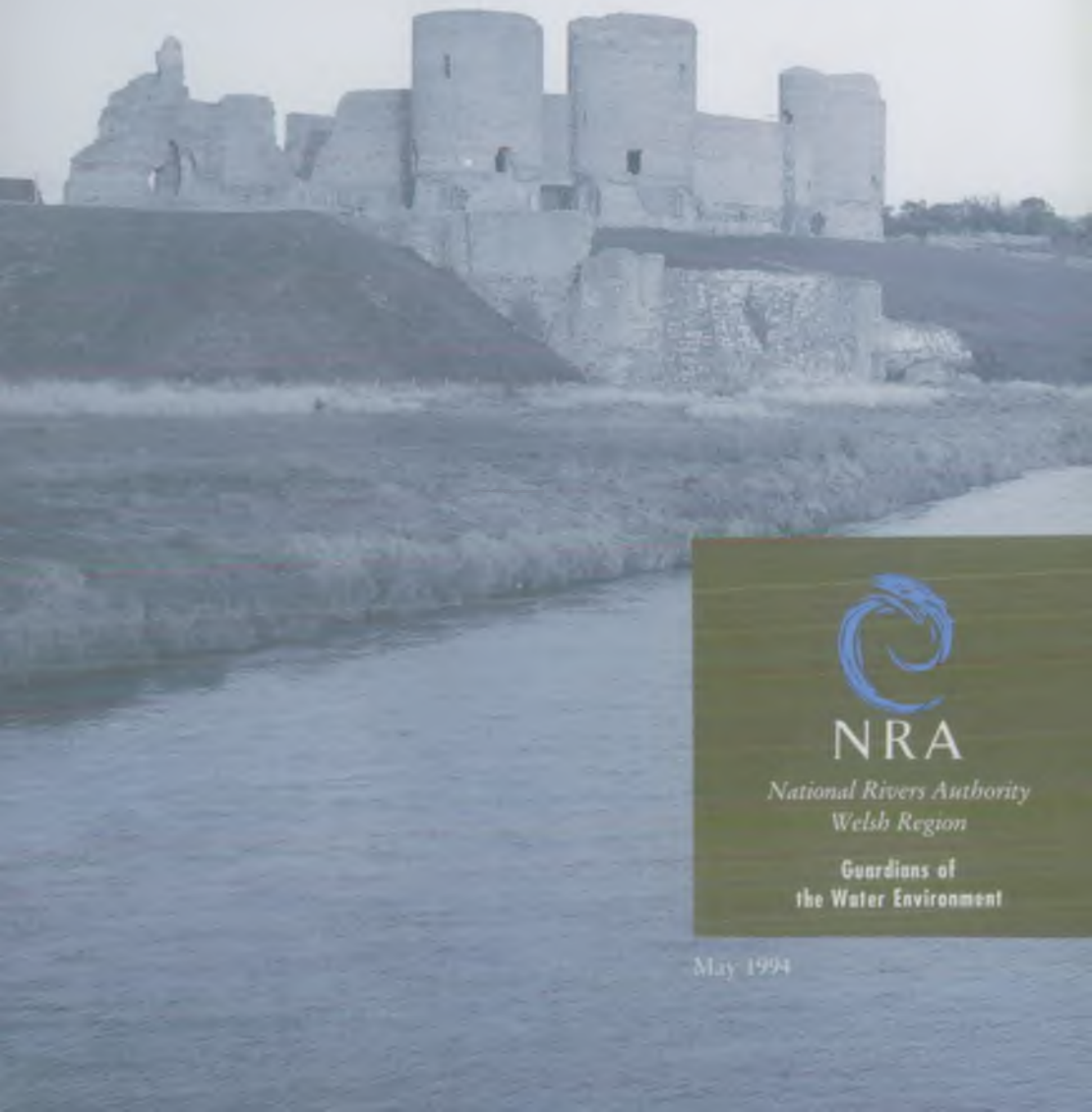


NRA-wales 9

Clwyd Catchment
Management Plan
Consultation
Report Summary



NRA

*National Rivers Authority
Welsh Region*

**Guardians of
the Water Environment**

May 1994

INTRODUCTION

Never before have the rivers, lakes, estuaries and coastal waters of Wales been subject to such large and rapidly increasing demands from the users of water. Many different uses interact, or compete for water or water space, and will inevitably come into conflict with one another. The National Rivers Authority (NRA) is the major manager of the water environment in England and Wales and has the responsibility to reconcile conflicts between water users as well as its general duties that include:-

- Maintenance and improvement of water quality by control of pollution in surface and groundwater.
- Flood defence for people and property.
- Flood warning.
- Management of water resources.
- Maintenance and improvement of fisheries.
- Conservation of the natural water environment.
- Promotion of water based recreation.
- Navigation (in some rivers).

The NRA believes 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.

National Rivers Authority
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 Class No _____
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ENVIRONMENT AGENCY



091993

YOUR VIEWS

The Clwyd 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' PRIESTLEY 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	900km ²
Population	>146,000 (estimated)
Ground Levels	minimum 4 to 5m (A.O.D.) maximum 500m (A.O.D.)
Tide Levels	Mean High Water Springs 5.07m (A.O.D.) ⁽¹⁾ 4.70m (A.O.D.) ⁽²⁾ mean low water springs 0.00m (A.O.D.) ⁽¹⁾ -3.30m (A.O.D.) ⁽²⁾

(1) Hilbre Island (2) Colwyn Bay

WATER RESOURCES

Average annual rainfall (range 700 - 1300mm)	960mm
Average flow from plan area	11.1m ³ /s
Flow range during the period 1968 - 1992 (measured at Pont-y-Cambwll)	0.4 - 81m ³ /s
Total licensed abstraction	19,953MI/a

WATER QUALITY

River Classification

Very Good	111.5km
Good	31.5km
Fair	0.4km
Poor	None
Bad	None

Estuary Classification

Good	7.2km
Fair	None
Poor	None
Bad	None

FLOOD DEFENCE

Length of Main River in catchment	323.22km
Length of Main River Within Internal Drainage District	3.80km
Length of Adopted Ditch within Internal Drainage District	1.13km
Length of Flood Banks Maintained by NRA	48.50km
Area at Risk of Flood (Tidal or River)	5,000Ha

FISHERIES

Designated under EC Directive Freshwater Fisheries (78/659/EEC)

Salmonid 99.5km

Cyprinid None

Abbreviations used:- m³/s = cubic metres per second
MI/a = million litres per annum

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 5000Ha at risk from flooding (tidal or rivers). The principal flood plain of the River Clwyd is located between Bodfari and Ruthin, where the major tributaries the Ystrad and Clywedog join from the west.

Flood defence activity within the catchment is concentrated upon the maintenance of tidal and fluvial defences, main river watercourses in relatively low lying areas and the operation of pumping stations at a number of urban and rural locations.

Elsewhere in the catchment flood defence work consists mainly of shoal removal and river management schemes carried out as necessary. There are no major flooding problems involving property near main rivers, but the agricultural flood plains are inundated from time to time. There are, however, a few isolated cases of flooding to properties associated with non main or ordinary watercourses within the catchment.

The area contains part of the Afon Ganol Internal Drainage District (IDD), which extends from Rhos-on-Sea inland to the bifurcation structure at Mochdre.



A flood warning scheme for the protection of property at St. Asaph from extreme events on the River Elwy, operates within the catchment. In addition the NEPTUNE TIDAL ALERT SYSTEM gives warnings of surge conditions along the North Wales Coast. These surge warnings are disseminated to local authorities along the coastal frontage.

RECREATION

The water environment is a key feature of the important tourist industry in the area. Bathing takes place at the EC Identified Bathing Waters of Llandudno, Colwyn Bay, Kinmel Bay/Sandy Cove, Rhyl and Prestatyn, and also at Abergele.

Most of the water based recreation occurs in the Clwyd estuary and on the coast adjacent to the resort towns.

There are two sailing clubs based near Rhyl, with one at Rhos-on-Sea also serving as a base for local charter boats and a number of commercial fishing boats.

Sailing takes place at the Aled Reservoir all the year round, with permits for windsurfing and canoeing also being available from the local sailing club. The marine lake at Rhyl is a popular venue for boating during the holiday season.

Access for canoeing on all rivers within the Plan is very restricted and permission must be sought from the riparian owners or fishing clubs.

Other immersion sports such as water and jet skiing have become increasingly popular over recent years, particularly at Colwyn Bay and Rhyl.

Public access is poor on the Elwy and in the middle reaches of the Clwyd, thus restricting activities such as walking and bird watching. There is a general lack of picnic sites and interpretation facilities.



CONSERVATION

The landscape value of the catchment is high. The Clwydian hill-range in the east is an Area of Outstanding Natural Beauty (AONB) and the limestone headlands of the Orme in the west are of national geological and botanical importance. The coastal sand dunes are the remnants of once extensive dune systems along the North Wales coast.

There are 32 Sites of Special Scientific Interest (SSSI) and 215 Sites of Nature Conservation Interest (SNCI). Other sites of ecological importance are the proposed Clwydian Range ESA (Environmentally Sensitive Area), the 5 Wildlife Trust Reserves, 6 Woodland Trust Reserves and the Forest Enterprise Conservation area at Clocaenog. Ancient semi-natural woodland remnants occur throughout the catchment, but are generally restricted to the steeper slopes of the upland valleys.

With the exception of notable examples such as the upland acidic blanket bog on Mynydd Hiraethog, wetlands are poor in occurrence and diversity. Key habitats such as reedbeds, mires, ponds and wet grasslands are also relatively scarce.

The shingle bank adjacent to the Gronant Dune system is Wales' only breeding site for the little tern, whilst the Clwyd estuary and the coastal plain are important as feeding and watering area for waterfowl, particularly supporting nationally important populations of sanderling. Beyond the coastal fringe the normal range of bird species occur, although wader numbers are restricted by the availability of wet grassland.

Recent otter survey data (1991) indicate a significant increase in population status on the Clwyd, Elwy and Dulas, with positive survey sites doubled since 1984.



The area is archaeologically rich, with the 150 Scheduled Ancient Monuments (SAMs) representing less than 10% of all currently known sites. They range in diversity from mesolithic deposits (8,000 years ago), Bronze Age mines, Iron Age hill forts, to the mediaeval castle and canalised river Clwyd at Rhuddlan.

DEVELOPMENT AND LAND USE

The vast majority of the plan area (over 90%) lies within the administrative County of Clwyd, with district matters being the responsibility of the Colwyn, Rhuddlan, Glyndwr and Delyn Borough Councils. The remaining area lies within the County of Gwynedd, with district matters being the responsibility of Aberconwy Borough Council.

The Clwyd Structure Plan is due for public consultation in February/March 1994, whilst the Gwynedd Structure Plan was adopted in November 1993.

Most of the development in recent years has been increasingly leisure/tourism orientated. Interest has also been shown in developing harbour/marina complexes at Foryd Harbour, Rhyl and at Llanddulas.

The Catchment population of approximately 146,000 is largely, with the exception of the towns of Ruthin and Denbigh, located in the coastal resorts and along the main A55 North Wales coast road.

The catchment is predominantly rural, with the main agricultural uses consisting of dairy farming in the fertile lowlands of the Vale of Clwyd and mixed sheep and beef production in the less fertile upland areas.

There are a number of afforested areas, the largest of which is the Clocaenog forest at the headwaters of the Clwyd.

The limited industrial development consists primarily of quarries and a number of fish farms. The catchment is heavily dependent on tourism, mainly centred around the coastal resorts of Rhyl, Colwyn Bay and Llandudno.



FISHERIES

The fisheries of the catchment are predominately salmonid, with good quality salmon and sea trout fishing available on the Rivers Clwyd and Elwy.

Distribution of migratory salmonids is restricted by impassable barriers, notably Bontuchel weir on the Clywedog. Acid waters affect the fisheries but the impact is limited to the headwaters.

Historically, catches of salmon and sea trout show considerable variation and in recent years a marked decline in numbers had been noted. However, since 1992, catches and the numbers of juveniles have been increasing and it is hoped that a recovery of stocks is underway. Brown trout fishing can be enjoyed throughout the system, but most angling clubs introduce reared fish to boost angling returns because natural recruitment and production is insufficient to keep up with the cropping demand. Put and take trout fishing and coarse fishing is available on a number of lakes in the catchment.



Eel stocks are prolific throughout, although they are generally small in size and have been found to be commercially unmarketable.

In the tidal section a few marine species are to be found which include the grey mullet, small bass and flounders. The latter can even be found in small numbers as far upstream as Ruthin.

Little commercial sea fishing takes place along the coast but sea angling is a popular activity.

Eight sling (drift) net licenses for salmon are available for issue annually by the NRA to operate within a defined period and area.

WATER RESOURCES

The NRA is reviewing the fine balance between resource yield and replenishment of groundwater resources in the Vale of Clwyd. The utilisation of water resources requires careful management to ensure efficient and effective use and to meet future demands.

Water for potable use is abstracted by Dŵr Cymru Welsh Water and, to a much lesser extent, by individual properties not connected to the mains supply. Abstractions are made from both surface sources and from groundwater. Resources are supplemented by water imported along the Alwen aqueduct from the Dee catchment.

There are 62 licensed abstractions in the area for general agricultural use including spray irrigation, with a total licensed volume of 170 Ml/a, of which the 16 Ml/a abstracted by fish farms is all returned to the river.

A further eleven licences allow abstractions from surface and groundwater for industrial purposes, such as cooling, sand and gravel washing and bottling.



WATER QUALITY

The water quality in the rivers covered by the Plan is generally very good, an important factor given :-

- the rivers play an important role in attracting tourists
- that compliance with the bacteriological standards of the EC Bathing Waters Directive is required for identified waters
- the high value of the fisheries and conservation interests
- the potable water abstractions by Dŵr Cymru Welsh Water from upland sources and lowland groundwater sources at Ffynnon Asaph (Dyserth) and Llanerch (Trefnant).

Acidification problems occur at the head of the catchment, particularly the Upper Clwyd, Upper Clywedog and Aled system. Adequate buffering progressively reduces the effects downstream and therefore any potentially harmful impact on fish recruitment is generally limited and localised.



There are 51 sewage disposal works operated by Dŵr Cymru Welsh Water in the catchment, with a further 10 privately operated. All are monitored to ensure compliance with discharge consent conditions.

The most significant impact of sewage is evident in the bathing waters off Rhyl and Kinmel Bay/Sandy Cove, where the bathing waters consistently fail to achieve the required water quality standards. Occasional failures also occur at Prestatyn and Colwyn Bay.

Inland, the River Clwyd downstream of the Ruthin sewage treatment works has deteriorated and fails the EC Freshwater Fish Directive standards for ammonia for an 8 km stretch below the works.

Despite the considerable amount of mining activity that has historically taken place it has not resulted in any large scale problems, the most noticeable effect being elevated lead levels in the river silts near Dyserth.

Agricultural pollution is common, mainly because 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.

ISSUES AND OPTIONS

The following tables list the 22 issues which the NRA has identified within the Clwyd Catchment Plan Area. We would like to hear from you if:-

- you think 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 No : 1

WATER QUALITY DEGRADATION OF THE CLWYD CAUSED BY THE DISCHARGE FROM RUTHIN STW.

OPTIONS	Responsibility	Advantages	Disadvantages
Determine environmentally protective discharge consent conditions and impose consent.	NRA	Standards set for achieving Fisheries Ecosystem Class 1.	NRA Cost (unknown).
Improve sewage treatment to ensure compliance with revised consent.	DCWW	Achievement of Fisheries Ecosystem Class 1. Compliance with EC Freshwater Fish Directive.	Cost: (> £1m).

ISSUE No : 2

FAILURE OF IDENTIFIED BATHING WATERS AT RHYL, KINMEL BAY/SANDY COVE AND COLWYN BAY BEACHES TO MEET E.C. DIRECTIVE (76/160/EEC) MANDATORY STANDARDS.

OPTIONS	Responsibility	Advantages	Disadvantages
Connection of crude sewage outfalls at Pensarn, Kinmel Bay and Rhyl to new treatment/ disposal facilities by March 1994.	DCWW	Improved water quality in coastal waters. Compliance with EC Bathing Waters Directive, in identified waters.	Cost (approx. £17m for Rhyl scheme, unknown for Colwyn Bay scheme). NRA will continue to object to further development in the Colwyn Bay area until improvements are confirmed.
Improve sewage disposal facilities at Colwyn Bay.	DCWW		

ISSUE No : 3 THE RIVER WHEELER FAILS ITS TARGET OF FISHERIES ECOSYSTEM CLASS I DUE TO ELEVATED AMMONIA LEVELS.			
OPTIONS	Responsibility	Advantages	Disadvantages
Review of Discharge Consents to determine environmentally protective conditions.	NRA	Environmentally protective standards.	NRA Cost (unknown).
Programme of site inspections within the catchment.	NRA	Maintenance of water quality and pre-empt pollution incidents. Targeting of sites for improvements.	Cost (£5K).
Improve treatment facilities and their management.	DCWW/Fish farm owners.	Reduction in ammonia levels.	Cost (£25K).

ISSUE No : 4 WATER QUALITY OF THE LOWER CLYWEDOG, YSTRAD AND DULAS IS AFFECTED BY AGRICULTURAL POLLUTION.			
OPTIONS	Responsibility	Advantages	Disadvantages
Programme of farm inspections/ liaison with agricultural community, NFU/ FUW.	NRA	Establish targeting of sites for improvements.	Cost (£2.5K).
Improve farm effluent management and handling/ storage facilities.	Farmers	Water quality improvements and reduced risk of prosecution.	Cost (unknown), but 25% grant may be available.

ISSUE No : 5 PREMATURE OPERATION OF COMBINED STORM OVERFLOWS (CSOs) CAUSES AESTHETIC PROBLEMS.			
OPTIONS	Responsibility	Advantages	Disadvantages
Investigate CSOs in plan area to identify degree of environmental impact and remedial measures required, (completed 1993).	NRA	Problematic CSOs and improvements required identified.	NRA Cost (unknown).
Improve screening and re-set weirs. Improve storm flow capacity at treatment works.	DCWW	Improved water quality and amenity value.	Cost (£50k).

ISSUE No : 6

LEACHATE CONTAINMENT FACILITIES REQUIRED AT LON PARCWR LANDFILL, RUTHIN.

OPTIONS	Responsibility	Advantages	Disadvantages
Improve the operation and regulation of the site in terms of restoration, leachate collection and disposal.	Waste Regulatory Authority (Glyndwr D.C.)	Reduced risk of pollution to the Clwyd and groundwater abstractions.	Cost (£40K).
Installation of facilities.	Site operators		

ISSUE No : 7

MIGRATING LEACHATE AT DDOL UCHAF LANDFILL SITE AFONWEN, PERCEIVED AS A POLLUTION THREAT TO THE WHEELER.

OPTIONS	Responsibility	Advantages	Disadvantages
Site investigation by Waste Regulatory Authority in consultation with NRA to determine extent of leachate migration and any mitigating measures that are required.	Delyn B.C.	Management information to determine action for protecting ground and surface waters and compliance with EC Freshwater Fish Directive.	Cost (£40K).

ISSUE No : 8

THE GANOL EAST FAILS ITS TARGET OF FISHERIES ECOSYSTEM CLASS 4 DUE TO DIFFUSE AGRICULTURAL AND INDUSTRIAL POLLUTION.

OPTIONS	Responsibility	Advantages	Disadvantages
Undertake catchment inspection programme to identify sources of pollution.	NRA	Establish targeting of sites for improvements.	Cost (£2.5K).
Improve farm effluent management and handling/storage facilities.	Farmers	Improved water quality.	Cost (unknown), but 25% grant may be available.
Improve treatment of industrial discharges.	Discharger	Improved water quality.	Cost (unknown).

ISSUE No : 9		SOLIDS CONTAMINATION OF WATER DURING FORESTRY PLANTING AND HARVESTING.	
OPTIONS	Responsibility	Advantages	Disadvantages
Implementation of Forestry and Water Guidelines, including riparian buffer zones.	Landowner	Reduction of environmental impact from forestry activity.	Cost implications including loss of planting area (unknown).
Establishment of Forest Design Plans.	Forest Enterprise	Improved crop management.	Cost (unknown).
Establishment of Indicative Forestry Strategy.	Clwyd County Council	Planned afforestation.	Cost (unknown).
Research and development to identify improved methods of forestry management.	NRA/NERC/ Forest Authority	Implementation of best methods would reduce environmental impact from forestry activity.	Cost (£135K).

ISSUE No : 10		ELEVATED ZINC LEVELS DUE TO ACIDIFICATION ON THE UPPER REACHES OF THE CLYWEDOG AND ALED.	
OPTIONS	Responsibility	Advantages	Disadvantages
Identify local causes of acidification (e.g. acid rain/ land drainage/ afforestation) and investigate cost benefit of remedial measures e.g. liming.	NRA	Gain information to determine future action.	NRA Cost (unknown). Potential damage to naturally acidic habitat if liming option pursued.
Research and development to identify and evaluate options for amelioration of impact.	NRA/NERC	Identification of options and costs.	Cost (£25K).

ISSUE No : 11		SALINE INTRUSION IN LOWLAND TRIBUTARIES MAY LEAD TO LOSS OF THE RESOURCE FOR CROP IRRIGATION.	
OPTIONS	Responsibility	Advantages	Disadvantages
Alert existing and potential abstractors to problem.	NRA	Abstractors will be more aware of water quality.	None.
Determine suitability for irrigation purposes.	Abstractor	Pre-empt adverse impact on crops.	Cost (£1K).
Use of bankside storage (if necessary).	Abstractor	Freshwater supply secured.	Cost (£10K).

ISSUE No : 12		PERCEIVED OVER UTILISATION OF THE WATER RESOURCES PARTICULARLY IN THE VALE OF CLWYD.	
OPTIONS	Responsibility	Advantages	Disadvantages
Investigate rate of usage/replenishment (increased monitoring).	NRA	Establish severity of problem as a basis for determining future action.	Cost (£200K).
Construct groundwater model.	NRA	Information to determine optimum use of resource.	Cost (£50K).

ISSUE No : 13		LACK OF RIPARIAN HABITAT DIVERSITY WITHIN THE CLWYD CATCHMENT.	
OPTION	Responsibility	Advantages	Disadvantages
Results of River Corridor Survey required before options can be proposed, if any.			

ISSUE No : 14 LACK OF WETLAND HABITATS, PARTICULARLY REEBEDS AND DAMP GRASSLAND.			
OPTIONS	Responsibility	Advantages	Disadvantages
Create new habitats.	NRA/CCW	Increased habitat diversity.	Cost (up to £20K per ha). No compensatory mechanisms for land loss. Landowner resistance. Requirement for ongoing management.
Manage existing habitats.	NRA		Cost (£2K per 100m). Conflicts with Geological Conservation Review. Landowner resistance.

ISSUE No : 15 BIRD DISTURBANCE FROM POWER BOATS AND JET SKIERS IN THE TIDAL SECTIONS OF THE CLWYD.			
OPTIONS	Responsibility	Advantages	Disadvantages
Establish degree of impact.	RSPB/NRA	Nature of problem defined.	Cost (£3K).
Voluntary agreement and code of conduct.	Recreational bodies	Bird disturbance minimised through voluntary action.	Some reduction in area/time for these water sports.
Consider development of byelaws.	NRA	Adherence to byelaws would minimise disturbance.	Cost (unknown), Difficult to regulate.

ISSUE No : 16 LACK OF BIRDWATCHING FACILITIES WITHIN THE CLWYD ESTUARY.			
OPTIONS	Responsibility	Advantages	Disadvantages
Erect hide(s).	NRA/RSPB/ District Council	NRA as facilitator reduces single authority cost.	Cost (£3K per hide).

ISSUE No : 17 REQUIREMENT FOR IMPROVED RIVERSIDE ACCESS ALONG THE CLWYD.			
OPTIONS	Responsibility	Advantages	Disadvantages
Review existing footpath network and produce strategy.	NRA, District and County Councils	Targeting of areas for improved access.	NRA Cost (unknown).

ISSUE No : 18 LACK OF CANOE ACCESS AGREEMENTS WITHIN THE CATCHMENT.			
OPTIONS	Responsibility	Advantages	Disadvantages
In conjunction with riparian owners, angling interests and Welsh Canoe Association promote at least one access agreement by 1997.	NRA/ Riparian Owners/ WCA	Provides for controlled river use by canoeists.	NRA Cost (unknown). Anglers against access agreements. In absence of registration system for canoeists, control not complete.

ISSUE No : 19 BARRIERS TO FISH MIGRATION ON THE CLYWEDOG, YSTRAD AND NANT MELIN DW R.			
OPTIONS	Responsibility	Advantages	Disadvantages
Investigate cost/ benefits of removal of barrier, or by-passing with fish pass.	NRA	Information to determine future actions, (providing access should improve spawning capability within the catchment.	NRA Cost (unknown). Genetic implications to native species if access provided.

ISSUE No : 20 REPAIRS TO CEFN WEIR FISH PASS TO ALLOW EFFECTIVE UPSTREAM MIGRATION OF SALMONIDS.			
OPTIONS	Responsibility	Advantages	Disadvantages
Carry out repairs if feasible or construct new fish pass.	NRA/Riparian Owner	Unimpeded passage for migratory salmonids. Prevention of deterioration of structure.	Cost (<£50K).

ISSUE No : 21

REVIEW OF LICENSED NETTING WITHIN THE CATCHMENT (I.E. NET LIMITATION ORDER 1995 REVIEW).

OPTIONS	Responsibility	Advantages	Disadvantages
Evaluate impact of licensed net fishery on the runs of salmonids into the Clwyd system.	NRA	Management Information.	NRA Cost (unknown).
Reduce number of licences if adverse impact evident.	NRA	Reduction of impact on salmonid numbers entering river.	Reduction of nets will adversely affect employment.

ISSUE No : 22

PROPOSED MARINAS AT RHYL AND LLANDDULAS.

OPTIONS	Responsibility	Advantages	Disadvantages
Build environmental controls into any planning permission.	Local Authorities, NRA and other statutory consultees in the planning process	Minimised environmental impact whilst recreational activity promoted.	Cost of environmental safeguards (unknown).

