

EA ANGLIAN BOX 17

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Snapshot

November 2001



**ENVIRONMENT
AGENCY**

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ENVIRONMENT AGENCY

Information Services Unit

Please return or renew this item by the due date

Due Date

Foreword

: East of England we are fortunate to enjoy a healthy, rich diverse environment. It's important that we strive to maintain this under increasing pressures of climate change, growth and development. Each year the Environment Agency publishes a 'snapshot' of the state of our environment in the East of England. This Snapshot allows us to check progress against targets and to share our knowledge and expertise on environmental issues. This year we have reported on our contribution towards sustainable development picking up the issues:

- **development in the floodplain;**
- **provision of adequate water resources;**
- **waste management;**
- **impacts on the rural economy, particularly changes facing the agricultural sector.**

We invite you to share with us your views on the state of our environment. If you would like more information visit our website at www.environment-agency.gov.uk or contact us on robert.runcie@environment-agency.gov.uk

Robert Runcie
Regional Director

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ENVIRONMENT AGENCY



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Introduction

OUR VISION

We have a key role in ensuring that future growth contributes to the goal of sustainable development and that environmental sustainability is at the heart of future decision making in the region.

Our national Environmental Vision highlights some of the challenges and opportunities that we will face in working towards a better environment. Having developed this long-term vision for the environment of England and Wales, we are now concentrating on its delivery. We have written nine Frameworks for Change, to match the themes in An Environmental Vision, and they describe the activities that could be undertaken. Each Framework for Change outlines the relevant environmental issues and our role. It lists partners, goals and actions, including how we will test for progress. The Frameworks for Change are available on our web site at www.environment-agency.gov.uk. A further series of Frameworks will set out what the Vision means for the different sectors we work with, including industry and the waste sector. These will also be made available on our web site.

THE EAST OF ENGLAND

The East of England Region comprises six Counties and four Unitary Authorities. It extends from the Wash to the Thames and from the Norfolk/Suffolk coast to Bedford, covering more than 19,000 square kilometres. Although over 5 million people live in the area there are no major urban conurbations. The region is largely characterised by a small number of cathedral cities and many market and county towns, serving extensive rural hinterlands of villages and hamlets. There are also a significant number of post-war new settlements, particularly in the southern part of the region where



suburban settlements also exist on the outer fringes of London.

This region has one of the fastest growing populations in the United Kingdom. There are a number of areas where growth is concentrated and/or the potential for major new development is being examined. The region also aspires to be one of the top twenty wealthiest regions in Europe by the year 2010. This will need to be delivered in a sustainable way.

The East of England has large areas of flat, low lying land, a quarter of which is below sea level. It is also the driest region in the country. Agriculture has a considerable influence over the rural economy and community, with 58% of the most productive agricultural land in

England and Wales found in this region.

Due to the characteristics of the region we face key environmental issues:

- rising sea levels and the threat of flooding
- waste management
- ensuring sustainable water management in England's fastest growing yet driest region.

A FURTHER CHALLENGE

The East of England has three nuclear power stations, two of which will have come to the end of their useful lives by 2007. Challenges for the future are how electrical power can continue to be provided without contributing to global



EAST OF ENGLAND



warming and how intermediate level radioactive wastes, currently stored at the stations, will ultimately be disposed of.

SUSTAINABLE DEVELOPMENT

Working towards sustainable development should help ensure that our quality of life improves. We recognise this as one of the fundamental goals we want to help achieve. The most immediate impact the Agency makes on quality of life is through its functional work which protects people against pollution and flooding, provides agreeable riverside recreation, and ensures wise use of precious resources such as water. Cleaning up historic pollution sites and providing a clean environment for the establishment of

new businesses encourages economic regeneration. New markets opened up by the drive for improved technologies that tackle pollution and waste minimisation can also reduce costs and improve competitiveness. We are involved in a wide range of partnership and advisory work with the increasingly important regional bodies.

Our work to improve and protect the environment goes hand in hand with social and economic improvements – all of which contribute to our quality of life.

This Snapshot:

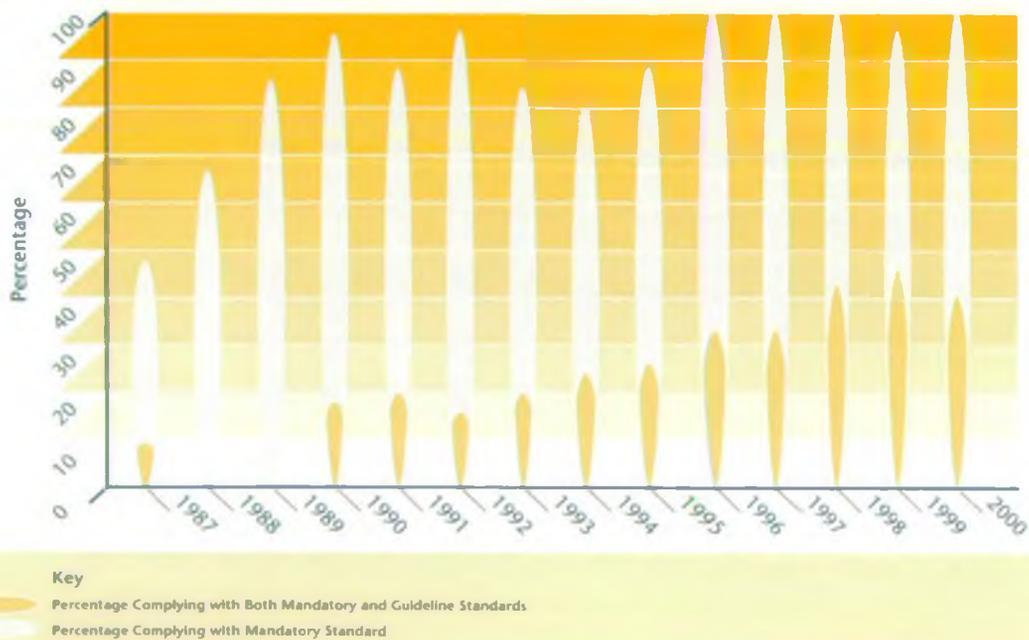
- Considers the key aspects of the current state of the environment in the East of England;
- Identifies a selection of indicators

- that help measure progress towards environmental sustainability;
- Highlights examples of Agency activity that contribute to improving the quality of life and sustainability;
- Highlights the regional bodies that we will be working with to achieve our goals.

We hope you find this Snapshot informative and if you want more information then access our website www.environment-agency.gov.uk or contact our corporate affairs section 01733 371811.



BATHING WATER QUALITY



A Better Quality of Life

TO ACHIEVE A BETTER QUALITY OF LIFE IT IS NECESSARY TO BALANCE A NUMBER OF ENVIRONMENTAL, SOCIAL AND ECONOMIC GOALS, EACH BEING DEPENDENT ON THE OTHER. THROUGH OUR WORK TO PROTECT AND ENHANCE THE ENVIRONMENT THE AGENCY HAS AN IMMEDIATE IMPACT ON THE SURROUNDINGS OF PEOPLE LIVING, WORKING AND VISITING THE EAST OF ENGLAND.

In last year's Snapshot we set the challenge of giving simple understandable messages that will trigger people to take action to protect themselves, their families and property from the worst impacts of flooding.

MANAGING FLOOD RISK

The East of England has extensive low lying land, a quarter of which is below sea level. Although flood risk cannot be eliminated, the effect on the community can be reduced by better awareness of the risk and impact of a flood and effective preparation.

The new national flood warning system was introduced following widespread consultation in September 2000. This warning system was tested during the period 27 October 2000 and 30 November when 120 Floodwatch, 94 Flood Warning and 9 Severe Flood Warnings were issued in the East of England region and some 100 properties were flooded.

Regional flood warning teams based at Ipswich, Brampton and Hatfield are involved in improving and expanding the warning service wherever feasible. Numerous locations have been added to the direct flood warning service during 2001. For example, in Norwich 2349 people will be able to receive direct warnings for the first time and in Cambridgeshire more than 500 properties have been added to the system.

IMPROVING BATHING WATERS

People living and visiting coastal resorts in the East of England benefit from improving quality of bathing water. The coastal resorts attract many visitors from across the country and the improving quality of our bathing waters represents an opportunity to further this tourism. European Legislation sets mandatory and guideline indicators for the quality of bathing waters across Europe. The graph shows how we have met these standards. This is a significant achievement in contributing to the attraction of our coastal resorts and has resulted through partnerships, liaison and regulation of effluent discharges to our bathing waters.

NATIONAL FLOOD WARNING SYSTEM



An Enhanced Environment for Wildlife

MANY PEOPLE VALUE WILDLIFE AS ONE OF THE KEY ELEMENTS CONTRIBUTING TO THEIR QUALITY OF LIFE. THE VARIETY AND ABUNDANCE OF WILDLIFE PROVIDES A CRITICAL INDICATOR OF HOW SUCCESSFUL WE ARE IN USING OUR ENVIRONMENT WISELY. THE MAP SHOWS SITES THAT HAVE BEEN DESIGNATED IN THE EAST OF ENGLAND FOR THEIR INTERNATIONAL AND NATIONAL WILDLIFE INTEREST, AND LANDSCAPE.

However, changes in the way we have used and managed the land over the last century have had a detrimental impact on our wildlife. Reversing the decline of plants and animals is now a major challenge. It will require the protection of the best remaining habitats and enhancement of both the wider countryside and urban environments for wildlife.

River Habitat Survey (RHS) is a method for assessing the physical character and quality of river habitats. The River Habitat Modification Score is a product of RHS and shows the impact on rivers of factors such as urbanisation, land drainage, agriculture, navigation and flood defence. This methodology has been developed to help the conservation and restoration of wildlife habitats along rivers and their floodplains. Its main purpose is to provide information needed to sustain and enhance biodiversity. It can be used, along with other information, to target improvement works to appropriate parts of the river systems.



Last year we set ourselves the challenge that we shall produce plans to secure and improve habitats for our wildlife through partnership projects.

IMPROVED HABITATS

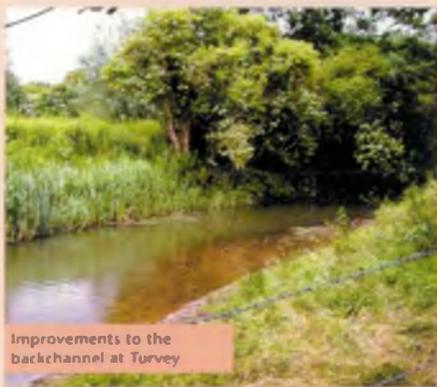
Enhancements were carried out to the backchannel upstream of the Mill at Turvey to restore it to its historic popularity with anglers. These works provided an improved landscape, wildlife and fisheries habitat both in the river and adjacent to it, for the benefit of local people. The work included:

- Removal of fallen trees from the channel to increase light and improve access for anglers;
- Removal of silt from the channel to create an average depth of 1.5 metres;

- Pollarding of willows to prolong their lives and increase conservation value;
- Installation of a barbed wire fence to prevent damage due to cattle poaching and encourage a diverse aquatic plant life.

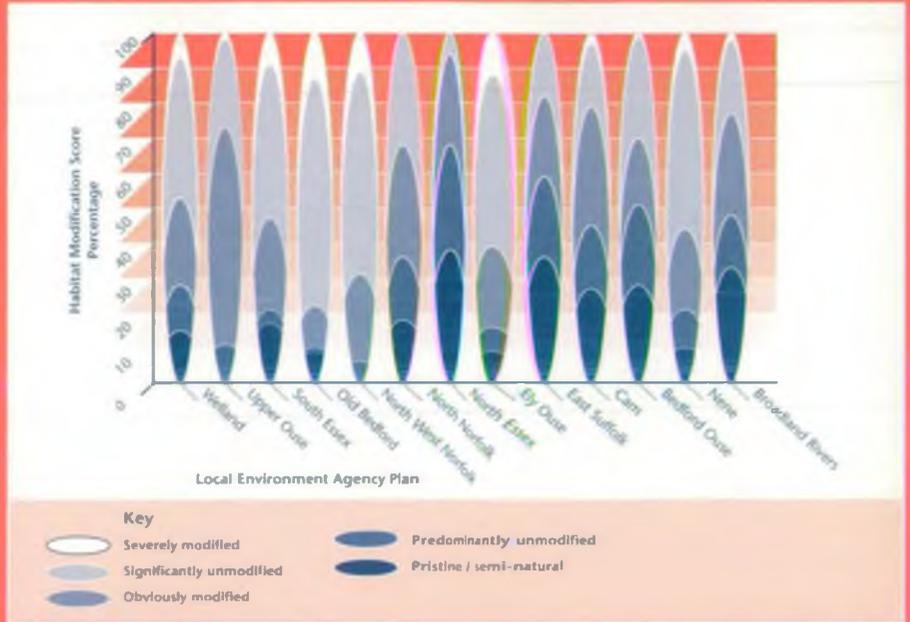
This involved working in partnership with the two resident angling clubs, riverside owners and the tenant farmers. We are continuing work on this site with the Ouse Valley Link Project to improve the fencing. Biological surveys were undertaken prior to the works and will be repeated to assess changes in the invertebrates in the restored channel. Fisheries surveys will also be undertaken once the channel has matured to investigate how much the fish are using it.

Wildlife

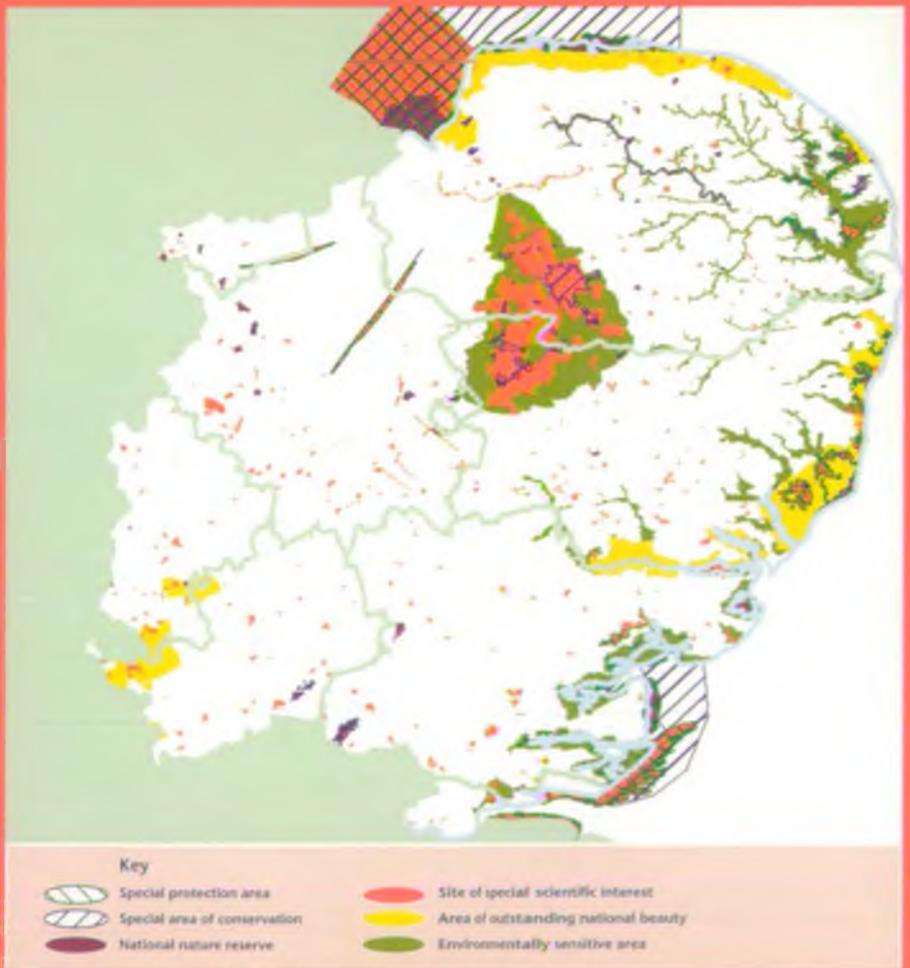


Improvements to the backchannel at Turvey

RIVER HABITAT MODIFICATION SCORE BY LOCAL ENVIRONMENT AGENCY PLAN

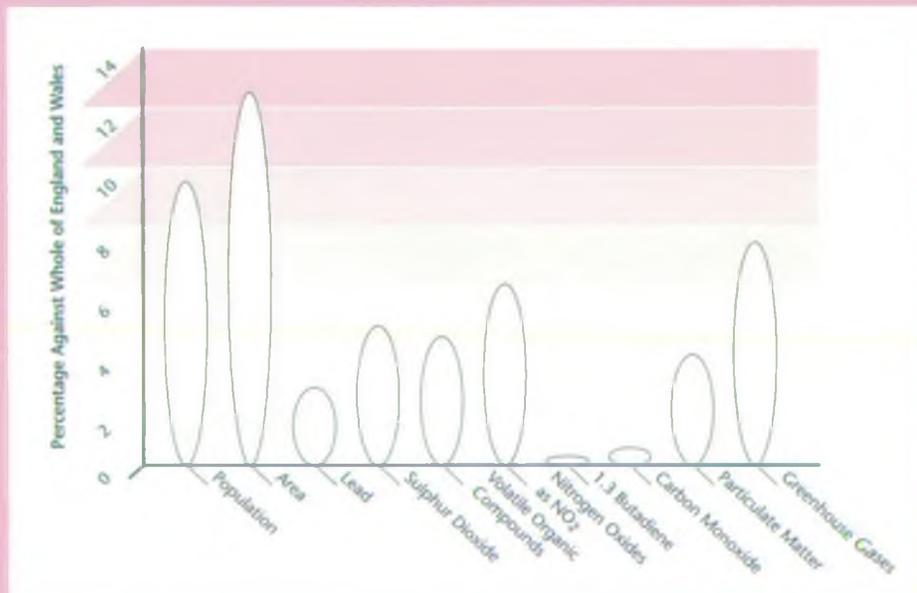


PROTECTED AREAS NATIONAL DESIGNATIONS

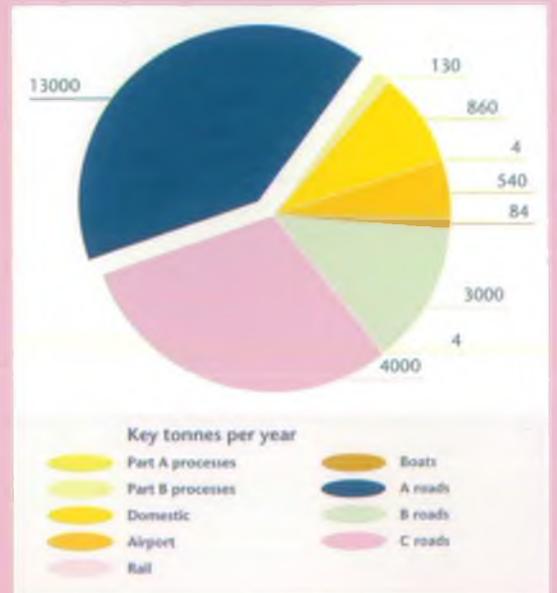




COMPARISONS OF POLLUTANT AND GREENHOUSE GASES IN THE REGION AGAINST ENGLAND AND WALES FROM AGENCY REGULATED PROCESSES



SOURCES OF NITROGEN OXIDES IN NORFOLK



Cleaner Air for Everyone

THE QUALITY OF THE AIR WE BREATHE IS A VITAL COMPONENT OF OUR QUALITY OF LIFE. THE AGENCY REGULATES EMISSIONS TO AIR FROM THE MOST POTENTIALLY POLLUTING INDUSTRIAL PROCESSES (PART A PROCESSES) AND FROM LANDFILL SITES. LOCAL AUTHORITIES REGULATE EMISSIONS TO AIR FROM CERTAIN OTHER INDUSTRIES (PART B PROCESSES), AND ARE RESPONSIBLE FOR AIR QUALITY IN THEIR AREA. THESE DISTINCTIVE ROLES MEAN THAT EFFECTIVE PARTNERSHIP CAN DELIVER REAL IMPROVEMENTS TO AIR QUALITY.

In our Snapshot last year we highlighted that everyone needs a breath of fresh air and that together, we aim to meet the appropriate air quality standards by 2005.

We will be regulating more industrial processes in the future as the food and drink industry and agriculture are covered by new regulations.

AIR QUALITY

Air quality is generally good across the whole of East of England. The graph shows that the region contributes a lower percentage of pollutants than may be

expected, given its area and population. This is due to its largely rural nature. Nitrogen dioxide is the region's highest single contribution and is produced from the burning of fossil fuel.

LOCAL AUTHORITY REVIEW OF AIR QUALITY

If the concentrations of certain pollutants will exceed health derived objectives by target dates the local authority must declare an Air Quality Management Area (AQMA) for that pollutant and produce an action plan to reduce the concentration below the objective.

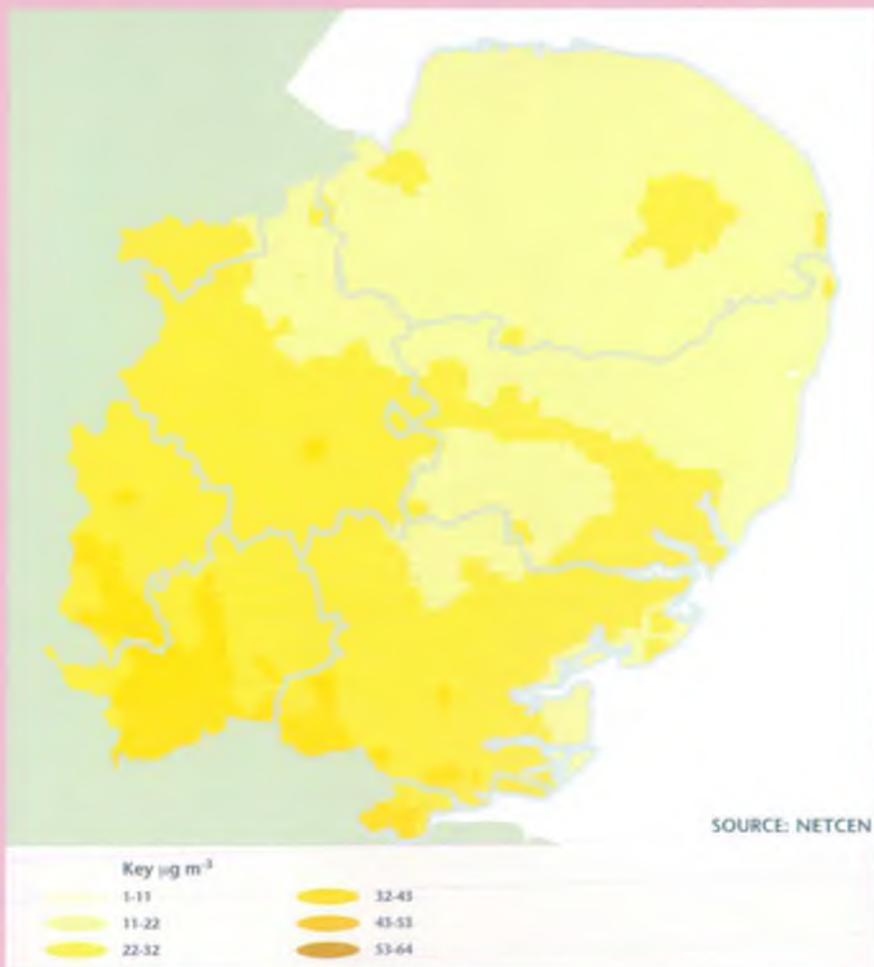
A number of local authorities have declared or are considering declaring AQMAs almost all for nitrogen dioxide pollution caused by traffic. The Agency is working with the local authorities, particularly when Agency regulated IPC processes are involved, to help ensure the objectives within the strategy are met.

NITROGEN OXIDES

The highest concentrations of nitrogen oxides in this region have been recorded in built up areas and along roads. The results for 2000 show a slight increase on the previous year reflecting the growth in traffic in some areas.

A recent study of nitrogen oxides in Norfolk shows where the main sources of that pollutant are in the county. It can be seen from the chart that the major source of nitrogen oxides in Norfolk is road transport, accounting for 92% of that pollutant.

NITROGEN OXIDE CONCENTRATIONS 2000



Improved and Protected Inland and Coastal Waters

CLEAN WATERS WITH A THRIVING WILDLIFE HELP GUARANTEE THE QUALITY OF THE WATER SUPPLIED TO OUR HOMES, THE WATER USED TO PRODUCE FOOD AND THE WATERS VALUED FOR RECREATION. IT IS THEREFORE IMPORTANT TO ENSURE INTEGRATED MANAGEMENT OF OUR WATERS.

The Agency monitors the condition of freshwater, groundwater and tidal waters. In the East of England we monitor 1029 discharges from sewage treatment works and 501 trade discharges as well as over 5000 private sewage discharges. We have a method for classifying the water quality of rivers and canals measuring from 'very good' to 'bad' quality. These provide a consistent assessment of the state of the water quality across England and Wales and any changes in this over time.

In 1997 the quality of about one-quarter of our rivers nationally was not good enough. We set the challenge last year that through investment, improvements and tighter standards we will contribute to the national goal of halving this shortfall by 2005.

River quality has improved and in 2000 in the East of England 92% of river lengths were of fair to good chemical quality. This has shown an improvement over the past five years with 88% being fair to good quality in 1995.



WATER QUALITY IMPROVEMENTS

Anglian Water Services and the Agency Anglian Region were the first company and region to agree the Water Quality Improvement Programme. Resulting from this, twenty-eight schemes were due for completion by the end of March 2001, however thirty-six schemes have actually been completed. This has resulted in about 60 kilometres of river being protected from pollution in the region.

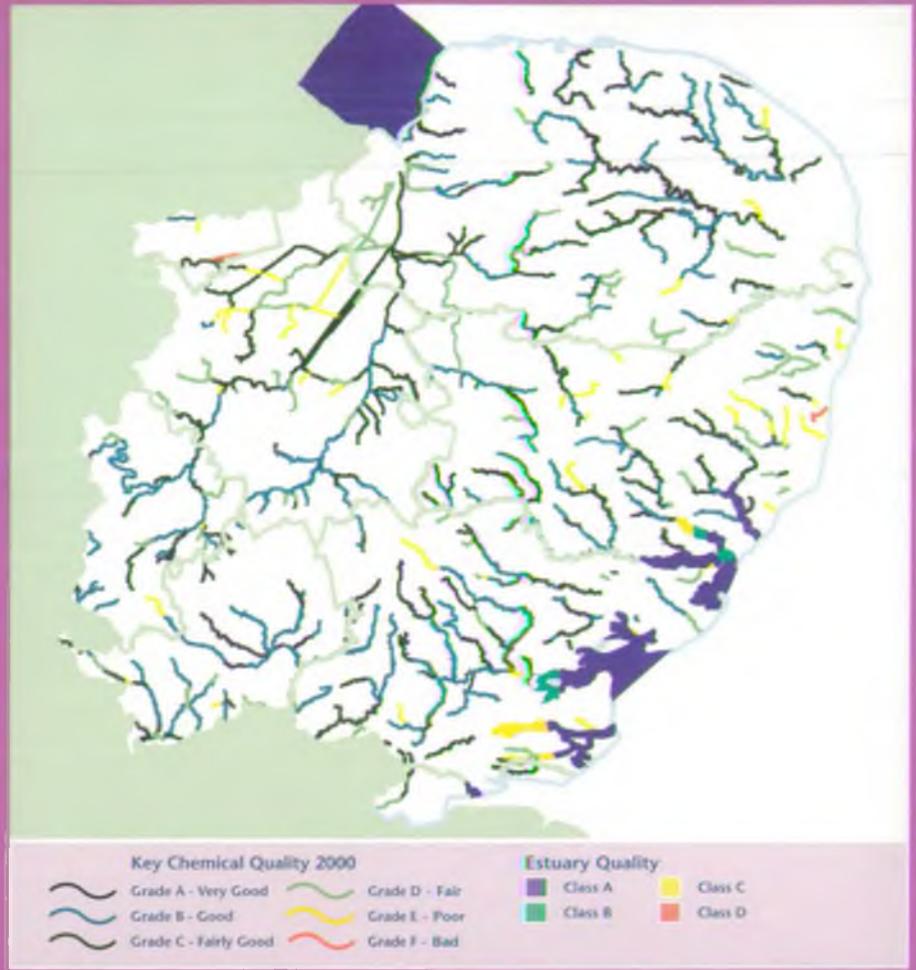
During the late seventies and early eighties expansion in Peterborough led to an increased discharge of sewage and trade effluent. This occurred at a time when the potential impact was not understood fully. A consequent decline in water quality resulted in some very large fish kills and a downgrade of the Nene Estuary to bad quality. The improvement to good quality recorded in 1999 follows major investment (over £25m) at all of the significant discharges to the Nene estuary, by both

ected Waters



local industry and Anglian Water. Our recent monitoring together with fisheries evidence points to a substantial recovery in water quality. We have installed a fixed automatic water quality monitoring station which provides a continuous check on quality. A fish pass has also been installed to allow passage of migratory fish, and anglers now regularly catch both coarse and estuarine fish species.

RIVER AND ESTUARY QUALITY SURVEY



PHOSPHATE REDUCTION IN EAST OF ENGLAND SEWAGE TREATMENT WORKS EFFLUENT



Restored, Protected with Healthier Soils

THE ENVIRONMENTAL IMPORTANCE OF LAND IS OFTEN OVERLOOKED. IT IS A FINITE RESOURCE AND CARE IS REQUIRED TO ENSURE THAT ITS POTENTIAL IS CONSERVED AND WHERE POSSIBLE ENHANCED. WE ALL NEED TO APPRECIATE THE ENVIRONMENTAL IMPORTANCE OF APPROPRIATE LAND MANAGEMENT FOR PROTECTION OF SOILS AND TO AVOID HARM TO WATER AND AIR.

Large numbers of people want to live in the region but there is a shortage of vacant or derelict land for new dwellings (see map). We set ourselves the target of contributing to cleaning up eleven seriously contaminated land sites, to make them safe and bring them back to beneficial use. This has been revised to secure substantial remediation and/or investigation of eight 'special sites' in the region by 2005, two of which have now started in the region.

RESTORING CONTAMINATED LAND

New legislation introduced on 1 April 2000 (Part IIA of the Environment Protection Act 1990) places a responsibility on local authorities to inspect their area and establish if any land meets the statutory definition of contaminated land. The local authorities are required to consult with the Agency over their inspection strategies. Once areas of contaminated land have been identified, the local authorities have to ensure remediation of the land. The responsibility for this work may pass to



the Agency if the contaminated land is designated a 'special site'.

There have been two public registers set up since this legislation came in, one belonging to the Agency and one to the local authorities. Both contain details of sites where work has started. The formal consultation process with the Agency has been completed by 96% of local authorities and over 60% have published their strategies.

In 2000/2001 two former landfill sites in Cambridgeshire were designated as special sites. The Agency is working

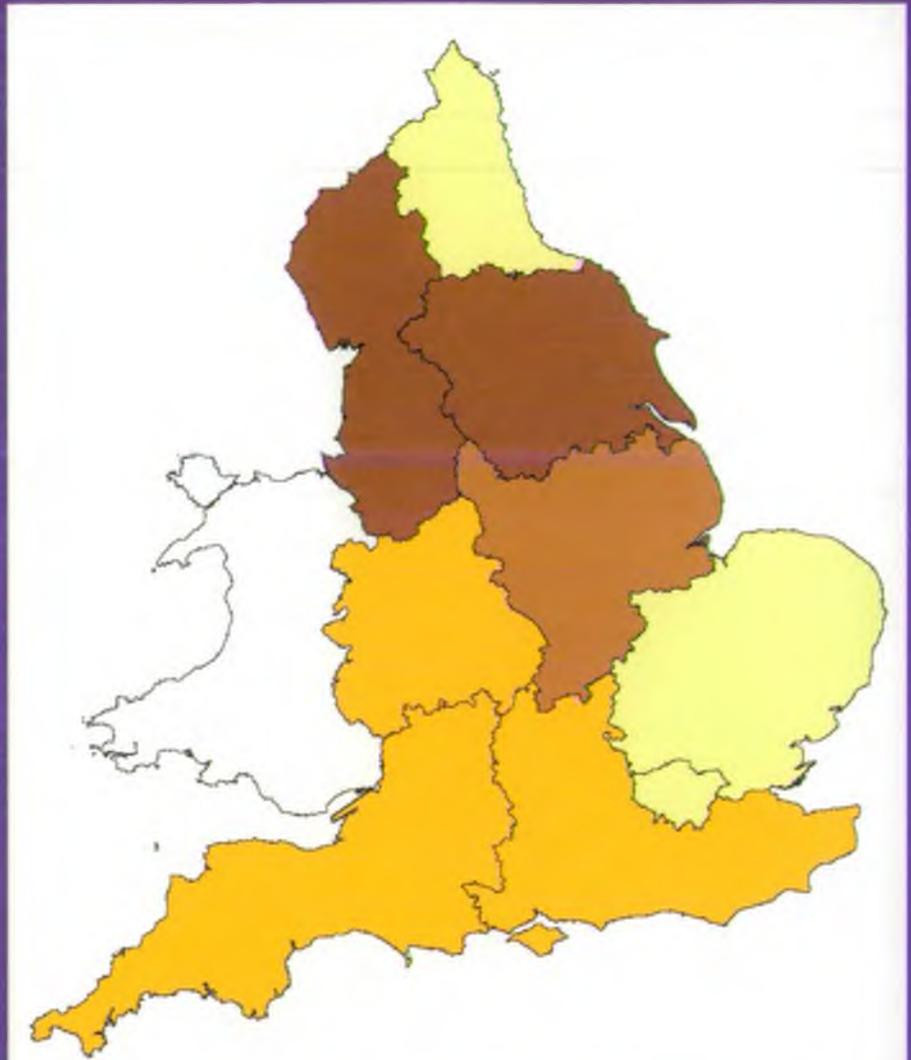
with the local authority on remediation work at these sites to clean up the polluted groundwater.

Re-development of brownfield sites through the planning process (whether contaminated or not) and the use of more effective clean-up methods will remain the main route to restore land into sustainable use. The Agency continues to support this process through its research and development programme and by providing good practice guidance for the management of contaminated land.

Land



REGIONAL DISTRIBUTION OF VACANT AND DERELICT LAND IN 1998



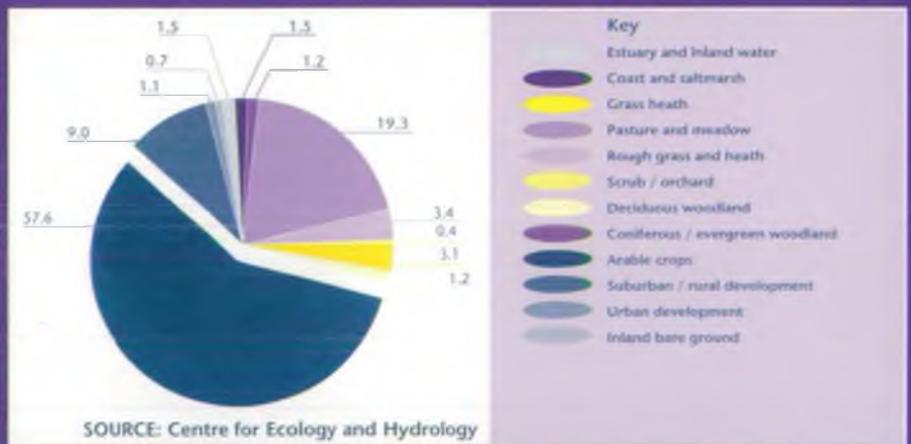
SOURCE: Department of Environment, Transport and the Regions 1999

Key Derelict Land (hectares)



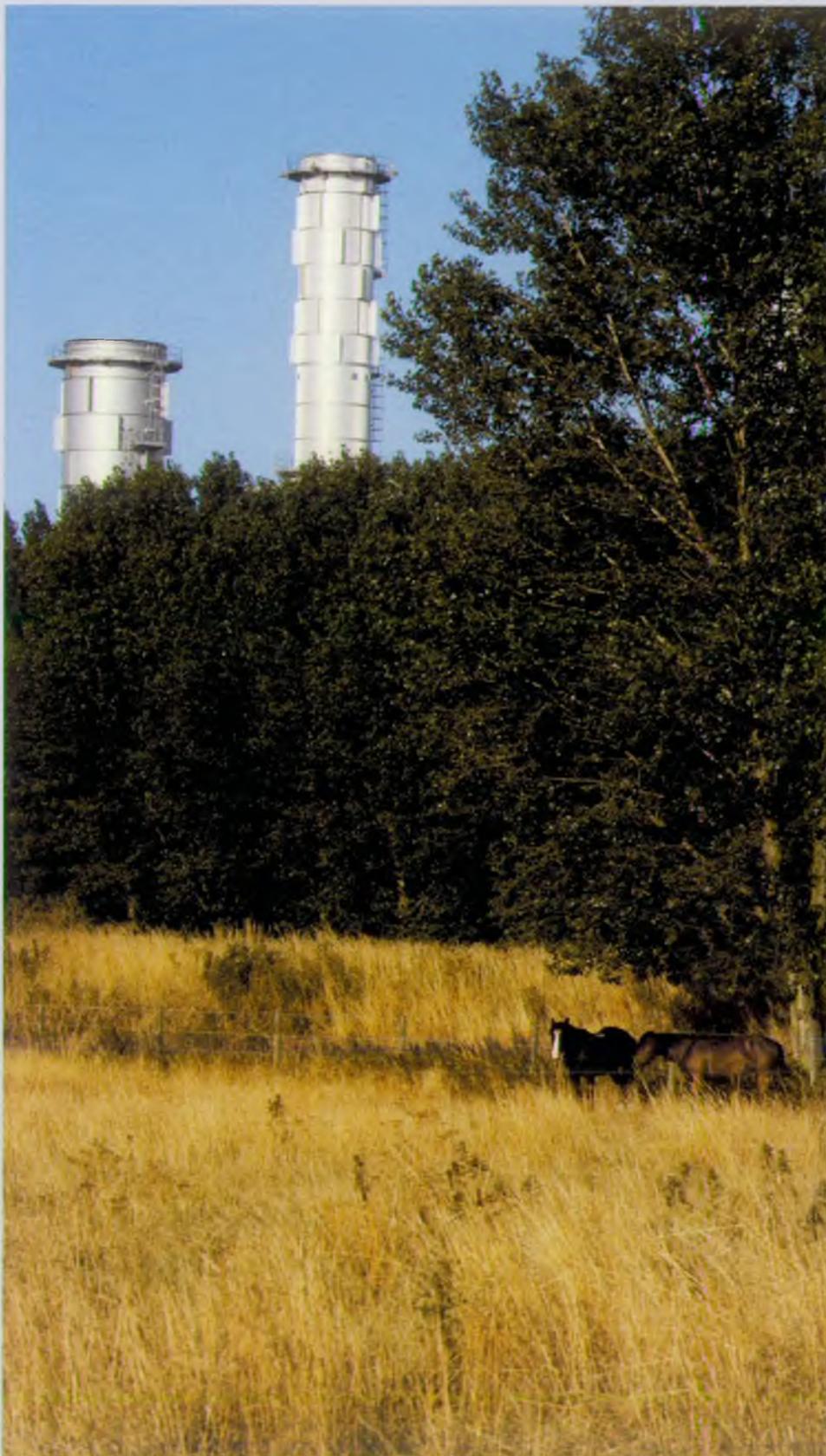
Contaminated land

PERCENTAGE LAND USE COVER IN THE EAST OF ENGLAND



SOURCE: Centre for Ecology and Hydrology

A Greener Business World



BUSINESS ACTIVITY IS FUNDAMENTAL TO SOCIETY. BY WORKING TOWARDS THE SUSTAINABLE USE OF RESOURCES AND PRODUCTION OF GOODS, WHILST ALSO PROMOTING SOCIAL FAIRNESS AND A PROSPEROUS ECONOMY, BUSINESSES PLAY AN IMPORTANT ROLE IN CONTRIBUTING TO SUSTAINABLE DEVELOPMENT. WE RECOGNISE THAT GREENER BUSINESSES CAN ONLY THRIVE WHEN THERE IS CONSUMER DEMAND AND SUPPORT FOR THE GOODS AND SERVICES PRODUCED THROUGH SUSTAINABLE BUSINESS PRACTICES. THIS REQUIRES A CHANGE NOT ONLY ON THE PART OF BUSINESS, BUT ALSO BY THOSE WHO USE AND BENEFIT FROM THE GOODS AND SERVICES BUSINESS PROVIDES.

The Agency licences and inspects the performance of businesses but has no statutory duties to reduce household waste but has helped with initiatives. Our target is that, with everyone's help, by 2010 we shall increase fourfold the amount of household waste we recycle compared to 1999.

SCHOOLS WASTE ACTION CLUB

The Agency has been working in partnership with Waste Watch and local authorities to secure external funding and set up a series of Schools Waste Action Clubs (SWAC) in the region. Each SWAC project employs a development worker

WASTE DISPOSAL AND RECYCLING FACILITIES

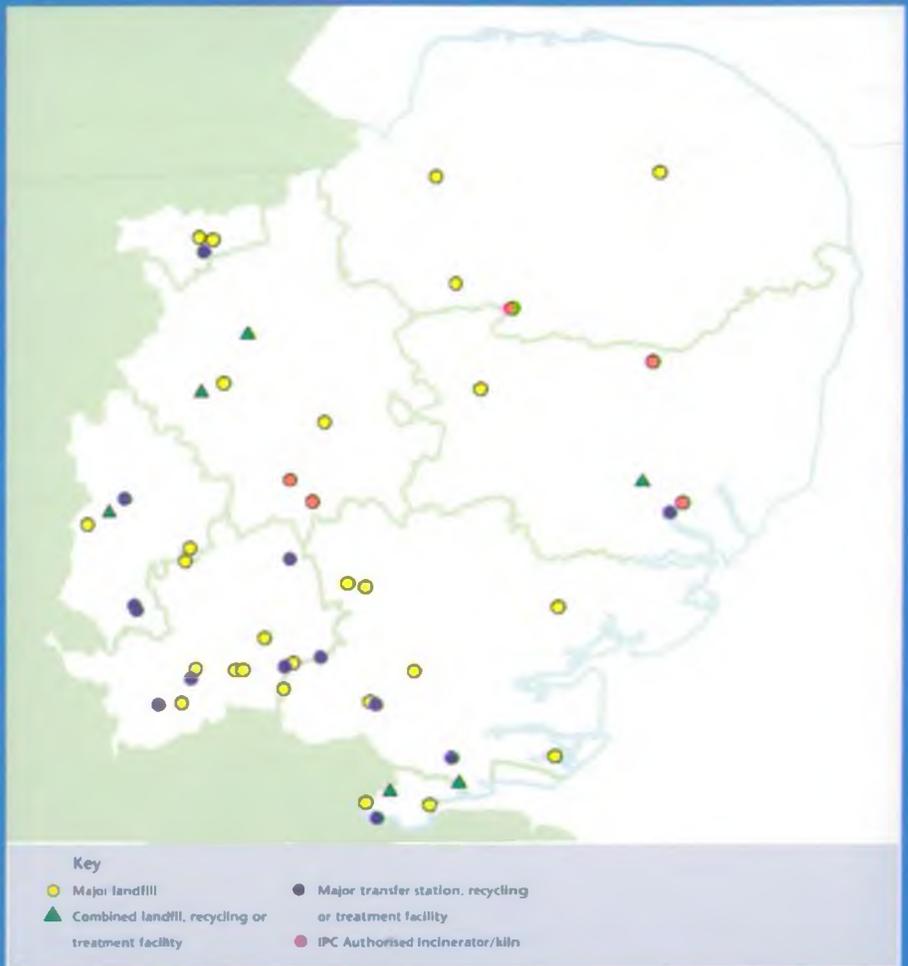
for the area who works along side local recycling officers, and develops a suite of activities that tie in with the national curriculum and help the school to reduce waste and reuse and recycle more effectively. In the East of England SWAC Norfolk and SWAC Suffolk were launched last year.

WASTE MINIMISATION IN THE FOOD AND DRINK INDUSTRY

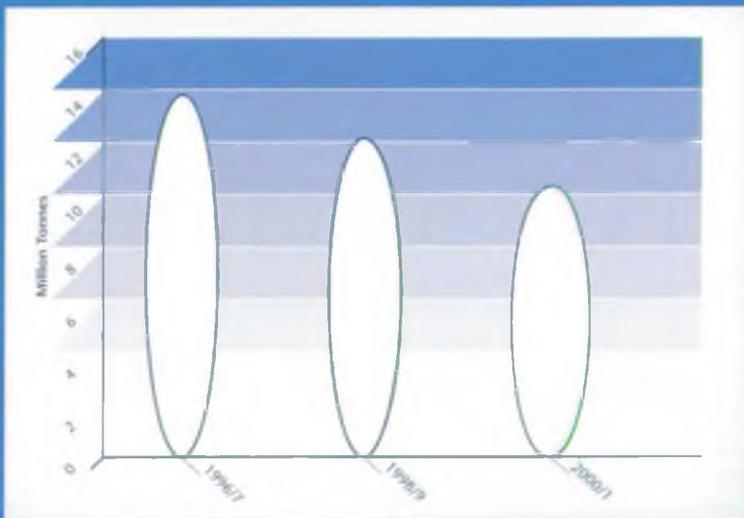
The Agency works with companies to influence and facilitate reductions in the generation of waste as part of its responsibility to promote the sustainable use of natural resources.

The East Anglian Waste Minimisation in the Food and Drink Industry Project was a unique partnership between ten organisations including the Agency. It set out to improve the competitiveness and environmental performance of participating companies through a programme of site support, training and consultancy in waste minimisation. Every company who participated in the project made environmental improvements. An overall yearly cost savings was achieved, which amounted to approximately £1,100,000.

At Wilkins & Sons Limited in Tiptree Essex, the Agency carried out a comprehensive scoping audit and following this the company introduced a programme of waste reduction initiatives. These included the separation and selling of various types of solid waste resulting in savings of 35% per year on disposal costs. Liquor from cooking fruit and steam from the heating process was re-used and the company continues to identify new opportunities to use its resources more efficiently.



EAST OF ENGLAND WASTE TO LANDFILL



Wiser Sustainable use of Natural Resou

THE EAST OF ENGLAND IS THE DRIEST REGION OF ENGLAND AND WALES. OUR VALUABLE NATURAL ENVIRONMENT AND HIGH POPULATION GROWTH RATE MAKE THE CAREFUL MANAGEMENT OF WATER RESOURCES ESSENTIAL. THERE ARE MANY SITES OF NATIONAL AND INTERNATIONAL IMPORTANCE WITHIN THE REGION THAT NEED PROTECTING. THE AGENCY RECOGNISES THIS AND IS WORKING WITH OTHERS TO ENSURE THAT WATER ABSTRACTIONS DO NOT TAKE PLACE TO THE DETRIMENT OF THE ENVIRONMENT.

One of our challenges from last year's Snapshot was that our strategy would follow management of demand by promoting metering in two-thirds of domestic properties, and developing new or enhanced resources for our future raw water.

WATER RESOURCE STRATEGY

During 2001 we produced our Water Resources Strategy for the East of England. The Catchment Abstraction Management Strategy (CAMS) process has also begun. These strategies will allow a more consistent and responsive approach to management of water resources both regionally and locally, exploring options for the long-term sustainable development of water resources locally.



WATER ABSTRACTION

Public water supply is the major user in the region (77%) followed by industry (12%). Spray irrigation for agriculture accounts for only 6% of total annual water abstraction, but demand is concentrated in the summer months when river flows are typically at their lowest.

A more sustainable use of water is to use winter storage reservoirs to retain winter

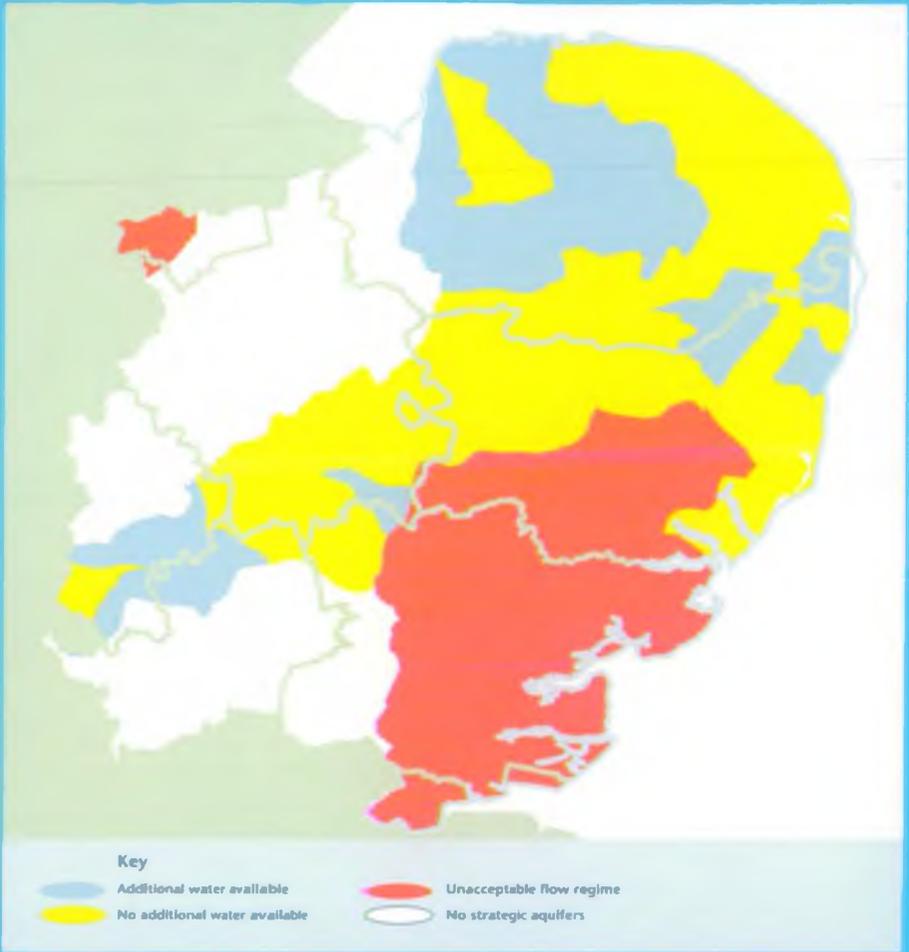
rainfall, which can then be used during the summer months for irrigation. This reduces the need to abstract from surface waters. In the region the number of licences for agricultural spray irrigation decreased during 1999 compared to the previous year. The number of licences for winter storage has increased in total; in 2000 thirty six licences were granted for this purpose.

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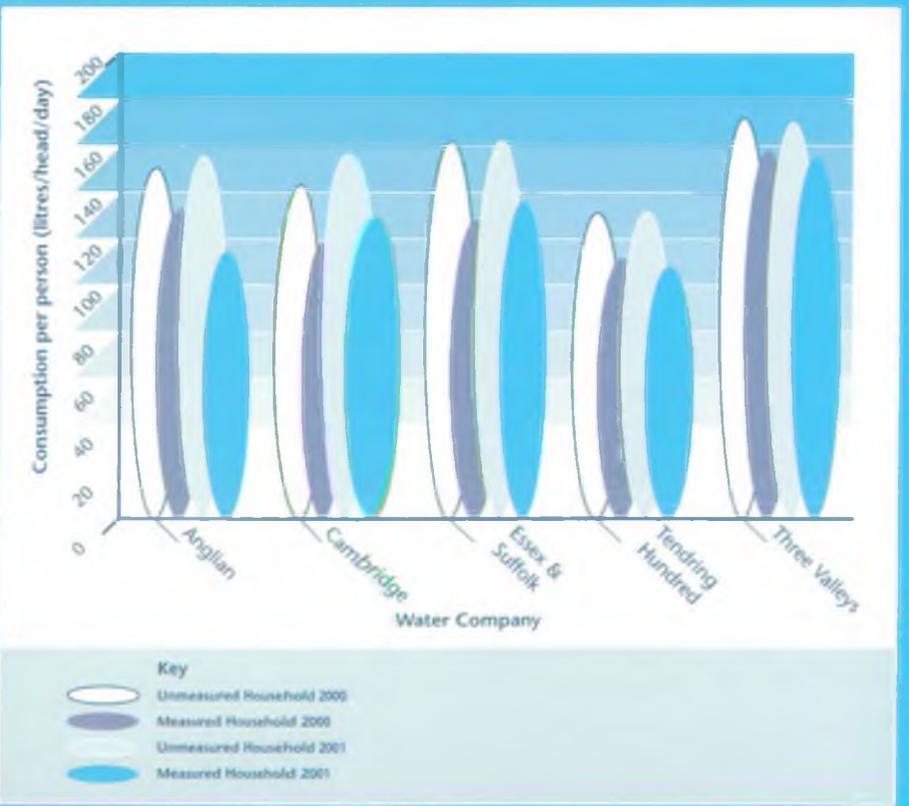


Winter storage reservoir

GROUNDWATER RESOURCE AVAILABILITY



WATER CONSUMPTION 1999-2000



Limiting and Adapting to Climate Change

CLIMATE CHANGE IS LIKELY TO HAVE A MAJOR EFFECT BOTH ON THE ENVIRONMENT AND SOCIETY. IN THE EAST OF ENGLAND, AS WITH THE WHOLE OF THE UNITED KINGDOM, SCENARIOS FOR CLIMATE CHANGE PREDICT LOWER SUMMER AND HIGHER WINTER RAINFALL AND RISING SEA LEVELS. THE REGION HAS EXTENSIVE LOW-LYING AREAS, SOME OF WHICH ARE HEAVILY POPULATED. A SEA LEVEL RISE OF 200 MILLIMETRES WITHOUT APPROPRIATE SEA DEFENCES WOULD CAUSE LOSSES OF FRESHWATER HABITATS IN THE FENS AND BROADS, AND MAY LEAD TO SALINE INTRUSION INTO COASTAL AQUIFERS REDUCING GROUNDWATER ABSTRACTION YIELD.

In last year's Snapshot we set ourselves the challenge to contribute to the national goal to reduce emissions of carbon dioxide by 20% below 1999 concentrations over the next ten years.

LIMITING CLIMATE CHANGE

The Agency's Anglian region has reduced its mileage by over 20%, representing a reduction in CO₂ from 1996 emissions of approximately 440 tonnes per year.

Releases from Agency regulated processes in the region produce 15,000,000 tonnes of greenhouse gases a year. In 2000 there has been a

reduction of around 400,000 tonnes. When considering trends in the releases of these pollutants over such a short period they will be affected by several factors. These will include the number of operators authorised or the economic health of an industry sector as well as the gradual reduction in permissible release limits which is a feature of the integrated pollution control regime.

ADAPTING TO CLIMATE CHANGE

Abbotts Hall Farm in Essex will be a practical demonstration of a more sustainable approach to coastal defences. This 700-acre coastal farm will show how sustainable coastal defences can lead to the re-creation of marshes which are vital for the future of both wildlife and people. This is a partnership project managed by Essex Wildlife Trust and supported by WWF-UK, Environment Agency, English Nature, Heritage Lottery Fund and the Wildlife Trusts. We are working together to solve the problems

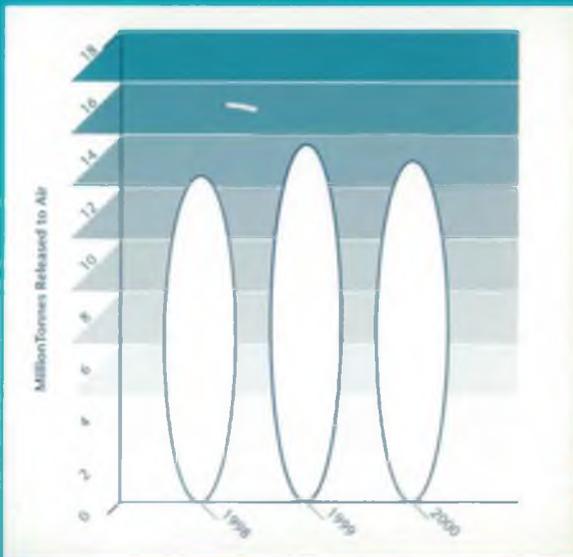
STRATEGIC COASTAL DEFENCE OPTIONS



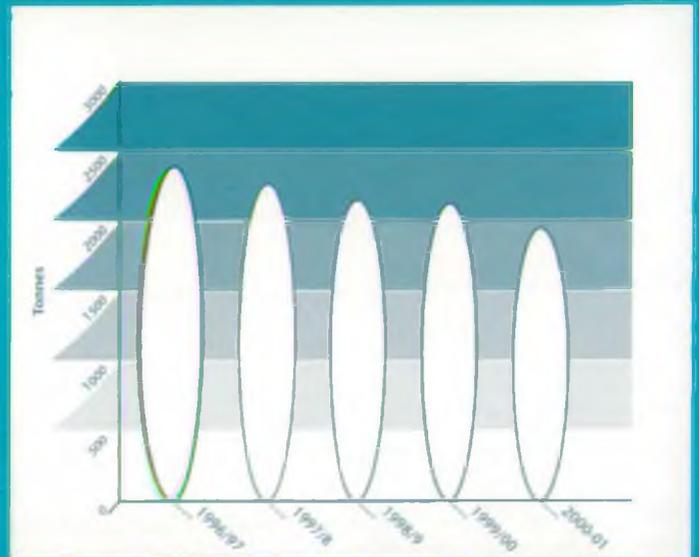
caused by rising sea levels which result in coastal marshes being squeezed out of existence against hard sea walls. The three kilometre sea wall along the south of the farm will be breached in several places, an approach called managed retreat or coastal realignment. This will allow the tide in and out and encourage coastal marshes to grow on a strip of arable land behind the sea wall. It is important that projects like this demonstrate how flooding can be controlled through realignment and show what levels of grant and compensation are available to landowners.



GREENHOUSE GASES FROM AGENCY REGULATED PROCESSES



CO₂ EMISSIONS FROM AGENCY VEHICLES



Agency working at Abbots Hall





INDICATIVE FLOODPLAIN



Riverswood development

Reducing Flood Risk

FLOOD RISK CANNOT BE ELIMINATED BUT IT CAN BE REDUCED AND WE AIM THROUGH OUR FLOOD DEFENCE STRATEGY TO MINIMISE THE RISK BOTH TO LIFE AND PROPERTY. WE WILL DO THIS BY INFLUENCING DEVELOPMENT PLANNING WHILE EXPLOITING THE BENEFITS OF NATURAL FLOODING SUCH AS RESTORATION OF FLOOD PLAINS AND COASTAL REALIGNMENT.

Our current estimate is that over 125,000 properties are at risk from flooding, affecting about 5% per cent of the region's population. The projected growth in household numbers to 2016 is over 20,500 each year and will place flood risk

areas under even greater development pressure. The Agency seeks to influence development planning by providing flood plain surveys and consistent advice on development and flood risk.

In last year's Snapshot we posed the question 'What's the price of a river view?'. Much of the region is below sea level, and sea levels are likely to rise by up to 30 centimetres in the next fifty years.

FLOOD ALLEVIATION

A Public Private Partnership Programme was launched in September 2001 to improve tidal flood defences and manage flood risk in the Norfolk and Suffolk Broads. Various factors including high river flows and the sea put the Norfolk and Suffolk Broads under the threat of

flooding. Some 240 kilometres of banks protect around 1,700 properties and 21,300 hectares of land. So flood defences in the area need a comprehensive, long-term programme of improvement and maintenance. In particular, the banks are to be strengthened and protected from erosion and raised sufficiently to compensate for rising sea levels.

INFLUENCING NEW DEVELOPMENT

As a statutory consultee on planning applications we were consulted at an early stage on the surface water provisions for the Ravenswood housing development in partnership with Ipswich Borough Council and Bellway Homes. The new development could not be accommodated via traditional sewer networks. There was concern that any additional surface water flows might affect Brazier's Wood which is a Site of Special Scientific Interest (SSSI) and lies directly downstream of the site.

A Sustainable Drainage Scheme (SuDS) solution was negotiated incorporating swales (an open channel to collect and discharge stormwater) and soakaways, which keep surface water on site and close to where the rain falls. Techniques employed allow:

- **Reduced quantity of run-off at collection from the site;**
- **Reduced velocity of run-off to allow settlement and infiltration via a permeable storage system;**
- **Passive treatment to collect water before discharge to a watercourse;**
- **Reduced effect of pollutants to the watercourse;**
- **Promotion of plants and animals.**



Broadland Flood Alleviation Scheme

Helping Achieve Sustainable Development

THE AGENCY HAS A KEY ROLE TO PLAY IN SECURING SUSTAINABLE DEVELOPMENT IN THE EAST OF ENGLAND BUT WE WILL BE UNABLE TO DO THIS ON OUR OWN. WE ARE THEREFORE WORKING CLOSELY WITH THE INCREASINGLY IMPORTANT REGIONAL BODIES SUCH AS THE EAST OF ENGLAND REGIONAL ASSEMBLY, EAST OF ENGLAND DEVELOPMENT AGENCY AND THE EAST OF ENGLAND LOCAL GOVERNMENT CONFERENCE. RECENT EXAMPLES OF PARTNERSHIP WORKING ARE SET OUT UNDER OUR ENVIRONMENTAL THEMES:

A BETTER QUALITY OF LIFE

The Agency was represented on a working group for the East of England Regional Assembly's East of England Sustainable Development Framework. This Framework will influence and provide guiding principles to resolve conflicts between regional strategies with competing agendas. It will influence how environmental, economic and social issues are resolved and the extent to which regional sustainability is achieved.

AN ENHANCED ENVIRONMENT FOR WILDLIFE

The East of England Regional Biodiversity Forum meets quarterly and a regional conservation officer represents the Agency. Local authority workshops sponsored by the Government Office have



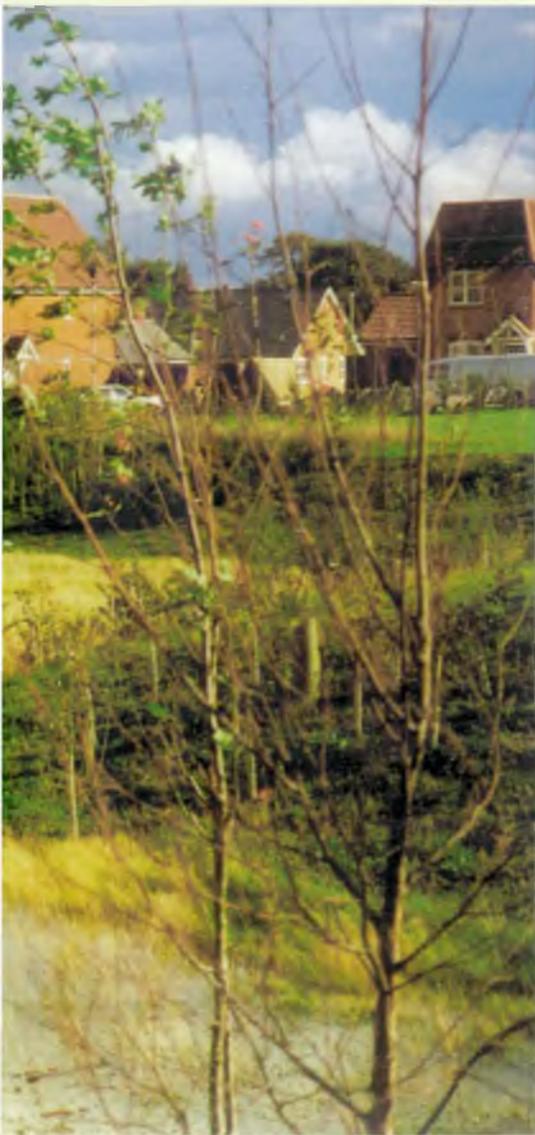
taken place to raise awareness of the biodiversity process. The forum will be working towards a biodiversity audit of the region to enable regional biodiversity initiatives to be developed.

CLEANER AIR FOR EVERYONE

A Renewable Energy & Land Use Planning Study has been produced for the East of England and gives regional targets for renewable energy which may

eventually be included in the Sustainable Development Framework. Awareness raising initiatives are planned with planning authorities and other key organisations on the potential of renewable energy resources, to encourage local authorities to incorporate policies in their Development Plans to encourage renewable energy.

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IMPROVED AND PROTECTED INLAND AND COASTAL WATERS

The Agency has been working with the Fens Tourism partners (local authorities in the Fens area, Middle Level Commissioners and the East of England Tourist Board) to secure funding for the second phase of the Fens Waterways Regeneration Project. This will provide improved facilities for boaters, anglers and walkers and will complete

development work on new and restored waterways to link the Fens Waterways to each other and to the national inland waterway network.

RESTORED, PROTECTED LAND WITH HEALTHIER SOILS

An East of England Better Regulation Partnership has been established to improve the process of regulation and the links between businesses and regulators. This is the only regional grouping of senior regulators including the Agency working closely with business in the country. The meetings have focused specifically on farming issues and one of the outcomes has been to work closely with DEFRA and the East of England Development Agency to deliver a number of practical workshops for farmers.

A GREENER BUSINESS WORLD

Membership on the East of England Regional Waste Technical Advisory Body (RWATB) includes the Agency, waste local planning authorities, Go-East, and local waste companies. The group met for the first time in 2001 and is dealing with assembling data and providing advice on options and strategies for waste management within the region. RWATB is part of the process being led by the Sustainable Development Round Table and East of England Environmental Forum looking at promoting a sustainable work management framework for the region.

WISER SUSTAINABLE USE OF NATURAL RESOURCES

The East of England Sustainable Round Table water sub-group on which we are represented has focused on our Regional Water Resource Strategy which will integrate very well with the forthcoming Regional Planning Guidance and the Sustainable Development Framework. It will also influence development of Catchment Abstraction Management Strategies. A conference was held in November 2001 to help people implement future sustainable use of water.

LIMITING AND ADAPTING TO CLIMATE CHANGE

The East of England Sustainable Development Round Table climate change sub-group has held seminars this year for those with high level responsibility for planning issues. Consideration is being given to preparing a regional study of climate change.

REDUCING FLOOD RISK

The Secretary of State published the final version of Regional Planning Guidance for East Anglia in November 2000 and for the South East in March 2001. The Agency is working with local planning authorities to ensure decisions on new development comply with new guidance in Planning Policy Guidance 25 Development and Flood Risk.

Environmental Outcomes



Key

- A better quality of life
- An enhanced environment for wildlife
- Cleaner air for everyone
- Improved and protected inland and coastal waters
- Restored, protected land with healthier soils
- A 'greener' business world
- Wiser, sustainable use of natural resources
- Limiting and adapting to climate change
- Reducing flood risk

Non site specific

- Flood warning system
- Protecting land quality
- Catchment Abstraction Management Strategy
- Winter storage reservoirs
- Improving bathing waters
- Local authority air quality reviews
- Water quality improvement programme
- Agency mileage reduction

**Sustainable Development -
A better quality of life for
everyone, now and for
generations to come.**



CONTACTS:

THE ENVIRONMENT AGENCY HEAD OFFICE

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD.
Tel: 01454 624 400 Fax: 01454 624 409

www.environment-agency.gov.uk

www.environment-agency.wales.gov.uk

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

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

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

MIDLANDS

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

SOUTHWEST

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

NORTH EAST

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

THAMES

Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

NORTH WEST

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

WALES

Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0EY
Tel: 029 2077 0088
Fax: 029 2079 8555



ENVIRONMENT AGENCY
GENERAL ENQUIRY LINE

0845 933 3111

ENVIRONMENT AGENCY
FLOODLINE

0845 988 1188

ENVIRONMENT AGENCY
EMERGENCY HOTLINE

0800 80 70 60



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