

NRA-wales 6

River Conwy
Catchment
Management
Consultation
Report
Summary



NRA

*National Rivers Authority
Welsh Region*

**Guardians of
the Water Environment**

Spring 1997

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 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.

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 Conwy 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?

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

The Catchment Planning Co-ordinator,
National Rivers Authority,
'Highfield',
Priestly Road,
Caernarfon.
LL55 1HR.
Telephone: 0286 672247

Please send your comments in writing, but if this is not possible contact us on the telephone number above.

CATCHMENT STATISTICS

GENERAL

Area	590km
Population	40,500 (estimated)
Ground levels - minimum	5m (A.O.D.)
- maximum	1062m (A.O.D.)
Tide levels - Mean Water springs	4.0m (A.O.D.)
- Mean Low Water springs	-2.9m (A.O.D.)

WATER RESOURCES

Average annual rainfall (range 800 - 4000mm)	1700m
Average flow from catchment	24cu m/s
Flow range during 10 year period 1982 - 1992	0.3 - 486.6cu m/s
Total licensed abstraction	15,842 M1/a

WATER QUALITY (from 1990 River Quality Survey)

Classified river length	48.9km
Length of classified river in Class 1A	48.9km
Classified estuary length	30.5km
Length of classified estuary in Class A	25.5km
Length of classified estuary in Class B	5.0km

FLOOD DEFENCE

Length of main river in catchment	129.3km
Length of main river within Internal Drainage District	17.5km
Length of Adopted Ditches within Internal Drainage District	13.0km
Length of floodbanks maintained by NRA	21.6km
Area at risk of flood (tidal or river)	790Ha

FISHERIES

Length of river designated under EC Directive Freshwater Fisheries (78/659/EEC)	
Salmonid	34.5km
Cyprinid	none

Abbreviations used:- cu m/s = cubic metres per second
M1/a = million litres per annum

CONWY CATCHMENT





FLOOD DEFENCE

The provision and maintenance of effective defence is required to protect people and property against flooding from rivers and the sea. There are 790Ha at risk from flooding. The land also requires an enhanced level of drainage because of its agricultural value. Consequently, any work undertaken in or near to the Afon Conwy and some of its main tributaries (principally the Gyffin, Crafnant, Llugwy and Lledr) has to be carefully managed.

To achieve these aims, and under the administration of the NRA, certain areas have been designated Internal Drainage Districts (IDDs). In addition the Afon Conwy itself, and some of the main tributaries, are designated Main Rivers. This means that any proposals which could interfere with the river bed or banks, or obstruct the flow in the river, require the consent or approval of the NRA.

In addition to the IDD's and main rivers, the NRA is also responsible for the operation of a Flood Storage System on the Afon Wydden at Llandudno Junction.

There are no major flooding problems along the designated stretches although the agricultural plains are inundated from time to time. The risk to properties in Llanrwst and Trefriw has been reduced as a result of flood alleviation schemes carried out in the past. However, there are a few isolated cases of flooding to properties associated with non-main rivers within the catchment.

The impact of flood events is minimised by a flood warning system operated by the NRA and North Wales Police.

The water environment is a key attraction for the important tourist industry. Frequently visited areas of high amenity value include the estuary near Conwy and Glan Conwy, river walks around Betws-y-Coed and Llanrwst, most of the Lledr valley and lakes within the Gwydyr forest. River bank access (footpaths) is generally poor, however, and there are no designated picnic sites adjacent to the river.

Bathing is mainly confined to the estuary but other water based sports take place in the rivers and Llyn Geirionnydd. Water skiing and windsurfing are significant activities at Llyn Geirionnydd while the Conwy and some of its tributaries have earned the reputation of being the prime canoeing rivers in North Wales.

Water skiing and windsurfing are popular in the middle estuary between the Conwy and Tal y Cafn road bridges. The estuarine waters are also used seasonally by holidaymakers, with jet skis and speedboats travelling up to Tal y Cafn and beyond on high tides.

The estuary is an idyllic setting for sailing and two sailing clubs are well established. Moorings on both sides of the channel, above and below the main road bridge, are administered by the Harbour Authority, while private moorings are available at the Conwy Marina. Total number of boat users is estimated to increase to around 1,500 by 1998.



CONSERVATION

The Conwy catchment includes a number of special archaeological sites and ecosystems within the river corridor and associated wetland of considerable conservation interest.

The conservation interest of special archaeological sites and ecosystems within the river corridor or associated wetlands is considerable within the catchment. Land use adjacent to the river corridor reflects the changing altitude from open heather moorland at the source (450m A.O.D.), to a wooded gorge-like mid section supporting important plants, mosses and lichens, and to improved pasture on the embanked flood plain.



There are 36 designated and 2 proposed Sites of Special Scientific Interest (SSSI) including 2 National Nature Reserves (NNR), of which 24 are associated with aquatic habitats or are susceptible to drainage. There are no published details of non-statutory sites although the Countryside Council for Wales (CCW) has informal records of 60 wetland sites (>1 Ha) of conservation interest. The archaeological record is considerable with a total of 52 statutory and 719 non-statutory sites. Landscape is protected by National Park designation to the west and a landscape conservation area (District Council) to the east.

Vulnerable bird species are present including lapwing, curlew and snipe in the upper catchment; migratory warblers on the floodplain reedbeds, and wildfowl and waders in the lower estuary including the declining dunlin and red shank. A bird sanctuary/reserve has been established by the RSPB at Glan Conwy on the site of the bunded dredging dumping ground from the Conwy tunnel work.

DEVELOPMENT

Most of the catchment (90%) lies within the administrative County of Gwynedd, with Aberconwy Borough Council responsible for district matters. The remainder, comprising much of the Merddwr sub-catchment, lies within the County of Clwyd and the district of Colwyn Borough Council. Where the catchment falls within the Snowdonia National Park, the Snowdonia National Park Committee is responsible for planning activities.

The Gwynedd Structure Plan is currently undergoing modification by the Welsh Office. The Clwyd Structure Plan and Colwyn Local Plan are being prepared. Most of the allocation for development is in the existing towns and main villages.

FISHERIES

The Conwy is an important salmon and sea trout fishery. It is an unusual river because a significant length is available to the public. Over the last 30 years catches have shown the declining trend common to most other Welsh rivers, but this decline appears to have levelled out.



Juvenile salmonid populations, monitored annually since 1982, are excellent or good at 50% of the monitored sites, with no fishless sites being recorded. However, acidification affects primarily brown trout in parts of the upper catchment, the NRA's research at Llyn Conwy showing that breeding is negligible.

Only 52% of the fish rearing area of the catchment can be reached by migratory salmon and trout. Juvenile migratory fish production could be increased by 22% if access could be provided above the Conwy Falls and a scheme to achieve this aim is currently being progressed.

There are two fixed salmon traps, subject to ancient rights, in the catchment; the inscale trap at Caerhun, which is no longer fished, and the basket trap at Tan yr Allt on the Lledr.

River fishing for brown trout is available on the Afon Llugwy above Swallow Falls and on the Afon Conwy and Machno above Conwy. Several lakes also support good trout fisheries. Charr fishing is developing at Llyn Dulyd and coarse fishing is available at 5 locations.

There are numerous commercial fisheries in the estuary (which is a designated bass nursery), including drift net/fixed net fishery (Mainly for bass, mullet and flat fish), and a commercial eel and mussel fishery. Six seine net licences for salmon and sea trout are issued annually by the NRA to operate within a defined period and area.



LAND USE

The catchment is predominantly rural, with the population centred in a number of towns (4 of population 3,000-8,500) or main villages (10 of population > 250). The total population within the catchment is approximately 40,000, 60% of which is located around the Conwy / Llandudno area.

The majority of land within the catchment is Grade 4 under the MAFF classification although there are some Grade 3 areas around the flood plain and the estuarial regions of Afon Conwy. Upland areas within the catchment consist of poor quality Grade 5 land.

Sheep farming is the most widespread agriculture practice with some dairy/arable farming within the Grade 3 area. There are extensive areas of afforestation in the upper reaches of the catchment.

There is some industrial development (Tilcon Ltd, Horpoint Ltd) in the Llandudno/Llandudno Junction area, with Dolgarrog Aluminium at Dolgarrog. Other than agriculture and forestry, the catchment depends upon tourism, with 0.5 million staying visitors and 1.3 million day visitors in 1981 - the last year when reliably accurate information was available.

WATER RESOURCES

Water supplies are plentiful in the catchment but these resources must be carefully managed to ensure their efficient and effective use and to meet future demands.

Water for potable use is abstracted by Dŵr Cymru Welsh Water, and by individual and isolated properties which are not connected to the mains supplies. Abstractions are made primarily from service sources, because groundwater is confined to springs and wells serving individual properties.

Water abstraction for agricultural use, including spray irrigation, is limited with a total licensed volume of 39 million litres a year. There are two fish farms which return all abstracted water (licensed total 18 million litres a year) to the river.

The catchment is essentially rural with little use made for industrial processes, but it has long been associated with the generation of electricity. Hydro electric generation accounts for the abstraction of 153,000 million litres a year, all of which is returned to the river system.

WATER QUALITY

The water quality is generally very good in the Conwy catchment. It is an important factor given:-

- the rivers play a major role in attracting tourists
- compliance with the EC Bathing Waters Directive is required in the estuary
- the high value of the fisheries and conservation interests
- the potable water abstractions by Dŵr Cymru Welsh Water from upland surface sources

Nevertheless, parts of the upland catchment including Llyn Conwy are acidified to an extent that significantly affects river ecology, while a length of the estuary fails to achieve the highest quality designation. This failure is attributed to the crude sewage discharges from Conwy and Glan Conwy. These discharges are also associated with the failure of West Shore Llandudno to comply with EC Bathing Waters Directive (76/160/EEC).

There are 26 sewage treatment works operated by Dŵr Cymru Welsh Water in the catchment. Numerous small private works serving caravan parks, industrial units and single properties also discharge into the rivers.

Discharges from old mines have significant but localised impact on some tributaries such as the Nant Gwydyr and Llugwy, and these are generally evident in the orange appearance of the river due to metal particles.

Agricultural pollution is common, mainly because of the combination of inadequate clean/dirty water separation, and high rainfall. Discharges of silt into watercourses occur during the harvesting of timber and the construction of temporary roads.

The Department of the Environment in 1992 proposed a scheme of Statutory Water Quality Objectives (SWQOs) which set standards of water quality appropriate for different uses. The SWQOs for Fisheries Ecosystem and Potable Abstractions are being applied to the Conwy through a pilot study and incorporated into Conwy Catchment Management Plan.



ISSUES AND OPTIONS

The following tables list the 21 issues which the NRA has identified within the Conwy. 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 comment about its future management.

ISSUE 1: POOR AESTHETIC QUALITY OF JACKSONS STREAM AND AFON GANOL (WEST) LLANDUDNO JUNCTION

Options	Responsibility	Advantages	Disadvantages
Intensive monitoring of streams and discharge in the industrial part of Llandudno Junction (1993)	NRA	Identification of offending discharges	Cost of £3.5K
Maintenance and improvement of facilities	Dischargers	Improved amenity and conservation value of streams	Cost unknown

ISSUE 2: INACCESSIBILITY OF UPPER REACHES OF AFON CONWY AND TRIBUTARIES TO MIGRATORY SALMONIDS

Installation of fish pass at Conwy Falls (currently being assessed). Other sites have been evaluated and found economically not justifiable	Conwy Falls Trust, with NRA support	Increased juvenile salmonid production. Increased fishery potential for sea trout and salmon	Cost £450K. Possible loss of genetic integrity of some native brown trout populations
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ISSUE 3: THE LOSS OF ADULT SALMON AND SEA TROUT DUE TO FOUL HOOKING

Review fishing activity at locations where fish are vulnerable to foul hooking. Create 'no fishing' areas where appropriate by the introduction of byelaws (Currently being progressed)	NRA	Increased escapement. More fish available to legitimate anglers. Save bailiff enforcement time	Loss of fishing in stretches subject to byelaws prohibition
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ISSUE 4: THE EFFECT OF COMMERCIAL SEA FISHING ACTIVITY ON EXPLOITATION OF SEA TROUT AND SALMON IN THE ESTUARY

Confirmation of byelaws to control beach and drift netting in outer estuary (Currently being progressed)	NRA North Western & North Wales Sea Fisheries Committee	Increased escapement of sea trout/salmon to freshwater	Restriction on fishing methods used by fishermen
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ISSUE 5: CONWY, LLUGWY, LLEDR AND MERDDWR DO NOT ACHIEVE SWQO OF CLASS 1 FOR FISHERIES ECOSYSTEM, DUE TO PRESENCE OF ZINC. CLASS 3 ACHIEVED

Options	Responsibility	Advantages	Disadvantages
Acceptance of status. Long term SWQO remains at Class 3	NRA	No cost. Status quo for fisheries maintained	Ideal long term objective not achieved, i.e. Class 1 No. improvement to fisheries
or			
Investigate the causes and sources of zinc contamination. Consider action to reduce levels. Medium term SWQO remains Class 3. Assess any impact of the zinc on the fisheries	NRA	Understanding of problem. Application of knowledge to similar problems in other catchments	Resource commitment and cost unknown. Any proposed action could conflict with acid habitat requirements

ISSUE 6: ELEVATED COPPER LEVELS IN ESTUARY

Given this is only apparent during 1991 and 1992, further investigation is required to establish cause and whether this is an indicator to deterioration or a temporary situation (Currently assessed)	NRA	Establishment of cause, provision of data to consider appropriate action	Commitment of staff and resources. Cost unknown
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ISSUE 7: PROPOSED LLANRWST BY-PASS; IMPACT ON FLOOD DEFENCE

Specification of requirements to safeguard existing level of flood protection (Currently available)	NRA	Maintenance of current standard of flood protection	None
Construction of a by-pass in accordance with NRA requirements		Maintenance of current standard of flood protection	Cost unknown

ISSUE 8: DRYING OUT OF THE AFON PORTHLLWYD

Options	Responsibility	Advantages	Disadvantages
The Nationally approved methodology of establishing severity of problem to be applied. The necessary action can then be considered and cost-benefit analysis be undertaken (application of methodology 1993/1994)	NRA	Establishment of severity of problem as a basis for considering options	Resource commitment

ISSUE 9: LOW NUMBER OF OTTERS WITHIN THE CATCHMENT

Investigate causes (By 1993/94)	CCW/NRA	Identification of most cost effective solutions	Time and resource commitment. Cost unknown
Improve habitat	NRA	Provision of conditions suitable for new colonisation	May not work Cost £K unknown

ISSUE 10: HUMAN DISTURBANCE TO BIRDS IN THE ESTUARY

Investigate potential for byelaws to control river motor craft traffic (By 1994)	NRA	Implementation of byelaws would reduce disturbance	Difficult to implement and police. Cost unknown
Control public informal access to foreshore	Gwynedd County Council	Area subjected to disturbance reduced	Difficult to implement and police. Cost unknown

ISSUE 11: ACIDIFICATION OF UPPER REACHES OF AFON CONWY, AFON LLEDR AND AFON MACHNO, AND AFON NANT Y GWRYD

Identify local causes of acidification (eg acid rain/afforestation/land drainage) and investigate cost benefit of liming as a remedial measure	NRA	Improve water quality to support salmonids	Cost unknown. Potential damage to naturally acidic habitat if liming considered as a solution
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ISSUE 12: DOLWYDDELAN STW DISCHARGE TO AFON LLEDR (PRIMARY SETTLEMENT ONLY)

Options	Responsibility	Advantages	Disadvantages
Full biological treatment plus secondary settlement (By 1995)	Dŵr Cymru Welsh Water	No discharge of identifiable sewage in receiving water	Cost £350K

ISSUE 13: LLANPENMACHNO SETTLED SEWAGE DISCHARGE TO AFON MACHNO

Full biological treatment (By 1995)	Dŵr Cymru Welsh Water	No discharge of identifiable sewage in receiving water	Cost £250K
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ISSUE 14: AGRICULTURAL CONTAMINATION OF SOME TRIBUTARIES

Programme of farm inspections/liaison completion	NRA	Maintenance of water quality and pre-empting pollution incidents	Cost unknown
Improved farm effluent handling/storage systems	Farmers	As above, and 50% grant aid available to farmers	Cost of installing facilities not quantified

ISSUE 15: TIP LEACHATE DISCHARGES TO CONWY AND TRIBUTARIES

Restoration, leachate collection and disposal (By 1999)	Local Authorities	Avoid pollution of the Afon Conwy and tributaries	Cost £40K
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ISSUE 16: CRUDE SEWAGE DISCHARGES IN THE ESTUARY FROM CONWY, GLAN CONWY

Connection to the West Shore outfall (By 1999)	Dŵr Cymru Welsh Water	Improved water quality in estuary. Compliance with EC Bathing Water Directive at West Shore	Cost £11m (Total cost of estuary scheme) NRA will object to further development at Conwy, until connection is made
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ISSUE 17: METAL CONTAMINATION OF SURFACE WATER FROM ABERLLYN MINE, GWYDR FOREST

Options	Responsibility	Advantages	Disadvantages
Stabilisation of spoil heaps and introduction of vegetation at Aberllyn lead and zinc mines	Snowdonia National Park/ WDA	Water quality, aesthetic, and conservation gain within National Park Improved water quality for private abstractors	Estimate cost £200K

ISSUE 18: ELEVATED MANGANESE LEVELS IN LLYN ELSI, BETWS Y COED

pH adjustment of Llyn Elsi waters, by dosing with crushed limestone	Dŵr Cymru Welsh Water	Compliance with EC Directive (75/440EEC) on quality of water abstracted for potable use. Compliance with Drinking Water Regulations 1989. Increased fish populations in Llyn Elsi	Cost of dosing £1K at 18 months intervals Impact on acidic habitats
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ISSUE 19: (POTENTIAL) LACK OF RIPARIAN HABITAT DIVERSITY

Results of River Corridor Survey required before Options can be proposed, if any (1993)			
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ISSUE 20: COMBINED STORM OVERFLOWS (CSOs)

Investigate CSOs in catchment to identify any environmental impact and remedial measures required (By 1994)	NRA	Target Problematic CSOs	Resource Implications
Screening and resetting of weirs	Dŵr Cymru Welsh Water	Improves water quality and amenity value	Cost unknown

ISSUE 21: POTENTIAL IMPACT OF ANY BARRAGE IN ESTUARY ON LEVEL OF LAND DRAINAGE, FLOOD PROTECTION, PASSAGE OF FISH, WATER QUALITY, MUSSEL FISHERY, SALMON AND SEA TROUT, COMMERCIAL AND ROD FISHERIES. (NO FIRM PROPOSAL TO CDATE)

Options	Responsibility	Advantages	Disadvantages
<p>Specification of requirements to safeguard existing interests of all concerned at the proposal stage</p> <p>Construction and maintenance of barrage and ancillary installations in accordance with NRA NWNWSFC and fishermen requirements</p>	<p>NWNWSFC Fishermen etc NRA</p> <p>Developer</p>	<p>Maintenance of existing standard of land drainage, fish movement, water quality, etc</p> <p>Maintenance of existing standard of land drainage, fish movement, water quality, etc</p>	<p>Resource implications, staff time and costs unknown</p> <p>Cost unknown. May affect other legitimate uses of navigation, boating, etc</p>

