

# **Sector Analysis: Water**

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## 1. Summary

- 1.1 This analysis describes the characteristics and scale of the water sector and impact on the delivery of nature conservation in England. It gives English Nature's objectives for the sector and sets out our six priority actions for 2002-2005. It is intended to provide the strategic direction of what we want to achieve in the water sector. We outline the roles and responsibilities of the key shapers and players within the sector. The dominant influences in this sector are the Department for Food and Rural Affairs (DEFRA), the Environment Agency (EA), the agricultural sector and Ofwat.
- 1.2 We examine the key socio-economic and political factors that shape the sector. In particular, the failure to recognise the value that properly functioning water ecosystems bring to meeting our socio-economic demands on water. We identify the obstacles presented by the numerous and varied institutions, legislation, regulations and incentives that have been established to manage water. We analyse the positive and negative impacts of the sector on nature conservation, and assess the regional variation in these impacts.
- 1.3 From this analysis are derived our priority objectives for the sector. These are to:
  - address and ameliorate diffuse and point source **water pollution** at a site-specific and catchment scale;
  - restore **water levels and flows** at a site-specific and catchment scale;
  - maintain and restore **aquatic species** at a site-specific and catchment scale;
  - promote **changes in land-use** at a catchment scale in a way that promotes sustainable water management;
  - promote the widespread **restoration and creation** of wetlands on a catchment scale.
- 1.4 Six priority policy actions arise from this:
  - seek to ameliorate the impacts of **diffuse agricultural pollution** at a site and catchment scale;
  - secure implementation of the AMP3 investment programme and the necessary nature conservation schemes for inclusion in the **AMP4** programme;
  - support the **Water Bill** and seek its effective implementation and support the implementation of **sustainable water resource policies** by the Environment Agency;
  - seek implementation and effective funding for **WLMPs** on priority SSSIs and the development of a **flood management** policy that works more with nature and delivers biodiversity gain;
  - seek effective implementation of the **EU Water Framework Directive** for nature conservation gain;

- develop and communicate English Nature's long-term **vision for water and wetlands** and implement partnership projects to demonstrate the benefits of wetland restoration.

## **2. Characteristics and scope of the sector**

### **2.1 The nature of the sector**

- 2.1.1 This sector is characterised by organisations and professional groups which identify closely with the 'water environment' and interact with it on a regular basis. Integration of these various interactions has yet to be accomplished but is recognised as important in achieving sustainable water management. Both water and its habitats are seen as places to relax and enjoy nature and so should be preserved. Free access to this natural resource is regarded by some as a right that should not be constrained. Therefore, we must take into account the costs to the water environment and society by the demand for such a right.
- 2.1.2 The water sector is large and highly regulated, apart from agricultural operations. There are a number of Acts of Parliament dealing with the management and regulation of water resources, pollution control, land drainage and flood management. EC Directives, especially the Habitats and Birds Directives and the Water Framework Directive are very influential. In terms of nature conservation, much of this regulation is focussed on protection of designated sites rather than creation or restoration of habitats and species in the wider countryside. Regulation in the water sector is also focussed on seeking end-of-pipe techno-fix solutions to problems, rather than more integrated sustainable solutions. The Water Framework Directive could bring about significant ecological improvements in the wider water environment.
- 2.1.3 The built development sector continues to affect the water sector in terms of impacts on water supplies, pollution and flood management. There is an increasing recognition of the need for sustainable development of the water sector, but this has yet to be incorporated on a broad scale. In the future, hard decisions may need to be taken in areas where water supplies are or will be constrained and where the costs of flood defence are outweighed by other factors.
- 2.1.4 The role of markets and economic instruments in the sector is small, but increasing. The Government recently announced proposals to extend competition in the water industry for large-scale industrial/commercial water users, but not domestic customers. This is likely to increase the demand for trading abstraction licences, but will not bring about quite the level of impact anticipated if it had been introduced more widely.
- 2.1.5 Agricultural policy is increasingly important in relation to the water sector, especially as action is taken to tackle direct impacts on the water environment, such as point source pollution. The potential re-orientation of agricultural policy at UK and EU level, in response to the Food and Farming Commission's report and EU review of CAP, offers opportunities for the water sector.

- 2.1.6 Since 1988 the UK has experienced exceptional climatic conditions - drier summers, wetter autumns and increased frequency of storms and tidal surges that batter the coasts. These trends are exerting strong pressures on water environments and people. Society is starting to question current approaches to water management. In response to climate change, opportunities need to be created that highlight the benefits of sustainable water management for both people and wildlife.
- 2.1.7 It is increasingly recognised that wetland habitats and naturally functioning water ecosystems have a vital role in the sustainable management of water and the provision of services to society (eg the provision of flood control, pollution control and water supply services), as well as recreational and cultural benefits. Therefore, this sector is a potentially powerful ally in the cause of water and wetland conservation. However, this synergy has yet to be fully explored and utilised.

## **2.2 English Nature's role in this sector**

- 2.2.1 Ministers, the Environment Agency, British Waterways, Internal Drainage Boards and the water companies all have duties to further nature conservation and consult English Nature over activities affecting SSSIs. Specific conservation duties were first incorporated in the Water Resources Act 1963. Through successive legislation, Parliament has recognised that the water sector has a potentially damaging impact on biodiversity. .
- 2.2.2 About a third of biological Sites of Special Scientific Interest (SSSIs) in England include freshwater and wetland habitats (see map in Annex 1). English Nature and its predecessors have sought to secure their protection by influencing the policies and practices of the water sector. We are beginning to see the fruits of these efforts in the increasing emphasis on protection of designated sites in the policies and programmes of Government departments, the Environment Agency, water companies, anglers' associations and others. For example, Ministers agreed the inclusion of schemes to protect SSSIs affected by abstraction and sewage pollution in the water companies investment programme for 2000-2005 (AMP3) and the DEFRA High Level Target for preparing Water Level Management Plans. However, the commitment to nature conservation in the water sector is variable, with resistance amongst those with an engineering mentality and those who favour exploitation of water space. Therefore, attention is still needed to ensure appropriate implementation of site protection policy.
- 2.2.3 With the successes in site protection, attention is turning to seeking policy opportunities to enhance the water and wetland environment outside of designated sites. The UK Biodiversity Action Plan is a useful tool to achieve this, but implementation needs to be improved.
- 2.2.4 The framework for management and regulation of the sector is consistent across England, but the nature and impact of this sector varies on nature conservation around the country (section 5.2.5).

## **2.3 Recent history**

- 2.3.1 Responsibilities of Government Departments and the statutory powers and duties of water undertakers have remained basically the same since the early 1970s. The privatisation of water supply and sewage disposal companies in 1989 and the creation of the Environment Agency for England and Wales in 1996 were landmark events. Privatisation brought major ongoing investment in water pollution control, much of which was required under EU Directives such as the Urban Waste Water Treatment. The Environment Agency has taken a more positive approach to environmental protection than its predecessors. This has been helped by a much more supportive political climate and EU Directives, culminating with the Water Framework Directive in 2000. Agricultural surpluses have meant that no major land drainage schemes have been funded by DEFRA (apart from the protection of property) since the early 1980s. Unfortunately, the damage was already done, as almost all lowland floodplain outside nature reserves had been drained by that time. This historic drainage infrastructure is still largely being maintained by operating authorities, making it difficult to reverse much of this damage.
- 2.3.2 Several of the recent policy successes in the water sector have resulted from pressing political need to take action for socio-economic benefits as well as environmental benefit. The drought of the late 1980s and early 1990s created an impetus for reform of water resource management. In 1997 the incoming Government set out its plans for reform in its Water Summit, including reform of abstraction licensing and the introduction of Catchment Abstraction Management Strategies. The floods of Easter 1998 and Winter 2000 had devastating socio-economic consequences, but resulted in a growing consensus for more strategic responses to flood management in England and a DEFRA review of the funding framework for flood and coastal defence. The crisis in farming resulted in a number of reviews, including the recent Food and Farming Commission report which calls for a switch in subsidies to environmental schemes.

## **3. Key Shapers and Players**

### **3.1 Key shapers – defining the rules of the game**

- 3.1.1 Ministers are responsible for bringing forward legislation, for giving a policy line to Departments and initiating organisational change. English Nature shares the same Minister in DEFRA as the water sector, currently Michael Meacher. He has promoted a commitment to nature conservation in the water sector. The Minister responsible for flood management and fisheries is currently Elliot Morley, a knowledgeable conservationist and bird watcher.

### 3.1.2 Within DEFRA there are four key Directorates:

- Wildlife, Countryside and Flood Management Directorate. The Flood and Coastal Defence Division is responsible for flood defence policy, grant-aid for capital works and strategic research. The Land Drainage Act 1991 placed a duty on all flood defence and drainage authorities to further the conservation of flora and fauna. Delivery of a programme of Water Level Management Plans (WLMPs) for SSSIs and Natura 2000 sites and the protection and enhancement of biodiversity is the subject of a High Level Target for flood defence activities. English Nature has regular dealings with DEFRA staff at HQ level and regional engineers. The European Wildlife Division is also of importance, because of the relevance of the Habitats Directive, CROW and BAP to the water sector. We have regular contact with the division regarding casework and review of consents resulting from the implementation of the Habitats Directive. We also have contact as a statutory consultee on licences to translocate species, such as floating water plantain, identified in the Habitats Directive. More recently we have been engaged with the department in the development of the England Biodiversity Strategy.
- Fisheries Directorate. The Fisheries II Division deals with salmon and freshwater fisheries. It also has a research arm, CEFAS. Our main contact is as a statutory consultee on licences to import or keep exotic fish.
- Land Management and Rural Development Directorate. The Rural Development Division has responsibility for delivering policy on diffuse agricultural pollution, including soil erosion. DEFRA has established demonstration farms for soil erosion on some SSSIs. We have initiated a joint research programme with DEFRA and the Environment Agency on risk assessment of diffuse agricultural pollution. The Conservation Management Division is responsible for agri-environment schemes. We have been discussing policy options for tackling diffuse agricultural pollution, following joint research with the Environment Agency. We need to initiate similar discussion on flood management programmes and should ensure high level engagement with the Directorate on water management issues.
- Land and Water Directorate. This includes divisions dealing with water resources and water quality, as well as sponsoring the Environment Agency and British Waterways. Work on the periodic review of water prices, the draft Water Bill and European Directives such as the Water Framework Directive and Urban Waste Water Treatment Directive, have brought English Nature into more regular contact with the Directorate. We are working with DEFRA on a cross-cutting review of policy options for diffuse pollution; their Implementation Group for the Water Framework Directive; the Regulators Group for the 2004 water price review (AMP4) and DEFRA's emerging water environment strategy. We should seek more regular contact with the Director of this Division and have offered a visit to EN.

### 3.1.3 The Office of the Deputy Prime Minister (ODPM) is responsible for the development of planning policy. The need for a sustainable planning policy that identifies its influence on water is crucial to achieving sustainable water

management. We have regular contact with ODPM on planning issues. We need to ensure that planning policy is environmentally sustainable and work constructively with planning bodies to ensure that this is the case.

- 3.1.4 The Treasury's environmental team has taken an increasing interest in the economic regulation, financing and role of economic instruments in the water sector. In particular, the financing of flood management and diffuse pollution strategies and the scope for competition in the water industry. In addition, the Treasury is instrumental in the financing of agri-environment schemes and the overall cost of the Common Agricultural Policy. We are increasing our liaison with Treasury.
- 3.1.5 The European Commission is responsible for proposing Community legislation and for overseeing its implementation. In the water sector, the Water Framework Directive and Habitats and Birds Directives are the most significant outputs from the Commission. The Commission has set up a Common Implementation Strategy to oversee the implementation of the Water Framework Directive. This is managed by the group of EU Water Directors, represented at the UK level by the Director of Water in DEFRA. DG Environment is the key Directorate General in Brussels. It also administers LIFE Nature and Environment funding. English Nature is project managing a £1.5 million four year partnership project *Safeguarding Natura 2000 rivers in the UK*. We have occasional contact with the Commission, especially in relation to the implementation of the Habitats Directive and the Life funded UK Rivers Project. We should consider increased involvement with the Commission on implementation of the Water Framework Directive.
- 3.1.6 The Environment Agency has some 10,000 staff based in 8 Regional and 26 Area offices and small head offices in London and Bristol. It is the principle regulator of pollution, abstraction, waste disposal and fisheries management. It also has operational and supervisory responsibilities for flood management. Its policies and practices are central to any programme for conserving wildlife in the water environment. English Nature has a close working relationship with the Agency. We have signed a Concordat, supported by a Joint Ventures Programme (JVP). The current five priority areas for co-operation are: Habitats Regulation Review of Consents process; 2004 water price review (AMP4); a joint strategy for diffuse agricultural pollution; implementing the Water Framework Directive; and seeking floodplain restoration demonstration projects. We have a separate Memorandum of Understanding (MoU) covering the development of conservation strategies for river SSSIs, co-operation over research and exchange of data and information. The Agency's Environmental Vision contains long-term targets to improve the quality of the environment for people and wildlife, which it intends to implement through its "Making it Happen" programme. A major challenge to the Agency is to ensure its staff also embraces such a strategy and delivers biodiversity gains rather than being immersed purely in its traditional functions such as flood defence, water quality and water resources. The re-structuring of the Agency might help in the long-term, but the task is made more difficult because its functions are tied to single objective plans and funding streams. DEFRA's recent quinquennial review of the Agency resulted in a consultation on the Agency's Section 4

sustainable development duties. English Nature will ensure that the guidance in fulfilling this duty gives appropriate weight to the Agency's role in protecting and enhancing designated sites and the wider environment.

- 3.1.7 As the economic regulator for water companies the Office of Water Services (Ofwat) plays a key role in enabling environment improvements in water quality and water resources to be funded. English Nature has regular high level and operational contact with Ofwat in the development and implementation of the periodic review of water prices (AMP3 and AMP4).

### **3.2 Key Players – seeking to influence the rules of the game**

- 3.2.1 There are 26 privatised water companies in England and Wales, all of which have statutory duties to further nature conservation. There have been recent moves to decouple the heavily regulated water supply and sewerage services from the rest of the business and to move to a greater proportion of debt-based financing. This might influence the ability of the water companies to finance future environmental requirements. We will continue to work with the water companies, through its umbrella trade association - Water UK, to develop and implement biodiversity standards and targets. Water companies affect hundreds of SSSIs through their operational activities. Some companies own substantial areas of land in upland SSSI catchments. It is important that English Nature also develops good working relationships with them at the company level.
- 3.2.2 The Countryside Agency, Scottish Natural Heritage, the Countryside Council for Wales and the Environment and Heritage Service Northern Ireland are key allies in the exchange of information and the formulation and promotion of policies in the sector. With devolution comes a greater need for co-operation across the UK, to both influence implementation of direction of EU policy and share learning and research programmes.
- 3.2.3 British Waterways is the statutory body responsible for the greater part of the canal network, including 40 stretches which are SSSIs. A further 27 SSSIs, including canal reservoirs, are wholly or partly in BWS ownership. British Waterways has a duty to further the conservation of SSSIs and in 2000 it published its own biodiversity plans. This is welcome, as the wildlife interest on many of the SSSIs has deteriorated since notification. English Nature has regular contact with BW at the Chief Executive level and operational level. BW has set up a Waterways Trust to oversee the funding of restoration schemes. It is important that English Nature, at the local level, influences plans for restoration and management of canals which contain SSSIs. We also seek to work with the Inland Waterways Association to keep canal societies informed of developments.
- 3.3.4 Landowners exert considerable influence over the management of land and water. Farmers are an important group because they are responsible for patterns of land-use which may either benefit or damage the water resource. A measure of influence can be obtained through agri-environment schemes, although these currently focus on protecting and enhancing terrestrial



biodiversity, rather than seeking improved resource protection that could benefit freshwater biodiversity. There are Codes of Good Agricultural Practice but these are not enforced. Gaining the support of the professional and representative bodies of farmers and land owners, notably the National Farmers Union and the Country Land and Business Association, will be instrumental to the delivery of nature conservation on the ground, and in the case for policy change. Other professional advisors such as ADAS Consulting Ltd., and the Farming and Wildlife Advisory Group have important influences on agricultural practice.

- 3.3.5 Strategic plans at the regional and local level are an important influence on the water sector. Influence is exerted in terms of policies towards flood plains, biodiversity and water supply and also in terms of the form and direction of development. The key players are currently local plan, unitary development plan and structure plan authorities. The present regional bodies and the regional planning guidance they produce also have a role. Future proposals favour abolition of county structure plans and moving strategic planning to a regional level. This is where our future focus should be. English Nature needs to ensure that such policies are environmentally sustainable by working constructively with planning bodies to make this happen.
- 3.3.6 Internal Drainage Boards (IDBs) are crucial in ensuring the appropriate water levels are created and maintained on designated sites within their districts. IDBs have a duty to further nature conservation, but some are more conscientious than others in implementing this requirement. English Nature has some contact with the individual IDBs but liaises with their umbrella association, the Association of Drainage Authorities, through DEFRA's Water Level Management Plan Advisory Group.
- 3.3.7 In addition to fishery owners, there are more than a million recreational anglers who could be natural allies of nature conservation. However, some practices such as over-stocking, can conflict with the conservation of the wildlife resource. We have drafted a joint statement with the National Federation of Anglers on "nature conservation, angling and freshwater fisheries management". The NFA are consulting with their partners in the National Angling Alliance with a view to making this a memorandum of understanding between all angling bodies and English Nature.
- 3.3.8 Voluntary conservation organisations, such as the RSPB and the Wildlife Trusts are all important partners for English Nature. They are highly active at the local level on practical land management, and in the debate over policy change. Friends of the Earth, WWF and CPRE get involved in water campaigns and projects from time to time.
- 3.3.9 Increasingly, consumer organisations, such as the National Consumer Council and the Consumers Association, have been seeking to influence the debate on water supplies and water prices to consumers. These organisations are beginning to recognise the value of clean healthy supplies of water to people and wildlife. English Nature needs to consider the scope for liaising with these organisations as part of our people and wildlife agenda.

- 3.3.10 Other players include the Press and Media for the promotion of English Nature's relationship with the sector. We need to produce a core set of key messages for each priority action and identify the main opportunities for promotion of these messages.

#### **4. Socio-economic and Political Factors**

- 4.1 Good quality water in the right place at the right time is required to meet the fundamental needs of people and the environment. This universal need for 'safe water' provides a direct link between people and the environment.
- 4.2 Water is used and managed to meet many different purposes – to support agriculture, industry, provide the public water supply, take pollutants, reduce flood risk and for recreation. These uses are not necessarily incompatible with biodiversity but we have failed to manage the water cycle in a way that works with nature. We have not recognised the value that properly functioning water ecosystems can bring to meeting our socio-economic demands on water. Instead, there has been a presumption towards anthropogenic control of the water cycle and a favouring of agriculture and development at the expense of sustainable water management. As a consequence of this competition for the management and use of water, nature conservation has been at the back of the queue for action and also for subsequent investment to rectify these failings.
- 4.3 Past and current pressures which stand in the way of sustainability in the water sector are:
- the concentration of productive agriculture, human settlements and industry in floodplains resulting in the canalisation of rivers to prevent flooding and drainage of wetlands to grow crops. The maintenance of such land drainage and flood defence works means that these historical activities continue to cause damage;
  - the intensive development of agriculture in the wider catchments causes them to lose their natural absorptive capacity. This creates soil erosion, increased flooding downstream and increased diffuse pollution of rivers and streams;
  - the use of rivers and streams as receptors for human and industrial wastes.
  - the supply of cheap, clean water regarded as a right by industry and domestic households. In some areas abstraction is exceeding the natural replenishment of ground and surface waters. One concern is that permissions for development often precede the need for developers to obtain licences. Proposed changes to the planning system may help resolve this situation.
- 4.4 The numerous and varied institutions, legislation, regulations and incentives established to manage water present the following obstacles in achieving sustainable water management. These include:
- lack of integration in and between the water sector and the agricultural and land-use planning sectors, and within the sector itself;

- funding - funding streams are inflexible and cannot easily be combined. Inefficiencies in some funding systems, rather than shortage of money, cause problems. In addition, traditional cost benefit analysis used for allocating monies largely fail to take account of wider social and environmental benefits. The solution lies in flexible, accessible and complementary funding streams;
- piecemeal regulation/planning - the water cycle operates naturally at the catchment scale, so we need to develop catchment-based objectives, plans and action;
- Focus on techno-fixes: solutions sought are often engineering single-objective techno-fixes that treat the symptom rather than the cause of the problem.

- 4.5 The political climate has recently changed and there is a burgeoning acceptance for the need to work more with nature in using and managing water. This has been helped to some extent, by the recent high profile droughts and floods. Climate change, as well as unsustainable management practices, is a driver. While it is increasingly recognised that it makes good economic sense to use and manage water sustainably, policies are not yet in place to deliver such management.
- 4.6 We should seek to change the rules of the game in the water sector by encouraging society to develop lifestyles, technologies and management plans that are less profligate in the use of water and the production of wastes. We should seek to work more with natural processes and find ways to integrate the water sector with the agriculture sector. In the interim, we should also capitalise on opportunities to reduce the impact of abstraction and pollution on conservation sites that we value and to restore habitats and ecosystems that have become degraded. The regionalisation of government presents further challenges and opportunities to influence the water agenda.
- 4.6 A brief introduction to the key opportunities on which English Nature should capitalise appear in the following paragraphs. These extend from site-specific opportunities to deliver policy change on designated sites, to opportunities to seek biodiversity enhancement in the wider environment .
- 4.7 **Water Level Management.** Since 1994, DEFRA has required operating authorities (Environment Agency, IDB's and local authorities) to prepare Water Level Management Plans for 510 SSSIs. More recently, DEFRA issued new guidance for these plans, placing greater emphasis on conservation objectives, and set a target for costed implementation plans to be produced for Natura 2000 sites by the end of March 2002 and for SSSIs by the end of March 2003. It is unlikely these targets will be met. We are working with DEFRA to provide guidance on how the 1994 Habitats Regulations should be applied to WLMPs. English Nature Area Teams should assure themselves of the conservation content of the plan and help operating authorities develop implementation plans. There is concern about the commitment from some operating authorities to the implementation of WLMPs and funding is seen as a key constraint to their delivery. English Nature needs to review the effectiveness of implementation of WLMPs, assess the effectiveness of

operating authorities in implementing them, and identify means to galvanise action.

- 4.8 **Fisheries Management:** The recent Government Salmon and Freshwater Fisheries Review reflected that fisheries are a strong driver for environmental improvement, by highlighting the range of broader environmental and land use issues which effect fisheries via impacts on the aquatic environment. The general ethos of the review that fisheries management needs to be conducted for the benefit of all components of the aquatic environment, is beginning to permeate most areas of fisheries management. Many of the recommendations of the review provide support for English Nature policy and we will continue to work to influence/implement the various recommendations of relevance to our agenda. We will continue to work with the EA, via *inter alia* the inter-agency fisheries TAG to develop sustainable fisheries management. We will also seek to develop a Memorandum of Understanding between national angling bodies and English Nature.
- 4.9 **Invasive Species:** The introduction and establishment of non-native aquatic plants at freshwater sites in England presents a serious threat to native biodiversity. The spread of species such as *Crassula helmsii*, *Hydrocotyle ranunculoides*, *Azolla filiculoides* and *Myriophyllum aquaticum* both within established and new sites is cause for concern. Our strategy for invasive aquatic plant is focussed on raising awareness and notification, early action and appropriate control, effective monitoring and follow-up control.
- 4.10 **Water company investment.** The 2004 review of water company prices (AMP4) sets the water company investment programme, including environmental investment, for 2005-2010. It provides an important opportunity to get remedial measures on Natura 2000 sites, SSSIs and BAPs affected by water company abstraction and pollution. We will be looking to promote sustainable solutions to managing water industry impacts. EN sits on the DEFRA regulators group and we are working closely with the Environment Agency. A project plan has been circulated to English Nature staff that allocates responsibilities in EN (nationally and locally). Key to this is the identification of sites requiring water company action.
- 4.11 **Habitats Directive Review of Consents.** We will continue to work closely with the Environment Agency to produce joint guidance in support of the Agency's review of consents required under the Habitats Directive. This will including seeking the setting of water quality and quantity targets for Natura 2000 water and wetland sites.
- 4.12 **Peat extraction/alternatives.** We will continue to support the SAC moderation exercise to ensure adequate Natura 2000 representation in England. We will build on the success at Thorne and Hatfield Moors and Wedholme Flow, where the management of 1500ha of worked peat will be passed from Scotts to English Nature, in order to cease the damaging effects of peat extraction on designated sites. We will also continue to seek policies that promote the use of peat alternatives and work with NNR staff to promote

the use of wetland NNRs as a drive for economic regeneration through green tourism.

- 4.13 **Water resources.** The development of catchment abstraction management strategies (CAMs) is a clear locus for English Nature to influence the abstraction of groundwater and surface water at the local level. The process is participative, and each CAM steering group will include a biodiversity representative. Where we are not directly involved, our input should be through this representative. Nationally, we need to ensure that the resource assessment methodology underpinning CAMs takes better account of designated site interest/off-stream biodiversity. One route would be through agreement of flow targets with the Agency. English Nature should also prepare for, and support, the anticipated Water Bill, which will bring about significant improvements to the water abstraction licensing system.
- 4.14 **Diffuse agricultural pollution.** English Nature is working with the Environment Agency and DEFRA to develop a comprehensive strategy to address diffuse agricultural pollution that will permit the achievement of PSA targets on River Quality Objectives and SSSIs, UK BAP targets and environmental targets under the Habitats Directive and the Water Framework Directive. This strategy should also reduce the costs to the water industry of diffuse pollution (c. £120mill p.a.) It should establish and monitor robust environmental targets, prioritise action and develop an integrated policy framework for implementing the required practical measures on catchments. We will work with Government and its agencies to ensure implementation of this strategy and with Area Teams to share information on best practice. We will begin to prioritise sites for action and pilot some of our policy recommendations.
- 4.15 **Flood management.** English Nature will continue to highlight the benefits of floodplain restoration and wise land management in reducing flood risk and bringing biodiversity benefit, not simply no “net loss” of biodiversity, and to protect designated sites. The Catchment Flood Management Plan initiative and the DEFRA review of flood defence funding offer opportunities. We will work with Area Teams to support the floodplain restoration initiatives.
- 4.16 **Water Framework Directive.** This Directive aims to achieve good ecological status in all surface and ground water bodies by 2015. It offers opportunities to progress the implementation of tools and policies required in some of the above areas. We will continue to work with DEFRA, the Agency and fellow conservation agencies to define good ecological status, the role of wetlands in the Directive, assess the impact of human pressures on surface and groundwater bodies, and influence the development and preparation of the River Basin Management Plans that will identify the measures required to achieve the aims of the Directive. We will clarify the key priorities for nature conservation (technical and policy) from the transposition of the Water Framework Directive into UK legislation by December 2003.
- 4.17 **Influencing the agricultural agenda.** Agriculture has a major impact on the water environment. Policy solutions range from the European level,

(including reform of the Common Agricultural Policy), to national level (eg increased modulation), to local level (eg improved targeting of agric-environment schemes to deliver freshwater as well as terrestrial biodiversity benefit). The potential re-orientation of agricultural policy at UK and EU level, in response to the Food and Farming Commission's report and EU review of CAP, offers opportunities in the water sector. We need to distinguish between the different values that agricultural land and production bring to society compared to those brought about by changing land use to create wetlands. In support of more sustainable water management, we will identify the policy changes needed to the agricultural regime.

- 4.18 **Developing and communicating English Nature's vision.** We will review English Nature's Freshwater Agenda, to develop a long-term vision for water and wetlands that underpins all our work from site safeguard through to the wider countryside. This work will be lead by the Water and Wetlands Conservation Focus Group. We aim to build on the Natural Area BAP targets to identify those habitats requiring restoration or creation, and where they are to be located in the context of catchments and hydro-geology. This will help us identify the best places to restore wetlands for the benefit of wildlife and people. This offers English Nature greater scope for public involvement..

## **5. Impacts on Nature Conservation**

### **5.1 Overview**

- 5.1.1 England's wetlands support a tremendous variety of wildlife. This is reflected in the fact that one third of all England's SSSIs are freshwater sites. The thousands of species reliant on wetlands include animals and plants that we all know and love such as otters and water voles, as well as the less well known species such as the club-tailed dragonfly, the adder's tongue spearwort, spangled water beetle and great diving beetle. Wetlands are valuable not just for the wildlife they support, but also for the functions and services they provide. They can act as flood control devices, water filters and recreational playgrounds.
- 5.1.2 Many of the characteristic plants and animals of wetland habitats in England suffered severe declines in the second half of the 20<sup>th</sup> Century. These include breeding waders such as redshank and snipe, and BAP species such as crayfish, pearl mussel and water vole. Water plants and insects have disappeared as habitats have been drained or polluted. The increase in numbers of some wintering and breeding waterfowl due to the creation of artificial water bodies (such as reservoirs and gravel pits) does not compensate for the losses of native flora and fauna.
- 5.1.3 Within living memory we have lost 94% of peat bogs, 75% of reedbeds and ponds and 40% of wet grassland. The type of impact has shifted over the last few decades from one of direct loss of habitats to a creeping degradation of habitats. The principle impacts are:

- direct loss and drainage of wetland habitat (eg from urban drainage and agricultural development);
- increased water abstraction from ground and surface waters;
- pollution, nutrient enrichment and siltation;
- modification or loss of physical features (e.g. river channelisation);
- introduction of non-native species;
- intensive fisheries management;
- inappropriate development for recreation and navigation.

## 5.2 Designated sites

- 5.2.1 Of the 4,100 SSSIs (biological and geological) in England, 1,680 contain freshwater or wetland features. Of these, 801 are notified principally for their freshwater and wetland interest. Within these designations, the UK Government has selected areas of international importance: 120 are also designated as cSACs; 73 as SPAs; and 90 as Ramsar sites (wetlands of international importance).
- 5.2.2 These sites represent the best of what is left to support wildlife in the water environment. However, more than 43% of the water and wetland SSSIs are estimated to be in unfavourable condition because of past or ongoing damaging activities. (See Table 1 below.) Protection of these habitats remains a priority. Table 2 below outlines the main reasons for unfavourable condition. Analysis is incomplete as condition assessments for the majority of river, lake and canal SSSIs will not be accomplished until the end of 2002, but some progress is being made with addressing impacts from point sources – abstraction or pollution – with future pressures from water management in the wider catchment.

**Table 1: Condition of main BAP habitat types within SSSIs**

Main habitat type	% area in favourable/ unfavourable recovering condition	% area in unfavourable no change/ unfavourable declining condition
Fen, marsh & swamp	71	29
Bogs	40	60
Standing water & canals	66	34
Rivers and streams	50	50

NB. This is an incomplete dataset as not all SSSIs have yet been condition monitored.

**Table 2: Reasons for unfavourable condition**

Issue	No. SSSIs affected	Area (ha)
Abstraction	16	839
Point source pollution	32	673
Diffuse Pollution	53	1779
Siltation	14	220
Ditch management	44	3263
Drainage	70	6188
Floods	14	2534

NB. This dataset is incomplete because only 59% of all SSSIs already assessed have an adverse impact identified and recorded.

- 5.2.3 Analysis of the joint English Nature/Environment Agency Site Issues Briefings (SIBs) database illustrates that the nature of impacts and risks from Agency consents to all European sites are largely the result of the effect of water quantity, with changes to the hydrology causing an impact or high risk of an impact on 50% of the c.300 Natura 2000 sites assessed. Changes to water quality (i.e. nutrient eutrophication) effect 40% of the sites in a similar way.
- 5.2.4 This analysis confirms that the water sector poses significant risks to both achieving the Governments PSA target for favourable condition on SSSIs by 2010 and complying with the requirements of the Habitats Directive. For example, current assessments of SSSI conditions illustrate that the water sector is responsible for preventing the achievement of favourable condition of about 10% of the area of SSSIs in England. This is likely to increase when assessments for rivers, lakes and canals are completed.
- 5.2.5 There is regional variation. An analysis of existing condition assessments show that the water sector causes the biggest impact in the east of England (causing adverse conditions on c. 25% of the area of SSSI). It is also the second most important factor in the south west and north west (causing adverse conditions on 15% and 8% respectively of the area of SSSI). In the south east, water is the fourth most important factor, but results in about 15% of the area of SSSI being in adverse condition . (NB: this is likely to change when assessments are completed for rivers, lakes and canals). Table 3 below highlights the regional variation in impacts/risk on European sites

**Table 3: Number of European sites impacted/at risk from the water sector by Environment Agency Region**

Region	Flood & Coastal Defence		Eutrophication		Hydrology	
	No.	%	No.	%	No.	%
Anglian	35	69	19	37	36	71
Midlands	2	8	10	42	15	63
North East	4	11	14	37	15	39
North West	11	26	23	53	21	49
South West	16	23	30	42	31	44
Southern	16	38	20	48	22	52
Thames	3	12	4	15	11	42

### 5.3 Wider Environment

- 5.3.1 Some 102 of the 391 Species Action Plans are directly associated with freshwater wetland habitats. Furthermore, a total of 123 SAPs make one or more references to water-related issues as a threat, or an area where action should be taken to address concerns. For habitats, 9 HAPs are concerned with the conservation of freshwater and wetlands, with a total of 26 HAPs impacted by the water sector (figures extracted from draft England Biodiversity Strategy Business Workstream).



- 5.3.2 *'Sustaining the variety of life' 5 years of the UK Biodiversity Action Plan* (March 2001) report by the UK Biodiversity Group highlights that across all plans, the most frequently mentioned threats to freshwater and wetland habitats and species are pollution and eutrophication (83 plans), drainage (43 plans), and water abstraction (41 plans).
- 5.3.3 Of the main reasons identified as causing the decline of priority species and habitats, water management (especially excessive abstraction and pollution of water systems) is considered to be a threat in 33% of plans. This is the third most significant after agricultural practices (46%) and inappropriate management (38%).

## **6. Sectoral Objectives**

- 6.1 Our emerging vision is for an attractive, wildlife-rich, accessible water and wetland environment which plays an important economic and social role (eg helping to reduce flood risk, process wastewater, and provide new attractions for visitors and opportunities for quiet enjoyment of the countryside) and raising awareness of the role people can play to help meet and sustain this vision.
- 6.2 English Nature will work directly and with partners in the water sector and local communities to secure benefits for biodiversity. We will seek to ensure:
- no deterioration in the water environment;
  - the protection and enhancement of our core wetlands sites, especially those designated as being of international or national importance;
  - the creation and restoration of wetlands in the wider countryside that will deliver benefits for biodiversity and people;
  - the sustainable use of water to maximise benefits to wildlife and people.
- 6.3 These objectives can be linked to the regional and local levels through designated sites and Biodiversity Action Plan targets in the Natural Areas.
- 6.4 We will seek necessary changes in institutions, legislation, regulations and incentives established to manage water, particularly focussing on:
- integrated planning systems: both within the water sector and between the water sector and the agricultural and land-use planning sector;
  - flexible and complementary funding streams;
  - strategic approaches at the catchment scale;
  - the correct mix in the use of regulation, incentives, markets, advice and education;
  - a move towards source control solutions that treat the cause of the problem rather than end of pipe engineering solutions that treat only the symptoms;
  - returning ecosystem functionality to catchments.

- the polluter pays principle, accepting that in some instances there may need to be a transitional phase to help certain sectors come up to expected regulatory standards.

6.5 Our five key objectives are to:

- address and ameliorate diffuse and point source **water pollution** at a site-specific and catchment scale;
- restore **water levels and flows** at a site-specific and catchment scale;
- maintain and restore **aquatic species** at a site-specific and catchment scale;
- promote **changes in land-use** at a catchment scale in a way that promotes sustainable water management;
- promote the widespread **restoration and creation** of wetlands on a catchment scale.

## 7. Priority Actions for 2002 – 2005

Priority action	Key shaper	Key player	EN lead teams/individuals
<p><b>1.</b> Seek to ameliorate the impacts of <b>diffuse agricultural pollution</b> at a site and catchment scale.</p> <p><i>Expected contribution to nature conservation: improving condition of around 50 SSSIs and 80 UK BAP habitats and species through reduced inputs of nutrients and pollutants.</i></p>	DEFRA, Treasury, Environment Agency	Landowners/farmers	Environmental Impacts Team (Chris Mainstone, Sarah Fowler, Jonathan Burney); Lowlands Team (Alastair Rutherford, Chris Reid), Local Teams
<p><b>2.</b> Secure implementation of the AMP3 investment programme and the necessary schemes for inclusion in the <b>AMP4</b> programme.</p> <p><i>Expected contribution to nature conservation: improving condition of around 50 SSSIs and 40 UK BAP habitats and species through reduced inputs of nutrients and pollutants and/or improved water levels/flows.</i></p>	DEFRA, Ofwat, Environment Agency	Water companies, CCW, RSPB, Wildlife Trusts	Environmental Impacts Team (Sarah Fowler, Alison Giacomelli); AMP4 local team contacts and regional policy officers.
<p><b>3.</b> Support the <b>Water Bill</b> 3. Support the <b>Water Bill</b> and seek its effective implementation, and support the implementation of <b>sustainable water resource policies</b> by the Environment Agency.</p> <p><i>Expected contribution to nature conservation: restoring favourable condition to around 15 SSSIs and 40 associated at risk from low water levels/flows.</i></p>	DEFRA, Environment Agency, Ofwat, DTLR	Water companies, RSPB, Wildlife Trusts, regional government	Environmental Impacts Team (Sarah Fowler, Senior Hydro-ecologist); all Local Teams; regional policy officers

Priority action	Key shaper	Key player	EN lead teams/individuals
<p><b>4.</b> Seek implementation and effective funding for <b>WLMPs</b> on priority SSSIs and the development of a <b>flood management</b> policy that works more with nature and delivers biodiversity gain.</p> <p><i><b>Expected contribution to nature conservation:</b> restoring favourable condition to around 80 SSSI and 40 associated BAP species and habitats at risk from low water levels and meeting BAP water and wetland species and habitat targets.</i></p>	<p><b>DEFRA</b>, Environment Agency, DTLR</p>	<p>Internal Drainage Boards, Local Authorities, RSPB</p>	<p>Environmental Impacts Team (David Withrington, Alison Giacomelli, Sarah Fowler); all Local Teams and regional policy officers.</p>
<p><b>5.</b> Work with Government, the EU Commission, Environment Agency and other nature conservation agencies to secure effective implementation of the <b>EU Water Framework Directive</b>.</p> <p><i><b>Expected contribution to nature conservation:</b> enhancement of the nature conservation value of some of the 243 water and wetland SSSIs in unfavourable condition and many of the 123 species and 26 habitats impacted by the water sector.</i></p>	<p><b>DEFRA</b>, Environment Agency, Treasury, European Commission</p>	<p>CCW, SNH, EHS, JNCC, WWF, RSPB, water companies</p>	<p>Environmental Impacts Team (David Withrington, Alastair Burn, Michael Coyle)</p>

Priority action	Key shaper	Key player	EN lead teams/individuals
<p><b>6.</b> Develop and communicate English Nature's long-term <b>vision for water and wetlands</b> and implement partnership projects to demonstrate the benefits of wetland restoration.</p> <p><i>Expected contribution to nature conservation: enhancement of the nature conservation value of some of the 243 water and wetland SSSIs in unfavourable condition and many of the 123 species and 26 habitats impact by the water sector</i></p>	Environment Agency, DEFRA	RSPB, Wildlife Trusts, water companies	Environmental Impacts Team (Sarah Fowler); Water and Wetlands Conservation Focus Group, regional policy officers and Local Teams.

NB: the key shapers highlighted in bold have lead responsibility for the issue.

## **Annex 1: Map of wetland SSSIs in England**