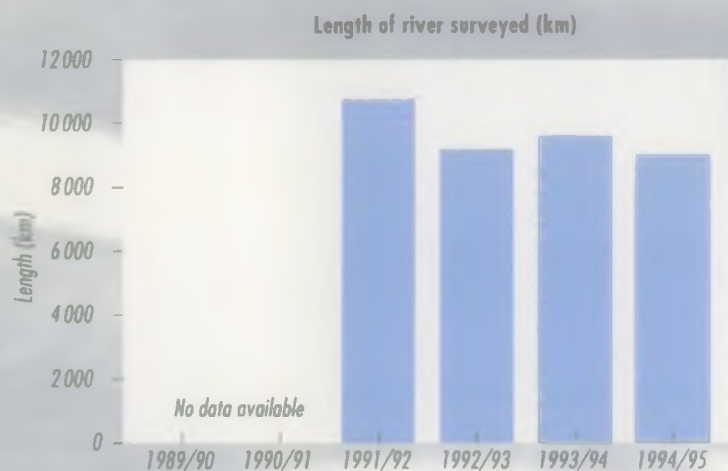
Fish rescued at reported fish kills





## Fisheries

■ We have surveyed over 8500 km of fishery in every year since 1991. This means that each stretch of fishery in England and Wales is surveyed approximately once every three years.



### 5. Ongoing improvements

■ We have improved river habitats to allow more fish to breed and survive. The number of habitat improvements we carry out has increased to over 200 a year.

■ The NRA has stocked over 27 million salmonid and over 8 million coarse fish in total. By doing this we have helped maintain and reinstate healthy fish populations in many rivers.

## Fisheries

A total of almost £2.8m has been spent on Fisheries R & D. Research has supported our business needs by looking at issues such as methods for assessing fish stocks, critical factors limiting coarse fish populations and the effectiveness of different stocking strategies.

### 6. The status of Fisheries

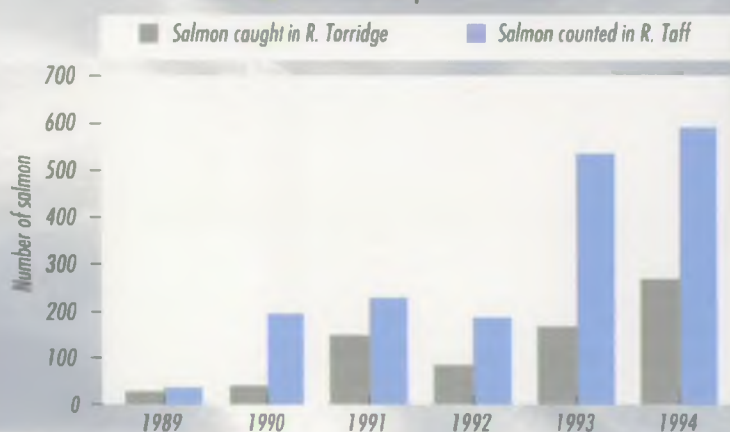
Salmon have increased in abundance in some rivers where stocks had depleted. The rivers Torridge and Taff are good examples of where our work in fish stocking and improvements in water quality have helped this type of recovery.

Excellent and good quality coarse fish stocks have been found along greater lengths of the rivers in Anglian region, where our most detailed surveys are carried out. In the future we aim to have accurate figures on coarse fish stocks across all of England and Wales.

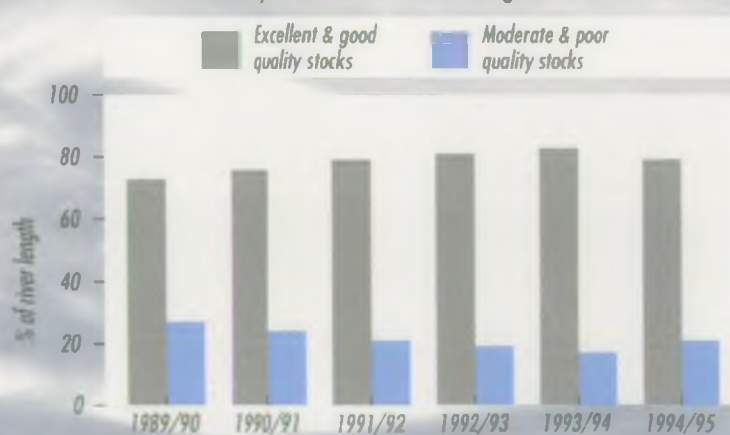
Expenditure on Research & Development



Return of salmon to depleted fisheries



Quality of coarse fish stocks in Anglian rivers





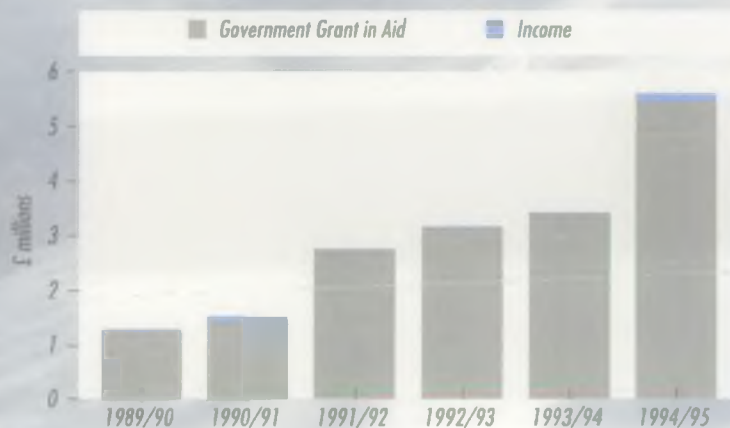
## 1. Aims

“Conserve and enhance wildlife, landscape and archaeological features associated with inland and coastal waters of England and Wales.”

### The scope of the task

- Areas of Outstanding Natural Beauty ~ 2 million hectares
- Environmentally Sensitive Areas ~ 0.8 million hectares
- Sites of Special Scientific Interest ~ 1 million hectares
  - Number of River SSSIs (inc proposals) 28
  - Length of River SSSIs (inc proposals) 1293 km

Income from charges and Grant in Aid



Capital and revenue expenditure



## 2. Resources

Nearly all of our income for specific conservation work comes from Government Grant in Aid. This has increased by 400% over the six year period.

Grant in Aided Conservation expenditure has followed an upward trend. However, this does not represent our total spending on Conservation. Projects carried out by our other functions incorporate work that benefits conservation and, depending on the number of projects in a year (see graph later in this section), our total Conservation expenditure can reach £20m. This extra expenditure is provided by other charging schemes.

## Conservation

- Staffing has increased by over 200% to cope with the greater amounts of conservation work that we have carried out to fulfil our statutory duties.

### 3. Pressures

- The amount of conservation advice that we provide on planning applications has increased by around 700%. This has allowed us to prevent many potentially harmful impacts on the conservation value of our inland waters.

### 4. Activities

- We increased the amount of river survey work carried out by nearly 200% in the first four years. The amount we survey has since levelled to around 15% of all the rivers in England and Wales each year. This work has improved our understanding and protection of river habitats.

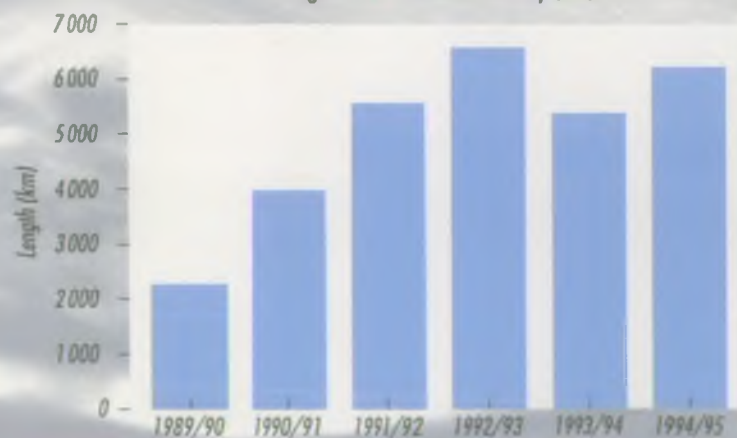
Staff in permanent posts



Planning applications screened for impacts



Length of river corridor survey (km)

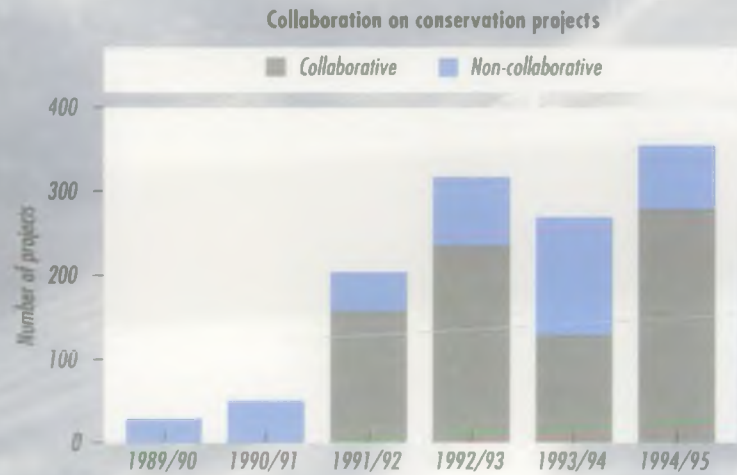




## Conservation

### 5. Ongoing improvements

■ We have included conservation improvements in over 2 300 of the capital projects carried out by our other functions.



■ By working with others, the number of conservation projects that we have completed each year has followed an upward trend. In total we have completed over 1 200 projects. Collaboration has maximised the effectiveness of the money we spend to benefit conservation.

## Conservation

■ We have spent just under one million pounds on Conservation research. We have collaborated on projects with our other functions and with external organisations. A major output has been the development of procedures to carry out river corridor surveys. These are widely used by external conservation groups as well as by the NRA.

### 6. The status of Conservation

■ The conservation value of river habitats has improved. Surveys in Wales have shown that otters, key indicators of good quality river habitats, have become more widespread. When the results of an otter survey in England are published, a similar trend is expected.

Expenditure on Research & Development



Welsh river stretches with otter presence





# Navigation

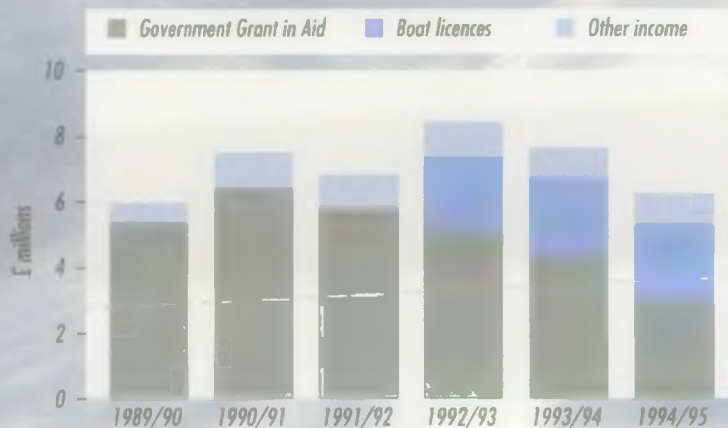
## 1. Aims

■ *"Improve and maintain inland waters and their facilities for use by the public where the NRA is the navigation authority."*

### The scope of the task

- Total length of navigable inland waterways > 40 000 km
- Number of boats on inland waterways > 100 000/yr
  - Length of NRA navigations 806 km
  - Number of boats on NRA navigations ~ 40 000

Income from boat licences and Grant in Aid



Capital and revenue expenditure



## 2. Resources

■ Funding for Navigation initially rose but has subsequently declined. Since 1992 the NRA has been able to retain income from boat licence sales. Despite above inflation increases in licence charges, there has only been a limited increase in this income stream. Government grants have been reduced over the same period.

■ After an initial upward trend, total spending on Navigation has been curtailed in recent years due to declining Government Grant in Aid. However, capital spending on locks and other physical improvements has been maintained at around 40% of total expenditure.

## Navigation

- The initial high level of staffing for Navigation was due to seasonal workers being classified as full time. From 1991 we have used a more accurate measure of manpower. Since then the number of full time Navigation staff has remained constant.

### 3. Pressures

- Around 40 000 boats were licensed to use NRA navigations each year. The number of licences we have sold each year has followed a slight downward trend. This decline in boating activity may be related to the overall economic climate. We have recently undertaken research to investigate the reasons more closely.

### 4. Activities

- In recent years the number of boats we have inspected for valid licences has doubled. As a result, the number of invalid licences found has fallen by 90%.

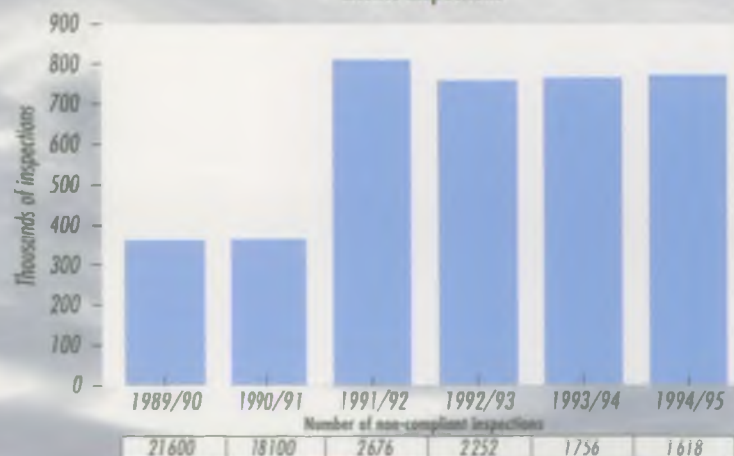
Staff in permanent posts



Number of licensed craft



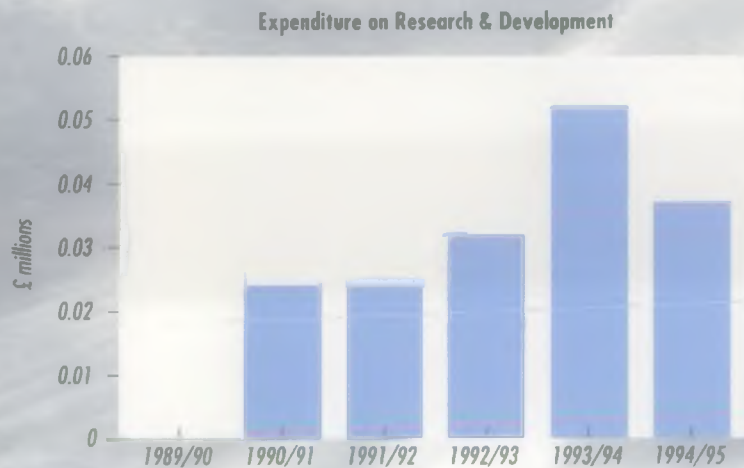
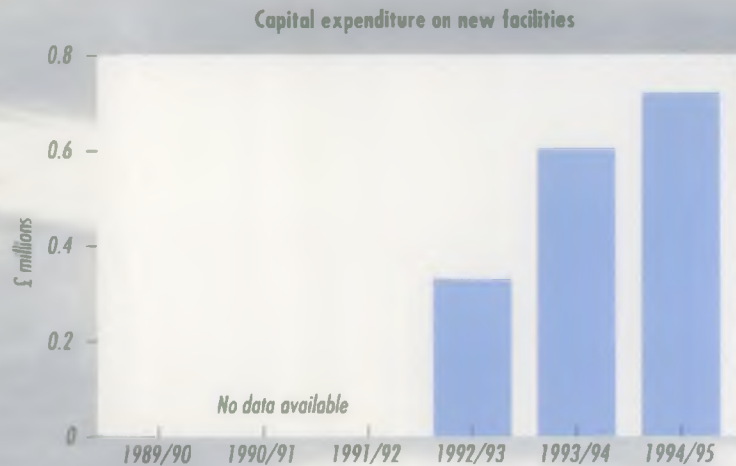
Licence inspections





### 5. Ongoing improvements

■ We have provided new and improved facilities for users of our navigations. The amount spent on capital projects for new facilities has followed an upward trend.



■ Research for our Navigation and Recreation functions has formed our smallest research programme. We have concentrated on assessing the opinions and requirements of particular user groups and in developing environmentally sensitive approaches for navigation maintenance.

# Recreation

## 1. Aims

■ *"Develop the amenity and recreational potential of inland and coastal waters and associated lands."*

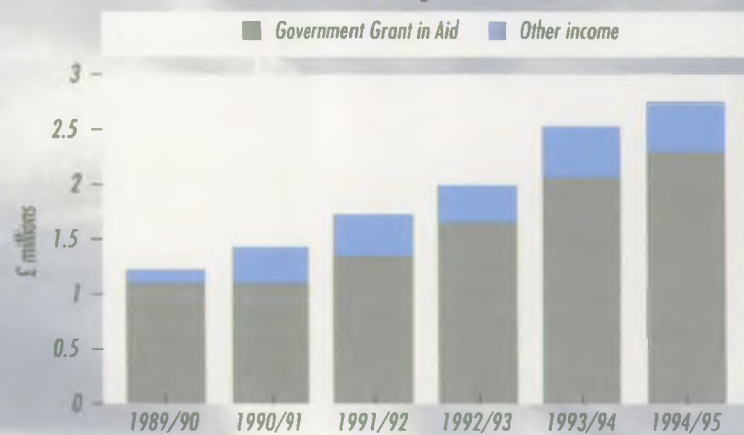
### The scope of the task

- Number of boats on inland waterways > 100 000/yr
  - Number of licensed anglers ~ 1 million/yr
- Number of watersports participants ~ 6.8 million/yr
  - Number of canoeists ~ 800 000/yr
- Number of recreational walker visits ~ 20 million/yr

## 2. Resources

■ Total income, from both charging schemes and Government Grant in Aid contributions, has risen by over 100% since our creation in 1989.

Income from charges and Grant in Aid



■ Expenditure on Recreation has followed the same upward trend as income. Spending on both day-to-day activities and capital projects has increased to improve our services for recreation. Additional Recreation work is funded directly by our other functions in fulfilment of their duty to take account of recreational needs.

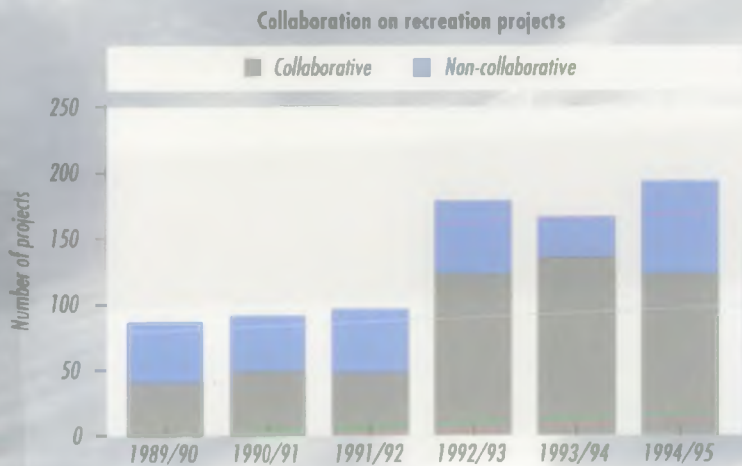
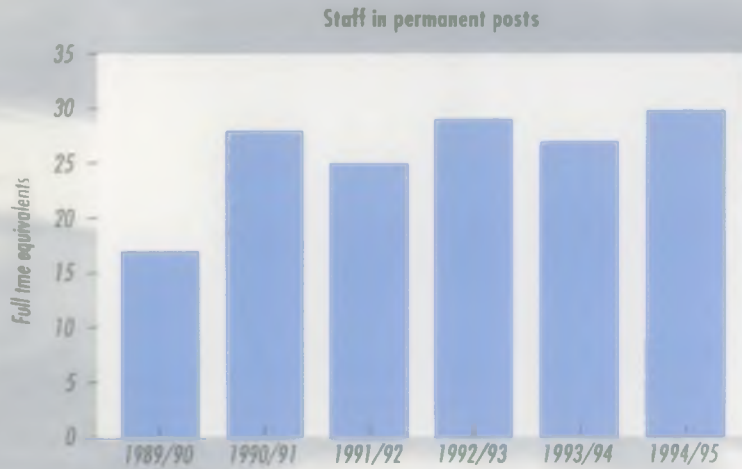
Capital and revenue expenditure





## Recreation

■ The numbers of Recreation staff have also increased. However, the staff time devoted to Recreation still amounts to less than 0.5% of our total manpower.



### 3. Ongoing improvements

■ We have worked in partnership with others, using joint funding opportunities to maximise the benefits we have provided for recreation. In total, the NRA has completed more than 800 recreation projects, with over 500 of these done jointly with others.

### **Abstraction**

Whenever water is taken from lakes, reservoirs, rivers or the ground this is called abstraction. If significant amounts of water are to be abstracted then a licence must be applied for to the NRA. The people who take the water are known as abstractors and they are charged fees for their abstraction licence.

### **Catchment Management Planning**

A catchment is an area of land whose water drains into a particular river. The NRA prepares consultation documents and plans to manage all the activities in a catchment so that the needs of different river users are considered.

### **Charging for Discharges**

This is a scheme developed by the NRA to charge people who discharge effluent (waste water) into the water environment. The amount charged depends on the type and amount of waste and the water that is being discharged into.

### **Consents**

Certain activities that affect rivers or flood defences cannot be carried out unless the NRA has granted a consent. The consent describes conditions which must be followed when the activity is carried out. These conditions are designed to protect the environment without preventing the activity from taking place.

### **Department of the Environment (DoE)**

The NRA is sponsored by the Department of the Environment and receives Grant in Aid funding from it.

### **Expenditure**

We refer to capital and revenue expenditure. Capital expenditure is money we spend on a one-off basis, either to improve existing or to buy new assets. Revenue expenditure is money we spend on a regular basis to carry out our activities or to maintain our assets.

### **Full time equivalent**

This is used by the NRA to measure how many staff work in each function. If two people spend half of their time working in Conservation then we would count this in the Conservation staffing figures as one full time equivalent.

### **Grant in Aid**

This is Government money received each year by the NRA from the Department of the Environment. It is used to pay for some of the work we do in Water Quality, Fisheries, Conservation, Navigation and Recreation.

### **Hectare (ha)**

This is a measure of area. One hectare is the same as two and a half acres.

### **House equivalent**

The value of all property, land and infrastructure that is protected by our flood defences is assessed by comparison to the "average house". This value, expressed in house equivalents, measures how much protection the defences give.

### **Megalitre (Ml)**

This is a measure of volume equal to one million litres or 220 000 gallons.

### **Ministry of Agriculture, Fisheries and Food (MAFF)**

The NRA receives grants from the Ministry to help pay for some of the work it does in Flood Defence.

### **Welsh Office (WO)**

The NRA receives grants from the Welsh Office to help pay for some of the work it does in Flood Defence in Wales.



**HEAD OFFICE**

Rivers House  
Waterside Drive  
Aztec West  
Almondsbury  
Bristol  
BS12 4UD  
Tel: 01454 624 400  
Fax: 01454 624 409

**ANGLIAN**

Kingfisher House  
Goldhay Way  
Orton Goldhay  
Peterborough PE2 5ZR  
Tel: 01733 371 811  
Fax: 01733 231 840

**NORTHUMBRIA & YORKSHIRE**

Rivers House  
21 Park Square South  
Leeds LS1 2QG  
Tel: 0113 244 0191  
Fax: 0113 246 1889

**NORTH WEST**

Richard Fairclough House  
Knutsford Road  
Warrington WA4 1HG  
Tel: 01925 653 999  
Fax: 01925 415 961

**SEVERN-TRENT**

Sapphire East  
550 Streetsbrook Road  
Solihull B91 1QT  
Tel: 0121 711 2324  
Fax: 0121 711 5824

**SOUTHERN**

Guildbourne House  
Chatsworth Road  
Worthing  
West Sussex BN11 1LD  
Tel: 01903 820 692  
Fax: 01903 821 832

**SOUTH WESTERN**

Manley House  
Kestrel Way  
Exeter EX2 7LQ  
Tel: 01392 444 000  
Fax: 01392 444 238

**THAMES**

Kings Meadow House  
Kings Meadow Road  
Reading RG1 8DQ  
Tel: 01734 535 000  
Fax: 01734 500 388

**WELSH**

Rivers House/Plas-yr-Afon  
St Mellons Business Park  
St Mellons  
Cardiff CF3 0LT  
Tel: 01222 770 088  
Fax: 01222 798 555



*The NRA is committed to the principles of stewardship and sustainability. In addition to pursuing its statutory responsibilities as Guardians of the Water Environment, the NRA will aim to establish and demonstrate wise environmental practice throughout all its functions.*

