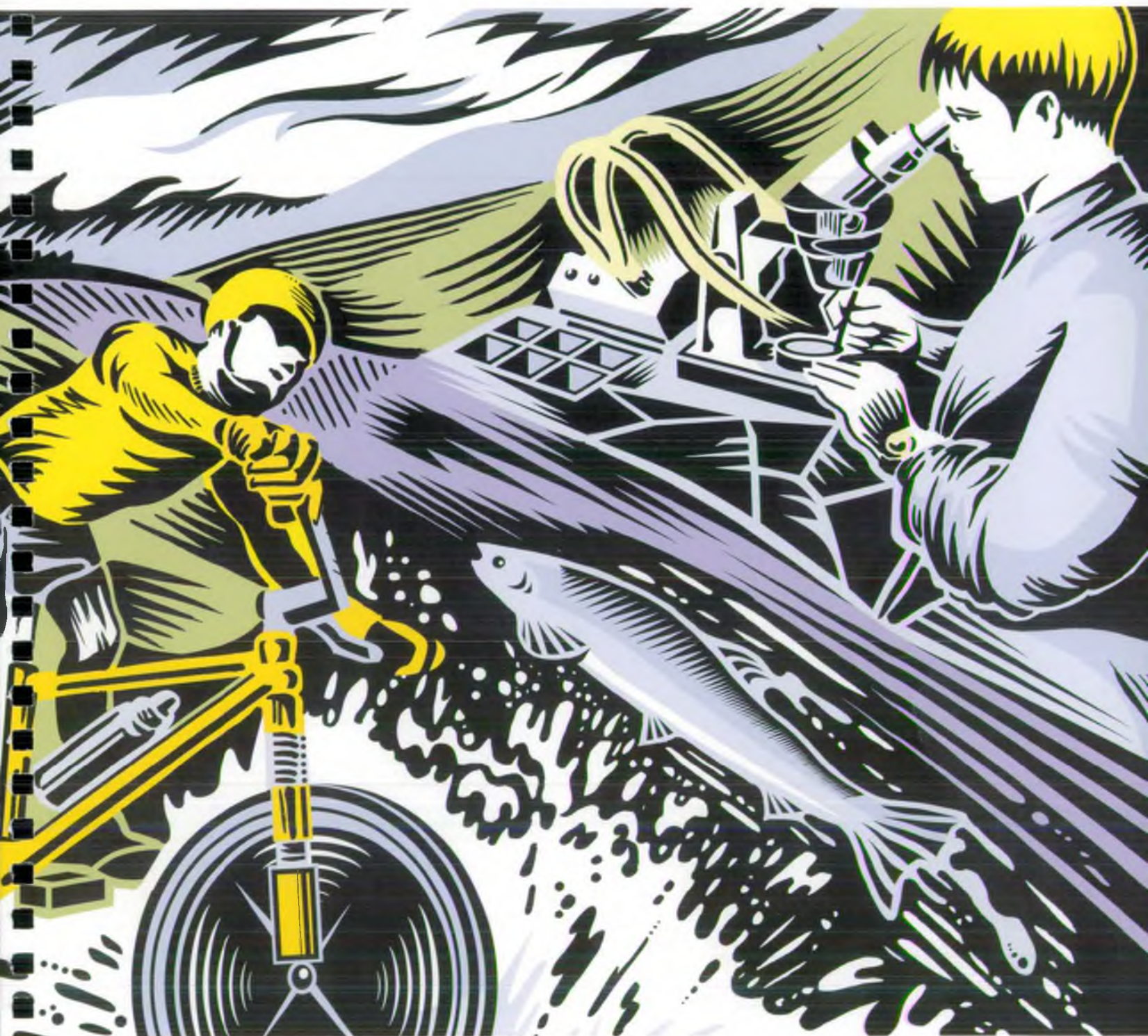


EA North West

09 APR 2002

North West Recreation, Biology and Conservation Annual Report 2000 – 2001



ENVIRONMENT
AGENCY

NORTH WEST CONSERVATION, BIOLOGY AND RECREATION REPORT 2000/01.

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INTRODUCTION

This report provides a brief overview of the work and major issues in the Region over the 2000/01 financial year. The regional overview that follows this introduction gives an outline of the key work areas of national or regional significance. Later sections provide details of some projects undertaken to benefit the wildlife and people of the North West.

For operational purposes, the North West Environment Agency is structured along functional lines to deliver the aims and duties which underpin our environmental responsibilities. The conservation function is incorporated with biology into ecology, with fisheries and recreation being separate. The Fisheries, Ecology and Recreation, (FER), teams deliver this service locally on the ground. The FER function works closely with other Agency functions such as Water Resources, Flood Defence and Environmental Protection to ensure that conservation and sustainability duties are furthered and this collaboration provides many benefits. For example, ecologists will advise flood defence engineers on the possible impact of flood defence engineering works and ways to incorporate features that will enhance wildlife and promote recreation. The same is true of water resources work. Because conservation and recreation work in the North West region is funded mainly by recharge to other Agency functions, there is little capital money for improvements.

It is therefore very important that features that will enhance conservation and / or recreation are incorporated into other Agency project plans at an early stage in the planning of such projects. Such co-operation is possible because the duty to promote conservation and recreation goes across all functions.

We hope that you find the report interesting and informative.

The Agency also produces a Fisheries Annual report that highlights some of the work done by fisheries staff to maintain, improve and develop fisheries in the North West region. Copies may be obtained from the address below.

The Agency would welcome any comments and suggestions that could be used to further improve the report.

Please address any queries or suggestions for improvement to:

The Regional FRCN Manager
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REGIONAL OVERVIEW

REGIONAL OVERVIEW: BIOLOGY

Biological work is at the core of the Agency's integrated approach to environmental monitoring and assessment. Although much of this work is currently focussed on aquatic systems, national and international commitments (e.g. the European Union's *Habitats Directive*), will require the Agency and its associates to develop atmospheric and terrestrial monitoring programmes.

In terms of aquatic monitoring, biological work can be divided into two types: routine and non-routine. Routine work is largely driven by national and international commitments (e.g. *Urban Waste Water Treatment Directive*) and government requirements (e.g. *The State of the Environment* reports). Non routine work is generally driven by the need to respond to local problems (e.g. pollution investigations).

The year 2000 was a *General Quality Assessment* (G.Q.A.) year for Ecology. The G.Q.A. scheme assesses the overall quality of rivers using both chemical and biological data. The biological component is based on collection and analysis of macro-invertebrates (e.g. insect larvae and shrimps), whose distribution is heavily influenced by water quality. The macro-invertebrates found within a stretch of river, therefore, give an indication of the prevailing water quality and are used to classify the quality using six classes from 'very good' through to 'bad'. Results from G.Q.A. 2000 showed that 84% of rivers in North-West Region were classed as 'good' or 'fair' biologically, a substantial improvement compared to 1990 and 1995. In the future G.Q.A. will move from a five-year cycle to a 'three-year, rolling programme' to provide annual information for the Department of the Environment, Farming and Rural Affairs.

The past year has also seen the implementation of measures to manage water resources more effectively: *Catchment Abstraction Management Strategies* (C.A.M.S.). Implementation of these strategies will require assessments of macro-invertebrates, plants and

fish in relation to water quantity to help determine sustainable levels of water abstraction.

In the next few years the *Water Framework Directive* will put ecological assessment at the heart of the Agency's monitoring programme and help channel investment into making further improvements in the quality of our inland and coastal waters.

Key achievements for biology in 2000/2001 included:

- The national Review of biological sampling points was completed;
- The initial biological assessments for CAMS were completed; and
- The year 2000 G.Q.A. programme was completed and a fact-sheet produced (telephone 0845 9333111 for information)

REGIONAL OVERVIEW – CONSERVATION SECTION

The Agency's vision for the environment and a sustainable future is a healthy, rich and diverse environment in England and Wales, for present and future generations.

The Environment Agency has nine themes to contribute towards this long term aim; A better quality of life, An enhanced environment for wildlife, Cleaner air for everyone, Improved and protected inland and coastal waters, Restored, protected land with healthier soils, A greener business world, Wiser, sustainable use of natural resources, Limiting and adapting to climate change and Reduce flood risk.

To ensure that protecting and enhancing biodiversity is central to the decision making of the Agency there is a Framework for Change for each of these themes which are intended mainly for internal planning purposes, though they are publicly available. The most relevant Framework with regard to Biodiversity is 'An Enhanced Environment for Wildlife'. They set out our proposals for the medium term to make progress towards the long-term objectives described in the vision.

External consultation and discussion will take place via a series of sector based Frameworks. Short to medium term activities include working with DERFA to implement 5 year targets for habitats and species which the Agency leads on, production of annual updates, ensuring monitoring is in place and better understand environmental requirements for key species and habitats.

A follow up document to Focus on Biodiversity (April 2000) was produced earlier this year to list the work which took place in 2000 towards the actions for all species and habitats which the Agency leads on. There were projects in the region for e.g. water vole, otter, vendace, white-clawed crayfish, freshwater pearl mussel and wetlands.

Since 1995 we have been a member at a national level of the UK Biodiversity Group, UK Targets Group, Biodiversity Information Group, Wales Group, England Group, Local Issues group to help steer the UK BAP process.

In the region we continue to be heavily involved in Local Biodiversity Action Plans. Several were launched this year including North Merseyside and significant progress was made on for Greater Manchester and Wirral. Many LBAPs are now being implemented through technical groups and support is provided through co-ordinators meetings arranged by English Nature. Other action plans, such as Countdown (Cheshire) were re-launched via their annual update.

This year the Agency in the region successfully influenced the Regional Planning Guidance in association with its regional partners to strengthen the role of biodiversity and improve protection for non-statutory sites and we continue to improve our input to the planning system. This will be assisted by a project "Better Town Planning" and will include a risk-based approach to dealing with applications we receive and improved GIS facilities.

The Countryside and Rights of Way (CROW) Act 2000 makes provision for a general right of access to certain open land and strengthens existing wildlife legislation, particularly the protection of Sites of Special Scientific

Interest. The Act also puts biodiversity on a more statutory footing by putting a duty on Ministers, Government Departments to have regard to the purpose of conserving biodiversity. Changes to Agency authorisation procedures have taken place to give English Nature 28 days notice before determining an authorisation for a third party for an activity which might damage an SSSI. The Agency has also amended its procedures for consultation before carrying out its own operations, which may affect an SSSI. The Agency is assessing where Agency landownership coincides with designated SSSI's and where appropriate will be involved in the production by English Nature of management statements for the land.

Landscape, Heritage and Environmental Impact Assessment

Although the North West Region got off relatively lightly during the autumn floods we have still been busy designing and implementing flood alleviation schemes. The Regional Landscape Architect has had an input into all of these. One crucial area of work in the development of these projects is the Environmental Impact Assessment (EIA) of the projects. In November we appointed Cath Sanders as our Regional EIA co-ordinator. Her role is to ensure we have appropriate systems in place so that our EIAs are carried to a consistently high standard in line with national guidance.

Improvement projects have also been planned including the canoe and fish pass at Padiham Weir. A 5 hectare woodland has been planted at Tue Brook and reedbed treatment project have been designed for sites in Leyland and Thornton Cleveleys.

On the archaeology front two more riverine archaeology surveys have been carried on the Mersey Bollin and the Tame Goyt Etherow catchments. We have a programme to survey all NW catchments. However, as we have not been able to secure adequate funds this has been put on hold.

Recreation Overview

The Agency has a recreation responsibility under the Environment Act to promote and take account of recreation in its work. As well as providing individual benefits, recreation adds value to society as a whole. Water represents a considerable resource for recreation and one of our principal aims is the promotion of recreation on or near water. We achieve this where possible, by protecting existing recreational activities, creating opportunities for recreation within our work, promoting an increase in quantity, quality and diversity of access opportunities, reducing conflict between different users through increased communication and by raising awareness of the opportunities and benefits of recreation.

The Agency has a role to play in helping achieve the shared use of water space. With effective management, more people, without detriment to other users, or the environment, may use water for recreation. Where appropriate, shared use of water can be achieved using access agreements.

To achieve recreation actions on the ground, the Agency generally has to work in partnership with other organisations. The North West Region has few land holdings, so the scope for recreation on Agency owned land is limited. Therefore, many projects we do become involved in, come about from opportunities to work with others on land they own. We can offer advice, expertise, examples of best practice and by doing this maximise benefits for recreation.

The Agency has been involved in a number of projects this year as follows:-

The Mersey Estuary

The Mersey Estuary represents a significant recreational asset to the Northwest Region. At present it is not recognised as that by many of those who are local to it. The Environment Agency has worked with the Mersey Strategy, a multi-sectoral partnership and part of the Mersey Basin Campaign, to address this problem through the production of a user guide.

The guide is available free of charge and contains 40 pages of information on what is

available around the Mersey Estuary, from places to fish to places to eat. Backed by maps and supporting text, the guide is an easy to follow document that includes information on local public transport. The initial print run was of 20,000 and these are available all around the estuary.

Rochdale MBC

Rochdale MBC have been awarded a significant amount of money from the European Single Regeneration Budget (SRB). We met with them initially to see what scope there was for the money the Agency is spending on a flood defence scheme in the area to be used as match funding for the SRB money.

Rochdale put forward proposals to create footpaths and recreation facilities along the River Roch and Hey Brook. We looked at these proposals and made further suggestions as to how the area could be improved both to the benefit of the locals and to the environment.

Staff from South area and Region visited the area in question and met with representatives from Rochdale MBC to put forward our recommendations.

North West Water Liaison Day

Area and Regional staff from the Fisheries, Recreation and Ecology teams spent a day with their equivalents from North West Water (United Utilities). The aim of the day was strengthen the links between the two groups and raise awareness of what each organisation is doing and where there is scope for future interaction.

Unitary Development Plans

Recreation comments were made on two consultations on Unitary Development Plans for Bolton and Warrington. These represent an opportunity for the Agency to encourage the Local Authorities to consider recreation on or near water within any planning controls they put in place.

In both cases reference was made to recreation issues within the relevant Local Environment Agency Plans, raising the problems of access and awareness, and the fact that this stage of planning represents an opportunity for the

Local Authorities to assist us in resolving these issues.

North Area Fisheries Staff go canoeing

A number of fisheries staff from Cumbria visited the Burrs Activity Centre in Bury to have a go at canoeing in an effort to further increase the understanding of canoeing and the issues it faces. They were accompanied by the British Canoe Union Access Officer for Cumbria. There was agreement that the day was a useful exercise by all who took part and that it achieved its aim of increasing understanding within the fisheries section.

Thames Conservation staff

In Thames region recreation work is carried out by Conservation staff. Sixteen conservation staff from Thames visited the South Area with the Mersey Basin Campaign, to get some first hand experience of the work the campaign is doing. The Regional Recreation Officer spent a day with them around the Mersey Estuary to look at the issues that exist in the area on access and recreation. Large amounts of work are being done on the estuary in association with the Mersey Estuary Strategy, which is part of the Mersey Basin Campaign. One example of this was the production of the Mersey Estuary User Guide.

The Bigger Picture

Besides the larger projects and events there is a considerable amount of smaller, but no less important work, that goes on all the time. This work includes things such as liaison, advice, comment and support. Here are just a few examples of some of these activities that have taken place over the year:-

- Tameside Metropolitan Borough Council Unitary Development Plan – The agency was consulted on the "issues" paper for this plan and comments were made to encourage the council to work towards our aims for recreation on or near water and incorporate them into their plan.
- Speke-Garston Partnership – This is a small community led group in Liverpool and they approached the Agency for advice and possible assistance on the improvement to a local footpath beside Ramsbrook. Part of this work would include the removal of five cars in a 100m

section. A site visit was arranged to advise on what the Agency would require to be done, what assistance could be given and possible example of best practice.

- Inland Waterways Amenity Advisory Committee (IWAAC) – The Agency was consulted nationally by the IWAAC on proposals for the restoration of some canals and proposals for new ones to assist them in prioritising these proposals nationally. We co-ordinated input on the proposals in our region.
- Ellesmere Port Cultural Strategy – We were consulted on a draft of this strategy and passed comment that would hopefully result in the strategy working towards our aims for recreation.
- Navigation Restoration Policy – The Agency published its policy on navigation restoration. The dissemination of this policy was co-ordinated from region with the aim of ensuring that all those who needed to know of its existence did.
- Rossendale Cycleway/Bridleway Project – This is a large project looking at creating a significant cycle and bridleway network, much of which will run close to the river Irwell and its tributaries. A meeting took place to give advice and try to ensure that the requirements of the Agency were taken into consideration at an early stage.
- LEAPS – Comment was made on draft LEAP Action Plans for the Tame/Goyt/Etherow and Croal/Irwell. This is done to try to ensure that there is a consistent approach to recreation input to LEAP's across the region.
- Mersey Valley Joint Committee – This committee was discussing the possible use of the river Mersey by canoeists and issues that may be encountered. The Regional Recreation Officer attended the meeting to clarify what the Agency's position would be, to support the idea and offer assistance in taking it forward.

Making the most of the Mersey - Countryside Exchange

As a follow up to the "Making the most of the Mersey" booklet a project was put together with the Mersey Basin Campaign and the Countryside Exchange Programme to look at the Mersey Estuary. The Agency part funded the project and the Regional Recreation Officer sits on the local organising committee.

Through the Countryside Exchange Programme, a team of 8 North American and UK countryside management professionals embarked on a week-long case study to look at the future use of the Mersey Estuary.

This study looked at ways in which the recreational, amenity, cultural and wildlife resources of the Mersey Estuary can be nurtured for future generations to enjoy. In particular, the study focused on the Liverpool Cast Iron Shore (Otterspool and the International Garden Festival Site), the Halton Shore (Hale Head to Spike Island and Wig Island), and the Wirral Shore (Eastham Country Park to Rock Park). The study also took account of other relevant schemes in the area, such as the North Liverpool Airfield Estuary Park proposals and the Sefton Coast scheme.

The Exchange Team findings were presented to a public meeting, and reproduced in a report. These findings and recommendations are now being taken forward by the organising committee.

Finding your way through the Waterways of the North West

Following a suggestion from RFERAC, the leaflet "Finding your way through the Waterways of the North West" was produced and distributed.

This leaflet was produced in partnership with British Waterways, in line with our joint working agreements, and with the assistance of the Inland Waterways Association. The leaflet was designed to give a very brief overview of what recreational and leisure opportunities there were available within the North West, associated with the regions waterways. The aim was to encourage more people to visit our watersides. It provides information ranging from angling to heritage and wildlife to cafes. It also provides information on where people can go to find out more about what is available.

Five thousand leaflets have been produced and they will be distributed through British Waterways sites and by the Agency on its stands at the many events we attend throughout the year.

Access Seminar with the British Canoe Union

Agency staff attended a joint access seminar held with the British Canoe Union at the Burrs Activity Centre in Bury. This is the third year the event has been run and it continues to be a success. One of the greatest outputs from this event is the increased understanding that has developed between the Agency and the British Canoe Union and the increased understanding between paddlers and anglers.

Agency staff gave presentations on sustainable rivers, water voles, crayfish and the Padiham Weir project. RFERAC Chairman James Carr and RFERAC member Tony Bielderma gave an anglers perspective on canoeing, from both a game and coarse fishing point of view. Dr Keith Hendry gave a presentation on the findings of the R&D on "The effects of canoeing on fish stocks and angling."

NORTH AREA

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Netted Carpet Moth
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Introduction to Angling course
Greenways in the Furness Peninsula

HABITATS DIRECTIVE

Habitats Directive Local Implementation Team

This team set up last year is comprised of area staff from across the range of Agency functions (flood defence, waste management, water quality, water resources, integrated pollution control, radioactive substances, fisheries and ecology). Its primary aim is to ensure that the Environment Agency's responsibilities as a Competent Authority under the Directive are adequately addressed in the area, and in particular that relevant consents are reviewed to ensure they are not adversely affecting the conservation interest of SACs and SPAs.

However as the year progressed it became increasingly clear that the "Kilkee moderation" would have a significant impact in the area. The result of this review of the SAC network was to add new features of interest and also physical extensions to most of the SACs in the area. In addition a whole new suite of sites have been designated as SAC. Following this adjustment to the network of SACs the Agency nationally needed to stand back and re-assess what this meant for our work in implementing the Directive.

To assist with this process we held discussions with English Nature to assess the issues on each site and see which sites needed priority attention from the Agency. The outcome of this was to change some of the original priorities and timetabling of the Agency review of consents.

One consequence of all these changes and the significant work they generated in their own right was that the work on the review of consents did not progress to the original timetable. However these changes are almost all in place and in 2001/2 the Agency will be able to re-focus on the work it needs to do to contribute to the conservation of these sites.

In recognition of the large workload this Directive brings to the area a new Habitats Directive Officer will be appointed in 2001 to steer the work of reviewing permissions. In addition because of the large number of riverine and other "wet" sites the water quality

and water resources functions will also benefit from some extra staff resources. To help with the review of permissions on the River Ehen SAC a project to model water quality has also received funding. It is anticipated that further projects to inform the review of consents will be funded in 2001/2.

New Works

The ecology section is now screening all new applications for consents to ensure any potential impacts on SAC or SPA features are flagged up as early as possible. The section has worked closely with other departments in the Agency to undertake assessments of these applications. This workload is significant and became larger this year due to the new SACs designated as a result of the Kilkee moderation discussed above.

A number of contentious applications have been received and these have required extensive liaison with English Nature to ensure that sites are adequately protected.

To help manage this workload a new ecologist post is to be filled in the section later in 2001.

European Marine Sites

The European Marine Site management schemes for Morecambe Bay and the Solway Firth have been published this year, and the Duddon Estuary consultation exercise is well under way.

The Agency is represented on the relevant authority management groups for these sites, and now these management schemes have been developed, the process moves from scheme production to delivery of identified actions.

BIODIVERSITY

Salmon Tracking Studies on the River Eden

Adult salmon have been radio-tracked on the River Eden over the last two years. The main aim of this work was to identify the spawning locations of Eden spring salmon and to determine whether or not there is a potential for these fish to mix with later-run salmon at spawning time.

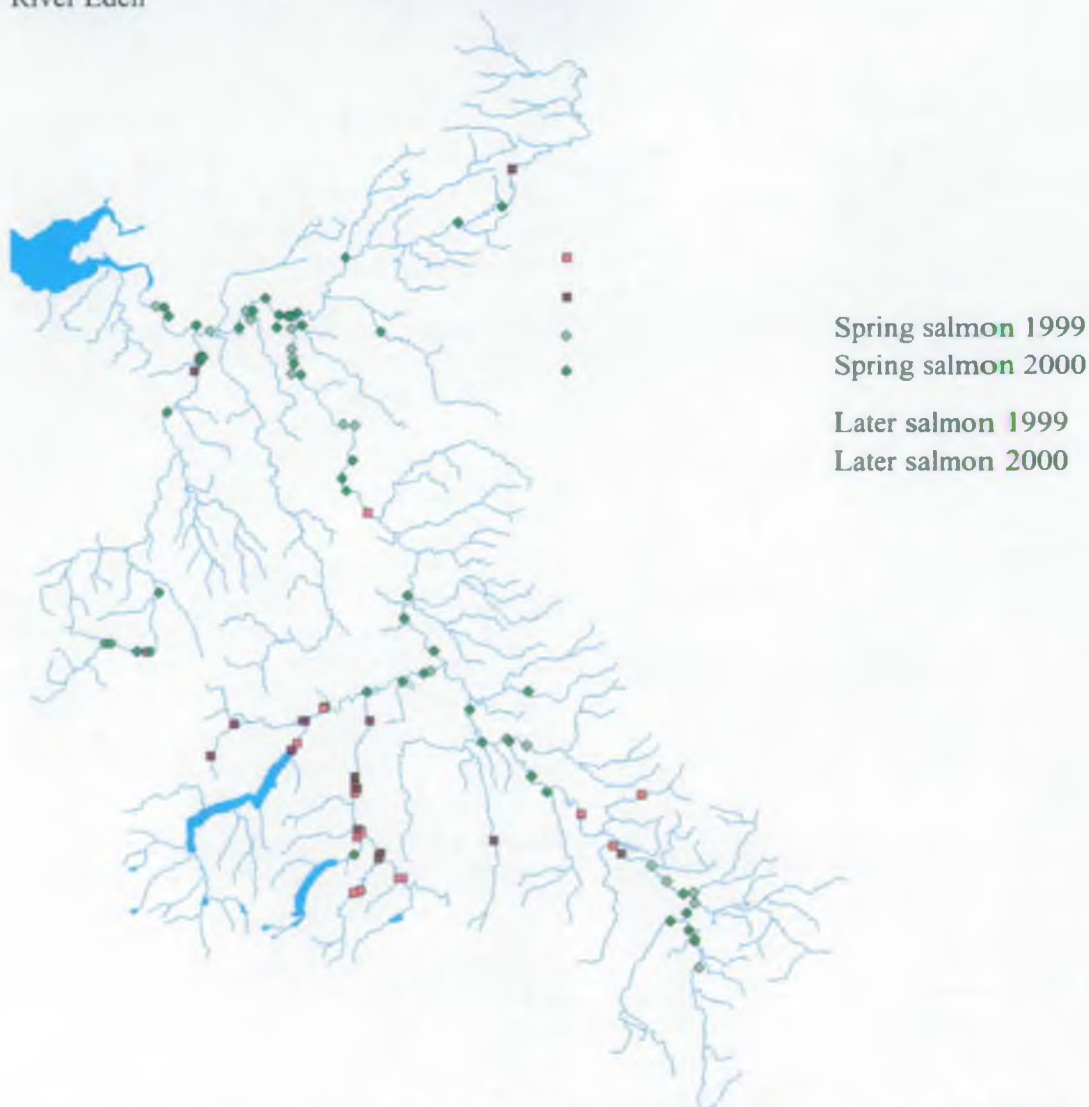
The Atlantic salmon is a species of European importance within the River Eden cSAC. This work will provide invaluable information with which to guide future management of it within the catchment.



Releasing a radio-tagged salmon back into the River Eden

A total of 212 salmon were captured, radio-tagged, released and then tracked to spawning. At spawning time, radio-tagged salmon were widely dispersed throughout the catchment. The Eamont system, and the River Lowther in particular, appears to be a very important spawning area for spring salmon.

These studies are a collaborative work involving the Agency, MAFF, English Nature, Atlantic Salmon Trust, Eden Rivers Trust, Eden Owners Association, Eden and District Fisheries Association, Carlisle Angling Association and Solway Rural Initiative.



Estimated spawning locations of radio-tagged salmon in the River Eden, 1999 and 2000

North of England Wetland Project

Further discussion with RSPB following the completion of the North of England Wetland Project aims to prioritise the higher potential sites identified within North West Region. Both the conservation constraints and flood defence potential of some of the sites are to be investigated.

UK Biodiversity Action Plan

Our staff continue to be involved with the development and implementation of the UK biodiversity Action Plan, reflecting the importance of biodiversity found in North Area.

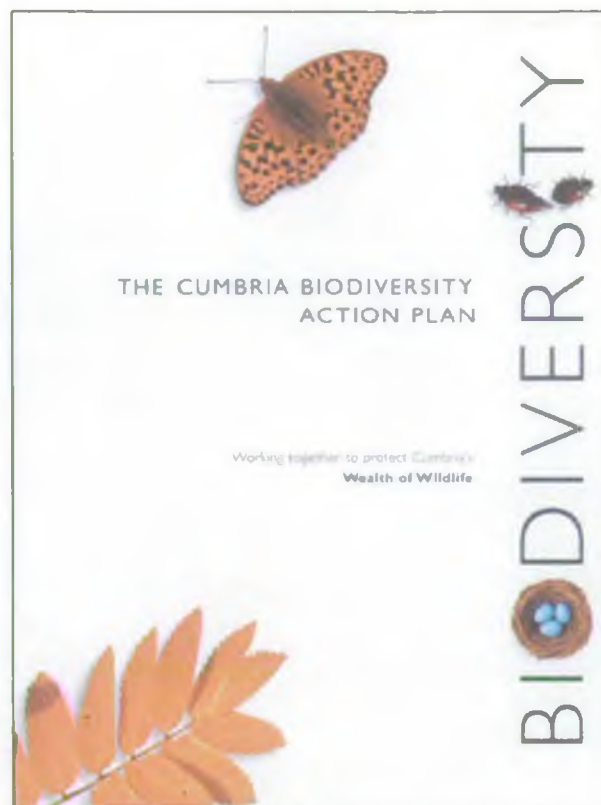
The Area provides National Agency coordinators for the following species and habitats; freshwater pearl mussel, natterjack toad, slender naiad, netted carpet moth, marsh fritillary, and vendace.

Steering group meetings have been attended (North Area hosted an England and Wales group for freshwater pearl mussel), and projects to implement individual plans are being developed.

Detailed figures and costs associated with implementing the actions undertaken so far for freshwater pearl mussels were supplied to DETR in August 2000.

Cumbria BAP

The Agency continues to be a key partner in the Cumbria Biodiversity Action Plan providing input to the steering, technical working and various focus groups.



The phase 1 plans have been published and we now move into the phase of delivery of Agency actions. Our contributions to water vole and great crested newt conservation (mentioned later) show we have started.

The production of the phase 2 plans has been postponed until 2002/03, when the Agency will again be drafting several species and habitat plans.

Great Crested Newt

Building on the success of last year's project, a further great crested newt survey centred on South Cumbria was funded by English Nature, the Agency, and the Herpetological Conservation Trust.

A total of 100 ponds were surveyed with 18 proving to have great crested newts present. In addition 13 new sites were identified by other surveyors.

A map of all known Cumbrian great crested newt sites is shown below.

Map 4: Distribution of known Great Crested Newt sites in Cumbria (1999 - 2000)



● Great crested newt site

North Area Water Vole Survey

Historical records of water vole populations in North Area were collated in early 2000. This information was obtained from a number of sources, including The Vincent Wildlife Trust and Monkswood Biological Records Centre. Approximately 50 sites were identified and included in a strategic survey. The sites were generally found on the fringes of North Area with an absence in the central uplands, possibly reflecting the geology and habitat of the area. The survey was programmed for late April/ early May 2001 with training for surveyors scheduled in late April. However, due to Foot and mouth disease the survey has now been postponed until May 2002.

Netted Carpet Moth

The database of Netted Carpet Moth and Touch-me-not-Balsam sites in Cumbria and North Lancashire has been produced and has been put on to the GIS system.



Netted Carpet Moth

Vendace

One of the recommendations from last year's vendace translocation feasibility study was that a hatchery be set up to support recruitment of the Bassenthwaite vendace population.

With the above recommendation in mind, arrangements were made with the Centre of Ecology and Hydrology at Windermere to hatch and rear the ova. Agency Fisheries staff were tasked with the capture and stripping of the required adult vendace.

During December 2000, fyke nets, and on occasions, gill nets, were fished at sites identified as spawning grounds in the Institute of freshwater Ecology Status of Rare Fish Study. No vendace were caught however. Roach, perch, ruffe, dace, pike and eels were all caught in significant numbers and released. In an attempt to establish the presence of vendace seine netting operations are now being planned, but at the moment is on hold due to foot and mouth restrictions.

River Jelly Lichen

As part of the Cumbria Biodiversity Action Plan a draft report on the River Jelly Lichen *Collema dichotomum* was prepared. It is rare in the UK and has been declining since 1960, and is now known from only eleven 10km squares in mid-Wales, northern England, Scotland and Northern Ireland.

Eden, Esk and Solway LEAP area otter survey

The survey in May and June 2000 continued coverage by LEAP area, following on from the South Cumbria survey the previous year. Again observations of spraints and other otter signs at bridge sites on a single visit was the method employed.

230 sites were checked in the survey, and 114 had evidence of otter activity in the form of recorded spraints, many being quite fresh. The results suggest established otter populations in the River Eden system and its tributaries.

There was a fairly even distribution from the middle to the lower reaches of the main R. Eden with little evidence of otters in the exposed upper reaches. There was plenty of sprainting activity in the R. Caldew.

Widespread presence of spraints was recorded in the Border Esk, Sark and Lyne maintaining the catchments reputation as a stronghold of the otter. On the Solway Plain, the Waver had spraints recorded on all the main river sites and six of the tributaries. The results on the Wampool were more patchy with fewer indications of otter presence in the lower reaches but increasingly better signs in the middle and upper reaches.

NORTH CUMBRIA EDEN AND SOLWAY OTTER SURVEY MAY 2000:
MAP OF SPRAINT SITES FOR ALL CATCHMENTS



Overall, the survey results give a promising picture of the state of otter colonisation in North Cumbria.

WATER QUALITY ISSUES

Sheep dip pollution monitoring

Further monitoring and investigation of the problems arising from the high toxicity of synthetic pyrethroid (SP) sheep dips to riverine invertebrates was undertaken. The trend for fewer SP related incidents noted in the last report was not sustained, with a number of problems found during the year.

Significant problems were found on the River Calder, the River Mite and on Mill Beck, a tributary of Windermere, where up to 1,000 native crayfish were killed due to SP pollution from a farm on the catchment. This incident caused a great deal of public interest and made the front page of The Westmorland Gazette.

Other incidents attributable to SP dip were traced to farms on Troutbeck (Windermere tributary) and Mosedale Beck (Wastwater tributary), with other incidents also apparent on Dacre Beck (R.Eamont tributary), Helm Beck (R.Eden tributary) Cald Beck (R.Calder tributary) and Pow Beck (R.Waver tributary). Restrictions on field work due to the Foot and Mouth crisis has prevented complete investigation on a number of these watercourses.

A crayfish mortality in the River Mint, a tributary of the River Kent, caused much concern in January 2001. Although SP was immediately suspected, investigations were hampered by the apparent washout of much of the benthic invertebrate fauna following prolonged high flows. The situation was further complicated by apparent abnormal behaviour in surviving crayfish in the river leading to fears of possible crayfish plague. Collaboration was undertaken with a researcher from Sheffield University (who had discovered crayfish plague in the R.Ribble) and live specimens were sent for testing at The Centre for Environment, Fisheries and Aquaculture Science (CEFAS) laboratory at Weymouth. Fortunately crayfish plague was not to blame and the link with SP dip was confirmed from the analysis of sediment

samples. Two road drains at the top of the catchment were implicated.

Monitoring asulam levels following aerial bracken spraying

In a collaborative project with North West Water, we chemically monitored the asulam levels in New Water, a tributary of the River Gelt with a public water supply abstraction, before and after aerial spraying with asulam to control bracken encroachment in this moorland catchment.



HELICOPTER SPRAYING WITH RAINBOW MIST

Although "before" samples and those taken between 3 and 18 days after the spraying showed no detectable asulam, we were surprised to record quite high pulses of asulam in river water associated with high flows in New Water as late as 26 days (asulam concentration 0.372 ug/l) and 45 days (0.27 ug/l) after spraying

The water supply situation in the catchment monitored was a relatively secure one, because of multiple sources, the ability to temporarily remove some from supply, and the presence of a 800 megalitre reservoir, but our findings will inform future spraying regulation on smaller or more vulnerable catchments with higher risk of exceedance of the 0.1 ug/litre limit for any pesticide set by the Water Supply (Water Quality) Regulations 1989. Our findings were presented by North West Water at a national meeting on treatment of bracken in water catchments in Wetherby in February 2001.

Urban Waste Water Treatment Directive - Macrophyte surveys

Ecologists contributed to reports submitted nationally as part of the UWWT Directive sensitive area review process. These reports covered monitoring results in the 1997-2000 period in designated sensitive areas (eutrophic) downstream of Appleby and Keswick sewage treatment works and in candidate sensitive areas (eutrophic) downstream of the Penrith, Carlisle and Kendal works.



Ranunculus sp in Udford survey reach, River Eamont

Ecology sampling during the year for UWWT directive purposes involved standardised macrophyte surveys of twenty-one river sites, and epilithic diatom monitoring. This work has added benefit in generating information relevant to the protection of the Eden, Derwent, Ehen and Kent riverine SACs.

Environmental Change Network site

We have one riverine site in North West Region, on the River Eden near Temple Sowerby, which is part of the UK Environmental Change Network. The network is designed for long term integrated environmental monitoring.

Detailed macrophyte, diatom, and invertebrate sampling is carried out according to the ECN protocols. Difficulty was experienced in Autumn invertebrate sampling because of prolonged high flows.

Data on our invertebrate samples analysed to species level by CEH has proved useful in an

applied context, having been made available to consultants considering the possible impacts of a proposed Temple Sowerby bypass.

Fish and macroinvertebrate monitoring in Coalburn

The Agency is a major partner in a long term co-operative project to study the hydrological effects of upland afforestation in the Coalburn catchment (tributary of the River Irthing). Ecologists have been involved in monitoring the fish and invertebrate fauna, following detection of highly acidic episodes during hydrological events.

Electric fishing survey of the trout population, and sampling of the macroinvertebrate community continued this year, and a report was produced on observations from 1999 and 2000, updating our documentation of the biota of this research catchment.

Lack of submerged macrophytes in Ulverston Canal

We have been investigating a problem of lack of submerged macrophytes in this canal coarse fishery. A decline in the fishery followed after the loss of a previously dense submerged macrophyte flora dominated by *Elodea*. The situation appears to be one of a classic "forward switch" from submerged macrophyte to algal dominated primary production, apparently following past herbicide control of the *Elodea*. Limited sampling of water chemistry, Secchi disc transparency, and planktonic and benthic algae has been undertaken.



Emergent macrophytes in Ulverston Canal

Barley straw has been deployed by Ulverston Angling Association to inhibit the development of algal blooms. Biomanipulation of the fish community is not a remediation method that would be appropriate for the angling interests, and consideration is being given to possible mass transplant of macrophytes in shallower marginal areas if water clarity is improved.

Quinquennial Biological General Quality Assessment (GQA) survey

The quinquennial Biological GQA survey was undertaken nationally in 2000, to allow for national reporting of quality trends since the previous survey in 1995. The survey involves standardised sampling of aquatic macroinvertebrates in the spring and autumn seasons; in the North Area 278 sites are covered.

In Cumbria, as in many other parts of the country, prolonged high water levels in the Autumn caused some sites on lower reaches of large rivers to be omitted from the data set.

The national report will be produced in late 2001, but results from our sites have already been utilised in our local biological quality catchment reports.

Dubbs Beck Windermere

Dubbs Beck, part of the River Kent and Tributaries SSSI/pSAC, supports one of the few populations of freshwater pearl mussel to co-exist with white-clawed crayfish. This is an extremely unusual situation as pearl mussel are normally found in soft oligotrophic waters. The pearl mussel population in Dubbs Beck is one of only two in England which are currently known to be recruiting young mussels.

In May 2000 over 200 dead freshwater pearl mussels were found in Dubbs Beck. A biological investigation was carried out to determine the water quality of the beck. No major water quality issues were highlighted by the investigation. In June 2000 silt was found to be running from the North West Water track to Dubbs Reservoir which had been upgraded in March 1999. One theory for the mussel mortalities is that excessive erosion of the track has caused an imbalance in the chemistry of the beck, however the sampling evidence so far does not support this.

FLOOD DEFENCE/WATER RESOURCES ISSUES

River Kent Gravel Removal

Due to potential flood risk of the River Kent in Kendal, the need to remove four gravel shoal build ups was identified. The River Kent and Tributaries was designated SSSI in May 2000 and was also put forward as a possible Special Area of Conservation. An assessment of significance and environmental assessment were completed on the proposed works and the process agreed with EN.

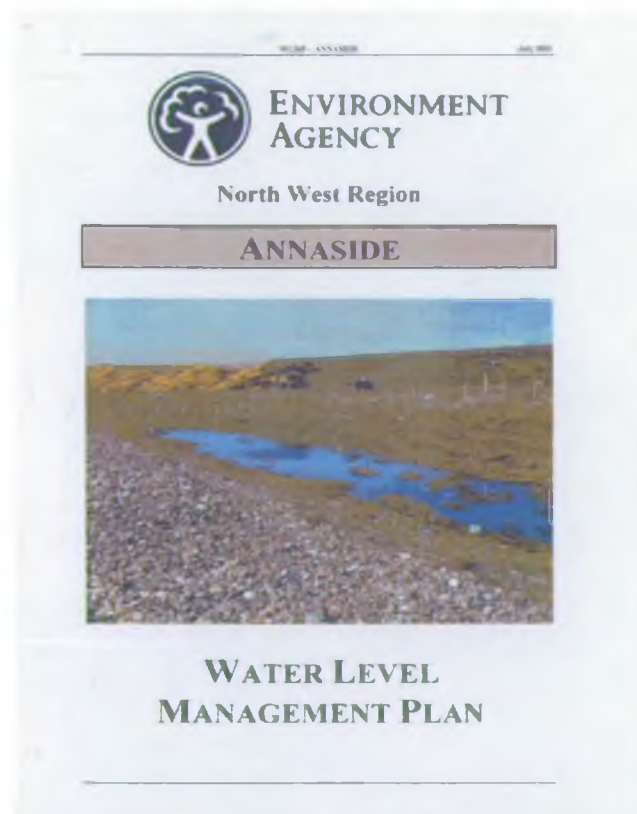
Flood Defence commissioned a consultant to carry out a geomorphological assessment of the catchment to determine sources of gravel reaching Kendal and to determine the impacts of the Flood Defence maintenance on the geomorphological processes in the River Kent system. The final report is due in June 2001.

The gravel removed from the shoals throughout Kendal was above water level gravel only. However there was some in channel machine tracking required to gain access on some of the sites. A full crayfish

rescue of the areas was completed by North Area Ecologists and Flood Defence Officers.

Water Level Management Plans

The four outstanding Water Level Management Plans have been completed this year for Annaside, Meathop Moss, Nichols Moss, and the Rusland Valley Mosses. Three of these sites are mires, and Annaside is a natterjack site.



The main issue arising from the preparation of the plans has been the level of influence that Agency Flood Defence maintenance works has on the sites, and the implications of altering the maintenance regime. No immediate changes are proposed to the current maintenance regimes, though as projects are developed to clarify the issues and objectives arising from the WLMP process, these may be reviewed.

Invertebrate Drought Monitoring Programme

A long term sampling programme agreed with Water Resources section was implemented to monitor the aquatic macroinvertebrate community at key riverine sites with the

potential to be significantly impacted in drought conditions by major water supply abstractions which might be the subject of drought orders. Twenty-seven sites were scheduled for sampling in spring, summer and autumn seasons on the Rivers Leven, Ehen, Eamont, Cocker, Gelt and Eden. The autumn sampling was incomplete because of sustained high flow in that season.

The intention is to use (for the bulk of the sites) species level data on low flow sensitivity provided by the LIFE score (Lotic-invertebrate Index for Flow Evaluation) to assess the impact of variable flows on the benthic fauna. In some cases where the main concerns relate to reduced dilution effects on effluent discharges rather than simply water quantity issues alone, data collection has been directed at family level water quality indicator assessment.

Defensive Drought study

A report was produced giving baseline information for identifying ecological issues relating to any possible applications for drought orders or permits affecting Cumbrian lakes. The need for such proactive consideration of possible impacts on the biota by reduction of lake levels had become apparent during the public enquiries in 1995 and 1996 when drought orders were granted on Lake Windermere and Ullswater.

The report considers possible impacts of water level changes in Windermere, Ullswater, Crummock water, Ennerdale, Westwater, Haweswater and Thirlmere on their ecology, but focuses particularly on the macrophyte communities.

Joint Management Plans

Multifunctional agreement was reached on routine maintenance operations for 4Km of the River Gowan in South Cumbria. This follows on from the success of the River Bela Catchment Joint Management Plan completed last year. The joint management approach involves walkover surveys involving Ecology, Flood Defence and Fisheries staff. Agreements made included leaving a significant proportion of the Gowan unmaintained for the year and only limited

maintenance on the remaining sections. The plan was also agreed by English Nature following the designation of the River Kent and Tributaries SSSI, pSAC.



River Gowan upstream of Staveley

Auditing of the River Bela joint agreement showed that the plan was working well and that the reduced maintenance agreements were being adhered to. Following the reduction in routine maintenance on the Bela catchment, increased Sea Trout spawning activity was apparent. It has not been possible to further monitor this due to prolonged high flows making redd counting impossible last Autumn/Winter.

Great Musgrave Gauging Station and Weir

Major capital works to install a gauging station and weir at Great Musgrave on the River Eden cSAC were completed in the summer of 2000. A crayfish and fish rescue was completed before machines entered the river. The final weir design included three fish pass areas to allow passage of bullhead and lamprey (both features of European interest), which should allow movement of fish at any flow level. Post project monitoring will not be possible this year due to the foot and mouth situation but will hopefully be started next year.

Crayfish Rescues

Two separate crayfish rescues were undertaken on the River Kent in the middle of Kendal prior to Flood Defence work to remove accumulated gravel shoals. A total of 77 crayfish were relocated downstream.

PARTNERSHIPS

Sustainable River Management Project

A fine August evening was enjoyed at Ehenside Farm, near Braystones by all the farmers and members of the public who attended a riverside walk, the object of which was to show what could be achieved under the Sustainable River Management Project. The project is a partnership between FWAG and the Agency which aims to encourage farmers to consider environmentally responsible farming methods and habitat management works, and this was seen to good effect on Mr Elliot's farm by the River Ehen. As well as a farm walk, Agency Ecologists were on hand to answer questions, and demonstrate the high biological water quality by kick sampling.

PROMOTION

Participation in Groups

Agency staff continue to build closer working relationships with other organisations through representation at various groups including:

CWT Freshwater Conference Steering Group
CWT Wildlife Sites Group
Cumbria FWAG Steering Group
Solway Firth Partnership
Morecambe Bay Partnership
Barrow Wildlife and Countryside Group
Warcop Conservation Group

Otters

A talk 'Otters in Cumbria' was given to four branches of the Cumbria Wildlife Trust and to the Keswick Natural History Society. The talk gave details on the natural history of the otter, surveys methods and situation of the population in Cumbria.

The opportunity was also taken, during a broadcast interview with an Ecologist, in a day spent by Radio Cumbria at the Penrith office to discuss findings from Agency surveys of otter distribution and the issues involved in it's recovery.

FWAG Pond Construction Training Day

Assistance was given to the pond-dipping aspect of this training day held at Mungrisdale. Following on from this, a joint visit was undertaken with FWAG to give advice on a number of pond-related issues on a farm near Wigton.

Millenium Festival

As part of the Agency's Millenium Green Festival's project, a new educational wildlife pond was created at the Lake District Visitor Centre at Brockhole near Ambleside. This joint collaboration between the Agency, the National Park Authority, North West Water and Burlington Slate was officially opened by BBC TV's Ground Force star Tommy Walsh at a special Water Life Festival in May 2000. During the festival, pond dipping sessions were run by ourselves and the National Park's Education Team.

Arts in Trust project

North Area staff were involved in the Arts in Trust project, "In the Green Field" at the National Trust's Acorn Bank Gardens and Watermill, near Penrith. The event was designed to introduce children to their cultural and environmental heritage by exploring a countryside site. Agency and National Trust employees teamed up with a variety of professional artists to help groups of children express their creativity through a wide range of activities, including painting, drama and costume. More than 600 pupils attended the event over three days. "In the Green Field" was such a success that a similar event is taking place in 2001.



Welcome to the Green Field

River life demonstration for school

In May fifty pupils from Flimby School enjoyed a river and fell walk at Dunthwaite on the River Derwent, and were given a demonstration of kick sampling and invertebrate identification, which excited much interest.

RECREATION AND ACCESS

Canoeing

Following on from last year's awareness day run by the British Canoe Union, which highlighted difficulties faced by the BCU whilst negotiating access agreements, Fisheries staff joined BCU access officers on a canoe trip down the River Derwent. The day allowed for the interchange of concerns relating to canoeing and fisheries in practical situations, and was thought to be of great benefit by all concerned.

Introduction to Angling course

During July six pupils from Flimby School participated in an Agency "Introduction to Angling" course. This week long experience included coarse fishing, trout fishing (fly and lures) and sea fishing for cod and mackerel. All the pupils were very successful and caught lots of fish.

This was a pilot scheme and had the active support of Castle Fisheries, National Park Authority and Gilcrux Springs Trout Fishery.

Greenways in the Furness Peninsula

The Agency contributed £5k towards a £119k feasibility study in the Furness Peninsula to establish a network of "greenways" as part of a sustainable transport initiative. The Agency's contribution was in support of the Memorandum of Understanding with the Countryside Agency.

CENTRAL AREA

It is regretted that it has not been possible to produce a full Central Area report for 2000/1. The following represent some high profile projects which ecology staff were involved with over this period.

Ribble crayfish plague

In June 2000 a contractor was working on the River Ribble investigating the populations of native white clawed crayfish and their recovery from a sheep dip incident when he noticed that the crayfish were infected with crayfish plague.

Because we were early enough in the infection we managed to rescue approximately 800 crayfish from uninfected areas. These were placed in two holding facilities, with the intention of re-stocking the river when the plague has passed through, or if possible creating a breeding population for longer term re-stocking. The project is being carried out in conjunction with English Nature and Paul Bradley of Sheffield University

Mill Brook Park, Knowlsey

The Agency were approached by the Mill Brook Millennium Green Committee to help with designing and building a river rehabilitation scheme on Mill Brook which runs through the millennium green. The design work was carried out in house and a financial contribution made to the works. The eventual works consisted of re-establishing one pond, creating a new pond in an old meander and creating wet ledges and other features along the length of the river. The works are now an integral part of the new millennium green.

Biodiversity

A major 5 year survey to establish the baseline population for watervoles was started, and the first year completed. The survey started in the areas considered most likely to contain watervoles, but will extend to other areas in future years. The early results are encouraging, showing watervoles in 60% of sites surveyed.

The barn owl nesting project continued with many more new boxes in new sites being established.

SOUTH AREA

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Progress with Habitats Directive

BIODIVERSITY 23

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Wolverine habitat enhancement – Lymm Golf Course
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Countdown, Cheshire Biodiversity Action Plan
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Meres & Mosses – Cheshire, Shropshire, Staffordshire
Cheshire Lapwing Lifeline
Cheshire Sustainable Rivers Project

HABITATS DIRECTIVE

Progress with Habitats Directive.

The South Area (Northwest) has made progress with the Environment Agency's review of consents for compliance with the Habitats Directive. Nicola Lord has been appointed as area co-ordinator and as such has completed the following tasks:

- Compilation of site dossiers for each site designated as SAC, SPA or Ramsar
- Site Issue Briefs (SIBs) have been completed and signed off by both Environment Agency and English Nature representatives.
- Key people involved in the review of EA permitted activities have been identified and individual site groups formed to discuss and resolve site specific issues.
- Development of system to record an audit trail of review work carried out in the area.
- Delivery of a presentation on the Habitats Directive to FER staff and at a conservation liaison meeting attended by external parties.
- Development of a project plan to be implemented in the area's review of new and existing authorisations.

Based on information contained within the SIBs all designated sites have been given a priority rating. The majority of South Area sites have been identified as high priority, which means that stage 1 and 2 of the review of consents needs to be completed by the end of September 2001. (Stage 1 and 2 involves identification of any permitted activity that is likely to have a significant effect upon a designated site). The remaining sites are Medium priority and will need to have stage 1 and 2 of the review completed by the end of March 2002.

The following sites fall within South Area:

High Priority

Manchester Mosslands SAC
South Pennine Moors SPA
South Pennine Moors SAC
West Midlands Mosses SAC
Oakmere SAC

Medium Priority

Mersey Estuary SPA
Rochdale Canal SAC
Rixton Clay Pits SAC

BIODIVERSITY

A500 Basford-Hough-Shavington Bypass

The A500 Trunk road is a Highways Agency scheme and went through public enquiry in the early 1990's. The scheme area contains five protected species, including the Lesser Silver Water Beetle, which has full schedule 5 protection under the Wildlife and Countryside Act 1981. Found only in the Somerset Levels and the Crewe and Nantwich area it is considered to be one of the rarest invertebrates in the country and threatened with extinction. We have worked closely with Cheshire Wildlife Trust and English Nature to negotiate with the consultants and Highways Agency to achieve a proposal that is sympathetic to the local ecology.

Wolverine habitat enhancement – Lymm Golf Course

Statham Pools Brook runs through the Golf Course in Lymm, near Warrington. Its banks support a thriving Wolverine population adjacent to the Golf course, but maintenance of the fairways reduced the potential for wolverines within the course. A management plan for the course was drawn up with input from the Golf Course grounds staff to increase the suitability of the banks for Wolverines without compromising the playability of the greens they crossed. Where banks were collapsing, work was carried out by the EWF to reprofile the banks to create a more stable slope that would still be suitable for burrows.

Existing ponds within the course were assessed for ecological value and advice given on ways of improving their wildlife value.

Further work is scheduled for 2001 to assess the outcome of the works.



The upstream section of Statham Pools Brook from the first footbridge across the 14th fairway



Water Vole works

National Biodiversity Network

The National Biodiversity Network (NBN) is an initiative aimed at creating a new network of Local (Biological) Records Centres (LRCs) with consistent standards and tools. The eventual aim will be to allow easy Internet access to biological data. The NBN is run by a Charitable Trust whose sole aim is to facilitate the development of the network.

The first national 'pilot' for England is the Cheshire LRC (known as RECORD) This is predominantly within South Area, NW Region. The Cheshire LRC will collate all biological distribution data in Cheshire, Halton, Warrington, Wirral and the Stockport area. This data will be collected from a wide range of professional and voluntary organisations and individuals and the data will be subject to quality and access standards. The Agency is likely to be a data 'provider' and 'user'. RECORD is currently within what will be a two-year establishment phase. However, the Centre already holds over 250,000 biological records.

A multi-functional group (including Water Resources, EP, FER, Customer Services) met with RECORD during 2000 to discuss potential applications of the LRC to the Agency's work. The group identified a wide range of areas where RECORD could provide a biodiversity data 'service' to the Agency from State of the Environment reporting to consent determination. Following this, the Agency has agreed to support the development of RECORD as one of over 20 collaborative partners. Once the establishment phase is completed the relationship with the LRC will be formalised by a Service Level Agreement (covering multi-functional work areas) between the two organisations.

Countdown, Cheshire Biodiversity Action Plan

The biodiversity partnership for Cheshire, known as 'Countdown' continued to make considerable progress in 2000/2001. The Agency is a steering group member alongside Cheshire Wildlife Trust, English Nature, Halton Borough Council, Warrington Borough Council, Wirral Metropolitan Borough Council and Cheshire County Council. There are a wide range of individual species and habitat BAPs (SAPs and HAPs) under the Countdown umbrella. The Agency then has involvement in SAP and HAPs representing its key priorities both nationally and locally including Water Vole, Reedbed, and Crayfish Action Plans.

The Biodiversity plan for 2000 was up-dated, complete with new actions and up-dates on existing actions. The Plan also included a junior Countdown to enthuse and interest school children in wildlife issues. The final format was a CD-ROM and this has proved to be extremely popular with the wide range of individuals and organisations (schools, wildlife groups, Government bodies etc) that receive the Plan.

The year 2000 also saw the organisation of a major biodiversity conference for Cheshire, "Tomorrows World for Local Wildlife." Approximately 200 BAP practitioners in the County attended this. Presentations ranged from explanations of the national, regional and local organisation of biodiversity action to how individual BAPs were effecting action on the ground. A wide range of displays and exhibits, including an Environment Agency stand, demonstrated the work of the many organisations in attendance.

A fund-raising strategy for the Cheshire BAP was developed over the year to increase funding of Countdown in future years. Currently, the Business Plans are being prepared for individual BAPs, for eventual usage in a bid for Heritage Lottery Funding for Countdown.

River Glaze, River Habitat Survey and Geomorphological Evaluation

The River Glaze catchment lies between Manchester and Warrington. It has been extensively modified and is typified by few areas of semi-natural channel structure. A strategic investigation of the River Glaze was undertaken to evaluate the river habitat of the catchment using River Habitat Survey (RHS) and geomorphological techniques.

The report covered a number of areas:

- Assessment of the current state of the Glaze catchment within the context of similar river types.
- Highlighting existing stresses on the catchment.
- Determination of existing erosion and deposition issues in relation to land use.
- Identification of suitable rehabilitation sites.
- Identification of management options for Water Voles in the catchment.

WATER QUALITY ISSUES

Endocrine Disruption

Endocrine disrupters currently are a major concern to the public and their role in the environment is not fully understood by the scientific community. Endocrine disruption has been linked both to human and wildlife reproductive impairment, examples include; low sperm counts, reproductive cancers, damaged sexual organs, species changing sex. Frequently present, and common throughout the environment, endocrine disrupters occur as synthetic chemicals and hormones, plastics and naturally as hormones and in food. These endocrine disrupters usually end up in rivers. Current scientific thinking is that heavily industrialised catchments with synthetic chemicals are affected more than highly populated catchments with higher sewage inputs.

Although the Mersey historically has been heavily polluted by industrial and sewage pollution there has been relatively little work done on endocrine disruption in this catchment. The freshwater research up to date (undertaken by Brunel University and others) on endocrine disruption in fish downstream of Sewage Treatment Works has not looked at any Mersey catchment sites. Recent estuarine research indicated that the Mersey could be ranked as the second most contaminated endocrine disrupted estuary after the Tees.

Locating sources and potential hotspots in this freshwater catchment through identification of oestrogenic releases, and through monitoring endocrine disruption in fish and invertebrates would help establish and focus any future research. Water quality improvements through the AMP programme could be initiated when there is a greater understanding of environmental health problems caused by endocrine disrupters.

This is a South Area collaborative project managed with our partners from the University of Plymouth and the Freshwater Biological Association. Initially the PhD research will look at invertebrates at sites

with mainly sewage effluent pollution, with synthetic chemical pollution and a mixture of both types of pollutants to establish presence/absence of endocrine disruption in some case study, South Area catchments. The research will use a variety of analytical techniques that establish disruption, developed by Plymouth University. The project fieldwork has been disrupted by the ongoing problems relating to Foot and Mouth, but soon will be started and produce the first results. This year it is hoped that the project will widen its breadth and look at the effects on some fish species to compare with the invertebrates results.

Hockery Brook Minewater Discharge Investigation

There is a long history of ochreous contamination affecting the headwaters of Hockery Brook near Ince in Lancashire. The discharge (NGR SD61520509) forms the source of the brook and it emerges from beneath a railway embankment south of an abandoned colliery called Hindley Deep Pits.

A biological investigation of Hockery Brook was carried out according to the Welsh Methodology (ref.: A survey of ferruginous minewater impacts in the Welsh coalfields, Welsh Office Contract No. WEP 100/138/11) to assess the impact of the minewater discharge. Assessment of biological impact was complicated by not having a 'clean' site upstream available for comparison. Nevertheless work undertaken by the patch ecologist enabled the site to be put forward onto the National Ranking List of abandoned mine discharges to obtain funding for further investigation and remediation.



Hockery Brook upstream of culvert under A577

Foot and Mouth disease

The outbreak of Foot and Mouth disease in February 2001 has had a profound impact upon the work of the Agency and on the work of the Fisheries, Ecology and Recreation Department. On 23rd February 2001, all non-emergency work ceased

on farmland in an effort to prevent the Agency's staff from inadvertently spreading the disease. The disease appeared in South Area in Cheshire on 15th March 2001 and has been confirmed on farms in many parts of the County (e.g. Nantwich, Northwich, Knutsford and Sandbach). To date there have been 21 cases of the disease confirmed in the Area, with 60 dangerous contact cases.

This has had two main impacts on the work of Ecology. Firstly, much routine biological survey work has been cancelled in rural areas and the time resource re-allocated to other issues unaffected by the disease. Secondly, the Agency authorises the disposal of certain substances to land under the Groundwater Regulation (1998). This includes the remains of burnt animal carcasses etc. and of spent disinfectants. In authorising these processes the Agency has a duty to protect sensitive ecological sites and features and the Ecology section has been screening such proposals for potential impacts and providing advice on any ecological issues.

FLOOD DEFENCE / WATER RESOURCES

Irwell Springs

Development proposal for houses at the head of the R. Irwell in Rawtenstall, Lancashire. The site was previously used as a mill and the river is in concrete and stone lined channel. The original proposal was to culvert the river. Negotiations have enabled an amended design to be put forward to return the watercourse to a more natural channel as a focal point of the development.



Irwell Springs Weir, Bacup December 1999

PARTNERSHIPS

Meres and Mosses - Cheshire, Shropshire, Staffordshire.

The bid for Heritage Lottery Funding aims to enable further work to ensure that the Meres and

Mosses Natural Area is better understood, more accessible where appropriate (both intellectually and physically) and is better managed for the benefits of people and wildlife.

This is an ongoing project that began in 1999.

The partnership is a joint venture between the Environment Agency, English Nature, Countryside Council for Wales, Shropshire CC, Staffordshire CC, Cheshire CC, Shropshire Wildlife Trust, Staffordshire Wildlife Trust and Cheshire Wildlife Trust.

Key Points

The project has the following aims:

- To conserve and enhance the priority areas of the Meres and Mosses Natural Area, aiming to achieve a sustainable and functioning landscape;
- To raise public awareness and understanding of key issues in the Natural Area and promote appreciation of the area for recreation;
- To assist understanding of the complex interactions of water, geology and land management within the Meres and Mosses.

Some examples of what the project will address, for the benefit of landowners, farmers, planners, decision makers, recreational users and the general public, are listed below:

- Analyse and interpret existing water quality data;
- Model hydrogeological conditions for a range of Meres and Mosses;
- Maintain or enhance species and habitat diversity and landscape character;
- Protect the archaeological resource;
- Have regard for the value and distribution of known peatland resources in an Minerals Planning context;
- Raise public awareness of the heritage value of the Meres and Mosses;
- Make available interpreted data for further study;
- Raise awareness of the threats to the natural area, broker solutions and develop opportunities;
- Establish pilot projects.

Cheshire Lapwing Lifeline

Breeding Lapwing numbers are declining across the UK and the species is recognised as one of Conservation Concern under the UK BAP. The picture is repeated in Cheshire where the RSPB have

identified the decline in breeding skylark numbers in the County as a key issue. This has led to the formation of the Cheshire Lapwing Lifeline project partnership including the Agency, RSPB, National Framers Union, Countryside Landowners Association and Cheshire Wildlife Trust. This partnership aims to reverse the steep declines in bird numbers.



for birds
for people
for ever

Cheshire Skylark and Lapwing Lifeline

**ACTION FOR
LAPWINGS AND SKYLARKS
ON YOUR FARM**

**Free 24-hour service
CALL 01484 861148**




Monday-Friday, 9 am-5.15 pm,
answerphone at other times

The project centres upon the use of selected volunteers, who receive training in the delivery of land management advice for Lapwings. The project is promoted by a leaflet and media coverage. Farmers who then register with the project will be visited by a volunteer advisor who will write a management plan to benefit Lapwing numbers on the farm. The most promising sites will then be followed up by further visits to promote Countryside Stewardship funding as a means of securing appropriate longer-term management. The project commenced in early 2001 with the publication of a leaflet, advisory manuals and the promotion of the scheme to farmers. Unfortunately, the outbreak of foot and mouth disease is likely to temporarily halt progress with the project.

Cheshire Sustainable Rivers Project

The Sustainable River Management project was developed by the EA and FWAG to show how rural land use activities can affect the river catchment and whole farm environmentally responsible farming can have benefits for various EA functions as well as landowners.

Activities described collectively as rural land use have a major impact on freshwater systems. Many Agency functions have to tackle such problems after the river has been affected. To tackle such problems at source and on a catchment basis, this project aims to provide a mechanism for influencing farming practices. The project commenced as a regional initiative in 1997/8. This was carried out by targeting a catchment in each Area of the North West and collaborating with the Farming and Wildlife Advisory Group (FWAG) as a conduit into the farming community. After reviewing the success of the project in 1997/8 and 1998/9 the project was continued in 1999/2000 and 2000/2001. Over this period the project has been funded regionally through national Make Difference (MAD) funds. The project has been extremely successful and has now raised £1.8 million of enhancement works through Countryside Stewardship and partnerships on the target catchments in the region.

In South Area the project is now being targeted at key Meres and Mosses: Chapel Mere, Bar Mere and Norbury Mere, with single visits planned for Oak Mere, Quoisley Mere and Comber Mere. These sites were selected following consultation with the Area Stillwaters Group, which includes representatives from relevant Agency functions (Environment Protection, Marine and Special Projects, Ecology, Fisheries, Flood Defence) and English Nature and Cheshire Wildlife Trust.

The Cheshire Meres and Mosses are recognised as being perhaps the most important nature conservation assets in Cheshire and this is reflected in many of them being of designated national and/or international importance. The Meres are heavily influenced by agricultural practice, which predominates around them and their catchments. Sometimes agricultural practices have resulted in overgrazing, poaching of soils and increased nutrient levels to the detriment of the nature conservation interests. It is hoped that the sustainable rivers project can tackle agricultural issues in the catchments of key meres by targeted agricultural environment schemes to reduce grazing pressure and nutrient inputs.

APPENDIX

CONSERVATION RESOURCES IN THE NORTH WEST

DID YOU KNOW ?

- There are 409 Sites of Special Scientific Interest (SSSIs) in the Region.
- There is over 534km of Cumbrian river designated as SSSI. This includes the Derwent and Cocker, Eden and Eamont, Ehen and Kent river systems.
- Only 38% of the Region's rivers can be classed as being in a 'semi-natural' condition, as determined by the Agency's River Habitat Survey work in the Region.
- There are 9 internationally recognised and protected wetlands classified as Ramsar sites under the international Ramsar Wetlands Convention.
- The Region has approximately 250 000 Ha of land designated, or about to be designated, as internationally important for conservation under EU Directives. This includes 22 candidate Special Areas for Conservation (SACs) under the EC Habitats Directive (1992); and 10 Special Protection Areas under the Birds Directive (1979).
- There are 3 National Parks. The whole of the Lake District, and parts of the Peak District and Yorkshire Dales National Parks.
- There are 4 Areas of Outstanding Natural Beauty (AONB): the Forest of Bowland, Solway Coast, Arnside and Silverdale, and the North Pennines. These cover approximately 1700 square kilometres in the Region.
- There is a Heritage Coast site at St. Bees Head in Cumbria.
- Hadrians Wall in Cumbria is a World Heritage Site
- It includes parts of the North Peak and South West Peak and the whole of the Lake District Environmentally Sensitive Areas (ESAs).
- It contains two Community Forests: the Mersey Community Forest and the Red Rose Community Forest.
- There are over 1000 Scheduled Ancient Monuments (SAMs).
- The Region is important for the following internationally important species and habitats covered by the EC Habitats Directive:
 - (i) Habitats Dystrophic, oligotrophic, and mesotrophic lakes, rivers with water crowfoot vegetation, coastal dunes, estuaries, transition mires and quaking bogs, large coastal bays, mudflats and sandflats, raised bog, blanket bog, coastal shingle vegetation, coastal marshes, and hard water springs.
 - (ii) Species Yellow marsh saxifrage, narrow-mouthed whorl snail, otter, freshwater crayfish, allis shad, twaite shad, salmon, river, brook and sea lamprey, bullhead, and great crested newt.
- The Region contains important resources of the following priority habitats and species listed under the UK Biodiversity Action Plan for which the Environment Agency has special responsibilities:
 - (i) Habitats Reedbed, coastal and floodplain grazing marsh, mesotrophic lakes.
 - (ii) Species Water vole, Otter, Bittern, Sand lizard, Allis and Twaite shads, Vendace, Netted carpet moth, Sandbowl snail, Medicinal leach, Freshwater pearl mussel, Depressed river mussel, Slender naiad, Yellow marsh saxifrage, Natterjack toad, Marsh fritillary, Freshwater crayfish, Harbour porpoise, Great crested newt, Petalwort, River jelly lichen and Floating Water Plantain.

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