

NRA-Wales 29

Ely Catchment
Management
Plan
Consultation
Report
Summary



NRA

*National Rivers Authority
Welsh Region*

*Guardians of
the Water Environment*

March 1994



ENVIRONMENT AGENCY

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INTRODUCTION

Never before has there been such a pressing need to conserve our rivers, lakes and coastal waters to support the rapidly increasing recreational, domestic, agricultural and industrial demands placed upon them. On the other hand, the need to protect life and property from flooding has never been greater. The NRA has a wide range of responsibilities for the control of the water environment, and seeks to reconcile the conflicts raised by the competing needs for water.

In particular the NRA is responsible for:

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

The NRA believes that it can only carry out its work by adopting the concept of **integrated catchment management**. This means that a river catchment is considered as a whole and the actions in each of the NRA areas of responsibility must take account of the possible impact on other areas.

The NRA has decided to formally present its catchment management policies to the public via Catchment Management Plans which will be produced for all the rivers in Wales by 1998. The Plans are intended to provide a link between the NRA and the users of water in each catchment so that the Authority can better reflect their interests whilst carrying out its duties. For this reason each Plan includes a Consultation Phase during which the general public are invited to comment on the NRA's proposals for the future management of the catchment.



YOUR VIEWS

The Ely Catchment Management Consultation Report is our assessment of the state of the catchment and identifies the key issues which need to be resolved. The most important are outlined in the tables at the end of this summary report.

We need your views:

- what do you think about the Plan in general?
- have we identified all the uses?
- have we identified all the issues?
- what do you think about the options proposed?
- you have any other information about the catchment or any comments about its future management.

If you would like to comment on the Consultation Report or receive a copy of the full document please write to:

**THE AREA CATCHMENT PLANNER
NATIONAL RIVERS AUTHORITY SOUTH-EAST AREA
PLAS-YR-AFON
ST MELLONS BUSINESS PARK
ST MELLONS
CARDIFF CF3 0LT**



THE CATCHMENT

This plan considers the catchment of the River Ely. The northern half of the catchment is characterised by uplands of up to 416m, cut by deep, narrow valleys. Further south, the Ely valley opens out, and catchment relief is much more subdued. The lower Ely is a meandering lowland river. The only major tributary is the Afon Clun.

CATCHMENT STATISTICS

GENERAL

Catchment Area:	169km ²	
Highest Point::	416m AOD at Mynydd Pen-y-Graig	
Population:	Year	Population
	1981	140,118
	1991	146,900
	2021	160,000

WATER RESOURCES

Average annual rainfall:	1400 mm/yr
Average Daily Flow from Catchment:	410 MI/d
Gross Licenced Abstraction:	34.7 MI/d
Volume of Water Abstracted but not returned to the river:	22 MI/d

(MI/d = Megalitres per day)

FLOOD DEFENCE

River Length:	42km
Total length of flood embankment:	950m

ADMINISTRATIVE DETAILS

		(% of Plan area)
County Councils:	South Glamorgan	42%
	Mid Glamorgan	58%
City Council:	Cardiff	15%
Borough Councils:	Vale of Glamorgan	27%
	Taff-Ely	58%
National Rivers Authority:	Welsh Region, South East Area Plas-yr-Afon, St Mellons Business Park St Mellons Cardiff CF3 0LT	
Water Companies:	Dŵr Cymru/Welsh Water plc.	

GEOLOGY

The high ground of the upper catchment is underlain by hard Pennant Sandstone of the Upper Coal Measures series. South of this are outcrops of Middle Coal Measures and Carboniferous Limestone. The southern part of the catchment is formed from sandstones and marls of the Triassic and Jurassic Periods. Overlying the solid geology are extensive deposits of glacial till in the north and sands and gravels in the south.



DEVELOPMENTS AND LAND USE

This catchment is essentially rural but has some rapidly developing areas of land in the middle and lower parts of the valley. Industry is concentrated at Tonyrefail, Llantrisant and Cardiff. The predominant agricultural activities are dairy farming in the middle and lower reaches and sheep farming in the upper reaches of the catchment.

Over the last few decades, the pattern of development in the Ely catchment has changed with the demise of the mining industry in the upper catchment and improvements to the road network (in particular the construction of the M4 Motorway).

Recent road improvements linking the M4 from Talbot Green to Tonyrefail (connecting to the Rhondda Valleys) and from Capel Llanilltern to the Cardiff Bay area will continue to attract development. Future highway improvements include a by-pass of Church Village from which a new road will connect to the M4 at Capel Llanilltern.

Industrial development is planned within or near the river corridor in the Leckwith/Grangetown areas of Cardiff and north and south of Llantrisant with their direct links to the M4.

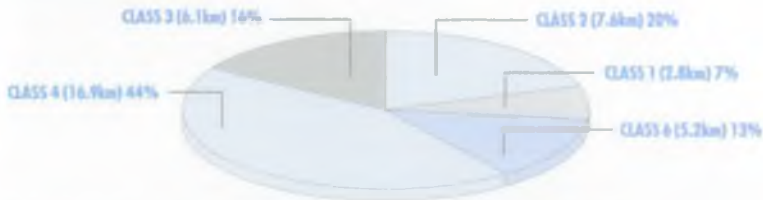


One of the major impacts on development during the next decade will be the construction of the Cardiff Barrage and consequent regeneration of the docklands area by Cardiff Bay Development Corporation.

WATER QUALITY

ELY WATER QUALITY DATA

Length of river in Fisheries Ecosystem Class



1 & 2 suitable for salmon and trout, 3 & 4 for coarse fish, 6 not suitable for fish



Headwater streams of all the Ely tributaries rise on undeveloped land and generally have good water quality. Significant discharges from both trade and sewage sources enter the river along its length. In fact treated sewage represents nearly 41% of the dry weather flow of the river Ely at St.Fagans. In addition, there are intermittent discharges from some of the 45 combined sewer overflows and runoff from agricultural land during heavy rainfall. Consequently there tends to be higher concentrations of ammonia and

lower dissolved oxygen concentrations in the middle and lower reaches of the main river. These stretches are in a lower class of water quality with an associated moderate to poor biological quality. The Afon Clun is of even lower quality due to the large industrial presence there.

The Ely estuary also has elevated levels of ammonia but improvement to this situation should occur once the Cogan outfall has been directed elsewhere as part of the Cardiff Bay Barrage outfall improvements.

The groundwater in this catchment is an important source of water for local needs. The NRA is not aware of any quality problems in the groundwater but will continue to protect this valuable resource.

WATER RESOURCES

Most of the drinking water needed for the population in the Ely catchment originates outside the area. Water is abstracted within the catchment for industrial and other purposes but because most of this is returned to the rivers, there is little reduction in the natural flows.

Quite large quantities of groundwater are available within the Ely catchment, notably in the Carboniferous Limestone. Springs are formed where the water table reaches the surface.



These are important local wetland features and the water from these springs represents the baseflow of streams and rivers; maintaining their flow at times of low rainfall. During long dry periods, however, groundwater levels themselves will fall and some springs may dry up.

FLOOD DEFENCE

Flood defences have been constructed at Pontyclun, St Fagans and on the lower reaches of the Ely in Cardiff. These have not been seriously threatened since their construction. Of course it is impracticable to protect all isolated properties from flooding and this is reflected by the fact that some properties can and do flood on occasions. The NRA provides a flood warning system for the flood-prone areas of Ynysmaerdy, Talbot Green, Pontyclun and the area between Miskin and St.Fagans and Cardiff.

FISHERIES

Coarse fish species including roach, chub, dace and gudgeon are present from the paper mill weir in Cardiff to above Talbot Green. Roach populations have increased over the last 10 years. A reasonable trout fishery also exists throughout the catchment apart from in the lower Clun and the Nant Myddlyn. Salmon and sea trout are found only rarely in the Ely and it is the aim of the NRA to regenerate these populations as soon as possible by improving the water quality and reducing the number of barriers to migration that currently exist.



CONSERVATION/ECOLOGY

The river's ecology has in the past been significantly affected by man's activities but improvement is now taking place. There is still a threat, however, from the growing population and industrial development.

The upstream part of the catchment is dominated by acid or neutral grasslands, either as rough or improved pasture. Many tributaries have narrow corridors of broad-leaved woodlands and small areas of marsh. The ecology of the main river is less natural, with areas of artificial banks and infestation with weeds. Lower down the river there has been more agricultural improvement but there are numerous open-water habitats and fairly extensive areas of wet grasslands which are of value to wildlife. The river

channel meanders considerably and the bankside vegetation is often restricted to a single line of alders. Japanese Knotweed and Himalayan Balsam are widespread.

Otters are known to frequent the main river and some tributaries.

The Ely Valley between Miskin and Peterston-super-Ely is designated as an Area of Special Landscape Value and the middle and lower reaches of the main river are an SSSI because it is the best area in Wales for the rare flower, monkshood. The estuary is also an SSSI due to its importance as a feeding ground for birds.



RECREATION

Angling for trout and coarse fish (though not salmon or sea trout) is the only significant recreational activity. It takes place on the river Ely from Cardiff to Tonyrefail

There are relatively few public rights of way alongside the river, but the low-lying land in the middle and lower reaches of the river and its estuary provide an attractive area for birdwatching.

The middle parts of the river are attractive for walking and there is limited canoeing and a marina at Penarth Docks. A major focal point in the catchment is the Welsh Folk Museum at St.Fagans.



ISSUES AND OPTIONS

The following tables list the 20 issues which the NRA has identified within the Ely catchment.

OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Treat Cwm Coke effluent to a standard suitable for river discharge or reuse in the plant.	NRA/HMIP/Coal Products	Reduce water and air pollution. Reduce effect of abstraction on river flows in the upper part of the Myddlyn catchment and the River Clun.	Will require Best Available Technology to be applied. Cost £millions.
2. Treat Cwm Coke effluent to a standard suitable for discharge to public foul sewer.	Coal Products/Dŵr Cymru	Reduced risk of failing discharge consent conditions. Lower cost than 1. Will achieve water quality target of Class 4 in River Clun.	Net loss of water from catchment. Over abstraction possible and could require development of new sources of water supply or a groundwater investigation to determine the impact of borehole abstraction on surface sources. Approx cost £100,000.
3. Require improved water management at Cwm Coke works.	NRA/HMIP/Coal Products.		Only partial solution and failure of consent still likely.

OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Divert effluent to Cog Moors STW	Dŵr Cymru	1. Land available. 2. Cost effective. 3. Already has planning permission.	Approx cost £400 000

ISSUE No. 3 INTERMITTENT POLLUTION FROM COMBINED SEWER OVERFLOWS			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Prioritise remedial work required	NRA/Dŵr Cymru	Permits planning of Dŵr Cymru capital expenditure programme.	1. Competes with other priority CSOs in the region.
2. Improve/relocate CSOs	Dŵr Cymru	Removes intermittent pollution sources.	1. Will take many years to complete.

ISSUES No. 4 COSLECH SEWAGE TREATMENT WORKS			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Enlarge Coslech STW	Dŵr Cymru	Large Greenfield site available for development.	1. Trunk sewer restricts inflow to STW. 2. Does not utilise self-purification in river. 3. Cost £2/3 million.
2. Rebuild Rhiwsaeson STW	Dŵr Cymru	1. Relieves load on trunk sewer. 2. Allows more capacity at Coslech.	1. Confined site. 2. Low dilution. 3. Cost 5 million.

ISSUE No: 5 POLLUTION AND SILTATION OF TALYGARN LAKE			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Review Forest Wood Quarry discharge consent.	NRA	Improved discharge quality and on-site water management.	
2. Desilt the lake	Mid Glam Health Authority Llantrisant & Pontyclun Anglers.	1. Improved conditions for trout & coarse fish populations. 2. Improved conditions for angling.	1. Reversal of natural succession with associated fauna and flora. 2. Spoil disposal.

ISSUE No: 6 IMPACT OF MAENDY TIP LEACHATE ON THE NANT TYR'ARLWYDD			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Produce and implement improvement plan for site. Consider various options.	Cleanaway	Removes pollution	

ISSUE No: 7 FOAM ON MAIN RIVER ELY			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Review discharge consents as appropriate.	NRA/Dischargers	1. Reduces source. 2. Removes problem.	

ISSUE No. 8 IMPACT OF CARDIFF BAY BARRAGE ON THE ELY			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Installation of fish pass.	Cardiff Bay Development Corporation	Allow passage of salmon, sea trout and eels	Despite best intentions fish passage is likely to be hindered.
2. Modify CSOs	CBDC/ Dŵr Cymru	Improve aesthetic quality of water	
3. Remove gravels from impoundment	CBDC	Prevent silt building up in lagoon	
4. Protect contaminated land from groundwater	CBDC	Prevent mobilisation of pollutants	
5. Nutrient Stripping	CBDC/ Dŵr Cymru	Prevents algal blooms	
6. Remove crude sewer outfall	CBDC/ Dŵr Cymru	Improve water quality	

ISSUE No. 9 THE IMPACT OF SLUDGE DISPOSAL TO LAND ON WATER QUALITY			
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Identify Groundwater Protection Zones and implement Aquifer Protection Policy.	NRA	Protect potable sources, groundwater aquifers and surface water.	Resource implication
2. Better regulation by authorities involved.	HMIP/Wastes Regulatory Authorities/ CONTRACTORS	Reduce risk to water environment.	

ISSUE No: 10		LACK OF GROUNDWATER QUALITY AND LEVEL DATA	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Implement routine groundwater monitoring programme	NRA	1. Identifies problem. 2. Permits better groundwater management.	

ISSUES No: 11		THE THREAT TO THE WATER ENVIRONMENT FROM NEW INDUSTRIAL DEVELOPMENTS	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Persuade developers to include pollution control measures.	NRA/Local Planning Authority	Reduce risk of pollution.	No statutory powers.
2. Regular inspection of premises.	NRA	Prevent establishment of risk activities.	No statutory powers.

ISSUE No. 12		DEVELOPMENT IN UPPER CATCHMENT - INCREASED FLOOD RISK	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Restrict run-off from development.	NRA/ Land Planning Authorities/ Developer	1. Flood risk downstream not increased.	Maintenance of storage/control structures in perpetuity.
2. Carry out hydraulic improvements to bridges.	Highways Authority	1. Reduced development cost 2. No maintenance of storage/control structures.	1. Involves complicated engineering to replace bridges/ raise highway level. 2. Listed structures.

OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Restrict development of low-lying sites	Cardiff City Council	Avoid flooding problems.	1. Restricts planning 2. More pressure to develop elsewhere 3. Does not resolve existing problem.
2. Provide tide-locked storage/pumping	Dŵr Cymru/ Cardiff CC	Excludes tide and prevent flooding.	
3. Exclude high tides	CBDC/NRA	No extra cost.	Stringent controls on barrage operation required.

OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Raise land	Developer/LPAs	1. Reduced flood risk to that development.	1. Increase flood risk downstream. 2. Need to restrict runoff from development upstream. 3. Loss of habitat.
2. Restrict development on floodplain and riverside via Structure Plans and the planning procedure.	NRA/LPAs	1. Less flood risk to the development and areas downstream. 2. Protect the remaining conservation interests. 3. Less need to restrict runoff from upstream developments.	1. Does not improve conservation interests already affected.

ISSUE No: 15		RESPONSIBILITY FOR FLOOD DEFENCE MAINTENANCE OF WATERCOURSES AND ASSOCIATED STRUCTURES PASSING INTO MULTIPLE OWNERSHIP	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Ensure responsibility passes to single body capable of maintaining watercourse or structure.	NRA/LAs/ Developers	Ensure upkeep of watercourse without need for serving of notices on individuals.	Possible reduction in development area.

ISSUE No: 16		LACK OF RIPARIAN HABITAT DIVERSITY AND STRUCTURE IN THE ELY	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Undertake river corridor survey.	NRA	Identifies scale of problem and priority areas.	Approx cost £3000
2. Undertake habitat improvements during flood defence maintenance work.	NRA	Can be incorporated into routine work over a period of time.	1. Requires agreement of landowner. 2. Flood Defence Works not always in priority areas. 3. Flood damage to works.
3. Promote enhancement measures via consenting procedures and planning comments.	NRA/Landowners		1. Work not always in priority areas. 2. Future maintenance.
4. Undertake catchment- wide capital projects in collaboration with other organisations and landowners.	NRA/ Conservation Organisations.	Can address priorities. Costs can be shared.	Requires agreement of landowners.

ISSUE No: 17		WIDESPREAD DISTRIBUTION OF ALIEN PLANTS	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Prepare Regional Policy to determine circumstance in which alien plants should be controlled by NRA.	NRA	1. Coherent approach to problem. 2. More effective and efficient control.	

ISSUE No: 18		NO STANDARDS OF SERVICE AGREED WITH CCW FOR NRA OPERATIONS AFFECTING SSSI	
OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Agree Standards of Service.	CCW/NRA	1. Protect SSSI. 2. Ensures consistent approach.	

OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
1. Install fish pass.	Arjo Wiggins NRA Other sponsors	1. Paper mill operations unaffected. 2. Coarse fish populations unaffected.	1. Time to plan and construct. 2. May not be 100% effective. 3. Cost - £75 000.
2. Raise weir on a regular basis.	Arjo Wiggins NRA	1. Little capital cost. 2. Fish passage more successful than with fish pass.	1. Coarse fish washed down, loss from river above. 2. Limitations to operational flexibility.
3. Remove weir (or raise it permanently)	Arjo Wiggins	1. Salmonid fish passage . 2. Coarse fish passage unhindered 3. Mud banks will recolonise. 4. River above weir to become natural.	1. Site owner to secure alternative abstraction arrangements. Could cost >£10 000. 2. Tidal flood risks to riverside area of Ely, Cardiff. 3. Erosion risks to all land and structures on river up to railway bridge near Glan-Ely Hospital.

OPTIONS/ACTIONS	Responsibility	Advantages	Disadvantages
<p>1. Undertake research into flow requirements of river flora and fauna.</p> <p>2. Develop and implement licensing policy based on 'Yorkshire' methodology to determine licensable resource and compare with existing use.</p>	<p>NRA</p> <p>NRA and others as consultees</p>	<p>Already in hand in NRA R&D</p> <p>Tried and tested. Widely accepted principle. Can provide policy within 2 years.</p>	<p>Unlikely to produce practically applicable results quickly.</p>

THE NRA VISION FOR THE FUTURE OF THE ELY CATCHMENT

The challenge of managing and improving the River Ely is one to which the NRA readily responds, recognising that there is much to be done if we are to move into the next century with a catchment of the quality that we would all desire. The NRA's vision for the Ely during the lifetime of the Plan is to achieve improvements in the fisheries by making the river more accessible to migratory fish and improving the water quality.

The ammonia levels in the Ely will be substantially reduced. We will continue to maintain the flood defences to the required standard and river flows will be safeguarded by the careful consideration of abstraction licences. The impact of the planned Cardiff Bay Barrage will be closely scrutinised in order to safeguard the water environment.

The NRA will take positive steps wherever possible to improve conditions for wildlife. It is our intention to work with all other agencies and representative organisations in the catchment to promote and achieve an integrated approach to management.

In particular, the NRA anticipates that the plan will influence the planning processes of local authorities. The realisation of the NRA's vision will be achieved through a balanced management approach to all activities so that the required improvements in the catchment can, as far as practicable, be obtained and sustained in active collaboration with all users of the catchment.



