# RIVER ANCHOLME CATCHMENT MANAGEMENT PLAN

## SUMMARY REPORT - JANUARY 1996



NRA
*National Rivers Authority*
*Anglian Region*

## INTRODUCTION

Catchment management planning aims to create a consistent framework within which all the NRA's functions and responsibilities can be applied in a co-ordinated manner within a particular catchment area. It tries to reconcile any conflicts that may arise, and to improve the water environment for the benefit of future generations in line with the principles of sustainable development.

During this planning process, the current state of the water environment and its associated uses are analysed and compared with appropriate standards. Where these standards are not being met or are likely to be affected in the future, "Issues" are established together with options for their resolution. These are presented in a table at the end of this brochure.

## YOUR VIEWS

The development of this Plan so far has involved the NRA's staff consulting with a number of public bodies, private companies and individuals, and it's consultative group the Lincolnshire Catchment Panel. The purpose of the Consultation Document is to identify all the water related issues in the catchment and to seek comments on these issues and the options identified to resolve them. Comments are also invited on any other matters affecting the water environment in the catchment which the public feels should be taken up by the NRA.

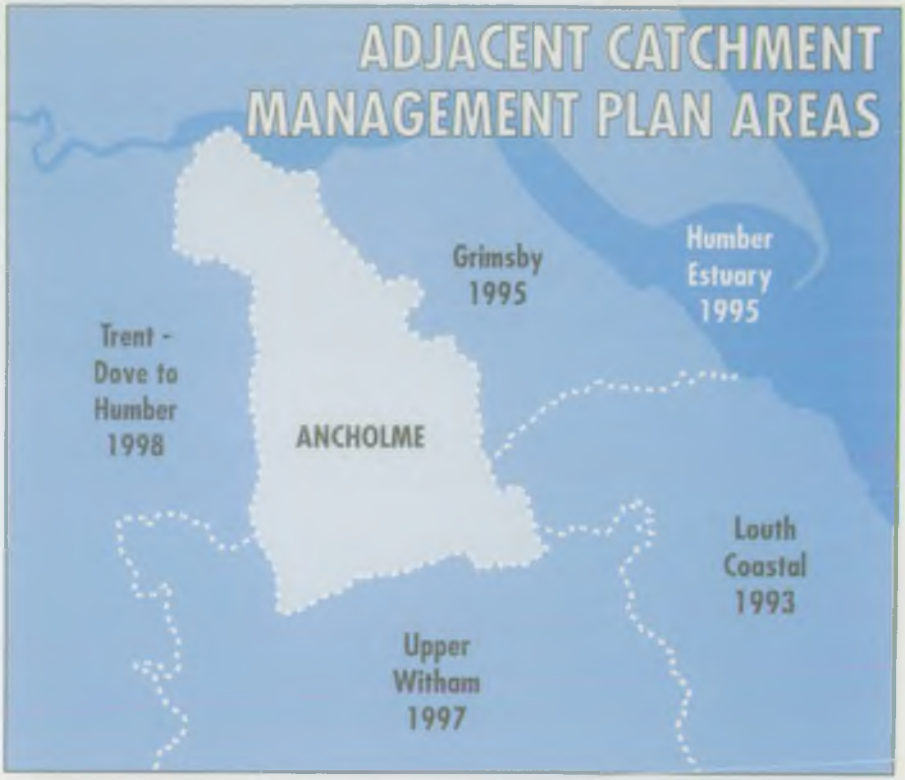
The next stage of the catchment management process is for the NRA to produce an Action Plan, which will take into account comments received during the consultation process. This Action Plan will form the basis for the NRA's actions in the catchment over the next 5 years and beyond. The NRA will seek the commitment to planned actions by others wherever necessary.

Please write with your comments to the following address, from which a full copy of the consultation report may also be obtained:

**Catchment Planning Officer, National Rivers Authority, Northern Area, Aqua House, Harvey Street, Lincoln LN1 1TF.**

Comments must be received by 10 April 1996.

EA-Anglian LEAPs




## WHAT IS CATCHMENT PLANNING?

River catchments are subject to increasing use by a wide variety of activities, many of which interact, some giving rise to conflicts. The many competing demands on the water environment and the interests of users and beneficiaries must be balanced.

Catchment management involves the NRA working with many people and organisations and using its authority to ensure rivers, lakes, coastal and underground waters are protected, and where possible, improved, for the benefit of present and future users.

The NRA uses its resources to:

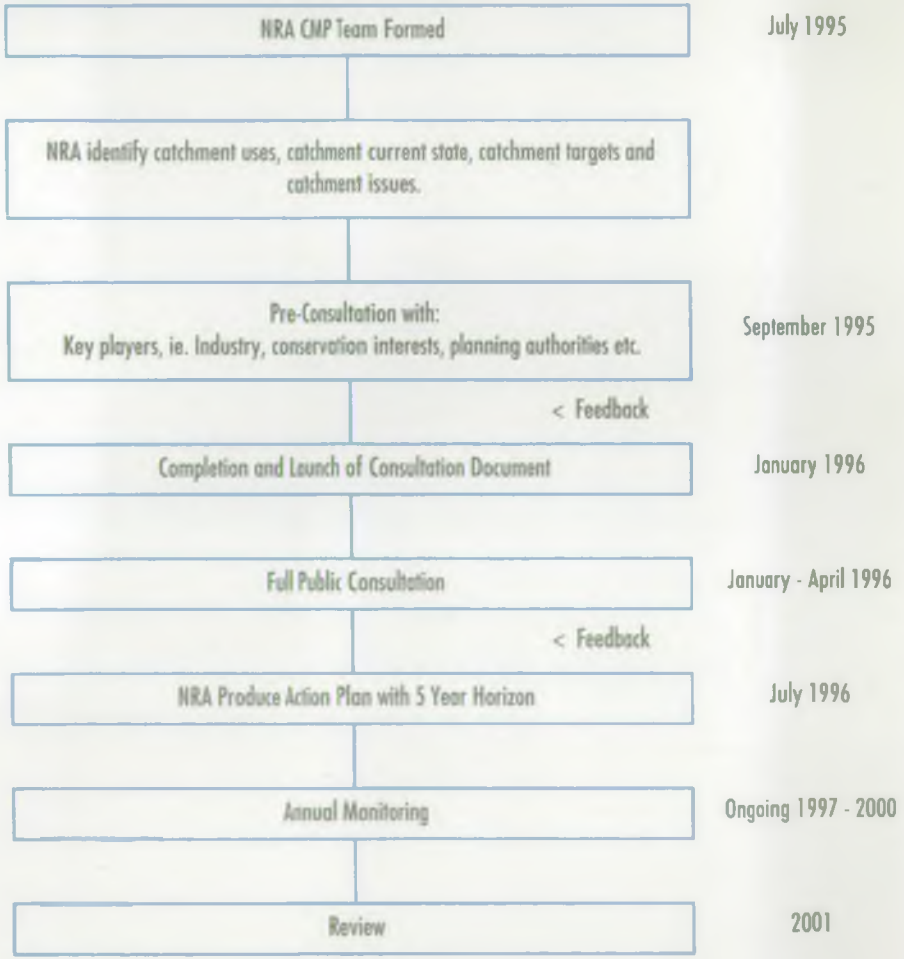
- Respond promptly to all reported pollution incidents and to emergencies due to flooding.

- Control pollution by working with dischargers to achieve improvements and monitor effluent compliance with standards.

- Maintain existing assets and invest in new ones to provide flood protection, manage and develop water resources and provide other NRA services.

- Monitor, survey and investigate the existing quality of controlled waters to determine short and long term changes.

## THE CATCHMENT PLANNING PROCESS
## RIVER ANCHOLME CATCHMENT TIMETABLE



## THE CATCHMENT

The River Ancholme Catchment is located in the administrative counties of North Lincolnshire and South Humberside and covers an area of 618 square kilometres. Main tributaries to the Ancholme include the River Rase, the North

Kelsey Beck, the Land Drain and the West Drain. The sub catchment of the Winterton Beck has been included in the Plan area.

The River Ancholme, as it is seen today, is largely the result of several centuries of man's labours. The historic landscape of thousands of hectares of fresh and salt water marshes/meadows abundant with wildlife is now replaced with productive arable farmland. This fundamental land use change had its beginnings back in the latter years of the 13th century. In 1294 works were undertaken to straighten the course of the Ancholme from Bishops Bridge to the Humber. This was done to facilitate the passage of cargo boats laden with corn and other cargo and would also have the effect of draining some areas of land. By 1312 however, siltation had reduced the depth of the river channel and so began the regular task of dredging and bank works which has continued through the centuries to the present day.

CMPs for the adjacent Louth (August 1993), Grimsby (September 1995), and Humber Estuary (May 1995) Catchments have already been produced. As a consequence of the overlap between the Humber CMP and this Plan, there are issues common to both. Where this is the case, for example, those issues relating to tidal defences, the actions to resolve the issues are identified in the Humber Action Plan. This Plan does not propose to review these issues which have already gone through the Consultation Process.

CMP's for the adjacent Upper Witham and Lower Trent Catchments will be produced during 1997/8. The NRA recognises the links between adjacent Plans and will ensure that they are compatible.

## DEVELOPMENT LAND USE AND INFRASTRUCTURE

The majority of the Ancholme catchment is rural and lies within a broad clay vale, between the tracts of higher ground of the Lincolnshire Edge in the west and the Lincolnshire Wolds in the east. The boundary between the clay and the limestone of the Lincolnshire Edge is characterised by a chain of settlements which vary greatly in size and character. Main population centres are at Brigg, Winterton and Market Rasen - the village of Broughton has grown significantly over recent years reflecting the historical drift of population away from rural to urban areas and the growth of towns and villages as dormitary settlements. A small part of Scunthorpe lies in the western extreme of the catchment. Industry and employment within the catchment is closely allied to the farming sector.

The vast majority of land within the catchment (around 93%) is used for agricultural purposes, much of this is highly productive and versatile. Crops grown include cereals, potatoes, sugar beet, and horticultural produce, 11% of the total agricultural land was set aside in 1994. Tree and woodland cover is

sparse in places, particularly to the north of the catchment, becoming more dominant in the south and around the edges of the catchment, for example at Willingham Woods.

The catchment is served by a network of roads which has been enhanced by the construction of the M180 motorway and the nearby Humber Bridge which provide essential links for the transport of goods beyond the catchment.

Agricultural and urban development can have significant impacts on water quality and conservation interests in the catchment as well as on surface water run-off characteristics. The influence of Local Planning Authorities in development proposals make it important that links are established between CMP's and Development Plans and that there is liaison between the NRA and Local Authorities.

## WATER RESOURCES

The Lincolnshire Limestone is the major aquifer in the catchment. Compared to the Lincolnshire Limestone to the south of Lincoln, it is generally thinner, contains more clay and is more heavily faulted. The aquifer dips more steeply to

the east and yields less water than the aquifer further south. It however provides baseflow discharge to the River Ancholme and meets demands for public water supply, industrial agricultural and spray irrigation. The aquifer is now considered to be fully committed and no additional water can be licensed.

The main surface water resource in the catchment is the River Ancholme which can be augmented by transfers of water from the River Witham (which in turn may be transferred as necessary from the River Trent). This major river transfer scheme, owned and operated by the NRA and known as the Trent Witham Ancholme scheme (TWA) was completed in the mid 1970's. The scheme was principally designed to meet the growing demands for water (both domestic and industrial supplies) along the South Humber Bank (Grimsby Catchment) which could not be met from increased abstraction from the chalk aquifer.

The major abstractors from the River Ancholme are Anglian Water Services (AWS), Brigg Power station and British Steel. The NRA can currently consider new demands direct from the Ancholme, although they would be subject to controls and occasional restrictions. Although winter abstraction will be considered favourably within the catchment, no further direct abstraction can be permitted from minor surface watercourses in summer.

Most of the water currently licensed from the catchment is surface water, supported by the NRA's Trent Witham Ancholme Scheme. The Ancholme is a significant source of water not only within the catchment but also for Scunthorpe and the Humber Bank industries outside the catchment.

The effective and efficient operation of the TWA scheme is key to meeting abstraction and in river needs for water.

## WATER QUALITY

Biological and chemical surveys of river quality in the Ancholme Catchment indicate that surface water quality is generally good to fair. In the upper reaches of the Ancholme itself, together with its tributaries, quality is good but as the river flows slowly through the fertile Ancholme valley, eutrophic effects generally reduce quality to fair, particularly during periods of low summer flow. The ability to augment the flow in the river during these periods helps to reduce the impact of eutrophication and also assists in controlling saline ingress into the system through the navigation/tidal structure at South Ferriby.

River Quality Surveys carried out for the years 1988-94 indicate that water quality within the Catchment is improving. Water quality has to be protected for a range of water uses, particularly the Anglian Water supply intake on the R. Ancholme at Cadney. Water in the catchment is also extensively used for spray irrigation and maintaining high quality fisheries. Livestock watering and industrial water supplies also have to be protected.

Being a largely rural catchment, the main influence on water quality is agriculture, particularly arable farming. This has resulted in high Nitrate levels being observed, exceeding the EC Drinking Water Directive and Surface Water Directive limit. The two major towns in the Catchment, Market Rasen (R. Rase) and Brigg (R. Ancholme) do not have a major impact on water quality. However industrial sites, particularly in the North and West of the Catchment do impact locally on some of the smaller streams.

The Catchment is bounded by the Lincolnshire limestone aquifer to the West and the Northern Chalk aquifer to the East. Both are used as public water supplies by Anglian Water Services. Protection of these supplies is important and the NRA uses its Groundwater Protection Policy to influence development within these area and to minimise the risk of groundwater pollution.

The quality of groundwater in the catchment is generally good, however high nitrate levels are found in some groundwaters. Groundwater quality is routinely monitored by taking samples from boreholes drilled into the Lincolnshire Limestone or from spring sources.

The intensive open cast mining of iron ore in the North West of the Catchment has left behind a number of holes or 'gullets' that are now being used as landfill sites for waste disposal. These present a potential risk to groundwater purity from leachates which may be produced by the decomposition of waste in these sites.


GENERAL QUALITY ASSESSMENT
Whitton
RIVER HUMBER
Winterton Beck
Winteringham
South Ferriby
Horkstow
Winterton
Burton upon Stather
Scunthorpe
Broughton
Brigg
Elsham
Old River Ancholme
Melton Ross
Barnetby le Wold
Redbourne
Caistor
Caistor Canal
Moortown
South Kelsey
Barton on Lindsey
Kingerby
Tealby
Hemswell Cliff
Market Rasen
North Willingham
Owmby
Spridlington
River Ancholme
River Rase
NORTH
SCALE
5 km
Catchment Boundary
1992-1994 DATA
CHEMICAL COMPONENTS
A
B
GOOD
C
D
FAIR
E
POOR
F
BAD

## FLOOD DEFENCE

The catchment has 11 kilometres of tidal defences which protect approximately 80 square kilometres of predominantly agricultural land and the town of Brigg which lie below the highest astronomical tide levels of 5.0 metres ODN.

Maintaining the integrity of these defences is of vital importance for the protection of people and property, issues pertaining to this are dealt with in the Humber Estuary CMP Action Plan (available on request.)

The main arterial watercourses for this catchment, the Ancholme, Land Drain, West Drain and Winterton Beck are embanked to prevent flooding of low lying land. These watercourses carry waters from the whole of the catchment to discharge to the Humber through sluices designed to prevent the influx of tidal waters. The flood capacity of some lengths of "Main" river, notably along the Ancholme, some of its tributaries and the River Rase, are inadequate for the land use protected.

The system of flood protection/land drainage maintained by the NRA is complemented by an extensive network of drainage channels and pumping stations maintained by Ancholme Internal Drainage Board. The importance of the agricultural industry to this area makes the effectiveness of both fluvial defences and land drainage a key feature of this plan.

## FISHERIES

This Catchment is dominated by the River Ancholme which has a fish fauna typical of a lowland watercourse. Fish species found during survey work include: common bream, roach, pike, perch and eel, with some upper rivers containing: brown trout, stoneloach and dace.

The Ancholme is an example of a typical lowland course fishery. The mean fish

biomass is high, reflecting the rich productive nature of its waters. Surveys undertaken in 1993 indicate that the Ancholme fish population currently stands at the highest recorded average biomass since sampling work began and represents an increase of 23% since 1989. However the numbers of fish species is low in certain locations.

The dominant species found are roach and bream. Ageing studies have shown that 82.5% of the population are fish below 5 years old. This reflects the nature of the fishery where warm, shallow, rich waters result in ideal conditions for juvenile cyprinid survival and growth.

In contrast to the Ancholme, the River Rase currently supports a mean fish biomass which is lower than might be expected from this water. A decline since 1989 has been observed, this could be attributed to loss of habitat and the recent drought period when many small watercourses were adversely affected by low flow conditions. Similarly the Winterton Beck, Land Drain and West Drain all currently support a low mean fish biomass and low numbers of species. Throughout the catchment there are several stillwater fisheries that provide popular angling opportunities. Some of these are run in conjunction with caravan holiday parks and provide important tourist facilities for the area.

## RECREATION

Recreation throughout this catchment is actively undertaken by both local people and visitors to the area.

*Old River Ancholme, Brigg*

Leisure pursuits on the River Ancholme include: angling, rowing, boating, canoeing, and walking. Along many riverbank sections, footpath access is available providing good walking opportunities.

The Ancholme Users Group which represents most of the recreational interests on the river regularly meets to discuss recreational use. Recreational demand on the river is rising and requires co-ordination to satisfy needs and exploit opportunities.

## CONSERVATION

The Humber Estuary and parts of the immediately adjacent coastal plain contain a number of conservation areas of National and International importance. For the purposes of the River Ancholme Catchment Management Plan any issues related to this area have been dealt with in the Humber Estuary Management Plan which was published in May 1995.

Within the low lying areas of this catchment, historical modifications to the rivers and streams for navigation and land drainage purposes have resulted in a uniform channel structure and subsequently the loss of diverse plant communities and natural fenland habitats. Eutrophication, maintenance of channelised rivers and lack of natural riverside margins are further constraints on the conservation interests within this catchment.

In upland areas, e.g. River Rase, important invertebrate communities are

*Horkstow Bridge - Scheduled Monument*

supported by short riffle and pool systems. Springs along the chalk and limestone edges are also of high conservation value, notably Broughton Alder Wood and Springs which is designated as a Site of Special Scientific Interest (SSSI). There are 17 other SSSIs in the catchment (including the Humber), 3 Country Trust Nature Reserves and 28 Sites of Nature Conservation Importance (SNCI).

This catchment contains a range of archaeological interests, including prehistoric remains at Risby, Ermine Street (the Roman road) and its associated sites; and the more recent bridges and locks of the River Ancholme.

## NAVIGATION

Boats have travelled on the River Ancholme for many hundreds of years, with works to improve the navigation being recorded back to the end of the 13th century. In the past the Ancholme represented an important route for the transportation of cargo, linking the catchment with the industrial towns of Yorkshire and beyond. Today, navigation is almost exclusively recreational with over 200 boats registered on the system. The NRA is the Navigation Authority for the Ancholme and aims to improve and maintain the navigation and its facilities. The NRA owns and operates South Ferriby Lock which is the key navigation structure and links the Ancholme with the River Humber. The Ancholme is a 'safe haven' for craft on the Humber.

South Ferriby is the only location on the river with sanitary facilities dedicated to navigation, a point noted in a survey of boat users recently undertaken by the

NRA which indicated that the provision of facilities and services are inadequate on the Ancholme.

The derelict lock at Harlam Hill is subject to proposals for restoration as it prevents boats using the upstream 4 kms of the Ancholme Navigation.

## ISSUES AND OPTIONS - GENERAL

This section of the plan considers options to address the issues that have been identified in the full Consultation Document. The options are presented as the initial thoughts of the Anglian Region of the NRA and do not constitute policy statements. Comments on the issues and options are requested together with any new ideas/suggestions.

Where possible, the body responsible for carrying out each option has been identified. In some areas this is identified as someone other than the NRA. However, the options as presented are intended as a plan to facilitate improvements to the water environment for the benefit of all users. Obviously, this will entail many bodies and individuals working together to fulfil the aims and objectives as detailed in this Catchment Management Plan. The issues and options are not shown in priority order and have not been costed or have any timescale determined. After publication of this Consultation Document, the NRA will prepare an Action Plan to provide an overview of the catchment, a policy framework and a series of strategies to deal with the issues. Details of a proposed monitoring programme will also be identified.

# GLOSSARY

**Abstraction.** The removal of water from any source, either permanently or temporarily.

**Abstraction Licence.** An authorisation granted by the NRA to allow the removal of water from a source of supply.

**Algae.** Microscopic (sometimes larger) plants, which may be floating or attached. Algae occur in still and flowing water.

**AMP2.** An acronym for the second Asset Management Plan produced by the Water Companies for the Office of Water Services (OFWAT). It sets out the water industry investment programme for the period 1995 to 2005.

**AOD (Above Ordnance Datum).** Land levels are measured relative to the average sea level at Newlyn in Cornwall. This average level is referred to as 'Ordnance Datum'. Contours on Ordnance Survey maps of the UK show heights in metres above Ordnance Datum.

**Aquatic.** Pertaining to the water environment

**Aquifer.** A water bearing-stratum situated below ground level. The water contained in aquifers is known as groundwater.

**Attenuation.** Breakdown or dilution of a contaminant in water.

**Augmentation.** The addition of water to a watercourse under artificial control. Usually to "top up" low flows in summer by either groundwater pumping or via reservoir release.

**Biomass.** Total quantity or weight of organisms in a given area or volume.

**Bubble Curtain.** A perforated pipe laid across the river and secured to the bed. Compressed air passes through the pipe such that bubbles form a 'curtain' in the water column. The curtain helps to prevent the passage of the heavier saline water from one side of the curtain to the other by a circulatory/mixing action.

**Coarse Fish.** Freshwater fish other than salmon and trout.

**Controlled Waters.** All rivers, canals, lakes, groundwaters, estuaries and coastal waters to three nautical miles from the shore, including the bed and channel which may for the time being be dry.

**Culvert.** Channel or conduit carrying water across or under a road, canal etc.

**Dangerous Substances.** Substances defined by the European Commission as in need of special control. This is because they are toxic, accumulate and concentrate in plants and animals, or do not easily break down into less dangerous substances. They are classified as List I or List II.

**Diffuse Pollution.** Pollution without a single point source eg. acid rain, pesticides, urban run-off etc.

**Ecology.** The study of relationships between an organism and its environment.

**Effluent.** Liquid waste from Industrial, agricultural or sewage plants.

**Enmain.** Procedure in which the NRA assumes powers to maintain a watercourse.

**Eutrophic.** A description of water which is rich in nutrients. At worst, such waters are sometimes beset with unsightly growths of algae.

**Fish Biomass.** A measure of the quality of a fishery as found in terms of surveys, weight by area ie g/m2.

**Gauging Station.** A site where the flow of a river is measured.

**Gravity outfall.** Discharge through a pipe or sluice with no pumping.

**Groundwater.** Water which saturates a porous soil or rock substratum (or aquifer). Water held in storage below ground level.

**Groundwater Protection Policy.** NRA policy relating to groundwater recharge areas to control activities having the potential to pollute underground water.

**Internal Drainage Broads (IDBs).** Authorities responsible for dealing with land drainage within a district. They are primarily concerned with agricultural land drainage but also may be involved with water supply to their district for agricultural purposes.

**Landfill.** Site used for waste disposal into/onto land.

**Leachate.** Liquor formed by the act of leaching.

**Leaching.** Removal of soluble substances by action of water percolating through soil, waste or rock.

**Main River.** The watercourse shown on the statutory 'Main River maps' held by NRA and MAFF. The NRA has permissive powers to carry out works of maintenance and improvement on these rivers.

**Nitrate Sensitive Areas (NSA) and Nitrate Vulnerable Zones (NVZ).** Land in areas where water sources exceed a 50mg/l nitrate limit or are forecast to by the year 2010 are designated NVZ's. Farmers are required to observe an action programme to reduce nitrate loss from their land in both NVZ's and NSA's. However, they do not receive compensation for such programmes where the land is designated on NVZ.

**ODN.** Ordnance Data Newlyn.

**Outfall.** The point at which a river discharges to the seas/estuary, it may also include an outfall structure to prevent sea waters backing up the system.

**Permissive powers.** Powers which confer on the NRA the right to do things but not the duty to do them.

**Phenols.** A class of aromatic compounds with one or more hydroxyl (-OH) groups directly attached to the benzene nucleus.

**Potable Water.** Water of a suitable quality for drinking.

**Public Water Supply.** The supply of water by companies appointed as Water Undertakers by the Secretary of State for the Environment under the Water Industry Act 1991.

**RAMSAR.** Wetland site of International Importance that is designated under the Ramsar" convention ("a town in Iran where the international convention originally agreed in 1975 to stem the progressive encroachment on, and loss of, wetland).

**Water Transfer.** The transfer of water from one resource to another in order to meet or anticipate demand. It is usually part of a scheme such as a reservoir or pipeline.

**Riparian Owner.** Owner of riverbank and/or land adjacent to a river. Normally owns riverbed and rights to midline of channel.

**Saline Intrusion.** Salt water is heavier than freshwater and will therefore tend to sink to the bottom of a watercourse. Once salt water has entered a watercourse it is difficult to remove other than by flushing with high flows during floods. It can have profound effects on the ecology of a river.

**Saline Waters.** Water containing salts.

**Scheduled Ancient Monument (SAM).** The key sites nationally for archaeology, designated by the Secretary of State for National Heritage, through English Heritage.

**Sea Defences.** Anything natural or artificial that prevents ingress by the sea.

**Sea Level.** As defined by Newlyn. Ground levels are measured as above Ordnance Datum Newlyn (AODN).

**Set-Aside.** The EC set-aside scheme was first introduced for the crop year 1991/92 as part of the CAP reform to allow farmers to remove land from production by receiving compensation. Eligible crops are a wide range of arable crops, principally cereals.

**Sewage.** Liquid waste from cities, towns and villages which is normally collected and conveyed in sewers for treatment and/or discharge to the environment.

**Sewerage.** System of sewers usually used to transport sewage to a sewage treatment works.

**Site of Special Scientific Interest (SSSI).** A site given a statutory designation by English Nature or the Countryside Council for Wales because it is particularly important, on account of its nature conservation value.

**Spray Irrigation.** The watering of crops by spraying. Can have a high impact on water resources.

**Springs.** Natural emergence of groundwater at the surface

**Statutory Consultee.** In both the NRA's and other agencies' legislation there are requirements for consultation. Comments and objections which are received are noted but do not usually have the power to, in themselves, prevent the controlling authority from making a decision.

**Statutory Powers.** Powers conferred (eg on the NRA) where it has a duty to do things.

**Sustainable Development.** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

**Telemetry.** A means of directly collecting data from remote sites.

**Washlands.** Extensive semi-natural area of flood plain adjacent to a river, where water is stored in time of flood. Structures can be added to control the amount of water stored in the washland and time its release to alleviate peak flood flows in areas downstream.

**Watercourse.** A stream, river, canal or channel along which water flows.

**Water Quality Objectives (WQO).** Statutory water quality targets to secure specific formal minimum quality standards for specific stretches of water by given dates. A new component of these is introduced by "The Surface Waters (River Ecosystem Classification) Regulations 1994"; a classification scheme to be applied by NRA to the rivers and watercourses of England and Wales. Other existing standards operate already to give effect to various EC Directives for water quality.

**Water Resource.** The naturally replenished flow of recharge of water in rivers or aquifers.

**Water Table.** Top surface of the saturated zone within the aquifer.

**Water Transfer Scheme.** An infrastructure provided to transfer water from one river system to another.

**Weir.** A dam built across a river to raise upstream levels.

**Wetland.** An area of low lying land where the water table is at or near the surface for most of the time, leading to characteristic habitats.

**Winter Storage Reservoir.** Reservoirs built by farmers to store water during the winter months when it is "plentiful" for re-use during the summer.

**Yield.** The reliable rate at which water can be drawn from a water resource.

## ISSUE 1

FLOOD PROTECTION AT CERTAIN LOCATIONS IN THE CATCHMENT ARE BELOW TARGET STANDARDS.

### BACKGROUND

#### River Rase

High flows in the River Rase caused flooding of properties in 1981 and 1993. Investigations have identified that events greater than a 1 in 20 year return period will cause flooding in the future. A feasibility study is in progress to identify and consider options.

#### River Ancholme and Tributaries

Bank instability, due to seepage at times of high river levels and as a consequence of erosion which is undermining the toe of the river banks, together with changes in river flows and levels as a result of more efficient field drains are affecting the Ancholme and its tributaries. Lengths affected include Brandy Wharf and Snitterby, Redbourne, Hibaldstow and Broughton Carrs.

Ancholme Valley flood defence improvements are now in the capital programme for 1996 to 1998 - a feasibility study was commenced in 1995.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| NRA to investigate the feasibility of measures to improve flood protection. This will consider options such as : | | | |
| Raising bank levels. | NRA/Ministry of Agriculture, Fisheries and Food (MAFF). | Reduced risk of flooding. Provide a consistent standard of defence. | Cost. Environmental Impact. |
| Constructing flood storage reservoirs to attenuate high flows. | NRA/MAFF | Reduced risk of flooding. Provide a consistent standard of defence. Possible environmental benefits. | Cost. |
| Provision of anti-seepage works. | NRA/MAFF | Reduced risk of flooding due to breaches. | Cost |
| Restoration/protection of towpaths/berms. | NRA/MAFF | Reduced risk of flooding. Provide a consistent standard of defence. Improved public access. | Cost |
| Accept existing standard of defence. | NRA/MAFF | | Increased risk of flooding |

## ISSUE 2

SEVEN "ACCOMMODATION" BRIDGES CROSSING THE RIVER ANCHOLME HAVE AN INADEQUATE LOAD BEARING CAPACITY

### BACKGROUND

The NRA is responsible for seven bridges crossing the River Ancholme by virtue of The Ancholme Act 1767. All were built between 1840 and 1890, and have timber decks. Six of the bridges are listed Grade 2 structures. In addition to having footpaths or bridleways crossing them adjacent landowners have rights of access over the bridges for farm vehicles. Analysis of their load bearing capacity by modern codes of practice has resulted in them being classified as unsuitable for vehicular traffic.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Improve bridges to comply with 1767 Ancholme Act. | NRA/Ministry of Agriculture, Fisheries and Food (MAFF). | NRA satisfies its legal obligations.<br>Continued public access. | Cost.<br>Future maintenance. |
| Close bridges to vehicular traffic. | NRA | | Cost of compensation.<br>Reduced public access. |
| Pass liability to landowners. | NRA | No future NRA liability. | Cost of commuted sum for future maintenance.<br>Landowners unlikely to accept. |
| Reconstruct bridges. | NRA/MAFF | NRA satisfies legal obligations.<br>Continued public access.<br>Reduced future maintenance. | Cost.<br>Loss of listed buildings. |

NB The Ancholme Act 1767: "An Act for the effectual drainage of the lands in the Level of Ancholme and making the River Ancholme navigable."

## ISSUE 3

THE STANDARD OF FLOOD FORECASTING PROVIDED FOR MARKET RASEN, MIDDLE RASEN AND WEST RASEN IS INADEQUATE.

### BACKGROUND

120 properties in Market Rasen, Middle Rasen and West Rasen were flooded in April 1981 and around 60 properties were affected in October 1993.

Because of a lack of flow gauging in the River Rase and Rainfall Recording Sites within the Rase catchment area it is not possible to provide adequate warning of such events. As a result, damage is caused which could otherwise be avoided.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Provide additional rain and flow gauging sites on telemetry. | NRA/Ministry of Agriculture, Fisheries and Food. | Improved flood prediction. Earlier warnings possible. Reduced flood damages. | Cost. Future maintenance liability |

## ISSUE 4

LOCALLY INADEQUATE RIPARIAN DRAINAGE SYSTEMS EXIST OUTSIDE INTERNAL DRAINAGE BOARD AREAS. UNAUTHORISED CULVERTING, A LACK OF MAINTENANCE AND CONTINUING DEVELOPMENT GIVE RISE TO LAND DRAINAGE PROBLEMS.

### BACKGROUND

Localised flooding results as a consequence of insufficient maintenance of riparian watercourses, inappropriate culverting and the insufficient capacity of watercourses to accommodate the increased surface water run-off which follows 'uncontrolled' development.

Ultimately, the responsibility to deal with these problems lies with the riparian owner. Local Authorities who have supervisory powers to resolve this problem are increasingly reluctant to do so because of the resource implications and/or the lack of expertise.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Enmain watercourses. | NRA/Ministry of Agriculture, Fisheries & Food | Management rests with responsible body. | Lengthy process not appropriate to NRA role. |
| Extend Internal Drainage Board area. | NRA/Ministry of Agriculture, Fisheries & Food/Internal Drainage Boards. | Management rests with responsible body. | Cost.<br>Lengthy process not appropriate in all cases. |
| District Councils to use their powers to resolve problems. | Local Authorities. | Management rests with responsible body. | Cost.<br>Lack of appropriate resource or expertise. |
| Riparian owners to undertake their maintenance responsibilities. | Private owners. | | Disjointed approach.<br>Not always practicable. |
| NRA to ensure new development incorporates appropriate provisions for land drainage. | NRA/Developers. | Future drainage problems are minimised.<br>Costs built into development costs. | Does not address the ongoing maintenance needs. |
| NRA to liaise with Local Authorities to develop on agreed approach towards this problem. | NRA/Local Planning Authorities/ Internal Drainage Boards. | Future drainage problems are minimised. | None. |

## ISSUE 5

THERE IS INSUFFICIENT MONITORING OF THE RIVER ANCHOLME TO IDENTIFY INTERMITTENT POLLUTION AFFECTING PUBLIC WATER SUPPLY AND OTHER USES.

### BACKGROUND

A number of pollution incidents have occurred in the River Ancholme upstream of the public water supply abstraction point at Cadney which the NRA have been unable to identify. The NRA does not have any monitoring facilities on the Ancholme which could provide it with an early warning of such incidents and could help identify the source(s) of this pollution.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Provide an Automatic Water Quality Monitoring Station upstream of Cadney intake. | NRA. | Would provide early warning of decline in water quality.<br>Would enable a swift investigation by NRA.<br>Improves water quality. | Cost. |
| Increase routine monitoring | NRA. | Less cost in the short term. | Short period declines in water quality likely to be missed. |

## ISSUE 6

A NUMBER OF LANDFILL SITES IN THE CATCHMENT HAVE THE POTENTIAL TO POLLUTE CONTROLLED WATERS.

### BACKGROUND

There are 24 operational Waste Disposal Sites in the Catchment. Leachate produced in Waste Disposal Sites is highly polluting if allowed to enter either surface or ground water.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Promote improved management of leachate. | NRA/Waste Regulatory Authority (WRA)/ Site Operator. | Reduced risk of pollution. | Cost. |
| Review existing monitoring data. | NRA. | Provide better management information. | |
| Initiate remedial measures where appropriate. | Site Operator/ WRA. | Reduced risk of pollution. | Cost. |
| Provide effective input into Planning and Waste Disposal Licence Applications. | NRA/WRA. | Ensure that pollution prevention measures are incorporated into future developments. | |
| Promote waste minimisation. | NRA/Waste Producers. Local Councils. | Less waste to be disposed of. | Partial Solution. |

## ISSUE 7

A NUMBER OF WATERCOURSES WITHIN THE CATCHMENT FAIL TO ACHIEVE THEIR RIVER ECOSYSTEM TARGET CLASS. (LAND DRAIN, OLD RIVER ANCHOLME, WINTERTON BECK, N KELSEY BECK).

### BACKGROUND

The majority of marginal and significant failures against RE targets in the Ancholme Catchment are due to low dissolved oxygen levels possibly associated with eutrophic conditions. Other failures appear to be due to single exceptional results that require further investigation. It is the NRA's intention to review RE Target Classes during 1996.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Investigate exceptional results for the Winterton Beck and Old River Ancholme. | NRA. | Will determine whether positive remedial action is required to achieve compliance. | |
| Conduct an investigation into the factors affecting eutrophication in the Land Drain. | NRA. | Will identify any point source nutrient inputs. | |
| Where appropriate set short-term RE Targets for these watercourses pending outcome of investigations. | NRA. | Provides a step approach to achieving suitable long term targets. | |

## ISSUE 8

SURFACE WATER FROM LAND CONTAMINATED AS A RESULT OF PAST INDUSTRIAL PRACTICE ADVERSELY AFFECTS WATER QUALITY IN THE UPPER REACHES OF THE WINTERTON BECK.

### BACKGROUND

The upper reaches of the Winterton Beck flows through an old blast furnace site. Water Quality is affected by high pH levels and the bed of the watercourse can become covered with a white precipitate which also affects the visual appearance of the Beck.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Reclamation of site to include removal of contaminated material | Site Owner. | Improved water quality and visual appearance. | Cost to the company. |
| Continue to monitor. | NRA. | Evaluate the impact of improved water quality. Monitoring costs recovered through the NRA's charges for discharges scheme. Follows polluter pays principle. | |

NB This Issue is included in the Humber Estuary CMP Action Plan at Issue 26.

## ISSUE 9

INADEQUATE OIL STORAGE FACILITIES WITHIN THE CATCHMENT LEADS TO SERIOUS OIL POLLUTION AFFECTING WATER QUALITY.

### BACKGROUND

Water quality within the Catchment is intermittently affected by localised pollution incidents. Many of these incidents are oil related.

Numerous industrial and agricultural sites within the Catchment have oil storage facilities which are not adequately bunded. Accidental spillage or leakage from such tanks and occasional acts of vandalism causes pollution and subsequently environmental damage.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Carry out pro-active pollution prevention campaigns to identify potential sources of pollutants, and seek the cooperation of site operators. | NRA/Dischargers/ Developers. | Reduced frequency of pollution incidents. Improved water quality. Cost savings on pollution incident investigations. | |
| Persuade local authorities to include oil pollution prevention measures when granting planning permission. | NRA/Local Authority. | Reduced frequency of pollution incidents. Improved water quality. Cost savings on pollution incident investigations. | |
| Increase enforcement of pollution control legislation when dealing with individual incidents. | NRA. | Possible reduction in incident frequency. Some improvement in water quality. Follows 'polluter pays' principle. | |
| Seek additional regulatory powers to require pollution prevention works, on those industrial sites not covered by pollution control legislation. | NRA/Department of the Environment. | Reduced frequency of pollution incidents. Improved water quality. Cost savings on pollution incident investigations. | |

## ISSUE 10

THE RIVER ANCHOLME EXCEEDS THE NITRATE LEVEL OF 50 MILLIGRAMMES PER LITRE SPECIFIED IN THE EC SURFACE WATER AND NITRATE DIRECTIVES.

### BACKGROUND

Agricultural practices within the Catchment have led to the presence of high concentrations of nitrates in the River Ancholme.

The EC Nitrates Directive requires compulsory controls where levels exceed or are at risk of exceeding the 50mg/litre standard set. The zone identified on Map 18 of the Consultation Document has been proposed as a Nitrate Vulnerable Zone by the Ministry of Agriculture, Fisheries and Food (MAFF)and the Department of the Environment(DoE).

Through this designation, the Ministry aim to change farming practices and water quality improvements are expected to follow.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Designate Nitrate Vulnerable Zones. | MAFF/DOE | Reduces nitrate concentrations in surface waters.<br>Reduces the need to remove nitrates from drinking water sources. | Cost.<br>Impact on agricultural activity.<br>Improvements likely in the long term only. |
| Promote 'Code of Good Agricultural Practice for Protection of Water'. | MAFF/NRA | Farmers made aware of need to limit nitrate applications. | Partial solution.<br>NVZ still required. |

## ISSUE 11

THE WATER QUALITY OF THE LOWER ANCHOLME, WEST DRAIN AND THE LAND DRAIN ARE ADVERSELY AFFECTED BY SALINE INTRUSION.

### BACKGROUND

The NRA currently manages saline intrusion on the Ancholme at South Ferriby by a combination of measures. These include transferring saline water from the lock\sluices into the West Drain, the management of the residual flows, lock operation procedures and 2 bubble curtains. Excessive salinity is a particular concern to abstractors in the lower river, in addition the ecological balance of the river is upset and fish mortality can occur. The primary source of this salinity into the Ancholme is thought to be ingress through the tidal structure during navigation/boat movements. The effectiveness of the NRA's management methods and the environmental costs/benefits of this operation are not fully understood.

The impact of saline water discharges from the R. Ancholme on the West Drain is unknown.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Undertake study to assess the effectiveness of the current salinity management regime, re: residual water flows, leakage through the structure, boat movements, bubble curtains etc. Assess the cost benefit of the management scheme. | NRA. | Will identify the current situation and a baseline for future management of the problem. | |
| Continue current operation. | NRA. | Partial management of saline intrusion. Provides a level of reliability for users. | Costs. Impact on the West Drain. |

## ISSUE 12

INADEQUATE LOCAL SEWERAGE SYSTEMS RESULT IN LOCALISED POLLUTION AND MAY HAVE PUBLIC HEALTH IMPLICATIONS.

### BACKGROUND

A number of small watercourses and ditches suffer from localised pollution because of inadequate village sewage disposal systems, where discharges to the watercourse are made from septic tank overflows. The problem manifests itself in terms of smell and appearance.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| District Councils to requisition sewerage schemes for villages affected. | District Councils/ Individual Property Owners/NRA. | Improvement in water quality. Coordinated approach. | Costs. |
| Individual householders to provide sewage disposal facilities. | Property Owners/ Developers/NRA. | Improvement in water quality. | Piecemeal, uncoordinated approach to the problem. Numerous small sewage plants provide less satisfactory effluent treatment than one large plant. |
| Cooperative investment in Package Treatment Plant. | Property Owners/ Developers/NRA. | Improvement in water quality. Coordinated approach. | Legal problems. Such initiatives can suffer difficulties arising from joint ownership regarding future maintenance. |

## ISSUE 13

THE WEST DRAIN AT SOUTH FERRIBY IS ADVERSELY AFFECTED BY AN INDUSTRIAL DISCHARGE.

### BACKGROUND

The high pH level of the discharge causes a precipitate to form in the watercourse which affects the visual appearance of the Drain. Following 'authorisation' of the site by Her Majesty's Inspectorate of Pollution (HMIP) an improvement plan is underway to resolve this issue.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Improve effluent quality. | NRA/HMIP/ Discharger. | Improved water quality. | Cost. |
| Seek alternative route for effluent disposal. | NRA/HMIP/ Discharger. | Discharge ceases. | Need to ensure that problem is not moved to another site. Cost to operator. |
| Cease discharge: -re-circulate effluent | HMIP/NRA/ Discharger. | Improved water quality | Cost to Discharger. |

## ISSUE 14

BOAT OWNERS FEEL THAT THE PROVISION OF SERVICES AND FACILITIES ON THE RIVER ANCHOLME NAVIGATION ARE BELOW STANDARD.

### BACKGROUND

In 1994 the Anglian Region of the NRA undertook a survey of all registered boat owners. The survey indicated that many boat owners feel they are not getting value for money for their registration fee. The survey identified shortfalls in terms of facilities and services. Facilities include chemical toilet disposal points, pump outs, refuse disposal points, water points and moorings. Services relate to the depth of water and bridge headroom. On the Ancholme users were particularly concerned about excessive weed growth limiting navigation and the waiting time associated with South Ferriby Lock.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Increase the provision of services and facilities on the navigation. | NRA, Local Authorities. | Improved facilities for boat users. | Provision of facilities needs to be balanced with level of use. |
| Reduce waiting times at South Ferriby Lock. | NRA. | More efficient service for boat users. | Potential high cost for automation of the lock. |
| Undertake weed control specifically for navigation purposes. | NRA. | Improved passage for boats. | Cost. |

## ISSUE 15

THE PHYSICAL STRUCTURE OF SOUTH FERRIBY LOCK HAS DETERIORATED AND THIS HAS THE POTENTIAL TO CLOSE THE NAVIGATION.

### BACKGROUND

South Ferriby Lock was constructed in 1844. The 8 doors were refurbished with new timbers, etc in 1944. However, since that time no major repairs have been undertaken. The lock doors leak and the timbers are rotten in places. The stone structure appears sound.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Assess the state of the lock structure and undertake any necessary repairs. | NRA. | Maintain the navigation. Improved safety. | High cost. |

## ISSUE 16

BOATS ARE UNABLE TO CRUISE THE FULL LENGTH OF THE ANCHOLME NAVIGATION BECAUSE OF THE DERELICT HARLAM HILL LOCK.

### BACKGROUND

In 1992/93, the Inland Waterways Association with the NRA's cooperation began work to restore the Lock at Harlam Hill to an operational condition. The Ancholme Navigation extends four kilometres upstream of the lock and therefore its restoration would increase the cruising distance to boat users.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Restore Lock. | Inland Waterways Association \ NRA. | Increase cruise length by 4km. | Cost. |

## ISSUE 17

AREAS OF RIVER CHANNEL AND RIVER CORRIDOR HAVE BEEN IDENTIFIED AS HAVING LOW PLANT SPECIES DIVERSITY.

### BACKGROUND

Intensively managed rivers are subject to works aimed primarily at supporting the land drainage function. The resultant river channel lacks features that influence the plant community it could support. The ecological value of the banksides and wetted margin of these rivers is degraded and of little significance.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Restore and enhance during routine Flood Defence maintenance or Capital Works without loss of channel capacity, eg washlands. | NRA. | Increased plant and habitat diversity.<br>Environmental gain to other higher organisms, ie fish.<br>Ecological stability. | Cost of Flood Defence works is increased. |
| Encourage landowners to restore wetland and riparian habitats, eg Buffer Zones (Countryside Stewardship, Set Aside Schemes, etc) | NRA, Landowners, Countryside Commission, MAFF, Forming & Wildlife Advisory Group. | Increased plant and habitat diversity.<br>Shared costs.<br>Grants/funding may be available from other bodies.<br>Recreation and amenity value enhanced. | Cost. |
| Encourage farmers to graze embanked watercourses with stock on selected sites. | NRA. | Increased plant species diversity.<br>Reduced maintenance costs for NRA. | Conflict of interests between tenant and other river users. |

## ISSUE 18

THE CATCHMENT HAS LOST ALL OF ITS NATURAL FENLAND HABITAT.

### BACKGROUND

Serious attempts to drain the marshes and low fens of this catchment started in 1635 by Sir John Munson, but as late as 1830 between 5-6,000 acres were still flooded each winter. Over the last century however, intensive agricultural practices have resulted in the fenlands being fully drained to increase its productivity and economic value. The consequence of this has been the loss of an environmentally important habitat along with its associated flora and fauna.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| The NRA should encourage any practical schemes which seek to restore natural fenland habitat. | NRA, Landowners, Fisheries & Wildlife Advisory Group, Countryside Commission. MAFF. | Increased diversity of flora and fauna and habitat.<br>Possible flood defence benefit.<br>Reduction in flood peak timing. | Cost. |
| The NRA should consider the feasibility of enhancing habitat during both routinemaintenance works and capital works. | NRA. | Increased diversity of flora and fauna and habitat.<br>Associated Flood Defence benefits of Washlands. | Cost of flood defence works may increase. |

## ISSUE 19

CONFLICT EXISTS BETWEEN THE NEEDS OF THE INTERNAL DRAINAGE BOARD TO MAINTAIN ALL OF ITS GRAVITY OUTFALLS INTO THE ANCHOLME AND THE NRA TO MANAGE RIVER LEVELS FOR ABSTRACTION PURPOSES.

### BACKGROUND

Until the early 1990's it was normal practice to lower the level in the River Ancholme to +0.15m ODN for a 2 or 3 week period each year, outside of the navigation season. Normal retention level in the navigation season (April to October) is +1.2 m ODN and outside of the season is +0.9m ODN.

The level was lowered to +0.15 to allow Ancholme Internal Drainage Board (IDB) to maintain their gravity outfall flap valves and structures. NRA have used this period to carry out bank maintenance and survey.

In recent years it has been the practice to only lower the level to +0.4m ODN as a result of environmental concerns and the increased importance of the river for abstraction purposes. The result of this change in practice has been that the IDB are unable to properly maintain 12 of their structures.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Revert to practice of lowering levels to +0.15m. | NRA | IDB outfall maintenance possible at no additional cost. | Interruption to supply for abstractors. Possible environmental damage. |
| Provide facilities to de-water IDB structures locally | NRA/Internal Drainage Board (IDB) | IDB outfall maintenance possible. Improved security of supply to abstractors | Cost |

## ISSUE 20

THERE IS INSUFFICIENT INFORMATION AVAILABLE ON THE ENVIRONMENTAL EFFECT OF GROUNDWATER ABSTRACTION IN THE WADDINGHAM AND REDBOURNE AREA.

### BACKGROUND

Anglian Water Services abstract water from three sources in the Waddingham/Redbourne area which were the subject of applications for licence variations in 1993/94. As a consequence of NRA concern for the impact of these abstraction changes upon the local water environment, NRA granted licence variations in 1994 for 3 years, conditional upon Anglian Water Services carrying out environmental surveys. This approach is in line with our precautionary principle.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Carry out environmental surveys of potentially affected areas and implement defined remedial actions. | Anglian Water Services/NRA | Better understanding of environmental impact. | |

## ISSUE 21

THE ABILITY TO MANAGE THE TWA SCHEME AND RESIDUAL FLOWS TO TIDE IS LIMITED BY A LACK OF INFORMATION ON RIVER FLOW AND DAY TO DAY INFORMATION ON MAJOR ABSTRACTIONS FROM THE LOWER RIVER ANCHOLME.

### BACKGROUND

The TWA Scheme is designed to transfer water to meet abstraction needs, to support the navigation and to manage water quality. Currently the NRA collects weekly forecast abstraction details from the 2 major abstractors, Anglian Water and Brigg Power Station. The NRA attempts to maintain a 5 TCMD (thousand cubic metres per day) flow to tide. The NRA must balance the transfer of sufficient water to meet these needs. There are currently no river gauging stations on the Lower Ancholme to assist in managing the control of river flows.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Construct a flow gauging station. | NRA. | Provides information on flows and facilitates improved management of saline intrusion and residual flows to tide. Increases the efficiency of operating the river transfer. Effective management of transfers will be required as the rate of river transfers increases to meet rising demands. Improved information for flood warning purposes. | Cost. Changes in water conductivity may interfere with gauging accuracy. |
| Do nothing. | NRA | | Ineffective management of resources that will as become more critical demands increase. Inefficient operation. |
| Install/commission telemetry on major abstractions. | NRA | Better day to day management information. Greater efficiency in operation - reduced costs. Better management of saline intrusion | Cost |

## ISSUE 22

FISH BIOMASS AND FISH SPECIES RICHNESS FALL BELOW THE TARGET STANDARDS ALONG LENGTHS OF THE WEST DRAIN, WINTERTON BECK, RIVER RASE AND THE LAND DRAIN.

### BACKGROUND

Fisheries' survey work indicates the desired standard for fisheries status is not being achieved for these watercourses within this catchment. The reasons are unclear and require further investigation to identify possible courses and solutions.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Undertake an environmental analysis of problem watercourses. | NRA. | Improve fisheries potential. Environmental improvements identified. | Cost. |
| Additional fisheries surveys to focus on problem sites. | NRA. | More specific data. | Cost. |

## ISSUE 23

FISH SPECIES RICHNESS IS POOR ON THE MAIN RIVER ANCHOLME IN CERTAIN LOCATIONS.

### BACKGROUND

Although fish biomass is excellent on the lower Ancholme fish species diversity is poor in certain locations (Class C/D), improvements are sought to achieve target standard. Poor riverine habitat is known to have had an impact on a number of specialised aquatic invertebrates; it may also adversely influence the fishery status.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Improve habitats through marginal vegetation on berms, tree planting, etc. | NRA, County and Local Councils, Landowners, Angling Interests, Countryside Commissioners, MAFF. | Long term improvement. Improves capacity of river to support fisheries and wildlife interests. Recreational enhancement. | Cost. |
| Improve habitats through routine flood defence maintenance or capital works. | NRA. | Improves capacity of river to support fisheries and wildlife interests. Associated flood defence benefits, eg washlands. Recreational enhancement. | Cost. |
| Re-stock with suitable fish species. | NRA/Angling Clubs Landowners. | Immediate fix. | Short term solution. River may not support the stock. |

## ISSUE 24

THE CURRENT DEVELOPMENT AND GROWTH OF RECREATIONAL DEMANDS WITHIN THE CATCHMENT ARE UNCO-ORDINATED.

### BACKGROUND

Co-ordinated development of the Catchment's recreational resource is required to meet the increasing demands of users.

Access along sections of river bank has been lost because of bank erosion.

The Ancholme Users Group provides a forum for discussion of recreational activities on the river system.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Conduct a study to assess potential and capacity of recreational resources. | NRA, Glanford Borough Council, Brigg District Council, Glanford Countryside Project, Ancholme Users Group. | Provides recommendations to balance resources and future input with user groups. | Cost. |
| Ad hoc development of recreational needs. | NRA, Glanford Borough Council, Brigg District Council, Glanford Countryside Project, Ancholme Users Group. | | Piecemeal approach. Under-use of facilities leads to conflicts between user groups. |

## ISSUE 25

MEMBERS OF THE PUBLIC ARE UNAWARE OF THE DANGERS ASSOCIATED WITH SWIMMING IN RIVERS.

### BACKGROUND

During warm periods and school holidays reports have been received of children swimming in the river and jumping from structures into the river.

There are inherent dangers from weeds, underwater structures and undercurrents which can endanger even the strongest swimmers. There is also the risk of catching waterborne illnesses eg Weils disease.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Publicise dangers to the public at appropriate times of the year. | NRA/ Local Authorities School. | Improved education of dangers. | Message may not reach those most at risk. Message may be ignored. Awareness of danger may attract irresponsible people. |
| Erect signs to warn of dangers. | NRA/ District and County Councils. | Fulfils duty of care. | Loss through vandalism. |
| Restrict public access to structures. | NRA/ Local Authority. | May discourage opportunists. | Some have right of way. May encourage trespass. Hard to enforce. |

## ISSUE 26

CHANGES IN LAND USE AND DEVELOPMENT POSE A RISK TO THE SUSTAINABILITY OF THE WATER ENVIRONMENT.

### BACKGROUND

Development and change in land use can bring with them the risk of: increased flooding through changes in surface water run-off, increased pollution through increased effluent discharges to ground and surface water, and a threat to the flora and fauna associated with the water environment.

Through the planning process the NRA seeks to minimise the impact of development proposals on the water environment by liaising with PA's and developers.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Increase the NRA's influence in the Planning process. | NRA/ Planning Authorities. | Reduces the potential harm to the water environment from development and change in land use. | |
| Increase the awareness of developers of risks to the water environment. | NRA/Developers/ Planning Authorities. | Reduces the potential harm to the water environment from development and change in land use. | |
| Establish the effectiveness of current practices. | NRA. | Identifies any weaknesses in the current system. | |

## ISSUE 27

THE EVALUATION OF THE CONSERVATION STATUS OF HABITAT WITHIN THE CATCHMENT RELIES SOLELY ON SPECIES DIVERSITY.

### BACKGROUND

Further information on the qualitative and quantitative value of marginal reedbeds, river side trees and shrubs would assist in the habitat valuation of the catchments rivers. At the present time current survey and analysis methodologies are unable to provide an objective status.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Improve survey methodologies to accurately measure habitats and increase analytical capacity of database. | NRA. | Greater accuracy and weight to conservation valuations.<br>Improve maintenance and enhancement of environment during maintenance and capital works.<br>Assist to meet Agenda 21 (sustainability criteria). | Cost. |

## ISSUE 28

RECREATION AND NAVIGATION ON THE RIVER ANCHOLME IS RESTRICTED AT TIMES BY EXCESSIVE WEED GROWTH

### BACKGROUND

During summer months excessive weed growth on the main River Ancholme has resulted in the restriction of recreation and navigational uses. Floating weed eg. duckweed and algae cause particular difficulties to anglers and boat users and results in numerous complaints.

Weed growth arises as a consequence of the enrichment of water with nutrients arising from surface water run-off from agricultural land and sewage treatment discharges.

The NRA currently undertake annual weed control on the Ancholme for flood defence purposes which involves cutting the weeds with a weed boat.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Review the effectiveness of current NRA weed management practices to meet recreation and navigation needs. | NRA | Improve recreation and navigation use.<br>Improve flood protection.<br>Reduce enrichment. | Cost. |
| Assess methods to reduce nutrient enrichment. | NRA/Dischargers/ MAFF | | |

## ISSUE 29

THE MANAGEMENT OF RIVER LEVELS IN THE RIVER ANCHOLME TAKES NO ACCOUNT OF PREVAILING "CATCHMENT" CONDITIONS.

### BACKGROUND

The level of the Ancholme is currently managed so that on certain dates of the year river levels are changed from summer to winter and vice versa by controlling gates at South Ferriby. This method of river management is not sensitive to prevailing catchment conditions, particularly during very dry periods.

Normal summer (April to October) retention level is + 1.2m ODN and normal winter level is +0.9m ODN.

| OPTIONS | RESPONSIBILITY | ADVANTAGES | DISADVANTAGES |
|---|---|---|---|
| Continue as present | NRA. | No monitoring required. | The unnecessary discharge of water to the Humber and increased costs of water transfer. |
| Review alternative methods of managing river levels and their legal implications. | NRA. | Improved understanding of River management. | Potential conflicts with other users from any subsequent change in river management. |

## NOTES

*The National Rivers Authority will form part of a new organisation which will have responsibilities for the environmental protection of water, land and air. The new Environment Agency starts its work of managing the environment in England and Wales on 1 April 1996.*


Published by the Public Relations Department of the National Rivers Authority, Anglian Region, Kingfisher House, Orton Goldhay, Peterborough PE2 5ZR. Telephone (01733) 371811.

Printed on 20% virgin, 40% pre-consumer waste, 40% post-consumer waste - totally chlorine free paper.

P139/12/95
AN-12/95-2K-E-AKAD

## YOUR VIEWS

The River Ancholme Catchment Management Plan Consultation Report is our review of the catchment and the issues facing it. Please send us your comments. The address, for correspondence, is given on the back page, with a pre-paid slip if required.

This page is detachable and can be posted or placed in the comments box provided with the display boards.

- Have we identified all the issues?

.....

.....

.....

- Have you any ideas about the issues raised?

.....

.....

.....

- Are there any errors or omissions in this Summary or in the Consultation Report?

.....

.....

.....

- Any other comments (including your ideas on the future of the catchment)?

.....

.....

.....

- If you wish to receive a reply, please put your name and address in the space provided below.

.....

.....

.....

BUSINESS REPLY SERVICE
Licence No. PE1093/2

Do not affix Postage Stamps if posted in
Gt. Britain, Channel Islands or N. Ireland

Kingfisher House, Goldhay Way,
Orton Goldhay,
Peterborough PE2 5ZR

NRA

*National Rivers Authority*
*Anglian Region*