

**NRA
INTERNAL
ENVIRONMENTAL
POLICY**

**1995
ENVIRONMENTAL
REPORT
ANNEXES**

NOVEMBER 1995





ENVIRONMENT AGENCY

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REGIONAL REPORTS

| REGION | PAGE |
|-----------------------------|------|
| ANGLIAN | A.2 |
| NORTHUMBRIAN AND YORKSHIRE | A.8 |
| NORTH WEST | A.13 |
| SEVERN TRENT | A.22 |
| SOUTHERN | A.25 |
| SOUTH WESTERN | A.31 |
| THAMES | A.38 |
| WELSH | A.50 |
| NATIONAL LABORATORY SERVICE | A.71 |

A.1

ENVIRONMENT AGENCY



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ENVIRONMENTAL REPORT 1994/5 - ANGLIAN REGION

1. Introduction

Anglian Region covers 10,500 square miles (a fifth of England and Wales) with 3,589 miles of fluvial main river, 791 miles of embanked fluvial watercourses and 842 miles of tidal estuary and sea defences.

In 1994/5 the Region held a budget of £81 million and employed 1,100 people.

The main responsibilities of the region are:-

The management of water resources to meet demands of all kinds, both for abstraction and in the river.

Maintaining and improving water quality in rivers, estuaries and coastal seas, granting consents for discharges to the water environment, monitoring water quality and pollution control.

The general supervision of flood defences and carrying out works on main river and sea defences.

The maintenance, improvement and development of fisheries in inland waters including licensing, restocking and enforcement functions.

Furthering the conservation of the water environment and protecting its amenity.

The provision and maintenance of recreational facilities on rivers under its control.

The region has its operational headquarters at Peterborough. This is the centre for its policy, administrative, financial, computer and high technology facilities which support the day to day operational activities in the field.

There are three operational areas in the region - Northern, Central and Eastern with area offices in Lincoln, Brampton and Ipswich respectively. These area offices, in addition to performing an operational role, also co-ordinate the activities of catchment offices within each of their individual areas. The catchment offices provide the regional unit with a localised presence.

2. **Regional General Manager's Report**

During 1994/5 the region continued to have a higher workload than its geographical area represents in the National context of a number of activities. The region is host to three National centres and a National Information Systems Group. The region also undertakes Personnel, Finance, Purchasing and Payroll work on behalf of the National Laboratory Service. We also operate the Payrolls for Severn Trent, Head Office and the new Agency. The region also collaborates on a wide range of Public Relations issues on a National basis. All of these activities use the region's resources and add to the region's environmental impact.

3. **Environmental Management**

The environmental policy is communicated to all staff from the Regional Management Team, to functional Management Teams and Area Management Teams which in turn cascade information to all employees. Team Brief and Streamline are also fully utilised as a means of communication. The region also has four Environmental Zap Teams, chaired by the Regional Administration Manager at Regional Head Office and by the Area Support Managers at Area level. The implementation and promotion of the policy is co-ordinated by a member of staff reporting to the Regional Finance Manager.

The Regional Co-ordinator has been allocated a budget of £5,000 to implement the policy in the region. It is envisaged that this will be spent on training, promotion and awareness initiatives during 1995/6.

No formal training was undertaken during 1994/5 although full use of the Open Learning Centre was made together with information collected from the Energy Efficiency Office and various environmental and energy management publications.

4. **Environmental Performance**

Identification of Significant Environmental Impacts

Pumping

Due to the region being located in the driest and lowest part of England a major energy requirement is for pumping of water. During 1994/5 12,706,011 KWh of electricity was used for flood defence and water resources pumping purposes.

Land drainage pumping is carried out to ensure that people and property are not flooded and is undertaken as and when necessary to maintain water levels within the ranges required to meet target standards.

Various water resources schemes were implemented during 1994/5 to prevent rivers, wetlands, lakes and springs from drying out and to ensure the availability of water for public supply.

Water Quality

The main water quality responsibilities are pollution control and ensuring the quality of watercourses and groundwaters.

The water quality section has developed a policy of using alternatives to chemicals wherever possible when carrying out its duties and only using oil absorbents which do not have peat as a component ingredient.

Flood Defence

The largest regional activity is that of flood defence.

During 1994/5 120,527 tonnes of rock armour was used, 1.1 km of hard defences and 15 km of earthworks were constructed and 1,300,050 cum of beach nourishment was undertaken in the region.

The material used for rock armour is sourced from Sweden or Norway. The main supplier being the Larvic Quarry in Norway. Rock is transported to site on barges carrying 10,000/20,000 tonnes of rock at a time. The distance involved in importing rock armour from overseas is less than if the rock were sourced from the UK.

During 1994/5 the region was successful in obtaining rock for the Happisburgh/Winterton scheme from a site in Norway which was being cleared to build a leisure complex and would otherwise have been wasted. The work at Happisburgh/Winterton also involved some emergency placement of rock which was later used elsewhere on the coast as part of another flood defence scheme.

The rock used for small stoning projects is obtained from local quarries and transported to site either by barge or road taking into account the environmental impact of each method.

Hard defences are either constructed of steel or reinforced piling, the main supplier for which is British Steel who supply direct to the Authority or via a contractor.

The material used for beach nourishment is obtained from licenced sources as a matter of policy. During 1994/5 Harwich Harbour was dredged for maintenance purposes and the sand removed was recycled via the schemes in Essex and Suffolk. Likewise the sand used for the Hunstanton/Heacham Beach Recharge is recycled on a yearly basis as the tides deposit the sand further along the coast which is then brought back again after the Storm Tide Season. In all cases the environmental impact of beach nourishment is assessed at the source of sand abstraction and the site of the scheme.

All suppliers are screened for their environmental policies and recycling opportunities are utilised wherever possible.

Rock armour and beach nourishment schemes do not produce any waste but schemes using hard defences such as sheet piling can produce waste in the form of left over material. This material is either diverted to other schemes if it has been bought directly by the region or if a contractor has supplied the steel then they are encouraged to recycle it.

The region fully complies with flood defence legislation throughout the planning, consultation, building and post project stages of all schemes and the Engineering Department has worked with various environmental and conservation organisations to preserve the environment and wherever possible to enhance it.

Performance Against Environmental Performance Targets

Buildings - During 1994/5 the region was successful in exceeding the target reduction of 15% for energy used in buildings. The actual reduction in energy use was 31% less than that used in the baseline year of 1991/2. The closure of Aqua House and the Laboratory at Kingfisher House have both been significant factors in this reduction. However, initiatives to reduce energy consumption at Kingfisher House have also been materially helpful eg. window filming, computer fresh air cooling, improved boiler operation and uprating of the Boardroom radiators.

Pumping - The region was successful in exceeding the 15% target reduction in pumping costs for 1994/5. The actual reduction being 56%. The achievement can be attributed to 1991/2 being a drought year when water resource borehole pumps had to operate for long periods and the fact that during 1994/5 we did not experience any very severe flooding which would have necessitated pumping large volumes of water. It should also be noted that the Region has a programme of pump refurbishment and replacement to ensure the optimum efficiency of its pumps.

Transport and Plant - During 1994/5 81% of the badged fleet was diesel powered. The region has a replacement programme for its fleet vehicles and all petrol powered vehicles are replaced by diesel versions if there is an equivalent available. Although there has been a decrease in the number of vehicles in the fleet, fleet vehicles are doing more miles than previously reported. This can be attributed to the client/contractor split implemented during the last financial year.

Water - There has been a 45% reduction in water use against the baseline year figures which can be attributed in part to the closure of Aqua House and the laboratory at Kingfisher House. Additionally conservation measures have included new water efficient taps and enhanced monitoring of consumption.

Waste Minimisation - The target for reduction in use of paper and stationery has been exceeded. This has been possible by limiting the variety of stationery available and by changing to cheaper alternatives. The reduction in paper usage has been achieved by utilising double sided copying wherever possible and employing email for internal correspondence.

Other Targets - It should be noted that neither peat nor tropical hardwoods are used in Anglian Region and that the use of ozone depletors has been phased out. The policy on use of Red and Black List substances has been fully integrated into the Region's procedures, with Red List substances only being used in laboratories under tight control and alternatives to Black List substances are found to ensure that they are not used in the region at all.

Recycling - Paper is recycled wherever possible and arrangements are in place to recycle batteries, tyres, toner cartridges and printer ribbons with initiatives being progressed on the recycling of aluminium cans, bottles and plastic cups. The recycling of corporate clothing has been investigated but a satisfactory solution has not yet been found due to the small amount of clothing involved and the manpower required to remove the NRA logos from each item before it goes for recycling.

5. Compliance

The region has waste transfer agreements with a variety of licenced waste carriers to dispose of general office waste, lighting tubes, laboratory sharpes and sanitary towels.

Trade effluent consents have been granted for Ipswich office which has a laboratory on site and the National Fisheries Laboratory located at Brampton.

The DOE has issued a consent for the sewage treatment works located at Haddiscoe and a consent to discharge for Dog in a Double Sluice.

An application for consent has been requested for Costessey Fish Farm but has not yet been received. Therefore we are self regulating this site and no problems have been experienced.

The region also has licences for the augmentation of the Rivers Sleas and Bourne Eau and the Gwash/Glen transfer scheme.

6. Future Plans

The Regional Management Team has approved a strategy for implementation during 1995/6 which aims to:-

- Raise employee awareness of the Authority's Environmental Policy.
- To promote an interest in environmental issues.
- To establish a resource to promote and co-ordinate the Environmental Policy for the region and to motivate staff to ensure its implementation.
- To implement a programme of environmental impact reduction.
- To initiate a programme of environmental/energy auditing.
- To identify opportunities for recycling.

These aims will be achieved by continued use of Team Brief and Streamline to request assistance and promote initiatives, by the introduction of auditing using best practice principles at NRA locations and by the initiatives progressed by the Environmental Zap Teams.

It is also intended that the Regional Co-ordinator will make contact with local businesses to liaise on best practice for the progression of environmental policy.

**NRA ANNUAL ENVIRONMENTAL REPORT 1994/95
NORTHUMBRIA & YORKSHIRE REGION**

1. INTRODUCTION

1.1 Key Statistics

Northumbria and Yorkshire Region employed 686 staff at 31/3/95 and had a budget of £54.8 million in 1994/95. The Region covers an area of 23384 sq km and a population of 7.9 million.

The length of fluvial main river in the region is 3295 km. The length of classified river, canal and estuary is 6602 km. The length of tidal and sea defences is 405 km.

1.2 Activities

During 1994/95, the Region has completed 10 Catchment Management Plans with 7 of the remaining 8 progressing to consultation stage.

1.3 Other notable achievements include:

- developing a Regional Water Resources strategy.
- improvements to water quality in the rivers Rother and Don.
- identifying low flow problems on the River Wharfe and implementing a solution.
- progress on 6 major Flood Defence schemes.
- completion of habitat improvement project.
- installation of fish counters on the River Wear at 2 sites.
- completion of Barmby Barrage amenity site.
- devolving management to Areas on a multifunctional basis.
- Field Data Services client/contractor split completed, saving £122k.
- Negotiated Takeover at Riccall completed, the first within the NRA.

2. REGIONAL GENERAL MANAGER'S REPORT

2.1 Work has progressed in the Region to raise awareness of the NRA's Environmental Policy and the environmental performance targets. Presentations have been made to both the Regional Management Team and the Regional Advisory Board. Staff awareness has been increased through team briefs and poster campaigns.

2.2 Improved mechanisms have been put in place for collection and compilation of accurate data on energy consumption. This has led to improved local management.

2.3 Action has been taken to improve energy efficiency. Local initiatives include fitting new boiler regulators and radiator panels to reduce consumption. All NRA premises now have water meters installed.

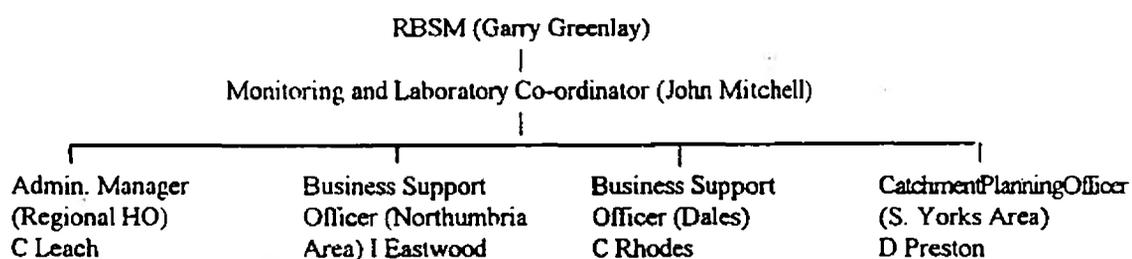
2.4 Work was begun to implement the requirements of the Pollution Prevention Checklist at all sites.

- 2.5 Systems have been set up for re-cycling of paper, batteries and clothing.
- 2.6 Drafting of an ozone depletion policy is continuing.
- 2.7 The year has seen steady progress, which has highlighted the need for increased awareness of the NRA's Environmental policy. This is reflected below in our future plans.

3. ENVIRONMENTAL MANAGEMENT (EM)

3.1 Structure

The EM structure within Northumbria and Yorkshire Region is:



This team is responsible for collecting, collating and reporting environmental data for Northumbria & Yorkshire Region. Reports are prepared for the Environmental Policy Unit (national) and for regional purposes to RMT and areas.

- 3.2 The above staff are also members of the Regional Environmental Policy Group which also includes representatives from each office in the region. The Group is responsible for auditing data, promulgation of environmental initiatives, encouraging environmental awareness and publicity. Each office representative is responsible for translating policy into an action plan once RMT approval is obtained. They also exchange information on "best practice" from one Area to another.
- 3.3 Consultants, Clifford Talbot, were engaged to undertake energy efficiency surveys at all the Region's offices. Their recommendations have been fully implemented regarding no cost actions and other options involving cost but a short payback period (typically less than 2 years) have been implemented or are planned for implementation by 1996.
- 3.4 All offices and depots within the region have been self audited for compliance against the NRA's Pollution Prevention Checklist. Whilst a few minor non compliances were identified, these have now been corrected.
- 3.5 Staff Awareness

There has been little formal staff training on Environmental Policy and Policy Initiatives but REPC members have a good awareness and have publicised issues (e.g:- poster campaigns, team briefings etc.). There is still much to be done with approximately 75% of staff being aware of the environmental policy and targets. It is planned to show videos on environmental matters at team briefs in 1995/96.

4. ENVIRONMENTAL PERFORMANCE

| | INPUT | PROCESS | OUTPUT | QUANTITY | RISK | TARGETS/ACTIONS SET | PERFORMANCE VS TARGET |
|--------------------|--|---|--------------------------------|---------------------|-----------------|---|--|
| ENERGY - BUILDINGS | Electricity & Gas | Heating & lighting | CO ₂ | 2117 Tonnes | See comment (1) | Reduce by 5% | Baseline data for 1991/92 does not include Northumbria figures. 3% reduction achieved cf 93/94. New reporting mechanisms introduced to ensure full and accurate data per site. |
| ENERGY - PUMPING | Electricity | Flood Defence | CO ₂ | 1804 Tonnes | | Ensure tariffs are most economical possible | |
| TRANSPORT | Diesel & small amount of petrol | Transport | CO ₂ + PAH | 1078 Tonnes | | Monitor fuel consumption and reduce (up to 15%) | All staff have attended Efficient Driver course. |
| PLANT | Diesel | River and associated work | CO ₂ + PAH | 1392 Tonnes | | Monitor fuel consumption | 9.4% reduction of 93/94 reported and 14% against baseline figure. |
| WATER | Supplied by various water undertakings | Metered potable water | Waste Water | 9861 m ³ | | Reduce usage by 5% | All NRA owned sites now metered. No previous data available for comparison but "Save It" campaigns started. |
| STATIONERY | Chapmans (National Contract) | Multi functional day to day working | Cartridges, batteries recycled | £89496 | | Improve reporting procedures and reduce 10% | Reports do not distinguish between stationery and items coded to stationery (e.g. furniture). Mechanisms to be set up to distinguish. |
| PAPER | Chapmans & Wiggins Teape | Photocopying, printing, computer listings | Recycled | 31299 kg | | As for stationery | Historical figures are suspect. Staff to be set targets of 94/95 returns. |

(1) The listed items (electricity, Diesel etc.) are all essential for the working of the NRA. It is inevitable some environmentally significant waste products will be produced. The risk to the NRA is that these are seen to be minimised consistent with value for money. Environmental policies should be public and complied with and it must be demonstrable that targets have been set and regularly monitored.

NB No peat or tropical hardwood used. Ozone depleters removed (hand held fire extinguishers & halon drench systems). Procurement policy is not to purchase fridge/freezers etc. containing ODS.

4.1 Energy

Energy consumed in the Region's buildings dropped by 3% compared to 1993/94 but comparisons with 1991/92 are difficult because of the Regional merger, changes of offices and lack of accurate data generally.

4.2 Energy used by Pumping Stations can be as high as £2.41/kWh. This figure looks excessive and is being investigated.

4.3 Fleet fuel efficiency is good at over 30 m.p.g. Northumbria & Yorkshire Region achieves more miles/vehicle than any other region. This is to be investigated as it represents a 50% increase in miles covered compared to 1993/94. However, the 1993/94 figure is doubtful as the mpg figure of 35.9 seems excessively high.

4.4 Stationery

Stationery figures for the region are high compared to most others as is the cost/FTE. This data probably includes items that are not strictly stationery (e.g:- furniture). This will be examined further.

4.5 Paper

The figures for paper consumption for 1994/95 (17299kg) are incorrect. 1400 kg should be added to reflect usage of printing paper in producing Catchment Management Plans internally. This was not included originally because it was believed only copier paper usage should be reported.

4.6 The paper sent for recycling figure (39.7%) may be incorrect. Offices report no perceived reductions despite the quarterly returns. Reporting mechanisms are to be reviewed.

5. COMPLIANCE

5.1 Abstraction Licences

There are no abstraction licences issued to the NRA in this Region.

5.2 Consents for Discharge

Three NRA premises are consented to discharge. (Olympia House, Kielder Hatchery and Riccall Depot). None of these consents have been breached and there are no instances of non-compliance notified to us by other regulators.

6. FUTURE PLANS

6.1 The Region fully supports the Environmental Policy and is committed to meeting the targets. This will be achieved with staff co-operation and involvement. Consequently, plans for 1995/96 include:

- ensuring all staff are aware of the Environmental Policy and targets and their importance.
 - regular team briefings about environmental issues/statistics.
 - demonstrable commitment from senior managers.
 - inclusion of at least one environmental issue in everyone's Job Description/Performance Targets.
 - increased publicity (Posters, E-mail etc.) for saving energy and resources.
- 6.2 The development of a strategy for policy implementation will be undertaken and the support and resources needed to facilitate achievement of the targets reconsidered.

12/9/95

NRA - NORTH WEST REGION

ANNUAL ENVIRONMENTAL REPORT 1994/95

SEPTEMBER 1995

CONTENTS

- 1 Introduction
- 2 Regional General Manager's Report
- 3 Environmental Management
- 4 Environmental Performance
- 5 Compliance
- 6 Future Plan

1 INTRODUCTION

This report details the North West Region's progress and achievements in meeting the targets and requirements within the NRA's Environmental Policy.

1.1 Key Regional Statistics

| | | |
|---------------------|---|------------------------|
| No of staff | = | 780 |
| Regional Budget | = | £39,362,000 |
| Area | = | 14,445 km ² |
| Miles of main river | = | 5,947 km |
| Sea defences | = | 193 km |

2 REGIONAL GENERAL MANAGER'S REPORT

This is the first opportunity for a statement on the Region's internal environmental performance.

It is appropriate that the NRA, as an environmental organisation, should be seen to be pro-active and successful in ensuring that it conducts its own business in an environmentally friendly manner and also that we take every opportunity to influence and request our suppliers and contractors to demonstrate their environmental awareness when supplying goods/services or working on behalf of the NRA.

1994/95 has highlighted significant progress and successes for the North West. I am particularly pleased with the increased awareness and acceptance of responsibility from my senior managers. This is clearly demonstrated by MAPs including Environmental Policy initiatives, and staff objectives including specific issues. Management awareness and commitment can only raise the awareness of staff in general and every opportunity is taken to raise the profile and publicise our targets and success. Particularly pleasing is our performance towards improving energy efficiency both in terms of consumption in buildings and transport related. Recycling initiatives continue to increase with paper now forming only one of the commodities recycled by the Region as vehicle batteries, plastic cups and aluminium cans are also recycled.

The vigilance of the Region's Project Approval Board to ensure that environmental impacts are considered and addressed within NRA projects is now well established and effective.

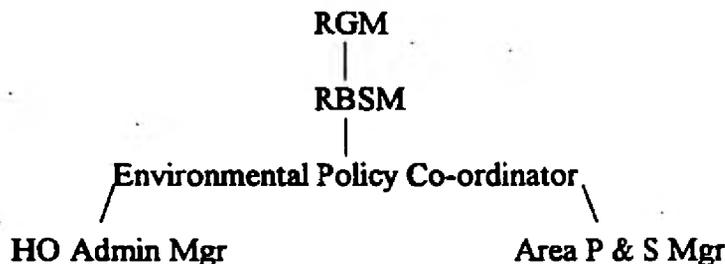
I am aware that our performance is not all good news and will actively ensure that complacency does not set in. The Region particularly needs to address paper consumption which has increased quite dramatically and will receive particular attention this year to reverse the trend. The accuracy of data collection, although better, also requires improvement and refinement to ensure that performance can be accurately measured.

3 ENVIRONMENTAL MANAGEMENT

- 3.1 The responsibility for Environmental Management rests with the Regional Business Services Manager who actively ensures that Environmental initiatives and reporting receive the necessary support and guidance. The relationship between the Business Services Manager and the Regional Environmental Policy Co-ordinator guarantees that the Regional Management Team are kept informed of Regional initiatives and performance. The Business Planning Section ensure that information and statistics feature in Corporate Plan reporting and that accountability for environmental awareness features in Management Action Plans.

Environmental initiatives are considered and developed by the Regional Environmental Policy Co-ordinator, the Regional Administration Manager and Area Planning and Services Managers. This arrangement provides a direct link into Area Management Teams and the ability to influence at an appropriate level. Staff awareness is then achieved via the cascading of information and effective use of the suggestion scheme which is proving to be a most productive vehicle for environmentally friendly ideas.

3.2 Environmental Management Structure



3.3 Budgets and Staff Resources

No specific budget is available for Environmental Policy initiatives, however this does not necessarily prevent worthwhile initiatives from being considered or implemented.

The Region's Environmental Policy Co-ordinator is the only member of staff who has formal recognition of responsibility for the policy.

3.4 Training and Staff Awareness

No formal training has been conducted within the Region.

Staff awareness is frequently addressed via:

- Regional Newsletters
- Posters
- Suggestion Scheme
- Team Brief
- e-MAIL

As a conservative estimate, 80% of staff are aware of the existence of the Environmental Policy due to the profile that it is given within the Region.

4 ENVIRONMENTAL PERFORMANCE

4.1 Impact of Regional Operations 1994/95

| <u>Input</u> | <u>Quantity</u> |
|-------------------------|----------------------|
| Sandbags | 4,803 bags |
| Cement/concrete | 413 m ³ |
| Timber | 39,555 mtrs |
| Steel | 95 tons |
| Stone | 30,891 tons |
| Vehicle fuel | 77,588 gals |
| Electricity - buildings | 1,157,404 kwh |
| Electricity - pumping | 3,388,392 kwh |
| Gas - buildings | 1,440,000 kwh |
| Water | 9,751 m ³ |

4.2 Waste Disposal

The disposal of waste either from NRA premises or direct from operational sites to registered and authorised tip sites is arranged via the Duty of Care.

All office locations have the appropriate transfer station requirements, again as laid down within the Duty of Care.

4.2.1 Recycling Arrangements

The Region has procedures and agreements in place for the recycling of the following:

- Vehicle batteries
- Vehicle tyres
- Aluminium cans
- Plastic cups
- Paper
- Toner cartridges
- Ribbons

4.3 Performance Against Target

4.3.1 Energy

Target: A 15% reduction in energy directly consumed by April 1995, compared to 1991/92 levels measured as CO² production.

(a) Buildings (Gas and Electricity)

| | <u>1991/92</u> | <u>1994/95</u> | <u>% Change</u> |
|-----------------|-----------------|-----------------|-----------------|
| CO ² | 1,288.06 tonnes | 1,064.24 tonnes | - 17% |
| Cost | £115,440 | £91,455 | - 21% |
| Consumption | 2,756,213 kwh | 2,118,599 kwh | - 23% |

Comment

Management of energy receives close attention, particularly by premises managers and M & E staff, a factor which has contributed to the reduction in consumption since 1991/92. The Region does adopt a rational approach to the number of sites it needs to effectively operate and it is felt that centralising the business into larger buildings and minimising satellite sites is a more economic arrangement regarding running costs. The Region has also resisted the temptation to introduce air conditioning, which is a known high consumer of energy. Staff awareness and good housekeeping has also played its part.

(b) Pumping (Electricity)

| | <u>1991/92</u> | <u>1994/95</u> | <u>% Change</u> |
|-----------------|-----------------|-----------------|-----------------|
| CO ² | 2,273.86 tonnes | 2,436.34 tonnes | + 7% |
| Cost | £226,382 | £258,326 | + 14% |
| Consumption | 3,031,817 | 3,248,448 | + 7% |

Comment

The demand led nature of pumping makes it difficult to guarantee that measures to economise and improve efficiency will reduce consumption sufficiently to counter operational needs. Initiatives have been taken to improve pumping and to reduce consumption and for costs, these will continue as technology improves and financial availability permits.

4.3.2 Transport - Badged Vehicles

| | <u>1991/92</u> | <u>1993/94</u> | <u>1994/95</u> | <u>% Change</u> | <u>% Change</u> |
|---------------------------|----------------|----------------|----------------|-----------------|-----------------|
| Fuel Use | 62,763 gals | 60,094 gals | 77,588 gals | + 23% | + 29% |
| Fleet Miles | 1,534,223 | 1,612,967 | 2,085,664 | + 36% | + 29% |
| Fleet Miles per Gallon | 24.4 | 26.8 | 26.9 | + 10% | + .4% |
| CO ² Emissions | 725.62 | 707.77 | 933.63 | + 29% | + 32% |

Comment

Reliability of 1991/92 data is questionable particularly as the National fuel card system which produces data was not in place at that time. It is recommended that 1993/94 data be used for the baseline.

The Region has operated its own driver training scheme for a number of years, however the National Efficient Driver training should assist improvements in future performance. A total in excess of 350 staff have been trained in the North West Region.

The number of miles travelled by Authority vehicles and staff raises concern and is worthy of a National review to introduce fundamental improvements.

Target: Achieve 90% diesel vehicles in 'badged' fleet.

| | <u>1991/92</u> | <u>1994/95</u> | <u>% Change</u> |
|----------|----------------|----------------|-----------------|
| % Diesel | 61% | 91% | + 49% |

Comment

The Region has increased its diesel fleet quite dramatically since 1991/92 and shows a 49% improvement. Compliance with the target has now been achieved.

4.3.4 Water

Target: A 10% reduction in use compared to 1991/92 levels.

Data for water consumption has been unreliable due to information being dependent on the receipt of bills, this approach to data collection has proved to be unsatisfactory. As all main Regional sites are now metered, it is intended that on-site collection of consumption information will provide the accuracy required.

4.3.5 Stationery

Target: A 10% reduction in use by April 1995 compared to 1991/92 measured as costs.

| | <u>1994/5</u> |
|--------------|---------------|
| Cost | £32,047 |
| Cost per FTE | £52.99 |

Comment

Financial systems prior to the introduction of the National stationery contract did not itemise information to allow like for like comparisons to be made.

The Region does centrally administer the ordering of stationery to ensure that control is maintained and environmentally friendly products from the 'Core List' are purchased.

4.3.6 Paper

Targets: To ensure that all paper for internal use and priority is from recycled sources and totally chlorine free. To reduce paper use by 10% compared to 1991/92.

| | <u>1993/94</u> | <u>1994/95</u> | <u>% Change</u> |
|--------------|----------------|----------------|-----------------|
| Use | 30,549 kg | 33,858 kg | + 11% |
| Use/employee | 37.25 kg | 55.99 kg | + 50% |

Comment

Paper consumption has increased noticeably since formation of the NRA, the trend during 1994/95 is of concern as the increase has occurred despite initiatives to reduce paper consumption. A reversal of this trend is the Region's priority target for 1995/96.

Target: To recycle at least 60% of paper purchased.

Comment

All main Regional office locations recycle paper. During 1994/95 the Region recycled 61% of paper purchased.

5 COMPLIANCE

The recent review undertaken within the Region to reassess Authority sites to ensure that they comply with the Authority's own regulations has generated few problems. Those that were detected required minor maintenance to rectify.

6 FUTURE PLANS

Planned initiatives for 1995/96 are:

6.1 Paper

As stated earlier in this report, a determined effort to reduce paper consumption will be actioned. An Action Plan to 'kick off' this initiative has already been forwarded to the RGM for approval and support.

6.2 Recycling

A procedure for recycling cell phone batteries will be introduced.

6.3 Transport - Fitting of Thermostatic Fans

The feasibility of fitting Authority vehicles with thermostatically controlled cooling fans to replace engine driven fans is to be assessed. If successful it should increase the mpg of converted vehicles.

6.4 Energy Efficiencies

Further consideration will be given to products which economise heating and lighting consumption.

IB/ENVIRON/REP

NATIONAL RIVERS AUTHORITY ENVIRONMENTAL REPORT **- SEVERN-TRENT REGION**

1. Introduction

Centred on the Midlands, the Severn-Trent Region is the second largest in population and third largest in size. Key statistics include:-

Area - 8,337 sq miles (21,600 sq kms)
Population - 8.36m
Employees - 827
Budget - £50m
Water Courses - 3,578 miles (5,724 kms)

The Region has no coastline, and is not responsible for navigation. All the remaining NRA functions are undertaken.

2. RGM's Report

The Region has actively pursued the implementation of Environmental Management in the last few years, and continues to do so. One of the main thrusts of this has been the effort made to ensure the application of Duty of Care in respect of Regional sites. This has involved an in-depth audit by environmental quality staff of operational locations, the identification and rectification of problems, the resolution of outstanding licence/consent matters for those sites, and the introduction of measures to prevent pollution. There has been an increase in employee awareness of the need for our statutory requirements to be observed with the same diligence by ourselves as we require of industry.

This exercise uncovered a number of situations which might, if they had remained unidentified, might have resulted in breaches of our own requirements.

We have pursued energy saving measures at major locations, including installation of water meters, retro-fitting of energy saving devices on boilers, improved specifications for any new installations, optimisation of tariffs, and have achieved a general increased awareness of energy issues amongst staff.

3. Environmental Management

Appropriate senior managers at major sites had, as a performance target, the achievement of specific environmental targets. Area action plans were prepared and initiated at all major locations. These plans were co-ordinated by the Regional Administration Manager, and best practice information was disseminated at regular meetings with Area Business Services Managers.

Awareness initiatives have concentrated on paper usage and recycling, reduction/elimination of paper cups, and energy saving.

4. Environmental Performance

a. Impact

Examples of RHQ impacts include:

PAPER (LOW RISK PRIORITY - 5% REDUCTION)

- Inputs - Approximately 4,000 reams of paper purchased per annum.
- Approximately 150 reams of letterheads/memos purchased per annum.
- Process - Paper used for copiers and printers etc
- Letterheads/memos used for typing of correspondence for external/internal customers.
- Outputs - Upto 60% of input is recycled. Environmental target being achieved.

TONERS (LOW RISK PRIORITY TO MINIMISE WASTE)

- Inputs - Approximately 150 toners purchased a year (64 to date this year).
- Process - Toners used in printers throughout RHQ.
- Outputs - Upto 40% recycled (25 to date this year).

Examples provided by Areas are:

- Input - Cardboard boxes from deliveries.
- Process - Transport of goods.
- Output - Collected for recycling.

- Input - Rubbish removed from riverbanks.
- Process - Riverbank/channel clearance.
- Output - Waste now being sorted and appropriate recyclable disposal routes being pursued.

- Input - Dry cell batteries in telemetry equipment.
- Process - Replaced regularly, irrespective of condition, to avoid equipment failure.
- Output - Batteries re-used in torches etc until flat. Disposal is no longer in bulk.

- Input - Old sheet steel piles.
- Process - Replacement.
- Output - Disposed off to scrap dealer for recycling (previously to tip). Produced income to assist scheme costs.

- Input - Old desks.
- Process - Replaced by new.
- Output - Rebuilt by handyman as bookcases, shelves etc.

b. Performance

Energy

Of the energy usage being measured at eight key buildings, there was a reduction of 1% over the three years to 1994/95. Average cost was £8.5 per sq metre, the second lowest regional figure.

Water

Collection of data on water consumption has not yet been refined to a level where accurate figures can be produced. On a cost basis there appears to have been a reduction over the three year period, resulting almost certainly from meter installations.

This is an area requiring further work. It should be noted that total expenditure on "water" (which includes sewerage charges) amounts to only £30k per annum.

Waste Minimisation

The Region is comfortably exceeding the target of 60% for recycling paper (paper in/paper out by weight). It was the first Region to achieve over 90% usage of recycled paper.

Stationery costs have increased by 30% over the last three years, and are now subject to high level scrutiny with a view to achieving significant reductions.

Paper usage decreased by 5% between 1993/94 and 1994/95 (on target).

Other Targets

Peat - not used.

Ozone depleters - all halon fire extinguishers and halon drench systems have been replace across the Region.

Timber - no tropical hardwoods are used.

5. Compliance

As part of the Duty of Care exercise we have ensued that all necessary licences/consents are in place. The total numbers for the region are:-

| | |
|-------------------------------------|----|
| Trade Effluent Discharge Consents - | 2 |
| Abstraction /Impounding Licences - | 14 |

SOUTHERN REGION ANNUAL ENVIRONMENTAL REPORT - 94/95

1. Introduction

NRA Southern Region covers an area of 10979 square kilometres with a resident population of 4.6 million across Kent, Sussex, Hampshire and the Isle of Wight. The length of coastline, including tidal waters, within the Region is 1124 kilometres with the Authority being responsible for 143 kilometres of sea defences and 2648 kilometres of main river, including tidal lengths. The Authority employs 653 people with a budget of £40.4 million.

The activities carried out within NRA Southern Region are as follows:

Water Quality

To guard rivers, estuaries, watercourses and the sea from pollution. Samples are taken to check the water quality in rivers and streams. Summer samples are taken from 67 EC designated bathing beaches to monitor seawater compliance with EC standards. Permission to discharge waste water to the water environment is managed in the Region in the form of a discharge consent, there being 11514 discharge consents in force.

Major Water Quality successes include the confirmation of continued estuary status for the Solent and its designation as "normal" water under the Urban Waste Water Treatment Directive and the completion of a 5 year programme of increasing control over paper mill discharges in Kent, illustrated by the complete cessation of paper mill discharges to Milton Creek.

Water Resources

To balance the amount of water needed to protect rivers, lakes and underground reserves with the demands of industry and environmental considerations by monitoring river flows, groundwater levels, rainfall and climate data. Water abstraction is regulated through the issuing of licences. There are 2541 abstraction licences in force, 155 permanent network gauging stations, 15 water companies. A total number of 1119 groundwater boreholes were dipped between July 1994 and July 1995.

A notable achievement within Water Resources was the commencement of the Darent Low Flow Alleviation Scheme and the publication and implementation of the Regional Water Resources Strategy, leading to actions such as the refusal of the Darwell licence application.

Flood Defence

Providing protection from flooding is vital in Southern with a coastline facing both the North Sea and the English Channel. Flood defence teams maintain hard defences including seawalls and tidal barrier together with softer defences such as shingle beaches.

With 2648 kilometres of main river in the region, it is essential to investigate flood risk locations for new flood relief schemes such as

by-pass channels, flood banks or dams to delay and control floodwater. River flow is maintained by dredging, weed control, grass cutting and the removal of debris.

A flood warning service is provided. Rainfall and river levels are monitored with warnings issued to the police to inform local authorities and the public.

Fisheries

To conserve and develop fish stocks for the future by carefully managing rivers and watercourses. The Test and Itchen in Hampshire are renowned for their trout and salmon. Rivers in Weald of Kent and Sussex are well stocked with many types of coarse fish.

NRA rod and net licences and byelaws controlling fishing methods help to protect fish stocks, along with building fish passes, removing obstructions and improving spawning gravels. During the year, 24027 rod and line licences were checked, 278,000 micro salmonid reared and 63,000 non salmonid reared, and 62,000 kilometres of rivers were surveyed.

Conservation, Recreation, Navigation

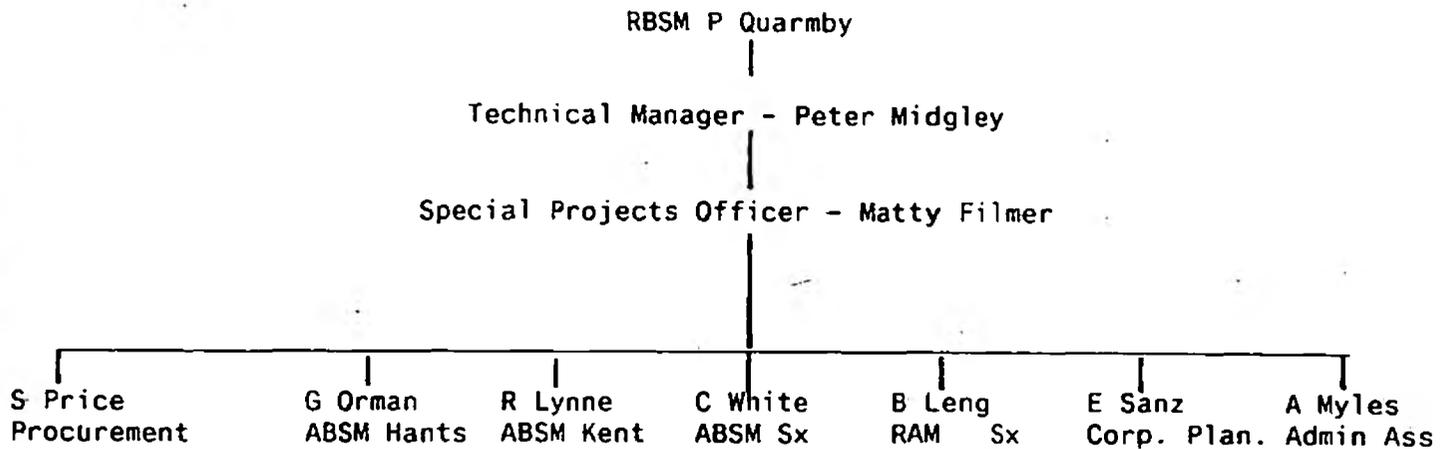
Conservation involves paying special attention to local landscapes, amenities and habitats in rivers and watercourses. Wherever possible nature conservation areas are created in new river schemes.

The creation of otter habitat, safe havens and road crossings to support the successful re-introduction programme in the Itchen catchment is a major achievement.

Southern is one of three NRA regions with a navigation role. The Harbour Master in the Port of Rye, owned and managed by the NRA, provides a 24 hour pilot service. In Kent, we ensure that the Medway Navigation can be enjoyed by boat owners, anglers and the public.

2. Environmental Management

In the Southern Region the Special Projects officer is charged with translating the environmental policy and co-ordinating the regional environmental initiatives. A Local Environmental Group has been set up to help communicate best practice throughout the region.



The above group form the Local Environmental Circle, which is the vehicle used to inform staff of environmental issues within head office and out to the areas.

Resources allocated to environmental management is one FTE, plus the time of the Local Env. Group members.

3. Environmental Performance

3.1 Author Graham Fisher - New Works Engineer

The capital works programme is, and will continue to be, dominated by the need to improve the Region's 570 Kms of sea and tidal defences. Sea defence in the Southern Region is very largely reliant upon a system of natural shingle banks which when adequately formed are very efficient in absorbing wave energy during times of storm. They are, however, very mobile and without the benefit of adequate control structures can become severely eroded. There is also evidence to suggest a long term decline in the volume of some shingle banks on the Region's coastline.

The need to manage and improve these shingle banks to ensure appropriate levels of sea defence protection makes the Region heavily dependent on securing supplies of marine aggregates and on obtaining suitable armourstone and timber to construct control structures (groynes etc).

The procurement of these materials has environmental implications which are significant and require sensitive and detailed consideration. The Region's demand for shingle is some 750,000 cubic metres/year but its ability to obtain this material can be compromised by a conflicting requirement by the dredging companies to supply the construction industry. Given the paucity of local licensed dredging areas and the conflicting demands on the available supplies the Region may have to consider obtaining its own dredging licence. This will inevitably lead to a wide ranging debate of the environmental implications of such a strategy.

The use of foreign hardwoods in the construction of groynes and the impact on global deforestation has been the subject of protracted debate within the Region due to a proposal by a local authority to use large quantities of this material in an £18 million coast protection scheme. Although the Southern Region will endeavour to use home grown or European supplies where practicable it will nevertheless be necessary to procure substantial quantities of tropical hardwoods if the targets for sea defence improvements are to be met. The procurement process will need to be handled in an environmentally sensitive and satisfactory manner. A scheme for sea defence improvements at Pevensey Bay in Sussex costing an estimated £30.0 million will involve the construction of multiple timber groynes on a 9 Km length of frontage. This will involve the consumption of 8,000 cubic metres of timber and lead to the Region commissioning a study of timber usage in coastal works. The report is due shortly.

Most rock armourstone is obtained from Scandinavia and has not yet proved contentious. Supplies from the UK are more difficult as the quarrying may affect the local groundwater regime and have other environmental consequences.

It is also pertinent to mention that managed retreat is considered as an option for sea defence improvement but extensive coastal development in the South East generally precludes this particular solution being adopted.

3.2 Author Ian Johnson - FRCN Manager

Significant environmental improvements have been achieved within the FRCN function. Particular successes have included the formation of river valley buffer zones by promoting Countryside Stewardship payments in the Itchen and Western Rother catchments, the River Beult habitat scheme and assisting with ESA on the Test. These are providing valuable river corridors for wildlife including otters and barn owls while reducing the damaging effects of silt loading on salmonid spawning beds. The development of management plans for NRA owned sites has enhanced their contribution to the natural environment.

The internationally designated wetlands of Amberley Wildbrooks and Pevensey Levels have received considerable environmental support from the Region in promoting and achieving raised water levels for wildlife improvements.

35 minor environmental enhancement projects have also been completed in the year.

3.3 The environmental targets for 94/95 upheld the following principles: Minimise resource use and waste, minimise or eliminate harmful practices, establish effective support systems

Energy

Target - 15% reduction compared to 91/92 actions on directly consumed energy

Monitoring systems are now in place to determine the consumption level

of electricity, water and gas, with meter readings taken monthly in all main buildings. Monthly meter readings of pumping stations will soon be underway.

| | 1993/1994 | 1994/1995 |
|------------------|-----------|-----------|
| Buildings | | |
| Cost £ | 96971 | 85951 |
| Use Kwh | 3040709 | 2047393 |
| Pumping | | |
| Cost £ | 315029 | 339232 |
| Use Kwh | 3594074 | 3329006 |

Transport

Target - Introduce effective monitoring of fuel & accidents for the fleet

Southern switched from Overdrive fuel cards to PHH at the beginning of 1995 in order to meet the environmental monitoring requirements.

Target - Achieve 90% diesel vehicles in badged fleet

The badged fleet in Southern consists of 205 vehicles of which only 1 is petrol. A diesel vehicle will be purchased on renewal.

| | 1993/1994 | 1994/1995 |
|---------------|-----------|-----------|
| Fuel use Gals | 115577 | 74268 |
| Fleet Miles | 2870000 | 2360292 |
| Fleet Mpg | 24.8 | 31.8 |

Water

Target - Reduce volume of water used by 10% compared to 91/92

Following the energy audit, significant savings were made through the elimination of leaks.

| | 1991/1992 | 1993/1994 | 1994/1995 |
|-------------|-----------|-----------|-----------|
| Cost £ | 32860 | 19176 | 11298 |
| Consumption | 36083 | 23255 | 17606 |

Stationery

Target - Reduce consumption of stationery (including paper) by 10% compared to 91/92

Little progress has been made on this target. A monitoring system was

implemented at the beginning of the year and therefore there are no previous figures for comparison.

| | 1993/1994 | 1994/1995 |
|--------|-----------|-----------|
| Cost £ | 81690 | 61983 |

Paper

Target - Reduce consumption of paper by 10% compared to 91/92

A number of initiatives have been generated by the Local Environmental Group for saving paper, including the use of double sided copying, wider use of EMail, circulating memos where possible rather than distribution multi-copies and the use of scrap-pads. However an increase in the quantity of paper purchased has been noted.

| | 1993/1994 | 1994/1995 |
|----------------------|-----------|-----------|
| Use Kg | 11551 | 16849 |
| Use kg/FTE | 27.15 | 39.81 |
| Sent to recycle kg | 10160 | 10030 |
| Sent to recycle % kg | 88.0 | 59.5 |

Ozone Depletors

Target - Introduce scheme to phase out use of ozone depleting substances - ongoing.

All halon fire extinguishers have been replaced. No aerosols containing CFCs are purchased. This ongoing target is monitored through the Regional COSHH panel and procurement procedures.

General Recycling Initiatives:

The following recycling initiatives are in place in Southern: tyres and batteries are environmentally disposed of through our contract with ATS. Disused protective clothing is sent to the Body Shop and then to orphanages abroad. Hard hats to the local play groups via the Council. Plastic cups are collected by Save-a-Cup and the aluminium cans are disposed of in the community can bank.

NRA SOUTH WESTERN

ENVIRONMENTAL REPORT 1994/95

1. INTRODUCTION

Location - The Region covers Cornwall, Devon, Somerset, Dorset, Avon and parts of Hampshire, Wiltshire and Gloucester.

Area - 20,820 km²
Population - 4 million
Coastline - 965 km
River Length - 3,700 km (fluvial main river)
Tidal estuary - 657km
& sea defences

Employees - 816 (including 147 manual employees)

Budget - £57m (£42m Revenue, £15m Capital)

Activities - Achievements during 1994/95 included:-

Improved environment of the Brinkworth Brook, including tree planting in collaboration with Forest Authority and full support of local community.

A Water Level Management Plan at Exminster Marshes has improved habitat for bird life.

Treatment of Wheal Jane discharge so water quality in Carnon River is restored to level prior to mine closure.

Promoted a successful campaign to reduce the levels of the pesticide, Atrazine, in tributaries of the Hampshire Avon.

Implemented Bristol Frome Action Plan to improve information and amenity, fishery habitats and assess risk passed by industrial sites.

2. RGM's REPORT

I am pleased to report significant progress within South Western Region towards our aim of meeting the Authority's Internal Environmental Policy targets. This progress has been achieved against a background of competing priorities and reducing resources, thus reflecting the level of the Regions commitment to being seen as a truly environmental organisation.

Significant achievements include our work in tackling the Wheal Jane mine discharge, involving emergency measures to contain and minimise ongoing effects plus the design and testing of pilot treatment works in order to provide longer term protection for the environment.

A great deal of hard work has also been devoted to minimising energy use associated with buildings and transport, consumption of paper and other supplies plus recycling items wherever possible. In order to monitor our progress towards achievement of Authority environmental targets, time and effort is being invested in systems and procedures for routinely gathering all the necessary data.

Although significant progress has been made there remain areas where more effort will be required in order to meet our stated targets. These include paper usage, which is the subject of a current regional campaign launched in the September cascade where staff are encouraged to "Reduce - Reuse - Recycle". We are also further raising staff awareness regarding energy use in the run up to this winter.

The progress made in the region could not have been achieved without the hard work and support of our employees, in particular the members of our local Environmental Policy Group to whom special thanks are due.

3. ENVIRONMENTAL MANAGEMENT

A Local Environmental Policy Group has been established in order to promote action and monitor regional performance against the NRA's internal Environmental Policy targets.

The Group (chaired by Jane Merry - Senior Administration Officer) includes a representative from each department plus relevant specialists in areas such as transport, electrical power and procurement.

As well as taking action to develop environmental data gathering and monitoring arrangements, the group is very active in promoting employee awareness of the NRA's targets. This latter action is achieved via regular items within the local 'cascade brief, regional newsletter and noticeboards, including competitions to encourage employees to suggest ways of achieving environmental policy targets. The promotion of the Environmental Policy is included in the Region's training programme with a regular slot on the Induction Course.

4. ENVIRONMENTAL PERFORMANCE

The process of gathering the necessary data to monitor achievement of environmental policy targets is at an early stage. The recent regional implementation of the new National Integrated Accountancy System (IAS) is the main driver for this work and it will take a year or so before accurate and consistent annual comparison can be made.

The recent data which has been collected is becoming more reliable but due to the shortcoming of historic base information it is not worthwhile to draw any conclusions from year on year comparisons.

Examples of significant regional environmental impacts where reliable data is available are:-

| | <u>Energy - Buildings</u> | <u>Impact</u> | <u>Paper Use</u> | <u>Impact</u> |
|---------|--|-------------------|---|--|
| Inputs | Electricity, Gas & Oil | 5,191,440 kWh | Copy paper Letterhead Computer | 32,687 kg |
| Process | Lighting, heating, air conditioning, & computer equip. | - | Word processing Photocopying Computer Use | - |
| Outputs | Carbon dioxide from energy use | 2841.62 tonnes | Filing Mail Recycling | 70.6% paper recycled. All computer printer toner cartridges recycled. |

Regional performance against targets are:-

ENERGY - BUILDING

Target - A 15% reduction in energy consumed in occupied buildings compared with 91/92

| | <u>91/92</u> kWh (1) | <u>91/92 Lab</u> kWh (2) | <u>94/95</u> kWh | <u>% Change (3)</u> | |
|-------------|-------------------------|-----------------------------|---------------------|---------------------|-----------------|
| | | | | <u>incl Lab</u> | <u>excl Lab</u> |
| Electricity | 2,594,215 | 757,549 | 3,207,932 | -4% | +23.5% |
| Gas | 2,043,067 | 818,267 | 1,744,352 | -39% | -14.5% |
| Oil | Not available | - | 239,156 | | |
| | <u>4,637,282</u> | <u>1,575,816</u> | <u>5,191,440</u> | | |

Notes:

- (1) Oil usage not collected in 1991/92 - no base line available.
- (2) Analytical Laboratory not operational in 1991/92, based on a current usage, we estimate the usage would have been 1,575,816 kWh (Electricity & Gas).
- (3) The number of Pcs, laser printers, file servers has almost doubled since 91/92.

ENERGY - PUMPING

Target - Continue to seek energy efficiency measures in relation to pumping.

| | <u>91/92</u> kWh | <u>94/95</u> kWh |
|-------------------------|---------------------|---------------------|
| Total energy used (kWh) | 260,275 | 760,646 |

Note - intermittent consumption - heavy rainfall & flooding during 1994/95.

ENERGY - TRANSPORT

Target - A 15% reduction in transport fuel consumed compared with 91/92.

| | <u>Total Miles</u> | <u>Fuel consumed</u> | <u>Average m.p.g</u> | <u>% change fuel consumed</u> |
|-------|--------------------|----------------------|----------------------|-------------------------------|
| 93/94 | 4,318,800 | 104,571 gals | 41.3 | |
| 94/95 | 2,379,829 | 64,916 gals | 36.7 | -38% |

Note: figures are for badged vehicles only. There are no figures available for 91/92 therefore unable to compare.

DIESEL VEHICLES

Target - To achieve 90% all-diesel badged fleet

| | <u>Total</u> | <u>Diesel</u> | <u>% Fleet</u> |
|-------|--------------|---------------|----------------|
| 93/94 | 376 | 365 | 97% |
| 94/95 | 251 | 238 | 94.8% |

Note: figures are for badged vehicles only.

WATER

A 10% reduction in water consumed compared with 91/92

| | <u>Volume (m³)</u> <u>Water Consumed</u> | <u>Cost (£)</u> <u>Water Consumed</u> | <u>%</u> <u>Change</u> |
|-------|--|--|---------------------------|
| 93/94 | 9,591 | 6,732 | |
| 94/95 | 5,905 | 5,001 | -38% |

Notes:

The only places not yet fitted with meters are Manley House (imminent) and Rivers House, Twerton (to be arranged). The above figures therefore exclude these offices.

It is not possible to use 91/92 figures as the baseline as most locations did not have water meters fitted in 1991.

STATIONERY

Target - A 10% reduction in stationery compared with 91/92

| | <u>91/92</u> | <u>94/95</u> | <u>% Change</u> |
|------------------------|--------------|--------------|-----------------|
| Cost of stationery (£) | 53,692 | 63,582 | + 18.4% |

PAPER PURCHASING

Target - A 10% reduction in use of paper compared with 91/92

| | <u>91/92</u> | <u>94/95</u> | <u>% Change</u> |
|--------------------------------|--------------|--------------|-----------------|
| Weight (kg) of paper purchased | 32,952 | 32,687 | - 0.8% |

Note: 94/95 figure now includes letterhead. 91/92 figure excludes headed paper.

RECYCLED PAPER PURCHASED

At least 95% of all paper and printed material purchased is recycled paper

RECYCLING

Target - To have in place systems that recycle at least 60% of paper purchased

| | <u>Total Weight Purchased (kg)</u> | <u>Total Weight Recycled</u> | <u>% Recycled</u> |
|-------|------------------------------------|------------------------------|-------------------|
| 94/95 | 32,687 | 23,075 | 70.6% |

OTHER RECYCLING ACTIONS

Tyres, Hard Hats, Protective Clothing and Cans all recycled. Recycling currently under review by Local Environmental Policy Group.

OZONE DEPLETERS

Implement policy to Phase out the use of ozone depleters from April 1994:

- CFC as a Refrigerant (fridges will be replaced on a wear and tear basis).
- Haldon Drench System in the Manley House Computer Room - replacement by Thorn FM200 will take place when the Computer Room is extended during 1995/96.
- All other ozone depleters phased out.

5. COMPLIANCE

Licence to Abstract:

The following licences have been issued:

| <u>Licence No.</u> | <u>Source Name</u> |
|--------------------|---------------------------------|
| 14/46/04/0522 | Staverton Mill Leat |
| 15/47/13/S/16 | Endsleigh Hatchery |
| 15/48/22/G/202 | James Adit (Wheal Jane) |
| 15/48/22/S/38 | River Carnon (Wheal Jane) |
| 16/52/09/S/120 | Bruton Dam |
| 17/53/08/S/064 | River Marden (Calstone Fishery) |

Consent to Discharge

There are no current consents granted but there are 7 applications with the DoE awaiting approval. These have been outstanding since 1992-3 and are as follows:

- 4 applications for the cottages at Beesands. (NRA agreed to obtain discharge consent since the sea defence system disrupted sewage disposal arrangements for these cottages).
- 1 application for site drainage at Alverdiscott depot.

- 1 application for site drainage at Bradney depot.
- 1 application for water abstraction/discharge for fish holding tanks on Hampshire Avon.

In 1991 the NRA placed advertisements in local papers to call for any objections; none were received.

DoE have also been asked what to do about sewage discharge to soakaway where consent may or may not be needed. There are other NRA sites which have toilets which may fall into this category (eg. at some pumping stations). These are not currently illegal because prohibition notices have not been served.

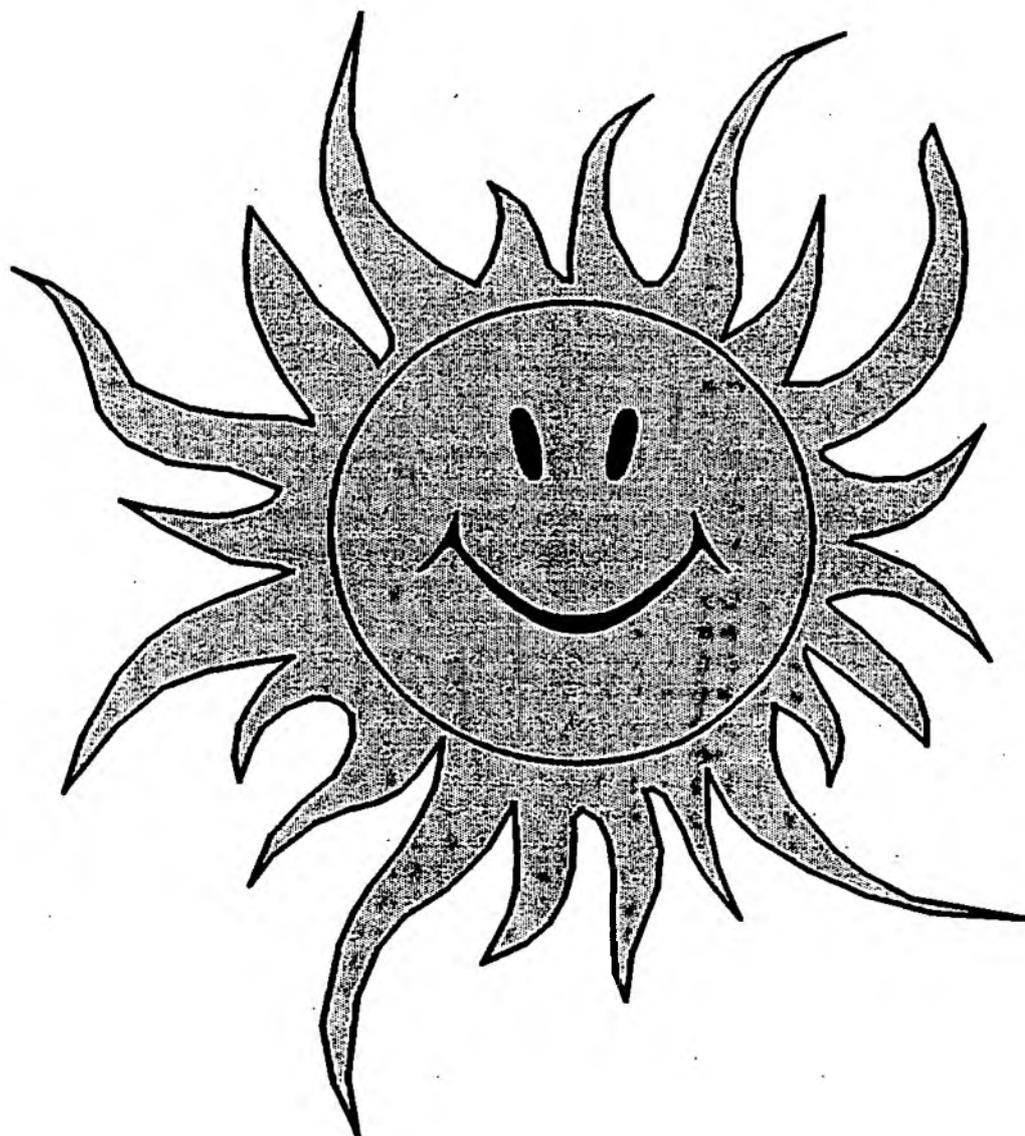
6. PLANS FOR 1995/96

Our plans for 1995/96 include:-

- consolidating last years efforts to routinely gather reliable environmental data.
- continuing the excellent work of the Local Environmental Policy Group in promoting the Authority's aims.
- monitoring the achievement of individual performance objectives set for staff
- Project approved for pollution prevention works at Pumping Stations (£100,000).

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NRA THAMES REGION ENVIRONMENT REPORT 1994/95



September 1995

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NRA

INTRODUCTION

This is NRA Thames Region's first annual Environmental Report. It reviews our environmental performance and key achievements over the previous year and sets out our future priorities for the year ahead.

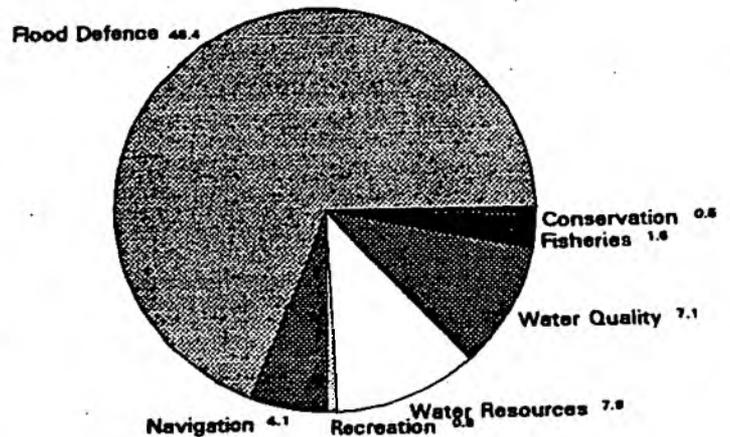
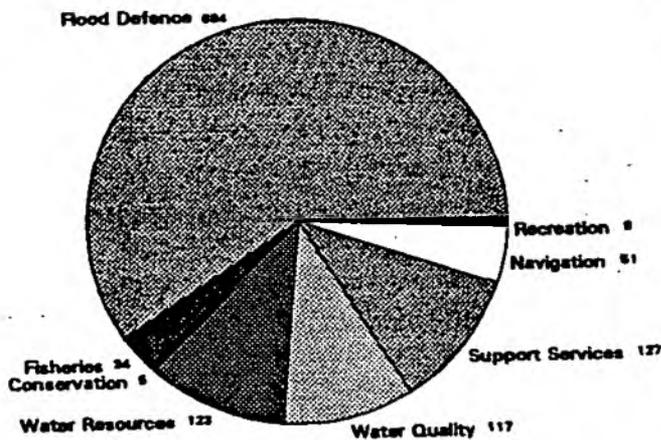
Key Statistics - NRA Thames Region

- Area - 12 900 km²
- Population - 11.6 million
- Length of tidal estuary and sea defences - 193 km
- Length of fluvial main river - 5 294 km

Resources 1995/96

Employee numbers - 1149 FTE

Total planned expenditure - £70.5 million



Responsibilities

The NRA has statutory duties and powers under the 1991 Water Resources Act for water resources, pollution control, flood defences, fisheries, recreation, conservation, and navigation.

| | |
|---------------------------|----|
| Introduction | 1 |
| RGM's Report | 2 |
| Environmental Management | 3 |
| Environmental Performance | 4 |
| Compliance | 10 |
| Future Plans | 11 |

REGIONAL GENERAL MANAGER'S REPORT

Our job in the NRA is to protect the water environment. However, in doing this job we operate processes which may in themselves have an impact on the environment.

By thinking carefully about what we do and how we do it we can make an even bigger contribution to the health of the overall environment. We employ a large number of staff; operate a number of office buildings; undertake significant construction activities; and transport people and materials over significant distances. We therefore have the potential to achieve a lot by reducing our consumption of resources and avoiding wastage.

Thames Region's staff have shown that they are keen to play their part in helping to make our business as environmentally friendly as possible. We've had some notable successes in 1994/95, but as this report shows, we've still got a lot of work to do. Over the year ahead it will be up to management show the same enthusiasm as staff in introducing systems and methods of working which support environmental initiatives.

Over the previous year Thames Region has laid the foundations needed to improve our environmental performance. During 1995/96 we will be looking to build upon these foundations to make the year our greenest yet.

Les Jones
Regional General Manager

NRA Environmental Policy

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

The NRA will:

- Minimise resource use and waste.
- Minimise, and wherever possible, eliminate practices known to be harmful to the environment.
- Establish effective systems and procedures to support implementation of our environmental policy.



ENVIRONMENTAL MANAGEMENT

Accountability and structures

Environmental management is a line management responsibility within Thames Region. Policy objectives are cascaded through the Region into Departmental Plans and Sector Plans and into personal objectives if appropriate. Operational managers are responsible for minimising the environmental impact of activities under their control. Co-ordination of environmental initiatives at Regional Management Team level is the responsibility of Adrian Birtles, Area Manager (South East).

A Regional Environmental Strategy Group was established in January 1994 to promote the NRA's Environmental Policy. The Group's role is to facilitate and encourage environmental initiatives within Thames Region; to communicate Environmental Policy matters to staff, and to liaise with the NRA's National Environmental Policy Unit. The Group is chaired by Brian Hughes, Catchment Planning Manager (West Area) and has representation from each Area and Department within Thames Region. Seven sub-groups have been established to deal with the following matters relating to the Environmental Policy:

- Recycling
- Paper and Stationery
- Energy and Water
- Transport
- Toxic Substances
- Publicity
- Monitoring

Each of these topic groups has prepared an action plan outlining key objectives which will be tackled over the 1995/96 financial year.

Resources

Expenditure on internal environmental management is not itemised and staff time spent on environmental management is not recorded on a systematic basis within the Region. No funds were specifically allocated towards implementation of the Environmental Policy during 1994/95, although a budget of £5k has been awarded to the Environmental Strategy Group for use on environmental initiatives during 1995/96.

Participation in the Environmental Strategy Group takes place on a voluntary basis, with a commitment of approximately one day per month given by each group member.

Awareness Initiatives

The Regional Environmental Strategy Group has made a concerted effort to raise employee awareness on the Environmental Policy and related matters. The following steps have been taken during 1994/95:

- Environmental Policy launch and autumn campaign throughout the Region in September 1994.
- Articles on Environmental Policy matters included in every edition of 'Banknotes' staff news-sheet, including a four-page supplement to coincide with the autumn launch.
- Environmental Policy noticeboards set up at principal office sites.
- Presentation and discussion on the Environmental Policy at a Quarterly Managers' Meeting.
- Preparation of circulars and advice notes on a regular basis.

As a result of these initiatives, it is estimated that over 80% of staff are aware of our Environmental Policy and targets.

To date no formal staff training on environmental policy matters has taken place.

ENVIRONMENTAL PERFORMANCE

Significant Regional Environmental Impacts

Some of the operational activities carried out by the NRA have an impact on the natural environment. The environmental impact can result from the process itself; from the inputs to the process (the raw materials and resources which are consumed), or the outputs from the process (waste products). The most significant of these impacts are described below.

| Inputs | Process | Outputs |
|--|--|--|
| <p>Construction and river maintenance work</p> <ul style="list-style-type: none"> ● Construction materials. ● Energy needed to power plant and equipment. | <ul style="list-style-type: none"> ● Construction of NRA assets such as flood defence structures, navigation structures, and environmental enhancement schemes. ● Heavy maintenance work (eg channel dredging), light maintenance work (eg weed cutting and rubbish clearance), and maintenance of control structures. ● Principal need is to protect people and property from flooding, but represents 'artificial' control of natural river flows which may not be sustainable. ● Environmental Impact Assessment carried out for significant schemes in accordance with legal requirements. All relevant NRA functions consulted so as to minimise environmental benefit and maximise opportunities for enhancements. | <ul style="list-style-type: none"> ● Dredged material, which is disposed of by dumping on river banks, spreading on land at the landowner's request, or to landfill. ● The NRA is a licensed waste carrier and has permissive powers for on-site dumping of dredgings which are not generally compromised by waste disposal legislation. ● Dredged material is tested for contamination and contaminated material is disposed of by a licensed contractor. ● Small quantities of inert construction wastes are also produced. ● Carbon dioxide is produced as a result of combustion of fuel used to power plant and equipment. |



| Inputs | Process | Outputs |
|--|---|--|
| Operation of structures | | |
| <ul style="list-style-type: none"> ● Energy needed to power plant and equipment. | <ul style="list-style-type: none"> ● Operation of flow control structures - weirs, sluices, lock gates, and flood control barriers, most notably the Thames Barrier. | <ul style="list-style-type: none"> ● Carbon dioxide is produced as a result of combustion of fuel used to power plant and equipment. The Thames Barrier consumed 7.0 GWh energy during 1994/95, which is equivalent to 4370 tonnes of CO₂ emissions. |
| Transport | | |
| <ul style="list-style-type: none"> ● Fuel necessary to power vehicles. | <ul style="list-style-type: none"> ● Transport for staff who are required to travel from their normal location for operational or management purposes. ● Transport of materials and equipment between NRA sites. ● Usually by use of motor vehicles. | <ul style="list-style-type: none"> ● Vehicle emissions: toxic substances and carbon dioxide produced from fuel consumption. ● Thames Region fleet vehicles travelled a total of 1.3 million miles in 1994/95, resulting in the production of 618 tonnes of CO₂. ● Vehicle related waste (tyres, scrap metal) is another, indirect, output. |
| Office premises | | |
| <ul style="list-style-type: none"> ● Energy used for heating, lighting, and power for office equipment. 2.4 GWh was consumed during 1994/95 for these purposes. ● Office consumables - paper and stationery. 27956 kg paper was used in offices in Thames Region during 1994/95. ● Tenders for supply of office materials are prepared in accordance with Environmental Policy requirements following pre-contract discussions which are aimed at influencing policies of the supplier. Materials known to be harmful to the environment are not purchased. | <ul style="list-style-type: none"> ● Office accommodation facilities are provided to NRA employees. | <ul style="list-style-type: none"> ● Carbon dioxide is produced as a result of combustion of fuel required for heating and lighting etc. 957 tonnes of CO₂ was produced as a consequence of operating buildings in Thames Region during 1994/95. ● Office waste is produced which is disposed of through a licensed contractor or recycled where possible. 28.9 tonnes of paper were recycled from offices in Thames Region during 1994/95. |
| Pollution clean-up | | |
| <ul style="list-style-type: none"> ● Clean-up materials, eg oil booms and other oil absorbent materials. ● Fuel necessary to power aeration equipment. | <ul style="list-style-type: none"> ● Removal of polluting substances and items from watercourses in response to incidents and complaints. | <ul style="list-style-type: none"> ● Contaminated materials which are disposed of to landfill by a licensed contractor. ● Carbon dioxide is produced as a result of fuel combustion. |

Performance Against Environmental Targets

The following table shows how Thames Region has performed during 1994/95 in meeting the NRA's National Environmental Policy targets.

| National Target | Progress in Thames Region during 1994/95 |
|--|--|
| 1.Aim: to minimise resource use and waste | |
| Energy 1.1 A 15% reduction in energy directly consumed in NRA premises compared to 1991/92 levels. | <p>9.4 GWh of energy was consumed during 1994/95 at fourteen principal sites where energy consumption is monitored in Thames Region.</p> <p>Records of energy consumption at many of these sites are not available for the 1991/92 baseline year, but comparisons with sites for which information is available (Kings Meadow House and Reading Bridge House) indicate that energy consumption has risen by 2% over the monitoring period.</p> |
| 1.2 Continue to seek energy efficient measures in relation to pumping. | <p>36 pumping stations are operated by NRA Thames Region. Of these 31 are associated with the West Berkshire Groundwater Scheme, and are used very infrequently to augment river flows in times of drought. Annual energy costs for the scheme are in the order of £35k and scheme operation is reviewed on an ongoing basis to reduce energy consumption and ensure cost effectiveness. The remaining five pumping stations are tidal pumping stations in the Thamesmead area.</p> <p>Work is in hand to improve monitoring and reporting of energy consumption at pumping stations during 1995/96.</p> |
| 1.3 To improve energy use by transport by 15% compared to 1991/92 (through efficient driver training, conversion to diesel, etc.) | <p>Thames Region's fleet vehicles consumed 51,004 gallons of fuel during 1994/95. Information on fleet fuel consumption is not available for the 1991/92 baseline year, so it is not possible to assess compliance with this target. However, annual average fuel consumption for fleet vehicles in 1994/95 in Thames Region (26.0 mpg) is below the average for NRA Regions (30.0 mpg).</p> <p>During the year efficient driver training for all lease car users and badged vehicle drivers was completed in Thames Region.</p> |
| 1.4 To introduce effective monitoring of fuel for the badged fleet and accidents for both leased and badged fleet. | <p>Fuel consumption and fleet mileage for Thames Region's vehicle fleet is monitored using information on fuel purchase transactions provided by PHH Allstar. Information on mileage for lease and private vehicles will be collected during 1995/96 using Regional financial systems.</p> |
| 1.5 Achieve 95% diesel vehicles in badged fleet nationally. | <p>At the end of the 1994/95 financial year 263 of the Region's 271 vehicles were diesel powered, corresponding to 97% of the fleet.</p> |
| 1.6 Achieve 40% diesel vehicles in lease fleet. | <p>The lease fleet is managed on a national basis and progress in meeting this target will be reported by the NRA's Head Office.</p> |
| Water 1.7 A 10% reduction in use (compared to 1991/92 levels). | <p>Water meters are installed at Thames Barrier, Kings Meadow House, Crossness, Ladymead, and Osney sites. During 1994/95 8291 m³ water was consumed at these sites. Information on water consumption is not available for the 1991/92 baseline year, so it is not possible to assess compliance with this target.</p> |

| National Target | Progress in Thames Region during 1994/95 |
|---|---|
| <p>Stationery (excluding paper) 1.8 A 10% reduction in use, compared to 1991/92.</p> | <p>During 1994/95 stationery expenditure for Thames Region totalled £139,840. This represents a 35% increase in expenditure when compared to 1991/92. Stationery expenditure has continued to rise throughout 1994/95.</p> |
| <p>Paper - re-cycling 1.9 To re-cycle at least 60% of paper purchased.</p> | <p>27,956 kg photocopier paper (the principal form of paper supplied to the Region) were purchased during the year. 28,909 kg paper were sent for recycling, corresponding to 103% of paper purchased.</p> |
| <p>1.10 To ensure that all paper purchased for internal use and printing is recycled paper, totally chlorine free (TCF) and has a minimum of 50% C or D class of post-consumer waste.</p> | <p>81% of paper purchased in Thames Region during the year corresponded to NRA standards for environmentally friendly paper. In future all paper will be purchased using the new national paper contract which specifies supply of environmentally friendly paper as the norm.</p> |
| <p>Paper - reductions in use 1.11 To reduce paper use by 10%.</p> | <p>27,956 kg of photocopier paper was purchased during 1994/95. This represents a three-fold increase in use since 1991/92.</p> |
| <p>Re-cycling 1.12 To develop a national re-cycling system and implementation plan for plastics, tyres, batteries, bottles and corporate clothing by October 1994 and implement fully by March 1995.</p> | <p>Eleven different waste types are currently recycled in Thames Region, including paper, aluminium cans, plastic cups, and toner cartridges. New arrangements for recycling paper and plastic cups were introduced at the Wallingford and Sunbury sites during the year.</p> <p>Plastics: Recycling of plastic cups takes place at all major sites. Advice on recycling plastic bottles has been passed on to the National Laboratory Service at Fobney.</p> <p>Tyres: Thames Region has a contract with National Tyres, who sell used tyres for remoulding. The top layer of rubber which is removed in the remoulding process is re-used to produce carpet underlay, tarmac, and playground surfaces. Tyres which are not suitable for remoulding are incinerated to generate energy.</p> <p>Batteries: Only rechargeable batteries can be recycled. These are widely used throughout the Region in mobile telephones, etc.</p> <p>Bottles: Voluntary schemes for recycling glass bottles have been established at some sites, but the quantities of material involved are very small.</p> <p>Corporate clothing: A recycling policy was approved by the Regional Management Team in January 1995. This requires managers to keep a record of all clothing and equipment issued to staff and to ensure that it is returned. Any undamaged clothing should be stored and reissued where appropriate.</p> |



| National Target | Progress in Thames Region during 1994/95 |
|--|---|
| <p>2. Aim: to minimise/eliminate practices known to be harmful to the environment.</p> | |
| <p>Ozone Depletors 2.1 To implement policy to phase out the use of ozone depletors.</p> | <ul style="list-style-type: none"> ● All BCF fire extinguishers have been phased out. ● Halon drench fire protection for the main computer suite will remain in place until national guidance is received on the appropriate course of action to take. ● The Region has been granted exemption from replacing halon systems at certain locations on the Thames Barrier because of the high costs of replacement. ● Ozone-friendly products are now purchased as the norm if there is a need for this type of product. |
| <p>Toxic Substances 2.2 To implement policy on use of red and black list substances.</p> | <p>A draft NRA policy on the use of toxic substances has been prepared by staff from Thames Region.</p> <p>At present red list / black list substances are not knowingly purchased within Thames Region. To date policy has been implemented within the Region through use of the National COSHH handbook, which contains advice on red list substances. Attention of purchasers has been drawn to this, with advice not to purchase such products.</p> |
| <p>Tropical Hardwoods 2.3 Eliminate use of tropical hardwoods in office furniture.</p> | <p>No furniture made from tropical hardwoods has been purchased by Thames Region during 1994/95, and procurement staff have been instructed not to purchase such items.</p> |
| <p>2.4 Develop tropical hardwood policy for NRA structures for flood defence.</p> | <p>The draft NRA policy on use of timber for construction purposes has been drafted within Thames Region. At the current time further consultation on the draft policy is underway with the National Flood Defence Design and Contracts group. In the meantime the draft policy is being promoted as best practice within the Region.</p> |
| <p>3. Aim: To establish effective systems and procedures to support implementation of the environmental policy.</p> | |
| <p>Audit 3.1 To implement findings from water pollution risk audit of NRA sites.</p> | <p>The pollution risk audit was completed during the year, with 100 sites visited. Inspection certificates have been issued for each site which identify remedial work required to ensure that the site complies with pollution prevention best practices. Remedial work is now being undertaken, with the intention that the majority of actions will be completed by March 1996.</p> |
| <p>3.2 To implement environmental audit programme.</p> | <p>Thames Region have provided expertise and advice to other NRA Regions to assist in the national audit programme.</p> |

| National Target | Progress in Thames Region during 1994/95 |
|---|---|
| <p>Procurement and Project Management 3.3 To establish ESG liaison with contract development programme and project appraisal boards (PABs).</p> | <p>Contract Development: Pro-active liaison with potential suppliers takes place through discussion and dissemination of the NRA Environmental Statement. Potential suppliers are requested to provide details of their environmental policy at the pre-qualification stage of tendering for a contract.</p> <p>Project Appraisal Board: The requirement for projects to comply with the environmental policy is explained to project managers at regular briefing workshops.</p> <p>Staff from both the Procurement group and the Financial Planning group are represented on the Regional Environmental Steering Group.</p> |
| <p>Monitoring 3.4 To implement improved monitoring arrangements.</p> | <p>A monitoring group chaired by the Regional Business Services Manager has been set up to collect and ensure the accuracy of Environmental Policy monitoring data. A quarterly monitoring report on the Environmental Policy is prepared for the Regional Management Board and the National Environmental Policy Unit.</p> |
| <p>Promotion 3.5 To develop and implement a proactive promotion/education campaign to heighten staff awareness of the policy.</p> | <ul style="list-style-type: none"> ● Environmental Policy launch and autumn campaign throughout the Region in September 1994. ● Articles on Environmental Policy matters included in every edition of 'Banknotes' staff news-sheet, including a four-page supplement to coincide with the autumn launch. ● Environmental Policy noticeboards set up at principal office sites. ● Presentation and discussion on the Environmental Policy at a Quarterly Managers' Meeting. ● Preparation of circulars and advice notes on a regular basis. |
| <p>Grounds Management 3.6 To develop and implement an environmentally friendly grounds maintenance programme.</p> | <p>No sites have been identified within Thames Region which require development of a grounds maintenance programme.</p> |



COMPLIANCE

- 100 sites within Thames Region have been inspected during the pollution risk audit, and certificates issued for each one.
- 79 sites were issued with conditional certificates and action plans which contained actions not necessarily associated with statutory responsibilities, but which are designed to achieve best practice in pollution prevention.
- 15 sites (principally lock sites) have effluent discharges to a surface watercourse. Applications for consent for all these sites have been submitted to DoE and 5 draft consents have been returned by DoE.
- One site abstracts water from a surface source and has a valid abstraction licence.
- 14 trade effluents have been identified. Nearly all of these are vehicle washdown areas. Effluents are disposed of by a number of routes, some of which are unsatisfactory. Four sites are in possession of a trade effluent consent or have had consent waived.
- No sites are known to require authorisation for atmospheric emissions.
- 11 sites handle waste other than domestic or office waste (eg oily waste or waste removed from rivers). Five of these have confirmed arrangements to meet the Duty of Care. Arrangements at the remaining six sites have yet to be confirmed.
- 28 sites have oil storage tanks of some description and all of these sites require action to be taken to ensure that storage arrangements conform with our own guidelines.
- All action plans issued with conditional certificates had associated time limits for completion of corrective actions. Most of these have now expired, with time remaining for remedial work at only 12 sites. A series of revisits is currently underway to assess compliance with action plans. 47 sites have been visited and, disappointingly, action plans have been fulfilled in only a few cases.



FUTURE PLANS

Thames Region's Environmental Strategy group has identified a number of key areas where actions will be targeted during 1995/96. We need to continue to increase the awareness of staff on Environmental Policy issues by continuing with publicity initiatives and providing good quality feedback on our achievements. In order to do this, we will endeavour to improve the standard of monitoring of our environmental performance.

Thames Region's Environmental Strategy Group will enter its second year with enthusiasm and a programme of focused actions. We hope that the work which has been done to date will provide a sound foundation to help the Environment Agency prepare its Environmental Policy.

Key actions for 1995/96

Energy and Water:

- Evaluate the scale of energy use at pumping stations and promote energy efficient methods for pumping.
- Identify buildings without water meters and arrange for meters to be installed where practicable.
- Ensure that energy saving features are utilised on computers installed within the Region.

Paper and Stationery

- Promote methods for using e-mail to reduce paper use.
- Arrange a 'stationery amnesty' to encourage re-use and to raise awareness of costs and wastage.
- Investigate methods for improving control over the ordering and supply of stationery.

Recycling

- Continue to recycle at least 60% of paper purchased.
- Introduce recycling of plastic cups at sites not yet using the Save-a-Cup scheme.
- Introduce a can recycling scheme.

Transport

- To explore ways of reducing mileage.

Pollution Prevention:

- Implement action plans from NRA site audits and undertake follow-up visits.

Publicity

- To include regular items on environmental matters in 'Banknotes' and the 'Regional Brief'.
- To raise awareness by arranging and publicising an Environmental Week.

Monitoring

- To provide regular data on environmental performance to Regional and National management.



ILLUSTRATIONS: EARTH LIMITED, STEWART OWEN, LEE BARRETT

NRA - WELSH REGION
ANNUAL ENVIRONMENTAL REPORT
1994 - 1995

Richard Hughes
Regional Environmental Policy Co-ordinator
September 1995

A.50.

CONTENTS

| | PAGE |
|--------------------------------------|------|
| 1.0 INTRODUCTION | 3 |
| 2.0 FORWARD BY RGM | 6 |
| 3.0 ENVIRONMENTAL MANAGEMENT | 8 |
| 4.0 ENVIRONMENTAL PERFORMANCE | 11 |
| 5.0 COMPLIANCE | 14 |
| 6.0 FUTURE PLANS | 16 |
| 7.0 APPENDICES | 18 |
| Appendix 1 - Regional Steering Group | |
| 8.0 REFERENCES | 20 |

INTRODUCTION

3
A-52

1.0 INTRODUCTION

The Welsh Region of the NRA is fully committed to the Authority's Environmental Statement which states

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

The Region is one of eight Regions of the Authority and is sub divided into three operational areas, South West (area office at Haverfordwest), South East (area office at Abacus House, St. Mellons) and Northern (area office at Bangor).

Flood Defence, Water Quality, Water Resources and Fisheries activities account for the majority of the Region's annual budget.

Key statistics for the Region are given on the next page.

1.1 Key Statistics - Welsh Region

| | | |
|---|---|--------------|
| Total Employees 1994/95 | - | 708 FTE |
| Area | - | 21,262 sq km |
| Population | - | 3.05 million |
| Length of sea defences | - | 120.1 km |
| Length of fluvial main river | - | 115.6 km |
| Length of salmon & trout fisheries | - | 7,000 km |
| No. of salmon reported caught by anglers | - | 5,986 |
| No. of sea trout reported caught by anglers | - | 13,350 |
| No. of EC bathing waters | - | 56 |
| Average rainfall | - | 1,310 mm |
| No. of discharge consents | - | 9,012 |
| Volume of authorised surface & groundwater abstractions | - | 24,368 MI/d |
| No. of abstraction and impoundment licences in force | - | 4,077 |
| No. of abstraction licence inspections | - | 1,655/year |
| No. of category 1 and 2 pollution incidents | - | 1,442 |
| No. of planning applications processed | - | 8,599 |

FORWARD

BY

REGIONAL GENERAL MANAGER

6
A-55

2.0 **FORWARD**

The Welsh Region is totally committed to implementation of the Environment Policy and to the principle of sustainability.

I am keen to promote the principles of effective Environmental Management to all staff in every aspect of our work.

The performance measures monitored thus far have indicated significant improvement in performance since 1991/2 in many areas. However further effort is required by all staff in order to achieve continuous improvement in the key result areas and to meet the targets set.

I extend thanks to the Regional Environmental Steering Group for the work undertaken thus far in achieving positive results and offer my support for future initiatives during 1995/96.

DR. JOHN STONER
REGIONAL GENERAL MANAGER

**ENVIRONMENTAL
MANAGEMENT**

8

A-57

3.0 **ENVIRONMENTAL MANAGEMENT**

3.1 **Regional Co-ordinator**

A Regional Co-ordinator has been appointed to co-ordinate implementation of the National Policy within Welsh Region. The Regional Co-ordinator is Richard Hughes, Administration Services Manager.

3.2 **Regional Environmental Steering Group**

A Regional Environmental Steering Group has been set up, under the chairmanship of the Regional Co-ordinator, to assist with implementation as widely as possible throughout the Region.

Membership of the Group is from all areas and functions, and all members have direct access to their respective area/functional management teams. A full list of current members is included as Appendix 1.

3.3 **Terms of Reference**

The Regional Environmental Steering Group has agreed the following Terms of Reference as a means to meet the Authority's Environmental aims and targets.

- (i) To set Regional Targets to ensure that National Targets are met;
- (ii) To devise and implement an annual Regional Action Plan that addresses at least all aspects covered by National/Regional Targets;
- (iii) To monitor performance against target on a monthly/quarterly/annual basis as appropriate;
- (iv) To report performance to AMT/RMT/HO on the same basis;
- (v) To publicise performance throughout the Region as widely as possible using different and appropriate media; and
- (vi) To highlight new and innovative ideas to colleagues within the Region and to Head Office for possible implementation.

3.4 **Communication**

Communication is seen as a vital method in improving education and awareness of all environmental issues.

The monthly staff newsletters to all employees within the Region contains a monthly article on an environmental issue.

Noticeboards are used to publicise Regional performance against target tables.

All light switches have had 'Save It' stickers prominently displayed to encourage lights and equipment to be switched off when not in use.

3.5 **Resources**

All members of the Steering Group have had the Environmental Policy included within their objectives and consequently are expected to devote the time necessary within normal working hours. Regional Management Team have endorsed the policy and this philosophy.

3.6 **Staff Training**

A number of relevant videos included 'Grime Goes Green', 'Polluter Pays' and 'Efficient Driver Training' have been made available and have been seen by a cross-section of staff.

A major National initiative on Efficient Driver Training commenced at the end of the year and will continue into 1995/6. All drivers of badged or leased vehicles have been required to attend.

3.7 **Staff Awareness**

All staff throughout the Region are exposed to the policy and its associated targets in some form. Current methods will be further utilised during 1995/6 in order to make staff more aware of

- (i) What the targets and issues are
- (ii) How we are performing
- (iii) What each individual can do to help

3.8 **Procurement**

An environmental policy questionnaire is issued with all major requests to tender or quote. The response to the questionnaire is used as part of the evaluation process.

3.9 **PAB**

The Regional Environmental Steering Group Co-ordinator advises the Regional Project Assessment Board on all projects that are considered to have an environmental impact.

**ENVIRONMENTAL
PERFORMANCE**

4.0 ENVIRONMENTAL PERFORMANCE

Environmental Performance against targets is monitored regularly and reported in a standard format to Head Office on a quarterly basis.

4.1 Energy

4.1.1 Buildings

Welsh Region was able to collect data in terms of kWh for the first time during 1994/95. Consequently, comparisons with previous years consumption can only be made on cost. Cost of total energy consumed in Welsh Region has fallen in each of years 1993/4 and 1994/5 compared to the baseline of 1991/2.

4.1.2 Pumping

Energy use caused by pumping is negligible due to the small numbers of pumps used in the Region.

4.1.3 Transport

The total mileage covered by Authority vehicles showed an increase of 59% on 1993/4. This is primarily due to improved data gathering techniques which were previously unreliable.

The Fuel Efficiency of vehicles has shown an improvement over 1993/4 and is anticipated to improve further as the benefits of the Efficient Driver Training Scheme take wider effect.

Only 72% of the current fleet are diesel powered, although this will increase year on year as part of the Regions replacement programme. All vehicles purchased for use within Region have diesel powered engines as part of the specification.

4.2 Water

Total water use has increased due to increased monitoring at major sites. Accordingly the volume of water used per employee has increased, although this is still less than the 'typical' volume used per employee.

4.3 Stationery

Welsh Region have extremely good compliance with the National Stationery contract. Consequently, the cost and amount of stationery used is kept to a minimum. Additionally, tight controls are kept over issue of stationery to staff from 'central stores'.

The cost of stationery used per employee is below the National average and equal to the published Times/Procord 'typical'.

4.4 Paper

All paper purchased within the Region fully meets the National criteria for recycled paper. This paper is purchased via a Regional contract pending a new National contract due in 1995/6. Paper usage within Welsh Region has shown a decrease of 24% from 1993/94 to 1994/5. This is due to a number of factors which include better utilisation of double sided copying or photocopiers, re-use of scrap paper and extended use of e-mail.

Welsh Region recycled over 60% of paper purchased at Regional Head Office. This is in excess of the National target and is an increase on the figure recycled in 1993/94.

4.5 Ozone Depleters

Halon extinguishers and systems have been eliminated from all buildings but still exist in some badged vehicles. These extinguishers are being eliminated on a replacement basis.

4.6 Others

Welsh Region does not use peat, timber hardwoods or hazardous materials. However, information on suitable alternatives is circulated to interested/affected departments.

COMPLIANCE

5.0 **COMPLIANCE**

Welsh Region currently issues consents to some of its own premises in respect of discharges and licences in respect of abstractions.

5.1 **Discharges**

Ten discharge consents have been granted, or are currently under Welsh Office consideration. Of these seven relate to discharges from fish hatcheries.

5.2 **Abstraction Licences**

Eight abstraction licences have been granted, all to fish hatcheries throughout the Region.

FUTURE PLANS

6.0 FUTURE PLANS

The Region has a number of key plans which will further enhance awareness of the Environmental Policy and Targets and consequently improve performance. These are outlined below.

6.1 Objectives

All staff have reference to the Environmental Policy and Targets within their personal and departmental objectives for 1995/6.

6.2 Regional Environmental Steering Group

The Regional Environmental Steering Group has adopted the National targets and Regional targets for 1995/6.

6.2.1 Regional Action Plan

The Regional Group will propose an Action Plan for the year that will assist in meeting all of the targets set. This plan will be submitted to RMT for endorsement and approval.

6.2.2 Awareness

Greater use will be made of all existing media and publicity will include greater reference to local issues, targets and performance. All staff will be encouraged to participate and recognise that their 'bit' does count.

Lunchtime seminars for all staff will be arranged, including screening of the promotional videos currently available.

6.2.3 Recycling

Recycling initiatives will be expanded to include more sites and more materials.

6.2.4 Vehicle Management

A study of badged vehicle usage at Regional Head Office is currently underway, which will result in a reduction in the number of pool vehicles.

6.2.5 Efficient Driver Training

The Efficient Driver Training Scheme for drivers of badged and leased cars will be completed.

APPENDICES

18

A.67

REGIONAL ENVIRONMENTAL STEERING GROUP

WELSH REGION

| | | |
|---------------------------|---|------------------------------------|
| Richard Hughes (Chairman) | - | Administration Services Manager |
| Sarah Armstrong | - | Business Support Officer |
| Grant Butler | - | Regional IS Client Officer |
| Ken Davies | - | Snr. Clerk (Admin) |
| Rob Etheridge | - | Field Data Officer |
| Della John | - | Clerk/Typist |
| Richard Jones | - | T&P Officer |
| Terry Kindon | - | Area Support Services Co-ordinator |
| Rhian Phillips | - | Asst. Water Resources Planner |
| Andy Rees | - | Regional Water Quality Planner |
| Huw Roberts | - | Financial Accountant |
| Iwan Thomas | - | Appraisal Officer (Biology) |
| Neil Weatherly | - | Environment Scientist |
| Val Wiltshire | - | Administration Support Officer |

REFERENCES

20

A. 69

8.0 **REFERENCES**

- 8.1 Environmental Policy - Progress Report 1994/5 - NRA(95)74 - Kevin Bond. May 1995
- 8.2 NRA Welsh Region - Regional Plan Summary.

NATIONAL RIVERS AUTHORITY

NATIONAL LABORATORY SERVICE

ANNUAL ENVIRONMENTAL REPORT

1 Introduction

The National Laboratory Service was formed in October 1993, as the result of an internal efficiency review of NRA laboratories.

Key statistics for 1994/95 are:-

| | |
|-----------------------|-----------|
| Staffing | 319 FTE |
| Budget | £14.45 |
| Determinands Reported | 5,086,514 |
| Samples Analysed | 427,475 |

2 NLS Manager's Report

Laboratories have not previously been much involved in the Authority's efforts on Environmental Management. The situation has now been redressed and the NLS has its own representative on the Environmental Steering Group (ESG). The Group's support and assistance from the National Environmental Policy Unit (EPU) has enabled the NLS to bring itself rapidly into the process.

Monitoring and reporting of all data required by ESG has been accomplished during the year. The NLS is committed to practising and promoting its own Environmental Management System (EMS). Major challenges lie ahead, with the use of some ozone depleters and hazardous chemicals, where no suitable alternatives are yet available.

The generally enthusiastic response by NLS staff has been encouraging and plans have been made to further promote good environmental management by holding presentations at each NLS site.

3 Environmental Management

Each NLS site now has a coordinator who ensures that data is collected and reported. Laboratory Managers are committed to the principles of good environmental management and liaise with their coordinators, as appropriate.

The coordinators held one meeting together during 1994/95, at Reading, under the chairmanship of the NLS representative on ESG. In addition, laboratory coordinators have been encouraged to attend Regional coordinating groups. These contacts have enabled new initiatives by Regions to be passed onto the laboratories and vice versa.

A programme of site inspections has been implemented and action taken to ensure compliance with NRA policy. Details of the full resource expenditure on internal environmental management are not available, as the actions have largely been integrated into existing quality and safety management systems.

All sites now have recycling schemes for paper, with plans to extend this to other materials, as local conditions allow.

All NLS senior staff attended presentations on Environmental Management and the CEST initiative.

4 Environmental Performance

The laboratories utilise a wide range of chemicals, many of them toxic, as well as consuming energy in the operation of their facilities. Data for the full year is not available, as some sites are shared with Regions and did not have separate meters or accounting systems. However, the table below indicated the NLS resource inputs, in terms of cost, for 1994/95.

| ITEM | £ |
|------------------------|---------|
| Electricity | 176,264 |
| Gas & Other Fuels | 32,564 |
| Water & Effluent | 59,163 |
| Chemicals & Gases | 453,147 |
| Bottles | 148,207 |
| Laboratory Consumables | 982,546 |
| Stationery | 81,227 |
| Computer Consumables | 25,534 |

The NLS does not operate a badged fleet of vehicles, having only lease, essential and casual users. The cumulative mileage for all vehicles in 1994/95 was 147,817, with the largest use being casual at 99,624 (67%).

These resources were used to process more than 400,000 samples and produced in excess of 5,000,000 individual results. Much of the travel was associated with technical meetings and training as well as some relocation mileage following the laboratory reorganisation.

Not surprisingly, the NLS also generated a significant amount of waste, despite recycling paper and other materials. This fell into three categories of Trade Effluent, Toxic Waste and General Refuse. Details of these are shown below.

| | |
|------------------------------|-----------------------|
| Trade Effluent | 25,000 m ³ |
| General Refuse (solid waste) | 4,000 m ³ |
| Toxic Waste | 8,000 litres |

5 Compliance

The NLS holds Waste Transfer Notes (details below), as required under the Duty of Care Regulations. Several sites are registered or exempt as Waste Transfer Stations or have applications pending.

| | |
|---------------------------------------|----|
| Waste Transfer Notes - General Refuse | 10 |
| Waste Transfer Notes - Toxic Waste | 29 |

The situation with Trade Effluent discharges licences is not as clear, due in part to different interpretations by the various water plc's and the shared use of sites. During 1994/95, one licence was granted (Southern) and one deferred (Thames) pending further consideration. At other sites a number of verbal exemptions have been granted.

No NLS laboratory has been granted an authorisation for discharges to air; laboratory emissions do not normally require a licence.

6 Future Plans

The NLS has only been involved in the second half of the 1994/95 in the NRA's efforts to improve its environmental performance. It is planned that participation will be at a greater level for ensuing years.

Two main initiatives will be pursued during 1995/96. The first will be to ensure that all NLS staff are aware of the NRA policy and the work of ESG. This will be undertaken by presentations at each NLS site, using material provided by the EPU and by more extensive training for the coordinators.

To support this work, the second initiative will be to produce an NLS Policy Manual, similar to those for quality and safety, which can be used to assist the laboratories in pursuing best practise. Having a single NLS manual will also help to achieve consistency and will provide a yardstick against which internal and external audits can be gauged. It is considered that the establishment of a basic EMS is essential before further progress can be made. Future initiatives and action plans will stem from the adoption of the manual and its principles.

In the meantime, efforts will continue to ensure that monitoring and reporting, in line with ESG requirements, are maintained and enhanced.



.....
PP NATIONAL LABORATORY SERVICES MANAGER

.....14.9.95.....

DATE

HOW WE ARE PERFORMING

DATA ANALYSIS

| SUBJECT | PAGE |
|----------------|-------------|
| INTRODUCTION | B.2 |
| ENERGY | B.2 |
| WATER | B.6 |
| STATIONERY | B.6 |
| PAPER | B.7 |
| GOOD NEWS | B.7 |
| FIGURES | B.9 |

HOW WE ARE PERFORMING

ANALYSIS

1) INTRODUCTION

Since 1993/94 considerable efforts have been made to improve the quality of the reported environmental performance data. Reporting is now integrated into the Corporate Planning process with Regional Business Service Managers responsible for reporting their quarterly progress and quality checking their returns. There is a marked improvement in the quality, quantity and timeliness of the reported data compared with 1993/94, although inconsistencies and missing data are still apparent.

In the Authority, resource management is still very much in its infancy. Data gathering is frequently carried out at regional level, usually from finance sources, and then reported up or down the line. The direct measuring, monitoring and management of resource use is not regularly practised. However, efforts are being made to increase managers' awareness of the need to adopt this approach.

Although regions were requested to verify the baseline 1991/92 data, this is known still to be suspect or incorrect for various reasons including mergers and re-organisation. Many inconsistencies in the 1993/94 data were highlighted last year. Inevitably comparisons of this year's performance with the baseline, or indeed with last year, are limited. Where comparisons are made they are on a 'like for like' basis, only using data from regions where both years are reported. Where practicable, the 1994/95 data is compared with nationally accepted norms to indicate overall performance.

Throughout this report, the data is as reported and verified by the regions. In the report, the statement "no data" means no data was reported or the data reported had such qualifications as to make it unusable.

2) ENERGY

TARGET: A 15% reduction in energy directly consumed by April 1995, compared to 1991/92 levels, measured as CO₂ production.

Buildings

Costs *No data 1991/92 Northumbria and Yorkshire, Thames, Southern.* Costs for the remaining regions use of electricity, gas and oil in 1991/92 were £897 k and in 1994/95 £750 k, a reduction of 16%.

No data 1993/94 Thames. A comparison of the fuller data for 1993/94 with 1994/95 gives expenditure of £1,284 k for 1993/94 and £1,054 for 1994/95, a reduction of 18%.

Care is required with these comparisons because the data within the regions is not always directly comparable, for example with the opening or closure of laboratories, changes in the number of sites reported or the absence of data for one energy source (eg oil) in one period.

Quantities (kWh) *No 1991/92 data Thames, Northumbria and Yorkshire, Welsh, Severn Trent.* From 1991/92 to 1994/95 consumption in the regions reporting increased by 16%.

No 1993/94 data Thames, Welsh, Northumbria and Yorkshire. From 1993/94 to 1994/95 consumption fell by 9%. Data from the Energy Efficiency Office (EEO) indicates that 1994/5 was less cold than 1993/94 and should produce a reduction in energy use for heating.

In 1994/95 a total of 32,739,000 kWh energy was used nationally, although oil use was not included by many regions and some data from leased buildings, especially in Thames, was not reported.

Environmental Impact (Tonnes CO₂ Produced) *Data for 1991/92 for Anglian, North West, South Western, Head Office.* This limited information indicates that CO₂ production increased by 20% from 1991/92 to 1994/5. However, in this period there were significant changes within the regions reporting, with the opening of a laboratory in South Western, closures in Anglian and North West, and the commissioning of Head Office. (Figure 1)

No data 1993/94 Northumbria And Yorkshire, Thames, Welsh. A comparison of the more complete data for 1993/4 with 1994/5 gives a 2% increase in CO₂. Total CO₂ production in 1994/95 was calculated as 17,693 tonnes.

Use & Costs in Terms of Floor Area Costs averaged 13.94 £/m² for energy use in buildings in 1994/95. It compares poorly with the EEO's 'typical' figure for a naturally ventilated open plan office of 7.92 £/m² and 'good practice' figure of 4.99 £/m². The use in 1994/95 ranged between 5.18 £/m² (Southern), and 16.51 £/m² (Northumbria and Yorkshire). (Figure 2)

Consumption for the NRA averaged 320 kWh/m² compared to EEO's 'typical' of 285 kWh/m² and 'good practice' of 156 kWh/m². (Figure 3)

Summary **1994/95 Performance.**

| | | | |
|-----------------|------|-------------|----------------------------------|
| Cost | -16% | on 1991/92. | (Data from A, NW, ST, SW, W, HO) |
| kWh | +16% | on 1991/92. | (Data from A, NW, S, SW, HO) |
| CO ₂ | +20% | on 1991/92. | (Data from A, NW, SW, HO) |
| Cost | -18% | on 1993/94. | (No data T & Barrier) |
| kWh | -9% | on 1993/94. | (No data T & Barrier, N&Y, W) |
| CO ₂ | +2% | on 1993/94. | (No data T & Barrier, N&Y, W). |

The data indicates that compared to 1991/92 there has been an increase in energy consumption, measured as quantity or environmental impact in the range 16 - 20%. The NRA has failed to meet the target for a 15% reduction. There is a cost saving of about £150 k per annum in 1994/5 compared to 1991/92 and £126 k compared to 1993/94.

Compared to 1993/94 the changes are more complex. The increase in CO₂, decrease in kWh and greater decrease in costs may be explained by the negotiation of more favourable tariffs following the energy audits and improved management of building heating. Electricity use is less well controlled and results in the increase in carbon dioxide emissions as electricity becomes a greater proportion of the NRA's buildings energy use.

Thames Barrier

Energy *Data 1991/92 electricity, 1994/95 gas, oil, electricity.* Electricity costs rose by £2,000 from £240 k in 1991/92 to £243 k in 1994/95, but use fell from 5.35 million kWh in 1991/92 to 5.11 million kWh, a reduction of 4.5%. Total energy cost in 1994/95 was £261 k, from 6.96 million kWh, and resulted in a release of a calculated 4370 tonnes CO₂. The Barrier accounts for about 8% of the Authority's energy use.

The target for a reduction of 15% in energy use was not reached, based on the electricity data.

Pumping

Cost *No data Thames, Southern 1991/92; only Severn Trent and South Western (in part) reported both electricity and oil use.* The demand led nature of pumping continues to be reflected in the figures available.

There was a 33% decrease in cost compared to 1991/92 but a 6% increase from 1993/94 to 1994/95 to £1.64 million. Anglian Region was the largest energy user, consuming £1,451 k in 1991/92 and £629 k in 1994/95, a decrease of £822 k compared to the Authority wide decrease of £646 k.

Quantities (kWh) *Data from Anglian, North West, Severn Trent, South Western.* Reported data shows a reduction from 41.8 in 1991/92 to 18.5 million kWh in 1994/95. If Anglian is excluded the reduction in use is 13% from 6.7 to 5.8 million kWh. (Figure 4)

Environmental Impact (Tonnes CO₂ produced) *No data Thames; 1991/92 Northumbria and Yorkshire Southern, Welsh.* Translated into CO₂ production, both direct and indirect, reported energy use produced 18,572 tonnes CO₂ emitted in 1994/95 and 31,392 tonnes CO₂ in 1991/92.

Summary The target of a 15% reduction in energy used (in pumping) was met. This was achieved because of the demand led nature of the operation. In Anglian Region 1991/92 was a 'drought' year with considerable operation of water transfer schemes.

Transport

Fuel Use *Data for 1991/92 Anglian, North West.* Comparison on total fuel use by 'badged' vehicles from 1991/92 to 1994/95 shows Anglian with an 8% increase and North West a 23% increase.

No data 1993/94 Severn Trent. Fuel purchase was 648 k gallons in 1993/94 and 642 k gallons in 1994/95, a 1% reduction. This change cannot be considered significant. Not all 'badged' vehicles are reported, some plant is included in both the vehicle numbers and fuel consumption, and some other uses such as boats and filling cans for small plant are included in the data from some regions.

Environmental Impact (Tonnes CO₂ produced) *Data for 1991/92 Anglian, North West.* From 1991/92 to 1994/95 Anglian reported a 11% and North West a 29% increase in emissions. These figures are greater than for fuel (expressed as gallons) because of the increasing proportion of diesel fuel purchased. (Figure 5)

No data 1993/94 Severn Trent. From 1993/94 to 1994/95 there was a decrease from 7757 to 7678 tonnes of carbon dioxide released.

The total reported for all regions for emission by 'badged' vehicles in 1994/95 was 8599 tonnes.

Miles Covered *Data for 1991/92 Anglian, Northumbria and Yorkshire, North West.* Use of 'badged' vehicles in 1994/95 compared to 1991/92 showed a 16% decrease in fleet miles in Anglian, a 32% decrease in Northumbria and Yorkshire, and a 36 decrease in North West.

No data 1993/94 Severn Trent, Thames. A total of 20.0 million miles were reported to be driven in 1993/94 and 18.5 million 1994/95, an 8% decrease. However, examination of figures show the unreliability of the data with reported changes between +59 and -45%. (Figure 7)

| Region | 1993/94 Million Miles | 1994/95 | Change % |
|-----------|--------------------------|---------|-------------|
| Anglian | 7.207 | 5.436 | -25 |
| N & Yorks | 1.823 | 2.778 | +52 |
| N West | 1.613 | 2.086 | +29 |
| S Trent | - | 2.105 | - |
| Southern | 2.870 | 2.360 | -18 |
| S West | 4.319 | 2.380 | -45 |
| Thames | - | 0.995 | - |
| Welsh | 2.205 | 3.502 | +59 |

The 'badged' fleet mpg figures derived from this data is similarly unreliable, but 30.7 mpg for 1994/95 is probably in the 'right ball park'. (Figure 6)

Size of Vehicle Fleet *No data 1991/92 Southern, South Western; full data 1994/95.* The 'badged' vehicle fleet increased by 3% from 1991/92 to 1994/95, with 1887 vehicles in the fleet in 1994/95.

Essential/lease/casual use The mileage for these categories was not reported. However, a report by Internal Audit in 1994 indicated that the mileage was of the same order as that of the 'badged' fleet. For this report the environmental impact will be assumed to be similar and is taken as 8600 tonnes of carbon dioxide emitted.

Summary The energy target of a 15% reduction in carbon dioxide emitted has not been met. The data is inadequate to assess how far from the target the NRA is.

TARGET: Achieve 90% diesel vehicles in 'badged' fleet and 40% in 'lease' fleet nationally by April 1995.

Vehicles - % Diesel *No data 1991/92 Southern, South Western, full data 1994/95.* Diesel power accounted for 89.5% of the 'badged' fleet in 1994/95 an increase of 16% on 1991/92. Only Anglian (81%) and Welsh (72%) fell short of the 90% target. The increase in the proportion of diesels in the fleet should increase the overall efficiency and result in a reduction of about 4% in the CO₂ emissions of the 'badged' fleet. (Figure 8)

The 'lease' fleet comprised 255 vehicles with 68% diesel powered at the end 1994/95. It is gratifying to note that 90% of managers replacing their cars on the PHH contract are now opting for diesels.

Summary The targets for the proportion of diesels in the 'badged' and 'lease' fleets have been met.

Plant

Fuel Use - Quantities (litres) *Data for 1991/92 from Northumbria and Yorkshire, North West, Thames.* A direct comparison over the period 1991/92 to 1994/5 gives a decrease of 167 k litres fuel used, from 908 k to 742 k litres.

No data 1994/95 Severn Trent, Southern. Total reported consumption in 1994/95 was 1.55 million litres and ranged between 11,000 litres in Thames to 654,000 litres in Anglian. This great variation indicates poor data capture in some regions leading to under reporting.

Environmental Impact (Tonnes CO₂ produced) On the basis of the above limited data, total CO₂ emissions for 1994/95 are calculated at 4160 tonnes. (Figure 9)

Summary It is not possible to estimate use against the target 15% reduction from 1991/92 to 1994/95. The data currently reported is believed to be an underestimate in some regions.

Energy - Summary

The reported data indicates that CO₂ emissions for 1994/95 are as below. Reported consumption in terms of individual regions are in figure 11. It is not realistic to assess how the Authority performs in relation to the target of a 15% reduction in energy use, measured as CO₂ release. The 57,000 tonne total is an underestimate, largely due to the failure to capture all uses. It is estimated that the actual impact of energy consumption is between 60 and 100 thousand tonnes of carbon dioxide released.

NRA ENERGY USE - CO₂ Emissions

| Source | CO ₂ Emission | % Total |
|----------------|--------------------------|---------|
| Buildings | 13,323 tonnes | 23 % |
| Thames Barrier | 4,370 tonnes | 8 % |
| Pumping | 18,572 tonnes | 32 % |
| Transport | | |
| 'Badged' | 8,599 tonnes | 15 % |
| Other | 8,600 tonnes | 15 % |
| Plant | 4,160 tonnes | 7 % |
| Total | 57,624 tonnes | 100 % |

3) WATER

TARGET: A 10% reduction in use compared to 1991/92 levels.

Costs Insufficient data is available for meaningful comparisons.

Consumption (cubic meters) *Data for 1991/92 Anglian, Southern, Welsh, Head Office.* Water use fell from 55519 m³ in 1991/92 to 41077 m³ in 1994/95, a reduction of 26%. This is accounted for by the changes in Southern and Anglian where excessive consumption is identified and remedial action (eg leak correction) taken.

No data 1993/94 Thames, North West, Northumbria and Yorkshire Comparing 1993/94 to 1994/95 there was an increase in water use of 1%. The change may be accounted for by an increase in the number of sites metered and monitored giving a higher apparent consumption being countered by better management of excessive consumption.

The great variability in consumption between regions reflects the difference in the number and types of locations metered and reported. Southern, with the highest consumption, has metered and reported all sites and includes depots.

Consumption per Employee Water use, expressed in terms of all employees (FTE), was reported by all regions and Head Office for 1994/95. Use ranged from 7.74 m³/FTE (Welsh) to 27.37 m³/FTE (Southern) with an average of 13.71 m³/FTE. A 'typical' consumption figure for use in offices is 13 m³/FTE, from the Association of Water Offices. (Figure 10)

Part of the variation is accounted for by some regions using the regional total of FTEs and not the number at the metered sites.

Summary From the reported data the target of a 10% reduction in water use is apparently met. Current consumption related to the number of employees is inaccurate, due to variation in reporting protocols, and warrants investigation.

4) STATIONERY

TARGET: A 10% reduction in use by April 1995, compared to 1991/92, measured as costs.

Costs *No data 1991/92 Northumbria and Yorkshire, North West, Southern; 1993/94 Northumbria and Yorkshire, North West; full data 1994/5.* Costs fell from £384 k (100%) in 1991/92 to £358 k (93%) in 1993/94 but increased to £398 k (104%) in 1994/95. The total expenditure reported nationally in 1994/5 was £581 k.

Costs per Employee Cost in terms of staff numbers (FTE, non-manual) averaged £111.56 per staff for the NRA as a whole. The Times-Procord Office Costs Index gives a stationery expenditure of £92 per staff as typical for October 1993. Consumption varied between £183 at Head Office to £53 in North West. In part this large range may be accounted for by the inclusion of non-stationery items (equipment, small furniture) in the figures of some regions. (Figure 12)

Summary Use increased by 4% in 1994/95 against the baseline year. It was considerably worse than 1993/4 when a 7% reduction was attained compared to baseline. The NRA failed to achieve the target for a reduction in the consumption of stationery.

5) PAPER

TARGETS: To ensure that all paper for internal use and printing is from recycled sources (40% class C/D waste) and totally chlorine free.
To reduce paper use by 10% compared to 1991/2.
To recycle at least 60% of paper purchased.

Paper Purchase Based on estimates from each region nationally it is estimated that about 80% of paper purchased meets the target specification; up from 67% in 1993/94. Southern failed to report, and Anglian and North West were low with 48% and 60% respectively. The national contract for paper being let in 1995 specifies paper that is 100% C/D waste and totally chlorine free.

Paper Use *No data 1991/92 North West, Severn Trent, Southern, Welsh.* Comparative consumption was 145 tonnes in 1991/92, 120 tonnes in 1993/94 and 134 tonnes in 1994/95, a reduction of 8% over three years.

Data for 1993/94 and 1994/95 from all regions and Head Office. Consumption increased 9% with 201 tonnes purchased in 1993/94 and 219 tonnes in 1994/95. Performance of regions varied with Northumbria and Yorkshire showing an increase of 121% and Southern 42%, and Welsh a decrease of 24%. (Figure 13)

Use per non-manual employee averaged 41.9 kg (\approx 8400 sheets) over the NRA for 1994/95. Consumption ranged from 74 kg/FTE in Head Office to 20 kg/FTE in Welsh. (Figure 14)

Paper Disposal Paper sent to be recycled increased from 115 tonnes in 1993/94 to 164 tonnes in 1994/95, representing 75% of that purchased. This exceeded the target of 60%. Only Northumbria and Yorkshire failed to meet the target with 40% recycled, down from 73% in the previous year. (Figure 15)

Summary About 80% of purchased paper met the specification for recycled content. Although paper use decreased from 1992/93 to 1993/94 it then increased in 1994/95 to 219 tonnes. The target for a 10% reduction was not met. Paper sent to be recycled exceeded the 60% target by 15%, with 164 tonnes sent.

6) GOOD NEWS

Project Boards Project Management Procedures require full consideration of the environmental impacts of a project. All regions reported having some environmental input into the Project Advisory Boards. This was on a formal basis in five regions.

Green Circles The full involvement of staff in furthering environmental awareness within the Authority is a key to obtaining a continual improvement in environmental performance. At the end of 1994/95 all regions except Anglian, Severn Trent and North West had 'Green Circles' in place.

Recycling Seventeen different waste types were reported to be recycled within the NRA. These included paper (at 71 sites), toner cartridges (46 sites), batteries (36 sites), printer ribbons (25 sites), corporate clothing (23 sites), plastic cups (20 sites), and aluminium cans (19 sites). Thames reported recycling eleven different waste types; Northumbria and Yorkshire and Southern ten.

Ozone Depleters Halon based fire-extinguishers in buildings were reported to be eliminated in all regions. Only Welsh reported halon extinguishers in vehicles, with several in vehicles that were due for disposal. Halons remained in fire drench systems in Anglian and Thames. South Western and Severn Trent were intending to remove halons from their fire drench systems in the next financial year. There was no programme to replace CFCs in refrigerators, but new purchases were reported to be CFC free.

FIGURE 1

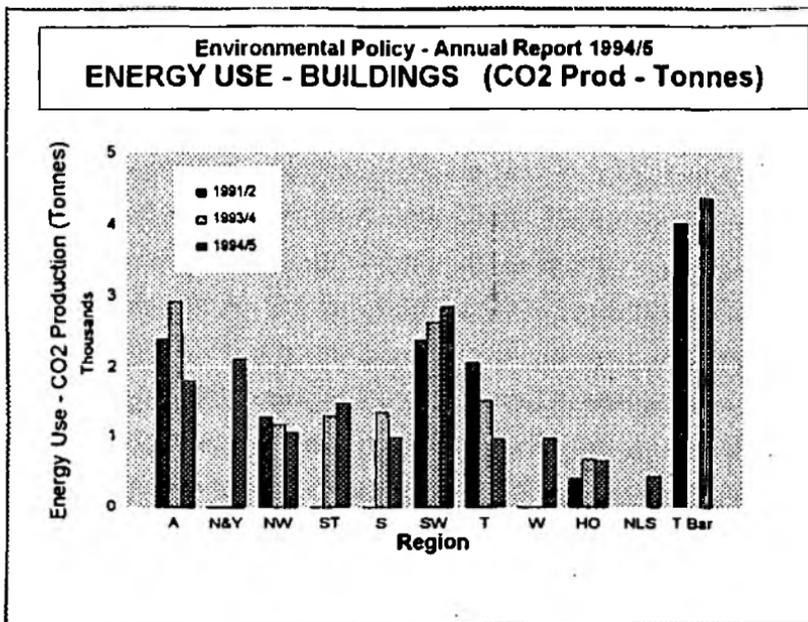


FIGURE 3

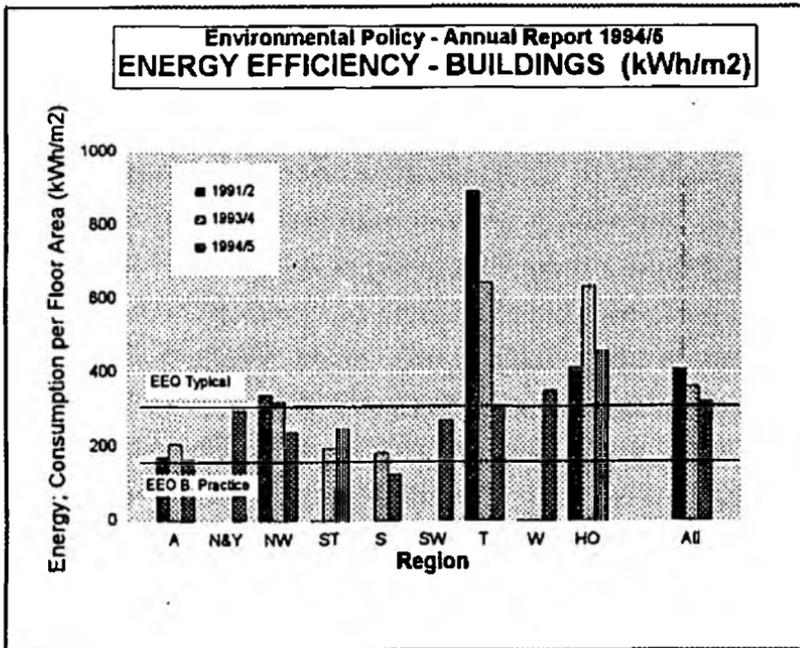


FIGURE 2

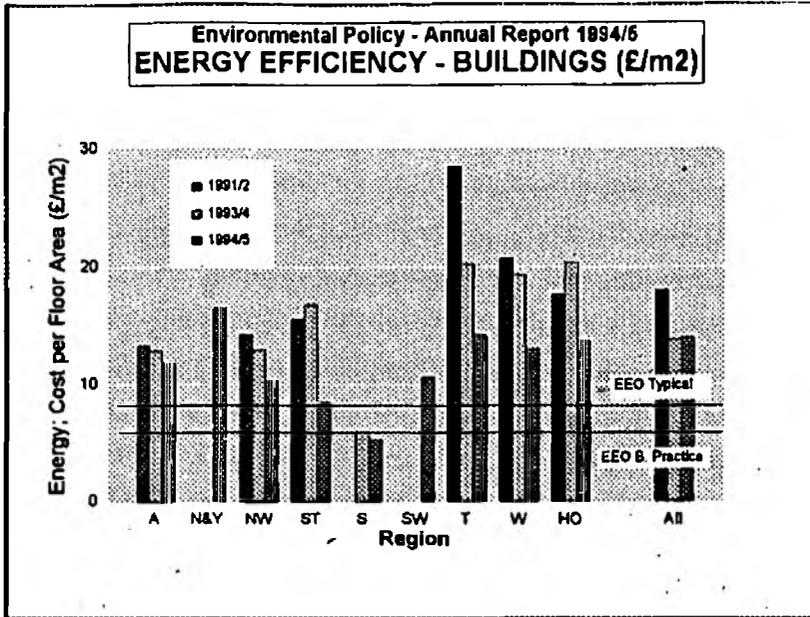
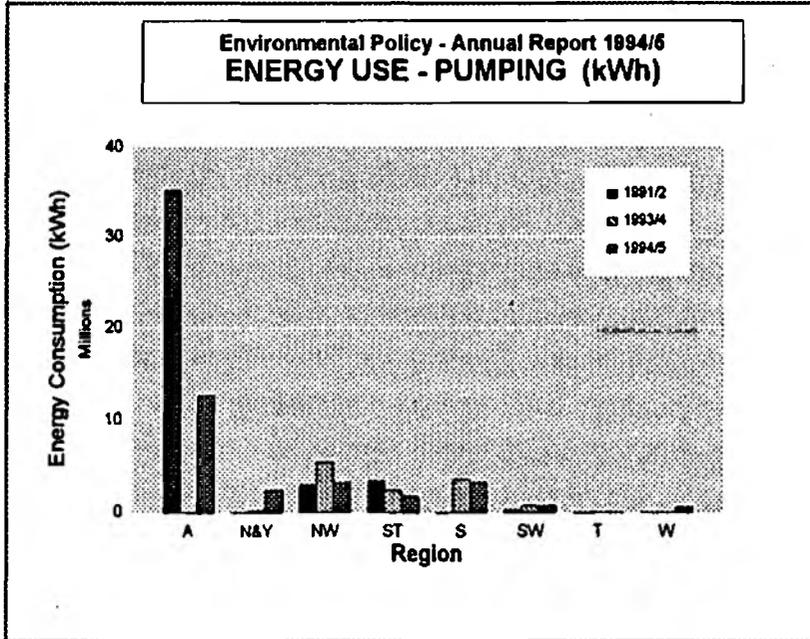


FIGURE 4



B.9

FIGURE 5

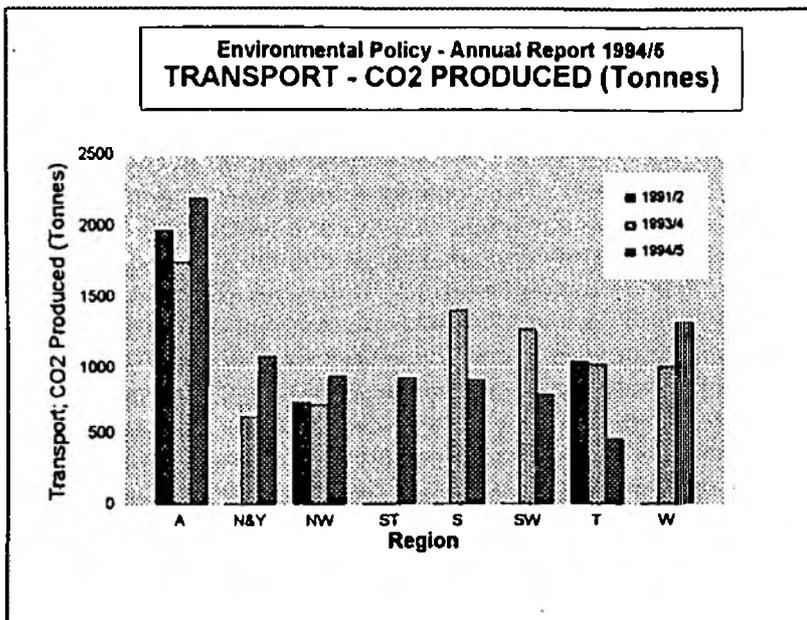


FIGURE 7

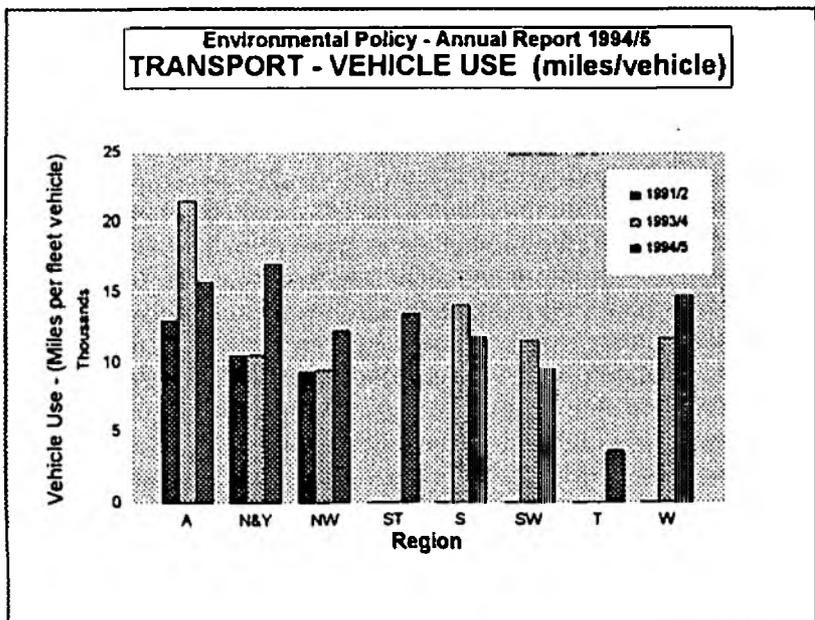


FIGURE 8

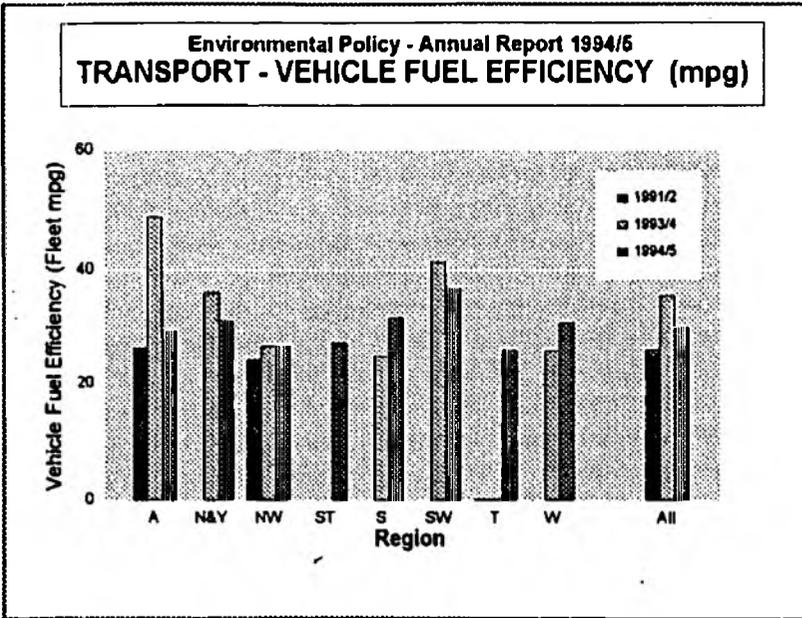
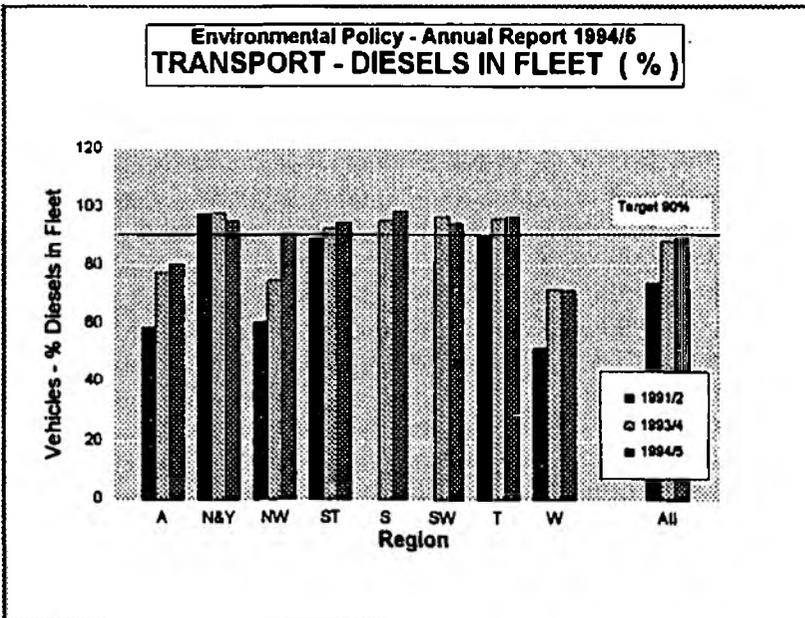


FIGURE 8



B.10

FIGURE 9

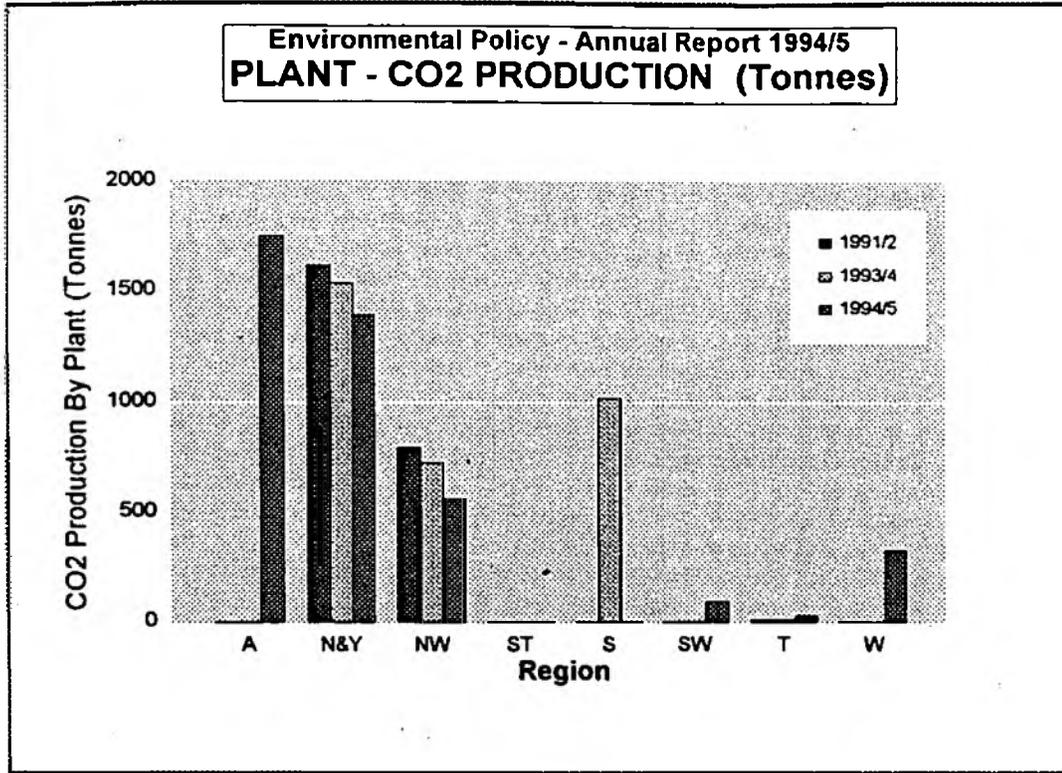
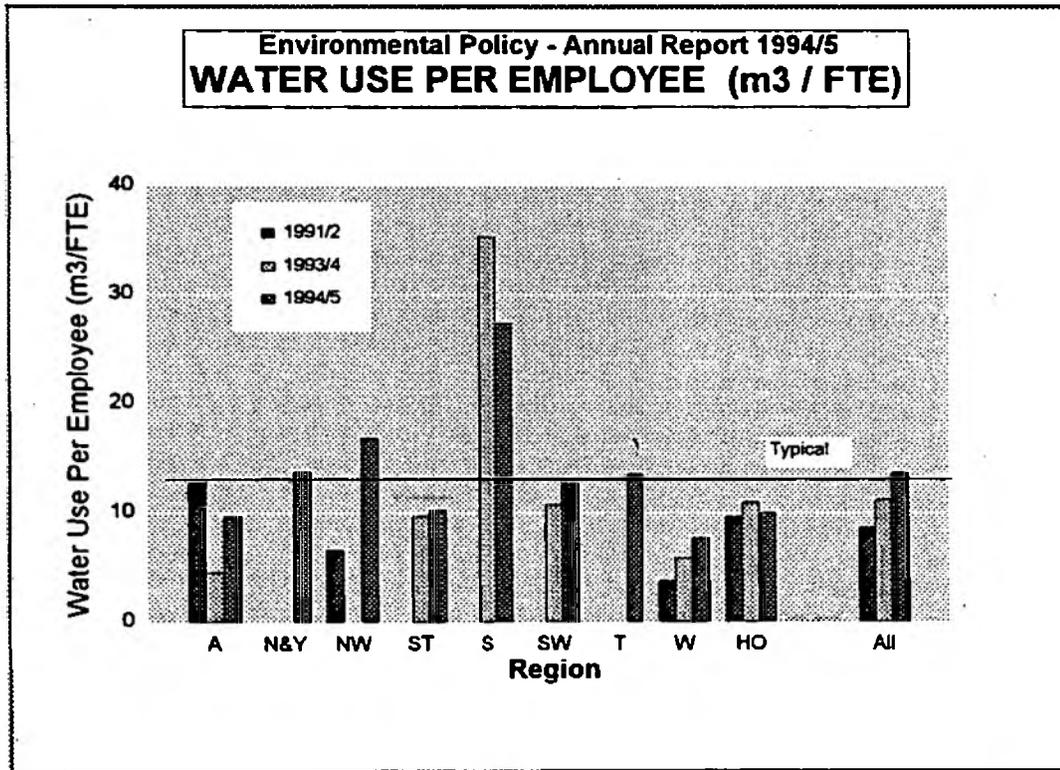
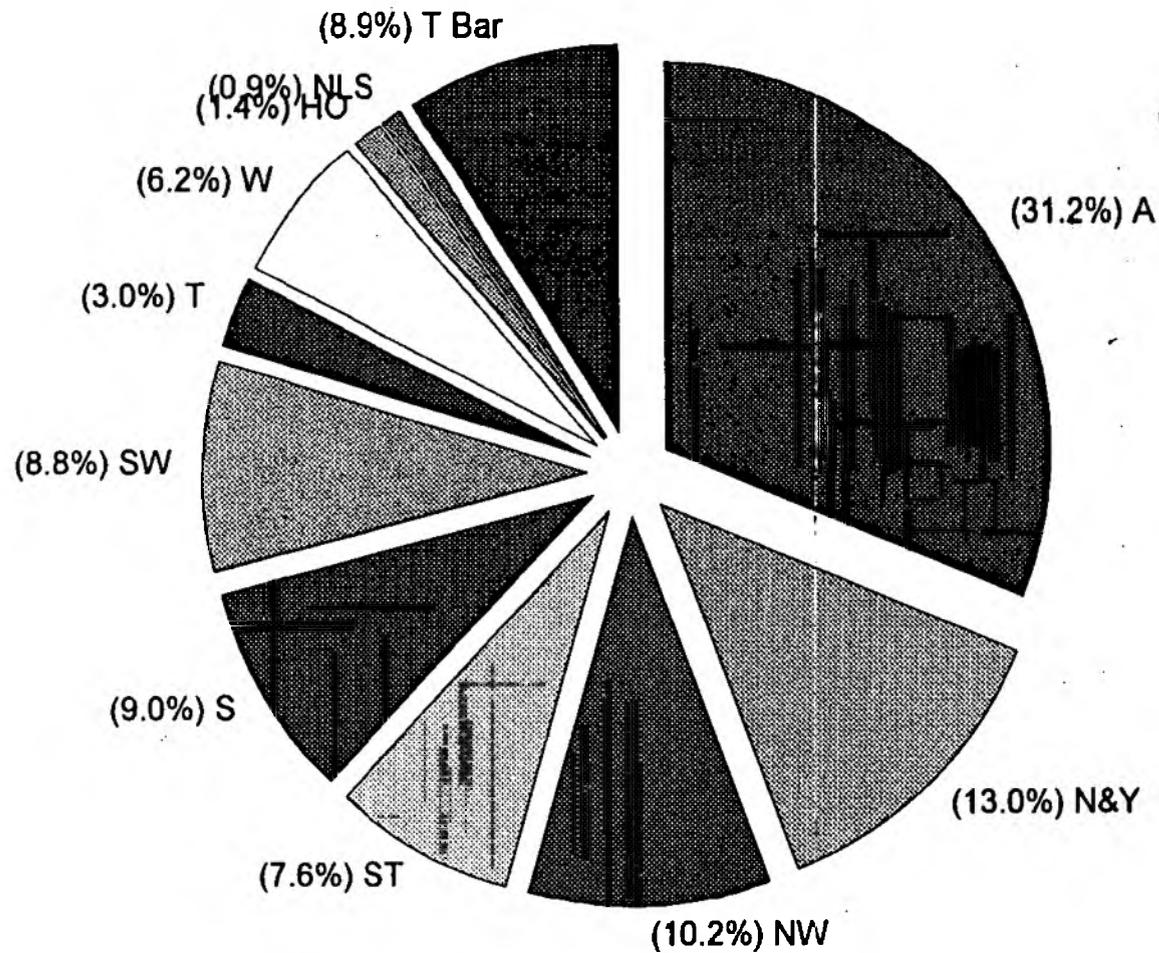


FIGURE 10



Environmental Policy - Annual Report 1994/5
TOTAL CO2 PRODUCTION 1994 - 95 (Tonnes)



B.12

FIGURE 11

FIGURE 12

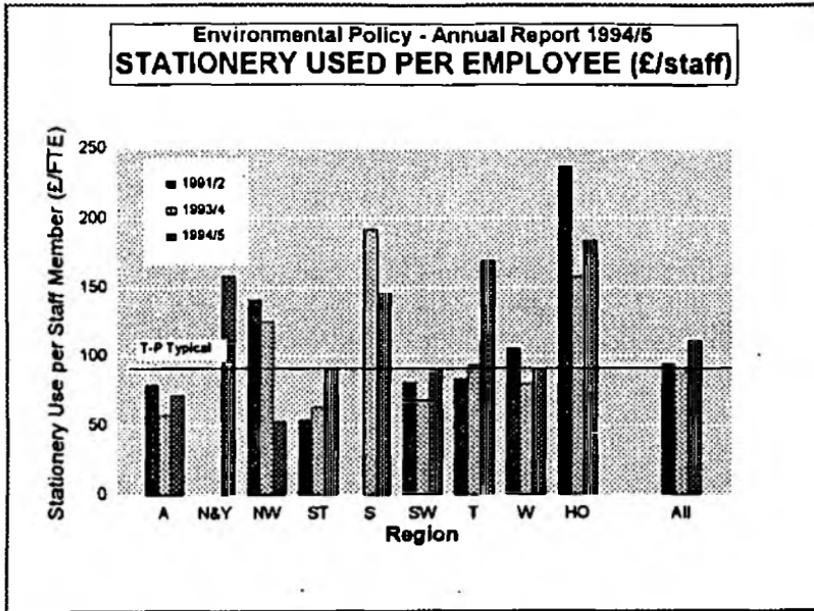


FIGURE 14

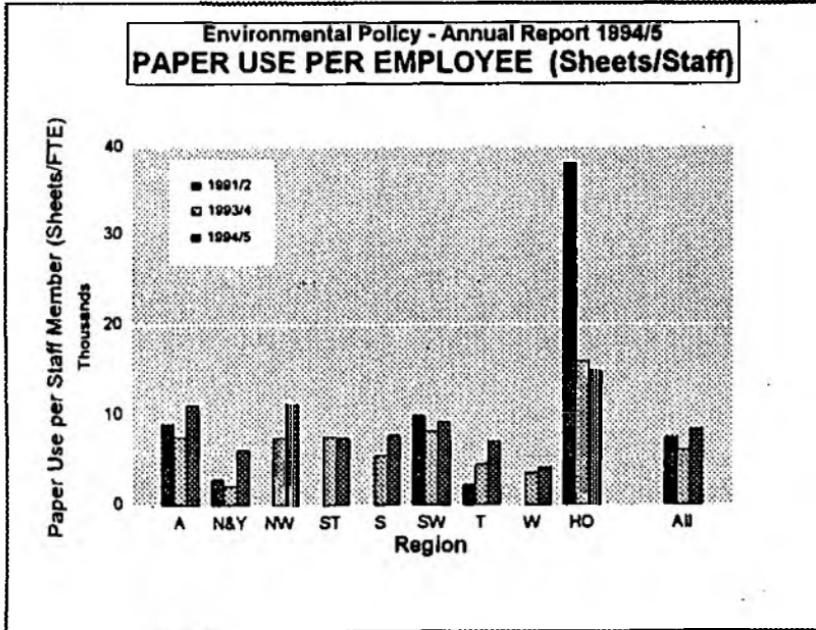


FIGURE 13

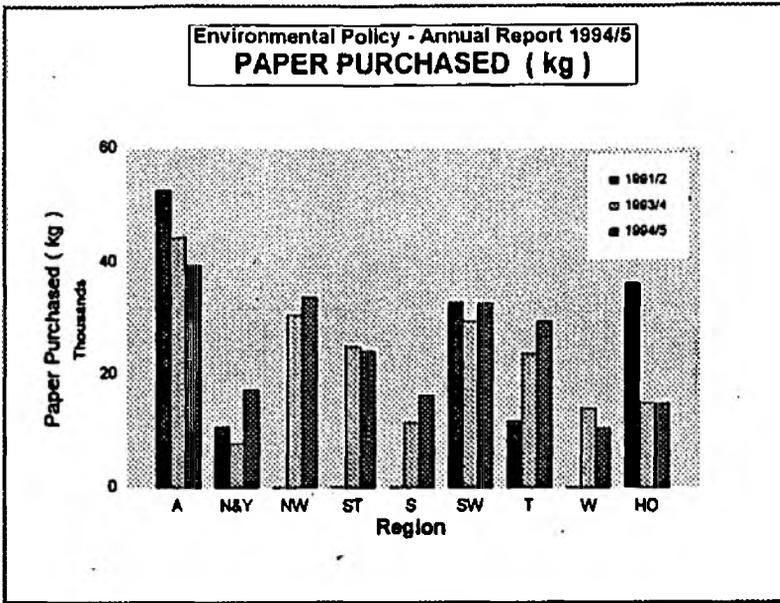
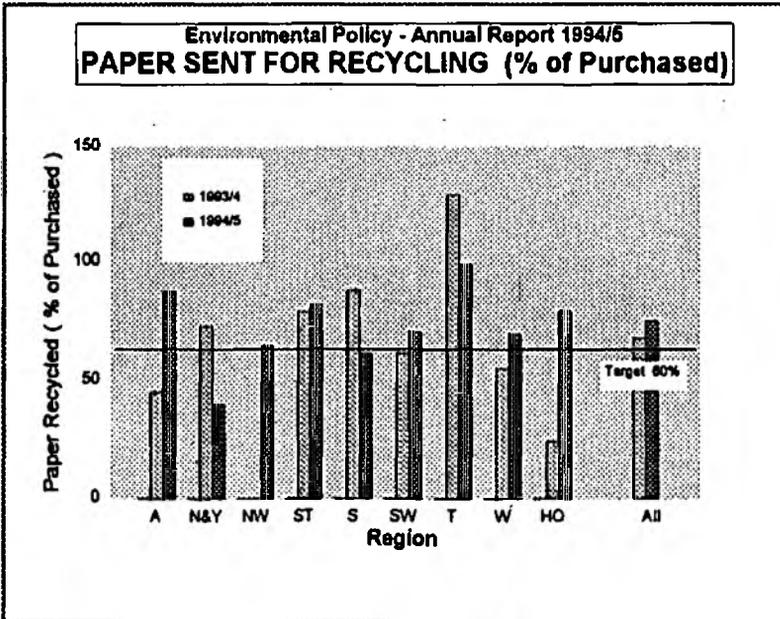


FIGURE 15



B.13