

INSTITUTIONAL ASPECTS OF RIVER RESTORATION IN THE UK

The River Restoration Project

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EXECUTIVE SUMMARY

This report is the outcome of a study undertaken as part of the National Rivers Authority's Research and Development Programme for the River Restoration Project. The River Restoration Project has been established by a group of individuals with a professional interest and expertise in river restoration. The project has the overall aim of, and EC Life funding for, carrying out demonstration projects within the UK that apply state-of-the art techniques to river restoration. The River Restoration Project also aims disseminate information about river restoration methods and to promote further river restoration initiatives. Its Business Plan (1993) gives full details.

The objectives of this study of institutional aspects of river restoration in the UK are to provide baseline information on opportunities for river restoration and on the institutions with an interest in river restoration, to clarify their powers, duties and responsibilities. The study also aims to provide information on schemes and source of funding for river restoration initiatives.

River restoration is defined as the complete structural and functional return to the pre-disturbance and self regulating state. It is recognised that this ideal is often not achievable and that institutions duties, powers, interests and experience mainly relate to rehabilitation or enhancement of watercourses.

Ideally, river restoration would develop out of a process of integrated catchment management planning. But within the UK, the NRA is the only body with sufficiently broad water management responsibilities to be able to undertake such planning. It has only relatively recently initiated a programme of catchment management planning in England and Wales. Other possible proactive approaches to river restoration identified are: as part of the planning authorities' statutory development plan process and through other non-statutory plans and strategies and through local community initiatives.

Reactive opportunities for river restoration are more common than proactive initiatives. Almost any change in land use, development or redevelopment on a site associated with a watercourse can create a reactive opportunity for river restoration. The following opportunities have been identified:

- industrial, commercial or retail developments or redevelopment;
- housing developments;
- new roads and other infrastructure schemes;
- mining and mineral workings;
- new flood defence works;
- renewal of flood defences or land drainage schemes;
- changes in land ownership or management;
- changes in the designation of a river site.

The institutional arrangements for water management and nature conservation and thence for river restoration are strikingly different in the different parts of the UK. Of the statutory

institutions with an interest in river restoration, there is not one institution in common between all four parts of the UK. It is clear that there is an important role for the River Restoration Project to act as a focus for river restoration and to disseminate information relevant to river restoration projects.

Details of the organisations are presented separately for different parts of the UK - England and Wales, Scotland and Northern Ireland. The following categories of organisations with an interest in river restoration are identified in the report:

- key statutory bodies with water management responsibilities particularly flood defence and
- statutory conservation agencies - both categories would need to be involved in any river restoration initiative;
- statutory authorities with responsibility for land use planning and management including planning authorities and organisations which have certain responsibilities for the management of agricultural land and of forestry;
- voluntary conservation organisations and community groups whose support might be crucial to the success of a river restoration project;
- recreational user groups such as anglers and boaters;
- industrial, commercial, agricultural and other users of rivers and their associated land; the cooperation and participation of these users may be essential for a river restoration project and they may be prepared to support a project with a financial contribution, sponsorship or a contribution in kind.

It appears that early involvement of all the interested bodies, land owners and organisations in any river restoration is likely to be beneficial. It is likely to have the advantage of bringing a range of ideas and information into the project at an early stage and of engendering a feeling of 'ownership' of the project in the local community.

EC structural funds have already provided support for river rehabilitation associated with urban regeneration schemes. However, these funds are only available in certain areas and within a broad predetermined framework and long term programme for structural change. The EC Life programme which is intended to provide support for the EC's environmental policy is another potential source of funding although this funding is fiercely competed for.

There is no single scheme in any part of the UK which is specifically designed to provide a source of funding for river restoration. There are a number of land management schemes and funding arrangements described in the report which could support river restoration. But the availability of many of these schemes is restricted in a number of ways, for example, to particular areas (Environmentally Sensitive Areas), to SSSIs (some English Nature schemes), to particular landscape and habitat types (Countryside Stewardship Scheme in England and Wales) and particular rivers in the first instance for the Habitat/Habitat Improvement Scheme.

Furthermore, none of these land management schemes offers direct support for in-stream works which are seen as the responsibility of the NRA in England and Wales and the Watercourse Management Division, Department of Agriculture Northern Ireland - possibly an over simplified view. In Scotland there is no single body that is clearly responsible. Any extensive river restoration scheme is likely to depend on a mosaic of funding covering

different aspects of the work and areas of land in the scheme. Early consideration should be given to determining the funding schemes from which a project might draw support since in certain schemes application periods are restricted.

The success of a river restoration project is likely to depend as much on the organisational skills of the project managers and the acceptance or support for the scheme engendered in interested bodies and general public as upon technical and scientific skills. Therefore, in order to gather information on 'best practice' in developing partnerships and collaborative methods of working for river restoration, it is recommended that these issues should be formally monitored and evaluated in the course of the River Restoration Project's demonstration projects on river restoration and that organisation and procedures should be the subject of further investigation under the RRP's Phase II Proposal: Partnerships for Restoration.

INSTITUTIONAL ASPECTS OF RIVER RESTORATION

1. INTRODUCTION

1.1 The River Restoration Project

The River Restoration Project (RRP) was established by an independent group of individuals with a professional interest and expertise in river environments. It has the overall aim of setting up a series of demonstration projects within the UK that apply state-of-the-art techniques to river restoration. Knowledge gained from the experience of the demonstration projects will be disseminated to educate, increase the understanding and promote further restoration attempts. Thus, the Project aims to further the understanding of, and stimulate interest in, river restoration.

The RRP has a core group consisting of an executive and a National Rivers Authority (NRA) technical group of officers with special interest and experience in river restoration. The core group is supported by a steering group whose members are drawn from a wide range of institutions and disciplines concerned in some way with the riverine environment. The RRP has received support for its initial activities from British Coal Opencast.

In the first phase of the RRP a feasibility study was carried out to review and assess current river restoration projects, measures and techniques and make recommendations on the next phase of the project, the demonstration projects (Econ 1993).

It was decided by the RRP that, prior to the initiation of demonstration projects, it would be desirable to carry out a baseline study of the institutions with an interest in river restoration. The objective was to clarify their powers, duties, responsibilities and other functions and the sources of funding available for river restoration and to identify other direct and indirect activities which influence river restoration.

Middlesex University Flood Hazard Research Centre was invited to submit a proposal to carry out this research and was subsequently asked to proceed.

1.2 Specific objectives of the study of institutional arrangements for river restoration

The following specific objectives are listed in the research proposal:

- Identify activities which provide reactive opportunities for river restoration and enhancement to be undertaken: examples include flood defence schemes, road and other infrastructure works, mineral workings and river crossings by pipeline.
- Identify all national and regional organisations in the UK having statutory or other institutional interests in these activities; examples include regulatory bodies, other

government agencies, conservation organisations, funding agencies (including EC), construction industries.

- Determine the limits of the duties or interests of each of the bodies, how they interact or operate in isolation giving examples of how interactions work; consider the proactive powers of each to undertake restoration in its own right.
- Produce a clear and concise document which enables anybody who may wish to promote river restoration to understand what procedures have to be followed and which organisations may be interested in practical or financial collaboration; provide a summary of currently available schemes that support restoration initiatives e.g Countryside Stewardship etc. and of schemes in the planning stage e.g MAFF Habitat Improvement Scheme and provide information on qualification and availability; list contacts and references for follow-up action by interested parties.
- Propose a structure for, and draft, a simple publicity leaflet which encompasses the main guidance points from the main document.

1.3 Definition of river restoration

It is important to clarify for the purposes of the RRP the meaning of the terms "river restoration" and related terms. It is important to distinguish it from the many other terms used to describe works involving improvements to the riverine environment which have environmental benefits (benefits to the natural environment, wildlife and habitats rather than recreational or amenity benefits) as their principal aim.

Restoration

This has been defined as:

'the complete structural and functional return to a pre-disturbance state' (Econ 1993; modified from Cairns 1982).

This, it is argued is the most desirable option for the natural environment. The geological, climatological, biological and chemical sequences responsible for producing any river system are probably unique to a particular time and place (Cairns 1991); therefore, the pre-disturbance state may not be a viable option (Econ 1993). The best approximation to the pre-disturbance state may be that exhibited during natural recovery. This process may be enhanced by minimal intervention to deal with appropriate stresses (Econ 1993).

Full restoration to the pre-disturbance state is the goal of the River Restoration Project. But it recognises that this goal is rarely if ever achievable. The aim, therefore, is to see what can be achieved within the constraints that are present and to return rivers as nearly as possible to their pre-disturbance state.

Rehabilitation

This has been defined as:

'the partial structural and functional return to the pre-disturbance state' (Cairns 1982).

Rehabilitation, the 'putting back in good order', it is suggested, typically involves the selection of desirable features only (Cairns 1982) whether or not some of these were present in the pre-disturbance state. This approach is likely to be attractive to planners and other decision makers. Rehabilitation can be seen as a process in which the needs of many user groups are balanced with those of the water environment. Rehabilitation is a practical expedient and not an alternative to full restoration. Although rehabilitated schemes may be self-maintaining, they are likely to require some management (Econ 1993). Much of the work that has been undertaken as 'river restoration' would be more correctly described as 'rehabilitation' according to the definition given here.

Enhancement

This has been defined as:

'Any improvement of a structural or functional attribute' (NRC 1992).

By definition, this is usually conducted on a smaller scale and without reference to the pre-disturbance state. Instead, desirable features are put in place which extend and improve current characteristics. 'Enhancement' as defined here often involved the use of artificial structures such as in-stream deflectors which mimic natural dynamics (Econ 1993).

The institutional arrangements are examined in this report primarily in relation to full river restoration as described above but most commonly the duties and powers of the organisations discussed are in relation to the lesser objectives of enhancement or rehabilitation. The interests and experiences of the organisation tend to be in 'enhancement' and 'rehabilitation' rather than in full scale restoration schemes.

River restoration work cannot be confined to watercourses alone. It must include the reinstatement of functional riparian zones, the banks and adjacent land associated with a watercourse or flood plains of rivers. This is because rivers are so intimately linked hydrologically and ecologically in terms of the food chain and nutrient cycling, with their flood plains or riparian zones, that they should be thought of as one functional unit (the Riverine-Riparian Ecosystem). The nature of the relationship between the riparian zone or flood plain and the watercourse will depend on its size: in the case of a small watercourse, the riparian zone will donate water, sediment, nutrients and organic matter to the watercourse; in the case of a large river, the watercourse will give water and other materials to the flood plain. The difference between riparian zones and flood plains is largely one of size in relation to the watercourse: riparian zones are smaller and less complicated and therefore easier to reinstate. But few rivers in the UK are large enough to have truly extensive flood plains. Flood plains are defined for flood defence purposes in DoE circular 30/92 on 'development and flood risk' as:

'All land adjacent to a watercourse over which water flows in time of flood or would flow but for the presence of flood defences where they exist. The limits of the flood plain are defined by the peak water level of an appropriate return period event on the water course or the coast'.

The circular goes on to indicate that in the context of development and flood risk, this will normally be the greater of the 1 in 100 year return period event or the highest known water level for rivers. The extent of the land associated with a watercourse that ought to be included in a river restoration project has not been generally defined but it is clear that land use management and structural techniques and institutions with land management responsibility will inevitably be involved in river restoration.

The length of river that should be included in a river restoration scheme has not been defined. Schemes of river rehabilitation or enhancement cited in the River Restoration Project Phase 1: Feasibility Study (Econ 1993) mainly range from 100 or more metres to several kilometres. Few schemes have covered the full extent or very long lengths of a river or a total catchment which would be the ideal approach. The greater the length of river involved, the greater are likely to be the number of institutions with an interest in river restoration and the effort needed to ensure coordinated action.

1.4 Definition of institutions

For the purposes of this report, it is also necessary to indicate what is meant by institutions. Parker and Penning-Rowse (1991) have stated:

"Institutions are seen to be a complex web of interconnecting systems, resource and power flows, and decision processes which can be seen as constituting the following:

- i) laws and regulations;
- ii) an organisational framework;
- iii) attitudes and subcultures; and
- iv) policies and instruments".

This report is concerned with these institutional aspects of the organisations and agencies with an interest in river restoration. These interested actors have been widely defined to include not only the major statutory bodies but also voluntary conservation agencies, commercial, industrial and recreational and other users of rivers and their associated land and formal or informal community organisations concerned with the amenity and nature conservation value of a local watercourse or area.

2. OPPORTUNITIES AND INSTITUTIONS FOR RIVER RESTORATION: AN OVERVIEW

This section of the report provides an overview of the opportunities for river restoration, of the organisations that may have an interest in river restoration initiatives and of the funding sources and schemes that might be called upon to support a river restoration initiative. The duties, powers and interests of the institutions are described in detail in sections 3 and 4 for England and Wales, sections 5 and 6 for Scotland and Sections 7 and 8 for Northern Ireland. Funding sources and schemes are presented in detail in sections 9, 10 and 11 of this report.

2.1 Opportunities for river restoration

2.1.1 Pro-active approaches to river Restoration

Catchment management plans

Ideally, river restoration would take place as part of a process of holistic river catchment planning and management (Gardiner 1990). But the only statutory body in the UK with sufficiently broad responsibilities to be in a good position to carry out such planning and management is the National Rivers Authority (NRA) in England and Wales. It is the only UK body which is attempting to do so. The NRA's programme of catchment management plans has been initiated relatively recently and therefore the number of river catchments covered is limited. The methodology is still being developed and early catchment management plans have been criticised for giving insufficient attention to certain functions and interests including nature conservation but such deficiencies have been remedied in some later plans.

Local authority statutory development plans and non-statutory plans

Another pro-active approach to river restoration might be through the local planning authorities statutory development plan process and through non-statutory initiatives, strategies and action plans. Some local authorities have taken the initiative in considering how to rehabilitate their degraded rivers albeit often with recreation and amenity and local economic regeneration rather than nature conservation as main objectives. The Greater Manchester Council's River Valleys Project is an example of this type of activity. Some of these projects including some urban waterside regeneration schemes take the form of joint public and private sector initiatives.

Local community initiatives

A third proactive approach towards river restoration is the initiatives taken by groupings of local statutory and voluntary organisations, private companies, recreational or other users and individuals who combine to secure the rehabilitation or enhancement of a particular local watercourse. There are some notable examples of action of this kind such as the Medway River Project and the Tweed Foundation.

2.1.2 Reactive opportunities for river restoration

Almost any change in land use, development or redevelopment on a site associated with a river may provide a reactive opportunity for river restoration. Restoring a river to its true pre-disturbance state, however, frequently requires a greater take of land to recreate meanders in the channel or to allow the river to move and to provide for an adequate buffer zone of ten metres or more along the watercourse. Full restoration may not be possible on very valuable urban or urban fringe sites and rehabilitation or partial restoration to a pre-disturbance state may be the best that can be achieved. The following examples of possible reactive opportunities for river restoration or rehabilitation can be cited:

- **Housing development or redevelopment:** A house builder developing a site which includes a watercourse might be persuaded to restore the watercourse as an attractive feature of the development. The NRA in England and Wales would generally no longer accept a proposal to culvert or channelise a small watercourses and there instances in which developers have been encouraged to redesign their schemes to accommodate an enhanced river.
- **Industrial or commercial development or redevelopment:** similar opportunities may arise in the case of industrial development or redevelopment on an riverside site. There is generally now greater appreciation of the amenity value of riverside sites and of the value of such sites in urban regeneration. There are many examples of riverside sites being the centrepiece of urban regeneration schemes but usually these have only offered limited opportunities for river enhancements rather than involving rehabilitation or restoration.
- **Retail Developments:** one of the commonest type of development to take place on major riverside sites and flood plain land in recent years has been major retail outlets and their car parks. However, there is little to indicate that this type of development has been associated with anything more than minor enhancement works to riverside sites.
- **New road and other infrastructure:** these works may create opportunities for compensatory restoration or rehabilitation of affected watercourses. NRA Thames Region, for example, proposed that a rehabilitation scheme for one section of the Ravensbourne River in South London should be funded in compensation for the adverse effect of the extension to the Docklands Light Railway on another part of that river.
- **Mining and mineral workings:** these cause major disturbance to natural features including rivers. But the operators are usually required to take action to reinstate the site on completion of mining and mineral extraction activities. River restoration may be included in these reinstatement activities. British Coal Opencast provides notable examples of such work. It has temporarily diverted or relocated a variety of rivers in order to carry out opencast mining activities. It often reinstates these rivers in their old channels when mining is completed (Econ 1993).

- **New flood defence works:** these may offer scope for river restoration where the works can be designed in a way that allows the river and its flood plain to interact and function naturally. Natural flood banks sited well away from the river and flood walls to provide protection to individual properties are the kind of flood defence works which might be combined with river restoration.
- **Flood defence or land drainage scheme renewal:** when schemes come up for renewal, there may be the opportunity to consider reducing the level of protection offered or abandoning protection altogether where agricultural land alone is protected. Where the level of flood protection is to be raised or maintained, it may, nonetheless, be possible to remove features such as concrete channels and to redesign defences using soft engineering techniques or in a way that permits the river to be returned to a more natural state.
- **Changes in land ownership or management:** this may create a new situation in which river restoration becomes possible. This is most obvious where a site comes into the ownership or management of a conservation organisation or local authority but a change in private land holding may also bring new opportunities. Any change in ownership or management of a site may engender new thinking about the site which may be favourable to river improvement or not.
- **A change in the designation of a river site:** bringing new funding possibilities and, in most cases, incentives or management constraints for landowners, this may also make river restoration more feasible. For example, this might be the case where a site is located in a newly designated Environmentally Sensitive Area (ESA) or local nature reserve or where a site contains a newly designated Site of Special Scientific Interest (SSSI) or Area of Special Scientific Interest (ASSI).

2.2 Institutions with an interest in river restoration

A very wide range of individuals and organisations both statutory and voluntary may have an interest in river restoration.

- First, there are individuals, companies and organisations which own or manage the land adjacent to, or associated, with watercourses and those who own the fishing rights to waters.
- Second, there are statutory institutions with responsibilities for the planning and management of the water environment.
- Third, there are statutory authorities with responsibility for land use planning and management. These include planning authorities who control development and plan land use mainly for the urban or developed parts of the land and also the authorities which have certain responsibilities for the management of agricultural land and of forestry.

- Fourth, there are statutory conservation organisations with responsibility for countryside, access and recreation, landscape and nature conservation. Their responsibilities extend across both the land and the water environment.
- Fifth, there are voluntary conservation and local community organisations with an interest in river restoration whose interests may also embrace both the land and water environment.
- Sixth, there are recreational user groups and interests, anglers, watersports organisations, ramblers etc.
- Seventh, there are industrial, commercial and agricultural users and local businesses who may have an interest in river restoration.

2.2.1 Landowners and Fishery owners

Those who own or occupy land adjacent to the river or who own the fishery there will have a key role in any river restoration project. Under common law, a 'riparian owner', that is anyone who owns property alongside a natural watercourse possesses certain rights and responsibilities relating to the stretch of the watercourse which falls within the boundaries of his or her property. Often, in England and Wales, a riparian owner owns the land up to the centre line of a non-tidal watercourse and not just the bank(s). However, this is not invariably the case. Legal rights and obligations of riparian owners vary in different locations. Riparian owners have a key interest in the restoration of the aquatic environment and in the riparian zone but a river restoration project may involve non-riparian landowners who have holdings of flood plain land associated with the river and with the river restoration.

Riparian owners in England and Wales, are responsible for accepting water from the section of watercourse owned by their upstream neighbour and for transferring this, together with drainage from their own property to their neighbour immediately downstream. Riparian owners in England and Wales are responsible for preventing erosion of the banks of their watercourse. In addition, they are also allowed to protect their property from flooding. These and other activities of riparian owners relating to watercourses and flood plains are subject to regulation by the National Rivers Authority (NRA) or Internal Drainage Boards in England and Wales and by the other bodies with comparable water management responsibilities in other parts of the UK. Landowners in Scotland in rural areas have responsibility for flood defence and land drainage.

Thus, although, in theory, a riparian landowner could decide independently on his or her own initiative to undertake river restoration work on the watercourse falling within the bounds of his or her property, this work in England and Wales would probably require Land Drainage Consent from the NRA or the relevant drainage authority and, therefore, the NRA or other drainage authority would have to be involved in England and Wales at least.

Furthermore, riparian and other landowners are subject to the normal planning law and although it is likely that most river restoration works will not require planning permission,

some may do so and landowners would be advised to check their position with their local planning authority.

The restoration of stretches of river will in many cases involve several riparian owners and indeed non-riparian land owners whose property includes associated river corridor or flood plain land.

Fisheries can be legally owned and anyone who negligently damages a fishery could be liable for damages to the owner or any other person having an interest in the fishery. Fisheries may be fished by their owners or they may be let out to others. They may be managed by individuals, companies or clubs. Owners or managers of fisheries will have an interest in river restoration since the quality of the fishing and species of fish available will depend on the water quality and quantity and on the physical characteristics of the watercourse and the riparian zone. Restoration of a river to its pre-disturbance state may greatly enhance the quality of its fisheries.

2.2.2 Statutory institutions

Table 2.1 summarises the statutory organisations that might be involved in river restoration in England and Wales, Scotland and Northern Ireland. These statutory bodies have obligations relevant to river restoration given to them in legislation or regulations. Because of their statutory responsibilities, these are likely to be key institutions in any river restoration initiative. There are major differences in the legislation and regulations and very few common institutions involved in the different parts of the United Kingdom, in England and Wales, in Scotland and in Northern Ireland. In England and Wales one body, the NRA have responsibility for a large proportion of the water planning and management activities that are relevant to river restoration. In Northern Ireland, the Watercourse Management Division of the Department of Agriculture for Northern Ireland (DANI) has the main responsibility for these functions. In Scotland functions and activities are dispersed among various organisations. The institutions and their duties, powers and interests are mainly described in detail separately in sections 3, for England and Wales, 5 for Scotland and 7 for Northern Ireland.

Table 2.1 Summary of statutory institutions with an interest in river restoration

Functions and activities	Institutions with main/significant responsibility		
WATER	ENGLAND AND WALES	SCOTLAND	NORTHERN IRELAND
Flood defence/land drainage			
Policy/grant aid:	MAFF	SOAFD/SOEnD	DANI
Scheme design/implementation	NRA IDBs District Councils	Landowners Regional and Islands Councils SOAFD/SOEnD	DANI Watercourse Management Division
Fisheries			
Policy	MAFF/WOAD	SOAFD	DANI Fisheries Div.
Licensing Regulation	NRA	District Salmon Fisheries Boards Tweed Commissioners	Fisheries Conservancy Board Foyle Fisheries Conservancy
Water Quality			
Policy Pollution control Discharge consents	DoE/WO/NRA NRA	SOEnD River Purification Authorities	DoENI Environmental Protection Div.
Water Resources			
Policy	DoE/WO/NRA	SoEnD	DoENI
Controls over abstractions/impoundments/transfers	NRA	SoEnD RPAs	
Navigation and Recreation			
Policy	DoE/WO/NRA BWB		DANI Watercourse Division
Catchment Wide Management Planning	NRA	-	-
Water and Sewerage Services	Water service PLCs Statutory water Companies	Regional and Islands Councils	Water Executive

Table 2.1 cont. Summary of statutory institutions with an interest in river restoration

Functions and activities	Institutions with main/significant responsibility		
	ENGLAND AND WALES	SCOTLAND	NORTHERN IRELAND
LAND			
Land use planning Policy	DoE/WO	SOEnD	DoENI
Development plans Development control	County and District Councils National Parks	Regional/Islands/ District Councils	DoENI
Agriculture and Environment policy	MAFF/WOAD	SOAFD	DANI
Forestry	Forestry Commission	Forestry Commission	DANI Forestry Division
CONSERVATION			
Countryside, access and landscape	Countryside Commission CCW	Scottish Natural Heritage	DoENI Countryside and Wildlife Branch CNCC
Nature Conservation	JNCC English Nature CCW NRA	Scottish Natural Heritage	Countryside and Wildlife Branch CNCC

List of Abbreviations at front of report

2.2.3 Voluntary and other organisations

National and local voluntary organisations concerned with nature conservation and countryside

A very wide range of voluntary and other organisations may have an interest in river restoration. National voluntary organisations and their local branches concerned with aspects of wildlife and nature conservation, the countryside, landscape, amenity and countryside access and recreation may wish to be involved and be able to contribute expert and local advice, specialist information, practical assistance, volunteer workers and in a few cases, financial contributions. Only the World Wide Fund for Nature and the RSPB appear to provide grants to outside bodies. County wildlife trusts, for example, have been involved in a number of river rehabilitation projects undertaken by the NRA and one planned by British Coal Opencast (Econ 1993).

National and local organisations representing user interests

National and local organisations representing particular interests especially farming and fishing interests may wish to have some involvement in a river restoration project. Local organisations may be able to contribute local expertise and may be important in persuading individuals to give a project support. Other user groups, walkers, canoeists and others engaged in boating activities may have an interest in the project if their activities could be affected by the rehabilitation or restoration works.

Local residents and amenity associations

At local level, many river valleys and communities have a local amenity or residents associations which takes an interest in local features such as rivers and open spaces associated with them. Examples of such local groups are the Chiltern Society which has taken an interest in the River Misbourne in Buckinghamshire, A.R.K, Action for the River Kennet which has campaigned about the condition of that river in Wiltshire. Local residents particularly those with properties close to a watercourse often take a considerable interest in their river and might well be willing to participate as volunteers in practical restoration work. This would not only reduce costs but would also give local people a greater feeling of involvement in the project and make the project more their own.

Projects to further the rehabilitation of local rivers have developed as a result of local initiatives. The Medway River Project in Kent and the Tweed Foundation in Scotland are examples.

The main voluntary conservation organisations which might have a contribution to make are summarised in Table 2.2. The activities of many of these and other organisations and the role that they might play in a river restoration project are described in sections 4 for England and Wales and UK Wide organisations, 6 for Scottish bodies and 8 for Northern Ireland Organisations.

Table 2.2 Main voluntary conservation organisations with an interest in River Restoration

Organisation	Country	Main interests and activities				
		Landowning Reserves	Countryside Amenity	Nature Conserv	Practical Conserv	Public Education
National Trust	E and W	Yes	Yes	Yes	Yes	Yes
National Trust	NI	Yes	Yes	Yes	Yes	Yes
National Trust for Scotland	Scotland	Yes	Yes	Yes	Yes	Yes
RSNC County Wildlife Trusts	E and W	Yes		Yes	Yes	Yes
Ulster Wildlife Trust	NI	Yes		Yes	Yes	Yes
Scottish Wildlife Trust	Scotland	Yes		Yes	Yes	Yes
RSPB	E and W Scotland NI	Yes		Yes	Yes	Yes
CPRE CPRW	E and W		Yes	Yes	Yes	Yes
USPC	NI		Yes			Yes
BTCV	E and W Scotland				Yes	Yes
CVNI	NI				Yes	Yes
Groundwork Trusts	E and W NI				Yes Yes	Yes Yes
FWAG	UK Wide			Yes	Yes	Yes
World Wide Fund for Nature	UK Wide			Yes	Yes	Yes

List of Abbreviations at front of report

2.3 Main sources of funding and schemes to support river restoration

There is no scheme available from any source specifically designed to support river restoration initiatives. Financial support for such activities will have to be assembled from a variety of sources and schemes. The main schemes which might offer support for aspects of river restoration are outlined in Table 2.3. Grant schemes are described in greater detail in relation to river restoration in sections 9 for England and Wales and UK wide schemes, section 10 for Scottish schemes and section 11 for Northern Ireland's schemes. Schemes are still being developed in some cases and final details on them are not yet available. Furthermore, schemes are constantly under review and new initiatives are under development. Therefore, it is important to contact sources of schemes to ensure that the latest schemes and details are noted.

Table 2.3. Summary of main funding sources and schemes

Source/Scheme	Duration (Years)	Availability	Grant Type	Specific Riverine option
ENGLAND AND WALES				
MAFF				
Environmentally Sensitive Areas Scheme	10	Farmers 22 designated areas	Annual payments Capital payments	Some river valleys ESAs
Habitat Scheme	20	Farmers Agricultural land with habitat potential. Pilot scheme on designated rivers/waters	Annual payments	Water fringe habitats option on designated rivers/waters
Non-rotational Set Aside Schemes	5-6	Farmers Arable areas Payment scheme land	Annual payments	Field margins including water fringes Otter havens
Countryside Access (from 1994)	20	Farmers Non-rotational set aside land	Annual Premium payments	Access along rivers
Moorland (proposed Scheme)		Farmers Moorland	Annual payments	-
Farm Woodland Premium Scheme	10-15	Farmers Agricultural land	Annual payments	-
Farm and Conservation Grant Scheme	NA	Farmers	Capital grant Improvement plan grants	-
FORESTRY COMMISSION				
Woodland Grant Scheme	10	Any land owners	Establishment grant. Management grant	-
ENGLISH NATURE				
Wildlife Enhancement Scheme	4	4 pilot areas SSSIs. Any land holder	Annual payments Capital payments	-
Various other English Nature Schemes				

Table 2.3. Summary of main funding sources and schemes - continued.....

COUNTRYSIDE COMMISSION (England only)

Countryside Stewardship Scheme	10	Any land holder inc. Local Authorities 7 landscape types.	Annual payments Capital grants	River valley and Waterside landscape option.
Landscape Conservation grants	-	Landowners via Local Authorities	Capital grant	-
Various other Countryside Commission Schemes.				

COUNTRYSIDE COUNCIL FOR WALES - (Wales only)

Tir Cymen Stewardship for Wales	10	3 Pilot areas Landowners Not restricted to landscape type	Annual payments Capital grant	-
Grants for projects				
Landscape and Nature Conservation grants (under review)				

SCOTLAND

SCOTTISH NATURAL HERITAGE

Various grant schemes available	-	Individuals/ organisations	Capital grants	-
Countryside Stewardship (under discussion)	10	Any land owner	Annual payments Capital grant	Watercourses option.

SOAFD

Environmentally sensitive areas scheme	10	Farmers. 5 designated 5 proposed areas	Annual payments Capital Payments	Option for wetlands and water margins
Habitat Improvement Schemes	20	Farmers Agricultural land	Annual payments	Waterside habitats option
Farm and Conservation Grant Scheme	NA	Farmers	Capital grant Improvement plan grant.	-
Farm woodland Premium Scheme	10-15	Farmers Agricultural land	Annual payment.	-

Table 2.3. Summary of main funding sources and schemes

NORTHERN IRELAND

**COUNTRYSIDE AND WILDLIFE
BRANCH OF DOENI**

Miscellaneous		Individual organisation	Capital	
DAN I				
Forestry Division Woodland Grant Scheme	10	Any landowner	Establishment Management	-
Farm Woodland Premium Schemes	10-15	Farmers Agricultural land	Annual payments.	-
Agricultural Development Operational Programme (1994).	-	Farmers	Capital payments.	Wildlife corridors on Agricultural land
Habitat Improvement Scheme. (scheme under discussion)	20	Farmers Pilot scheme on designated rivers	Annual Payments	Waterside Option
Moorland Schemes (under discussion) Environmentally sensitive areas scheme.		Farmers	Annual	-

3. STATUTORY INSTITUTIONS WITH AN INTEREST IN RIVER RESTORATION: ENGLAND AND WALES

3.1 The National Rivers Authority and Internal Drainage Boards in England and Wales

3.1.1 Organisation

The National Rivers Authority (NRA) was established in 1989 as the regulatory body for the water environment following the restructuring of the water industry in England and Wales under the Water Act 1989. In this, the provision of water supply, sewerage and sewage treatment became the responsibility of water services public limited companies (PLCs). The NRA was organised into ten catchment based regions, which were broadly the same as the Water Authority areas they replaced. The NRA has recently been reorganised. From July 1993, two pairs of regions have merged reducing their number to eight. Recent reorganisation within the NRA has also placed greater emphasis on integrated multi-functional organisation at the area level within the regions. Although the NRA is a national body which develops national policies for the water environment for England and Wales, its responsibilities are mainly devolved to its regions and now to some extent to the areas within the regions.

3.1.2 Duties, powers and interests

In the Water Act 1989, and subsequently in the Water Resources Act 1991 which replaced it, the NRA was given responsibility for the following functions in England and Wales:

water resources,

water quality,

flood defence,

fisheries,

and

navigation.

The NRA has statutory obligations and licensing and consenting powers relating to water management, including control of water abstraction and impounding, discharges and water quality which can prevent deterioration and further enhancement of the water environment. But some of the activities for which the NRA has responsibility can be the cause of damage to riverine habitats - chiefly flood defence and navigation. The NRA has to balance and integrate the different interests for which it has responsibility including conservation and recreation.

Conservation duties

The NRA has been given important conservation responsibilities, first in the Water Act 1989 and then in the Water Resources Act 1991.

The duty to further conservation

The NRA has a duty to further conservation in carrying out its own functional responsibilities. Section 16 of the Water Resources Act states that, the NRA has a duty, in developing or considering any proposals relating to any of its functions:

‘to further the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiographical features of special interest’ and

‘to take into account any effect which the proposals would have on the beauty or amenity of any rural or urban area on any such flora, fauna, features, buildings, sites or objects’.

This duty has to be exercised whenever the NRA carries out any of its functional activities - in relation to maintaining or constructing flood defence schemes, in relation to its licensing and consenting powers, and in its advisory role, for example. This duty is interpreted as requiring the NRA not just to avoid damage to conservation interests but as giving it a positive obligation to further conservation.

The duty to promote conservation

Section 2 para. 2 of the Water Resources Act 1991 states that it shall be the duty of the Authority, to such an extent as it considers desirable, generally to promote:

‘the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and of land associated with such waters’ and

‘the conservation of flora and fauna which are dependent on an aquatic environment.’

This duty is discretionary in that the NRA can decide the extent to which it considers it desirable to fulfil it: some NRA regions have shown greater enthusiasm for promoting conservation than others. The resources available for conservation activities in different NRA regions also vary. The duty to promote conservation does not have to be restricted to the NRA’s functional activities and, therefore, is, in principle, broader in its applicability - giving the NRA a right to engage in free standing conservation activity independent of its functional activities. There is scope, too, for different interpretations of the phrase ‘land associated’ - it can be interpreted quite narrowly as applying to a narrow strip along a river, to the flood plain or to the river catchment.

In carrying out its conservation duties, the NRA is guided by a Code of Practice which was issued under the provisions of the Water Act 1989, and gives practical guidance on conservation matters.

NRA regional conservation officers and other NRA regional specialists have expertise on the water environment and on many watercourses in their area. They may have access to river corridor surveys or other specialised information on these and are, therefore, in a good position to advise anyone with an interest in river restoration within a region. The same is true of IDB staff and particularly their conservation officers where they have them.

River rehabilitation in NRA Conservation Strategy

The NRA's Conservation Strategy (NRA 1993) identifies river rehabilitation as a key area where long term improvements should be sought through improvements in water quality and quantity and through habitat enhancement. The NRA sees its role in habitat enhancement as one of providing a broad rational framework for the long-term rehabilitation of riverine habitats. Thus the NRA is seeking to develop a system and database to assess the conservation interest and enhancement potential of all rivers so that resources can be properly targeted. The strategy also stresses the importance of collaboration with others - conservation organisations and local authorities. It seeks to work with others in proactively promoting river enhancement projects, as well as in reactively exploiting any opportunities that arise to rehabilitate river environments in association with other developments. Its objectives in river rehabilitation are both to aid the recovery of species which are in decline and generally to enhance the amenity of urban and rural watercourses.

Water quality

The NRA has responsibility for preventing pollution to rivers and other waters for which it has responsibility in order to ensure that the water quality is suitable for plant and animal life in and around the river and for all of its various uses. Under the Water Act 1989, it is an offence to cause or knowingly permit the entry of poisonous, noxious or polluting material into any watercourse, inland water (lakes generally discharging into a stream) and specified underground waters).

Prior consent must be obtained from the NRA before industrial, trade, agricultural, sewage or any other effluent or in certain cases surface water is discharged, into any river, stream, underground or other controlled water under the Water Act 1989. The NRA is responsible for monitoring river water quality and ensuring that its discharge consents are complied with, and that unconsented discharges do not take place.

Although the NRA has good controls over discharges at a particular point, its controls over diffuse sources of pollution are less satisfactory. The Food and Environmental Protection Act 1985 requires prior consultation with the NRA or RPAs before the use of herbicides or pesticides in or near water and before the aerial application of chemicals. Herbicides listed as suitable for use in or near watercourses and lakes in MAFF Guidelines (MAFF 1985) should be used when there is a risk of contamination.

The NRA is advising the Department of the Environment and the Welsh Office on the development of Statutory Water Quality Objectives (SWQOs), which will be set for rivers or sections of rivers. Discharge consents will be reviewed and subjected to appropriate standards to ensure that the SWQOs for a particular river are met.

Water Resources

Abstraction licenses have to be obtained before a well or borehole is sunk or before water is abstracted from a natural source or before the flow of water is impeded or obstructed by impounding works under the Water Resources Act 1963. The NRA now exercises this control over abstractions. However, in some regions, licenses to abstract given in the past mean that all the water reliably available for abstraction has already been allocated. Indeed, in some instances excessive authorised abstraction is causing low flows in rivers. The NRA has drawn up a list of the top 40 river locations in England and Wales perceived to be suffering from unacceptably low flows. In most cases the cause of the low flows has been identified as ground water abstractions. Most of the abstractions were authorised under the Water Resources Act 1963 which gave existing abstractors the right to a license regardless of the environmental implications (NRA 1993). In these circumstances, the NRA's regulatory powers to license new abstractions cannot facilitate river restoration.

The NRA has powers under the Water Resources Act 1991 to vary or revoke licenses. But where this approach is adopted for a license that is in use, the NRA is liable to pay compensation to the license holder. Negotiation with license holders to obtain voluntary restrictions on abstractions or expenditure to create other sources of supply such as sinking new boreholes or to pipe water from alternative sources or lining the bed of rivers are other approaches that may be adopted (NRA 1993). Clearly these approaches vary in the extent to which they allow a natural recovery and could be said to restore the river to its pre-disturbance state.

Flood defence

Under section 105 of the Water Resources Act 1991, the NRA exercises a general supervision over all matters relating to inland and coastal flood defence in England and Wales. The NRA is required under the Act to carry out surveys as part of its flood defence duties. Therefore, it is a key source of information on flood risk areas and on flood defences.

But other bodies also have flood defence and land drainage responsibilities. The NRA has specific responsibilities in relation to main rivers - which are watercourses defined by Parliament as main river and shown on a main rivers map. Under the Water Resources Act 1991, the NRA's executive decision making and powers in respect of its flood function, with the exception of its general supervisory role, the raising of drainage charges, precepts and borrowing money, are delegated to regional flood defence committees (RFDCs) which have been established in each of the ten original NRA regions. The membership of RFDCs consists of MAFF or WO appointees, representative of local authorities in the region who contribute to the Flood Defence Levy and NRA representatives. There may also be local flood defence committees, set up with MAFF approval which carry out RFDC functions for a local area within a region.

In internal drainage districts, non-main rivers or ordinary watercourses, usually streams, dykes and drainage ditches, are the responsibility of drainage boards (IDBs). Outside internal drainage board areas, local authorities are the drainage authorities for ordinary watercourses or non-main rivers within their boundaries.

Under section 109 and 110 of the Water Resources Act 1991, prior consent must be obtained from the NRA before riparian owners or others can carry out any structural work, on, over, under or adjacent to a main river watercourse. NRA regional byelaws may determine the width of the stretch of land for which land drainage consent is obligatory. These byelaws may also require riparian owners and others to obtain NRA consent for other activities such as tree planting and excavation affecting the bed or banks of rivers which a landowner might wish to undertake. These regulations are intended to ensure that changes in, under or over a river do not impede the flow of flood waters or reduce the flood storage capacity of adjacent land. Thus, the NRA would necessarily be involved where works and activities specified in the byelaws were carried out as part of a river restoration scheme because of the flood defence implications.

Under section 14 of the Land Drainage Act 1991, the NRA has permissive powers to maintain and improve existing works and construct new works for flood defence purposes. These powers are discretionary and although the NRA nationally and the NRA regions do aim to provide a particular level of protection to areas at risk from flooding according to the land use, the NRA is not obliged to provide a particular standard of protection to property or land.

If a flood defence scheme is to obtain Government grant aid, it is required to show that the proposal is technically sound, environmentally acceptable and economically efficient in that the economic benefits of the scheme can be shown to be greater than the costs.

Where riverine flood defences have been constructed to protect agricultural land alone and to permit more intensive farming methods, it appears that the NRA could decide in the future to stop maintaining the defences or not to renew the defences at the end of their life or to reduce the level of protection offered, without in most circumstances being required to pay compensation to the land owners involved. This form of managed retreat on inland rivers could provide opportunities for river restoration schemes in the future. The NRA's Flood Defence Strategy states that where the justification for any flood defence has diminished to the point where the expected benefits of maintenance and rehabilitation will not match the costs, the NRA will consider the abandonment of a defence or a managed retreat incorporating ecological and landscape criteria in the assessment of the most beneficial option (NRA 1993).

Land drainage and flood defence works carried out in the past have played a major part in creating the need for river restoration as many rivers have been channelised, for land drainage or flood defence purposes. NRA personnel in a survey perceived physical habitat loss, principally through river engineering to be the most important form of riverine degradation in England and Wales (Econ 1993). The requirement to defend land and property from flooding was identified as the most important reason for river engineering works. The current need to reduce rather than maintain agricultural production provides an opportunity to consider reducing or removing protection where the protection of agricultural land is the main function of flood defences or land drainage creating scope for river restoration schemes.

Fisheries

Under the 1991 Water Resources Act, the NRA has a general duty to maintain, improve and develop salmon, trout and freshwater fish and eel fisheries and to establish and maintain

Regional Fisheries Advisory Committees. Most of the NRA's powers to regulate and protect fisheries through a system of licensing are defined in the Salmon and Freshwater Fisheries Act 1975 and the Salmon Act 1986. The NRA has a wide range of powers to monitor, police and enforce its fishing regulations and to help to ensure the free passage of fish including the power to require the construction of fish passes and to control the introduction of fish into waters apart from fish farms. The NRA can raise money through duties on licenses for angling and other forms of fishing. Under Section 142 of the Water Resources Act 1991 the NRA may require, subject to Ministerial Order, contributions from fisheries owners but to date, the NRA has not applied for any such orders and the NRA may fix and recover charges for services and facilities.

The NRA's fisheries duties to a considerable extent complement its conservation duties although there may be issues such as otter habitats where there is a conflict between the two. The fisheries function and interests may provide important support for river restoration since a return to the pre-disturbance state is likely to provide improved conditions for fish. The restoration and improvement of damaged fisheries is part of the specific aims of the NRA's Fisheries Strategy (NRA 1993).

Forward planning for the water environment

The NRA at national and regional level has responsibility for forward planning for the water environment. The NRA has recently published NRA Strategies for each of its functions and for NRA conservation (NRA 1993). In fulfilling this responsibility, the NRA carries out strategic reviews of aspects of the water environment which may serve to identify and prioritise rivers suitable for enhancement, rehabilitation or restoration. Thus, the NRA is in a good position to adopt a proactive approach to river restoration.

For example, the NRA has embarked on a river catchment overview project which will attempt to provide a national overview of all river catchments using available data from sources such as aerial photography and remote sensing. It is hoped that the outcome of the project will be a broad categorisation on a hierarchical basis of the conservation value of river reaches or catchments. The data and classification system, generated by the project, will provide the context for the more detailed river corridor surveys and guidance on the types of management required by reaches or catchments including rehabilitation and restoration.

In relation to flood defence activities, overviews of existing flood defences which serve to identify what is required in terms of river engineering could also be used to identify rivers and areas for which 'managed retreat' on rivers and a change to less intensive agriculture on adjacent land would be the most appropriate solution. A managed retreat initiative would need to be undertaken in association with agencies providing schemes which offer grants in exchange for less intensive agricultural land use.

Catchment Management Plans

The NRA has taken the initiative in developing catchment management plans. A catchment management plan is a non-statutory plan in which the current uses of the water environment in a catchment or part of a catchment are reviewed. In a second stage of catchment management planning, an action plan for the future development of the water environment

in the catchment is developed. Catchment management plans, thus, provide a tool for the integrated management of catchments and for planning future developments. They are intended to be used internally by the NRA as a means to positively manage environments and externally as a vehicle to communicate NRA views on the current and future uses of the water environment, to resolve conflicts and as a means of developing a shared view on the future of a catchment among all those with an interest in a catchment. The stage and extent to which external organisations, such as local authorities, conservation organisations, individual landowners and all those with an interest in a catchment have been involved in the catchment planning process has varied and the initial catchment management planning procedure and some early catchment management plans have been criticised for providing for insufficient external consultation, for failing to give attention to all NRA functions and to conservation issues (Tunstall, Parker and Krol 1993).

Potentially catchment management planning could provide the impetus, and the basis on which to undertake river restoration and the mechanism for carrying it out. The catchment management planning process may serve to bring together the parties interested in the catchment and catchment action groups are sometimes set up to carry work in the catchment forward. A group of this kind could form the basis for a working group for a river restoration project

The NRA's special knowledge and powers regarding the aquatic environment place it in the best position of all the organisations in England and Wales to carry out in-stream river restoration works. NRA officers at regional and area level, chiefly its conservation officers but also, depending on the circumstances, its flood defence, water quality, and water resource officers would need to be involved in any river restoration project in England and Wales.

3.1.3 Funding

The NRA can fund conservation that it carries out from its budgets but it does not give grants to other bodies for conservation work.

Unlike other NRA activities which generate some of their income from charges, conservation work, undertaken independently of functional activities has to be funded from grant aid from the Department of the Environment (DoE) and the funding available for such activities from this source is relatively small - £3.2 million in 1993-4. However, it is estimated that this sum constitutes only 18% of the expenditure by the NRA on conservation work. This is because most conservation work undertaken by the NRA is carried out in conjunction with, and is funded by, the NRA's functional activities, chiefly in association with flood defence (responsible for an estimated 56.5% of conservation expenditure in 1993-4) and to a much lesser extent, with water quality activities (17.5% of conservation expenditure in 1993-4) (NRA 1993). River rehabilitation or enhancement schemes undertaken by NRA Thames region so far seem to fit in with this pattern with major funding contributions for the work coming from flood defence budgets. In some other NRA regions, more resources for river rehabilitation or enhancement appear to have been found from conservation budgets but this may simply reflect the differences in the particular schemes that have been undertaken (Econ 1993).

The NRA is the main body in England and Wales with responsibility for the riverine environment, it has important conservation duties and river rehabilitation is given prominence in the NRA's conservation strategy. Therefore, the NRA can be expected to have a key role in river restoration in England and Wales.

3.2 Internal Drainage Boards

3.2.1 Organisation

There are over 250 IDBs which have responsibility for land drainage and flood defence matters in drainage districts. These vary in size from a few hundred acres to over 100,000 acres. They are found mainly in the low lying, drainage sensitive areas, constantly at risk from flooding. IDBs are responsible for land drainage matters in rich farming areas such as the Cambridgeshire and Lincolnshire Fens and in sensitive areas such as the Somerset Levels.

Drainage board members are directly elected by the farmers within the district, all of whom pay drainage rates to the board, or are elected councillors nominated by a district council to serve on the board within its area. Apart from the income raised through the rating on agricultural land, the boards serve a special levy on district councils reflecting the benefits received by domestic and industrial property owners in the district.

3.2.2 Duties, powers, interests

The great majority of boards operate under powers given in the Land Drainage Act 1991. However there are some Commissioners operating under older legislation but there are no major differences in terms of their duties and responsibilities. The responsibilities of the IDBs are broadly the same as those of the NRA. IDBs exercise a general supervision over drainage matters in their district.

Under the Land Drainage Act 1991, IDBs have powers comparable to those of the NRA to maintain and improve existing works and to carry out new works. However within their districts, IDBs have power to carry out works on all ordinary watercourses or non-main river and local authorities do not share this power with them. Internal drainage boards were set up in low lying mainly rural areas where all parts of the district were to some extent at risk. It was thought to be appropriate that the IDBs had powers to take action to deal with drainage and flood defence problems throughout the district.

IDBs also have the same land drainage consenting powers and powers to make byelaws as the NRA. They can require owners or occupiers of property to remedy defects in the system, where for example water flows are impeded. They control the erection of structures affecting watercourses and the culverting of watercourses which requires their special consent. They are, therefore, in a good position to see that watercourses are maintained in good condition or enhanced for drainage and nature conservation purposes.

IDBs are in a somewhat different position from the NRA with regard to conservation duties.

Under section 12 and 13 of the Land Drainage Act 1991, IDBs are under the same duty to further the conservation and enhancement of natural beauty, and wildlife as is imposed on the NRA under section 16 of the Water Resources Act 1991. However there is no obligation on IDBs to 'promote' conservation comparable to the duty imposed on the NRA in Section 2(2) of the Water Resources Act 1991. IDBs have been criticised for giving insufficient attention to conservation matters in their maintenance and new works on watercourses. The Association of Drainage Authorities has, however, cooperated with the NCC to produce nature conservation guidelines for drainage authorities 'Nature Conservation and the Management of Drainage Channels' (ADA/ NCC 1989) and seeks to cooperate with nature conservation interests and to combine maintaining and also enhancing wildlife habitat and landscape interest while retaining satisfactory flood protection and water level management.

IDB districts cover relatively small areas and boards employ small staffs and generally are not able to justify employing their own conservation staff. MAFF in its 'Conservation Guidelines for Drainage Authorities' (MAFF 1991) suggests that IDBs group together to do so and a group of 20 IDBs in Yorkshire have jointly with English Nature funded a conservation officer for their districts. Other boards are able to draw upon the local knowledge and advice of conservation organisations such as English Nature and RSPB which have landholdings in the district though their representation on the board. Others work closely with the NRA conservation and other staff.

Opportunities for river restoration within IDB districts are thought to be limited because of the nature of the areas and watercourses they contain. The great majority of these are human-made drains or ditches which have to be maintained, and in some cases dredged and cleared of vegetation in order to stay open. Many of these have considerable conservation interest much of which is due to the way they have been managed by people. However, the concept of river restoration is not directly applicable to these artificially created watercourses. The IDBs do have an important part to play in the restoration of land associated with the watercourses through controlling water to higher levels.

3.3 Ministry of Agriculture, Fisheries and Food

3.3.1 Duties, powers and interests

The Ministry of Agriculture, Fisheries and Food (MAFF) has a wide range of powers and responsibilities in England that may be relevant to river restoration. It administers agricultural, fisheries and flood defence policy and has, for example, powers relating to agricultural pollution, fisheries, specific agriculture and the environment policies and flood defence grant aid. In Wales, the Welsh Office Agricultural Department (WOAD) and in Scotland the Scottish Office Agriculture Department (SOAFD) have broadly similar responsibilities.

Flood Defence and Land Drainage responsibilities

MAFF has overall policy responsibility for inland and coastal flood defence and land drainage. Under the Land Drainage Act 1991 and the Water Resources Act 1991 provision

is made for Ministers to make grants to the flood defence agencies - the National Rivers Authority (NRA), Local Authorities (LAs) and Internal Drainage Boards (IDBs) towards capital expenditure incurred by those bodies in the improvement or construction of flood defence schemes submitted to the Minister for approval for grant-aid.

Furthermore, section 16 of the Water Resources Act 1991 obliges the NRA and Ministers, and Section 12 of the Land Drainage Act 1991 obliges the NRA, IDBs and Ministers to:

- (a) further the conservation and enhancement of natural beauty, consistent with any enactments relating to their functions:
- (b) further the conservation of wildlife and geological and physiographical features of special interest, consistent with any enactment relating to their functions;

There is, now, much greater recognition by MAFF and others involved in flood defence and land drainage of the importance of rivers, river corridors and flood plain land as habitats for wildlife and of water as a key element in the landscape (MAFF 1991). The publication, 'Environmental Procedures for Inland Flood Defence Works: A Guide for Managers and Decision Makers in the National Rivers Authority, Internal Drainage Boards and Local Authorities has been prepared by MAFF, English Nature (EN), the NRA and the Royal Society for the Protection of Birds (RSPB) in consultation with the Welsh Office (WO), the Countryside Council for Wales (CCW) and other environmental organisations and operating agencies in 1992. It indicates that four options for flood defence should always be considered:

- (i) do nothing;
- (ii) reduce the standard of protection to a lower standard than at present;
- (iii) maintain the current standard of protection through maintenance works or works to renew;
- (iv) improve the level of protection through new works.

Options (ii) and (iv) may offer opportunities for river restoration. When flood defences come to be reviewed at the end of their fifty or sixty year life, the option for a reduced level of protection could involve siting new defences back from the river bank or abandoning them altogether in a form of managed retreat to allow the river and flood plain to function naturally. New works providing protection for the first time or improving the level of protection offered by existing works could also provide scope for river restoration. Although there is only limited experience so far in using the opportunities provided by flood defence schemes in this way to restore or enhance riverine environments, these possibilities are now recognized by MAFF. The Environmental Procedures for Inland Flood Defence Works (MAFF 1992) states that environmental opportunities should be considered in all flood defence options;

'Schemes may provide opportunities to enhance the landscape and restore or create wetland habitats; washland areas for flood storage and river buffer zones are prime examples. Opportunities for habitat enhancement should always be considered.'
(MAFF 1992)

According to the Procedures (MAFF 1992), a preferred option for flood alleviation should

be chosen from options that are technically, environmentally and economically acceptable. Options should be ranked both according to their benefit-cost ratio and according to their environmental impact. Where the two rankings suggest a different preferred option, then judgement has to be exercised (MAFF 1992). To be eligible for approval for grant aid, a scheme has to be technically sound, economically worthwhile and environmentally acceptable. There is no requirement to adopt the most environmentally advantageous option, only to ensure that the preferred option passes an environmental acceptability threshold. River restoration measures, to be grant-aided as part of a flood defence scheme, must be considered to be an essential element in the technical flood defence solution and /or be necessary to meet planning permission requirements or the requirements of an Environmental Assessment. Also only schemes that have the approval of English Nature or the Countryside Council for Wales are likely to be regarded by MAFF as acceptable and grant aided.

It is possible, therefore, that some river restoration measures associated with flood defence schemes might be eligible for MAFF grant-aid.

Environmental responsibilities

Under the terms of the Agriculture Act 1986, MAFF has a duty to balance interests in exercising its agricultural functions. While promoting a stable and efficient agricultural industry, economic and social interests and the enjoyment of the countryside by the public, under section 17 of the Act, MAFF must also have regard to:

‘the conservation and enhancement of the natural beauty and amenity of the countryside (including its flora and fauna and geographical and physiographical features) and of any features of archaeological interest.’

Section 18 of this Act gave MAFF the power to designate Environmentally Sensitive Areas.

3.3.2 Funding

MAFF is responsible for developing schemes which implement a new agri-environmental regulation which the European Community has adopted (Council Regulation (EEC) 2078/92) as part of the CAP reform package agreed in 1992. The UK has taken a lead in developing schemes for land management compatible with requirements for the protection of the environment and maintenance of the countryside and the EC regulation provides the opportunity to build on what has already been achieved in this regard in the UK. The details of the schemes and the funding possibilities that these may offer for river restoration are discussed under section 5 below.

In its conservation policy, the Ministry of Agriculture is interested in and supportive of river restoration. It has not considered it appropriate at this stage to put forward a scheme aimed specifically at rivers, their corridors and associated land but has preferred to see what can be accomplished within the existing framework of schemes some of which are relatively new.

3.4 Department of the Environment and the Welsh Office Environment Department

The Department of the Environment (DoE) in England and the equivalent department in the Welsh Office (WO) have a wide range of responsibilities that are relevant to river restoration in England and Wales. These include, land use planning, conservation of the built and natural heritage, urban regeneration, environmental protection and water, sport and recreation. These Departments are ultimately responsible for national conservation policy but much of this responsibility and work in this area is delegated to the statutory conservation agencies mainly funded by the Department of the Environment (English Nature, Countryside Commission, Countryside Council for Wales and Scottish Heritage). Much of the DoE and WO responsibility for the water environment is delegated to the NRA

Britain's Environmental Strategy published in 'This Common Inheritance' (HMSO 1990) has sustainable development as its guiding principle and although river rehabilitation is only specifically mentioned in relation to the improvement to the River Lagan in Northern Ireland, the importance of improving river water quality and of inland waters as valuable habitats for wildlife is recognised.

3.4.1 Duties, powers and interests

Land use planning - the control of development through the planning application system and the preparation of development plans is mainly carried out by local planning authorities (LPAs) in England and Wales. However, the Secretary of State for the Department of the Environment (SoS) is responsible for appointing Inspectors to hear appeals against rejection of planning applications, and to conduct public hearings on development plans, public inquiries for local plans prepared by district authorities and examinations in public for structure plans prepared by counties. Inspectors' reports and recommendations are submitted to the local authorities for decision. The SoS, however has considerable powers to intervene in the development plan process and can call in plans. The Planning and Compensation Act 1991 instituted a plan-led planning system: a new requirement in that Act states that planning decisions, for example on planning applications, should accord with development plans unless material considerations indicate otherwise. Therefore, the SoS powers with regard to development plans have added importance.

The Department of the Environment has overall responsibility for the planning system and issues circulars and Planning Policy Guidance to guide the planning authorities. The DoE and Welsh Office have recently drafted new Planning Policy Guidance (PPG) on Nature Conservation setting out local planning authorities' main statutory obligations under both domestic and international law. LPAs are advised that nature conservation objectives should be taken into account in all activities which affect rural and coastal land use and in urban areas where there is wildlife of local importance (PPG on Nature Conservation). Guidance on Government policy for the countryside is provided in PPG 7.

The Department of the Environment and the equivalent Welsh Office department have responsibility for urban policy and for regeneration policies for decaying or derelict

industrial or other inner urban areas.

Notable examples of urban waterside regeneration projects which have received support from the Department of the Environment and/or EC funding are the Salford Quays project, the regeneration of Tyneside and Wearside industrial riversides, the Mersey Basin Campaign and the Exeter Riverside. Many urban waterside regeneration projects have been organised through Development Corporations and have involved public and private sector partnerships. Many have centred on docks and canals rather than riversides. Where projects have involved riversides, improvements have usually taken the form of enhancements or rehabilitation rather than full river restoration. The scope for returning urban rivers to a pre-disturbance state may be limited but riverside rehabilitation and enhancement have come to be seen as important components in urban regeneration schemes (White et al. 1993).

3.4.2 Funding for urban riverside regeneration

The Department of the Environment does not offer funding directly or administer schemes which might provide support for river restoration but it does fund the statutory conservation agencies to do so.

In the last ten years the departments have provided a range and variety of schemes which aim to promote inner urban regeneration by attracting private investment into such areas. Schemes have included the Urban Regeneration Grant scheme and Urban Development Grant. These have been superseded by the City Grant. In this the role of the public sector is much more reactive in that there is no longer any direct local authority involvement and therefore development is much more private sector driven. There is also a Derelict Land Grant. The arrangements for delivering assistance to deprived urban areas are under review by the Government and an Urban Regeneration Agency has been proposed.

3.5 English Nature, the Countryside Council for Wales and the Joint Nature Conservation Committee

3.5.1 Organisation

Three Government funded conservation agencies, independent of each other, were established by the Environmental Protection Act 1990 as the successor agencies to the Nature Conservancy Council (NCC), which had responsibility for nature conservation throughout Britain. The Joint Nature Conservation Committee (JNCC) has responsibility for research and advice on nature conservation matters at both UK and international level. It comprises members of English Nature, Scottish Natural Heritage, and the Countryside Council for Wales together with independent members and a representative of the Countryside Commission (England) and Northern Ireland. It is supported by a small specialist staff.

In England, English Nature has assumed the responsibilities of the NCC. In Wales, and in Scotland the functions of the disbanded NCC and the Countryside Commission have been merged to create the Countryside Council for Wales (CCW) and Scottish Natural Heritage

respectively. Thus in the Scottish and Welsh agencies, the nature conservation interests and landscape and recreation interests have been brought together in one organisation. In January 1994 Ministers announced the proposed merger between the Countryside Commission and English Nature. All the organisations have head offices and regional/local offices.

3.5.2 Duties, powers and interests

The three agencies and the Joint Committee have predominantly the same functions as those provided for under the Nature Conservancy Act 1973 and 1981 Wildlife and Countryside Act.

Among the powers and duties given to the NCC under the Nature Conservancy Act of 1973, are the following:

- to advise Ministers on policies for or affecting nature conservation in Britain;
- to establish, maintain and manage nature reserves;
- to provide advice and disseminate knowledge about nature conservation;
- to notify Sites of Special Scientific Interest (SSSI) and take such steps as are open to it to protect them - for example by advice and/or agreements provided for under section 15 of the Countryside Act 1968;
- to carry out or commission relevant research.

Conservation agencies are obliged formally to notify SSSIs to local authorities, and under the provisions of the Wildlife and Countryside Act 1981, owners and occupiers of the land and the Secretary of State for the Environment. This formal notification requirement is extended to the NRA, under the Water Resources Act 1991, to IDBs, under the Land Drainage Act 1991, and to the appropriate water and sewerage companies under the Water Industry Act 1991. In turn, landowners, occupiers and the others must consult English Nature or the CCW before they carry out or authorise any activities likely to damage the special interest of the site in question.

The Wildlife and Countryside Act 1981 gave the NCC further powers and obligations relating mainly to agricultural and forestry activities affecting SSSIs. Thus, the powers, duties and the activities of that conservation agency and its successors have been focused on designating, acquiring or otherwise protecting and managing existing sites of high nature conservation value - usually statutory sites such as SSSIs, National Nature Reserves (NNRs), Local Nature Reserves (LNRs), Special Protection Areas (SPAs), Ramsar Sites (Wetlands of International Importance).

Under the Environmental Protection Act 1990, English Nature was given new powers to enter into management agreements with owners and occupiers on land adjacent to SSSIs. This adjacent land does not have to be of conservation interest. It is the intention, however, that management agreements on adjacent land should support the SSSI.

English Nature has, as one of its current objectives for water and wetlands, to continue to promote a strategy for the conservation of rivers, lakes and wetlands so as to maintain and enhance their biological diversity and natural features. There are currently 450km of designated riverine SSSIs (1293km including proposed SSSIs). English Nature aims to work for the protection and management of key sites and to notify a national series of river SSSIs.

As part of its strategy for Nature Conservation in the 1990s, English Nature is undertaking a Natural Areas programme. This will identify key management objectives for areas of thwhich have characteristic habitats and wildlife, for example, Broadlands, the Lake District, Vale of York. The emphasis will be on expanding and enhancing the nature conservation resource.

English Nature is generally supportive of river restoration. But, it stresses the importance of selecting appropriate sites. It would wish river restoration to be targeted to achieve significant habitat enhancements, to create large habitats for wildlife and restore fluvial features. The organisation would tend to want to give precedence to better rivers, where removing defects might yield greater benefits for nature conservation. It would be less interested in urban restoration schemes where the opportunities for habitat creation might be quite limited.

It would like to see a nationally agreed cooperative programme involving MAFF, English Nature and the NRA and others to restore at least one river per year. It stresses the importance of working with others including local planning authorities and landowners.

3.5.3 Funding

English Nature is supporting the River Restoration Project with funds to produce a site selection methodology. It also intends to support the second phase of the River Restoration Project's EC Life funded demonstration project. English Nature has the powers to make grants for doing conservation work and would be in a position to make a contribution to funding for river restoration work it considered worthwhile.

3.6 Countryside Commission

3.6.1 Organisation

The Countryside Commission was established as the National Parks Commission by the National Parks and Access to the Countryside Act 1949. The organisation was reconstituted under its present name and given wider responsibilities in the Countryside Act 1968. Since 1982, it has been an independent agency with an annual grant from the Department of the Environment. Under the Environmental Protection Act, its companion bodies in Wales and Scotland were abolished and their functions were given to new bodies, the Countryside Council for Wales and Scottish Heritage which were also given responsibility for the functions in their respective parts of the country formerly carried out by the Nature Conservancy Council in Britain as a whole. The Countryside Commission has seven regional offices in England.

3.6.2 Duties, powers and interests

The Countryside Commission is the statutory body with responsibility for landscape and countryside recreation in England. Its main aims are to further the preservation and enhancement of the landscape and natural beauty of the countryside, and to encourage the development and improvement of facilities for informal recreation and access to the countryside by the public.

The Countryside Commission has sought to make clear that it considers the term 'natural beauty' is not simply about the physical and visual qualities of the landscape such as form and colour but that a wide range of factors such as archaeological and wildlife interest, human associations and national sentiments are involved (Countryside Commission 1987). Therefore, the Commission's interest in river restoration is likely to be widely based and the creation of habitats and encouragement of wildlife are likely to be only one among a number of components of interest to the Commission. Furthermore, the Commission has obligations to further informal recreation and access to the countryside which can in some circumstances be incompatible with nature conservation interests.

The Commission does not own or manage land or facilities but seeks to encourage others, notably the local authorities, to develop activities and policies that further its aims. It acts as adviser to the Government on matters relating to the countryside.

It has a special responsibility for the designation of landscapes of national importance as National Parks and Areas of Outstanding Natural Beauty (AONBs), and for establishing National Trails, heritage coasts and community forests. There are now eleven National Parks in England and Wales designated under the National Parks and Access to the Countryside Act 1949. These areas are administered by Joint Boards or Committees which have management as well as planning responsibilities within the parks. AONBs are areas of attractive landscape administered jointly by the local authorities within their boundaries. These designated areas are by definition already high of landscape value but if there are rivers, which would benefit from restoration within these areas, this would be likely to be supported by the Commission.

The Countryside Commission, in 1991 started an experimental scheme, Countryside Stewardship which aims to conserve and improve certain specific landscapes and habitats including waterside which are considered to be of particular importance. It also seeks to improve public access to these landscape areas.

The Commission's interest is not confined to the protection and enhancement of designated sites or specific valued landscapes. It has noted that 'almost every landscape, however unassuming, means something special to someone' (Countryside Commission 1990) and has shown strong interest in the wider countryside, and because of its responsibility for promoting public enjoyment of the countryside, in countryside close to and accessible from urban areas (Countryside Commission 1987b). It has sought to further conservation and enhancement or promote the restoration of environmentally degraded sites in urban and country areas.

The Commission has long been aware of the special contribution of river valleys to the beauty of the countryside. In order to provide evidence on the nature and extent of change to river landscapes and to guide future policy, it has conducted research on modifications to upland

and lowland river landscapes that have taken place over the past forty years or so through changes in agricultural practice, river engineering and maintenance works for land drainage and flood defence purposes, built development, mineral workings and transportation schemes. This is reported in 'Changing River Landscapes' (Countryside Commission 1987).

Its research has also shown the importance of water as a feature that attracts people using the countryside for informal recreation. It has since 1968 assisted in the creation of over 200 Country Parks, many of which are situated in river valleys. It has encouraged the establishment of riverside paths, for example along the River Thames and the Ribble.

The Countryside Commission and the NCC in their guidance notes for district councils on countryside and nature conservation issues in district local plans have encouraged councils where appropriate to develop special policies aimed at conserving, enhancing and restoring the particular character of river valleys. They point out that these matters are of special concern to the NRA, noting river corridor policies proposed by NRA Thames Region and suggest that joint initiatives with the NRA on policies and proposals may be appropriate (Countryside Commission 1990).

Thus, a wide range of river restoration projects is likely to be of interest to and to be supported by the Countryside Commission. The Countryside Commission has experience in, and stresses the value of working in cooperation with other organisations, especially the local authorities, but also statutory and voluntary nature conservation agencies, the NRA and other local groups and local communities.

3.6.3 Funding

The Countryside Commission offers a variety of grants and payment schemes to organisations, chiefly local authorities but also to voluntary organisations; it also makes grants to individuals. In particular, it administers the Countryside Stewardship Scheme, which might be used to support aspects of river restoration, particularly landscape enhancement and public access aspects of such projects.

3.7 Local authorities in England and Wales

3.7.1 Organisation

There are a large number of local authorities and three different tiers of local government in England and Wales. At present, at county level, 47 county councils, and at district level, 333 non-metropolitan district councils, 36 metropolitan district councils and 33 London boroughs are the authorities mainly responsible for land use planning in England and Wales. In addition, in most rural areas, there are parish councils. These, although they do not have many powers, represent the local government body most closely concerned with the countryside and constitute the most localised decision making, and they have power to acquire unenclosed or waste land and to make it available for public use as open space. Parish or

Town Councils, therefore despite their limited powers may be relevant bodies as regards river restoration.

3.7.2 Duties, powers and interests

Under section 11 of the Countryside Act 1968, local authorities are required in exercising their functions relating to land to "have regard to the desirability of conserving the natural beauty and amenity of the countryside". This is interpreted to include safeguarding wildlife and geologically and physiographically important features. It extends to urban as well as rural areas.

An important local planning authority function, highly relevant to river restoration and rehabilitation is forward planning through development plans. Forward planning and development plans have a heightened importance in the planning system since the Planning and Compensation Act 1991. This Act also requires development plans to include policies in respect of the conservation of the natural beauty and amenity of land.

Development plans

County councils in non-metropolitan areas produce structure plans which establish the strategic policy framework for planning and development including nature conservation in the county to which the policies including nature conservation policies of a district authority should conform in its local plan. District councils outside metropolitan areas are responsible for drawing up district-wide local development plans which set out detailed policies including conservation policies and site specific proposals for the development, improvement, and protection from development of land in the local area. The metropolitan districts and the London Boroughs are responsible for producing unitary development plans (UDPs) which contain both strategic policies (Part 1) and local policies and site specific proposals (Part II).

Draft Planning Policy Guidance from the DoE and WO to the LPAs indicates that local plans including Part II of UDPs should identify relevant national and local nature conservation interests and ensure that the protection and enhancement of those interests is properly coordinated in development and land use policies. Local plans should include policies to be applied to SSSIs, NNRs and other designated sites and should indicate the areas within which they should apply. But local plans should be concerned not only with the protection of designated sites but also with maintaining the conservation values of other land and with the provision of new habitats.

Development plans, therefore, provide the land use planning framework within which river restoration projects have to be carried out. Local plans can be supportive of river restoration if they identify and include policies for the protection, enhancement and management of sites such as river valleys or river corridors which have nature conservation value or potential. District plans may restrict opportunities if river corridor sites are allocated as development land in them.

LPAs can and some, chiefly county councils but also district and metropolitan borough councils have prepared non-statutory landscape and nature conservation strategies or more

specifically, river valley action plans which address management issues in more detail than is appropriate in a local plan. For, example, Leicester City Council in its Ecology Strategy proposed protecting 'a green network of wedges, corridors and other vegetated areas and features so as to conserve an integrated system of wildlife habitats'. North Avon District is another authority that has produced a landscape and conservation strategy (1992).

LPAs are, therefore, in a position to be proactive and to take the initiative in protecting river valleys or corridors and in seeking river enhancement or restoration. But authorities vary greatly in the extent to which they have chosen to adopt such an approach. Some counties and some districts have appointed conservation officers, carry out river corridor surveys and prepare river action plans; others are much less active.

NRA Thames region has developed a set of model land use policies relating to the water environment including policies on river corridors and has actively promoted these policies to the LPAs within the region. Other NRA regions have also used a similar approach. NRA Thames region's monitoring suggests that it has had considerable success in getting river corridor policies adopted in local plans. But what little other information is available on river corridors policies in development plans generally suggests that there is still a large number of authorities who do not include such policies in their plans (Tunstall, Parker and Krol 1993). This suggests that the interest and support shown for river restoration projects is likely to vary greatly from council to council. Major projects are likely to require the cooperation of a number of different local authorities which may have different levels of interest and enthusiasm. But, some councils are very aware of their rivers as landscape, amenity and recreational assets and as important wildlife habitats and have been very active in seeking improvements.

The local planning authorities' role requires them to balance various interests: economic, employment, agricultural, industrial, housing, transport, amenity, sport and recreation as well as landscape and nature conservation in the broad public interest. Therefore river restoration is most likely to be given priority by local planning authorities where a number of interests can be satisfied by a scheme, for example, where the scheme provides an amenity, and recreational and educational resource as well as a nature conservation benefit. The former Greater Manchester County Council's programme carried out in collaboration with its district councils to survey and develop its river valleys is a prime example of a local authority adopting a proactive approach to achieve a broad range of recreational and environmental improvements in degraded river valleys.

Councils are required to consult with certain organisations, English Nature or the Countryside Council for Wales, the National Rivers Authority, before their development plan proposals are made public. Once proposals are deposited and made public, six weeks has to be allowed for proposals to be examined and objections to be made. Local planning authorities, therefore, are used to processes of consultation and have substantial experience in working cooperatively with a range of organisations and individuals in developing and implementing proposals.

Development control

A planning application must be submitted for all proposed works or changes of use which

constitute "development" under the 1990 Town and Country Planning Act and which are not a granted general permission under the 1988 General Development Order except in Enterprise and Simplified Planning Zones where specific arrangements apply. Development control mainly serves the interests of landscape and nature conservation by providing a mechanism, albeit a weak one, for protecting sites of existing value, particularly designated sites such as AONBs, NNRs or SSSIs and the area around them usually defined by English Nature or the Countryside Council for Wales, from damaging development. English Nature or the Countryside Council for Wales have to be consulted about applications affecting sites in or near SSSIs. Nature conservation and landscape interests will be a material consideration in determining many planning applications.

There are some circumstances in which development proposals may offer reactive opportunities to achieve the restoration or enhancement of rivers and in which the control of development through the planning application system might be used to further these objectives. Redevelopment of river sites could be combined with river restoration measures. Planning conditions might be used to achieve new habitat creation or enhancement on a riverine site where an otherwise acceptable development would diminish the nature conservation value of the site.

Another means by which nature conservation objectives might be incorporated into new development proposals is through planning agreements under section 106 of the Town and Country Planning Act 1990. These agreements can be used by LPAs when desired objectives cannot effectively be organised through planning conditions, for example, the safeguard of valued habitats, the mitigation of damage caused by development and habitat creation. In the Government Circular 22/83 on 'Planning Gain', it is clearly stated that agreements should only cover matters which relate directly to the development, and it is generally accepted that the planning gain should be on the development site. But there are examples where it has been proposed that the degradation of one site should be ameliorated by habitat creation on another and this would constitute a planning gain. As a mechanism for achieving river restoration, this would only be acceptable if the habitat creation afforded, more than compensated for the loss on the development site and thus represented a true nature conservation gain.

Most river restoration schemes themselves will not require planning permission but it is conceivable that some schemes might, depending on the nature of the works they involve. New flood defence works require planning permission and river restoration carried out as part of such works might be included.

Local authorities often own flood plain and river corridor land as open space or park land and may be in a position to undertake habitat creation there independently or in cooperation with other organisations. Local authorities are in a position to purchase land for conservation purposes. Under section 226 of the Town and Country Planning Act 1990, a LPA with the authorisation of the SoS can acquire by compulsory purchase any land in their area which is suitable for and required to secure the carrying out of development, redevelopment or improvement. It is not required that the LPA itself should carry out this work but the LPA can compulsorily purchase land to allow others to do so. LPAs have similar powers to purchase land by agreement.

Local authorities have power under section 21 of the National Parks and Access to the Countryside Act 1949 to designate local nature reserves (LNR) in consultation with English Nature. The existing landscape and conservation value of these sites, owned, leased or managed under agreement by the local authorities is likely to be high in local terms at least. But it is possible that LPAs might wish to undertake a river restoration scheme in order to create or enhance a LNR.

3.7.3 Funding

LPAs can allocate their resources to fund nature conservation projects of their own and to provide grant aid to other bodies such as local Wildlife Trusts for such purposes. They are also able to establish management agreements.

Thus, LPAs have a range of duties and powers relevant to river restoration but they appear to vary greatly in their interest in landscape and nature conservation and in the way in which they carry out their duties and in the extent to which they use their powers.

3.8 Forestry Commission

3.8.1 Organisation

The Forestry Commission is the government department with responsibility for promoting the interests of forestry in Great Britain. Since April 1 1992 the Forestry Commission has consisted of the Forestry Enterprise with responsibility for the management of the Commission's forest estate and the Forestry Authority which is an advisory and regulatory body. The Forestry Authority monitors standards in all forestry including that of Forest Enterprise, conducts research, promotes and advises on good forestry practice and also administers the woodland grant scheme. The Forestry Authority has one national office in England, one in Wales and one in Scotland. It has 20 local conservancy offices, six in Scotland, eleven in England and three in Wales. It is thus one of the few statutory institutions with an interest in river restoration which has a Britain wide remit. The Forestry Authority has its head quarters in Scotland, perhaps reflecting the importance of Scottish forestry.

3.8.2 Duties, powers and interests

The Forestry Commission was established in 1919 in order to ensure an adequate supply of timber in Britain. The Forestry Act 1967 gives the Commission the general duties of promoting the interests of forestry, the establishment and maintenance of reserves of growing trees, the production and supply of timber, and the development of the recreational potential of the forests it manages.

Under the Wildlife and Countryside Act 1981, the Forestry Commission shares with other

public bodies, the duty "to have regard to the desirability of conserving the natural beauty and amenity of the countryside". The Wildlife and Countryside (Amendment) Act 1985 modified the general duties of the Commission. It now has a statutory duty to "endeavour to achieve a reasonable balance" between the development of afforestation, the management of forests and the production of timber and the conservation and enhancement of natural beauty and of flora, fauna and geological and physiographical features of interest.

The Commission, now as Forestry Enterprise, is the largest landowner in Britain. As such, it is in a position to initiate river restoration and habitat creation on rivers within its own extensive landholdings.

The Forestry Commission has published "Forests and Water Guidelines" (HMSO 1993) prepared and recently revised by a working group drawn from government departments and regulatory bodies in consultation with other forestry and water interests. These voluntary guidelines are intended to assist managers who look after forest and woodland in the catchment of streams and river systems. The Guidelines are evidence of a strong interest in the Forestry Commission in the conservation and improvement of the aquatic environment and in maintaining good water quality. Particular emphasis is placed on the uplands in Britain where most afforestation has taken place and where rivers and other waters are most likely to be affected by land use changes. It is recognised that poor forestry management in the fragile riparian zone and in land adjacent to watercourses can have a very damaging effect on watercourses; for example, it can lead to rapid run-off, increased soil and stream erosion, turbidity and sedimentation and pollution of rivers with consequent adverse effects on aquatic life. Particular attention is given to the issue of acid deposition and buffer zones. The Guidelines make other specific recommendations on how forest operations such as cultivation, drainage, planting, careful design and maintenance of forest roads and harvesting can protect and improve the water environment.

The Commission has also published voluntary Guidelines on "Forest Nature Conservation" (HMSO 1990).

3.8.3 Funding

The Forestry Authority is responsible for coordinating advice to woodland owners. It is also in a position to influence landowners who wish to plant trees through its grant scheme. Landowners may be eligible for grant aid from the Forestry Authority for new planting. Since 1974, the Forestry Commission has had arrangements to consult local authorities, the Agriculture Departments and other Statutory Bodies such as English Nature and the Countryside Council for Wales and Scottish Natural Heritage before deciding whether to approve applications for grant aid. The aim of the consultations is to ensure that the full range of requirements including landscape, wildlife and water supplies are taken into account before decisions on planting are reached. Thus the Forestry Authority seeks to adopt a proactive and cooperative approach to forest planning. This approach may, in some circumstances provide opportunities for river restoration.

4. VOLUNTARY CONSERVATION AND USER ORGANISATIONS WITH AN INTEREST IN RIVER RESTORATION: ENGLAND AND WALES

As well as the statutory authorities which have statutory duties and powers relevant to river restoration schemes, there are a large number of voluntary and recreational and agricultural and industrial users which have an active interest in rivers and riverine habitats. Depending on the particular restoration scheme, these organisations may be in a position to provide information and advice, active involvement and, in some cases, funding. The main activities of these organisations which are likely to be of relevance to river restoration are summarised and the probable level and type of support that these organisations might be able to offer to river restoration initiatives are indicated.

4.1 Voluntary Conservation Organisations and Community Groups

4.1.1 The RSCN Wildlife Trusts Partnership

The RSCN Wildlife Trusts Partnership is the largest voluntary organisation in the UK concerned with all aspects of wildlife protection. It is a partnership of 47 County and other Wildlife Trusts and over 50 Urban Wildlife Groups in England Wales and Scotland. It works nationally and locally to protect and enhance wildlife and wildlife habitats. The Trusts receive some support in the form of grants from local authorities and from statutory conservation agencies.

The Trusts protect over 2000 sites of nature conservation interest including some SSSIs and some local nature reserves managed for local authorities but also sites of only modest local interest. Trusts may have an interest in restoration of rivers on sites they manage.

The Trusts are the main available source of information and expert advice on local nature conservation matters outside the statutory conservation agencies. Trusts may hold specific information on river habitats and have the expertise to carry out ecological site assessments or river corridor surveys. The RSCN Environmental Services Ltd undertakes consultancy work.

The RSCN's 1992-3 Campaign, "Water for Wildlife", focused on the issues of water quality, water quantity and habitat management. As part of the campaign, the organisation has sought to cooperate with farmers and landowners to encourage positive wildlife management of waterside land by helping them make maximum use of available government grant schemes. At least one Trust, Wiltshire, has attempted to take this further and has proposed undertaking in cooperation with others a feasibility study for a river restoration scheme on the River Avon. County Trusts have participated in British Coal Opencast's river restoration projects.

4.1.2 Royal Society for the Protection of Birds

The RSPB, a voluntary organisation with a membership of over 870,000, takes action nationally and in the regions to protect wild birds and the wider environment with particular emphasis on wild bird habitats. It is a UK wide organisation with six regions in England, four in Scotland and one each in Wales and Northern Ireland.

The RSPB has a policy of buying land to create new reserves and protect feeding and breeding grounds of birds as habitat loss is seen as the greatest threat to birds. It owns or manages over 100 reserves. In choosing potential reserves, the Society adopts the following criteria:

- The number of bird species present;
- The rarity or abundance of species;
- The presence of nationally or internationally important populations of breeding or wintering birds;
- Status of bird protection elsewhere in its range.

Within this framework, the RSPB has the long term aim to establish wildlife refuges on 50 estuaries with the highest bird populations. Recent campaigns have focused on estuaries and on shorelines and coastal zone management policy. But another campaign has been concerned with the wider countryside and the opportunities for protecting and enhancing bird habitats through increased funding for environmental farming schemes such as the Environmentally Areas Scheme.

It appears likely that the RSPB would only be prepared to make a major financial and organisational contribution to a river restoration scheme which would offer major benefits to birdlife in line with the criteria outlined above. But, the Society has long experience of working cooperatively with the NRA, the English Nature and the other statutory and voluntary conservation organisations and with local authorities where some opportunities bird habitat enhancement or creation arise, for example in conjunction with flood defence schemes. The Society is likely to be a source of specialist advice and information and to offer some degree of support to any river restoration project involving significant bird populations or potential for bird habitat creation. The RSPB has some funding capability.

4.1.3 The National Trust

This body works to preserve places of historic interest and natural beauty in England, Wales and Northern Ireland. It has a head office and sixteen regional offices. With two million members, it is the largest conservation organisation in the country and if it were to be involved in a river restoration project, could be influential in bringing this type of work to the attention of a wider public. It is the largest private landholder in England, Wales and Northern Ireland. It has been extensively involved in the restoration of historic landscapes and gardens including their water features.

The work of the Trust is focused on the preservation of landscape of historic interest and of places of scenic value rather than nature conservation. But it is likely that the organisation

would be interested in and supportive of river restoration on its own land holdings where the scheme was compatible with its own objectives for landscape and recreation.

4.1.4 Council for the Protection of Rural England and the Campaign for the Protection of Rural Wales

These bodies work both nationally and locally for the protection of the rural environment. They are concerned not only with areas of national or regional importance but particularly with areas of local importance only. In England, there are 44 county branches and an individual membership of 45,000. The Councils seek to protect and enhance the beauty and variety of the countryside, and its towns and villages. Nature conservation is not a specific objective of the organisations but wildlife is part of the beauty and diversity of the countryside to be protected and improved. The organisations actively promote their views on a broad range of environmental, planning and landscape issues at national level and at local level particularly through liaison with local planning authorities but also in consultation with other organisations.

The CPRE has developed a good working relationship with the NRA nationally and locally and through the Regional Rivers Advisory Committees, on most of which the CPRE is directly represented. Its main concern with regard to the water environment has been water resources and low flows in rivers. The Councils at local level would be able to provide local knowledge and active support for restoration schemes in rural areas enhancing rivers' landscape and nature conservation interest.

4.1.5 Farming and Wildlife Advisory Group (FWAG)

The Farming and Wildlife Advisory Group works throughout the UK to encourage nature conservation activity chiefly on farms. It employs about 45 fully qualified farm conservation advisers based in all parts of the UK. These have the support of about 65 local voluntary county groups. It aims to provide practical advice to farmers and landowners on nature conservation matters generally and on habitat creation.

Local voluntary groups and FWAG conservation advisers are likely to be a focus for those with a strong interest in conservation in the local farming community. They are likely to be in a good position to advise a river restoration project on local views on conservation matters and on promoting the project to local farmers.

A cooperative Riverside Farm Conservation Project involving the FWAG, the NRA and the Countryside Commission was initiated this year on the rivers Ure, Swale and Nidd in Yorkshire. The Countryside Commission agreed to target its funding of the "Waterside Landscapes" option of the Countryside Stewardship Scheme in the area on these rivers. The FWAG adviser helped to explain and ensure a good take up of grants under the Countryside Stewardship and other schemes.

4.1.6 World Wide Fund for Nature (UK) (WWF)

The World Wide Fund for Nature is a UK wide and international organisation that campaigns for nature conservation world wide. Although much of its work is concerned with campaigning for and funding conservation projects in other parts of the world, one third of the UK funds are spent on projects within the UK. It funds hundreds of small projects throughout Britain and therefore might provide a source of support funding for aspects of river restoration in any part of the country.

4.1.7 The British Trust for Conservation Volunteers

This organisation is Britain's largest conservation organisation taking practical action to protect and enhance the environment. It trains and equips volunteers to work on sites in England, Wales and Northern Ireland. There might be scope for a contribution from volunteers to assist under supervision in work for a river restoration project. Involvement of local volunteers can have the advantage of engendering local community interest and support for habitat creation.

4.1.8 The Groundwork Foundation and Groundwork Trusts

Groundwork is a national network of local initiatives and people committed to working with others to deal with problems of urban dereliction, to restore landscapes and wildlife habitats and make positive use of wasteland in and around Britain's towns and cities. There are 28 Groundwork locations in England, Wales and Northern Ireland.

The Groundwork Foundation is a charitable body which provides resources and support for existing Groundwork Trusts and encourages the establishment of new ones.

Groundwork Trusts work by bringing together organisations, private, statutory and voluntary, national and local to promote environmental action for the benefit of local communities. It is possible that the particular skills that the Groundwork Trusts have developed in building groups to work cooperatively towards an environmental objective might be of use to a river restoration project.

4.1.9 Medway River Project

This project provides an example of a river rehabilitation initiative which has been underway for about five years and which might serve as a model for other river rehabilitation or restoration initiatives. It aims to manage and enhance the landscape, wildlife, access and recreational use of the River Medway between Tonbridge and Rochester in Kent. It also aims to promote community awareness of, and involvement in the enhancement of the river and to encourage landowners to take a positive role in enhancing the Medway and its surroundings.

The project receives its main core funding from the NRA and the Countryside Commission

with core funding contributions from Kent County Council other District Councils and industrialists and landowners. Additional small funding sources for specific projects include Parish Councils, an angling society and companies and contributions in kind. In addition the Project has had the support of the Kent Trust for Nature Conservation, English Nature and the Forestry Authority. It has also obtained growing support from community volunteer groups such as schools and angling societies which have undertaken practical conservation and enhancement work. A variety of sources of grant aid have been drawn on including the Countryside Stewardship Scheme, the Forestry Authority's Woodland Grant Scheme, and MAFF's Hedgerow Incentive Scheme. An educational Nature Reserve has been opened.

4.2 Recreational users

Recreational users or potential users of watercourses may have an interest in river restoration schemes. The most important of these is likely to be the anglers, but other groups such as ramblers, canoeists or other waterports enthusiasts and their organisations might wish to be involved if the restoration scheme has implications for their activity.

4.2.1 National Federation of Anglers

The National Federation of Anglers has a membership of over 500 angling clubs and associations in England and Wales. Through them, it represents the interests of nearly 300,000 individual coarse anglers. It aims to protect the aquatic environment and is concerned with the impact of pollution, water abstraction and land drainage on coarse fisheries.

Local angling clubs are likely to have an interest in any river restoration project affecting local rivers currently fished or with fishing potential. Those involved in fisheries often have specialised local knowledge of rivers and special economic and sporting interests in the quality of the aquatic environment. Clubs may be in a position to make a small contribution to a river restoration scheme likely to yield direct benefits to members.

4.2.2 The Salmon and Trout Association

This organisation represents the interests of game fishers in England and Wales through its head office and through its local branches. It has shown concern about water quality and water pollution issues and about increasing demand for abstractions from rivers.

4.3 Industrial, commercial and agricultural users

Local industries that are significant users of water or owners of riverside land will have an interest in river restoration and local businesses may be prepared to sponsor a project or

contribute in cash or kind. The cooperation of farmers and other landowners will be essential for many river restoration projects.

4.3.1 Water Service PLCs

Since the Water Act, water supply and sewage services in England and Wales are the responsibility of ten private water supply and water treatment agencies and 29 pre-existing statutory water companies. The ten PLCs like the NRA regions retained the same catchment based areas as the Water Authorities, their predecessors, had covered before privatisation.

The companies consented activities, such as discharging from sewage treatment works into rivers and abstracting from aquifers that supply rivers are of obvious relevance to river restoration.

As major users of the water environment they may be seen as potentially involved in a river restoration or rehabilitation. Such involvement is increasingly seen as appropriate by shareholders and customers and as helping to balance water use with the mitigation of environmental impact. Furthermore, the companies are regarded by the general public as highly profitable organisations which should be in a position to invest in environmental improvements for the benefit of the public (Green et al 1993).

The privatised Water Service Plcs' status as major holders of land in river catchments and of water in the form of reservoirs in river valleys means that they may have an important role in particular schemes by virtue of their land or water holding.

It is likely but as yet not a proven fact that river restoration involving the creation of buffer zones along watercourses may yield economic benefits to the Water Service Plcs. If such restoration measures have the intended effect of reducing the diffuse pollution reaching rivers, the costs to companies of treating abstracted water may be reduced and at the same time the effluent carrying capacity of the watercourse may be increased which would be to the economic advantage of the companies. Companies may have an interest in participating in experiments in river restoration in order to test whether such benefits are likely to be realised.

4.3.2 Country Landowners' Association (CLA)

The CLA is an organisation of private owners of agricultural and other rural land in England and Wales. It has 17 local branches and 47,000 individual members in England. It aims to promote the interests of its members. Its core objective is to safeguard and develop the capital invested in the ownership of the land and to secure an appropriate return on the investment. Its promotion of its members' interests is within a framework of concern for the economic health of the wider rural economy and of rural areas in general.

It recognises that landowners have a crucial role in the management of landscapes and habitats. It supports and seeks the extension of the whole range of schemes which provide positive incentives for the environmental management of land.

There is a growing demand for attractive landscapes, for wildlife habitats and for access and

recreation. The CLA takes the view that landowners should respond to this demand by providing what it terms "Environmental Land Management Services (ELMS)". The CLA is actively encouraging the development of a new market - a market in the provision of Environmental Land Management Services. In this landowners and occupiers reach an agreement to provide environmental services - protecting or creating habitats, protecting or enhancing landscape, access or recreation services to users in exchange for a payment which reflects the value of the service. Potential users of such services might be private individuals or organisations, voluntary organisations, local authorities, or government agencies. Devon County Council has recently taken a lead in establishing an environmental land management scheme. In 1990 and 1991, it entered into an agreement for the provision of environmental land management services and has provided funds to support this policy. This has encouraged landowners to come forward with imaginative proposals for long term management agreements providing for access to areas of scenic or wildlife value.

If a source of funding could be found, management agreements between landowners and a river restoration project of the kind advocated by the CLA could provide a mechanism for achieving river restoration project objectives.

It appears that the CLA would be supportive of river restoration initiatives if these could be combined with appropriate agreements under ELMS with the local landowners. Such agreements would need to be sponsored and funded by the local authority or other agency with power to enter into such agreements.

4.3.3 National Farmers Union (NFU)

The NFU represents a slightly different interest to the CLA - that of farmers and horticultural growers including tenants as well as those owning their land. The NFU represents about 100,000 members in England and Wales. It has a national Headquarters and ten regional offices, two in Wales and eight in England.

The NFU's environmental policy argues that the provision of incentives rather than legislative controls is the most appropriate method of delivering environmental objectives. Thus, the NFU approves of the policy of offering payments to manage the land in a certain way designed to enhance or prevent deterioration of landscape or habitats as in the ESA scheme or the Countryside Stewardship Scheme. The NFU would favour a water based ESA type payment policy. That approach would compare favourably with water protection zone legislation to which the NFU is opposed.

Although there would be some disadvantages to farmers in a buffer zone policy - the loss of land and the disturbance to land drainage that might occur, the NFU might favour a policy of this kind if adequate compensation payments were involved.

It appears, therefore, that general support would be forthcoming from the NFU for the environmental management of land associated with a river restoration scheme, if compensation payments could be arranged under one of the existing schemes. All such schemes are voluntary and are negotiated with the individual landowner but the local NFU organiser might be able to stimulate interest and encourage support for a restoration project.

5. STATUTORY INSTITUTIONS WITH AN INTEREST IN RIVER RESTORATION: SCOTLAND

5.1 Introduction

There is no single coordinating agency in Scotland, comparable to the NRA in England and Wales, which, because of its wide responsibilities, can integrate the planning and management of its functions: water quality, water resources, fisheries management, flood defence and nature conservation. In Scotland, regulatory responsibility for rivers is divided between a number of different departments and agencies.

5.2 The Scottish Office Agriculture and Fisheries Department and Environment Department

The Scottish Office has responsibility for policy on and powers in relation to matters that affect rivers: the Scottish Office Environment Department (SOEnD) in the case of environmental protection, land use planning and development control, urban development and regeneration and the Scottish Office Agriculture and Fisheries (SOAFD) in the case of agriculture and fisheries policy and land drainage. In the absence of a coordinating agency, the Secretary of State for Scotland has a significant coordinating role and considerable and numerous duties and powers relating to the water environment (Howell 1993).

The Secretary of State has general duties and powers to promote the conservation of water resources in Scotland under the Water (Scotland) Act 1980, to promote the cleanliness of rivers and inland and tidal waters in Scotland under the Rivers (Prevention of Pollution) (Scotland) Act 1951 and to conduct investigations and collect statistics under the Salmon and Freshwater Fisheries (Protection) Scotland Act 1951.

The Scottish Office and Secretary of State authorise and issue grants for land drainage schemes under the Land Drainage (Scotland) Act 1958 and can carry out maintenance on land drainage schemes under Land Drainage (Scotland) Acts 1930-41. The Secretary of State also confirms flood prevention schemes and makes grants towards flood defence expenditure incurred by local authorities under the Flood Prevention (Scotland) Act 1961.

The Secretary of State hears and determines appeals against refusal of planning permission under the Town and Country Planning (Scotland) Act 1972, discharge consent appeals and various others.

The Secretary of State also has specific powers in relation to the control of water pollution and in relation to abstraction and diversion of water for generation of hydro-electricity (Howell 1993).

The Scottish Office Agriculture and Fisheries Department (SOAFD) like its counterparts in England and Wales has developed and is developing schemes to further environmentally

sensitive land management which might provide support for river restoration. It has designated ESAs within which it provide farmers with incentives to further nature and landscape conservation on their land. SOAFD has a number of environmental schemes and is developing further schemes under the EC agri-environmental regulation broadly comparable to those available in England and Wales.

5.3 Conservation duties

Conservation duties comparable to those imposed in the Water Resources Act 1991 in England and Wales on bodies with water management responsibilities do not apply in Scotland. The Countryside (Scotland) Act 1967 imposes the weaker requirement that "in the exercise of their functions every Minister, government department and public body shall have regard to the desirability of conserving the natural beauty and amenity of the countryside". The legislation in Scotland has not been amended to reflect the increased environmental concerns of the public. The 1981 Wildlife and Countryside Act, which required Water Authorities in England and Wales to further conservation and consult with the then NCC regarding proposed works affecting SSSIs, does not apply in Scotland. The Scottish Office in 1982 wrote to the Water and Sewerage Authorities (WSAs), and the River Purification Authorities (RPAs), giving a qualified indication that they were expected to carry out their activities "in accordance with the spirit" of the 1981 Act.

During the passage of the Water Bill and again during the passage of the Natural Heritage (Scotland) Bill, unsuccessful attempts were made to extend a formal conservation duty comparable to the NRA's duty to further conservation to the RPAs. The Scottish Office then decided to introduce a voluntary Code of Practice on Conservation, Access and Recreation for RPAs and WSAs.

The 1986 Agriculture Act applies in Scotland and requires the Secretary of State like the Minister of Agriculture in England and the Secretary of State in Wales to achieve a reasonable balance between agricultural developments, nature conservation and the enjoyment of the countryside. But this duty does not appear to have had a significant influence on the Scottish Office, for example, in its supervision of agricultural land drainage and flood defence schemes.

Generally, therefore, there is little statutory pressure on those involved in water management in Scotland actively to pursue conservation objectives such as river enhancement, restoration and habitat creation in the course of their activities. However, it is proposed that the new Scottish Environment Protection Agency (SEPA) would have a conservation duty; there is a clause in the Local Government (Scotland) Bill gives a duty to further conservation to the proposed new public water authorities.

5.4 Water quality and water pollution: River Purification Authorities

Under the Control of Pollution Act 1974 and the Water Act 1989, responsibility for most water quality and pollution control in Scotland is exercised by ten River Purification

Authorities (RPAs) comprising seven River Purification Boards (RPBs) - Clyde RPB, Forth RPB, Highland RPB North East RPB, Solway RPB, Tay RPB and Tweed RPB together with the three Islands Councils - for Orkney Islands Council, Shetland Islands Council and the Western Isles Islands Council. The RPAs' functions derive from the earlier Rivers (Prevention of Pollution) (Scotland) Acts of 1951 and 1965.

As in England and Wales, discharges of sewage or trade effluent to rivers require discharge consent under procedures introduced in the 1951 Act but extended and refined in subsequent legislation. RPAs are responsible for issuing, monitoring and enforcing compliance with discharge consents, and prosecuting for illegal unconsented discharges. Five yearly surveys indicate that the discharge consenting procedures have been relatively effective in reducing polluting discharges from point sources and in securing improvements in river water quality as measured by a simple classification system in Scotland.

The water quality classification used in Scotland as in England and Wales is relatively crude. The Secretary of State for Scotland has powers to introduce a statutory water quality classification and to set statutory water quality objectives but, in contrast to England and Wales where there are proposals to develop such a system, in Scotland these powers have not been used although work is being undertaken by the RPAs to develop a biologically based water quality classification.

The RPAs, like the NRA, have insufficient powers to control pollution from diffuse sources - atmospheric acid deposition, use of fertilisers and pesticides in forestry and agriculture and pollution resulting from past industrial activity such as abandoned mines and contaminated land, all of which pose a particular threat to Scotland's rivers and lakes.

5.5 Water supply, sewage treatment and sewerage services

These services are provided by the Regional and Islands Councils mainly under the Sewerage (Scotland) Act 1968 and the Water (Scotland) Act 1980. Another body, the Central Scotland Water Development Board has a role in distributing water. However, the structure for these services has been under review and a consultation document was issued in 1992. Under the Local Government (Scotland) Bill currently before Parliament new public water authorities are proposed.

5.6 Water resources: abstraction, impoundments and water transfers

In Scotland, there is no single independent authority with responsibility for water resources. Nor, is there any authority apart from the Secretary of State in a position to adopt an integrated approach to the management of water quality and water resources. The natural flow regimes in Scottish rivers have been considerably modified, for example, by abstractions, impoundment in over 100 reservoirs for drinking water supply and for hydro-electricity generation and by water transfers. But the legislation governing these modifications is inadequate in many ways (Howell 1993).

The private right to abstract water from surface and underground sources is generally founded in the common law and neither the Secretary of State for Scotland nor the RPBs have any powers over these abstractions. Some private rights over flows are based on Acts of Parliament. RPAs set discharge consents on the basis of assumptions about the quantity of receiving water available to dilute polluting discharges but have no control over the abstractions that may affect the amount of receiving water.

The Spray Irrigation (Scotland) Act 1964 provided for only limited control over agricultural abstractions for spray irrigation but this has been replaced by new provisions in the Natural Heritage (Scotland) Act 1991 which give controlling power over all abstractions for irrigation by commercially-based agriculture and horticulture to the RPAs.

Under the Water (Scotland) Act 1980 and the Electricity Act 1989 the Secretary of State for Scotland has the power, with the RPAs acting as consultees, to authorise abstractions and impoundments for purposes of public water supply and hydro-electricity generation.

The Secretary of State for Scotland has powers under the Water (Scotland) Act 1980 to modify the compensation flows released from reservoirs. There is evidence that the majority of reservoirs were releasing the same compensation flows as when the reservoir was first impounded and that these flows were determined by industrial and political factors that no longer apply and with little knowledge of the impact on downstream flora and fauna. It has been argued that all current releases from reservoirs should be reviewed to enable compensation flows to be set at levels more appropriate to nature conservation and other relevant interests (Brown and Howell 1992).

It appears, therefore, that in the current circumstances, schemes which aim to restore rivers modified by over abstraction, impoundment, compensation flows and the combined effect of over abstraction and pollution might face difficulties because of limited powers of control and the different bodies involved.

5.7 Fisheries: District Salmon Fishery Boards

In Scotland, salmon and sea trout fisheries are of major economic and social importance and these fisheries interests are likely to be important in any restoration of a river involving these species. Most, fisheries legislation is concerned with these species. Under the Salmon Act 1986, salmon and sea trout fisheries but not other species of fish are mainly administered by District Salmon Fishery Boards. Boards are set up only on the initiative of the fisheries proprietors and as a result not all districts have a board. There is no board to take responsibility for the Clyde catchment where salmon have returned in recent years and where there is now some difficulty in identifying the fishery owners. There are separate arrangements for the Rivers that form the boundary with England - the Tweed and the rivers flowing into the Solway Firth. On the Tweed the Tweed Commissioners are the fishery authority and have responsibility for managing all types of freshwater fish even in the English part of the catchment.

The District Salmon Fishery Boards have quite wide powers to protect and improve their fisheries. They can, for example, carry out channel and bank works in the interests of the

fishery.

As the boards do not have responsibility for species other than salmon and sea trout, and there is no other local administration for brown trout and other species, the management and conservation of these other species has been neglected.

5.8 Land drainage and flood defence: Regional and Islands Councils

In Scotland, land drainage and the prevention of flooding of agricultural land is the responsibility of the individual landowners. Where several landowners are involved in large scale drainage schemes, the Scottish Office Agriculture and Fisheries Department administers grant aid. In urban areas, under the Flood Defence (Scotland) Act 1961, the local authorities, the Regional and Islands Councils, have discretionary powers to undertake flood defence works with approval and grant aid for schemes being issued by the Scottish Office Environment Department. These fragmented institutional arrangements for flood defence in Scotland: the division of responsibility for urban and rural land drainage and flood defence, the responsibility of individual proprietors for the prevention of flooding on their own land, would appear to mean that combining flood defence objectives and river enhancement or restoration on a large scale would be more difficult to achieve in Scotland than in England and Wales.

Furthermore, those with responsibility for flood defence and land drainage in Scotland are not under the same obligation as their counterparts in England and Wales to give attention to nature conservation interests in carrying out their work. In addition to the requirements of the Countryside (Scotland Act) 1967, the Secretary of State for Scotland, has, under the Agriculture Act 1986, to achieve a reasonable balance between agricultural developments, nature conservation and the enjoyment of the countryside.

It appears that these rather weak requirements have had little influence on those with responsibility for land drainage and flood defence and a traditional civil engineering approach still appears to dominate (Howell 1993). Until stronger statutory duties towards nature conservation are placed on those with land drainage and flood defence responsibilities in Scotland, encouraging a more environmentally sensitive engineering approach, the scope for achieving river enhancement or restoration in conjunction with flood defence schemes as occurs in England and Wales and elsewhere, appears very limited.

5.9 Scottish Natural Heritage

Scottish Natural Heritage (SNH) was established by the Natural Heritage (Scotland) Act 1991 in April 1992 combining the functions of predecessor organisations, the Countryside Commission for Scotland and the Nature Conservancy Council for Scotland. It was given two new functions of particular interest (Howell 1993). It was given the power to recommend areas of outstanding natural heritage value. The Countryside Commission for Scotland in reporting on recreation and resource management in mountain areas had recommended that National Parks should be established in certain areas (Countryside

Commission 1990). The power to recommend areas of outstanding heritage value could be seen as an alternative or indeed as a way of avoiding a policy of establishing National Parks. The Countryside Commission for Scotland has also undertaken a major review of access to the countryside in general and a study of the legal basis of access for water based recreation (Brodies 1992).

SNH was also required to 'have regard to the desirability of securing that anything done, whether by Scottish Natural Heritage or any other person, in relation to the natural heritage is done in a manner which is sustainable'. Both these functions could in the future be supportive of river restoration projects.

A major focus of concern over rivers in Scotland has been over water quality because much of the concern has been driven by fisheries interests. As water quality has improved, and the salmon fishing has not recovered, concern has shifted to the overgrazed headwaters of rivers where bankside vegetation has gone, banks collapse and erosion occurred, creating unfavourable conditions for fish.

Forestry has also adversely affected watercourses although the Forestry Commission is keen to look after and enhance watercourses and the land associated with rivers. Acidification, fish farming and channel modification, flow control and catchment transfers as part of the hydro-electricity industry are seen as particular problems for Scotland's rivers. But Scottish rivers also suffer in some degree from the same problems as experienced in England: agricultural, sewage and industrial pollution (Howell 1993).

There appears to be considerable interest in and enthusiasm for river restoration within SNH. The organisation, with its wide range of activities and interests in conservation, landscape and recreation and particularly its expertise on and involvement in freshwater issues and its remit to support sustainable activities, would seem to be particularly well placed to support a river restoration initiative.

5.10 Local planning authorities

Strategic planning and the preparation of structure plans in Scotland is the responsibility of the Regional authorities. In the densely populated central area of the country, there are two tiers of local government with the six Regional authorities (Central, Grampian, Lothian, Fife, Strathclyde and Tayside) responsible for structure plans and the district councils within them having responsibility for local plans and development control.

In Dumfries and Galloway, Borders and Highland Regional authority areas which cover the less populated areas of the country, the district councils have no planning powers and the Regional authorities are responsible for development plans and development control.

In addition, the three Islands Councils are unitary authorities responsible for both strategic and local plans and development control. The structure of local government in Scotland is under review, the intention being to create unitary authorities throughout Scotland.

The Planning and Compensation Act 1991 modified the Town and Country Planning

(Scotland) Act 1972 and introduced a plan-led planning system into Scotland as in England and Wales. The new planning legislation also requires all development plans to include policies in respect of 'the conservation of the natural beauty and amenity of the land'. In contrast with the current position in England and Wales, subject plans are still available to authorities as a planning tool and may be of use for planning strategies for areas of nature conservation importance and might be applied to river environments.

Recent Scottish Office advice contained in Circular 13/1991 (Nature Conservation) may be supportive of LPA participation in river restoration schemes. It reinforces advice that Government, LPAs and other public bodies have a duty to 'have regard to the desirability of conserving the natural beauty and amenity of the countryside'. It also advises LPAs on their role in nature conservation and encourages LPAs to take nature conservation considerations fully into account in the management of their own land.

Scottish planning legislation differs from the English legislation in a few respects which might be favourable to nature conservation interests. Structure plans have a somewhat enhanced role because of the authority given to Regional authorities under the Local Government Act (Scotland) as amended in the Local Government Act (Scotland) 1982 to 'call in' district proposals in certain circumstances. Also under the Town and Country Planning (Notification of Applications) (Scotland) Directions 1988 and 1991, LPAs must refer to the Secretary of State any cases where it is the authority's intention to allow development within an SSSI against the advice of SNH. In Scotland early involvement in consultation with Regional authorities on issues prior to the production of the consultation draft of development plan is common which may enable positive suggestions for improving development plans and protecting and enhancing nature conservation to be incorporated.

Forestry is not subject to planning controls. However, some Regional Councils have developed Indicative Forestry Strategies (IFS). In these they set out preferred areas for forestry and sensitive areas taking nature conservation into account. This approach is supported by the SoS in Circular 13/1992 and when completed IFS can be incorporated into structure plans.

Development plans can provide support for river restoration. But a recent review of Scottish Structure Plans by the RSPB indicates that there is considerable variation in the extent to which Regional plans incorporate site safeguards and positive nature conservation measures such as green corridor policies or specific habitat protection policies such as protection for wetlands. Most plans do contain policies or proposals to address at least one nature conservation initiative. Examples include Fife's Environment Strategy and Strathclyde's River Valley Initiative (Davies, Pritchard and Austin 1992).

5.11 Forestry Commission

The Forestry Commission has a significant role in relation to river restoration in Scotland because of the extent and importance of Scotland's forests. The organisation, interests, duties and powers of the Commission in relation to river restoration are discussed in section 3.9 above.

6. VOLUNTARY CONSERVATION AND RECREATIONAL AND OTHER USERS WITH AN INTEREST IN RIVER RESTORATION: SCOTLAND

6.1 Voluntary Conservation Organisations

Some voluntary nature conservation organisations such as RSPB are UK wide, others such as the Scottish Wildlife Trust and Scottish Conservation Projects have a separate Scottish identity but have close counterparts in England and Wales. Some voluntary organisations have taken special initiatives to promote improvements in river environments and to involve local communities in practical conservation work on rivers.

6.1.1 National Trust for Scotland

Although a separate organisation, the National Trust for Scotland has similar objectives to its namesakes in England and Wales and Northern Ireland. It aims to promote the preservation of places of historic or architectural interest or of natural beauty. It owns over 100 properties including beauty spots and areas of fine scenery. It carries out countryside management with volunteers on its own properties. It is likely that this organisation would be interested in river restoration affecting its own property.

6.1.2 Royal Society for the Protection of birds

This is part of the UK wide organisation described in section 4.1.2

6.1.3 Scottish Wildlife Trust

This is part of the Wildlife Trusts Partnership described in section 4.1.1. It owns or manages 88 nature reserves comprising over 18,000 hectares. Urban wildlife is of increasing interest to the organisation with groups in Glasgow and Edinburgh. Like its counterparts in the rest of the UK, the Scottish Wildlife Trust and its local groups with their local knowledge and expertise are likely to provide a valuable source of support for any river restoration initiative.

6.1.4 Keep Scotland Beautiful

In 1988 the Keep Scotland Beautiful Organisation in cooperation with the Forth River Purification Board launched the "Clean Forth" campaign to carry out a clean up throughout the Forth catchment. This was followed by an educational programme and as an outcome a number of charitable "River Trusts" have been set up to increase public participation in habitat improvement work. The Trusts are generally small community groups which try to increase the awareness and quality of the watercourse through involving people in practical

activities such as litter clean ups, footpath construction, bank erosion work, anti-pollution activities and access improvements and provision of interpretation facilities. A further campaign, "Clyde Pride", was planned for the Clyde River Purification Board's area for 1991 (Brown and Howell 1992; Howell, in press).

6.1.5 Scottish Conservation Projects

These are the Scottish equivalent of the British Trust for Conservation Volunteers with similar aims and objectives to that organisation. It is the leading organisation in Scotland involving people in improving the environment by practical conservation work. As such it could provide a valuable source of such assistance to a river restoration project.

Scottish Conservation Projects undertook a three year campaign, "Operation Brightwater" similar to the work undertaken by Keep Scotland Beautiful. It aimed to make people more aware of threats to rivers and other freshwaters and to encourage people to become involved in practical conservation work (Brown and Howell 1992).

6.1.6 Tweed Foundation

This is a unique forum for broad consultation on matters concerning the Tweed catchment. In the absence of an organisation to undertake catchment management planning, it provides a forum for the exchange of information for those with an interest in the catchment. The organisation was given impetus by fisheries interests which saw the need for work to restore the river banks and bankside vegetation in the higher reaches of the river and its tributaries damaged by overgrazing. The Foundation is a grouping of representatives from different organisations, District Councils, Scottish Natural Heritage, the Tourist Board, the Tweed Fisheries authorities, English Nature and others. The funding for the organisation is coordinated by the Tweed Foundation Trust and comes from a wide variety of sources including the riparian owners, statutory organisations and some private sector companies.

The group are carrying out river corridor surveys and aim to monitor the effects of the enhancements undertaken.

6.2 Recreational, industrial, forestry and agricultural users

Fishing and fisheries interests, fish farmers and fish farming organisations, the forestry industry and the hydro-electricity generators are likely to be among important water users with an interest which may have an interest in a river restoration project. The Scottish countryside and Scottish rivers are also of particular importance for tourism and general recreation and these interests may need to be involved in certain projects.

6.2.1 Scottish Anglers National Association

This association is the governing body for the sport of game angling in Scotland. Fisheries interests are an important element in river restoration in Scotland. Much of the drive to improve rivers has come from these interests. Thus, national and local organisations representing anglers may be of importance to a river restoration project.

6.2.2 Atlantic Salmon Trust

This organisation is dedicated to the conservation and development of the wild atlantic salmon and sea trout and to the improvement of the management of fisheries. With its specific interest in salmon, may be of significance for a river restoration project where important salmon fishing interests are involved.

6.2.3 Scottish Salmon Growers Association

This body acts as a point of reference for information on the salmon farming industry and liases with interested bodies. This organisation might be relevant if a river restorationschem was likely to affect significant fish farming interests.

6.2.4 National Farmers Union Scotland

Like its English equivalent, this is the main body representing farmers in Scotland. It was 15,000 members.

6.2.5 The Scottish Landowners' Federation

This organisation represents the interests of rural landowners in Scotland.

7. STATUTORY INSTITUTIONS WITH AN INTEREST IN RIVER RESTORATION: NORTHERN IRELAND

7.1 Introduction

There are fewer statutory institutions which have an interest in river restoration in Northern Ireland compared with England and Wales or Scotland. Northern Ireland has no independent statutory conservation agency comparable to English Nature or Scottish Natural Heritage, no National Rivers Authority and a centralised planning system. Many of the responsibilities relating to conservation and the water environment exercised by other agencies in England and Wales and Scotland are concentrated in the Department of Agriculture and the Department of the Environment for Northern Ireland.

Legislation providing for landscape and wildlife conservation in Northern Ireland has tended to be weaker and to lag behind that of England and Wales. The first comprehensive legislation for conservation in Northern Ireland was introduced in the Amenity Lands Act 1965 and three major legal instruments were brought in the 1980s: the Access to the Countryside (NI) Order 1983, the Wildlife (NI) 1985 providing for species protection and the Nature Conservation and Amenity Lands (NI) Order 1985. The legal obligations of public bodies towards nature conservation under the Nature Conservation and Amenity Lands (NI) Order are rather weaker than those of public bodies in England and Wales: in Northern Ireland public bodies are required only to 'have regard to the need to conserve' not to 'further' the interests of conservation in carrying out their functions.

7.2 Department of the Environment for Northern Ireland

The Department of the Environment in Northern Ireland (DoENI) has responsibility for developing and implementing environmental policy in Northern Ireland. It also has direct responsibility for forward planning and development control through its Planning Service. The DoENI's Environment Service - Countryside and Wildlife, in the absence of an independent statutory conservation organisation for Northern Ireland, has responsibility for nature conservation matters. The DoENI's Environment Service - Environment Protection has responsibility for water, air and land pollution. Its Water Quality Unit protects the aquatic environment by monitoring and controlling effluent and by acting to minimise pollution.

7.2.1 Environment Service - Countryside and Wildlife (C & W)

Dr Balfour's review of the administrative structure for nature conservation in Northern Ireland (Balfour 1984) recommended that conservation policy should continue to be implemented through the Department of the Environment but with more resources and higher status given to the Conservation Service.

Thus, most of the conservation duties which in England, Wales and Scotland are carried out by statutory conservation agencies are, in Northern Ireland, the responsibility of the Environment Service - Countryside and Wildlife (C & W). It is now larger and better resourced than it has been in the past. The C & W aims to protect and improve the quality of the countryside and conserve wildlife through looking after protected areas such as nature reserves and country parks and through supporting others in conserving the countryside and its wildlife and through providing facilities to help people enjoy the countryside.

The branch has the following responsibilities:

- designation of AONBs, National Parks, NNRs, Areas of Special Scientific Interest (ASSI) and Wildlife Refuges;
- management agreements for some of these designated areas;
- management proposals for AONBs and National Parks;
- implementation of national and international species protection;
- funding of the voluntary sector, district councils and others in conservation activities.

The branch acts as internal advisor to, and consults with, other parts of the Northern Ireland Government on conservation and countryside matters including the Planning Service of DoENI, Environment Protection, and the Department of Agriculture for Northern Ireland. C & W advises the Planning Service and the DPOs on wildlife and landscape resource issues in the early stages of development plan preparation and on development decisions. Although consultation has improved in recent years, concern has been expressed as to the extent to which the Branch is able to exert influence from within Government and make the case for nature conservation to other branches (Milton 1990).

Statutory protection has only been extended to a limited number of nationally and internationally important sites in Northern Ireland. Designation of sites, therefore, is not likely to provide major impetus or support for river restoration schemes.

No National Parks have been declared as yet but efforts have been concentrated on conserving landscape through the AONB designation. Eight such areas have been designated under the Amenities Lands Act 1965 but are subject to re-designation under the 1985 Nature Conservation and Amenities Lands Order. In the absence of local authorities with planning responsibilities, there is a need to create management structures for these designated areas.

Under the Nature Conservation and Amenities Lands Order 1985, the C & W has a duty to declare as an ASSI, any area which it considers to be of sufficient interest by virtue of its wildlife or geological features. This mechanism like the SSSI designation in England and Wales, provides for consultation over activities affecting the site and for management agreements. It is the main means chosen by the Government, together with the NNR designation, to protect sites of national or international nature conservation importance. However, progress on declaring sites has been slow and by early 1993, only 38 sites had been designated but the DoENI had a target of 250 sites to be designated by the year 2001. But

the task of designating sites has made heavy demands on, and been a major preoccupation of, the C & W. In addition, Northern Ireland also has international obligations to protect sites.

The C & W provides a range of grants for conservation, countryside and recreation projects and activities which might be used to support aspects of a river restoration project.

7.2.2 Planning Service

Northern Ireland currently has a centralised planning system.

The Planning (Northern Ireland) Order 1972 transferred responsibility for planning in Northern Ireland from local authorities to Central Government.

Amendments to the 1972 Order have been consolidated in the Planning (Northern Ireland) Order 1991. What little planning policy guidance as exists in Northern Ireland is generally internal and not subject to consultation and issue in the same way as it is in the rest of the UK. Thus, there is not generally a common framework of advice to which all those working within the planning system can refer for guidance which may lead to inconsistency in the way planning matters are handled. However there is a Northern Ireland Guidance note 'Nature Conservation and Planning' based on DoE Circular 27/87 in England (Circular 52/87 in Wales) which is publicly available.

Both strategic planning and development control are handled by the Town and Country Planning Service of the DoENI at its Belfast headquarters and through six divisional planning offices (DPOs) and two sub-divisional offices.

Three types of development plan are found in Northern Ireland:

Area plans: these cover the strategic planning found in structure plans in England and Wales and the detailed policies on urban land use; they are therefore comparable to Unitary Development Plans in England and Wales and like them they usually cover a single district.

Local plans which cover selected urban areas and set out in greater detail policies and specific land use plans for the area.

Subject plans are normally used to deal with selected aspects concerning land use outside urban areas.

Development plans are prepared by the relevant DPOs with certain planning functions such as minerals being the responsibility of headquarters. District councils are statutory consultees in the development plan system and with Government departments and agencies and the Council for Nature Conservation and the countryside (JNCC) can comment before the draft Written Statement is issued and can object to plans. Wider public consultation mainly takes place after the issue of the draft Written Statement, the draft plan, detailing the Department's intentions. Plan inquiries in Northern Ireland are restricted to consideration of objections to a development plan as is the case in local plan inquiries in Great Britain. Northern Ireland

lacks a procedure for the public discussion of strategic development issues akin to that afforded by the Examination in Public procedure in Great Britain.

Northern Ireland does not have a statutorily endorsed plan-led planning system comparable to that provided under Town and Country Planning legislation in the rest of Great Britain. Development plans, while they have particular importance because they are written by the Department remain just one material consideration in planning decisions. There is not, therefore, in Northern Ireland the same scope for development plans to provide support and a framework for river restoration as there is in the plan-led system in the rest of Great Britain. Furthermore, partly because local authorities are not responsible for plans in Northern Ireland, it is unusual to find particular pro-active policies for nature conservation in area plans comparable to the policies found in structure and local plans in other parts of the United Kingdom. For example, the RSPB survey of 19 area plans found only six out of 19 area plans to have positive measures relating to green wedges or corridors, some of which might be river corridors and only one plan contained a policy on river bank habitats (Dodd and Pritchard 1993). There is no organisation comparable to the NRA in a position to promote water related policies such as river corridor policies or riverine habitat creation in area plans.

7.3 Urban regeneration and the Lagan-side Corporation

The DoENI has responsibility for urban renewal and development. Grants are provided for the renewal of property and there are also grants available for urban regeneration purposes. These activities and funds may in certain circumstances provide support for associated river rehabilitation or enhancement in urban areas.

The Lagan-side Corporation is a separate body that has been set up to draw up and implement a major plan for the regeneration of over three miles of river corridor through the centre of Belfast which will be the most significant urban development project in Ireland. It is financed by grant in aid voted by Parliament to the DoENI and from funds from the EC European Regional Development Fund (ERDF).

The Lagan-side plan is a good example of urban regeneration focused on the riverside. In the plan, riverside environmental improvement is viewed as creating confidence and stimulating private sector interest and investment. Planned improvements to the river environment include river bank walkways, landscaping many of the river banks and public areas and the provision of watersports facilities. In addition, the Ulster Wildlife Trust has assisted in the development of a wildlife strategy for Lagan-side to attract wildlife into the inner city by introducing appropriate wildlife habitats along the river. There is a plan for a wildlife garden and for a wildlife sanctuary along a section of the river walkway (Lagan-side Corporation 1992; Lagan-side Corporation 1993)

7.4 Department of Agriculture for Northern Ireland

The Department of Agriculture for Northern Ireland (DANI) carries out the same functions

as its English and Welsh counterparts but, in the absence of an organisation such as the NRA, it has wider responsibilities for the water environment, fisheries and flood defence. Therefore, it has greater importance for river restoration than the other agriculture departments. In addition, the Forestry Commission does not have authority in Northern Ireland and the DANI, therefore, also has responsibility for forests through its Forests Service

7.4.1 Watercourse Management Division of the Department of Agriculture

The Watercourse Management Division, formerly called the Drainage Division has responsibility for land drainage and flood defence matters in Northern Ireland. It also has responsibility for navigation and recreation on rivers and inland waterways and canals.

Unlike the NRA, it does not have formally imposed conservation duties over and above the obligation on all public bodies to 'have regard to the need to conserve' imposed in the Nature Conservation and Amenity Lands (NI) Order 1985. It does not have the power to undertake and spend money on river restoration work as such. The division's policy statement is set out in the document 'Drainage and the Environment' (1988). It has recently introduced an Environmental Assessment Regulation (1991). This sets out a procedure for identifying all the impacts of flood defence, land drainage and maintenance works. The division is able to advise on and undertake measures to mitigate the adverse effects of new schemes or of maintenance works such as tree planting and habitat enhancement or recreation. The division includes three conservationists who advise on nature conservation aspects of schemes and maintenance. The Division has a programme of river corridor surveys.

In the past the drainage division, like land drainage and flood defence engineers in other parts of the UK have been criticised for constructing drainage schemes that were damaging to the environment, to riverine and associated habitats. The DANI has carried out a number of arterial drainage schemes in order to drain wetlands to create grazing lands. The largest and most heavily criticised of these has been a scheme on the River Blackwater (Milton 1990). However, since then procedures for the appraisal of rural drainage schemes have been produced. These would make it unlikely that a comparable scale major arterial drainage scheme would be approved today although smaller schemes are still considered. Most work is now concerned with schemes in urban areas or in the urban fringe which permit development there to go ahead.

Under current legislation, there is limited scope for land drainage schemes in Northern Ireland to provide an opportunity for river restoration although enhancement and some habitat creation is possible and schemes damaging to the nature conservation interests are now much less likely to go ahead than in the past.

Following the controversy over the River Blackwater drainage scheme, over 350 sites were identified as suitable for rehabilitation in order to enhance the river as a fishery. There is an on-going programme of rehabilitation works to the river mainly to recreate habitat for fisheries purposes.

Division staff consider that opportunities to carry out small river restoration projects may arise in connection with schemes to renew flood defences, for example, on urban rivers and

streams canalised in the 1960s and 1970s that no longer offer a high enough standard of protection. When land is zoned for development or redevelopment, there may be a need to increase the capacities of watercourses and this may offer scope for restoration. Recently, the Division has been instrumental in ensuring that some river restoration measures were built into a scheme to increase the capacity of the Ballysally-Blagh stream, a small urban watercourse running through the grounds of the University of Coleraine. Meanders have been reintroduced and environmentally sympathetic banks built.

There is no provision for integrated catchment management within the Watercourse Management Division. The fact that many of the functions relevant to integrated water management, water quality, water supply are handled within the DoENI has not lead to its development there. Water management is integrated if at all through the land use planning system. The division is a statutory consultee on development plans and is invited to comment when a plan is being prepared along with other divisions with an interest. It endeavours to use the opportunities offered by the planning process to press for river rehabilitation or restoration measures such as buffer zones.

There is keen interest in river restoration among staff in the Watercourse Management Division. They consider the Division to be the agency in Northern Ireland in the best position to develop river restoration initiatives and would like to have a more pro-active role.

7.4.2 Agriculture and Environment

Agriculture is of greater importance to Northern Ireland's economy than it is in many other parts of the UK and it may therefore have greater significance for conservation and river restoration in the Province than elsewhere. In Northern Ireland intensification of agriculture, particularly increased livestock numbers has resulted in the pollution of watercourses by slurry and silage effluent becoming a major problem for fisheries as well as wildlife. Furthermore, as DANI has major fisheries responsibilities and fishing has economic significance for tourism in the Province, DANI probably has a stronger appreciation of the need to protect and enhance rivers as a result. There is considerable interest in, and enthusiasm for, incentive schemes to encourage farmers to adopt conservation measures including measures affecting water courses and associated land either directly or indirectly.

The Northern Ireland Agriculture Department, like MAFF and the other agriculture departments has begun to introduce incentives towards conservation measures in agriculture. DANI is also developing a programme of schemes which are very similar to those available in the rest of the UK under the EC agri-environmental regulation.

In addition Northern Ireland has developed its own programmes. The Northern Ireland Agricultural Development Programme was introduced in 1982 and amended in 1988. It aimed to encourage development in the less-favoured areas in the Province (as defined under EC Council Directive 75/268 and amended by EC Regulation 797/85). This programme was superseded by a further programme, the Agriculture Development Operational Programme which in turn is to be replaced by a second Agricultural Development Operational Programme. This is still under development but should be available in 1994. It is intended that this programme will include provisions to encourage the enhancement of the environment

such as aid for wildlife corridors but the details of the programme have not been settled.

Further details of this programme and others available from DANI which might provide and some support for river restoration schemes are given in section 11.

7.4.3 Forestry Service

The Forestry in Northern Ireland is administered by DANI's Forestry Service. This has responsibilities including responsibilities for conservation and recreation broadly equivalent to those of the Forestry Commission in the rest of the UK. Northern Ireland is the least wooded part of the UK and of the EC with only about 5% tree cover compared with 10% for UK and 24% for the EC. Woodlands in Northern Ireland are predominantly state owned with over 80% compared with 40% in the rest of the UK presently in state ownership.

The extent to which forests, particularly those of current or potential nature conservation and recreational value include river environments is not known and therefore the scope for combining river restoration with forestry and afforestation is unclear. Forestry Service forests have an importance for nature conservation and recreation in Ulster out of proportion with their acreage. About a third of Northern Ireland's NNRs are on Forestry Service property and there are a further 36 Forest Nature Reserves providing valuable wildlife habitats. Forestry Service lands also represent a substantial proportion of Northern Ireland's countryside recreation facilities with 50 forests offering informal recreation and an addition 10 Forest Parks.

The Northern Ireland Government has a policy of encouraging forestry in the Province but this has met with limited success so far (Milton 1990). Grants are available from DANI comparable to those available through the Forestry Commission.

7.4.4 Fisheries Division of DANI and the Fisheries Conservancy Board and the Foyle Fisheries Commission

Under the Fisheries Act (Northern Ireland) 1966, the Fisheries Division of DANI has responsibility for the 'supervision and protection of fisheries'. The Foyle Fisheries Commission is a statutory body charged with the conservation and protection of the freshwater fisheries (including salmon and sea trout) in the Foyle Area under the Foyle Fisheries Acts. The Fisheries Conservancy Board for Northern Ireland is a statutory body under the Fisheries (NI) Act 1966 and the Fisheries (Amendment) (NI) Order 1983.

The two conservancy boards are responsible for law enforcement on inland fisheries in relation to both commercial and recreational fishing. They sell angling licenses and enforce the licensing laws. They carry out certain pollution monitoring and investigation activities for the DoENI. Fishery and conservation interests are often in harmony. The conservancy boards and angling interests cooperate with the Environment Service the DoENI to protect waters from pollution and they have sought to protect fisheries, wildlife and landscape from the damaging effects of arterial drainage. However there can be conflicts between fisheries interests and those of conservationists as illustrated by the situation on the River Bush in

County Antrim regarding salmon and cormorants (Milton 1990). Any river restoration project on a watercourse with significant fishing interests would need to include these interests and draw on the knowledge and data available from the conservancy boards.

7.5 Council for Nature Conservation and the Countryside

This body was set up in 1989 to act as an independent adviser to DoENI and to provide an official voice on nature conservation and landscape issues. It has a small staff and voluntary members who are in practice, nominated by the head of C & W and the Minister. The CNCC received planning applications and development plans for comment through C & W. The CNCC has the power to appear at public inquiries on plans to put forward the nature conservation case. It has issued policy statements on rural planning policy and on peatland conservation strategy. It is consulted on grant-aid and on the designation of nature reserves, AONBs, ASSIs and of ESAs and on other agri-environmental policy matters. Therefore, the Council, which provides an independent voice on conservation matters, might have a part to play in promoting river restoration in Northern Ireland.

7.6 Water Executive

This is a statutory body under the DoENI, formerly the Water Service Division of that Department. It is responsible for water supply, sewage treatment and sewerage services. It also has as part of its supply duty, responsibility for water resources. It has local offices in different parts of the Province.

7.7 District Councils

It seems likely that variable and only limited support for river restoration projects would be forthcoming from district councils but particular council's might respond with enthusiasm.

Northern Ireland has 26 district Councils created by the Local Government (Northern Ireland) Act 1972. At that time, many major local government functions were transferred to central government or to specially created agencies. The district councils were only left with responsibility for waste disposal, public health, recreation and tourism. Their responsibilities for the conservation of landscape and wildlife are mainly in relation to the provision of recreation facilities, particularly through the implementation of the Access to the Countryside (NI) Order 1983.

The councils are responsible for establishing and maintaining rights of way and access to open countryside. They have a right to be consulted on the designation of AONBs and National Parks and the formulation of management proposals for these areas, and on the designation of Nature Reserves and Wildlife Refuges. They must be informed of ASSIs designated in their area and they have power in consultation with the CNCC to establish and manage local nature reserves. What evidence there is suggests that the record of the district councils in using their powers relating to access and nature conservation is variable but generally not

impressive (Milton 1990; Dodd and Pritchard 1993). But there are exceptions such as Craigavon Borough Council's Conservation Service and its creation and management of the Oxford Island Nature Reserve (Milton 1990).

8. VOLUNTARY CONSERVATION AND USER ORGANISATIONS WITH AN INTEREST IN RIVER RESTORATION: NORTHERN IRELAND

8.1 Voluntary conservation organisations

In the absence of a statutory conservation agency in Ulster equivalent to English Nature, voluntary organisations have had a key role in providing an independent voice for conservation in the Province. A wide range of voluntary conservation and other organisations in Ulster might have an interest in and provide support for river restoration. It has been argued that four of the conservation organisations, the National Trust, the RSPB, the Ulster Wildlife Trust and the Northern Ireland Conservation Volunteers have gained a greater degree of recognition and financial support from government than other voluntary bodies (Milton 1990).

8.1.1 The National Trust

This is the largest and oldest (1936) voluntary conservation organisation in terms of membership and staff but also in terms of the extent of land owned. Much of this land lies within AONBs and it includes several designated sites. It carries out conservation on its own land and might be interested and supportive of river restoration involving its own property.

8.1.2 The Royal Society for the Protection of Birds

The Ulster Society for the Protection of Birds merged with the UK wide RSPB and it is now the second largest voluntary conservation organisation in the Province in terms of membership. It is also the second largest owner or manager of land of conservation value among the voluntary organisations with reserves at seven different sites in different parts of the Province. It has recently reviewed the effectiveness of the planning system in affording protection to sites of nature conservation significance and in promoting nature conservation in the Province (Dodd and Pritchard 1993). It has also recently carried out a breeding wader survey and an estuary inventory.

The RSPB has a strict remit to conserve birds and their habitats and there are many major coastal, estuarial and lough habitats of importance for birds to which the organisation might wish to give priority. It would be likely to offer support for river restoration if important bird habitats were involved.

8.1.3 The Ulster Wildlife Trust

This organisation founded in 1977 partly at the instigation of the then Conservation Branch of the DoENI is affiliated to the Wildlife Trusts Partnership but operates mainly independently to conserve wildlife and habitats in Northern Ireland. The Trust owns or

manages nineteen small nature reserves but has a much smaller and less significant holding than that of the National Trust or the RSPB.

8.1.4 The Ulster Society for the Preservation of the Countryside (USPC)

This organisation founded in 1937 is concerned with urban planning, countryside access and preservation especially of designated sites - ASSIs and AONBs. Therefore, schemes involving such designated sites and the landscape and amenity aspects of any river restoration scheme are likely to be of interest to USPC.

8.1.5 Conservation Volunteers Northern Ireland (CVNI) and Groundwork Northern Ireland

Conservation Volunteers Northern Ireland is affiliated to the British Trust for Conservation Volunteers (BTCV) and provides volunteers to take part in practical conservation work.

Groundwork is also part of an agency existing in other parts of the UK which organises voluntary work. Both organisations might provide practical support for a river restoration project.

8.1.6 Other voluntary conservation and community groups

There are some locally based voluntary groups whose objectives include conservation. For example, the Conn's Water River Conservation Committee sees the river which runs through East Belfast to Belfast Lough as a valuable amenity for local people and supports local initiatives to clean, restore and prevent pollution of the river. The Belfast Lough Conservation Committee set up in 1988 campaigns for the conservation of the remaining areas of wildlife habitat in the Belfast Lough area. Some of these groups, the Mourne Advisory Council, the Strangford Lough Management Committee and the Association of Lough Neagh Users were set up to bring together the diverse interests present in the area including farming, fishing, recreation and conservation and to formulate integrated management proposals. In the absence of river catchment management groups, these groupings might suggest a model for the developing and taking forward river restoration proposals.

8.2 User groups

8.2.1 Ulster Angling Federation

This is a federation of 53 angling clubs representing approximately two thirds of salmon and trout fishers in the Province. Angling is an important interest in the Province and Ulster has some unique sub-species in its Loughs such as the Lough Neagh trout. Some of the clubs are based on occupational or employer groups whose members will fish anywhere. Others are territorially based and have access to their own club waters in which they have a particular

interest.

The Federation considers that it has taken a lead among voluntary bodies in the Province in arguing for river protection and enhancement and was active in opposing certain arterial drainage schemes such as the Blackwater drainage scheme. The Federation and some of its constituent members have been very active in promoting the need for rehabilitation of riverine habitats generally. At the local level, certain angling societies have themselves taken action with others to protect and enhance rivers. The Ballinderry Enhancement Society in which angling clubs have cooperated with others to rehabilitate damaged spawning and nursery sites along the river exemplifies this type of action. But while the interests of anglers and landscape and wildlife conservationists do overlap, they can also be in conflict over for example the control of predators.

8.2.2 Ulster Coarse Fishing Association

This body aims to develop, maintain and promote the sport of coarse angling in the Province.

8.2.3 Ulster Farmers' Union and the Northern Ireland Agricultural Producers Association

The Ulster Farmers' Union (UFU) represents the interests of the larger, mainly lowland farmers while the Northern Ireland Agricultural Producers Association (NIAPA) represents the smaller farmers in the less favoured areas. In the past government conservation measures have tended to arouse negative responses from farmers who have perceived designations as imposing actual or potential restrictions on farmers' use of their land and their access to capital grants (Milton 1990). A river restoration project would need to be sensitive to these concerns of farmers and to seek to take their interests into account. Farmers organisations might have a role to play in this.

9. FUNDING SOURCES AND EXISTING AND PROPOSED SCHEMES: EC FUNDING AND FUNDING SOURCES AND SCHEMES IN ENGLAND AND WALES

9.1 Introduction

Obtaining funding for river restoration projects is not straightforward for a number of reasons:

- There is no scheme available specifically designed to support river restoration projects. However, there are a number of funding schemes mainly designed to serve other purposes which could be utilised in carrying out river restoration.
- There are a number of different sources of funding, EC, MAFF and WOAD, EN, and CCW, The Countryside Commission, National Parks Authorities and local Authorities that might be called upon to support a project.

Most of the schemes focus on land management and therefore, would be of assistance in restoring the land adjacent to a river or the riparian zone rather than the aquatic zone itself.

- The availability of funding under these schemes is in most cases restricted to certain categories of land or landholder or to certain geographical areas. These schemes often focus on the conservation of landscape or habitat of existing high value.
- For a large scale river restoration scheme it is likely that funding would have to be assembled from a variety of sources under different schemes to cover different parts of the river.
- Participation in the schemes is almost invariably voluntary on the part of farmers or landholders. Therefore, managers of a large scale river restoration project involving a number of landholders would be presented with a considerable task of persuasion and coordination in order to secure participation and funding.

The details and the type of schemes available vary in different parts of the UK and therefore sources of funding are discussed separately for England and Wales, Scotland and Northern Ireland.

EC funding is available, in some cases to eligible areas only, to all parts of the UK.

9.2 EC Funding opportunities

There are two major EC funding areas which might offer funding opportunities for river restoration initiatives:

- EC Structural Funds (the largest source with a budget of £98.7 billion for the period 1994-99);
- LIFE (Financial Instrument for the Environment: £280 million for 1992-6)

In addition, each of the 23 directorates of the EC Commission in Brussels has its own budget and have smaller funds available to support their own specific policy initiatives with research, pilot and evaluation studies. It is conceivable that river restoration might find support from these sources.

Under EC law, EC Governments are required to match ED funding provided to non departmental public bodies such as local authorities and the National Rivers Authority with 'additional' new money. However, in the past this additional government money has not always been forthcoming and local authorities have been forced to cut back on expenditure elsewhere in order to match funds when taking up EC funding. The UK Government has agreed to match funding in the case of certain EC structural fund grants (grants under the European Regional Development Fund) but the problem of matching funding and the loss of grant in aid remains for the other sources of EC funding. Furthermore, EC funding is in most cases only provided for 50% or less of project costs.

9.2.1 EC structural funds

Three structural funds are provided with the aim of strengthening economic and social cohesion between the 12 member countries of the EC and of aiding economic development of the poorer EC regions:

- European Regional Development Fund (ERDF)
- European Social Fund (ESF)
- European Agricultural Guidance Fund (EAGGF)

These funds are only available in certain areas nominated by the national governments and approved by the EC.

These funds are also only made available as part of a long term planning process. EC funding must form part of a region's integrated planning strategy within a longer term investment programme. Regional coordinating committees and specialist working groups comprising members from local authorities and other interested public and other bodies have been set up in many regions to prepare regional development plans.

The regions qualifying for support must be classified under one of five 'objectives' but objectives 3 and 4 apply to all regions. The type of funding available depends upon the classification of the region:

Objective 1

Promoting the development and structural adjustment of the regions whose development is lagging behind the rest of the EC. Areas classified under this objective which in 1993 for the first time include Merseyside and the Highlands and Islands have received 70% of the EC's structural funds. Apart from spending on vocational training and other employment measures, these funds are mainly allocated for modernisation of infrastructure projects. Such projects might, in some cases, provide scope for river rehabilitation or restoration of associated watercourses.

Objective 2

Aiding regions seriously affected by industrial decline. Most of UK's assisted areas are classified either under this objective (Northern England) or under objective 5b. Projects to enhance the "image" of an area through rehabilitation of derelict land, renovating buildings, landscaping and restoration of waterways rather than more fundamental environmental improvements have been carried out under this objective. There is, therefore, some scope for river rehabilitation if not full scale restoration, for example, to promote recreation and tourism to be included.

Objective 3

Combatting long term unemployment.

Objective 4

Facilitating the adaptation of workers to industrial change.

Objective 5

Promoting rural development by:

- a) speeding up the adjustment of agricultural structures affected by CAP reform
- b) facilitating the structural adjustment of rural areas (mainly Cornwall, Devon, Wales and Scotland).

The AEGGF plays a major part in the protection of the environment in Objective 5 b) areas and the kind of projects which may be supported by this fund include schemes for the restoration of important landscapes, the renovation of drainage schemes and the maintenance of the countryside. It is possible that river restoration could be supported under this objective.

Some funds are also available under the ERDF for 'Community initiatives' not covered by regional development plans. These funds are more accessible and more flexible than the long-term regional plans. Several of these include actions to protect the environment which might in special circumstances offer opportunities for river restoration.

The objectives of the funding are all primarily economic and social rather than environmental

but an attractive environment is increasingly seen as contributing to economic development or regeneration in an area. It has been recognised that EC funded projects can have an adverse impact on the environment. Therefore, the new EC structural fund regulations underline the importance of the environment and the principle of sustainable development and make an environmental impact assessment necessary for the receipt of EC funding. This should lead to a greater involvement of those interested in the environment in funded projects and more emphasis on funding environmental projects possibly including river restoration projects.

Timetable for the Structural Fund Programme 1994-1999

In July 1993 the EC approved the 1994-1999 structural fund programme.

Following nominations from member governments, in December 1993 the EC Commission approved a new list of eligible areas for 1994-99.

From January until March 1994 regional development plans are produced by the DoE, DTI, MAFF or equivalent departments, local authorities and other regional partners.

In March the regional development plans are submitted to the EC Commission which has six months in which to assess the plans and draw up in collaboration with the national and local authorities a community response in the form of a Community Support Framework. This outlines the type, quantity and duration of support to be provided and a programme of implementation procedures.

Thereafter, each member state submits an Operational Programme for approval by the Commission.

Local authorities and other regional partners then select individual development projects to implement then programme.

It appears that the broad framework within which EC structural funds will be made available in UK eligible areas over the next six years is largely already determined. There may, nonetheless, be scope within the framework for specific projects of river rehabilitation or restoration to be developed.

9.2.2 EC LIFE Programme

This programme was set up in July 1992 to contribute to the development and implementation of the EC's environment policy by financing innovative demonstration projects. The LIFE programme is providing funding for RRP's first demonstration project of river restoration. It is open to question as to whether further LIFE funds will be made available for river restoration unless the projects involve a particularly innovative process or approach. The EC sets priorities for funding and will contribute up to 50% of project costs. There is a budget for this fund covering the period 1992 - 1996. Applications have to be submitted between November and February and awards are notified between July and October.

The NRA is seeking to coordinate NRA applications for EC funding and dissemination of information on EC programmes. It has appointed a European Affairs Officer and has produced an internal document 'Guidelines to EC Funds' (NRA 1993) and is, therefore, a valuable source of guidance on this topic.

9.3 Funding sources and schemes in England and Wales

Substantial funds are being made available for environmental management of farmland in England and Wales which might provide support for river restoration initiatives in certain circumstances. A number of different organisations provide this funding: the Agriculture Departments, English Nature, the Countryside Council for Wales and the Countryside Commission in England. At present, the Environmentally Sensitive Areas Scheme only receives a little more of these funds than is devoted to SSSI and NNR agreements and the Wildlife Enhancement Scheme, expenditure under the ESA scheme is set to grow quite rapidly. But by 1995/6, the ESA Scheme is projected to receive three times the funding of that these receive. Therefore, it is particularly important to examine the possibilities this rapidly growing scheme offers to river restoration projects.

9.4 MAFF and Welsh Office Agriculture Department Schemes

9.4.1 Environmentally Sensitive Areas Scheme (Available in England and Wales)

The Environmentally Sensitive Areas (ESA) scheme was introduced by MAFF in 1987 to encourage farmers to help safeguard areas of the countryside where the landscape, wildlife or historic interest is of national importance. The areas selected are ones where the landscape and quality and variety of habitats are threatened by agricultural intensification. ESA schemes are also offered by the SOAFD and DANI. Farmers are given incentive payments in exchange for agreeing to farm the land in ways that are sympathetic to the traditional landscape and which conserve the high ecological value of the land. In the light of advice from EN, the Countryside Commission and the Secretary of State for the Environment and equivalent organisations in Wales, 16 ESAs have been designated in England and proposals have been issued for a further 6 ESAs bringing the percentage of agricultural land covered by ESAs in England to 10%. In Wales there are two existing and four proposed schemes.

Duration

The designation of each ESA once made is not time-limited and there is a continuing commitment to the scheme in these areas. Agreements between the farmer and the Ministry were for five years under the original 1987 and 1988 schemes but now agreements are for ten years with a break clause allowing either party to terminate the agreement at five years. Farmers can enter into a further agreement at the end of an existing agreement. Farmers not entered into the scheme have an opportunity each year to apply to do so at a set period (between January 1 and March 31).

Restrictions on Availability

The scheme is limited to:

- farmers, both landowner and tenants who must notify their landlord of the agreement;
- those who farm within boundaries of the specific designated ESA areas shown on a detailed map held by the Ministry at its Regional Service Centres;

existing schemes in England and Wales are:

Designated in 1987:

Broads
Pennine Dales
Somerset Levels and Moors
South Downs
West Penwith

Designated in 1988:

Breckland
North Peak
Shropshire Borders (now called Clun)
South Downs (extension)
Suffolk river valleys
Test Valley

Designated in 1993:

Avon Valley
Exmoor
Lake District
North Kent Marshes
South Wessex Downs
South West Peak

Proposed for 1994:

Blackdown Hills
Cotswold Hills
Dartmoor
Essex Coast
Shropshire Hills
Upper Thames Tributaries

Wales has the following designated ESAs:

Cambrian Mountains
LLeyn Peninsular

Proposed in Wales for 1994:

Angelsey:
Clwydians
Preseli
Radnor

- land farmed under a management agreement or similar agreement for which a farmer receives payment would not be eligible unless the conditions of the two agreements are very different;
- there are restrictions relating to the type of land (eg grassland in the Avon Valley ESA) and the amount of land that a farmer is required to enter into the ESA scheme which vary from scheme to scheme.

Management scheme

The guidelines for each scheme set out in detail what farming practices the farmer will be expected to follow if he or she enters into an agreement. There are different tiers and options for entry into the scheme, requiring different agricultural practices in exchange for different levels of annual payment per hectare entered into the scheme. For example, the Avon Valley ESA scheme offers two tiers, tier 1: grassland; tier 2 option 1: wet grassland; tier 2 option 2: reversion of arable land to permanent grassland.

Many of the ESA schemes, for example the Avon Valley, the Suffolk Rivers, the Somerset Levels and Moors and the proposed Upper Thames Tributaries offer obvious scope for river restoration. Most scheme areas cover at least part but often only part of the catchments of rivers and streams. The schemes are basically land management schemes and therefore provide for the management of land adjacent to rivers and for the management of the riparian zone. Prescriptions relating directly to the aquatic environment and the riparian zone are, in the main, confined to a requirement not to modify the existing land drainage system so as to bring about improved drainage, for water levels to be maintained or raised to support grassland particularly wet grassland important for aquatic flora and fauna and overwintering and breeding birds, for the maintenance on ditches and watercourses to be carried out in a manner that protects wildlife and habitats and to restrictions on the use of fertilisers herbicides or pesticides which might pollute watercourses. There are also prescriptions relating to water related habitats particular to a given scheme area such as fen habitats, reed and other wetland.

Conservation plan capital works

The ESA scheme also provides for grants to be paid under a conservation plan for certain capital works to be carried out to improve landscape, wildlife habitats or historic or archaeological features on any part of a farmers land within ESA boundaries. Acceptance of any item into a farmers conservation plan is at the discretion of the Ministry of

Agriculture. It is not anticipated that these capital grants could be used to pay for in stream works to rivers although some of the items such as the restoration of ditches, dykes, fens and reed beds, and wetlands, and construction of bunds and sluices to control water levels are relevant to river restoration projects.

9.4.2 Habitat Scheme (Proposed for Autumn/Winter 1993-4) (Available in England and Wales)

This proposal is one of a number of schemes drawn up by MAFF and WOAD under the EC Agri-Environmental Regulation. This regulation requires each Member State to develop a programme of schemes offering incentives to farmers to farm in an environmentally beneficial way. The scheme, the subject of a public consultation in the spring of 1993, has yet to be finalised. The objective of the scheme is to encourage the longer term withdrawal of land from agricultural production in carefully selected areas for the creation or improvement of a range of valuable wildlife habitats. An option for water fringe habitats which would be directly relevant to river restoration schemes is included.

Duration

20 years: a major advantage of this scheme as a vehicle for river restoration is the longer time period that it covers compared to other schemes.

Restrictions on availability

- the Habitat Scheme is intended to complement existing schemes; therefore, options that would duplicate existing schemes have been excluded;
- it is available on any type of agricultural land not just arable;
- only land which has potential for the re-creation of the targeted habitat must be accepted into the scheme;
- only a limited selection of habitat types are available for inclusion in the scheme and for certain habitat types the scheme is restricted to specific geographic areas;
- land accepted into the scheme cannot at present count towards a farmer's set-aside commitment under the arable area payments scheme; (this restriction is under negotiation with EC);
- the scheme is available to farmers - both landowners and tenants;
- land subject to an existing ESA or Countryside Stewardship agreement is excluded.

Options available under the scheme at present are:

- i. Establishment or enhancement of water fringe habitats along lakes and watercourses to protect the water, its flora and fauna and to create a rich wildlife habitat on the

waterside banks.

- ii. Management of particularly valuable habitats established under existing five year set-aside.
- iii. Creation of intertidal habitats, targeting saltmarsh as an important habitat for birds.

If land accepted into the scheme could be counted against a farmer's non-rotational set aside obligations under the arable area payments scheme, then two further options would be offered under the Habitat Improvement Scheme:

- iv. Lowland heath.
- v. Damp lowland grassland.

Clearly the option for the establishment or enhancement of water fringe habitats has potentially the most to offer river restoration schemes. But the existing set-aside option and, if offered, the damp lowland grass options might in certain circumstances be supportive of river restoration.

Recreation of water fringe habitats

The objective of this option is to recreate, restore or extend waterside habitats which are important for supporting a wide range of wildlife and for providing protection for watercourses against pollution and soil erosion from adjacent land.

Initially, the water fringe habitat option is only available as a pilot scheme on land alongside certain designated rivers, lakes and other watercourses. The designated areas have been selected to reflect a range of waterside habitat and different types of watercourse with the advice of the Government's statutory advisors on nature conservation and the NRA. But the scheme may be extended later to include other designated watercourses, for example riverine SSSIs, recognised spawning and nursery streams or eutrophic rivers.

The scheme would involve taking out of production broad strips of land alongside the watercourse. The width of the strip is not specified in the consultation document. There is a similar option for waterside landscapes under the Countryside Stewardship Scheme but compared to that scheme, the Habitat Scheme focuses on the protection of the watercourse, for example by prohibiting grazing; also the management prescriptions are likely to be simpler under the Habitat Scheme to encourage farmers to participate. Other management prescriptions include the establishment of waterside plants, the introduction of waterside trees, a prohibition on the use of fertiliser and pesticides, the special management of mowing and of reed beds, sedges and rushes.

Existing-set aside sites

This scheme might be relevant to river restoration in certain circumstances, for example, where farmers have taken the opportunity to introduce environmental improvements on land adjacent to watercourses under the five year set-aside scheme either through the Countryside

Premium Scheme or independently. Land eligible under this option is likely to be land which has been in five year set-aside which has been managed with a particular environmental purpose, for example, to create a wildlife habitat or as a SSSI buffer zone or possibly as a buffer zone along a watercourse. Applications will have to be supported by a statutory conservation agency, Countryside Commission, English Nature or by another reputable environmental organisation such as the local Farming and Wildlife Advisory Group, British Trust for Ornithology, RSPB, Agriculture Advisory Service. Woodlands created under the Farm Woodlands Scheme land will not be eligible for the Habitat Scheme.

A specific management plan endorsed by a reputable environmental organisation would be prepared for land entered into the scheme.

Under all the options farmers will be offered annual payments which take account of the costs of the required management and of the income foregone by taking land out of production.

9.4.3 Set aside schemes: rotational and non-rotational set-aside, countryside access scheme (Available in England and Wales)

Under the new EC arable areas payment scheme, introduced as part of the Common Agricultural Policy (CAP) reform arrangements, farmers are provided with area payments for certain arable crops but as a condition of payment, they must set some land aside. Under the original set-aside scheme, land could only be set aside once every six years and land set aside had to be rotated. Set-aside under these arrangements could yield only limited and temporary environmental benefits.

From 1993/4, it is proposed that there will be two forms of set-aside rotational and non-rotational. Non-rotational set-aside has potential for greater environmental benefits and for river restoration schemes as it includes an option for field margins including water fringes and other options that might be supportive of river restoration.

Non-rotational set-aside

Duration

A commitment to keep land in non-rotational set aside for five or six years will be required.

Restrictions on availability

Details of the scheme have yet to be finalised and no specific EC rules have as yet been proposed but it appears that the scheme will be available to:

- Farmers - landowners and tenants;
- land set aside under the Arable Areas Payment Scheme or under the 5 year set-aside scheme in 1992/3 will be eligible;

- apart from the above set aside land, and with some additional exceptions, the land will have to have been cultivated with a view to harvest in the previous year;
- a minimum landholding of 0.3 hectare or a 20 metres wide strip will be required;
- currently land entered into other schemes such as the Habitat Improvement Scheme or the Farm Woodland Premium Scheme cannot be counted towards a farm's non-rotational set-aside allocation;
- for certain habitats under rotational set-aside options:

Field margins including water fringe

Grassland

Woodland

Natural Regeneration

Wild-bird cover

Non-food

Goose pasture●

Sites for ground nesting birds●

Otter havens●

Sandy Grassland

Damp lowland grassland

For the marked options ●, farmers will need to apply to their Ministry Regional Service Centre for a specific permission and the application will require support from a reputable environmental organisation. Farmers may also apply for permission to carry out their own plan with specific environmental benefits. This would also require the endorsement of a reputable environmental organisation.

It is likely that farmers will be able to enter land into both rotational and non-rotational set-aside. Because farmers will be able to enter their less productive land into non-rotational set aside, a higher percentage of set-aside land may be required of farmers for this category of set-aside. Non-rotational set-aside is seen as offering greater environmental advantages, as well as advantages to farmers in that they will be able to allocate their difficult to work or inaccessible land and land subject to trespass into the scheme. It is hoped that farmers will be encouraged to make full and careful use of their non-rotational set-aside. It is stressed that greatest environmental gains will result if farmers choose sites adjacent to or linking to sites of high quality habitats or areas of existing nature conservation interests such as SSSIs and

nature reserves. The field margin and water edge option is seen as particularly advantageous both from the point of view of the farmer and for environmental benefits it may yield. This is also the option with most direct applicability to river restoration although other options may also be useful to restoration schemes.

Field margins including water fringe

The environmental aims of this option are to encourage wildlife and flora, provide "green corridors", protect watercourses from contamination, develop areas close to species rich habitats such as hedges and woods and rivers and ditches, particularly areas of high conservation value such as SSSIs or NNRs and areas next to watercourses at risk of direct contamination from agricultural chemicals.

Management requirements are still under discussion. The only specific management requirement likely to be set for the field margin including water fringe option is that farmers should establish green cover either by sowing or natural regeneration over the set aside site. Other management requirements proposed for all non-rotational set aside would also be required for this option. Under these it is proposed that the use of residual herbicides, fertiliser, manure or slurry, would be prohibited, a particular mowing regime would be required.

Otter havens

In areas adjacent to rivers banks where otters are known to occur, any of the non-rotational options can be combined with an otter haven. This option might be appropriate to certain river restoration schemes. However, the option appears to apply to known otter habitats rather than to creating habitats to attract otters to extend their range as has been done in NRA Severn Trent Region with some success.

An area of at least 400 metres of bank and extending at least 200 metres from the bank would have to be provided for a haven. Natural regeneration of existing riverside vegetation or planting of additional cover would be required and green sward should be left uncut within 50 metres of the river. Sites with footpaths would not be suitable because otters need to be undisturbed.

Countryside Access scheme

Under this new scheme, it is proposed to offer an additional premium payment to farmers who provide and maintain new access opportunities on land in non-rotational set aside. This might provide an additional incentive for farmers to participate in a river restoration scheme where the promotion of public access along the restored watercourse is of interest to the river restoration project and key participants such as local authorities and compatible with the project's conservation objectives.

Duration

A 5 year commitment would be required

Restrictions on Availability

- only land in the non-rotational set aside scheme under the field margins or grassland options would be eligible;
- only land suited to new or increased public access;
- Not available where conservation or other interests would be affected by access;
- land must offer benefits to local communities and visitors as follows:

landscape features such as a watercourse or vantage point;
ready access and with safe parking;
a location on the fringes of a town or village or linking to a public right of way or creating a circular walk.

The land could be opened for access only or a large area suitable for picnicking etc could be provided. The premium would only be available for land opened for quiet recreation and for walking. Those in the scheme would be expected to agree to the details of the scheme being passed to Parish Councils and other interested bodies so that the new access opportunities could be publicised.

9.4.4 The moorland Scheme (proposed) (Available in England and Wales)

The proposed moorland scheme will be an entirely new scheme designed to encourage the conservation and enhancement of heather and other shrubby moorland vegetation. It will be available throughout the less favoured areas to sheep farmers farming heather moorland outside ESAs.

Management will involve restrictions on stocking levels, on the use of agro-chemicals and on improvement of the land.

This scheme might provide a suitable and appropriate land management approach for land associated with certain upland rivers in need of restoration where overgrazing has affected the watercourse.

9.4.5 Farm Woodland Premium Scheme (Available UK wide)

This scheme run by the Agriculture Departments aims to encourage farmers to plant woodland particularly small broadleaved woodlands on land currently in agricultural production in order to improve landscape and habitats. The scheme might have a contribution to make to a river restoration project where the creation of a woodland area on land adjacent to a watercourse was an appropriate element in the restoration.

The scheme was introduced in April 1992 and it follows on from the earlier Farm Woodland scheme but offers better incentives. Higher incentives are offered for planting outside less favoured areas and where arable or improved grassland is entered. Payments under this scheme are additional to the range of grants payable by the Forest Authority.

Duration

Farmers are eligible to receive annual payments for 15 years from the date of planting for broad leaved woods and ten years for conifers.

9.4.7 Farm and Conservation Grant Scheme (Available UK wide)

Under this scheme, MAFF and WOAD and the other agricultural departments give grants of up to 50% of costs depending on the area and the work involved to eligible farmers towards capital expenditure. Grants have recently been cut making this scheme less attractive. Grants can be paid towards work which has an environmental value including traditional field boundaries, shelter belts of trees, enclosure of woodlands, heather management and repair of traditional buildings. In less favoured areas higher rates of grant are payable under certain circumstances.

A wider range of grants is available through an Improvement Plan. This involves a programme of investment to improve or maintain the farm income which must be acknowledged by MAFF or WOAD.

There might be circumstances in which this grant could be used to contribute towards a river restoration scheme.

9.5 Forestry Commission Schemes (Available in England, Wales and Scotland)

9.5.1 Woodland Grant scheme

Grants under this Forestry Commission scheme might have a part to play where the restoration of a watercourse is closely associated with forested land or land with potential for afforestation. The Forestry Commission's Woodland Grant Scheme introduced in 1988 provides a range of grants both for the establishment and management of woodlands.

Establishment grants

Establishment Grants are paid for creating new woodlands or restocking old ones either through planting or through natural regeneration. The rate of grant paid per hectare in the scheme varies according to the size of the area entered and type of woodland - conifer or broadleaf. There are supplementary payments for planting which takes place on arable or improved grassland and for creating new woodlands which create facilities for informal recreation close to towns and cities. Payments are made in instalments over a period of time

- fifteen years in the case of new planting.

Management grants

Management grants are payable as a contribution to the net cost of management operations needed to maintain and improve woodlands and forests. Payments are available per hectare per annum for conifers aged 11 -20 years and broadleaved woods aged 11 - 40 years. The level of payment varies according to the size of the holding and type of forest - conifer or broadleaved and for woodland of special environmental value.

9.6 English Nature Schemes **(Available in England only).**

English Nature has powers to give grants for doing anything which in its opinion is conducive to nature conservation or to the fostering of the understanding of nature conservation. Although most of its grants are given to conservation and other organisations, it also gives grants to private landowners for activities which are in accordance with its objectives and strategy. It has a number of specific targeted grant schemes which might be used to provide support for habitat creation or other aspects of a river restoration project but it also gives grants for a wider range of nature conservation activities and has the scope to give grant support to a river restoration directly and not under any existing scheme if it wished to do so. While its grant giving is aimed at protecting the most important sites such as designated sites, it also supports the conservation and enhancement of wildlife sites outside designated areas.

9.6.1 Wildlife enhancement scheme and management agreements for SSSIs

Much of English Nature's grant-aiding work is focused on designated sites. The Wildlife Enhancement Scheme is a new initiative designed to develop a partnership between English Nature and the owners or occupiers of SSSI land in order to protect but also to improve the quality of wildlife habitats in SSSIs. In the past English Nature has relied upon making management agreements with SSSI managers in order to protect these areas from damage. The new scheme develops and tests a more focused, positive and proactive approach to the management of the nature conservation value of land. New management agreements offered to those owning or managing SSSI land will also reflect this positive management approach.

Duration

The scheme has been introduced as a pilot scheme which will run from December 1991 until 31 March 1995. Agreements will continue to be completed in 1992 and 1993.

Restrictions on Availability

- the scheme is only available in four pilot SSSI areas:

Pevensey Levels SSSI in East Sussex;

the Culm Grasslands SSSI in Devon and Cornwall;

the Coversand Heath and Peatland SSSIs of Humberside and Yorkshire;

the Craven Limestone Grassland SSSI in the Yorkshire Dales.

- it is open to any landholder or tenant (with written consent of the land lord) in the specified SSSI areas;
- Unlike MAFF schemes, it is open to local authorities, voluntary conservation organisations and from Commoners Associations as well as farmers;
- any amount of land in the SSSI but preferably all the SSSI landholding, land that may be notified as SSSI and in some instances land adjacent to the SSSI may be included;
- acceptance into the scheme is at the discretion of English Nature;

The Wildlife Enhancement scheme involves a simple management agreement and a management plan agreed between the land holder and English Nature that is specific to the landholding. Under the scheme landholders are eligible for two types of payment: an annual payment per acre which reflects the costs of managing the land in a way that will sustain and enhance its wildlife interest and a fixed cost payment scheme for non-recurrent works required to protect and enhance the wildlife quality of the land.

Although there is currently only limited scope for the Wildlife Enhancement Scheme to support river restoration projects, it is significant as indicating a new approach that is likely to be of increasing importance in the work of English Nature in the future and thus might come to be of importance to river restoration schemes.

Some other English Nature schemes which might provide a means of funding river restoration activity are summarised below. The sums available to individual projects under many of these are quite small.

9.6.2 Reserve Enhancement Scheme

This pilot scheme was set up with the Wildlife Trusts Partnership. One object of this scheme is to help Wildlife Trusts and other voluntary conservation organisations to maintain the natural resources particularly SSSIs for which they have responsibility. Organisations responsible for reserves are provided with five year grants to support management activities set out in management plans and capital grants. Only six Wildlife Trusts have been assisted so far under the scheme but more are due to obtain help as the scheme expands. Where Trusts are responsible for riverine SSSIs or SSSIs on land adjacent to watercourses, the scheme might provide a means of funding some habitat creation as part of a river restoration project.

9.6.3 Community Action for Wildlife

This scheme aims to encourage community groups to become involved in nature conservation projects in towns and cities. This scheme has been used to help over 400 small projects. It might offer a source of support for local groups seeking to rehabilitate or restore a watercourse.

9.6.4 Rural Action

This scheme operates through county networks of organisations to channel training, advice and small amounts of grant aid to local community groups wishing to undertake environmental improvements in their own areas which might include river restoration work. Rural action will operate in 33 English counties from May 1994. The scheme is a joint initiative of English Nature, the Countryside Commission and the Rural Development Commission.

9.7 Countryside Commission Schemes (Available in England only)

9.7.1 Countryside stewardship

This is a pilot scheme started in 1991. It is being undertaken by the Countryside Commission in collaboration with English Nature and English Heritage at the invitation of the Department of the Environment and with the support of MAFF. It aims to conserve key areas of countryside and improve the opportunities for public enjoyment.

This scheme probably offers the most scope for river restoration projects of all the major schemes because it offers a directly relevant river valley and waterside landscapes option as well as other options that might have relevance. Furthermore, it has the least restrictions on availability of the major schemes, offers great flexibility and is for a longer period than some other schemes.

The scheme is concerned with four elements on farmed land, landscape, wildlife, history and access. The scheme aims to restore characteristic qualities and features to the landscape, to improve and restore typical habitats, to protect and maintain important historical and archaeological sites and to create opportunities for new access to the countryside where appropriate.

Duration

Ten year agreements which may be renewed

Restrictions on availability

The scheme is available to:

- farmers, estate owners, tenants (landlord must be notified) voluntary bodies and local authorities; there are no farming or income criteria;
- there are no restrictions on the size of landholding that can be entered but very small fragments of land are unlikely to be acceptable;
- the scheme is not restricted to geographic areas but it is restricted to seven English landscapes. Acceptance is at the Countryside Commission's discretion:

river valleys and other waterside landscapes

chalk and limestone grassland

lowland heath

coastal land

uplands

historic landscapes

old meadow pastures (in 1992 targeted on the Culm Grasslands and sites in Hereford and Worcester and on areas selected under the historic landscapes option)

River Valleys and Waterside Landscapes

Included in this option are river valley land affected by the flood plain, areas adjoining lakes and canals and other wetlands. The Countryside Commission wishes to attract land that has most potential for environmental improvement and public benefit. The Commission aims to support and reintroduce traditional management to sustain and extend meadows and pastures and the wildlife they support and to restore and protect characteristic waterside features as well as provide opportunities for people to enjoy the landscape and its wildlife.

The scheme provides both for annual payments per hectare for management activity and for payments for capital items. The waterside landscapes management options are offered in two tiers: tier 1: management of existing permanent grassland; tier 2: re-creation of traditional waterside landscapes on arable land or ley grassland, with different levels of payment applying to each tier; additional payments are made for land made available for public access and there are other supplementary payments including one for the creation of waterside features such as reed beds, fens and carr.

The capital items provide for tree and shrub planting, pollarding and coppicing bankside trees and for sluices for water level control which might assist with river restoration projects. Although pond restoration works are listed, restoration works to watercourses and in stream works are not. Landholders applying to the scheme can select from a menu of management options and capital items as is appropriate to their land. Thus the scheme offers participants

considerable flexibility and this appears likely to add to its acceptability and effectiveness as a means of funding aspects of river restoration.

9.7.2 Landscape Conservation Grants

These are grants to undertake landscape enhancement or improvement works funded by the Countryside Commission through grants to local authorities usually counties. The Commission agrees a strategy with the local authority and provides funds for the local authority to run a Landscape Conservation Grant Scheme appropriate to the needs of the area. Landowners, farmers and individuals then apply to the local authority for the grants. The type of scheme that is operated will vary from area to area but items for which grants may be available include amenity tree planting, management of small woodlands, pollarding willows and alders, the restoration or creation of ponds but not river restoration directly. There may, however, be scope for this scheme to be used to fund a local authority contribution to a particular aspect of river restoration such as tree planting.

9.7.3 Areas of Outstanding Natural Beauty

The full range of the Commission's grants are available in these designated areas. In addition the Commission funds projects undertaken by local authorities within the boundary of the AONB that enhance the planning and management of these areas. River restoration schemes within an AONB might be able to benefit from these funding arrangements.

9.7.4 Countryside Management Projects

The Countryside Commission makes grants available for Countryside Management Projects. Mainly operated by local authorities, these involve a small, practical team lead by a project officer that help to carry out small scale conservation and visitor management tasks within a defined area of countryside. This approach might provide a means of carrying out small scale river restoration work.

9.8 Countryside Council for Wales **(Available in Wales only)**

This new body administers grants to further landscape and nature conservation, access and the enjoyment of the countryside in Wales.

9.8.1 Grants for Projects and Programmes

This scheme is designed to support individuals and organisations carrying out work meeting the objectives of CCW policies. This scheme might provide funding opportunities for river restoration projects.

9.8.2 Landscape and Nature Conservation Grants

This scheme is administered by the county councils and National Parks Authorities on behalf of CCW. Under the scheme it is open to anyone living and working in the local authority area to apply for assistance to manage or enhance features of landscape or nature conservation importance. The objectives of this scheme are currently under review.

9.8.3 Tir Cymen - Countryside Stewardship in Wales

Initially, this scheme will only operate in pilot areas:

the Three Districts of Meirionydd
Dinefwr excluding the ESA
Swansea

The scheme will be broadly similar to its English counterpart. But it will not be restricted to particular important landscapes but will aim to offer management payments for the whole range of farmland habitats and landscape features found in Wales. A special feature of the scheme in Wales is that it will apply to whole farms. Agreements will be for ten years and as in England, payment will be offered both as annual management payments and as capital grants for creating habitats or landscapes. As in England this scheme appears to be the most promising source of support for river restoration in Wales.

9.9 Local authorities and National Parks in England and Wales

9.9.1 Local authority conservation grants

Apart from the grants they receive from governmental organisations such as the Countryside Commission, local authorities may have funds of their own available for making grants towards conservation work.

9.9.2 National Park grants

National Park Authorities administer their own grant schemes and they may provide a source of support for river restoration within the boundaries of their own Park.

9.10 Urban Regeneration Grants: Department of the Environment and English Partnerships

A new agency - English Partnerships will take over responsibility for City Grant and the Derelict Land Grant previously administered by the DoE. These grants are available to support urban regeneration projects which can include riverside projects and elements of river rehabilitation.

10. FUNDING SOURCES AND SCHEMES IN SCOTLAND

10.1 Scottish Natural Heritage Grants

(Available in Scotland)

Scottish Natural Heritage was given wide discretionary powers to award grants to others to further its aims of conserving and enhancing Scotland's natural heritage and to help people to enjoy this heritage in a responsible and sustainable way. SNH does not have specific schemes under which grants are provided but adopts an open, flexible approach and gives guidance on the broad areas within which it will award grants. The work that SNH will support with grants is considered under several headings. River restoration projects would appear to meet many of the requirements for the award of SNH grants. SNH is prepared to discuss proposals at an early stage (grants cannot be made for works started prior to the offer of a grant) and to advise potential applicants on their projects.

Improving conservation of species, habitats and landscape

Grant assistance will be considered for projects which have as their objective the conservation or enhancement of landscape features, wildlife and habitats. It is specified that the landscape measures should aim to reinforce or improve the landscape character of the area. Wildlife habitat creation should be aimed at the restoration or protection of locally important habitat types. River restoration schemes could be selected to meet these objectives.

Schemes for which grant may be given include:

- Amenity tree planting and tree surgery;
- habitat creation;
- the preparation of management plans for the conservation and enhancement of the natural heritage;
- land purchase;
- pond creation and rehabilitation where this makes a contribution to landscape and habitat diversity.

Although river restoration is not explicitly mentioned, it is clear that it is potentially the kind of project that would attract grant assistance under this heading.

Promoting or facilitating public enjoyment of the natural heritage

SNH will consider making grants for projects which help the public to enjoy the natural heritage without damaging it, or which facilitate the sustainable management of recreation and the enjoyment of the natural heritage. To be eligible for this grant, projects must be of benefit to the general public. A river restoration projects in which public access and recreational enjoyment of the site was a component part of the scheme might attract grant under this scheme. The kind of measures for which grant might be paid which might be relevant to river restoration work include footpath management, trails, signposting and waymarking, country parks and regional parks.

Increasing awareness and understanding of the natural heritage

Grants may be paid for schemes which include the interpretation of the natural heritage, schools projects, and projects promoting community involvement in the care and understanding of the natural heritage. River restoration projects could involve interpretation and community participation and, in that case might be eligible for support.

Developing partnerships

It would be more likely, however, that river restoration would attract grant under this heading. SNH is keen to develop partnerships with all types of interested groups - voluntary organisations, public bodies including local authorities individuals and businesses. Therefore, it provides grants to help develop and cement such partnerships. River restoration projects will require the development of such partnerships among a wide range of interests. Therefore, river restoration might be eligible for support under this heading. The activities for which this grant aid is paid include training voluntary organisation staff and volunteers, the establishment of countryside projects and trusts, feasibility studies and the employment of project and officers. The last item may be of most relevance to river restoration projects since such projects may well require full or part-time project officers.

SNH requires applicants for grant aid to show that they have sought support for their project from others and that funding from other sources such as the Forestry Commission, Scottish Enterprise or Highlands and Islands Enterprise Networks or local authorities is not more appropriate. Sponsorship arrangements with business perhaps involving matching funds are welcomed.

SNH particularly welcomes projects which aim both to conserve the natural heritage and to assist in sustaining its enjoyment by society. It encourages projects which aim to demonstrate or further our understanding of sustainable land use. River restoration projects which aim to restore a natural and sustainable relationship between the water and land environment would appear to fit this objective.

Grants are discretionary, in most circumstances no higher than 60% but may be up to 85% in National Scenic Areas and are offered for a set minimum period.

10.2 Scottish Office Agriculture and Fisheries Department Schemes

10.2.1 Environmentally Sensitive Areas Scheme

ESAs can be designated by SOAFD in consultation with SNH in areas where wildlife and landscape are particularly important and also vulnerable to agricultural intensification. Five areas have been designated and five are proposed:

Designated:

Breadalbane
Loch Lomond
Machair of the Uists
Stewartry
Whitlaw and Eildon (to be known as the Central Borders ESA)

Proposed for designation in 1993:

Shetland Islands
Western Southern Uplands
Central Southern Uplands
Cairngorms Straths
Argyll Islands

Recent schemes and renewals under already existing schemes include as one of its management conditions a requirement that wetlands and water margins, if they are present, on a farm be conserved and enhanced. The water margin strip to be managed should have a minimum width of six metres. Controlling bankside grazing and tree planting are among the management measures mentioned. This requirement could be of direct assistance to river restoration schemes in ESA areas.

Duration

As in England and Wales ESA scheme agreements are now for ten years with a break clause allowing either party to terminate after five years.

Restrictions on availability

The schemes are only available to those who farm land wholly or partly within the boundaries of the designated area of the ESA

The Scottish ESA scheme provides three types of payment:

- Tier 1 Payments - annual payments per hectare protected by the standard requirements;
- Tier 2 payments additional annual payments per hectare to cover specific management measures such as the water margins management requirement;
- payments relating to additional costs identified in the conservation plan such as tree planting.

10.2.2 Habitat Scheme

A scheme comparable to that available in England and Wales is proposed for 1994. It is intended to encourage long-term withdrawal of land from agricultural production in carefully selected areas to create a range of valuable wildlife habitats. The scheme will have five

options:

- waterside margins in enclosed land (pilot schemes are proposed in the catchment areas of the River Tweed, Spey, Don and Dee);
- upland scrub (primarily willow and juniper);
- coastal heath;
- damp lowland grassland and marsh communities;
- dry lowland species rich grassland.

It is intended that the waterside margin option should benefit fish populations and it clearly provides scope for river restoration initiatives. Eligible land must be withdrawn from agricultural use for at least 20 years. Different annual management payments are proposed for the different habitat options.

10.2.3 Rotational and non-rotational set aside

These schemes are broadly similar to those available in England and Wales (Section 9.4.3). The non-rotational set-aside scheme includes a field margins and strips option. It is intended that this should include buffer strips along watercourses. The schemes are for a minimum of five years only. Therefore, there is some potential for this scheme to provide support for river restoration.

10.2.4 Set aside access scheme and Heather Moorland Scheme

As in England and Wales (Section 9.4.3), a scheme is proposed for the autumn of 1993 to encourage farmers to make available, for quiet recreation such as walking, land set aside under the Arable Areas Payment Scheme. It is intended that the scheme would be limited to land which is particularly suitable for new access, for example, land which is adjacent to a landscape or recreational feature or is on the fringes of a town or village. Riverside sites might fulfil these requirements.

The heather moorland scheme available in all parts of Scotland where heather moorland is found (except ESAs). It is intended that the scheme should protect and enhance heather moorland by reducing the number of sheep grazing on such moorland. This scheme does not appear to offer much support for river restoration initiatives.

10.2.5 Farm and Conservation Grant Scheme

This scheme described in section 9.4.7 above is also available in Scotland.

10.2.6 Farm Woodland Premium Scheme

This scheme described in section 9.4.6 above is also available in Scotland.

10.3 Forestry Commission schemes

10.3.1 Woodland Grant Scheme

This scheme described in section 9.5.1 above is also available in Scotland

11. FUNDING SOURCES AND SCHEMES IN NORTHERN IRELAND

Potential sources of funding that might be called upon to support river restoration schemes are more restricted in Northern Ireland than in the rest of the UK because of the concentration of responsibilities for the water environment, agriculture, fisheries, and nature conservation within the DoENI and DANI.

11.1 Countryside and wildlife branch of the DoENI

The C & W offers a variety of grants for activities connected with conservation and informal recreation in the countryside, open spaces and access to the countryside and for land purchase.

Grant-aid payable for projects under the Nature Conservation and Amenity Lands Order (NI) 1985

The type of project that would qualify for grant aid under this order is not strictly defined and any proposals large and small is considered on their merits. This funding would be a potential source of support for aspects of river restoration schemes and possibly for schemes as a whole. Branch staff will advise on how to proceed with a planned project. The types of project that might qualify for grant-aid are described below.

11.1.1 Conservation of Wildlife Habitats

Special measures to protect rare or endangered species, to manage habitats for the benefit of wildlife, or to create opportunities for public appreciation of wildlife may be eligible for grant-aid. Suggested activities include the rehabilitation of ponds and the management of vegetation in areas set aside for nature conservation. The restoration of riverine habitats would appear to be an appropriate project for this funding.

11.1.2 Management of broadleaved woodlands

Grant-aid may be made available for management work which aims to sustain native woodland. Fencing to prevent livestock damage, selective felling and replanting are examples of the kind of activities that might be funded. This scheme might support a river restoration scheme closely associated with broadleaved woodland.

11.1.3 Tree planting

The planting of trees or small woods, normally broadleaved, of less than a quarter of a hectare may be a component in a variety of projects eligible for grant aid. In addition, grant aid may be available for small tree planting not eligible for grant aid from DANI, in AONBs.

Grant may also be used to pay for protective fencing, tree shelters and ground preparation. It is possible that this tree planting grant might be of use for planting associated with a river restoration project.

11.1.4 School Wildlife areas

A river restoration project might wish to involve local schools in its activities in order to foster links with the local community and community support. This grant might be of use in such a situation. Grants of up to £500 are paid to schools undertaking conservation projects such as the creation of wildlife areas which can be used as a teaching resource.

11.1.5 Picnic sites, nature trails and interpretation

A river restoration project might wish to provide interpretative material or guided trails along a restoration site to involve and inform the general public about river restoration work. Grants are available to support these kinds of activities.

Rate of grant

Grant is usually paid at the rate of 50% but particular attention is paid to the likely public benefit of a project judged by the prominence in the landscape, extent of public access and educational potential. Grants can include both labour and material costs.

Restrictions on availability

The grants are available to a wide range of applicants: local authorities, voluntary bodies, community groups, schools, landowners and farmers.

11.1.6 Open spaces grant

Under the provisions of section 16 of the Local Government Act (NI) 1966, the C & W Branch of the DoENI can pay a grant to District Councils for the acquisition of land to be used for informal recreation. The standard rate is 75% of acquisition and associated costs. Within the limits of a city, town or village the grant is available through the Physical Development Branch of the DoENI. Local Authority land acquisition might be one strategy that a river restoration project might wish to use and this grant might provide support for this approach.

11.1.7 Access Grants

Under the provisions of the Access to the Countryside (NI) Order 1983 grants are also paid to District Councils for works on public rights of way, long distance paths, interpretive publications promoting access to the countryside and for the employment of footpaths officers by the District Councils. Access grants could not make a direct contribution to the main

objectives of a river restoration project but might provide supplementary finance if public access to the restored site were deemed compatible with its conservation objectives and if District Council interest and support were forthcoming.

11.1.8 Grants paid under the Nature Conservation and Amenity Lands (NI) Order 1985

Under this act, the C & W supports a wide range of project which benefit nature conservation and which might include river restoration. Core grants are provided to voluntary conservation organisations such as the Ulster Wildlife Trust, Northern Ireland Environment Link and NI2000 at a level of 60% for core expenditure. But grants at 50% are also available to support posts within these and other organisations which have a specific project task. Such funding might be available to support a river restoration project post. Projects such as surveys, conferences or exhibitions which have a conservation benefit can also attract a grant at a rate of 50%.

11.2 DANI Forestry division schemes

The Forestry Division of DANI introduced in 1988 schemes which are equivalent to those offered by the Forestry Commission in the rest of the UK. DANI policy is now to protect moorland in upland areas and not to grant aid afforestation in moorland areas. This means that forest development is moving down off the hills to lower altitudes so that it is more likely that it would be associated with rivers.

11.2.1 The Woodland Grant Scheme

This is similar to the scheme described in section 9.5.1 above.

11.2.2 The Farm Woodland Premium Scheme

This scheme is the same as that available in the rest of the UK from the agriculture departments described in section 9.4.6 above.

11.3 Department of Agriculture Northern Ireland schemes

11.3.1 Farm and Conservation Grant scheme

This scheme operates in Northern Ireland as elsewhere in the UK. It is described in detail in section 9.4.7 above. The specifications imposed by the scheme have in many cases not met the local requirements, for example with regard to traditional buildings, very well (Milton 1990). The scheme seen mainly as a means of improving farms rather than as an environmental scheme. The plan based part of the scheme has not been very successful. The

scheme may not offer much to a river restoration scheme.

11.3.2 Agricultural Development Operational Programme

This is a new scheme, unique to Northern Ireland which DANI plans to introduce in 1994. It is intended that this scheme will contain provisions to enhance the environment and to provide for such things as wildlife corridors on agricultural land. The details of this scheme are not yet available but it seems likely that it will provide useful support for the management of the land associated with the river in a restoration scheme.

This scheme is offered through the EC Structural Funds and as a result of Northern Ireland's classification as an Objective 1 area - a less economically favoured area in the EC. The incentives that the scheme will provide to farmers for conservation measures such as wetland protection and hedge planting are expected to be more generous than those provided under the Farm and Conservation Grant scheme. It is intended to offer a premium to the farm improvement grant payments to those farmers who also take up the additional environmental options as an added incentive. It is hoped that it will prove more successful in encouraging farmers to introduce conservation measures. This scheme will be generally available and not restricted to particular areas or habitat types. It is seen as being comparable to the Countryside Commission's Countryside Stewardship Scheme and as a significant initiative by the DANI.

11.3.3 Environmentally Sensitive Areas

Three ESAs schemes are available in Northern Ireland:

Mournes and Slieve Croob ESA
Antrim Coast, Glens and Rathlin ESA
West Fermanagh and Erne Lakeland

These are successors to two earlier schemes. As in the ESA schemes in the rest of the UK, in these areas farmers who enter into a ten year management agreement with DANI to manage their land in a particular way are paid a yearly rate per hectare. ESA schemes in Northern Ireland now include as one of their options, the provision of wildlife corridors which may be along watercourses. This might provide support for river restoration within the ESA areas.

11.3.4 Habitat Improvement Scheme

A scheme comparable to the Habitat Scheme available in England and Wales is being developed. It will include a waterside option targeted on certain rivers. Discussions are currently taking place with the advisory body, CNCC, and the C & W branch to determine the 2 or 3 rivers to be included initially as a test of farmers' reaction to the scheme. It is considered important that the initial schemes are successful and that rivers are chosen where a good response from farmers is likely. This might not be forthcoming with some of the

more obvious candidate rivers where the farmers have successful dairy farms. Fisheries interests are also involved and the North Atlantic Salmon Trust is one organisation that has expressed an interest in the scheme. This scheme, when available is likely to provide good support for a river restoration scheme on the selected rivers at least if this is feasible or desirable.

11.3.5 Moorland Scheme

This scheme is the equivalent of the scheme offered in England and Wales. It might have some relevance for river restoration on upland watercourses.

11.3.6 Set-aside schemes

Although available, these are not important in the Northern Ireland context because the main forms of farming are dairying and livestock rearing rather than cereal production.

11.4 Local authorities: District Councils

Local authorities have responsibility for recreation and tourism and the right, in consultation with the CNCC, to establish local nature reserves in their districts. They might be able to provide supporting funding or action in order to create a local wetland nature reserve or access or a recreational area alongside a river.

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