

EA REC+NAV Box 1

Conservation, Access and Recreation

report 2000/2001



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AGENCY

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report 2000/2001



Using environmentally friendly techniques to carry out habitat improvement works in Forge Valley as part of the Upper Derwent enhancement project (see main report)

EA - Recreation & Navigation



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Please note since the formation of this report, the Ministry of Agriculture, Fisheries and Food (MAFF), the Farming, Rural, Conservation Agency (FRCA) and parts of the Department of the Environment, Transport and the Regions (DETR), have reorganised to form the Department for Environment, Food and Rural Affairs (DEFRA).

Photography

North York Moors National Park (page 1); Alistair and Sarah Moore/U Canoe (page 4); Apex Photo Agency Ltd (pages 6, 12, 20, 24, 28 and 34); Russell Long/Environment Agency Southern Region (page 30); Environment Agency Regional offices (all other photos unless stated)



Foreword

It has been a challenging year for the Environment Agency, especially for those involved in the direct delivery of conservation, access and recreation. Whilst much of our operational work was disrupted by the wide-scale flooding during autumn 2000 and the outbreak of foot and mouth disease in early 2001, our strategic work has continued with great success.

This reporting year saw the passing of two notable pieces of environmental legislation: the Countryside and Rights of Way Act 2000 (CROW Act 2000) and the EU Water Framework Directive. These are not only important in supporting statutory designation and the identification and achievement of high ecological targets, but also in heralding a new era of Government commitment to enhance nature conservation. This commitment was echoed in the publication of the Government's policy document on inland navigation *Waterways for Tomorrow*, the first in over 30 years, and the Agency's valued contribution to the *Review of Salmon and Freshwater Fisheries in England and Wales* and the Environment Select Committee, *Inquiry on Waterways*.

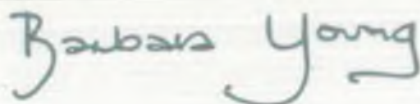
These statutory reviews recognised the need for additional funding to be given through grant-in-aid, to progress repairs to our operational infrastructure, especially along our navigations. Through our asset management plans, we have been able to develop a programme of work to ensure our structures are in good working order and meet the high standards required for health and safety legislation.

Along with these developments, we have continued to make strides to promote our duty to conservation, access and recreation through local initiatives and collaborative partnerships. One such high profile programme - the *Thames Ahead Initiative* was launched this year. Its aim is to rejuvenate the River Thames by raising its profile as an important contributor to the quality of life of those who use it. Following on from the successes of this initiative, we look forward next year to the appointment of Waterway Managers on each of the Thames, Medway, Nene and Ouse rivers. We eagerly await the opportunities these appointments will create and anticipate reporting successes in the future.

Through this year, we have continued to be successful in generating interest and funding for biodiversity project work and are major contributors to three large EU-supported projects on river, coastal habitats and flood plains. Along with funds received from Government, we have used money from rod licence sales to enable projects focusing on and involving local communities to be undertaken for the benefit of all. These partnership projects create quality recreational facilities, improve environmental awareness and create better fishing. The success of the functions involved in the delivery of conservation, access and recreation work in achieving external funding is noted and demonstrated throughout the report.

Our work with other agencies has, as always, been invaluable in achieving our goals. The development of working secondments, signing Memoranda of Understanding (MoU) and publishing joint advice, reflects the value of the Agency's contribution, and its staff's skill and enthusiasm. The progress of water companies' schemes required under the Asset Management Plan round 3 (AMP 3) programme have provided additional benefit to wildlife conservation and recreation by improving water quality and restoration of water levels.

With the Agency's clear commitment towards the environment, enhancing biodiversity and improving people's quality of life, I look forward to building on our successes in the coming years. I hope you find the Environment Agency's sixth annual *Conservation, Access and Recreation* report informative.



Chief Executive, Environment Agency

A national summary of conservation, access and recreation work throughout the Agency



Promoting
enjoyment on our
navigations

Increasing our profile

Customer liaison

Our six-monthly newsletter, *River Views*, is an important communications tool and welcomed by our licence payers. Also as part of our aim to work closely with recreational water users or those with businesses on our waterways, we held a number of 'Briefing' sessions led by the Chairman and Chief Executive. These were in addition to our usual navigation user group meetings. Next year we will be looking at other ways of improving our communications with the media and waterway users. We intend to build on our existing communications work to keep all our stakeholders up-to-date with our activities.

The continuing Angling and Canoeing Liaison Group 'user' meetings chaired by the Agency are an attempt to reduce angler/canoeist conflicts and achieve increased access through voluntary agreements. As part of this work, we also undertook research into the effects of canoeing on fish stocks and angling. The final report concluded that, on the basis of the evidence available, canoeing in general has little impact on fish stocks but it can impact on angling. This has proved to be a controversial finding and we intend to follow up this work with more research.

Looking after waterways

The year 2000 was very positive for UK waterways with a wide recognition of their value within people's quality of life. The publication of the Government's first policy document on inland navigations for 30 years - *Waterways for Tomorrow* - raised the profile of our waterways and examined how they are used and managed. We are working with the Government and others to implement the recommendations and promote this renewed focus on waterways.

Following the publication of *Waterways for Tomorrow*, the Government Environment, Transport and the Regions Select Committee announced an inquiry into "The Potential of Inland Waterways". The Agency submitted written evidence and was also called to give oral evidence. The Committee report (issued in March 2001) supported our integrated approach to managing our navigations.

The Agency's navigation responsibilities were also reviewed as part of the Government quinquennial Agency review and the final report for this is expected to be published late in 2001.

Partnerships

We continue to have good working relationships with our major partners and currently have secondments from the Agency to English Nature and the RSPB. Partnerships at a local level provide most opportunities for 'grass-roots' projects that benefit wildlife conservation and we are pleased that more than 250 such schemes were under way in 2000/1. This reflects the enthusiasm and skill of our conservation staff and that of the statutory and voluntary sectors with which they deal.

Within recreation, our theme of working in partnership has continued and developed throughout the year. Our Memorandum of Understanding (MoU) with Sport England and the Countryside Agency was consolidated in a joint workshop, and the preparation of a new joint action plan covering work of mutual interest. As part of this we have contributed to Sport England's Lottery guidance, and shared information and research.

Our relationship with Sustrans (Sustainable Transport) was also consolidated by an MoU signing, which will help us deliver practical transport solutions using suitable stretches of Agency land. This will be followed up the developing of a model legal agreement.

One of our most proactive partnerships is with British Waterways, which we have been working with, alongside others including the British Marine Industries Federation, on safety advice for boaters (*The Boaters Code*). We have also supported the hire-boat trade as co-sponsor of Waterway Holidays UK (a marketing initiative for the waterways). A second workshop for the hire industry promoted Waterway Holidays UK, together with a hire-boat grading scheme and training initiatives.

Together with British Waterways, the Agency co-sponsors the Boat Safety Scheme, which went through a thorough review during 2000. The resulting recommendations will be implemented during 2001/02.

A specific "win" in our partnership with British Waterways has been a successful bid to the Treasury's "Invest to Save" budget. We secured £400,000 to jointly fund developing e-commerce facilities for navigation licence sales, and also developing a comprehensive waterways website.

The Association of Inland Navigation Authorities (AINA), of which the Agency is a sponsoring member, has developed significantly with the appointment of a Research & Administration Manager, and funding for specific research projects by the Department of the Environment, Transport and the Regions (DETR). Through AINA, we want to share information and promote good practice in waterway management.

Landscape and archaeology

With the increasingly high profile of ecology and wildlife conservation, it is vital to emphasise that we have equally important responsibilities for landscape and archaeology. To reinforce this message, we have received our internal guidance and will be running refresher-training courses for archaeology in 2001/2.

Our input to landscape design for flood defence works continues to attract compliments, not least those associated with river rehabilitation. Several feature in our attractive publication *River Rehabilitation: practical aspects from 16 case studies*, which was launched at the British Festival of Science in September 2000. In addition, the Maidenhead Flood Alleviation Scheme has had substantial landscape and archaeological input at the design and construction stages.

Strategic policy

"An enhanced environment for wildlife" is part of the Agency's *Environmental Vision*. This reflects the internal changes in emphasis and the external expectations of our action to further conservation. We will have to work hard to gain the support and necessary resources to meet these expectations. Reflecting this increased profile, we have brought the responsibilities for conservation and biology together nationally, providing a much-needed focus for our ecological policy and science base.

Encouraging people to understand, appreciate and enjoy waterspace through recreation underpins the Agency's recreation and navigation work. Our *Environmental Vision* reflects this, specifically in two of its themes - A Better Quality of Life, and Improved and Protected Inland and Coastal Waters. Over the coming year, we will be playing our part in taking the Vision forward. This work will also encompass our aspiration for all waters in England and Wales to be capable of sustaining healthy and thriving

fish populations, and everyone will have the opportunity to experience a diverse range of good-quality fishing.

We also have a duty to establish and maintain Regional Fisheries, Ecology and Recreation Advisory Committees, and to consult these committees about how the general duties are performed. The Agency's fisheries-management function is integrated with wider water-management responsibilities, including regulation of discharges into and abstraction from surface waters, flood defence, navigation, recreation and general conservation activities.

UK Biodiversity Action Plan (UK BAP)

We published *Focus on Biodiversity* in July 2000. This documents our responsibilities to wildlife conservation and the ways in which we have contributed to the first five years of the UK Biodiversity Action Plan (UK BAP), notably for the 39 species and five habitats of wetland character for which we have lead responsibility. It was well received and won a *Communications in Business Award* for Excellence for design and contents. A CD-ROM version, including a Welsh language version, has also been produced.

Major effort in 2000/1 was targeted on the following species: water vole (including reintroductions), otter (otter survey of England), southern damselfly (distribution surveys), shad (including discovery of new spawning grounds), freshwater pearl mussel and triangular club-rush.

We hope to take forward more work on eutrophic lakes, saltmarshes and mudflats, and reinvigorate our lead responsibility on chalk rivers in 2001/2.

Legislation

December 2000 was notable for two pieces of legislation - one domestic, the other European - that will have profound influences on wildlife conservation, access and the profile of ecological assessment and monitoring.

Domestic legislation - the Countryside and Rights of Way Act 2000

The Countryside and Rights of Way (CRoW) Act 2000 strengthens the provisions for ensuring positive management and protection of Sites of Special Scientific Interest (SSSI) in England and Wales. It also introduces provision for greater access to designated land and water. We will have to take ever-greater steps to build on our already excellent track record of helping to conserve and enhance native biodiversity and give expert advice to help further access for waterspace recreation. This was highlighted in our written and oral evidence to the House of Commons Select Committee Inquiry into UK Biodiversity in May and June 2001 and in the DETR-led and Agency sponsored Access to Water research project, discussed later in this summary.

A whale chine cycle rack – locally designed and handcrafted by a local blacksmith. (see Island Chine's enhancement project in main report)



European legislation - EU Water Framework Directive

The EU Water Framework Directive means a major shift in emphasis, requiring environmental targets to be identified, then associated action is geared to achieving good or high ecological status. There is much preparatory work to be done, but a fully integrated approach to catchment management - using pollution prevention and control measurement, together with sustainable abstraction and flood management - will provide major benefits for wildlife and people's enjoyment of our rivers, lakes, wetlands, estuaries and coasts.

Birds and Habitats Directives

Implementing the Birds and Habitats Directives continues to be the biggest single influence of wildlife conservation in Agency activities. Doubling the number of candidate Special Areas of Conservation (cSACs) has meant a major new workload for us, and we have secured an extra £2 million grant-in-aid annually for three years from 2001/2 to help us cope. Working closely with English Nature and Countryside Commission for Wales (CCW) has been critical to managing the enormous complexities and major uncertainties involved with implementation.

Fisheries review

The Government's independent review of salmon and freshwater fisheries in England and Wales provided a unique opportunity to shape future policy. We are looking forward to the prospect of freshwater fisheries management being developed to offer the best possible fishing opportunities while ensuring the sustainability of our natural fish stocks.

The Review Group's report, which contained 195 recommendations, was published in March 2000. The report was well received both externally and within the Agency. Many of our aspirations were supported, such as the need for additional funding.

Following comments on the review, the Government published its response in January 2001. Most recommendations were accepted and will be progressed, with a few requiring further consideration. We are developing a timetable for implementing the recommendations that fall within our remit.



Planting reeds to enhance biodiversity and improve our habitats

Education, research and promotion

The Access to Water research project

Following the introduction of the CRoW Act, to further the debate about water access, the Agency helped sponsor a major DETR-led research project on access to recreational waterspace. Late in 2000, consultants led by Brighton University were appointed to carry out a comprehensive review to establish facts on the need for and availability of waterspace for recreation. The research project will also provide a national database on water-based access and recreation. The Agency is on the Steering Team and hopes to be a key player in taking the research results forward. The final report is expected to be published in the very near future.

Databases

Our River Habitat Survey (RHS) database continues to grow, with more than 17,000 sites now included. We have developed numerous catchment-based applications and are now working to integrate it with flood-defence information and modelling systems. We tested RHS in Finland and trained 25 Finnish environmental scientists to use it. Further cross-comparison is being carried out in Norway, France and Austria as part of its development as a standard EU method for assessing the hydromorphological character of rivers, as required by the EU Water Framework Directive.

We continued to develop our Biology for Windows database. This will hold all our

invertebrate data collected as part of our estuarine biological sampling programme. It will be an invaluable source of information for the National Biodiversity Network (NBN).

We intend to develop a database for our UK BAP species and habitats, and to link this with our Habitats Directive database. In both cases, close links with English Nature and CCW datasets is essential.

Riverside Explorer

Our *Riverside Explorer* educational CD-ROM, based on RHS database information, was launched in May 2000 and distributed free to all 28,000 schools in England and Wales. A Welsh language version was produced for schools in Wales. It has proved very popular and won a prestigious International Electronic Multimedia Award (EMMA) for the category "Education and home-learning, 12-18 years". It was also highly commended by the Geographical Association, which described it as an "inspirational interactive CD-ROM", and highlighted its "sumptuous interactive glossary linking text to video sequences". This latter aspect has attracted the attention of several overseas countries, which now use it for English language tuition as well as a teaching aid for studying rivers.

Teachers and pupils from 15 schools are now developing case studies to improve the applications of *Riverside Explorer* for use on our web-site.

Restoring fish habitats

The fisheries capital programme continued the Agency's work of restoring fish habitats in rivers, including improvements to spawning and nursery areas. This was in addition to our routine expenditure on fisheries in England and Wales. The projects aimed to benefit anglers, particularly in urban areas, to encourage youngsters and, wherever possible, cater for the disabled. On many projects we worked in close partnership with angling clubs, local authorities, conservation groups and others to make the most of available resources. We created new angling opportunities at 31 urban sites last year.

We often follow habitat improvements with a stocking programme. Around 1.8 million fish were stocked during the year. The projects restored fish populations to 92km of previously "fishless" or low-value fisheries, with the aim of

restoring fish populations that will thrive in sustainable fisheries.

Following research into the effects of a close season on fish stocks, breeding waterside birds and the wider environment, the Agency consulted on a proposal to dispense with the canal close season. The findings were submitted to the Fisheries Legislative Review Group in January 1999 for consideration in the broader context of close seasons. Two byelaws were promoted to dispense with the close season on canals in England and Wales respectively. The former received Ministry of Agriculture Fisheries and Food (MAFF) approval in March 2000 and the latter in March 2001.



Face to face with nature – promoting environmental education

Financial resources

Funding

The Agency's recreation and navigation work has always suffered from under-funding. During 2000, bids to the DETR for additional funding to repair our navigation infrastructure resulted in an extra allocation of £2 million. Baseline navigation grant-in-aid has also been increased by £1 million for 2001/02, the use of a navigation asset management plan demonstrated this need convincingly. We will continue to use this tool in managing our navigation assets.

We have not, however, just been relying on Government grants to supplement our resources. As part of our Thames Ahead project we have gone into partnership with The Waterways Trust, appointing a fundraiser specifically for the Thames. We plan to extend this partnership to other navigation and recreation projects.

Direct expenditure on fisheries management by the Agency is approximately £22 million annually, of which about two-thirds is raised by licence duties from anglers and netmen. The remaining third is provided in the form of grant-in-aid from Government, a reflection of the wider social benefits that accrue from fisheries-management activity.

During the year, MAFF confirmed the plan to reduce grant-in-aid for fisheries in England by £1.5 million in 2001/02. We argued strongly that additional funding was required rather than a cut, and feared our work to conserve salmon stocks would be greatly reduced as a result. Following the Review Group report and the Comprehensive Spending Review carried out in 1999/2000, MAFF announced an increase in funding of £3 million for 2002/3. This will restore the £1.5 million cut in 2001/02, and provide an additional £1.5 million to fund work on coarse fish and salmon enforcement.



Rod-fishing licence duties were reviewed during 2000/01, and Ministers approved a £1 increase in price for both salmon licences and coarse and trout licences to take effect from 1 April 2001. The proposals drew only 11 objections from interested parties. To help attract juniors into fishing, the cost of the fishing licence for 12 - 16 year olds was halved to £5.

Our internet fisheries information is second only to our Floodline pages in terms of website popularity. Anglers can also now buy rod-fishing licences on the internet.

*Adding to
environmental
change*

Anglian Region

This year, we have achieved enormous success in securing partnership funding for a significant number of projects. In our Central Area, the construction of a new navigation lock on the River Ouse was partly funded by European funding and in the Eastern Area of the region, 37 collaborative projects were achieved using £80,000 of Agency funding alongside other external funding. These projects have all enhanced the physical and social environment considerably and were undertaken in a sustainable way.

Improvements to access on several sites have also been a theme of this year. At Maxey Cut, Peakirk Bridge, Nunton Road Bridge, Elton Road Bridge and at Deeping St James, a series of stiles were constructed to reduce the damage to fences whilst still encouraging people to use public footpaths. Along the River Nene at Oundle, six kissing gates were also installed in collaboration with Northants County Council, which also contributed towards the *Nene Valley Way* leaflet, published to promote access in the area.

With regard to conservation, again collaboration has been a major theme. Work between the Agency and the local Wildlife Trust to improve the Harper's Brook for otters is one good

example. The main river section of the Brook was surveyed for signs of otters, together with existing sites and habitat important for them. Proposals to improve the Brook included tree planting, enhancing existing woodland and building otter holts. Still sticking with the theme of otters, the Agency, in collaboration with the Anglian Otters and Rivers Project, undertook a programme of mink control in the Waveney Valley. The main reason for this was to benefit native riparian wildlife such as water voles, an action from the national *Water Vole Biodiversity Action Plan*.

Our work, however, has not been confined to rivers. Advice was given to Crowland Parish Council about converting a small Lido into a wildlife pond. Due to lack of funds the Council was unable to provide upkeep of the Lido and requested Agency advice as to what they could do with the empty site. The concrete liner has formed an excellent base for the pond, and hardcore and ballast have been used to partially in-fill the pool and provide the pond's shape. As a result of this initial project, a Crowland Wildlife Group has been established to continue its work, as well as identifying future potential local conservation projects.

Construction of a new lock at Denver
(see main report Relief Channel navigation)



Midlands Region

During 2000/01, Midlands Region has been much involved with wetland creation and restoration projects. As well as *Gresham Marshes* (see main report) and the *Severn Valley Wetlands* (see main report), the Agency has constructed a wetland area on the River Salwarpe near Droitwich, for dragonflies and amphibians, and a pond beside the Onny at Craven Arms as an educational facility. Appointing a project officer for the Severn and Avon Vales (see main report - *Minsterworth Ham*) has allowed us to be involved, in partnership with landowners and Wildlife Trusts, with several wet grassland restoration schemes, often making use of Countryside Stewardship. On a smaller scale, floating reedbeds have been introduced to several sites (for example, *Coton Hall* near Tamworth (see main report) and Watermead Country Park in Leicester) to enhance the habitat and provide cover for fish.

At Llandrinio, an archaeological survey linked to flood-defence works provided, for the first time, evidence of a former motte and bailey castle, probably Norman. Work around the medieval Packhorse Bridge at Bakewell provided samples for environmental archaeologists interested in pollen, seeds and bones.

Despite severe financial constraints on projects during the year, staff continued to be involved in environmental improvements such as flood defence and water resources schemes, ensuring conservation and recreation remain important considerations in these large-scale civil engineering developments.

Other notable successes include improving facilities for disabled anglers at eight stillwater sites, identifying 10 new circular walks on the River Avon, supporting a campaign to get youngsters involved in fishing, creating a website to promote the Severn Way and building a bird hide on Agency land overlooking our river purification lakes at Lea Marston.

The Agency is also a member of a partnership bidding for three-quarters of a million pounds of Heritage Lottery funds as part of a £2 million project to renovate and develop the Agency-owned historic Lydney Docks complex.

The region continued to provide a focus for visitor safety policy and guidance as a member of several national countryside and water-safety groups.

The opening of a new fishery by Sir John Harman, Agency Chairman at Coton Hall (see main report)



North East Region

Work with external partners has been invaluable to the success and completion of our work this year. The Wear Riverbanks Project in Northumbria successfully obtained £59,000 of landfill tax funding from the Northumbrian Water Environmental Trust. This project, developed in association with the Groundwork Trust, local authorities, Northumbrian Water and Monsanto, has a programme of giant hogweed control in the Wear catchment and habitat enhancements on a number of reaches. At Pocklington Canal in Dales area, work with British Waterways, English Nature and Pocklington Canal Amenity Society has produced interpretation material to promote the important heritage features of the canal, its SSSI status and details of its recent restoration. Minor collaborative projects have also taken place. A project to create a boardwalk at Rossett Acres in Harrogate was completed by Open Country with the aid of Agency funding to provide "access for all" to a local wetland area.

Internal collaborations have also been important. *The Crimpsall scheme* in central Doncaster received the Institute of Civil Engineers Yorkshire Association Award 2001 for its innovative design (see main report). In Tyne and Wear, the River Don Water Vole Initiative, funded by the Agency and English Nature, has provided evidence that has been used by the South Tyneside Council to propose notification of an extensive reach of the River Don as a Local Nature Reserve specifically

for water vole. Work was also completed on *The Native White Clawed Crayfish - Project 2000*, funded by the Agency in conjunction with external partners (see main report).

Environmental improvement and habitat-creation projects have been a theme of this year. Projects based in Upper Wharfedale, *Upper Derwent* (see main report) and the Upper Swale in Dales Area and the River Team in Northumbria aim to ensure the environment is protected for future generations.

Recreational access was also improved by projects completed in York along the Ouse and Foss to develop riverside walks, and in South Yorkshire through the substantial completion of the Millennium Commission-funded Trans-Pennine Trail, much of which is routed along river corridors and flood banks in the area.

Future work is already being planned. It is hoped a third phase of funding can be secured to carry on the work already started along *the Wansbeck estuary* (see main report). With the aid of Sports Lottery funding, we hope a Community Lake at Darfield, South Yorkshire will provide "access for all fishing", specifically relating to disabled fishermen. On the Dearne Valley, the Agency, RSPB, English Nature and the Wildlife Trusts are working together on a washlands project. This is still very much in the planning stage, but the ecological benefits are expected to be huge. The RSPB is targeting it as a priority site.

An aerial view of Crimpsall Sluice rock chute (see main report)



North West Region

The North West Region has spent an industrious year collaborating with external partners to promote recreation and enhance biodiversity across the region. Planned conservation work was affected at the end of the financial year, however, due to the onset of foot and mouth disease, particularly in Cumbria.

With regard to recreation and access, we have worked with bodies such as Groundwork, Sustrans and various local authorities to deliver cycle paths, footpaths, improved access to watersides and Park Lake regeneration.

Similar collaboration is helping to deliver conservation objectives for Biodiversity Action Plans and Habitats Directive European Sites, including the *Eden Salmon tracking study* (see main report), which will provide invaluable information to guide future management options. The ways in which land use can be influenced to enhance biodiversity is also being explored. The LIFE *ECOnet project* (see main

report) brings together a number of partners and aims to explore the best ways of creating a network connecting areas for wildlife across Cheshire.

More information about the regions conservation and recreation activities can be found in the *North West Regional Conservation, Biology and Recreation Annual Report*, available from the regional offices.

Recreational improvements as part of the Platts Lodge Urban Fisheries project in Accrington (see main report)



Southern Region

In 2000, Southern Region launched its first *Recreation Action Plan*. Written in response to an earlier consultation document, this outlines the region's recreation targets for the next five years. In line with the Agency's Vision of "a better quality of life" and "improved and protected inland and coastal waters", the purpose of the *Action Plan* is to help achieve lasting improvements to water-related recreation in the region. Activities this year included support for "access for all" initiatives on local nature reserves and the promotion of traffic-free cycle routes on the Isle of Wight.

A wide range of projects to promote and enhance natural beauty were carried out this year (see main report - *Island Chines enhancement project* and *Pevensey Levels restoration project*). These and other projects focus on contributing to the Agency's Vision and Biodiversity targets through partnerships and by making use of external funding sources.

The severe flooding across the region in 2000 saw staff involved in emergency works and contributing to flood-alleviation studies to ensure that future proposals and works are sustainable and of maximum benefit to wildlife. Staff continued to liaise with Flood Defence colleagues to ensure routine maintenance works were carried out in an environmentally sensitive manner. Conservation staff also provided

professional advice to the public and responded to increasing numbers of planning referrals, including the Dibden Bay Port proposal in Southampton water, which required significant staff resources.

The Habitats Directive continued to be a strong driver for the region in 2000/01. Our close relationship with English Nature was further strengthened through this collaborative project. Despite considerable resource pressures, stages 1 and 2 for the Review of Consents, identifying permissions with potential to cause an impact, were progressed on schedule for all Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites within the region.

Island Chines enhancement project – a seat carved out of local purbeck limestone (see main report)



South West Region

The millennium proved to be a busy year for conservation and recreation in the South West, with several innovative partnership projects. One of the highlights was a boat trip around Poole harbour for 600 school children, many with learning difficulties. They encountered lobsters, spider crabs and rag worms during the visit - a memorable experience for Agency staff and children.

Sadly, with the end of the millennium, one of our student partnerships came to an end. Over the past four years, Cornwall Area has employed students from the University of Plymouth and Cambourne School of Mines - Exeter University, working alongside fisheries staff as part of its routine survey programme to *study of non-commercial fish species in Cornwall Area rivers* (see main report). As well as assisting with the fisheries survey, the students carried out River Habitat surveys and recorded notable species, particularly bullhead, lamprey, otter and dippers. So far five degree projects have been published and one Master's degree thesis - a valuable approach to integrated survey.

Much work has focused on biodiversity. The South West biodiversity partnership, chaired by RSPB, worked with Government Office Southwest to ensure appropriate recognition of wildlife in the new Regional Planning Guidance for the South West. Locally, the Agency contributed to numerous biodiversity initiatives, in particular the Dart biodiversity project. A joint approach with Dartmoor National Park has led to improved land management alongside the river, and enhancement of the river channel for salmon and trout. Especially pleasing was the positive response from Dartmoor Prison Farm, which has reduced its use of inorganic fertiliser, reduced run-off and benefited their local brook.

The partnership theme was also very strong in the recreation projects delivered, with footpaths built from recycled materials from flood defence projects, access provision and disabled viewing areas (see main report - *Bude Footbridge partnership project* and *Huntsmill National Nature reserve (phase 2)*).

Bull head (Cottus gobio) – subject of a study of non-commercial fish species in Cornwall (see main report)



Thames Region

2000/01 was a landmark year for conservation in Thames. It saw the publication of the region's *Biodiversity Strategy and Action Plan* and the highest-ever-recorded expenditure on habitat creation. The strategy is the product of two years' continuous data-gathering and contains distribution information and LEAP (Local Environment Action Plans) based actions for 53 of the 82 BAP priority species and habitats that occur in the region. The strategy is now used by Agency staff as a guide to future priorities for biodiversity action across the region.

Annual expenditure on proactive conservation-related work exceeded the £2 million mark for the first time, thanks to the Maidenhead, Windsor and Eton Flood Alleviation Scheme (recently renamed the Jubilee River). Elsewhere in the region, £650,000 was spent on 75 separate conservation projects, and this attracted £883,000 of partnership funding from more than 50 external organisations and numerous private landowners. Significant amongst these projects were: completion of the award-winning *Shrike Meadow* wetland creation scheme near Oxford (see main report); the de-culverting and restoration of the *River Ravensbourne at Norman Park* (see main report) and the creation of 1.7km of ditch for water voles at the Inner Thames Marshes SSSI.

Pond dipping at the opening of View Island (see main report)

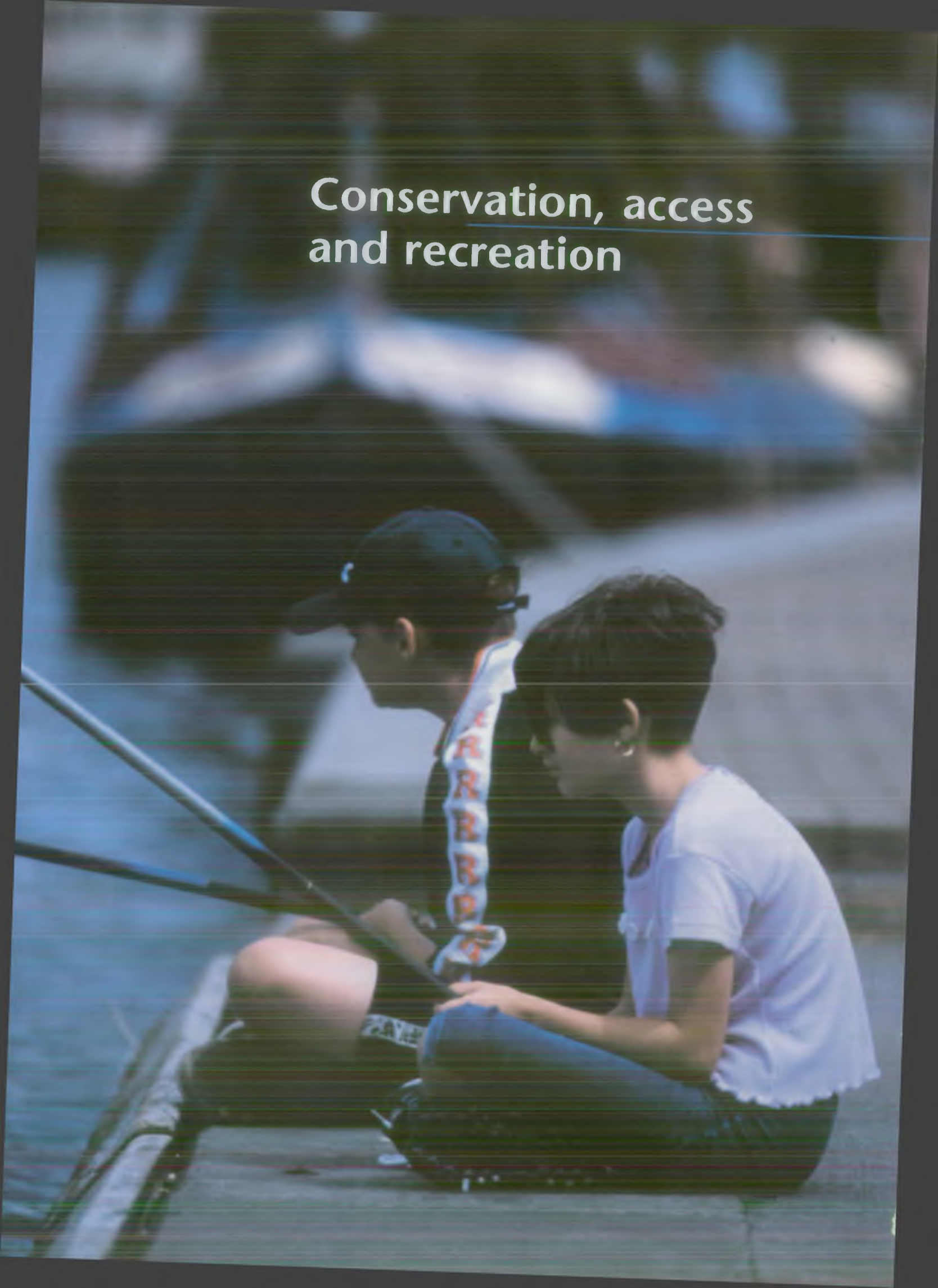


With regard to recreation, Thames Region was involved in 22 projects during 2000/2001. This amounts to a total of £420,000 worth of new recreation provision. Internal regional projects included the development and implementation of a marketing strategy for the River Thames Lock & Weir Fishing Permit, and the ongoing development of a Regional Recreation Database.

Examples of partnership projects include working with the British Canoe Union (BCU) to develop a canoe flume at Boulter's Weir, and assisting Sustrans in the implementation of a cycleway along Thameside, from Staines to Molesey, as part of the Thames Valley Cycle Route. The region also supported the "Boats on Show 2000" exhibition held at Pangbourne and continued to promote recreation on or near water by supporting Eton Excelsior Rowing Club in the building of their new clubhouse.

Following on from last year, we took part in a number of access initiatives, including the *Thames Landscape Strategy Access Guide*. An example of this was our involvement in the production of the new *Accessible Thames* leaflet, which includes routes designed specifically for those in wheelchairs. This leaflet is the first in the country to use the new "accessibility symbols system" devised by the Countryside Agency.

Conservation, access and recreation



Environment Agency Wales

This year, the conservation, recreation and navigation team has put considerable effort into improving the quality of our environmental impact assessment capability. A regional officer has been taken on to co-ordinate this activity and to promote best practice, and a plan has been implemented to provide additional resources to the area teams.

We have also continued to direct the small amount of project funding that is available to supporting work associated with the UK BAP and we are represented on the Wales Biodiversity Group.

The outbreak of foot and mouth disease has had a serious impact on our work. Some of our project work has been delayed or cancelled, and our recreational facilities have either been closed or operating a very reduced service. We plan to "catch-up" on all the delayed operations over the next two years, as well as continuing with our programme of operations.

We have continued to put a lot of effort into our review of our Dee navigation and our involvement in the "Wetlands for Wales" project.

We have made considerable progress on our internal review of consents and authorisations that is required by the Habitats Directive.

A bridge and footpath on the Otter Tail before improvements (see main report)



Medway and Swale Estuary partnership project

Type of activity the project represents	Conservation, access, recreation, education and social inclusion
Location	North Kent coast, forming part of the Greater Thames estuary
Agency Area	Kent (Southern Region)
Time taken to complete the project	Ongoing – began 1999
External partners working with the Environment Agency	16 organisations from the private, statutory and voluntary sectors (including Kent County Council, English Nature, the Lower Medway Internal Drainage Board, Medway Ports, Medway Yachting Association, RSPB, Sport England and the Kent and Essex Sea Fisheries Committee)
Funding make-up or the percentage of financial input	7.32 percent of the project costs for 2000/01 were contributed by the Environment Agency
Total expenditure	£68,3000
Functional links	Recreation, Conservation, NCPMS (National Capital Programme Management Service), Flood Defence, Tactical Planning, Fisheries and Biology
Is there a site management plan?	The strategy for the Medway and Swale estuary was produced in June 2000. A Business Plan for the financial period 2000-2003 has been prepared, which supports this

Key points

- There has been sound liaison and consultation between partners on core issues related to promoting a sustainable future for the estuary, such as capital dredging by Medway Ports and the development of Environment Agency coastal strategies. The most important element is the integrated nature of all the initiatives (economic, social and environmental). It also links organisations interested in coastal processes (flood defence and water quality).
- There is now a mechanism for the delivery of sound management in terms of the Habitat Regulations.
- A Sediment Matrix Map has been produced to assist decision-making on the beneficial use of dredgings.
- A Sea Wall Botanical Survey (the walls are SSSIs and Ramsar sites) has been conducted with the development of MEDMIS (Medway Management Information System) - a GIS tool.
- An Environmental Opportunities Map has been facilitated with "Watchpoints" - interpretation panels at key locations in the estuary.
- An estuary Code of Conduct has been developed along with a Wildlife Ranger service.

Huntspring National Nature Reserve (phase 2)

Type of activity the project represents	Conservation, access, recreation, disabled and re-engineering
Location	Huntspring River, near Bridgwater, Somerset
Agency Area	North Wessex (South West Region)
Time taken to complete the project	4 months
External partners working with the Environment Agency	Wyvern Environmental Trust, Wyvern Waste, Wessex Water, Sedgemoor District Council and the Levels and Moors partnership
Funding make-up or the percentage of financial input	£20,000 Environment Agency £120,000 Partners (£108,000 was from land-fill tax credits administered under Entrust rules)
Total expenditure	£148,000
Functional links	Area Fisheries office and Regional Public Relations
Who manages the site now?	Area Fisheries, Ecology and Recreation office
Is there a site management plan?	Yes, it was written five years ago and includes land management, fisheries and conservation management and a provision for public access. Completion of this project achieves most of the plan, bar the ongoing maintenance

Key points

- There is now a 4km stretch of newly engineered riverbank, including gentle slopes, ponds and inlets off the main channel.
- Access has been provided for the public, including pedestrian gates with wheelchair access, a bird hide was constructed, signage and health and safety improvements, and a circular walk was created.
- The project benefited wildlife and the recreational value of the Agency's only National Nature Reserve.
- The engineering phase of the project has unearthed a previously unknown Roman settlement, which is soon to be excavated.

Platts Lodge urban development

Type of activity the project represents	Conservation, access, recreation, fisheries, biodiversity and social inclusion
Location	Accrington, Lancashire
Agency Area	Central (North West Region)
Time taken to complete the project	Ongoing - began April 2000
External partners working with the Environment Agency	Groundwork, British Trust for Conservation Volunteers (BTCV), Lancashire County Council, Countryside Agency, Hyndburn Council
Funding make-up or the percentage of financial input	Contributions were received from Environment Agency, Hyndburn Council, Landfill Tax, Lancashire County Council, Parish and Community Initiative and Countryside Agency
Functional links	Recreation, Fisheries and Ecology

Key points

- Before the project, Platts Lodge was substantially a disused area of central Accrington that had no public access due to health risks associated with hazardous waste, fly tipping and the general disrepair of the site.
- The ongoing works include a large-scale clearance of the site, the establishment of a cycle route, and 12 fishing pegs with associated gravel paths to allow public access.
- Emphasis will be placed on habitat improvement, which will serve as an oasis for wildlife as well as improving recreational facilities for the residents of Accrington.
- Fisheries have been reinstating the fishery by stocking the waters with fish from Liverpool Park Lakes.
- The final product will be a recreational area in the centre of Accrington that is of benefit to the whole community, with a section for angling, an educational area that also serves as disabled access and the cycle route (National Cycle Network leg 608).



A new gravel path to allow greater public access

Meres and Mosses – West Midlands

Type of activity the project represents	Improved understanding of access and environmental management
Location	Cheshire, Shropshire and Staffordshire
Agency Area	North West and Midlands Regions
Time taken to complete the project	Ongoing - began 1999
External partners working with the Environment Agency	English Nature, Countryside Council for Wales, Shropshire County Council, Staffordshire County Council, Cheshire County Council, Shropshire Wildlife Trust, Staffordshire Wildlife Trust and Cheshire Wildlife Trust
Funding make-up or the percentage of financial input	70 percent grant request from Heritage Lottery Fund 30 percent partnership, including financial contributions and contributions in kind
Total expenditure	The revenue bid currently totals £407,000
Functional links	Water Resources, Marine and Special Projects, Environmental Protection and Ecology
Is there a site management plan?	All SSSI within the Natural Area have a dedicated Conservation Plan

Key points

- The project aims to conserve and enhance the priority areas of the Meres and Mosses Natural Area, to achieve a sustainable and functioning landscape.
- Public awareness and understanding of key issues in the Natural Area will be raised and appreciation of the area for recreation will be promoted.
- Greater understanding of the complex interactions of water, geology and land management within the Meres and Mosses should be achieved.
- The project will address many issues for the benefit of landowners, farmers, planners, decision-makers, recreational users and the general public.
- It will analyse and interpret existing water-quality data.
- Model hydro-geological conditions for a range of Meres and Mosses will be developed.
- Species and habitat diversity and landscape character will be maintained or enhanced.
- In addition, the archaeological resource will be protected and public awareness of the heritage value of the area will be raised.
- We will have regard for the value and distribution of known peat-land resources in Minerals Planning context.
- Interpreted data for further study will be made available and pilot projects established.
- Awareness of the threats to the Natural Area will be raised, then we can broker solutions and develop opportunities.

Shrike Meadow

Type of activity the project represents	Conservation, access and recreation
Location	Adjacent to the River Thames at Farmoor Reservoir, near Oxford
Agency Area	West (Thames Region)
Time taken to complete the project	2 years
External partners working with the Environment Agency	Thames Water
Funding make-up or the percentage of financial input	£35,000 Environment Agency through the Flood Defence Enhancement budget £35,000 Thames Water
Total expenditure	£70,000
Functional links	Conservation, Landscape Architecture Group, Flood Defence, Survey and Development Control
Who manages the site now?	Thames Water
Is there a site management plan?	Yes, in development with Thames Water and the Agency

Key points

- A mosaic of wetland habitats has been created on a dry grassland site adjacent to the River Thames, including a 150m reedbed parallel to the river. There are two hectares of wet grassland incorporating pools, scrapes and islands partly sown with seed from a nearby SSSI meadow. The meadow also incorporates an area of ponds and pools amongst rough grassland, and a silted-up ditch has been restored.
- The meadow was created to diversify the wildlife habitats at Thames Water's Farmoor Reservoir landholding and restore areas of wetland habitat to this area of the Thames. The scheme builds on the very successful adjacent Pinkhill Meadow wetland scheme, a collaboration between Thames Water and the National Rivers Authority (NRA). Shrike Meadow will rely on low-intensity cattle grazing rather than active human management to sustain the site.
- The scheme was designed to benefit a range of rare and declining wetland species such as water vole and redshank, for which special habitat features were designed. Redshank are already breeding on the site.
- Public rights of way, permissive access routes and a bird hide at the site enable the public to enjoy the wildlife. There is also disabled access to part of the site.
- The meadow provides an outstanding opportunity to observe a variety of wetland wildlife in close proximity to the city of Oxford, as well as contributing to the conservation of a variety of rare and declining species associated with this type of habitat. The wetland scheme at this site has just received the Annual Award from the River Thames Society, recognising its contribution to environmental enhancement.

The transformation of View Island

Type of activity the project represents	Conservation, access, recreation, and education
Location	Reading, Berkshire
Agency Area	West (Thames Region)
Time taken to complete the project	Approximately 1 year
External partners working with the Environment Agency	Reading Borough Council, British Canoe Union (BCU) and Reading College of Art
Funding make-up or the percentage of financial input	£30,000 Heritage Lottery Fund £45,000 Environment Agency £86,000 Sponsors
Total expenditure	£161,000
Functional links	Staff across all of the Agency's functions were involved in some way either in the planning and design of the site or on the days of the Millennium Festival
Who manages the site now?	Reading Borough Council
Is there a site management plan?	Yes

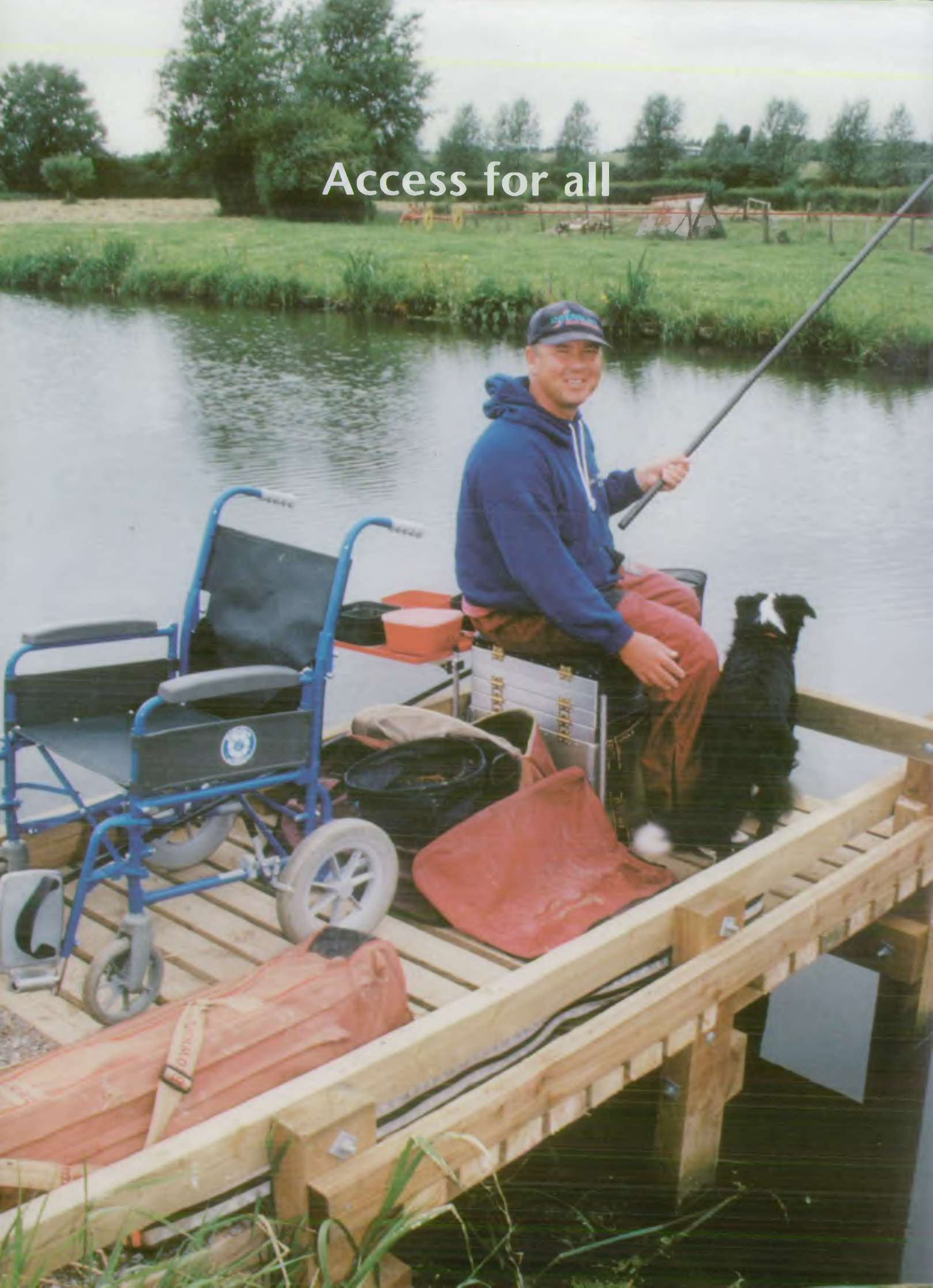
Key points

- View Island has been transformed from a site littered with old machinery and junk into a valuable urban nature park. It is now a wildlife site with a new pond and dipping platform, pollarded willows and wildflower meadows. Benches have been made from the trees felled by the 1987 storms and access has been improved by a new boardwalk and surfaced paths. Canoeists can use a specially constructed pontoon to gain access to the nearby weirpool where conditions are ideal for white-water canoeing.
- View Island was officially opened with a two-day Millennium Festival, organised and run by the Agency and supported by local businesses. Students from Reading College of Art converted a former tennis court into an open-air classroom and children from local schools were invited to visit a range of "activity stations" around the site where they learned about the environment, wildlife and water safety.



An activity station at the two day festival

Access for all



Bude Footbridge partnership project

Type of activity the project represents	Access, recreation and disabled access
Location	Bude, North Cornwall
Agency Area	Cornwall (South West Region)
Time taken to complete the project	1 year and 7 months
External partners working with the Environment Agency	North Cornwall District Council (NCDC), English Nature, Bude Town Council and County Environment Trust
Funding make-up or the percentage of financial input	43 percent Landfill Tax 29 percent NCDC 14 percent Environment Agency 14 percent English Nature
Functional links	Conservation
Who manages the site now?	North Cornwall District Council
Is there a site management plan?	Yes, with North Cornwall District Council

Key points

- The project involved the construction of a footbridge from the Bude Canal Towpath to Pethericks Mill wetland footpath.
- The aim of the bridge was to provide a circular access route linking an existing nature reserve with a new wetland area formed as part of the Bude Environmental Enhancement Project (part of the Bude flood defence improvement), which was completed in 1998.
- Local people and visitors can now enjoy a circular footpath route through the new wetland area across the new footbridge and along the towpath back to the town centre via the local nature reserve. It was not possible to cross the River Neet before the footbridge was constructed.
- The project has improved access to both the local nature reserve and the new wetland area and has itself provided a pleasant walk. Interpretation boards will help to educate people about the abundant wildlife that can be seen on the wetland and reserves. Access is restricted to outer paths only during sensitive times (for example, the bird-nesting season), but still allows the use of the circular route.
- Disabled people are also able to use the footbridge and the majority of the paths are wheelchair friendly. In addition the new Sustrans cycle link runs adjacent to the site.
- The bridge itself was made from sustainable woodland sources.

Gresham Marshes

Type of activity the project represents	Recreational routes with disabled access
Location	Nottingham
Agency Area	Lower Trent (Midlands Region)
Time taken to complete the project	5 months
External partners working with the Environment Agency	Nottinghamshire County Council, Nottinghamshire Wildlife Trust
Funding make-up or the percentage of financial input	£32,000 Fisheries, Ecology and Recreation
Total expenditure	£32,000
Functional links	Recreation, Conservation and Fisheries
Who manages the site now?	Environment Agency
Is there a site management plan?	Yes

Key points

- Efforts to restore the ecological interest of the Environment Agency's Gresham Marsh site in Nottingham is now bearing fruit, but good access has proved more difficult until now.
- Informal access already existed, but until recently it was impossible to find an easy route because of the marsh located in one corner.
- Now the Agency, with the help of Nottinghamshire County Council, has designed and constructed a boardwalk across the marsh area. This provides a link with existing public rights of way and informal paths to create a circular walk around the site.
- Conservation and Recreation Officer, Steve Betts, said, "The boardwalk allows visitors access to all parts of the site whilst keeping them away from the most sensitive areas. It will now be possible to walk through a reedbed and to see at close hand some of the birds and invertebrates that live there."

Cuckoo Bridge, Ely

Type of activity the project represents	Recreational access
Location	Ely, Cambridgeshire
Agency Area	Central (Anglian Region)
Time taken to complete the project	7 months
External partners working with the Environment Agency	Cambridgeshire City Council, East Cambridgeshire Countryside Agency
Funding make-up or the percentage of financial input	£30,000 Environment Agency (60 percent Recreation, 20 percent Flood Defence, 10 percent Navigation, 10 percent Conservation) £30,000 Cambridgeshire City Council, £10,000 East Cambridgeshire District Council, £2,000 Countryside Agency, £18,000 WREN Landfill Tax
Total expenditure	£90,000
Functional links	Recreation, Conservation, Flood Defence and Navigation
Who manages the site now?	Environment Agency and Cambridgeshire City Council
Is there a site management plan?	No

Key points

- Cambridgeshire City Council and the Environment Agency joined forces with other partners to replace the bridge, which was declared unsafe and beyond economic repair after embankment erosion left the bridge deck at a precarious angle.
- The original stone bridge, built several hundred years ago, was used by monks from the cathedral to access the river. Today it is used by walkers on two long-distance footpaths - The Fen Rivers Way and Hereward Way - and by local people visiting the Roswell Pit Nature Reserve.
- The new bridge was officially opened by Ely-based Paralympian Ian Sharpe, who won three medals at the 2000 Sydney Games.



The new bridge at Ely

River Nene canoe portages

Type of activity the project represents	Recreation - 'access to water and on the water'
Location	River Nene, Lincolnshire
Agency Area	Northern (Anglian Region)
Time taken to complete the project	1 year - ongoing
External partners working with the Environment Agency	Nene Valley Project, Countryside Agency
Funding make-up or the percentage of financial input	100 percent Environment Agency Partners contribution in kind
Functional links	Flood Defence, Navigation, Recreation
Who manages the site now?	Environment Agency
Is there a site management plan?	No

Key points

- The River Nene is attractive for placid water canoeists. The navigable fairway is broken up by navigation locks and weirs - both of which are unsuitable and unsafe for canoes to pass through or over. Boat moorings are provided upstream and downstream of each lock, but are not particularly suitable for canoes.
- Working with Nene Valley Project and with initial help from the Countryside Agency, many small platforms adjacent to the locks have been built.
- Set 300mm above the water, these platforms provide a nettle-free landing area suitable for canoeists of all abilities.



Canoe portage platform

Coton Hall Lake

Type of activity the project represents	Recreational fishery and birdwatching facilities, both with disabled access
Location	Lea Marston, near Sutton Coldfield
Agency Area	Upper Trent (Midlands Region)
Time taken to complete the project	7 months
External partners working with the Environment Agency	None
Funding make-up or the percentage of financial input	£30,000 National Fisheries £15,000 Regional Fisheries £6,000 Recreation
Total expenditure	£51,000
Functional links	Fisheries, Recreation and Conservation joint project - Flood Defence workforce carried out the work
Who manages the site now?	The fishery will be leased to a local angling club, which will provide day-ticket sales; the Agency will receive a proportion of revenue generated
Is there a site management plan?	One is being prepared for the whole of the Lea Marston site

Key points

- A nationally funded project for the provision of fishing in urban areas has been developed at the Agency-owned site at Lea Marston, near Sutton Coldfield.
- The project involved creating a day-ticket fishery at Coton Hall Lake, which is an established gravel pit of some eight acres.
- Initially the lake was pumped dry and the fish removed to a holding pool while the bed was reshaped to provide shallows and cover for fish. Several large carp were removed, weighing up to 29lbs, together with large tench, bream, perch and small pike.
- Following re-watering, floating reed beds were constructed to provide cover and suitable fish spawning substrate. The reed roots grow down into the water and help protect fish from cormorants and other predators. It also provides a good habitat for invertebrates, thereby increasing food for the fish. The lake was finally re-stocked with roach, bream, tench and perch.
- One end of the lake is designated a conservation area. The remainder has 26 angler pegs and is a general coarse fishery suitable for junior and disabled anglers.
- The lake will demonstrate how to set up a fishery, which retains a strong conservation interest.
- The project has involved lake reshaping, stocking, peg creation, the construction of a car park, signage and publicity.
- On the same site, a bird hide was constructed overlooking another lake nearby. This birdwatching facility is only a short walk from the new car park, which is shared with anglers.
- Access suitable for disabled visitors to the hide was a key feature of the project.

The Otter Trail – disabled access

Type of activity the project represents	Disabled access, recreation
Location	Canolfan Tryweryn – the National White Water Centre, Bala
Agency Area	North Wales (Environment Agency Wales)
Time taken to complete the project	Ongoing - began July 2000
External partners working with the Environment Agency	Welsh Canoe Association and British Trust for Conservation Volunteers (BTCV)
Functional links	Fisheries, Ecology and Recreation
Who manages the site now?	The site is owned by the Environment Agency Wales, but is leased to the Welsh Canoe Association. The land adjacent to the river is managed for conservation and recreation by the Agency
Is there a site management plan?	Yes, it is being updated following major redevelopment of the recreation centre

Key points

- The upgrade of the Otter Trail to provide disabled access was carried out by the BTCV and involved 300m of path resurfacing and modification with safety rails, viewing sites, rest sites and three footbridges. Further work is planned involving site interpretation and footpath linkage.
- The footpath follows the Tryweryn River near Canolfan Tryweryn, an internationally important white water centre in the midst of Snowdonia National Park. The river itself is regulated, managed and owned by the Agency and is internationally important for salmon and otter (SAC designation).
- The riverside path has benefited from a major upgrade.
- Improving access for the disabled will help to meet our responsibilities under access for all legislation.
- All users will benefit from the scheme's completion.



Widened bridge over the Otter Trail

Research and development



North Kent Marshes water vole survey 2000

Type of activity the project represents	Survey work, conservation and biodiversity
Location	The North Kent Marshes (from Swanscombe in the west to Luddenhams Marshes in the east)
Agency Area	Kent (Southern Region)
Time taken to complete the project	6 months
External partners working with the Environment Agency	Southeast Otters and Rivers Project, Medway and Swale Estuary Partnership and Schema D'Amenagement Integrer du Littoral (SAIL). Considerable support and co-operation was also received from MAFF and the relevant landowners
Funding make-up or the percentage of financial input	75 percent Environment Agency. In addition to financial contributions, the other partners, provided support in kind in terms of staff management, loan of equipment, volunteer survey assistants
Total expenditure	£22,500
Functional links	The project was used as a training day for many staff from Flood Defence, Development Control, Planning Liaison, Conservation and Recreation
Who manages the site now?	Landowners – under various site-management agreements due to environmental designations of the area and Environmentally Sensitive Area (ESA) grazing schemes funded by MAFF
Is there a site management plan?	Yes

Key points

- More than 800 watercourses on the marshes were surveyed, with this being the first comprehensive baseline work to be carried out in this area.
- *Ad hoc* records existed, which suggested that it might be a significant stronghold for water voles, a rare and rapidly declining species.
- "Hotspots" have been identified. An adjacent area, previously surveyed, has been selected as one of only 13 nationally key sites for the species and we hope that this status may be extended using this latest data.
- The survey has already proved very beneficial in terms of demonstrating the impacts of development in this pressurised area, such as the Channel Tunnel Rail Link at Swanscombe Marshes. Another key outcome has been identifying management issues and enhancement opportunities, which are now being taking forward with the relevant parties.
- This work has made a significant contribution to achieving national and local BAP targets.

Salmon tracking studies on the River Eden

Type of activity the project represents	Survey work – radio tracking
Location	River Eden, Cumbria
Agency Area	North (North West Region)
Time taken to complete the project	2 years
External partners working with the Environment 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
Functional links	Conservation, Fisheries and Ecology
Is there a site management plan?	Not at present, but this work will provide invaluable information to guide future management of the catchment

Key points

- Adult salmon have been radio-tracked on the River Eden over the past 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.
- 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.

Enhancing
biodiversity



Otter Road Deaths in Wales – Phase 2

Type of activity the project represents	Conservation, biodiversity
Location	Wales
Agency Area	Led by South East Area (Environment Agency Wales)
Time taken to complete the project	1 year and 4 months
External partners working with the Environment Agency	Wildlife Trusts, Countryside Commission for Wales, local authorities and National Assembly for Wales
Funding make-up or the percentage of financial input	100 percent Environment Agency Wales
Total expenditure	£5,000
Functional links	Conservation

Key points

- Road deaths are an important cause of mortality in otters and dealing with this issue has been identified as an action in the UK Otter BAP.
- This project was a development of a study that identified blackspots and causes of otter road deaths in 1999/2000.
- It focuses on developing the protocols for implementing mitigation measures, including roles, procedures and costing for a range of circumstances.
- Five case studies have been developed to implementation stage and funding will be sought in 2001/2002 to continue this work.
- This was a follow-up to the previous year's study. It was undertaken by a consultant, funded jointly by the three Environment Agency Wales areas. There was no external funding, but the work involved extensive liaison with other organisations.

Study of non-commercial fish species in Cornwall Area rivers

Type of activity the project represents	Implementing Biodiversity Action Plans, surveys, fisheries, recreation, conservation and navigation
Location	River Camel (cSAC), and other catchments across Cornwall Area
Agency Area	Cornwall (South West Region)
Time taken to complete the project	4 years
External partners working with the Environment Agency	Students from University of Plymouth and Camborne School of Mines (University of Exeter)
Funding make-up or the percentage of financial input	100 percent Environment Agency
Total expenditure	£12,000
Functional links	Fisheries, Recreation, Conservation and Navigation

Key points

- Degree students worked with the routine fisheries survey team collecting data, such as lengths and weights, about non-commercial species. This extra data is not routinely recorded during salmonid surveys.
- The River Camel (cSAC) is designated for, amongst other things, Bullhead (*Cottus gobio* L.). To ensure that we can protect the fish, we need to know about the existing populations and ecology within our rivers.
- The study assists with English Nature and Environment Agency management of the cSAC.
- The project, which was ongoing over four years, generated five BSc dissertations and one MSc thesis. It enhanced the knowledge of species distribution and population status throughout the Cornwall area.

Crayfish habitat improvement project

Type of activity the project represents	Enhancement of biodiversity
Location	River Wansbeck catchment, Northumberland
Agency Area	Northumbria (Northeast Region)
Time taken to complete the project	7 months - further schemes may be added in future
External partners working with the Environment Agency	Farming and Wildlife Advisory Group (FWAG) and local landowners
Funding make-up or the percentage of financial input	£5,000 Environment Agency £2,800 MAFF plus contribution towards salary of FWAG officer £544,000 Estimated Countryside Stewardship funding
Total expenditure	£551,800
Functional links	Conservation through River Habitat Survey (RHS) methodology
Who manages the site now?	Riparian landowners
Is there a site management plan?	Management plans have been drawn up for 12 farm holdings in critical areas where improved farm practices can benefit crayfish

Key points

- Native crayfish populations in Northumbria have declined or become extinct in recent years. Research evidence has shown that point source pollution, predation and crayfish plague were not the causes of this decline, leaving diffuse pollution and habitat degradation as the primary reason.
- A 1997 survey showed that a patchy but sizeable population in the Wansbeck was one of the last in the area. A 1999 project combined crayfish and River Habitat Surveys to identify areas where habitat was damaged or at risk.
- A FWAG officer assessed farm holdings in these target areas, developing improved management plans with landowners and farm managers.
- The aim was to enhance the prospect of survival of native crayfish and raise awareness of conservation issues with riparian landowners.
- The schemes will use Countryside Stewardship funding to implement long-term farm management beneficial to crayfish and wider conservation interests.
- Benefits include bankside fencing to prevent stock damage, field margin introduction and wetland area creation, native tree planting, improved management of grassland with historical, botanical or wildlife interest and advice on optimum methods in the use of chemicals and animal wastes.

Local Agenda 21 Community Project

Type of activity the project represents	Biodiversity, conservation, social inclusion, and river restoration
Location	River Piddle, Dorset
Agency Area	South Wessex (South West Region)
Time taken to complete the project	10 months
External partners working with the Environment Agency	Dorset Wildlife Trust
Funding make-up or the percentage of financial input	£1,142 Environment Agency, plus the volunteers' time, food and hall hire provided by the community
Total expenditure	£1,142
Functional links	Conservation
Who manages the site now?	The local community
Is there a site management plan?	No

Key points

- The project helped the local community understand and enjoy their local river.
- It involved a local brainstorming event from the community and two workshops on chalk streams, facilitated by the Environment Agency and the Dorset Wildlife Trust. Subsequent implementation of on-the-ground improvements to a stretch of river donated by a riparian followed, with habitat improvements for species such as water vole.
- A local reserve for the whole community has been created.
- Other interested communities are hoping to follow this example.



Community helpers enjoying the river

Bourn Brook

Type of activity the project represents	Habitat and landscape enhancement
Location	Bourn Brook, Cambridgeshire
Agency Area	Central (Anglian Region)
Time taken to complete the project	12 months
External partners working with the Environment Agency	Countryside Restoration Trust
Funding make-up or the percentage of financial input	80 percent Conservation 20 percent Flood Defence
Total expenditure	£25,000
Functional links	Conservation and Flood Defence
Who manages the site now?	Countryside Restoration Trust
Is there a site management plan?	Yes

Key points

- These works were carried out along a 4km section of the Bourn Brook in Cambridgeshire, owned by the Countryside Restoration Trust.
- Past management practices in the UK were driven by agricultural policies, which improved drainage within flood plains to maximise the production of cereals. These activities have resulted in the loss of many in-channel features.
- Recent changes in land-use policies now provide the potential to restore river and flood plain ecology.
- The works include osier planting, willow pollarding, deciduous tree planting and the construction of otter holts.
- This will make a positive contribution not only to safeguarding but also to increasing the biodiversity on the Brook and further the biodiversity action plan process in Cambridgeshire.



Pollarded tree on the bank of Bourn Brook

Pevensey Levels restoration project

Type of activity the project represents	Biodiversity, conservation and water level management plans
Location	Near Eastbourne, East Sussex
Agency Area	Sussex (Southern Region)
Time taken to complete the project	3 years in total – 1 year has been completed
External partners working with the Environment Agency	English Nature and Sussex Wildlife Trust
Funding make-up or the percentage of financial input	£200,000 English Nature £52,000 the Agency - We hope to secure an extra £100,000 from English Nature for the final year and possibly expand the project through Heritage Lottery Fund to encompass recreation, access, education and further wetland restoration
Total expenditure	£252,500
Functional links	Conservation, Flood Defence and Water Resources
Who manages the site now?	Environment Agency
Is there a site management plan?	Yes – a Water Level Management Plan for Pevensey Levels

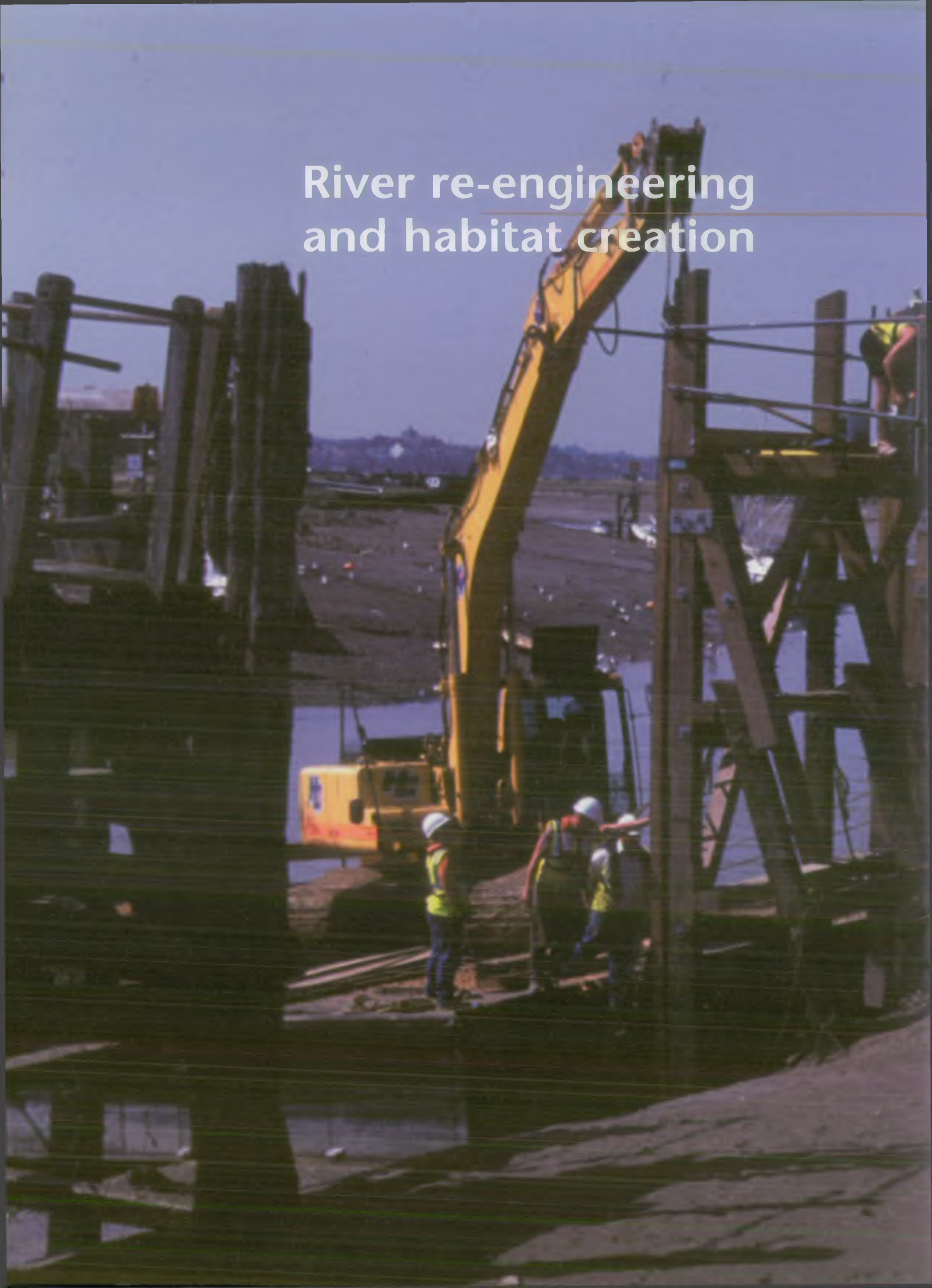
Key points

- The Pevensey Levels is a large area of lowland wet grassland, which is designated a SSSI and a Ramsar site of international wetland importance.
- It has a diverse assemblage of flora and fauna supported in many ditches, most notably the rare fen raft spider, which is only found at one other site in the UK.
- The Levels have been progressively drained during the past century, significantly accelerated by the introduction of an extensive pump drainage scheme in the 1960s and 1970s, which had substantial effects on the biodiversity.
- Wherever water levels have been changed, a monitoring programme has been put into place to ensure that the project's actions are not having a detrimental impact on biodiversity.
- The implementation of this Water Level Management Plan will benefit the rich fauna, including wetland birds, rare invertebrates and flora.



Existing structure being raised at Pevensey

River re-engineering and habitat creation



Severn Valley wetlands

Type of activity the project represents	Wetland habitat creation
Location	Various
Agency Area	Upper Severn (Midlands Region)
Time taken to complete the project	Ongoing
External partners working with the Environment Agency	Montgomeryshire Wildlife Trust
Funding make-up or the percentage of financial input	Heritage Lottery Countryside Commission for Wales Environment Agency Montgomeryshire Wildlife Trust
Functional links	Fisheries, Conservation and Recreation
Who manages the site now?	Montgomeryshire Wildlife Trust
Is there a site management plan?	Yes

Key points

- The recent purchase by Montgomeryshire Wildlife Trust (MWT) of 90 acres of floodplain of the River Severn at Llandinam means that a total of 340 acres of wetland habitat has been created or enhanced along the upper reaches of the Severn Valley in recent years. It is also the fourth wetland reserve in the area created from scratch.
- After 18 months of complicated negotiations between Agency Conservation staff, MWT and the landowner, a generous grant was given by Heritage Lottery and Countryside Commission for Wales to purchase the site.
- As a site of national geomorphological importance, this 2km stretch of the Severn provides habitat for a variety of protected species, including otters, salmon, little-ringed plover and beetles that can be found at only a handful of sites in the UK.
- Future habitat improvement work to be undertaken by the Agency will include fencing, planting of significant areas with local provenance black poplars and limited wetland creation, which will complement the conservation interest of the site.

River Ravensbourne restoration at Norman Park

Type of activity the project represents	River restoration
Location	Bromley, London
Agency Area	South East (Thames Region)
Time taken to complete the project	4 months
External partners working with the Environment Agency	London Borough of Bromley
Funding make-up or the percentage of financial input	85 percent Environment Agency (Flood Defence) 15 percent London Borough of Bromley
Total expenditure	Approximately £130,000
Functional links	Flood Defence, Landscape, Conservation, Recreation, Fisheries, Biology and Environmental Protection
Who manages the site now?	London Borough of Bromley
Is there a site management plan?	Yes

Key points

- The project involved the de-culverting and re-meandering of approximately 300m of the River Ravensbourne.
- This stretch of the river had been identified by both the strategic River Corridor Survey and the Landscape Assessment as being highly degraded.
- The river is now a focal point for the informal users of the park. The project has flood-defence and biodiversity benefits for local residents both upstream and downstream of the site, and the local college has also been using the scheme as part of a science project.
- Local biodiversity priority species, which now occur on this stretch of the river, include kingfisher, minnow and grey wagtail.
- The site lies within a very popular public park near the centre of Bromley.

The Gann Estuary restoration

Type of activity the project represents	Lagoon restoration
Location	Gann Estuary SSSI, Milford Haven, Pembrokeshire
Agency Area	South West (Environment Agency Wales)
Time taken to complete the project	2 days
External partners working with the Environment Agency	Pembrokeshire County Council, Countryside Council for Wales and Pembrokeshire Coast National Park
Funding make-up or the percentage of financial input	£2,000 Environment Agency Wales £400 Pembrokeshire County Council £400 Countryside Council for Wales £400 Pembrokeshire Coast National Park
Total expenditure	£3,200
Functional links	Flood Defence, Internal Business Unit and the Conservation Recreation and Navigation Unit

Key points

- The Gann Estuary SSSI is an extremely diverse small estuary near the mouth of Milford Haven in Pembrokeshire and forms part of the Pembrokeshire Marine cSAC.
- It is an important area of conservation with saltmarsh, mature shingle vegetation and a brackish lagoon that is dammed by a shingle ridge.
- The estuary is close to the site of the 1996 Sea Empress disaster and protection measures, which led to the alteration of the level of the dam and resulted in a lowered water level in the lagoon.
- In March 2001 Environment Agency Wales undertook some engineering works to repair the dam and permanently raise the water level in the brackish lagoon.
- The project has very successfully restored this special site, which is enjoyed by many visitors to the National Park.



The restored brackish lagoon of the Gann Estuary SSSI

Penton Hook fish spawning channel

Type of activity the project represents	River engineering for recreation, fisheries and conservation
Location	Between Staines and Laleham on the River Thames in Surrey
Agency Area	South East (Thames Region)
Time taken to complete the project	Design 16 months, implementation 2 months
Funding make-up or the percentage of financial input	100 percent Environment Agency
Total expenditure	£120,000
Functional links	A Recreation, Fisheries, Conservation and Landscape Architect Officer were part of an Agency team that worked directly with the contractors
Who manages the site now?	Environment Agency
Is there a site management plan?	Yes, due to be revised in the near future

Key points

- The fish-spawning channel and weir bypass channel is an innovative project to improve fish spawning and fish migration on this part of the River Thames. It is the first channel of its kind to be constructed in the UK. It has been highly successful in meeting its key objectives and in the first year 16 species of fish have been found using the channel, including BAP target species such as bullhead and barbel.
- The 250m channel was excavated through Penton Hook Island. The Island's attractive semi-natural riverside character is particularly valued by the local community from the surrounding urban areas and the site has a rich and diverse wildlife.
- One major challenge of the project was to sensitively integrate the new channel within the established network of footpaths and valuable existing vegetation. A team of engineers and landscape architects worked closely with Agency staff to achieve this.
- The design of the scheme included a naturalistic meandering channel, with an alternating sequence of in-channel pools and gravel riffles to create ideal fish-spawning conditions. The channel also enables fish passage upstream by passing the weir and provides nursery habitat for young fish. A gentle slope down to the channel edge and a number of viewing points give people the opportunity to enjoy the attractive new watercourse, incorporating restricted access to minimise disturbance. Kingfishers nested in a steep bank in the first season and the channel was colonised by water crowfoot and rare burrowing mayfly.
- Three months before construction work began, a period of public consultation provided people with a clear illustration of how the scheme was to fit into the island and to explain its benefits.

Crimpsall Sluice replacement

Type of activity the project represents	Innovative re-engineering of a structure, incorporating significant conservation and fisheries amenity features
Location	River Don, one mile from the centre of Doncaster
Agency Area	Ridings (Northeast Region)
Time taken to complete the project	Design work commenced 1996. Formal approval obtained 1999. Conservation pond excavation works commenced Autumn 1999. Site works - April 2000 to September 2000
External partners working with the Environment Agency	English Nature, Doncaster Metropolitan Borough Council and Doncaster Naturalists' Society
Funding make-up or the percentage of financial input	100 percent Regional Flood Defence Committee scheme
Total expenditure	£1.1million
Functional links	Flood Defence, Fisheries and Conservation
Who manages the site now?	Environment Agency
Is there a site management plan?	Not at present, but a research and development project relating to fish passage may be a future prospect

Key points

- The scheme involved imaginative civil engineering works to replace aged sluice gear regulating flows in the main river at Doncaster, with a rock chute fish pass and re-modelled conservation area and wetland associated with the former course of the River Don adjacent.
- The rock chute fish pass allows the passage of salmon into the middle and upper reaches of the Don catchment for the first time in 100 years.
- We seized the opportunity to naturalise and vastly improve the conservation value of the site when we learned that replacement of an unattractive flood-defence structure at the end of its useful life would allow the construction of a novel means of allowing the passage of fish.
- Two new ponds were also created on the site, along with a backwater area. By using the former course of the river, a large island was created that includes one of the ponds. The island, which will hopefully become a wildlife refuge, has been planted up and sown with a diverse species mix of grass seed. Water voles on the site were captured and removed prior to construction. The voles were then successfully returned to one of the new ponds.
- The works have improved the visual amenity of a section of watercourse regularly used for angling.
- The scheme won the Institute of Civil Engineers Yorkshire Association Award 2001.

Relief Channel navigation

Type of activity the project represents	Construction of new lock, facilitating 16km of new navigable waterway
Location	Denver, Norfolk
Agency Area	Central (Anglian Region)
Time taken to complete the project	19 months
External partners working with the Environment Agency	GO-East (Objective 5b funding)
Funding make-up or the percentage of financial input	46 percent Objective 5b funds 54 percent Environment Agency
Total expenditure	£1.2 million
Functional links	Flood Defence, Fisheries, Ecology and Recreation
Who manages the site now?	Environment Agency
Is there a site management plan?	No

Key points

- The project involved constructing a new lock at Denver (30m long, 4.6m wide and at least 2m deep) from the Ely Ouse into the Relief Channel.
- The new lock creates 16km of new navigable waterway and provides a new non-tidal link to the outskirts of King's Lynn.
- New 48-hour moorings with water points have been constructed at Downham Market, Stowbridge and Wiggshall St Mary Magdalen.
- The project has strong links with other initiatives in the area such as the Fens River Regeneration Project (brown signage, interpretation panels at key locations, waterways guide, Fens Waterways web-site, picnic areas, angling platforms, navigation feasibility studies, new moorings, refurbished car park) and the Fens Access Project (creation of permissive footpath and bridleway near the new lock).



The relief channel at Denver

Managing landscapes



Island Chines enhancement project

Type of activity the project represents	Environmental management and enhancement, recreation and provision of interpretative information
Location	Isle of Wight
Agency Area	Hampshire and Isle of Wight (Southern Region)
Time taken to complete the project	4 years
External partners working with the Environment Agency	Isle of Wight Council, Brighthelm Village Parish Council, National Trust, Isle of Wight Area of Outstanding Natural Beauty (AONB) Project (now the Island 2000 Trust), local community, local Archaeology Society, and local craftspeople including artists, a blacksmith and a stonemason
Funding make-up or the percentage of financial input	£30,000 Environment Agency Financial expenditure and work in kind all contributed by Island 2000 Trust, the local authority, County Ecologist, archaeology and geology experts, and the National Trust
Total expenditure	£53,200
Functional links	Conservation
Who manages the site now?	Isle of Wight Council, private landowners
Is there a site management plan?	No

Key points

- Dramatic and fascinating landscapes with rich geological and ecological interest, chines are the remains of ancient river valleys, now mostly deep, steep-sided gullies leading down to the sea.
- The chines lie along a stretch of the island, designated as Heritage coast, an AONB and in most places geological SSSI status.
- Wooden steps that provide access down Whale Chine to the beach were refurbished and a circular chines trail was developed.
- A local landscape architect was commissioned to draw up proposals for a complete revamp of a popular yet unsightly Chine car park owned by the National Trust.
- An Island Chines booklet and an Education Study Pack (linked to the National Curriculum) were published for sale in local shops and Tourist Information Centres.
- Cycle racks and Purbeck limestone hand-carved seats were provided.
- In 1999 the Island Chines Project won a national Open Space Management Award from the Institute of Leisure and Amenity Management (ILAM).

ECONet

Type of activity the project represents	Exploring the best ways of creating a network connecting areas for wildlife across Cheshire - GIS
Location	Cheshire
Agency Area	South (North West Region)
Time taken to complete the project	Ongoing, four-year project, started 1999
External partners working with the Environment Agency	Cheshire County Council, English Nature, Vale Borough Council, United Utilities, Sustainability Northwest, Universities of Salford, Liverpool John Moores and Reading. Partners also in Italy and Netherlands
Funding make-up or the percentage of financial input	100 percent European Life funded
Total expenditure	£3.2 million
Functional links	Ecology and Planning

Key points

- Geographical Information Systems, digital aerial photography and landscape ecology have been used to analyse the Cheshire landscape.
- Core areas of wildlife importance have been identified, as well as areas that could be used to create new habitats and wildlife corridors.
- The network will be realised by various means. Parts are already in place, for example, as nature reserves and country parks. Elsewhere, the network will be incorporated wherever possible in existing rural and urban initiatives, and by utilising whatever grant schemes are available.
- Opportunities for creating new habitats by "green generators", such as quarries, derelict land and landfill sites, are being explored. The road network is being examined to highlight its potential for reducing impacts on wildlife.
- The project is also seeking to influence changes to land-use policies, programmes and practices.

The Wansbeck estuary enhancement project

Type of activity the project represents	Recreation, conservation, access, improving people's quality of life and social inclusion
Location	Wansbeck estuary, Northumberland
Agency Area	Northumbria (Northeast Region)
Time taken to complete the project	Ongoing in three phases – began April 2000
External partners working with the Environment Agency	Wansbeck District Council, Sustrans, Northumberland County Council and Northumberland Wildlife Trust, Mid-Northumberland Arts Group
Funding make-up or the percentage of financial input	<p>Phase I - Improvements north bank £15,000 Environment Agency £30,000 Sustrans £38,000 Northumberland County Council</p> <p>Phase II - Improvements south bank £25,000 Sustrans £25,000 Northumberland County Council £10,000 Landfill Tax £5,000 Wansbeck District Council</p>
Total expenditure	Phase I £83,000 Phase II £65,000
Functional links	Recreation, Ecology and Flood Defence
Who manages the site now?	Wansbeck District Council
Is there a site management plan?	The site is managed in accordance with the Wansbeck Estuary Management Plan

- In partnership with Northumberland Health Action Zone, a programme of activities will encourage use of the estuary and surrounding land by young people, women, ethnic minorities and the socially excluded. Whether used for leisure or utility journeys, the new facilities will help to improve the quality of life and health of local communities.
- Local ownership of the improvements has been encouraged by involving local people and user groups throughout the project. With their help, high quality co-ordinated information and interpretation panels have been produced to raise awareness and appreciation of the heritage, wildlife and recreation opportunities of the Wansbeck estuary.



The Wansbeck estuary before work started

Key points

- In contrast to the rest of the catchment, the Wansbeck estuary is a focus for residential and industrial development. This project promoted the use of land around the estuary for sustainable recreation by local communities and visitors.
- It has created 11.2km of safe off-road multi-user routes that link into the local, national and international cycle network, including the Coasts and Castles Route from Newcastle to Edinburgh and the North Sea Cycle Route.
- Landscape and habitat improvements were made to benefit wildlife as well as people. These included changing the mowing regime of open areas to encourage greater biodiversity in meadows, extending tree cover and green corridors, while safeguarding existing nature reserves such as Castle Island Site of Nature Conservation Interest (SNCI).
- Increased use of formerly blighted areas for recreation – with a subsequent increase in social policing – is helping to regenerate brownfield sites and the local economy. There has already been a reduction in fly-tipping and other anti-social practices along the estuary paths, and there are plans to build new business premises nearby.
- Local communities are still economically depressed and have low levels of car ownership. The routes created by this project link residential areas, the coast and major employers, so they can be used as safe routes to school and by commuters on low incomes.



The transformation

Minsterworth Ham

Type of activity the project represents	Wetland restoration
Location	The River Severn, Gloucester
Agency Area	Lower Severn (Midlands Region)
Time taken to complete the project	18 months – ongoing
External partners working with the Environment Agency	Farming, Rural, Conservation Agency (FRCA), Farming Wildlife Advisory Group (FWAG) and The Severn and Avon Vale Wetlands Project
Funding make-up or the percentage of financial input	Approximately 50 percent of the cost for any works is provided by Countryside Stewardship Capital Works Grants fund. The landowners provide the balance through work-in-kind. English Nature and the Environment Agency jointly fund a wetlands project officer
Total expenditure	£30,000 – £40,000 (this varies between sites)
Functional links	Conservation, Flood Defence and Development Control sections of the Agency such as Planning Liaison
Who manages the site now?	Each farm holding is managed by the respective landowner and monitored by the Wetlands Project Officer
Is there a site management plan?	Yes, guided by the Countryside Stewardship schedules and agreements

Key points

- The project is part of a broad-based study commissioned by the Environment Agency, English Nature and the RSPB. The study aimed to establish the technical feasibility of achieving large-scale recovery of Biodiversity Action Plan wetland habitats.
- The project has been developed in three phases. In 2000, at Linton Farm, 75 hectares of arable farmland entered a Countryside Stewardship Scheme for reversion to permanent wet grassland. In 2001, Grove Farm completed a detailed hydrological study funded as a special project through Countryside Stewardship. Water level management works were undertaken in April 2001. Also in 2001, Grove Farm and Highcross Farm submitted Countryside Stewardship applications for a shared drainage system. The aim is to revert 120 hectares of land from arable to permanent wet grassland.
- The original impetus for the scheme came from the landowners' with the long-term initiative for the programme being facilitated through the Severn & Avon Vales Wetlands Partnership. The landowners are the key direct beneficiaries, in that they have gained a ten-year funding agreement to manage a non-viable area of their farms for non-agricultural goals. The indirect benefits are gained by society as a whole, through the tangible and intangible benefits of increased biodiversity.
- The project to date reflects the vision of a pilot Catchment Flood Management Plan (CFMP) for the Severn, which will contain policies to promote the natural functioning of the flood plain.

Upper Derwent enhancement project

Type of activity the project represents	Conservation, access, recreation, river restoration and social inclusion
Location	All the Upper Derwent system from Fylingdales on the North York Moors to West Ayton in the Vale of Pickering
Agency Area	Dales (Northeast Region)
Time taken to complete the project	2 years and 8 months
External partners working with the Environment Agency	North York Moors National Park, English Nature, Scarborough Borough Council, Derwent Anglers and private contributions
Funding make-up or the percentage of financial input	45 percent European Objective 5b funding 11 percent Environment Agency input 44 percent other partners combined
Total expenditure	Approximately £180,000
Functional links	Fisheries, Ecology and Recreation worked together with input from Water Resources
Who manages the site now?	Steering group led by North York Moors National Park
Is there a site management plan?	There is a management agreement between English Nature, North York Moors National Park and Scarborough Borough Council for the Forge Valley National Nature Reserve section of the project. A management agreement has been drawn up between Scarborough Motorbiking Club and the project regarding vehicular use of riparian land

Key points

- The aim of the project was to maintain and enhance the environmental assets of the Upper Derwent catchment for the benefit of the environment, local people and visitors after local concerns over the environmental management of the area developed.
- A geomorphological audit was completed. This identified that siltation was the main cause of the problems in the system. It was agreed that rather than dredging, a more sustainable solution such as stabilising sections of riverbank to reduce silt entering would be a better option. The Forestry Commission also agreed to investigate the impact of forestry operations on river siltation.
- A range of habitat improvements has taken place. These have included coppicing to encourage in-stream vegetation growth and the creation of habitat for fish and invertebrates using felled tree material to create in-stream structures such as groynes and brushwood bundles.
- Surveys of water voles, otters and molluscs have been completed in order to help with future management decisions.
- Improvements have been made to riverside paths along the valley. A boardwalk has been constructed with the help of local volunteers from underprivileged groups.
- There have been 14 successful applications for Countryside Stewardship funding by riparian owners. These have improved access and wildlife issues within the area.

Statistics

The following tables give an insight into some of the work completed by the functions throughout the year of reporting

Habitat improvement works

	Fish passes and screens installed	Kilometres of degraded bankside restored
Anglian	0	6
Midlands	0	7
North East	2	0
North West	3	16
Southern	0	1
South West	3	22
Thames	0	19
Environment Agency Wales	9	3
Total	17	74

Project information

	No. of recreation projects completed	No. of conservation projects completed	New angling opportunities created at urban sites
Anglian	8	2	5
Midlands	11	22	20
North East	7	22	3
North West	21	15	1
Southern	21	79	3
South West	5	27	5
Thames	14	64	5
Environment Agency Wales	7	28	3
Total	94	259	45

Planning application and consent screening

	No. of planning applications, Agency consent applications and capital works screened for;	
	Recreation implications	Conservation implications
Anglian	1045	2188
Midlands	3851	3851
North East	2084	2529
North West	919	2945
Southern	2320	3233
South West	4348	4328
Thames	121	2572
Environment Agency Wales	2162	2115
Total	16850	23761

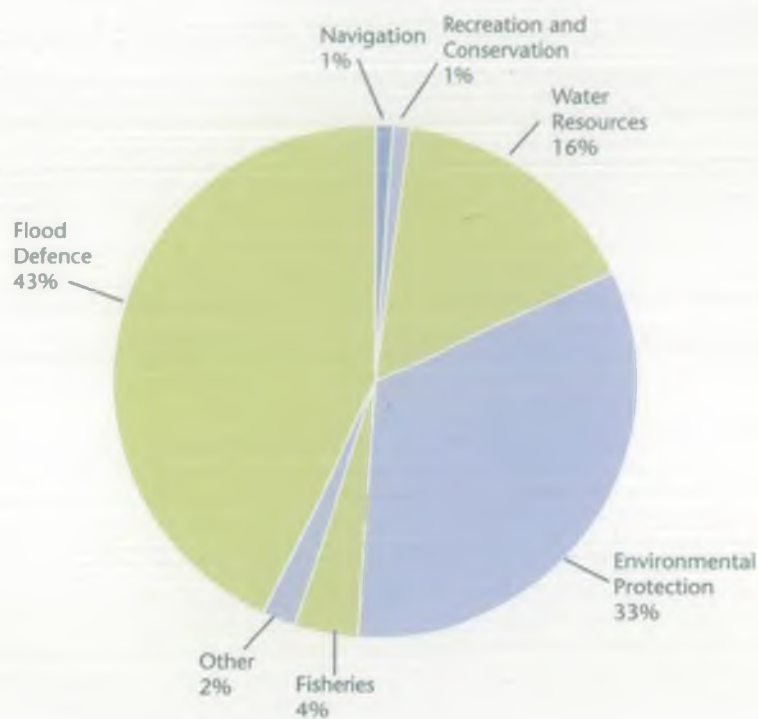
Involvement in capital works schemes

	No. of new Agency capital works schemes incorporating;	
	Recreation work	Conservation work
Anglian	7	13
Midlands	15	30
North East	23	82
North West	0	7
Southern	10	13
South West	6	16
Thames	7	43
Environment Agency Wales	4	12
Total	72	216

Agency expenditure

Conservation, Access and Recreation projects are undertaken by the Agency's Water Management and Environmental Protection functions. This work is funded through the Agency's operation budget which in 2000/2001 was £642 million. The following chart shows the spending ratio of this budget.

A detailed account of the Agency's expenditure is available in the financial schedules included in the *Annual Report and Accounts 2000/2001*.



The following information describes some of the ways in which the Agency sites are used for conservation, access and recreation

Asset information

	Recreation sites in use	Conservation sites in use
Anglian	167	74
Midlands	43	34
North East	204	136
North West	18	23
Southern	45	38
South West	42	35
Thames	57	40
Environment Agency Wales	25	23
Total	601	403

Activities on Agency sites

Water based		Land Based	
Boating	94	Birdwatching	119
Canoeing	77	Cycling	37
Coarse fishing	234	Horse riding	17
Game fishing	49	Shooting	18
Jet skiing	4	Informal recreation	4
Rowing	30	Jogging	46
Sailing	15	Model boating	4
Sub aqua	2	Motor sports	1
Water skiing	4	Orienteering	1
Windsurfing	10	Walking	386

PENTON HOOK ISLAND

SCRUB AREAS

These naturally regenerated areas comprise of ash, hawthorn, elder, bramble and ivy and are rich in wildlife, including nesting garden warbler, chiffchaff, blackcap and bullfinch. Other attractive species of shrub occur, such as hazel, field maple, guelder rose, dogwood, spindle and buckthorn, the food plant of the striking brimstone butterfly.

BACKWATER

This feature was excavated in 1997 and provides an important fish refuge at times of high flow in the Thames. The backwater has already attracted nesting kingfishers to the cliffs as well as herons and a variety of dragonflies. Good habitat is also provided for the nationally endangered water vole. A small reed bed has been planted and the naturally colonising purple loosestrife gives an impressive display in late summer.

GRASSY GLADES

Glades have been created within the scrub and are regularly managed to maintain open and sunny places for visitors to enjoy, that are also rich in wildlife. Insects such as gatekeeper butterflies are attracted to bramble and thrive in the warm, sheltered conditions. In a few hotspots, mounds of the declining yellow meadow ant occur and are sought out by green woodpeckers. Weasels may occasionally be glimpsed crossing the open spaces.

FISH SPAWNING CHANNEL

This channel, constructed in 1999, is the first of its kind to provide ideal conditions for fish spawning (egg laying) and migration, that have almost disappeared from the River Thames.

Features within the channel include an alternating sequence of shallow gravel beds and deeper pools. The channel also enables fish passage upstream bypassing the weir and provides nursery habitat for young fish. Thirteen species have already been recorded, including barbel, bullhead and dace.

Eroding cliffs provide habitat for a whole range of insects, including a rare burrowing mayfly. Water crowfoot, uncommon along the Thames, grows within the channel and attracts the beautiful banded demoiselle damselfly.

RIVERSIDE

Five species of willow grow on the edge of the island. The large and impressive white and crack willows will be managed periodically by pollarding. This is the traditional practice of cutting back trees above head-height to produce vigorous bushy growth.

Ring-necked parakeets frequently fly over the island, calling loudly. These colourful birds were introduced from Asia and can often be seen on this part of the River Thames.

... Banks available for weir permit fishing

Attractive Viewpoints
Timber Footbridges



ENVIRONMENT
AGENCY

The island is managed by the Environment Agency for the enjoyment of visitors and the conservation and enhancement of its wildlife, fisheries and natural beauty.

Penton Hook is a fascinating place to explore but take care, deep and fast-flowing water occurs around and across the island. Please keep a special eye on young children.

Angling is only permitted on these islands if you possess an Environment Agency permit. Permit holders should report to the Lock Keeper on arrival and may fish only from the sections of bank indicated by the wooden marker posts.

Environment Agency Tel: 0118 953 5000

Poster Design: THE LANDSCAPE ARCHITECTURE GROUP, ENVIRONMENT AGENCY

Poster used for on-site information and general publicity for Penton Hook Island, Laleham, Staines, Middlesex (see main report)

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ENVIRONMENT AGENCY
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ENVIRONMENT AGENCY
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