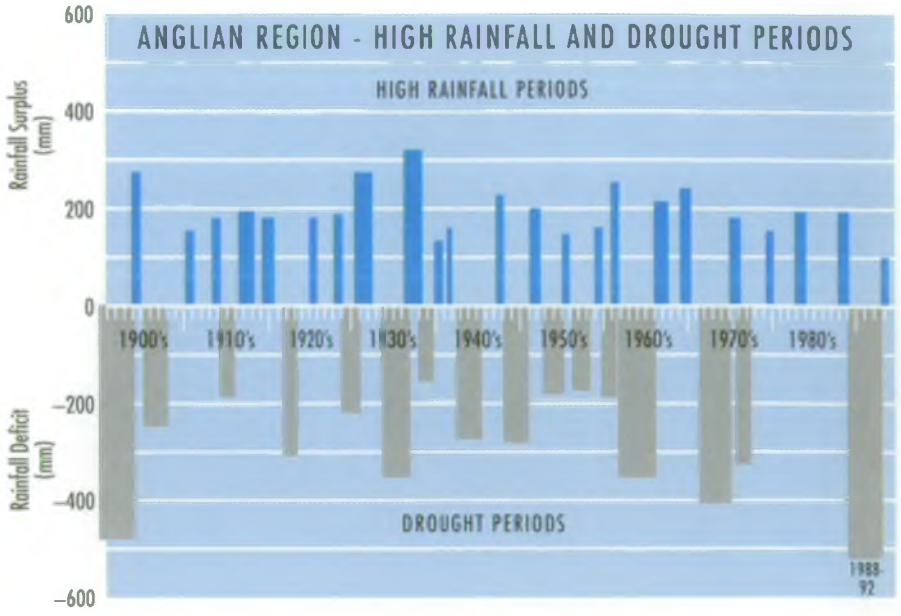
WATER RESOURCES STRATEGY
SUMMARY OF CONSULTATION DRAFT

A blueprint for secure water supplies and a better environment

NRA

National Rivers Authority
Anglian Region

This document describes a Strategy for water resources to the year 2021 produced by the Anglian Region of the National Rivers Authority. NRA's role is to manage our rivers and underground waters in such a way as to meet all reasonable needs, both human and environmental. The strategy will provide a framework within which all concerned can work towards secure water supplies for a growing population *and* a better water environment. It will also be the basis for NRA's continuing input to the planning of the Region's development.



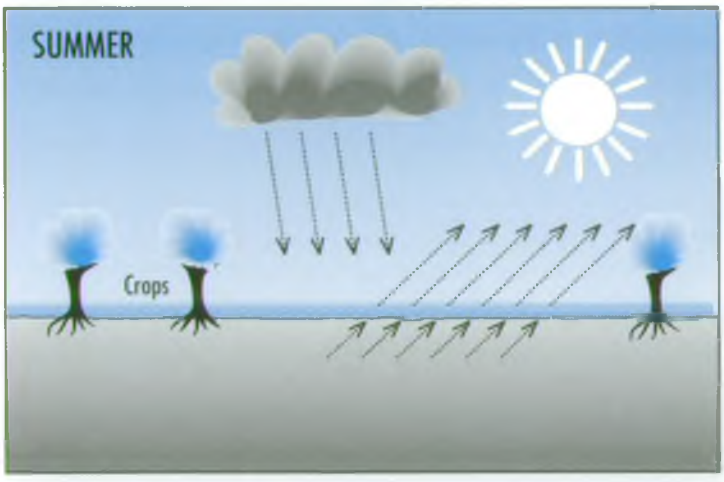
THE PROBLEM

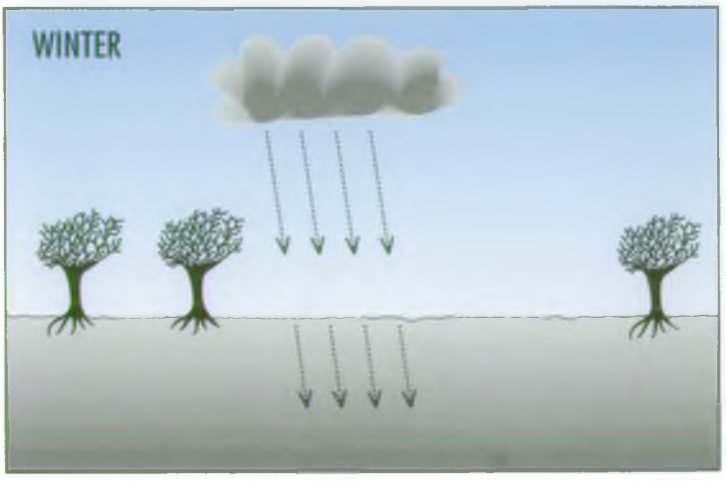
Anglia has a water problem.

In summer we receive 300mm of rain, but we lose 450mm by evaporation.

This means that every summer is a drought and the 6 million of us who live between the Thames and the Humber depend on stored winter water. So do the flows in our rivers and the waters in our wetlands.

In winter evaporation stops and rainfall is usually adequate to refill our water stores.





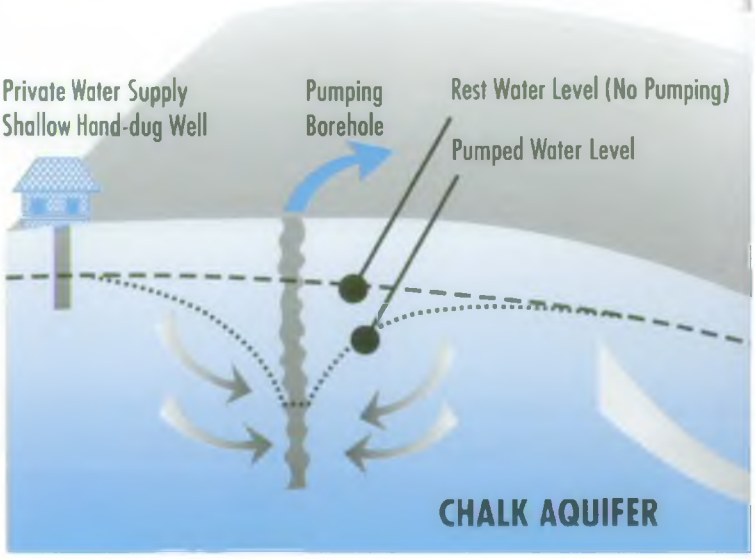
However, a dry winter may fail to refill our stores. Two dry winters can cause real problems. Three or more (such as we have just had) stretch the system to its limits.

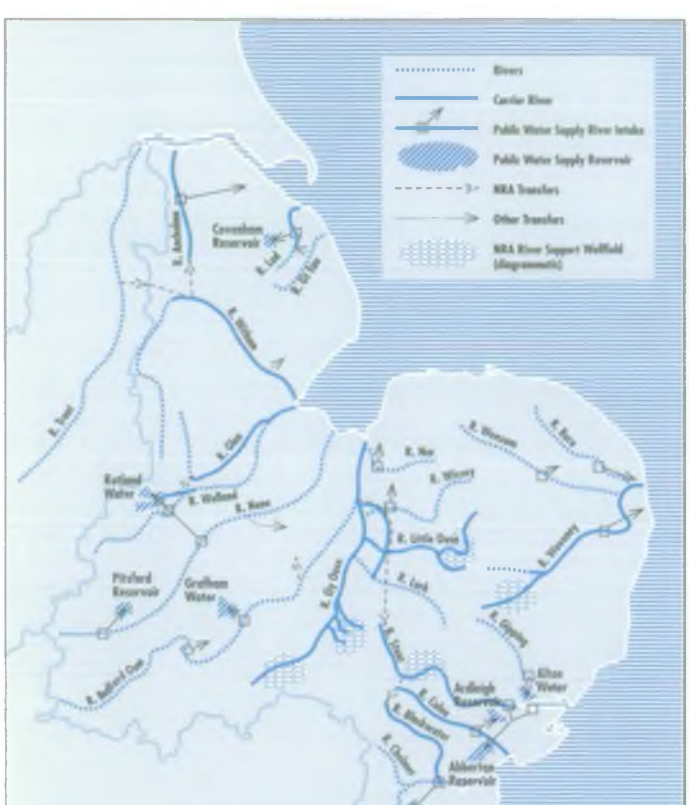
It is possible that climate change could make things worse. Researchers cannot yet tell whether climate change may increase water resources or reduce them. However, a warmer climate will almost certainly increase our use of water.

The challenge is how to store enough winter water in good years, and distribute it to where it is needed to keep both the taps and the rivers flowing, and the wetlands wet. This must be done, with or without climate change, through the drought conditions which are a regular feature of our climate.

WATER FOR PEOPLE

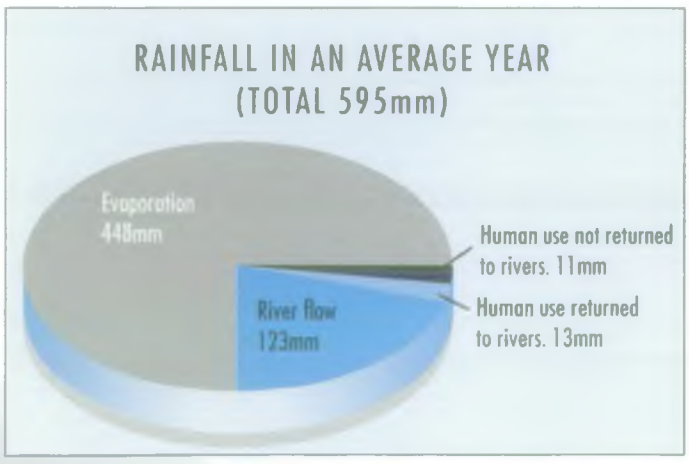
Happily the Anglian region is blessed with huge natural storage in water bearing rocks which underlie half the region. These 'aquifers' sustain spring and river flows as well as water supplies, so we have to use them very carefully. In the other half of the region, manmade reservoirs store winter water for summer use. A network of boreholes, pumps, pipelines, tunnels and river channels gets the water to where it is needed.

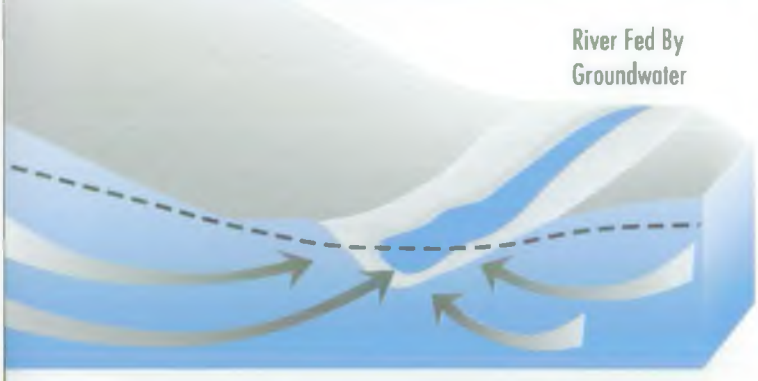




This network provides the water which the water companies supply, after treatment, to our homes and factories. Many factories and farmers also take water directly from rivers and from boreholes.

The system just about coped in the 1988/92 drought. But by 2021 it will have to supply another 1 million people, all of them aspiring to higher living standards.





We need to act now to be ready for the future.

There is ample water to do this provided we use water wisely and invest money to store it in the good years and to get it to where it is needed in the bad years.

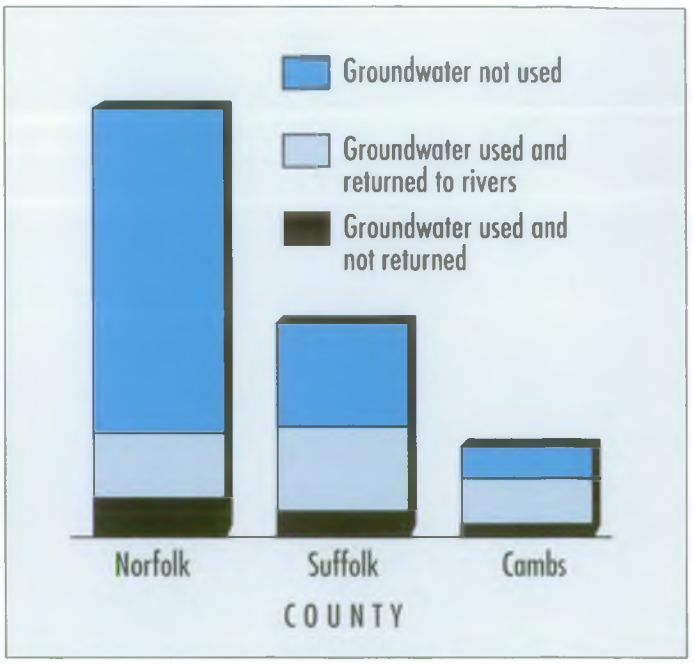
WATER FOR THE ENVIRONMENT

But there is another dimension - our rivers, wetlands, and estuaries depend on the same sources as we do. It would be all too easy to dry them up in the search to meet our own needs cheaply. As Guardians of the Water Environment, NRA is not going to let that happen.

The environment we have all inherited is not natural. If it was, it would be largely forest, immensely rich in marsh and wetlands but relatively poor in river flows because the natural forest would evaporate most of the rainfall. But the forests have been felled; the land has been drained and ploughed. We are left with relatively few 'natural' wetlands, which we rightly regard as precious assets;

with artificial wetlands such as the Broads (which are old peat diggings) and with gravel pits (the modern day equivalents). We also have a small number of large reservoirs each of which gives great environmental, as well as recreational, benefit.

Our rivers support fisheries and navigation. They are prime sources of amenity and recreation, and havens for wildlife.



However, many of them have been straightened, channelled, dredged, embanked. They act as carriers of our flood waters and our wastes. They are vulnerable to our pollution. Our taking of water reduces the low flows of some rivers, but our returning effluents increase others.

With 6 million of us living in a dry region, our rivers are never going to be truly natural. But NRA is committed to moulding the inevitable changes of our times to the betterment of our rivers. We will continue to press for higher water quality. We will continue to carry out flood defence work as carefully as possible. We will work to restore more natural, and diverse river channels. And, through this Strategy, we will work towards sustaining river flows, which, together with all the other changes, will give us 'better' rivers in the next century than they are today.

OUR PROPOSALS

Our proposals to meet the reasonable future human needs for water securely, sustainably and economically, whilst protecting and enhancing the water environment, are spelled out in detail in the full strategy. In summary:-

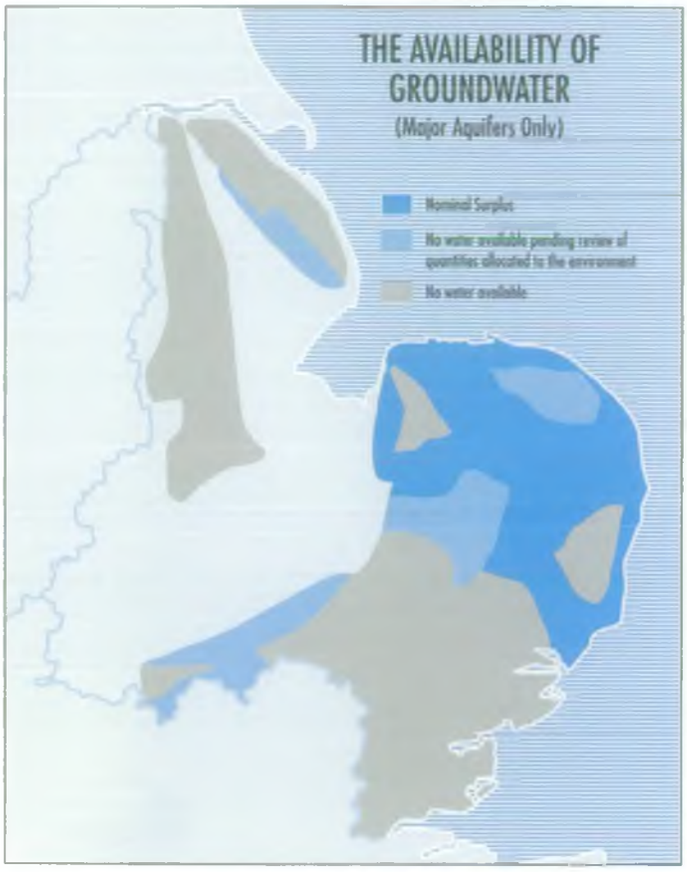
1. WISE USE OF WATER

This means public education, pressing for more water efficient appliances, continuing vigilance on leakage and perhaps domestic water metering in areas where water is particularly scarce.

But all of this can only buy a little time. Further water development is inevitable.

2. USE OF GROUNDWATER

Groundwater resources are fully used in some areas - notably Lincolnshire, Essex and most of Cambridgeshire. In other areas groundwater is less committed - notably Norfolk and parts of Suffolk.



Our map shows where further groundwater is potentially still available. Our proposals include using some of this groundwater to meet the increasing needs of Norfolk, most of Suffolk and parts of Cambridgeshire.

We know that not everybody shares this view, because of recent low groundwater levels and spring flows. Our proposal therefore needs explanation:-

The figures and maps all refer to the *average* sustainable groundwater resource - that is, the average rate at which rain water refills the groundwater store. In dry years, much less goes in; in wet years more. The vast amount of water held in the groundwater store acts likes a reservoir to even out the good years with the bad. For example the worst sequence of drought years this century has recently caused the lowest levels and river flows of a lifetime. A few small rivers have run dry, most of them as a direct result of the drought.

However, water users have been able to use stored groundwater to get through an extra-ordinary drought with minimal restrictions. In some spring fed rivers this abstraction has exacerbated the low flows; in others, returning effluents and, in some cases, deliberate river support pumping by the NRA, have kept flows higher than 'natural'.

If we were to allow ever increasing groundwater abstraction, without any other measures, then flows and levels in future droughts would be worse than they have been in this one. In most catchments this would *not* be tolerable, and it is *not* what we are proposing. However, the fact remains that in all normal years there is ample groundwater for our needs (see the illustration). Our proposals to allow this precious resource to be put to good use and at the same time to sustain, or even improve, the water environment are as follows:

1. 'Conventional' boreholes to supply inland areas where the water is subsequently returned to the river.

2. River support boreholes to guarantee river flows for abstraction at or near the tidal limits to supply areas where the water is subsequently lost to the sea. Support pumping is only needed for short periods during drought years.

3. Some use of groundwater for irrigation and other non-returning uses will be allowed subject to the maintenance of satisfactory river flows.

4. When the point is reached where the lowest spring and river flows are unacceptably affected, compensation river support pumping will be required to sustain satisfactory minimum flows. Again this would be needed only very occasionally.

5. In all cases new boreholes must avoid unacceptable effects on recognised wetlands.

The full strategy gives catchment by catchment details of groundwater recharge, the amounts already licensed, the returning effluents, the amounts we have reserved to sustain river flo , and hence any nominal 'surplus'. Abstraction of any such surplus will only be allowed in accordance with these proposals.

3. FLOWS TO THE ESTUARIES

Two proposals are being studied to increase supplies by reducing low flows to the Great Ouse estuary. We will judge any proposals on their merits against the criterion of "no unacceptable environmental effect".

4. FURTHER USE OF EFFLUENTS

Treated effluents from inland sewage treatment works return to the rivers and are automatically re-used. In addition we support the diversion of Chelmsford's effluent to the river (instead of the estuary) to augment public supplies. This would be in line with practice throughout South and East England, and it emphasises the need for the return of properly treated effluents to our rivers.

5. IMPORTS

We propose to transfer increasing amounts of water from the River Trent in Nottinghamshire through our existing transfer system to meet the rising needs of much of Lincolnshire and South Humberside.
We have examined the option of transferring larger quantities of Trent water further South but have found this to be more expensive, and environmentally less acceptable, than other options -though it could be a necessary follow up in the longer term.

6. A NEW RESERVOIR

We believe that a large new reservoir should be built soon. There is a likely site near Great Bradley on the Cambridgeshire/Suffolk borders, and an alternative, as yet unproven, site on the fens between Feltwell and Ely. The choice of site must await detailed investigation of the fenland site, and should be based on site suitability, environmental impact and cost. The timing may be influenced by the NRA's National Strategy which is in preparation. Both the site and the timing should be clarified in 1994.

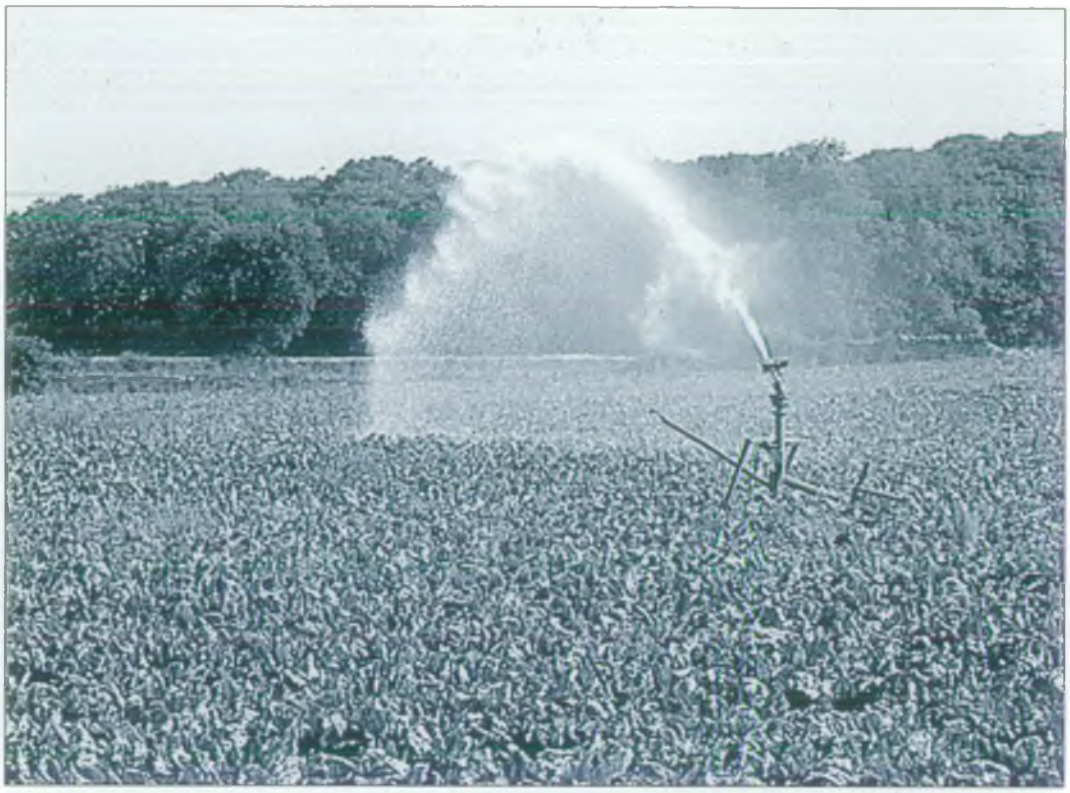
The reservoir would be primarily for public supply, but we believe that a proportion of it s yield should be used to meet the needs of direct water users such as industry and agriculture.

Whichever site is chosen, the reservoir should be welcomed for its environmental, recreational, social and amenity benefits as well as its role in securing our water supplies. Every opportunity should be taken to maximise those benefits.
However, reservoirs can cause genuine hardship to local people. This too should be recognised and suitably compensated.

7. WATER TRANSFERS

The rising needs of Essex and parts of Suffolk will involve increasing transfer of water through NRA's Ely Ouse - Essex system. Extension of these transfers towards London will be considered in our National Strategy. Such transfers use the rivers as natural water carriers, which has environmental implications, both good and bad. We propose studies into the effects and will undertake any reasonable mitigating measures.

Our water transfer systems (Ely Ouse - Essex and Trent-Witham-Ancholme) will continue to be used, with appropriate charges, to help meet the needs of direct water users.



8. LOCAL WATER FOR LOCAL NEEDS

We will continue to allocate relatively local sources to local needs, particularly agriculture, and to press for substitution for any resulting loss to downstream users.

We will encourage the use of storage, particularly farm reservoirs, to use winter water wherever appropriate.

9. RIVER FLOWS

We propose to identify acceptable minimum river flow targets and, where appropriate and economic, to actively sustain them. We will relate these targets to physical and water quality measures. Our overall aim is to improve the amenity and ecological value of many of our rivers.

10. HISTORIC OVER ABSTRACTION

We will continue, where appropriate and economic, our programme to put right river flows and wetlands which are unacceptably affected by abstractions authorised in the past.

WHERE NOW?

Our full Draft Strategy contains far more detail than is possible here. It will be open for public consultation from May to September 1993 and can be viewed at our local offices. If you would like a copy it is available at a cost of £10. Please send a cheque payable to NRA Anglian Region to:

The Public Relations Department
National Rivers Authority
Kingfisher House
Orton Goldhay
Peterborough PE2 5ZR

We welcome everybody's views, based either on this document or on the full Draft Strategy.

This work and the results of our consultation will feed into our National Strategy, due for publication early in 1994. We will finalise our Regional proposals during 1994. Any major developments, for example a reservoir, would then be subject to formal Environmental Impact Assessment and almost certainly to Public Inquiry.

The National Rivers Authority

Guardians of the Water Environment

The National Rivers Authority is responsible for a wide range of regulatory and statutory duties connected with the water environment.

Created in 1989 under the Water Act it comprises a national policy body coordinating the activities of 8 regional groups each one mirroring an area served by a former regional water authority.

The main functions of the NRA are:

Water resources	— The planning of resources to meet the water needs of the country; licensing companies, organisations and individuals to abstract water; and monitoring the licences.
Environmental quality and Pollution Control	— maintaining and improving water quality in rivers, estuaries and coastal seas; granting consents for discharges to the water environment; monitoring water quality; pollution control.
Flood defence	— the general supervision of flood defences; the carrying out of works on main rivers; sea defences.
Fisheries	— the maintenance, improvement and development of fisheries in inland waters including licensing, re-stocking and enforcement functions.
Conservation	— furthering the conservation of the water environment and protecting its amenity.
Navigation and Recreation	— navigation responsibilities in three regions — Anglian, Southern and Thames and the provision and maintenance of recreational facilities on rivers and waters under its control.

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