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**RIVER EREWASH
CATCHMENT MANAGEMENT PLAN
CONSULTATION REPORT SUMMARY 1995**



NRA

*National Rivers Authority
Severn - Trent Region*



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RIVER EREWASH CATCHMENT MANAGEMENT PLAN CONSULTATION REPORT SUMMARY 1995

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INTRODUCTION

The National Rivers Authority is committed to protecting and improving the water environment, and protecting people and property from flooding. The NRA has a wide range of responsibilities for the control of the water environment, in particular:

- conservation of water resources
- pollution control
- flood defence and flood warning
- maintenance and improvement of fisheries
- nature conservation in water related habitats
- promotion of water based recreation
- control of navigation in some areas

Establishing a sound planning base for the development of river catchments is essential for their future management and a major task of the NRA. River catchments are subject to increasing use by a variety of activities. Many of these interact and conflicts arise. The conflicting requirements and interests of users and beneficiaries must be balanced.

It is the NRAs view that the most effective way of balancing all interests is through the production of Catchment Management Plans. This involves the NRA using its powers and working with others to ensure that the rivers, lakes, coastal and underground waters are protected and improved for the sake of future generations.

Using this approach, the NRA can assess the current state of the water environment and the uses made of it. Comparisons can then be made with the relevant standards and targets. Where the objectives are not being met, the shortfalls, together with options to resolve them, are presented as issues. Catchment Management Plans provide a link between the NRA and users of water, so the Authority can better reflect their interests while carrying out its duties.

The River Erewash Catchment Management Plan is currently in the Consultation Phase. This plan is one of 17 Catchment Management Plans that are being produced by Severn-Trent Region. Following the consultation phase, a Final Plan will be produced for the catchment. This will include an action plan which will form the basis for improvements to the water environment. It will outline areas of work and investment proposed by the NRA and others.

YOUR VIEWS

The River Erewash Catchment Management Consultation Report is the NRAs review of the catchment and the issues facing it. This summary document gives an overview of the catchment and lists the issues and suggested options for action.

We would like to hear your views on the Report and in particular:

- Have we identified all the issues?
- What do you think about the options proposed?

To comment on the report please write to:

DR B D WATERS
AREA MANAGER
NRA SEVERN-TRENT REGION
LOWER TRENT AREA
TRENTSIDE OFFICES
SCARRINGTON ROAD
WEST BRIDGFORD
NOTTINGHAM
NG2 5FA

Please send your comments in writing.
The closing date for response is Friday 31 March 1995.

Requests for further copies of this summary document, the full Consultation Report or further information should be made to: Alison Fisher at the above address or by calling Nottingham (0115) 9455722.



THE NRA'S VISION FOR THE EREWASH CATCHMENT

The River Erewash is a small watercourse which passes through a number of urban areas. In the past, the river valley has suffered from the ravages of the industrial revolution. Relicts of past mining and industrial dereliction are evident in many places.

The river itself is generally of poor quality, consisting largely of treated sewage effluent. It is often highly discoloured with dye wastes and in times of rain, gross sewage solids are present. Except in a few locations, the river is devoid of fish. The few fish that live in the river do so precariously.

This sad reflection of human neglect provides us with perhaps one of our greatest challenges: the challenge of restoring the river.

By addressing both the existing and foreseeable problems identified in this plan, progress can be made towards improving the water environment to the benefit of all.

In particular, the NRA is seeking improvements in water quality by reducing the impact of sewage and industrial pollution. It will take advantage of redevelopment opportunities to promote the remediation of contaminated land, to protect both surface and groundwater.

As the quality of the river improves, fisheries will be restored and it will open up opportunities to plan walkways and riverside amenities, thereby facilitating public access and to promote conservation and wildlife, especially in the lower reaches of the river, where it passes through the Attenborough Gravel Pits.

The NRA will implement a Licensing Policy, which will enable us to manage the water resources of the catchment to allow sustainable development. The flood defences need to be maintained to the appropriate standard of service throughout the catchment to protect people and property from flooding. They also need to be improved where it is considered appropriate and cost effective to do so.

The NRA recognises the importance of improving the river system. It is our intention to work with all other agencies and representative organisations in the catchment to promote an integrated approach to the management of the river. In particular, the NRA anticipates that the plan will influence the planning processes of the local authorities.

The realisation of the NRA's vision will be achieved through a balanced management approach, so that the required improvements can be made and sustained in active collaboration with all legitimate interests of the river catchment.

"... the meadows where the Erewash twisted sluggishly through Alder trees, separating Derbysbire from Nottinghambire."

From DH Lawrence *'The Rainbow'*

RIVER EREWASH CATCHMENT



KEY DETAILS

CATCHMENT DETAILS

Area	213km ²
Population	195,300

TOPOGRAPHY

Minimum level	27	mAOD
Maximum level	180	mAOD

ADMINISTRATIVE DETAILS

County Councils	Nottinghamshire Derbyshire
District Councils	Ashfield Bolsover Broxtowe
Borough Councils	Erewash Amber Valley

National Rivers Authority	Lower Trent Area, Severn-Trent Region
Water Company	Severn Trent Water Limited
Internal Drainage Boards	None
British Waterways	Erewash Canal

MAIN TOWNS AND POPULATIONS

Eastwood	11,700
Heanor	15,500
Ilkeston	33,800
Long Eaton	35,600
Stapleford	11,600

LAND USE The main land uses in the catchment are arable cropping 38%, grass 32 %, woodland 6 % and urban 24%

WATER QUALITY Length of river and canal in each General Quality Assessment (GQA) Scheme class - 1993 (km)

	R Erewash	Erewash Canal	Nut Brook Canal
Good A	0	0	0
	0	0	6.0
Fair C	2.5	10.2	0
D	20.7	7.9	0
Poor E	16.4	0	0
Bad F	0	0	0
Not graded (due to insufficient data)	0	0	0
Total km	39.6	18.1	6.0

No of river and canal chemical sample monitoring points	33
No of Consented Discharges	172

Comprising:-	8	Water Undertaker STWs final effluent
	8	Water Undertaker STWs storm tank overflows
	119	Storm sewage and Emergency Pumping Station overflows
	3	Private sewage treatment plants
	6	Trade effluent
	28	Site drainage and rainfall related effluent

KEY DETAILS

WATER RESOURCES

Average Annual Rainfall	710	mm
Total licensed abstraction	4.79	ml/d
Long term average flow of River Erewash at Sandiacre	190	ml/d
95 percentile exceedance flow	48	ml/d
Number of licensed abstractions	18	
of which >		
surface water	9	
groundwater	8	
joint surface/groundwater	1	

FLOOD DEFENCE

Length of main river in Catchment	39.66 km
Length of floodbanks and floodwalls maintained by NRA	5.78 km
No. of Flood Alleviation Schemes	8

FISHERIES

Length of watercourse designated under EU Directive for Freshwater Fisheries (78/659/EEC)	
Salmonid	0 km
Cyprinid	0 km

CONSERVATION

Sites of Special Scientific Interest (SSSIs)	9
Sites of Importance for Nature Conservation (SINC's)	234
Scheduled Ancient Monuments (SAMs)	10

CATCHMENT OVERVIEW

Introduction

The Erewash Valley is located to the west of Nottingham, rising to the south of Kirkby in Ashfield at Kirkby Hardwick from where the River Erewash flows in a southerly direction. It is bounded on the east by the River Leen and on the west by the River Derwent and joins the River Trent at Attenborough. The length of Main River (see Glossary) is 39.66 km and the catchment has an area of 213km². The land to the north of the catchment rises to around 180 m AOD, falling to 27 m AOD at the southern end.

The Erewash Canal between Langley Mill and Trent Lock is closely associated with the River Erewash. Water is abstracted from the river and Nethergreen Brook at Langley Mill to feed the canal.

Prior to industrialisation, the catchment was predominantly rural and agricultural in character. Once the coal and ironstones were discovered, the character of the valley changed, with the appearance of collieries, gas and tar works and blast furnaces. In more recent times, the collieries have closed down and some of the worst spoil heaps have been reinstated under successful reclamation schemes. Numerous small industrial estates and large opencast coal sites have replaced the old industries and scenes described by DH Lawrence in many of his novels.



Landscape and Land Use

The Catchment is a mix of open rural areas and dense urban areas, comprising towns such as Long Eaton, Ilkeston, Stapleford, Sandiacre, Eastwood and Heanor.

The canal and railway network combine with the river corridor to create a greenway within urban surroundings. Near Ilkeston this is a wide area within the floodplain and the landscape is flat with few trees or hedgerows. At Stapleford and Langley Mill the corridor is confined through industrial areas and housing. There are some very natural looking sections which support a varied river ecology, with rural pockets in the upper reaches of the river.



The value of the natural open character is recognised and protected through the County Councils Structure plans defining Green Belt and Greenways. The landscape is characterised as marshy, rank but often species rich, grassland used for grazing, dissected by a network of scrub and overgrown hedgerows.

Some green areas have been used to create open space and parks such as Shipley Country Park, and recreational areas such as American Adventure Theme Park and the Ski Slope at Cossall.

Geology

The underlying solid geology is predominantly Coal Measures which consist of shales and mudstones with numerous coal seams; isolated sandstone beds also occur in the sequence. Along the eastern boundary to the catchment the Coal Measures dip down under the overlying Lower Magnesian Limestone. Along the southern boundary the Coal Measures again dip down under younger strata which consist of, firstly, the Sherwood Sandstones and then the Mercia Mudstones. In the main Erewash valley a thin cover of alluvium overlies the solid geology, whilst near its confluence with the River Trent, extensive sand and gravel deposits overlie the solid geology.

Hydrology

Average annual rainfall is 710 mm, varying over the catchment from 650 to 800 mm. Evaporation rates are around 460 mm, leaving about 250 mm to run off to rivers and percolate through to groundwater.

The surface hydrology is dominated by artificial influences with flows enhanced by discharges from a number of sewage treatment works (STWs) and drainage from coalmines. The abstraction by British Waterways (BW) to the Erewash Canal at Langley Mill has a major impact on the pattern of low flows. Under low flow conditions the natural component is less than 30% of the total flow in the Erewash at its confluence with the Trent. Almost 20% of the catchment is urbanised which has a very significant influence on both the high and low flow regimes.

Flows are measured on the Erewash at the Sandiacre ultrasonic gauge. The long term average flow at Sandiacre is 190 Ml/d and the flow exceeded 95% of the time is 48 Ml/d.

Water Resources

The catchment does not have a high profile as far as water resources are concerned. There are no surface or groundwater abstractions for public water supply in the catchment. Most of the 18 licensed abstractions are confined to industrial activity and to meet small scale agricultural/horticultural needs. The licensed boreholes abstract from either the Sherwood Sandstones or the limited sandstone horizons within the Mercia Mudstones. None are located on the very limited groundwater resources of the relatively impermeable Coal Measures. Current demand for either groundwater or surface water Licences is low. Any new surface water Licences are subject to flow restrictions in order to protect river quality, existing licensed abstractions and the ecology of the River Erewash.



Water Quality

The water quality of the River Erewash, is dominated by the discharge of treated sewage effluent from eight STWs operated by Severn Trent Water Ltd (STW Ltd). Under dry weather conditions the river is composed of approximately 70% treated sewage effluent. In addition there are intermittent effects from both premature and legitimate operation of storm sewage overflows (SSOs). The upper reaches of the river are highly coloured by the discharges from Pinxton and Pye Bridge STWs receiving trade effluent from the dyeing and finishing industry.

A discharge from Milnhay STW in the middle reaches at Langley Mill causes a similar situation. Rainfall generated runoff occurs to the river from colliery spoil tips and opencast coal workings following treatment. The quality of the Erewash Canal water is adversely affected by the major abstraction from the river by BW at Langley Mill.

Flood Defences

The NRA's flood defence legislative powers, including its Land Drainage Byelaws, relate to the control of obstructions to flow in all watercourses and on Main River floodplains. It also endeavours to control developments in the floodplain and those developments likely to cause flooding problems due to increased surface water runoff, by consultation and negotiation with Local Planning Authorities (LPAs) on Structure and Local Plans and planning applications.

The NRA also has permissive powers to carry out maintenance and improvement schemes on Main River.

Flooding from the River Erewash has long been a problem and a total of 8 alleviation schemes have been carried out to protect specific urban areas, including more than 800 houses and businesses. The NRA is currently undertaking a Hydraulic Modelling Study of the River Erewash in order to determine the current standards of the flood defences and define the floodplain limits. Also underway is an Asset Survey consisting of a detailed investigation to identify and record the nature and structural condition of the defences.

While most Main River urban flooding has been reduced by flood alleviation schemes, the problem of flooding from Ordinary watercourses still exists.

The NRA has identified as an issue, the extension of the flood warning service. There is no flood warning scheme currently operating for the River Erewash and the need for such a scheme will be investigated.

Fisheries

The River Erewash, due largely to problems of water quality and habitat degradation supports only a low density, low species diversity fishery. Roach and Chub dominate at the downstream end, whilst only minor species, such as Minnows and Sticklebacks are present in the upper reaches.



However, the canal supports a thriving local fishing match venue. There are eight major angling clubs on the canal and all of them fish in competitive matches.

At the lower end of the catchment is a complex of pools at Attenborough, known as the Attenborough Gravel Pits, of around 100 hectares, of which 80% is affected by flow from the River Erewash. This is a popular, thriving fishery.

In the rest of the catchment, there are around 22 lakes or ponds of 1 hectare or above. These ponds contain a mix of species, including Carp, Bream, Perch, Roach and Tench, and are all well stocked, giving good conditions for angling.

Conservation, Recreation and Navigation

The River Erewash is one of the few lowland rivers to contain some stretches (in the vicinity of Ilkeston and Eastwood) which are largely natural in character. The aquatic wildlife value of the river itself is generally limited by poor water quality. However, adjacent riverside washlands are often highly valuable grassland in nature conservation terms. The downstream extremity of the river flows through the Attenborough Gravel Pits Site of Special Scientific Interest (SSSI), designated for its diverse aquatic and marshland plant communities and its outstanding avifauna. Including Attenborough, there are a total of 9 SSSIs and numerous Sites of Importance for Nature Conservation (SINCs). The valley itself is of high importance for breeding birds and as an important migration route.



The river valley is traversed by the Erewash, Pinxton, Cromford, Derby and Sandiacre, Nutbrook and Nottingham Canals. There are 10 Scheduled Ancient Monuments (SAMs) within the catchment area, including Greasley Castle and Beauvale Abbey. There is also a rich industrial archaeological heritage associated with many mills. The valley also has historic connections with D H Lawrence. Public Rights of Way are fairly extensive in the valley and there are proposals for a River Erewash Walkway. The major locations for informal recreation visits are the Attenborough Gravel Pits and Shipley Country Park on the Nut Brook. The river is used occasionally by canoeists.



Infrastructure

The area is well placed in relation to the national road network. The M1 runs through the catchment with a number of trunk and A-roads linking the main population centres. There are plans to widen the M1 to four lanes each way between Junctions 25 and 28. The A52 Trunk Road, linking Derby and Nottingham runs east/west through the southern part of the catchment.

Rail transport is served by the Midland Main Line from Nottingham to Sheffield, which runs through the catchment and serves a number of local communities. The development of a heavy rail local services network in the Greater Nottingham area and a light rapid transit network is under consideration. A regional rail freight depot to the west of Toton is proposed.



ISSUES AND OPTIONS

The following tables list the 23 issues which the NRA has identified within the River Erewash Catchment. We would like to hear from you if:

- You think that there are other issues which have been missed.
- You think that we have not considered all the options available.
- You have any views on the options suggested.
- You have any other information about the catchment or any other comments about its future management.

ISSUE No. 1 WATER QUALITY OBJECTIVES - THE SETTING AND ACHIEVEMENT OF APPROPRIATE AGREED WATER QUALITY OBJECTIVES TO MEET THE NEEDS/USES OF THE RIVER SYSTEM

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Set and achieve appropriate agreed water quality objectives to meet the needs and uses of the river system	NRA Department of the Environment (DoE)	Improvements in water quality, amenity, fisheries, protection of SSSI's Provision of improved quality and quantity of resource to users	Cost
2. Obtain statutory status from DoE.	DoE		

ISSUE No. 2 SEWERAGE AND SEWAGE TREATMENT STRATEGY - IMPROVEMENTS TO MEET THE OBJECTIVES IDENTIFIED IN ISSUE 1

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Improve water quality to meet proposed water quality objectives.	NRA Severn Trent Ltd (STW Ltd) Industry	Improvements in water quality, amenity, fisheries, protection of SSSI's Elimination of public complaints Provision of improved quality and quantity of resource to users	Cost

ISSUE No. 3

EUROPEAN UNION URBAN WASTE WATER TREATMENT DIRECTIVE (UWWTD) (91/271/EEC) - THE REMOVAL OF NUTRIENTS TO PREVENT EUTROPHICATION

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Gather data on nitrates, phosphates and macrophytes.	NRA	Increased understanding of potential eutrophication process	
2. Review 1997 for inclusion in programme.	NRA DoE		Cost
3. Removal of nutrients to prevent eutrophication.	NRA STW Ltd	Reduced eutrophication Enhanced environmental benefit	Cost

ISSUE No. 4

POLICY FOR DETERMINATION OF PLANNING APPLICATIONS IN AREAS SERVED BY INADEQUATE SEWERAGE AND SEWAGE TREATMENT FACILITIES

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Policy to be determined.	NRA LPA	Removal of Planning constraints Stabilisation and improvements to river water quality	Cost STW Ltd investment programme
2. Status quo			Restriction on further development

ISSUE No. 5

ACTION TO ELIMINATE HIGHLY COLOURED DISCHARGES FROM SEWAGE TREATMENT WORKS

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Reduce colouration of the river and canal system.	STW Ltd Industry NRA	Reduction of aesthetically unacceptable colouration of the river and canal system. Elimination of widespread public complaint. Elimination of interference with angling. Reduction in habitat inhibition	Cost Technical feasibility

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Investigate loss of resource to river.	NRA	Better planning of Water Quality issues	
2. Investigate emergence of uncontrolled pollution within the catchment.	NRA Coal Authority Owners	Early implementation of remedial work measures	Cost Legal Powers Technical difficulties
3. Remediation measures to protect water quality.	Coal Authority Owners	Avoidance of pollution	Cost

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Opencast Coal Sites to be operated in a manner which will reduce the threat of pollution.	Coal Authority Owners	Protection of ecosystem	Cost
2. Channel flow and floodplain must not be obstructed by site operations.	Coal Authority Owners NRA	No increase in flood risk	Cost
3. Upon reinstatement, the floodplain and river channel to be reformed to satisfactory line and level.	Coal Authority Owners NRA	Reinstatement of original regime with no increase in flood risk	Operational Difficulties
4. Object to multiplicity of further applications.	NRA LPA	Protection of the ecosystem	Cost
5. Ensure restoration of river to more natural course.	NRA Coal Authority Owners	Restore ecosystem	Appeals Procedures
6. Promote enhancement of riverside habitat.	NRA Wildlife Trusts Groundwork	Improvements to river system	Cost

ISSUE No. 8

CONTAMINATED LAND

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Upon redevelopment, remediation measures to eliminate risk of pollution.	NRA Redevelopers	Elimination of risk of pollution to surface and groundwater resources	Cost Legal Powers

ISSUE No. 9

EFFLUENTS AND TOXIC SUBSTANCES EFFECTS ON FLORA AND FAUNA

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Routine biological monitoring at appropriate sites.	NRA	Identification of toxic substances and effects on biological diversity Enables tracing and removal Reduced pollution risk to surface water resources	Sediments downstream may still be contaminated for some years
2. Removal of toxic substances.	Discharger	Improved aquatic environment	Cost

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Operating agreement for diversion of River Erewash to Erewash Canal.	BW NRA	Improved chemical and biological quality of river and canal and enhanced amenity, recreation and fishery aspects Additional resources available to abstractors and other river users	Further study required to determine control rules
2. Install locking devices on strategic locks along Erewash Canal.	BW	Chemical and biological improvements to river and canal and enhanced amenity, recreation and fishery aspects Additional resources available to abstractors and other river users	Cost
3. Assessment of Telemetry systems to monitor canal levels and respond to fluctuations.	BW	Chemical and biological improvements to river and canal and enhanced amenity, recreation and fishery aspects Additional resources available to abstractors and other river users	Cost
4. Increased use of Moorgreen Reservoir to augment flow in Nethergreen Brook.	BW	Chemical and biological improvements to canal and enhanced amenity, recreational and fishery aspects Additional resources available to abstractors and other river users	

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Seek to influence planning process by encouraging adoption of NRA Guidelines for Developers.	NRA	New development/ redevelopment would have regard for constraints aimed at preserving the water environment	
2. Encourage LPA not to release Green Belt land for development.	NRA LPA	Long term protection of base flows	Limitation on development
3. Encourage environmental enhancement as part of development or redevelopment.	Developers LPA	New development/ redevelopment would have regard for constraints aimed at preserving the water environment	Potential cost to developers
4. Reduce polluting discharges from industrial premises to the river system.	NRA Local Industries	Improved water quality	Cost
5. Reduce polluting effects of construction of extra lanes on M1 motorway.	NRA Highways Authority Contractors	Reduced levels of pollutants entering river system	Cost
6. Resist development which would increase the risk of flooding due to additional surface water runoff.	NRA LPA	No increase in flood risk to people and property	Limitation on development
7. Works to mitigate the effects of surface water runoff to be considered in the context of the whole catchment, not individual sites.	NRA LPA	No increase in flood risk to people and property	Potential cost to developers

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Improve sewage treatment and sewerage system.	STW Ltd NRA	Achieve WQOs and improve aquatic environment for all users	Cost Sediments may still be contaminated for many years
2. Investigate impact of river on gravel pits.	NRA Gravel Company Wildlife Trust EN	Determination and elimination of pollution	Cost Resource implications
3. Divert the river from the Gravel Pits.	Gravel Company	Improved water quality in Gravel Pits	Cost and constraints on gravel extraction
4. Do nothing until the Gravel Company has completed all works.		Full evaluation of situation on cessation of gravel extraction and final long term solution	Long term gravel extraction proposals
5. Agree long term management plan for Gravel Pits with Gravel Company	NRA Gravel Company LPAs Wildlife Trusts EN	Clarification - overall view of the problems	Possible environmental loss in the short term

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Improve riparian and instream habitats where appropriate.	NRA Riparian Landowners	Restoration of biological status	Levels of flood risk afforded by flood defences
2. Promote countryside stewardship and other appropriate schemes in riparian locations.	CC NRA FWAG Wildlife Trusts	Incentives to carry out conservation improvements and maintain habitat status	Limitations on farming practices
3. Investigate riparian tree planting and fencing opportunities and implement where appropriate.	NRA Riparian Landowners	Restoration of riparian and river corridor habitats for wildlife	Restrictions on stock access to riverbanks, limitations on farming practices
4. Restore old and create new wetland habitats.	NRA EN Wildlife Trusts Riparian Landowners	Restoration of lost wetland habitats and habitat diversity	Loss of some agricultural land
5. Produce Register of Grasslands	CCs	Programme of restoration could be drawn up	
6. Protect Subsidence Flashes	NRA BCOF Riparian Landowners	Retention of wetland habitats	Loss of land for other uses

ISSUE No. 14

ERADICATION OF INVASIVE PLANT SPECIES

OPTIONS / ACTIONS

RESPONSIBILITY

BENEFITS

CONSTRAINTS

- | | | | |
|--|----------------------------|---|----------------------------|
| 1. Survey river corridor. | NRA | Identify locations of alien plant species | Survey costs |
| 2. Undertake spraying and / or cutting regime. | NRA
Riparian Landowners | Eradicate alien plant species | Herbicide use in catchment |

ISSUE No. 15

INDUSTRIAL HERITAGE AND ARCHAEOLOGICAL ASPECTS

OPTIONS / ACTIONS

RESPONSIBILITY

BENEFITS

CONSTRAINTS

- | | | | |
|---|------------------------|--|---|
| 1. Undertake surveys of historic sites. | LPA
NRA | Identification of remains of historical interest

Protection of historic sites | Cost |
| 2. Ensure protection at planning stage. | LPA
NRA | Education and increase of community involvement | Other functions (Flood Defence) activities or development restraint |
| 3. Promote public awareness of sites. | LPA | Increased awareness of historical sites
Technical advice | Access to land |
| 4. Liaise with local canal restoration groups. | NRA
BW | Protection of habitat and optimisation of enhancements | |
| 5. Investigate impact of restoration of canals on wildlife. | NRA
Wildlife Trusts | Identify benefits/constraints of said proposals | Cost of investigation |

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Develop footpaths along the river and circular walks.	LPA NRA Riparian Landowner	Improved access to river environment	Need Riparian owners' permission
2. Promote long distance riverside walk and cycleway.	LPA NRA Riparian Landowner	Improved access to river environment	Need Riparian owners' permission
3. Promote fishing at targeted lengths of river for young/ disabled.	NRA LPA Riparian Landowner Sports Council Angling Clubs	Improved angling facilities for the young/ disabled	Access for disabled Need Riparian owners' permission
4. Improve canoe access at suitable locations.	BCU Riparian Landowner NRA	Increased use of river for water sports	Access for disabled Need Riparian owners' permission
5. Investigate impact of increased recreational use on wildlife ie the Community Routeways Initiative on Nature Reserves.	NRA	Protection of wildlife/ habitat	Jeopardy of recreational plans
6. Formation of coordination group from interested parties	NRA LPA Riparian Landowner Sports Council Angling Clubs British Canoe Union (BCU) BW	Liaison between user groups Optimisation of recreational use in the catchment A more integrated and cost effective approach	Administration of group Conflicts of interest

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Ensure that rubbish is not dumped in rivers by using enforcement powers.	NRA LA Riparian Landowners	Flood protection standards maintained Increase in visual amenity Reduction in danger to public health	Finding the guilty party
2. Raise public awareness of problems caused by rubbish dumping.	NRA LA	Public Education to increase awareness	Promotion costs of campaign
3. Design schemes to discourage fly - tipping using fencing etc.	LA	Supports work of other functions, particularly flood defence	Can cause difficulties in access
4. Clear rubbish which may pose a flood risk.	NRA LA	Flood protection standards maintained Increase in visual amenity	Maintenance costs Health and safety
5. Installation of mesh screens/ debris screens.	NRA LA	Large amounts of waterborne litter and rubbish would be removed from rivers, with a resultant increase in visual amenity	Increased obstruction to flow with increased flood risk. Restriction of fish movement. Maintenance costs. Increased liability for screen owners
6. Litter Campaign	LA NRA	Increased public awareness of the litter problem	Cost Public attitude

ISSUE No. 18

THE POSSIBLE PROVISION OF TREE COVER IN THE RIVER CORRIDOR AND CATCHMENT TO ENHANCE CONSERVATION

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Improve tree cover where appropriate, ie Greenwood Project; East Derbyshire Woodland Project.	NRA Greenwood Community Forest CCs	Increase of middle and high vegetation cover	Flood Defence considerations

ISSUE No. 19

RESTORATION OF FISHERIES IN THE RIVER AND ASSOCIATED CANAL

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Improve water quality in river and on canal.	STW Ltd NRA Industry	To maintain and protect the existing fishery on the canal	See Issues Nos 1 and 2
2. Redress habitat degradation in river.	NRA Riparian Landowner LPA	Improved fishery in lower reaches	Cost
3. Enhance proprietorial rights on river.	NRA Riparian Landowner	Increased financial benefit Improved recreational opportunities	River can be enhanced only to the level of a small opportunistic fishery with no substantial matches

ISSUE No. 20

STANDARDS AND ENHANCEMENT OF FLOOD PROTECTION

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Ensure existing flood defences are to an appropriate level.	NRA Riparian Landowner	To optimise the level of flood protection	Cost/Resources
2. Ensure flood defence structural integrity is adequate to guard against failure.	NRA Riparian Landowner	To optimise the condition of flood defences	Cost/Resources
3. Investigate whether there are any undefended properties currently at risk from flooding and construct flood defences.	NRA Riparian Landowner	Reduced flood risk to people and property	Cost/benefit Possible damage to environment
4. Investigate past flood defence schemes for impact on river course - need for restoration project.	NRA	Potential for habitat restoration	Cost Retention of protection standard
5. Future flood defence schemes - environmental assessment, mitigation measures and enhancement schemes.	NRA	Schemes assessed for impact and designed for little or no substantive change in river course	Cost/benefit

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THERE IS CURRENTLY NO FLOOD WARNING SCHEME

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Investigate introduction of a flood warning scheme.	NRA	Issue of warnings of overtopping of flood defences	Cost of construction and operation of new Gauging Stations
		Improved Emergency Planning	Resource implications to Police, LPAs Flood Wardens
		Reduce risk of injury or loss of life resulting from flooding	Limited data presently available
		Reduction in financial losses arising from flood damage to property	

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Promote awareness of duties, powers and responsibilities of all parties.	NRA LA	Increased awareness of responsibilities. Improved management of river system	Cost No guarantee that increased awareness leads to action to maintain the watercourse
2. Identification of flooding problems.	LA NRA Riparian Landowner	Will assist update of Flooding Survey (carried out under Section 105(2) of Water Resources Act 1991)	Cost
3. Improvement works in order to alleviate flooding.	LA Riparian Landowner	Alleviation of flood risk	Cost/benefit
4. Enforcement action to ensure remedial works are undertaken.	LA NRA	Reduce flooding problems	Cost of remedial works Will not alleviate all flooding problems
5. Encourage Riparian Landowners to maintain watercourses to an adequate standard	LA NRA	Alleviation of flood risk from poorly maintained watercourses	Will not alleviate all flooding problems
6. Promote the need for Land Drainage Consent for structures.	NRA	Prevents increased flood risk	Cost
7. Coordinated approach to flood defence issues.	NRA LA	Reduced local flooding Improved environmental value	Cost Lack of powers

OPTIONS / ACTIONS	RESPONSIBILITY	BENEFITS	CONSTRAINTS
1. Press for policies to be included in Structure and Local Plans to protect floodplain from development.	LPA NRA	Data available for use by LPAs	Shortfall in basic data will be costly and time consuming to address
2. Press for policies in Structure and Local Plans to remove redundant structures from floodplain.	LPA NRA	Data available for use by LPAs	As above. May have adverse financial implications to users of redundant structures
3. Define extent of floodplain to 1 in 100 year return period.	NRA	Improved data for development control purposes Improved definition of floodplain Will assist update of Flooding Survey under Section 105(2) of the Water Resources Act 1991	Resource implications Cost of programme Time taken to achieve full coverage
4. Resist development on floodplains.	NRA LPA	No increase in flood risk to people and property	Limitation on land use



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