local environment agency plan

RIVER TONE

FIRST ANNUAL REVIEW

March 2002

ENVIRONMENT AGENCY

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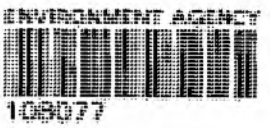

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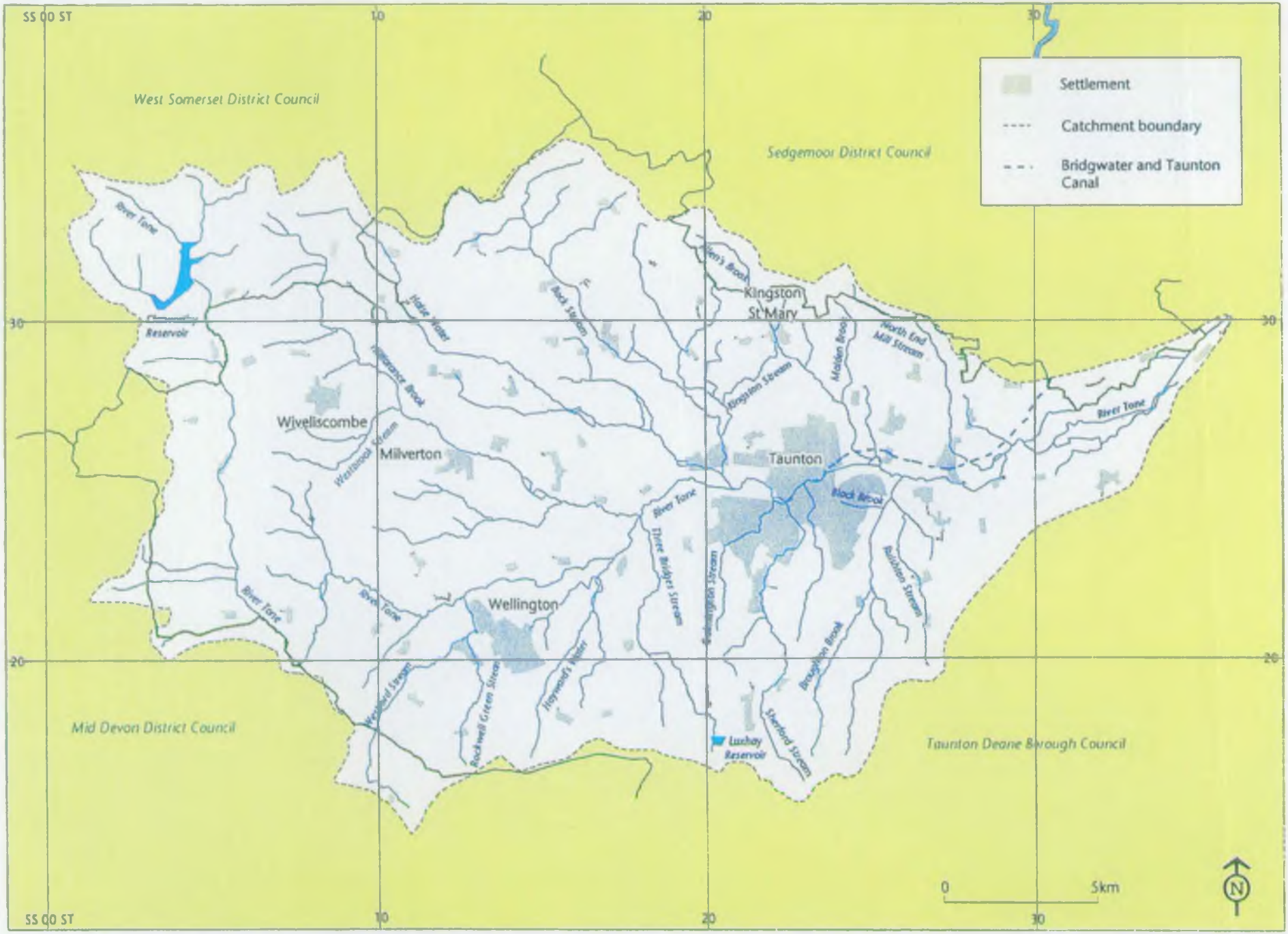
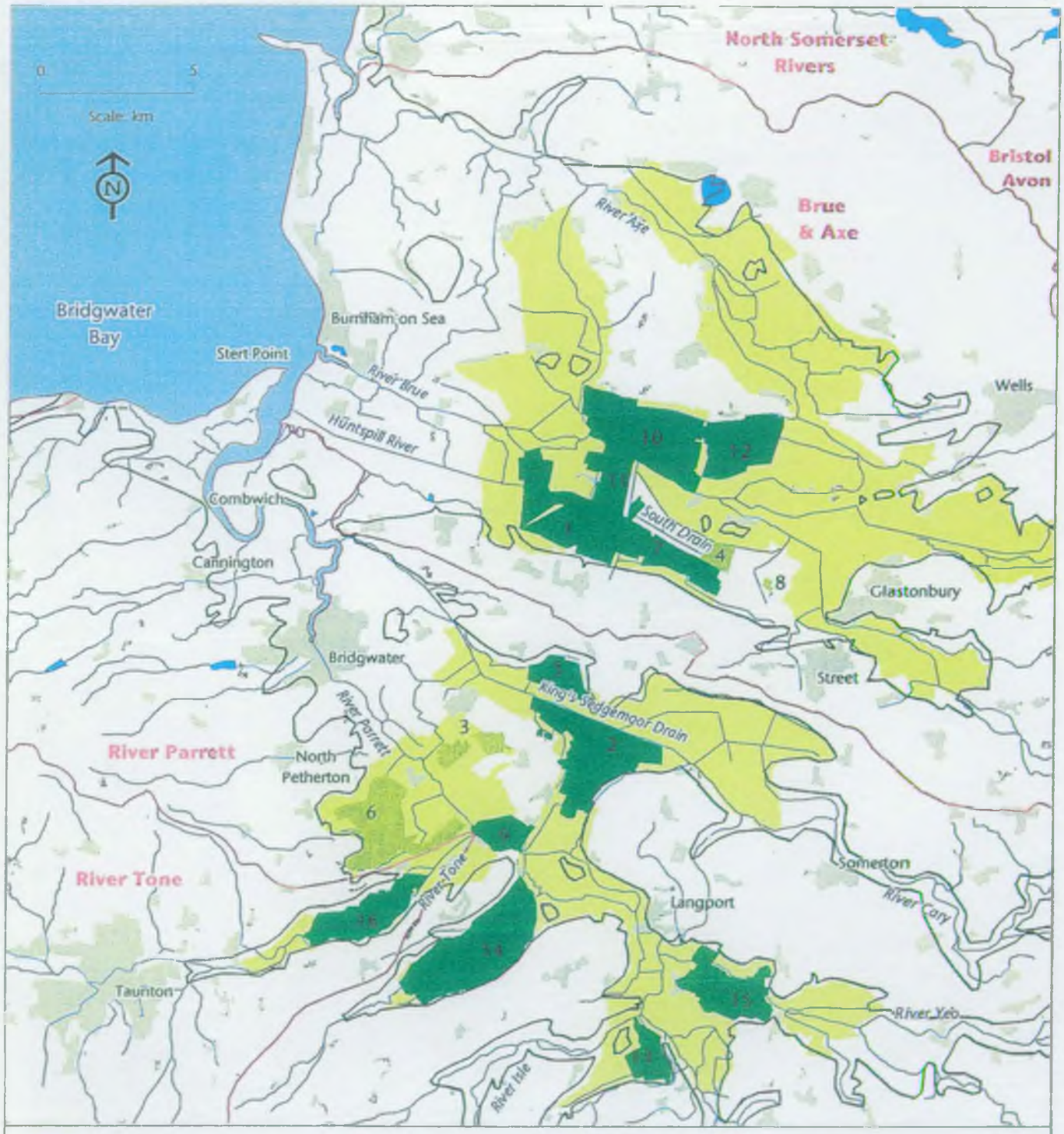


Map 1: The River Tone Catchment

Map 2: The Somerset Levels and Moors and River Catchments



1. Introduction

1.1 The River Tone First Annual Review

This is the first Annual Review of the River Tone Action Plan (2000). It provides a summary of the Environment Agency's progress on actions set out in the Action Plan. More detailed background information is provided by the previous publications relating to this catchment:

- River Tone Consultation Report December 1999
- River Tone Action Plan December 2000

1.2 The Environment Agency

The Environment Agency was established by the Environment Act of 1995, and formed on 1 April 1996. We have wide range of duties and powers relating to different aspects of environmental management. These duties, together with those areas where we have an interest but no powers, are described in more detail in appendix 3. We are required and guided by Government to use these duties and powers in order to protect the environment and help achieve the objective of sustainable development, defined by the Rio Earth Summit (1992) as:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

At the heart of sustainable development is the integration of human needs and the environment within which we live. The creation of the Agency itself in 1996 was in part recognition of the need to take a more integrated and long-term view of environmental management at a national level. We therefore have to reflect this in the way we work and in the decisions we make. Local Authorities are the focus for community action to work towards a more sustainable way of life at a local level. This is part of the Community Strategy and global Local Agenda 21 initiatives that we are committed to support (see Issue 2.26).

Taking a long-term perspective will require us to anticipate risks and encourage precautions, particularly where impacts on the environment may have long-term effects, or where the effects are irreversible. We must also develop our role to educate and inform society as a whole, as well as carrying out our prevention and enforcement activities, in order to ensure continued protection and enhancement of the environment.

1.3 Local Environment Agency Plans (LEAPs)

One of the key outcomes of the United Nations Earth Summit held in Rio de Janeiro in 1992 was agreement by governments that, in order to solve global environmental problems, local action is crucial; we must all therefore think *globally* but act *locally*.

LEAPs are non-statutory, integrated action plans based on local river catchments, and provide a focus for those concerned with the future of the local area. All of the river catchments in England and Wales are covered by LEAPs.

LEAPs have helped contribute to the principle of sustainable development through integrated environmental management and improvement. They have also played a key role in:

- Promoting openness and accountability.
- Developing closer links with the public and with key partners.
- Educating the public on local environmental issues.
- Prioritising the Agency's work through an action plan for managing and improving the local area over the next five years.
- Realising the environmental potential of the area.
- Forming joint actions and partnerships for environmental improvement.

1.4 The River Tone LEAP

The River Tone Consultation Report was published in December 1999. This outlined key environmental issues facing the area and options for their solution. Following a three-month period of consultation, during which over 100 organisations and individuals were consulted, the Action Plan was published in December 2000. Taking into account the views expressed during the consultation process, this Plan set out a five-year programme of actions to improve the local environment and outlined areas of work and investment proposed by the Agency and others.

The Agency often works with others to ensure that the Plan actions are implemented, and so each action identifies the partner organisations involved. The Agency also seeks opportunities to establish new links with other organisations that influence or affect the environment. The Agency reports on progress through the publication of Annual Reviews.

1.5 The Annual Review Process

An important part of the LEAP process is to monitor progress and review the Action Plan on an annual basis to ensure that targets are achieved and actions completed, and that the Plan continues to address relevant issues in an appropriate manner.

This First Annual Review of the River Tone LEAP summarises the progress made since the publication of the Action Plan in December 2000. The progress for each action has been gathered through discussions with the Agency Officers responsible for leading on each particular action, and the Steering Group has been consulted on the draft document.

This progress report aims to:

- Report on progress made by all those involved.
- Report on changes to the content or timing of actions, including the addition of new actions and removal of existing actions, and reasons for these.
- Report on changes and events in the plan area.
- Report on other matters, such as new legislation or initiatives, affecting the LEAP.

This will be the last Tone LEAP Annual Review as the Environment Agency has moved to a new more streamlined process for planning its actions locally (see Making It Happen, section 1.8). We nevertheless invite readers to contact us at any time to raise new issues or suggest new actions to ensure that the Agency constantly evolves to meet the changing needs of the local environment, and local people.

1.6 The River Tone LEAP Steering Group

This group represents a range of commercial, Local Authority and environmental interests operating within the Tone catchment. The group comments upon the Consultation Draft, Action Plan and Annual Review prior to publication. They monitor the implementation of the Action Plan and provide us with specific advice on the importance of issues within the catchment.

The group acts as a communication link between the local community and the Agency, and helps to promote environmental initiatives within the catchment. Each of the six catchments in the North Wessex Area has its own Steering Group. The members of the River Tone LEAP Steering Group are:

Name	Representing
Mrs A M Lennox	The Ramblers Association
Mr J Williams	Taunton Fly Fishing Club / Somerset Otter Group
Mr R Martin	Somerset Wildlife Trust
Mr D J House	Levels & Moors Partnership (LAMP) (Mump Area)
Mr D H Luxton	Wiveliscombe Parish Council
Councillor P Stone	Somerset County Council
Mr I Clark	Taunton Deane Borough Council
Mr S Parker	English Nature
Mr K Lowe	The Old Market Shopping Centre
Mr R Dommett	British Waterways
Mr L Fortune	Area Environment Group Chairman (AEG)
Mr B Cleere	Taunton Deane Borough Council
Mr K Hayward	Abacus
Mrs D S Bradley	Taunton Deane Borough Council
Mr A J Vail OBE	Taunton Deane Borough Council
Mr R Simpson	Somerset Farming & Wildlife Advisory Group (FWAG)
Mr M Eddington	English Nature
Mr D R Cudlipp	Taunton Deane Borough Council
Mr R Bradford	Somerset County Council / Levels & Moors Partnership (LAMP)
Mr S H Chedzoy	Parrett Consortium of Drainage Boards
Mr M Venning	Wessex Water
Mr J Comer	Farmer / former Area Environment Group Member
Mr J Pring	Wyvern Waste Services

1.7 The Environmental Vision

In September 1997 the Agency published its first national strategy entitled *An Environmental Strategy for the Millennium and Beyond* which set out nine principal and immediate environmental concerns. The Millennium Strategy has recently been under review resulting in a new Environmental Vision, which was launched early in 2001.

The Vision retains nine themes, but they are significantly different, reflecting a change in the Agency's approach. The Vision looks at a longer timeframe (20 years or more) and recognises to a much greater extent the importance of working with others. Our vision is:

A healthy, rich and diverse environment in England and Wales for present and future generations.

The new themes that underpin the Vision are:

- A better quality of life.
- An enhanced environment for wildlife.
- Cleaner air for everyone.
- Improved and protected inland and coastal waters.
- Restored, protected land with healthier soils.
- A 'greener' business world.
- Wiser, sustainable use of natural resources.
- Limiting and adapting to climate change.
- Reducing flood risk.

The Vision sets key targets that we will contribute to, and lists key environmental indicators against which we can measure our performance.

1.8 Making It Happen – Local Contributions

The Environmental Vision has set out what we want to see in the long term. *Making It Happen* sets out what we are to do in the next five years towards achieving these goals.

Local Contributions are to be developed which will enable us to turn national priorities into actions on the ground. Drawing up these local contributions will involve everyone in the Agency as well as key stakeholders externally.

The programme for local contributions is:

- January – March 2002: Local outcomes & targets agreed, & contributions developed.
- April 2002: Required resources identified and prioritised.
- May 2002: Draft Local Contribution documents compiled.
- June 2002: Draft Local Contribution documents complete.
- June – September 2002: Local Contributions agreed.
- September – April 2003: Annual business plans and personal objectives developed.

Our objectives are a mix of ongoing responsibilities carried out in new ways, and new work; both are equally as important. The Local Environment Agency Plan (LEAP) process has already identified issues and actions needed to improve the local environment. The relevant issues and actions will be incorporated into the Local Contributions and the LEAP process itself will cease as it duplicates the Local Contribution.

1.9 The River Tone Catchment Overview

The River Tone catchment covers an area of approximately 414 km^2. The river rises in the Exmoor National Park near Raleigh's Cross on the Brendon Hills. The Tone is 49.5km long from its source to the confluence with the River Parrett at Burrowbridge, and it falls approximately 370 metres.

Downstream of its source, the Tone enters Clatworthy Reservoir. From the reservoir, the river runs south towards the village of Greenham. It then does a U-turn, heading north for a short stretch, before turning east. The Tone skirts the northern side of Wellington, then passes Bradford-on-Tone and Norton Fitzwarren, before entering Taunton. From Taunton, the river flows past Creech St. Michael, and becomes tidal at New Bridge Sluice, North Curry, before joining the tidal River Parrett at Burrowbridge.

The Bridgwater and Taunton Canal leaves the River Tone at Firepool Lock in Taunton. At Bridgwater the Tone water is returned to the tidal River Parrett at Hamp Weir. Having passed through the outskirts of Bridgwater the canal ends at Bridgwater Docks, which it enters via Newtown Lock. The canal has an overall length of 24.5 km.

The Somerset section of the Grand Western Canal also lies within the catchment. Consideration is being given to use the Tone Corridor between Taunton and Silk Mills as part of a regeneration scheme to reconstruct the canal to provide a green waterway link.

The population of the Tone catchment was estimated to be 96,000 in 1995, and is mostly concentrated in Taunton (60,700 in 2000) and Wellington (12,600 in 2000). The predominant land use in the upper reaches of the Tone catchment is permanent pasture, with woodland (some ancient semi-natural) on the steeper valley sides. As the valley widens in the middle reaches land use becomes more intensive, with improved and re-seeded grassland, maize cultivation and potatoes (principally in the Hillfarrance sub-catchment) which are regularly irrigated. Sheep and cattle grazing are common, with increasing numbers of horses. In the lower reaches of the Tone, the floodplain is essentially open moorland with improved permanent pasture, re-seeded grassland, withy beds and maize cultivation.

The catchment is characterised by its beautiful and diverse landscape with more than half the total area designated as an Area of Outstanding Natural Beauty (AONB) or Special Landscape Area (SLA). The river corridor itself is a designated Landscape Character Area between Taunton and Wellington, and between Creech St Michael and Burrowbridge, where the river passes through the unique landscape of the Somerset Levels and Moors. The catchment above Clatworthy Reservoir falls in the Exmoor Environmentally Sensitive Area (ESA).

The Tone is an exceptionally varied river in geomorphological terms until it becomes embanked and impounded below Taunton. The river corridor provides a variety of habitats for wildlife including the nationally rare otter and water vole, which are still present in good numbers, and it has more kingfishers than any other Somerset river. There is a rich dragonfly fauna, and a good diversity of fish species, with brown trout and grayling present in the higher reaches above Taunton.

1.10 Resources

The following figures, presented in the Agency's North Wessex Area Business Plan, have been included to give an indication of available resources and expenditure on Agency functions by area to provide a context for spending priorities in the River Tone catchment. Regrettably these figures are not available at a catchment level.

Table 1: North Wessex Area Budget for 2001/2002

Function	Area Budget
Environment Protection	£3,202,000
Flood Defence & Water Resources	£5,322,000
Fisheries, Ecology & Recreation	£993,000

In the action tables (Section 4, Actions Update) the estimated costs of actions for the catchment have been given where possible.

1.11 Priorities

A large proportion of the North Wessex Area budget is used to undertake work required of us by legislation and regulation, and by Agency 'national must-do's'. This includes committing substantial resources to everyday monitoring and management of the environment. Remaining resources are used to undertake other environmental works throughout the area on a priority basis, reviewed annually as part of our business planning process.

The issues identified in the River Tone Action Plan have arisen despite our considerable statutory work and the work of other organisations. Some issues can be resolved by reprioritising and redirecting our resources within our statutory work programme, sometimes requiring the help and co-operation of other bodies. Other issues require action over and above our statutory work and funding. Resources for this work are not certain, matched project funding is usually required in these cases.

Some issues require solutions beyond the scope of our existing budgets or technology. However, these are still valid issues and so are included in LEAPs in the hope that a solution may be found in the future.

Because of the short-term nature of our funding, we can often only firmly commit ourselves to action in the current and next financial years. Our priorities, policies and budget may change thus changing our action programme. For example, development pressures within the catchment have resulted in a significant increase in workload, responding to both planning applications and general information requests. The outlook is for such development to continue, maintaining the pressure on staff resources and so affecting the prioritisation of non-routine actions.

The non-statutory actions in this Plan have been prioritised, together with those from other North Wessex LEAP areas. Those actions that do not receive funding from statutory budgets have been given a priority number of 1-3, with 1 being the highest priority. The priority of these actions is listed next to each one in the progress report in Section 4. Our Managers take into account the priority LEAP actions when producing our Annual Business Plan.

2. Legislation, Initiatives and Organisations Update

2.1 The Department for Environment, Food and Rural Affairs (DEFRA)

On 8 June 2001 the Department for Environment, Food & Rural Affairs (DEFRA) was formed. DEFRA is a new Government Department bringing together responsibilities for:

- Environmental protection from the former Department of the Environment, Transport and the Regions (DETR).
- Wildlife and countryside, including the rural economy, from the former DETR.
- Certain animal welfare issues and hunting with hounds from the Home Office.
- All the functions of the former Ministry of Agriculture, Fisheries and Food (MAFF).

Environmental, rural, food, farming and other related issues have become more complex and interconnected. DEFRA was formed so that the Government can handle these issues more effectively within one Department. DEFRA's formation underlies the Government's long-term strategies on food, farming, the environment, rural communities and sustainable development – issues which lie at the heart of the work of this Department.

At the time of publication of the River Tone Action Plan in December 2000 the Ministry of Agriculture, Fisheries and Food (MAFF) was still in existence. MAFF was a partner of many of the actions in the Plan. The action update tables in this document (Section 4) state DEFRA as the partner where MAFF was cited in 2000.

2.2 The Natura 2000 Network

The European Community Birds Directive (79/409/EEC) and the Conservation of Natural Habitats and of Wild Flora and Fauna Directive (92/43/EEC) (known as the Habitats Directive) place responsibilities on the Agency in addition to our normal conservation duties. Both Directives were made UK legislation by the Conservation (Natural Habitats, & c.) Regulations 1994 (commonly known as the Habitats Regulations).

The aim of the legislation is to protect and conserve certain threatened species and habitats throughout Europe, which is being achieved by the establishment of a network of nature conservation sites that are known as the Natura 2000 Network.

Natura 2000 sites are Special Protection Areas (SPAs) which are designated under the Birds Directive and Special Areas of Conservation (SACs) which are designated under the Habitats Directive. It is Government policy that RAMSAR wetland sites (sites identified under the Convention on Wetlands of International Importance, which was ratified by the United Kingdom Government in 1976) will also be considered under the Habitats Regulations.

The Government has decided that once a possible Special Area of Conservation (pSAC) has been submitted to Brussels (i.e. it has become a candidate Special Area of Conservation or cSAC) the Regulations will apply. Natura 2000 sites are also nationally designated as Sites of Special Scientific Interest (SSSIs).

Figure 1: Summary of the Assessment Process under the EC Habitats and Birds Directives

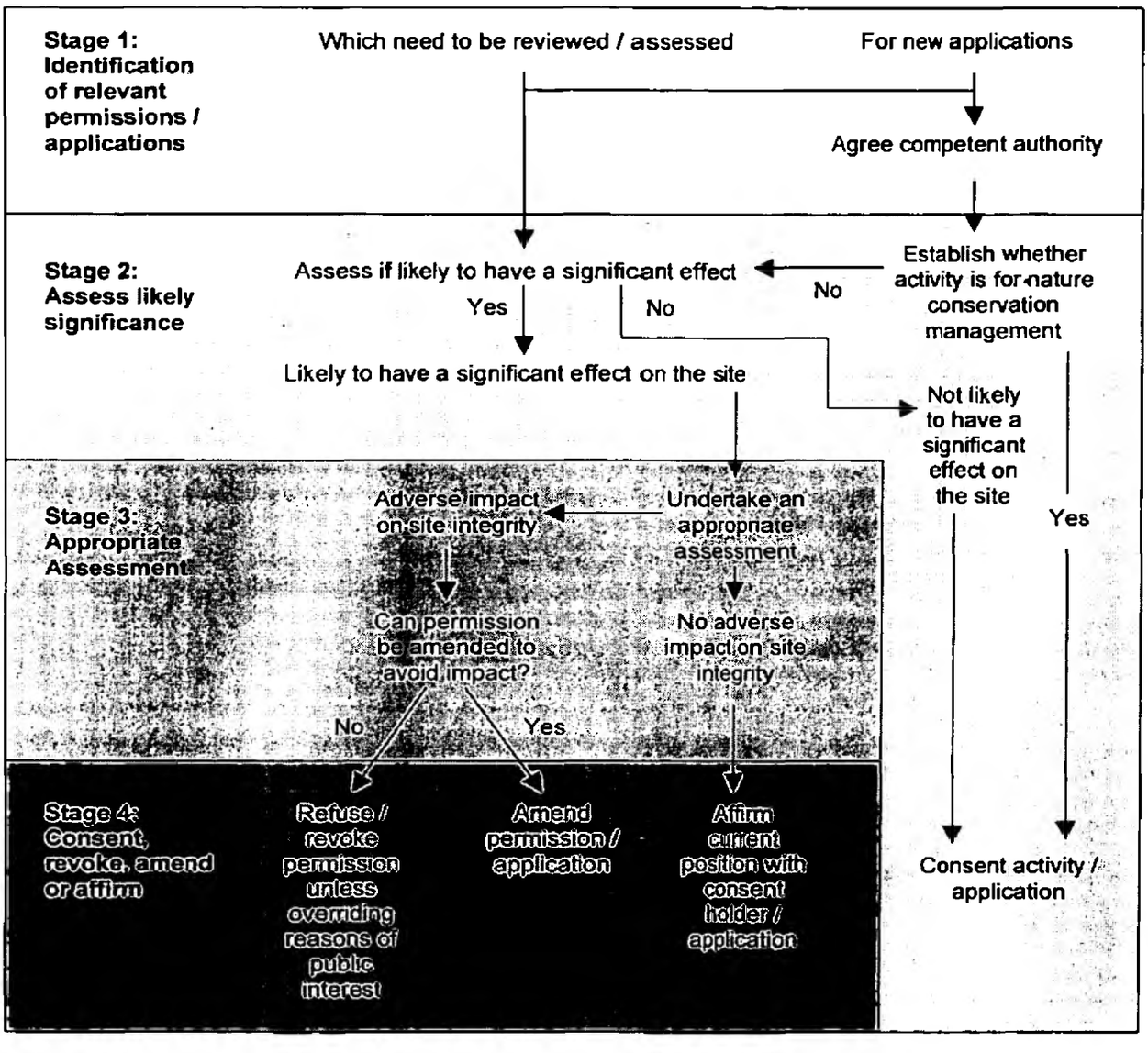


Figure 1 summarises the identification and authorisation process under the Regulations. The assessment of the effect of a new or existing activity or authorisation on a Natura 2000 site must take place in the light of conservation objectives supplied by English Nature. The authorisation or activity can only be allowed where the assessment has demonstrated that it will not adversely affect the integrity of the site. The Government will decide where it is considered that there are imperative reasons of over riding public interest.

There are currently over 180 candidate SACs and 91 SPAs in England and Wales, covering a wide range of habitats and species on land and at sea. Additional sites and revisions to existing sites are being discussed at a meeting in the Netherlands in early March 2002, as the UK Government was asked by the EU to increase the number of Natura 2000 sites and features. The Government has also undertaken to ensure that all SSSIs will be in a favourable condition by 2010.

There are four Natura 2000 Sites in the Tone catchment; these are given in Table 2.

Table 2: Natura 2000 Sites in the Tone Catchment

Site	Designation	Qualifying Interests
Somerset Levels and Moors	Special Protection Area, Ramsar site	Bewick swan, golden plover, teal, lapwing, wintering waterfowl numbers in excess of 20,000 and the outstanding assemblage of ditch flora & fauna, particularly water beetles
Holme Moor and Clean Moor	Candidate Special Area of Conservation	Purple moor grass (*Molinia)* meadows on chalk and clay (*Eu-Molinion*); calcareous fens with saw sedge *(Cladium mariscus) and Carex davalliana,* alkaline fens
Hestercombe House	Candidate Special Area of Conservation	Lesser horseshoe bat
Quants	Candidate Special Area of Conservation	Marsh fritillary

The Agency, as a 'Competent Authority', has extra responsibilities to safeguard these sites. Any application for a new authorisation (e.g. consents to discharge, abstraction licences, waste licences, land drainage consents, Integrated Pollution Prevention and Control permits, or Radioactive Substances Authorisations) or activity (e.g. flood defence work), that is likely to have a significant effect on a Natura 2000 site, will be subject to an appropriate assessment of the likely impact on the conservation interests of the site. We are also obliged to review all existing authorisations and activities that may be affecting the sites by 2010. These authorisations can be either inside or outside the site, as those outside the boundary may still have the potential to impact on the site's qualifying interests.

2.3 The Countryside and Rights of Way Act 2000

The Countryside and Rights of Way Act 2000 (CRoW Act) came into force on 30 January 2001. The CRoW Act presently applies only to England and Wales, but Scotland is expected to develop similar legislation.

This new Act covers several areas that are potentially important for the Environment Agency and it is encapsulated by two of the nine themes in the Agency's Environmental Vision: A Better Quality of Life and An Enhanced Environment for Wildlife. Specific key measures include:

Access and Rights of Way:

- Giving the public a new right of access to mountain, moor, heath, down, and registered common land, whilst protecting the rights of landowners and managers.
- Improving the rights of way legislation by encouraging the creation of new routes and clarifying uncertainties about what rights already exist.
- Local Authorities will be required to review & publish plans for improving rights of way.

Wildlife Protection:

- A new duty on Government Departments to have regard to biodiversity conservation and maintain lists of species and habitats for which conservation measures should be taken or promoted.
- A statutory duty for public bodies to further the conservation and enhancement of Sites of Special Scientific Interest (SSSIs) and have regard for Areas of Outstanding Natural Beauty (AONBs).
- Better protection for wildlife habitats by introducing higher penalties for those who damage SSSIs, and more incentives for positive land management.
- A stronger legal protection for threatened species by updating the Wildlife and Countryside Act 1981.

There is a duty for all public bodies to 'further the conservation of SSSIs, and enhance the natural features for which they were notified' (section 28G). The Environment Agency, as a s28G authority, has an important duty when exercising statutory functions that may effect SSSIs. Where Agency operations are likely to damage a SSSI or when granting permission to other parties to carry out works that are likely to damage a SSSI, the Agency must notify and consult English Nature of the proposals. This duty applies whether or not the operation would actually take place on the SSSI.

The CRoW Act sets out a general duty on all Government Departments to further the UK commitment to global conservation. This is translated by domestic legislation into Biodiversity Action Plan targets, and other provisions aimed at delivering key EU Directives such as the Habitats and Species Directive and the Birds Directive.

2.4 Biodiversity Action Plans

Biodiversity is a key indicator of sustainable development. The UK Government signed the Biodiversity Convention at the 1992 Rio Earth Summit, making a commitment to play its part in halting and reversing the decline in numbers of species and areas of key habitat. The United Kingdom Biodiversity Action Plan lists habitats and species that require conservation action through regional and local plans. The Regional Biodiversity Audit Plan for the South West was published in 1996 and was followed by Action for Biodiversity in the South West in 1997, which provided a series of habitat and species plans to guide delivery.

In Somerset local Biodiversity Action Plans have been developed at District level, while in Devon the plan covers the whole County. British Waterways are developing their own local Biodiversity Action Plan for the Bridgwater and Taunton Canal, while organisations like Wessex Water are also producing Biodiversity Action Plans for land they own. Over the next five to ten years, we will work with a number of organisations that are formulating and implementing habitat and species actions at both regional and local levels. The following local Biodiversity Action Plans cover the Tone catchment:

- Taunton Deane Biodiversity Action Plan (Taunton Deane Borough Council)
- West Somerset Biodiversity Action Plan (West Somerset District Council)
- Sedgemoor Biodiversity Action Plan (Sedgemoor District Council)
- Devon Biodiversity Action Plan (Devon County Council)

We are also developing National Species and Habitat Action Plans and have agreed to be the lead agency or contact point for four habitats: chalk rivers, coastal saltmarsh, fluctuating water bodies and eutrophic lakes; and forty species of animals and plants.

2.5 Fisheries

In 1999 a review of policy and legislation applying, or relevant, to salmon and freshwater fisheries was carried out by an independent review group on behalf of Ministers. The group made a total 195 recommendations and the Ministry of Agriculture, Fisheries and Food (MAFF) published the 'Salmon and Freshwater Fisheries Review' in 2000. The Government debated the review and published their response in January 2001. Many of the review's recommendations were accepted in principle though changes in legislation will be required to progress some. The Agency has also completed its consultation on its proposed national eel fishing byelaws and charging system and is awaiting approval from the Department for Environment, Food and Rural Affairs (DEFRA) before implementation.

Following on from our existing national strategies for salmon, coarse fish, and eels, the Agency publicly consulted on its National Trout and Grayling Fisheries Strategy. The consultation ended in October 2001 and the responses are currently being considered. This strategy, expected to be published in late 2002 / early 2003, will define policies for the Agency to guide it in its statutory duty to maintain, develop and improve trout and grayling fisheries in England and Wales.

A recent Government review has led to the concept of Fisheries Action Plans (FAPs). These will cover specific areas, incorporating actions for all important fish species present in that area into one Plan. FAPs are currently being trialed in various locations over the country. It is expected that FAPs will be produced for local areas nation-wide from 2003.

2.6 The Water Framework Directive: River Basin Management Plans

The European Water Framework Directive (2000/86/EEC) was introduced in the UK in December 2000. This date signified the beginning of a three-year consultation process and the Directive has to be transposed into domestic legislation by 2003. The new directive will replace a variety of issue specific directives, which have governed water management in the UK for the last three decades. The Directive is significant for taking a holistic approach to water management and introducing monitoring and assessment strategies common to all Member States in the European Union.

It will introduce a more integrated approach, including both water quality and quantity issues, and ecological and chemical standards. It will take a more holistic approach to river catchments and introduce the concept of River Basin Districts; administrative areas based on the catchment rather than political boundaries. All inland waters will be covered including surface, ground, transitional, and coastal waters. The key objectives are to:

- Prevent further deterioration and protect and enhance the status of aquatic ecosystems and associated wetlands.
- Promote sustainable water consumption.
- Contribute to mitigating the effects of floods and droughts.

The Directive sets out arrangements for river basin administration and planning based on common objectives for water status. Implementation will require member states to develop "River Basin Management Plans" as a statutory planning process subject to public consultation and review on a six-year cycle. The main requirement is that all surface and groundwaters achieve 'good' status by 2015. The former Department of the Environment, Transport and the Regions (DETR) has proposed that the Environment Agency be the competent authority for the Directive. There will be a series of consultations before the first programme of measures are introduced in 2012 to ensure compliance with environmental objectives for each river basin by 2015.

2.7 The Regional Water Resources Development Strategy

The Environment Agency has a statutory duty to secure the proper use of water resources in England and Wales. In accordance with this duty, our water resource strategy 'Water Resources for the Future – A Strategy for the South West Region' was launched in March 2001. It sets down how we can provide enough water for all human uses with an improved water environment for the period up to 2025.

It is one of a suite of eight regional strategies, plus the overall national strategy for England and Wales, which look some 25 years ahead. The strategy considers the needs for water, both for the environment and for society, and examines the uncertainties about future water demand and its availability. It identifies demand management and water resource development options that are able to help ensure adequate supplies of water across all sectors and shows that we can manage water resources over the next 25 years in a way that will allow an improvement to present levels of environmental protection.

The strategy is part of a framework of integrated water resources planning carried out by the Agency and water users. Water companies play an important part in this framework, each having a published plan for the next 25 years that is kept under annual review. Our strategy sets a structure within which these plans can be refined, allowing them to meet the wider objectives of society.

2.8 Catchment Abstraction Management Strategies (CAMS)

Water resources management and the maintenance of reliable public water supplies within the LEAP area and beyond are subject to national legislation and regulation. Primarily this is with the help of a system of impounding and abstraction licences, determined and administered by the Agency.

This system of licensing is common to England and Wales and was reviewed during 1997/98. In March 1999, following a consultation period, the Government published *"Taking Water Responsibly"* which proposed changes to the water abstraction system. The most important change to come out of this document was a proposal for the introduction of Catchment Abstraction Management Strategies (CAMS).

In April 2001 the Environment Agency published *"Managing Water Abstraction"* which sets out the context and purpose of CAMS. The principal objectives of CAMS are:

- To make information about water availability and licensing readily available to the public.
- To balance the needs of the abstractors for a reasonable quantity of water with the needs of the environment.
- To increase the opportunities for public involvement in the management of abstraction at catchment level.
- To provide a management structure for time limited licences.
- To introduce licence trading.

Another key change to the water abstraction system is that abstraction licences are now to be time-limited. CAMS will be the mechanism for managing time-limited licences by determining whether they should be renewed and, if so, on what terms.

Sustainability appraisals will take place on each CAMS to ensure that the potential social, environmental and economic impacts of each strategy are assessed. Information gathered in the appraisal will also be used to classify the water resource status of each catchment and therefore what level of abstraction will take place.

Consultation is considered to be an important part of the CAMS process. Stakeholder groups will be selected to contribute to the sustainability appraisal and the early stages of CAMS development, from this a consultation document will be produced which all interested parties will have the opportunity to comment on before the strategy is finalised.

2.8.1 The Tone CAMS

Catchment Abstraction Management Strategies will be published one at a time on a six-year rolling cycle. In North Wessex we hope to publish our first Strategy in 2003 which will cover the River Tone catchment.

Key dates for the Tone CAMS:

- Summer 2002: Publication of Tone CAMS Consultation Document.
- Autumn 2002: Deadline for receipt of written responses to the Tone CAMS Consultation Document.
- Winter 2002/3: Publication of Response Statement.
- Spring 2003: Publication of the Tone CAMS (final strategy).
- Year 2007: Likely start date for the Tone CAMS Review.
- 31 March 2016: Common end date for new time-limited licences in the Tone CAMS area.

2.9 Flood Management

The LEAP actions identified in this document form only part of the Flood Defence commitment within the catchment. Core maintenance activities in the summer include weed cutting, application of herbicide and grass cutting on flood banks whilst in the winter, dredging, fence repairs and tree/blockage removal is carried out.

Asset and water level management is carried out all year round. This involves operation and maintenance of pumping stations and sluices which maintain summer water levels and evacuate winter floodwater. The in-house Emergency Workforce, who also routinely respond to flood events and pollution incidents when they occur, carry out most of this work.

Activities that will take place in 2002 include property threshold surveys in Taunton. This, in a similar fashion to the surveys undertaken downstream of Taunton in 2001, will allow improved targeting of the flood warning service. There will also be a new flood warning station constructed at Tonedale in Wellington. This will improve the flood warning service for villages upstream of Taunton and provide better information on the timings of flood peaks arriving at Taunton. Work is also continuing on a Flood Response Plan for the Levels and Moors including the Lower Tone area.

2.9.1 Floodplain Mapping – PPG 25 and Section 105 Plans

Following the floods of Easter 1998 and winter 2000/01, the Government introduced a 'step change' in attitudes to flood risk and land use, which is articulated in the PPG (Planning Policy Guidance note) 25: Development and Flood Risk. This came into force in July 2001 and will be reviewed in 2004. The PPG 25 promotes sustainable location and design, and provides advice on how to consider flood risk at all stages of the planning process. The need for partnerships in land use planning is implicit in PPG 25. Partnerships are vital to sustainable development and the Government expects the Environment Agency to play a positive role in the preparation of Development Plans. This will require early involvement, together with timely provision and interpretation of flood risk data. Integrated thinking and action is required to reduce flood risk and thus strategic partnerships with Local Planning Authorities and other organisations must be established.

The Local Planning Authorities covering the Tone catchment are Taunton Deane Borough Council, Sedgemoor District Council, West Somerset District Council, Somerset County Council and Mid Devon District Council. The Agency has issued to all Local Planning Authorities plans of indicative flood risk areas as part of our role as formal advisor to them on Development and Flood Risk (S105 Level A plans). We also have an ongoing programme of producing more detailed flood risk maps (S105 Level B plans) targeted at areas likely to be allocated for development. The Level B studies consist of hydrological modelling of the existing catchment and hydraulic modelling of those sections of the watercourse which may be affected (effects are possible either directly through existing flood risk to the site itself, or by upstream discharges of surface water from new development).

The Agency is seeking to influence all Local Planning Authorities in the take up and presentation of the Section 105 data. This helps inform the readers at an early stage of the problems likely to be encountered in such areas and therefore help dissuade developers from pursuing sites in such locations. In conjunction with the Section 105 programme, the Agency also advises Local Planning Authorities on appropriate planning policies to deal with flood risk and surface water disposal.

The Local Plan for Taunton Deane covers the majority of the Tone catchment. Taunton Deane Borough Council has included Section 105 Level A and B data on their Local Plan maps. The public Local Inquiry into this Local Plan is currently underway with an anticipated end of June 2002. We will be attending as an expert witness and are preparing a proof of evidence regarding flood risk and other environmental issues, paying particular attention to areas of proposed development such as Norton Fitzwarren and Silk Mills.

Sedgemoor District Council has also included the Section 105 data on their maps along with data on Groundwater Source Protection Zones. However, West Somerset District Council, Somerset County Council and Mid Devon County Council have not included the Section 105 data in their Local Plans. This has resulted in objections from the Agency on a number of settlements. Continuing discussion will, it is hoped, lead to inclusion of the Section 105 data on future Local Plan maps and West Somerset have indicated as such.

North Wessex Area has also produced a document entitled 'Environmental Planning Issues in the North Wessex Area', which is intended as an invitation to Planning Authorities to seek the Agency's involvement rather than as a substitute for discussion. It is designed to be useful to all of the Planning Authorities whose areas are within the North Wessex Area, though the information should also be of use to all concerned with making a better environment and contributing to sustainability. This document is available to the general public on request.

2.9.2 Catchment Flood Management Plans (CFMPs)

In May 2002, The Department for Environment, Food and Rural Affairs (DEFRA) will publish guidelines for the production of CFMPs for the whole country. A CFMP considers flood risks on a whole catchment basis, and identifies the processes that lead to those risks. It considers the impact of future changes, i.e. climate change and land use, on existing and possible future flood risks.

It also considers the sensitivity of the flood risks to a series of possible scenarios including detention, improvement, embanking and flood warning. This results in a high level policy for flood warning to influence the planning process, and future investment in works and further studies to improve understanding of the processes.

The CFMP process includes periods of consultation. To aid in this, the Local Flood Defence Committee has set up a Steering Group of representatives of interested bodies. We are currently working on a CFMP for the wider Parrett catchment, which will incorporate the Tone catchment. This Plan is on target to be completed in April 2002.

2.10 Flood Warning

Absolute flood protection is not possible and so effective warnings are essential, especially where a flood defence scheme cannot be justified. We issue warnings through the media, the Agency's Floodline telephone service, and directly to people in some areas by telephone, fax or pager, or by local flood wardens or sirens.

During 1998 much of England and Wales were seriously hit by floods, both at Easter and again in October. An independent report was commissioned to look at how we dealt with these floods; the result was the Bye Report, published on 1 October 1998. In response we published our own Easter Floods Action Plan. Findings from both these reports and consultation with the Government set new priorities to ensure the delivery of an improved Flood Warning Service i.e. "A seamless and integrated service of flood forecasting, warning and response."

One of the key developments resulting from the review of flood warning is the implementation of a new flood warning code system. Under the new system there are four stages of warning:

- **All-clear:** No flood watches or warnings currently in force in the area; flood water levels receding; check all is safe to return; seek advice.
- **Flood watch:** Flooding is possible; be aware; be prepared; watch out.
- **Flood warning:** Flooding of homes, businesses and main roads is expected; act now.
- **Severe flood warning:** Severe flooding is expected; imminent danger to life and property; act now.

In September 2001 the Environment Agency launched a National Public Awareness Campaign calling on people to "*Wise Up*" to flooding. The campaign had two main aims. Firstly to motivate those complacent to the threat of flooding to take personal action to prepare for the risk. Secondly, the campaign looked to support those already aware with practical help and advice. Over half a million homes received direct mailings in support of this campaign. A new flood directory covering the Avon and Somerset Area including the River Tone catchment was published and is available to the public.

As part of the integrated approach to flood warning the **Floodline** service has been improved. All aspects of the service are now available 24 hours a day on **0845 988 1188**, providing real-time flood warning information, advice, and a route to report flooding issues. Callers can also obtain two advice guides produced in conjunction with the Construction Industry Research & Information Association (CIRIA): *Damage Limitation – how to make your home flood resistant* and *After a Flood – how to restore your home.*

Another significant change to the flood warning service has been the creation of a flood warning team based at Bridgwater. This, and the associated move of the delivery of the flood warning service to Bridgwater, will result in a better targeted flood warning service more suited to the needs of those at risk of flooding. Part of this improved delivery has included installation of a new Automatic Voice Messaging system (AVM) at the Bridgwater office. It is this machine that delivers the pre-recorded flood warning messages to those at risk of flooding at a rate of 1000 calls an hour. This more local service became operational in September 2001 and provides 24 hour a day cover, 365 days a year.

In addition to Floodline, real-time flood warning information is now available through the Internet on the Agency's web site: **www.environment-agency.gov.uk/floodwarning**. The site, designed to withstand one million hits a day, is linked directly to the Agency's direct flood warning system so is updated every 15 minutes with the latest flood warning situation. This new service, available in English and Welsh, provides information for 1,300 individual flood warning areas, and enables users to search by town, postcode, river or warning status.

Since December 2000 floodplain maps have been added to the Agency's website. The indicative floodplain maps provide an overview of flood risk in England and Wales. Users can enter the name of a town or a postcode and see which areas of England and Wales are at potential risk of flooding. The maps do not distinguish degrees of risk, which will be higher in undefended, low-lying areas near rivers or the sea. It is important to note that the fact that a property lies within a floodplain does not mean that it will definitely experience flooding, nor does it denote any particular degree of risk; there are a significant number of factors that cannot be mapped at this level of detail. Further information is available from Floodline or direct from Agency Offices.

The maps were launched because independent research for the Agency indicated that, despite growing awareness, over 50% of people who live in flood risk areas were still not aware that their property may be at risk from flooding. The Agency has already provided copies of the indicative floodplain maps to all Local Authorities in England and Wales to help with emergency planning and development control decisions. The floodplain maps can be accessed on the Agency's website, **www.environment-agency.gov.uk**, by clicking on '**What's In your backyard?**'

2.10.1 The Taunton Major Incident Plan

A Major Incident Plan for Taunton has been in place for some time. The Plan details the roles and responsibilities of a number of organisations when Taunton is faced with a real risk of flooding. These organisations include the Environment Agency, Somerset County Council, Taunton Deane Borough Council, Avon and Somerset Police and the Fire Service. Operation of the Taunton Major Incident Plan was triggered during the floods in October 2000. A review of the Plan operation due for December 2000 was cancelled as the full Plan was almost triggered a second time. When the review finally took place, it was considered by all parties to have been a success.

A review of the Plan initiation trigger levels found that existing levels were appropriate and gave the Agency's professional partners sufficient time to execute an appropriate response. However, two significant changes were made to the Plan.

Firstly, the Agency has produced and distributed a public awareness leaflet in support of the Plan. This details the areas of Taunton covered by the Plan, the roles and responsibilities of the organisations included in the Plan and guidance to the public on what actions they should take before, during and after a flood. This leaflet was mailed directly to 1500 residents and businesses in Taunton in autumn 2001. It replaces a more general leaflet that previously would have been distributed on the night of the flooding.

The second change was that the Police have taken on responsibility for issuing public warnings in Taunton by loudhailer. This decision was taken as the Police would have an operational presence on the ground during the floods and all their vehicles now have a public address capability.

2.11 The Parrett Catchment Project – Countryside Partnership

The Parrett Catchment Project is a collaborative project involving the local community, farmers, landowners, businesses, Local Authorities and councils, and Government agencies, including the Environment Agency. It covers a large area, from the watershed on the Quantock, Blackdown and South Somerset Hills, along the main tributary rivers of the Cary, Yeo, Isle, Fivehead and Tone, to the basin of the Levels and Moors, and finally to the Parrett Estuary, where the whole system drains into the sea. Therefore the Parrett Catchment Project incorporates the Tone catchment, along with other LEAP areas.

The aim of the project is to find new ways to integrate land and water management and strives to avoid uncontrolled flooding, reduce pollution, and protect wildlife, the landscape and archaeological remains. The Parrett Catchment Strategy sets out these objectives under three main areas:

- Integrated Catchment Management - Integrated planning to achieve the best economic, social and environmental results across the whole catchment.
- Water Farming - Temporary storage of floodwater in designated storage areas in the upper and mid-catchment.
- Water Management – Primarily to improve the conditions for nature conservation by:
    1) Moderating runoff in upper parts of the catchment and urban areas.
    2) Managing flood events to minimise adverse effects on local communities whilst maximising benefits for conservation.
    3) Improving the rate of flood evacuation.
    4) Reducing tidal influence by reducing the import of estuarine silt and cutting off tidal surges.

British Waterways are also involved in this Project and have had some success in improving water quality in Bridgwater Docks by opening the small drainage culvert situated in the dam sealing off the docks from the canal. They are now in the process of identifying whether a new drainage sluice and lock can be incorporated in the Barge Lock to provide a more effective solution to improving water quality.

The Parrett Catchment Project, covering such a large area, is divided into smaller areas using the watersheds of each main tributary of the River Parrett system. This allows projects to take place on the ground which address the problems specific to that local area whilst still taking into account the issues of the larger catchment.

2.11.1 The Tone Land Use Project

The Environment Agency, Somerset Farming & Wildlife Advisory Group (FWAG) and Somerset Wildlife Trust have been working together on the Tone Land Use Project since 1998. The decline in dairy and stock farming in the catchment and increased arable areas on productive, sandy soils has led to a severe soil erosion problem that can block roads and pollute watercourses with nutrient-rich silt, causing eutrophication and siltation.

The Tone Project has aimed to help farmers and landowners enhance riverside habitat and reduce agricultural impact caused by runoff and soil erosion. Awareness has been heightened amongst the farming community and some have already taken measures to reduce risk of erosion and environmental damage. As concerns about soil erosion have increased, Somerset County Council, WS Atkins Highways Management and Taunton Deane Borough Council have got involved in the project. Somerset County Council now holds a database of soil erosion incidents that can be used by FWAG to target areas of particular concern, advising farmers in those areas of best farming practices. In addition, the Project has instigated numerous habitat enhancement works along the main river and its tributaries in partnership with Somerset Wildlife Trust, English Nature, Taunton Fly-fishing Club and the Somerset Otter Group.

Many improvements have also been achieved through the Countryside Stewardship Scheme administered formerly by the Ministry of Agriculture, Fisheries and Food (MAFF), and now by the Department for Environment, Food and Rural Affairs (DEFRA). This grant Scheme encourages applicants to enhance the wildlife, landscape, historic and amenity value of their holding through a ten-year environmentally friendly farm plan. In the Tone, the project has already delivered more than 180km of 2 metre and 6 metre-wide field margins (buffer strips) along watercourses; buffer strips help prevent soil and chemicals which affect water quality from entering rivers. Many other environmental improvements have also taken place, including some 40km of hedge restoration, the creation of wildlife strips, alteration of crop rotations and the introduction of non-inversion tillage.

English Nature is also supporting a small capital grants programme for landowners to make improvements where Stewardship is not an option. These projects will help to protect habitat to the benefit of species such as otter, water vole, water shrew, kingfisher and brown trout, together with farmland birds, invertebrates and aquatic plants.

Riverside and other farmland habitats are closely linked to whole catchment water quality, therefore we will continue to encourage farmers to protect and enhance these areas.

2.11.2 The Area Diffuse Pollution Strategy

Diffuse, or non-point source, pollution is becoming of increasing concern in the North Wessex area, in particular in the Tone catchment, with increasing stock densities and the growth of arable farming. The Parrett Catchment Project will continue to highlight poor farming operations, such as inadequate waste management and pesticide spray drift which are causing environmental damage, and encourage best farming practices.

However, diffuse pollution needs a longer-term commitment and priority, hence a more coherent strategy is required. The Area Diffuse Pollution Strategy (An Integrated Strategy for Diffuse & Point Source Pollution) has been developed to facilitate further work on diffuse pollution.

Key objectives are to:

- Reduce nutrient enrichment in areas suffering from eutrophication.
- Promote best practice in farming, land use, and sustainable urban drainage.
- Train Operations Staff to recognise and give advice on diffuse pollution.
- Liaise and collaborate with, and seek advice from regional committees, user groups and others where appropriate.
- Establish a network to communicate issues and new practices effectively.

The Area Diffuse Pollution Strategy is currently being trialed in the Parrett catchment and it is expected that the Strategy will be extended to other catchments over the next few years. The delivery of diffuse pollution improvements is also a key component of the work identified under the Area Strategy for the Somerset Levels and Moors, which covers the lower part of the Tone catchment.

2.12 The Somerset Levels & Moors Water Level Management Action Plan

The Agency is a member of the Somerset Levels and Moors Partnership (LAMP), whose overall vision for the Levels and Moors is:

> **A thriving wetland landscape valued by its communities and others, able, through a vibrant local economy, to protect and enhance its special features through wise use.**

To date, the Agency has completed its contribution to all Water Level Management Plans where Internal Drainage Boards (IDBs) have requested input, and we are continuing to work to resolve issues and seek implementation of these plans. A Project Officer is in place to progress this. A programme of survey work has taken place to investigate water quality issues on the Levels and Moors, the results of which have been disseminated via the Levels and Moors monitoring group.

The Somerset Levels and Moors Water Level Management Action Plan was launched in September 1999. The plan has wide support and is the Agency's vehicle for achieving balanced, sustainable management of the Levels and Moors. A dedicated officer has been appointed to implement the Plan on behalf of the Agency.

The widespread concern about flood events is recognised by the Agency, and we have carried out a major review of flood management practices as part of the Action Plan and as a requirement of the Habitats Directive. The first phase of the Review of Flood Management Practices was published for consultation in July 1999. Based on the responses, a Water Management Strategy Action Plan has been developed for the Parrett catchment, incorporating the River Tone catchment.

2.12.1 The Parrett Water Management Strategy Action Plan

The Parrett Water Management Strategy Action Plan (WMSAP) was published in March 2002. It includes several proposals that affect the River Tone catchment, including actions to reduce the impact of flooding on communities in the Lower Tone catchment. It also incorporates the remaining actions of the Water Level Management Action Plan. In doing this the proposals fit into the broader integrated management proposals being implemented through the Parrett Catchment Project. This is probably the first example of strategic flood management being fully integrated into wider environmental socio-economic targets at a catchment scale in the UK.

2.13 Integrated Pollution Prevention and Control (IPPC)

One of the Agency's key responsibilities is to prevent pollutants from major industrial processes being released into the environment. Where releases do occur, we try to make sure they are minimised and made harmless. Regulations made in 1991 identified industrial processes that use or produce potentially harmful substances in significant amounts, known as prescribed processes and substances. Broadly, these are the industrial processes with the greatest potential to cause pollution. Local Authorities regulate smaller, less complex industrial processes.

The United Kingdom was one of the first countries in Europe to introduce an integrated regulatory system, and many individual processes have been authorised under Integrated Pollution Control (IPC). A similar approach is being introduced throughout the European Union under the new *Integrated Pollution Prevention and Control Directive* (IPPC) (96/61/EEC). Integrated Pollution Prevention and Control came into force in the UK on 1 August 2000. It applies to a broad range of industrial and commercial sectors, most subject to existing but separate authorisation schemes for their emissions to water, air and land.

The Integrated Pollution Prevention and Control Directive requires member states to prevent or, where that is not possible, to reduce pollution from a range of industrial and other installations, by means of an integrated permitting process based on the application of 'best available techniques'. It is designed to prevent, reduce and eliminate pollution at source through the prudent use of natural resources and is intended to help industrial operators move towards greater environmental sustainability.

This integrated approach takes a wide range of environmental impacts into account such as emissions of pollutants (to air, water and land), energy efficiency, consumption of new materials, noise and site restoration. The aim is to achieve a high level of protection for the environment as a whole. Pollution Prevention and Control (PPC) permits must take into account local environmental conditions at the site, its technical characteristics and its geographical location. Conditions must be included to address any transboundary pollution from an installation and also to ensure, where necessary, that any environmental quality standard laid down in European Community legislation is not breached.

The Pollution Prevention and Control Act 1999 provides for the implementation of EC Integrated Pollution Prevention and Control Directive and consequently the introduction of a single pollution control regime for England and Wales, through the implementation of the Pollution Prevention and Control (England and Wales) Regulations 2000. Under the regulations, the Agency has an essential role in regulating specified types of activity and installation.

Sectors such as those involved in food and drink production and intensive agriculture will be regulated by permits for the first time. We previously regulated discharges to water by sectors not covered by Integrated Pollution Control by issuing consents, which restrict the amount and type of pollutants that can enter a watercourse. While existing sites will be phased into the new regime between now and 2007, any new sites under development will be subject to Integrated Pollution Prevention and Control with immediate effect.

Operators will need to show that they will run their installations in a way that prevents emissions to the land, air and water or where that is not practicable, reduces them to a minimum.

Operations must apply the following general principles:

- Use Best Available Techniques in controlling discharges to air, soil and water and address other issues such as odour, noise and vibration.
- Minimise waste and recycle it where they can.
- Conserve energy.
- Prevent accidents and limit their environmental consequences.
- Return the site to a satisfactory state after operation ceases.

The Environment Agency is also the enforcing authority in England and Wales for the Radioactive Substances Act 1993, regulating the use of radioactive sources and the disposal of radioactive waste.

2.13.1 The Operator & Pollution Risk Appraisal (OPRA) Scheme

The Agency is developing its approach to risk based regulation. A major part of this development is the use of Operator & Pollution Risk Appraisal (OPRA) scores for processes authorised under Integrated Pollution Control (IPC). Since 1999/2000 an OPRA score has been produced for all IPC processes, and we are now implementing a national approach to use these scores when planning work. OPRA scores are also used for licensed waste facilities not covered by IPC. This system will provide a more transparent and consistent approach to planning our work.

In the past we have allocated our resources for compliance effort in IPC primarily according to the risk posed by the type of industry or manufacture that is undertaken. In future we will allocate these resources according to the individual risks posed by a process, the specific environmental hazards, and the operator's performance. These main factors will be measured by way of an Environmental Appraisal and an Operator Performance Appraisal which, when taken together, provide an individual OPRA score for each site. The OPRA score will determine how often we inspect the site. However, each site will have a base environmental score which will determine the minimum inspection frequency for the site; and since this score will be recalculated quarterly, the minimum inspection frequency that any site will be subject to is once every three months.

2.14 Waste Management

The National Waste Production Survey took place between October 1998 and 1999 and involved 20,000 companies nation-wide. It was the largest of its kind ever undertaken in the United Kingdom. Data was collected from companies across a variety of industrial and commercial sectors on the amounts and types of wastes produced and how it was managed. The data collected by the Survey has been used in the production of the 'Waste Strategy 2000', a statutory strategy published by the Government in May 2000.

2.14.1 The Waste Strategy 2000

The Waste Strategy 2000 continues many of the principles of its predecessor 'Making Waste Work' (see the River Tone Action Plan). The overarching principle is that decisions regarding waste management should be consistent with the Best Practicable Environmental Option (BPEO). This considers the protection and preservation of the environment in the long and short terms and is likely to be different for each waste stream in each location.

The 'proximity principle' advocates that waste should be managed as close to the area of production as possible. This is sometimes considered to be the link between the Waste Hierarchy and the BPEO. Where the BPEO for a particular waste stream is towards the lower end of the Hierarchy, this could be due to the environmental impact of an option higher in the Hierarchy, such as transporting waste to a more distant facility.

The Waste Strategy contains statutory targets for the recycling of household waste by Local Authorities: 25% by 2005, 30% by 2010 and 33% by 2015. An aspirational target to reduce landfilling of commercial and industrial waste to 85% of 1998 levels by 2005 is also presented. The strategy also identifies the roles of interested parties in achieving these targets and includes Local Authorities, industry, non-government or community organisations and the Environment Agency. The Agency is a member of the Environment Business Consortium, which works in partnership to deliver sustainable environmental improvement in local businesses, in particular the minimisation of waste.

2.14.2 Strategic Waste Management Assessments

As a requirement of Waste Management Licence conditions we receive data from site operators relating to the type and amount of waste each site has managed in a set period, usually quarterly. This data is amalgamated to provide statistics on how much waste is being managed at licensed sites within a particular area, district or country. This data, combined with data from the National Waste Production Survey, can then be used for planning purposes.

In particular it can be used in the production of the Agency's own Regional Strategic Waste Management Assessments (SWMAs). These provide consistent, comprehensive, local information about the qualities and types of wastes produced and how they are managed, which will inform regional planning functions, such as Regional Technical Advisory Bodies, and Local Authorities about the provision of land and resources for waste management they will have to make, particularly regarding Waste Local Plans, but also other plans which include waste as a factor.

The Agency's South West Region Strategic Waste Management Assessment was published at the end of 2000. An Annual Update of the Regional Strategic Waste Management Assessment will be produced in spring 2002 and will be available on the Agency's website.

2.14.3 Waste Local Plans

Waste Planning Authorities (in this case Somerset County Council) prepare Waste Local Plans. A Waste Local Plan sets out the proposals for managing the waste in the Authority and policies by which other proposals will be judged. It is required to take into account relevant local, regional, national and European Union policy. This includes, for example, the National Waste Strategy, Planning Policy Guidance Note 10 (both prepared by Government), Regional Planning Guidance, as prepared by the Regional Assembly and the European Union Landfill Directive (1999/31/EEC).

The Somerset Waste Local Plan is currently in production, it is expected to go out to public enquiry in late 2002 / early 2003, with adoption of the final Plan in 2004. It will be a statement of the strategy that Somerset County Council considers is the best way of dealing with waste in Somerset. It will form part of the Development Plan for Somerset and will set the ground rules for waste planning permissions.

2.14.4 The Producer Responsibility Obligations (Packaging Waste) Regulations

These Regulations place an obligation to recycle and recover certain amounts of packaging on those companies that supply more than 50 tonnes of packaging per annum and also have an annual turnover greater than £2 million. Proof of recycling and recovery is required by the Agency and can be provided by an Accredited Reprocessor (a company that voluntarily registered with the Agency and has had the process of packaging recycling and recovery checked by the Agency). Producer Responsibility will be extended in the next few years to include end of life vehicles, waste electrical and electronic equipment and batteries. The Waste Strategy 2000 includes the possibility of including junk mail.

2.14.5 The Landfill Directive

The European Union Landfill Directive (1999/31/EEC) requires that a number of changes to the waste industry and waste regulation take place.

The main requirements of the Directive are:

- Biodegradable Municipal Waste going to Landfill nationally must be reduced to 75%, 50% and 35% of that produced in 1995 by 2010, 2013 and 2020 respectively.
- All landfills must be classified as either for hazardous waste, non-hazardous waste or inert waste.
- With few exceptions, all waste must be treated before going to landfill.
- Co-disposal of hazardous wastes with other wastes will not be permitted.
- Liquid wastes, explosive, corrosive, oxidising, highly flammable and flammable wastes will be banned from all landfills, as will some hospital and other clinical wastes and whole and shredded tyres.

Sites must also have:

- Detailed operations and monitoring plans.
- Plans for closure and aftercare including adequate financial provision.
- Plans to prevent accidents and limit their consequences.
- Operators and their staff to be technically competent.
- Prescribed engineering requirements to protect ground- and surface waters or an auditable site risk assessment to demonstrate equivalent environmental protection.
- Controls on the migration of landfill gas and measures to use or flare it.

2.14.6 Landfill Tax

The landfill tax, introduced on 1st October 1996, is payable on every tonne of waste taken to landfill. It is designed to make other waste management techniques more practicable economically with the aim of reducing the amount of waste going to landfill. The tax currently stands at £11/tonne for non-inert waste, going up by £1/tonne in 2003 and £2/tonne for inert waste, and is enforced and collected by Her Majesty's Customs and Excise. Site operators can enrol on environmental bodies, enabling up to 20% of the tax to be reclaimed for use on specific environmental projects.

2.15 Contaminated Land Regulations

Part IIA of the Environmental Protection Act 1990 came into force in England on 1 April 2000, and introduces a new regulatory regime for the identification and remediation of contaminated land. The new regime requires Local Authorities to identify contaminated land within their areas and provides a statutory definition of contaminated land:

'any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that significant harm is being caused or there is a significant possibility of such harm being caused; or pollution of controlled waters is being, or is likely to be, caused'

Certain contaminated land sites may become designated as 'Special Sites' and these will become the responsibility of the Agency. Contaminated land is designated as a special site if the site falls within one of the descriptions defined in the Contaminated Land (England) Regulations 2000. These descriptions are summarised in Table 3.

Once sites have been designated as Special Sites we will liaise with the landowners and other appropriate persons to ensure a timely programme of remediation where action is required. Details of Special Sites will be kept on a Public Register, maintained by the Agency. The Agency also has a role to provide relevant information and advice to Local Authorities, particularly regarding pollution of controlled waters. No Special Sites have yet been identified in this catchment.

Table 3: Conditions for Designation of Contaminated Land as Special Sites

A) ANY OF THE FOLLOWING ACTIVITIES HAVE BEEN CARRIED OUT AT ANY TIME:

- disposal of waste acid tars in a retention basin
- purification of crude petroleum or oil
- manufacture or processing of explosives
- the manufacture, production or disposal of chemical weapons
- the manufacture, production or disposal of biological agents or weapons
- an authorised prescribed process

B) THE LAND IS USED FOR ANY OF THE FOLLOWING:

- naval, military or air force purposes
- an atomic weapons establishment
- within a nuclear licensed site
- activities which are subject to Section 30 of the Armed Forces Act 1996

C) LAND WHICH IS AFFECTING ANY CONTROLLED WATERS THAT:

- are used as a drinking water supply, and are likely to require treatment in order to be fit for human consumption, or
- are not likely to meet the requirements for water quality specified in regulations made under the Water Resources Act 1991, or
- are contained within one or more defined aquifers and where pollution relates to one or more of the defined substances

D) THE LAND APPEARS TO BE CONTAMINATED AS A RESULT OF THE ESCAPE OF SUBSTANCES FROM SITES THAT MEET ANY OF THE DESCRIPTIONS FOR A AND B.

2.16 Road Transport

Although the Agency has no formal remit in relation to road transport, many of the associated issues have a bearing on the Agency's ability to regulate and manage the environment effectively. The need to take a holistic, long-term view of this issue is at the heart of the principal aim of sustainable development.

Road transport has long been acknowledged as a major source of air pollution, nitrogen oxides and particulate matter being the main pollutants. Nitrogen oxides and volatile organic compounds from vehicles are also precursors of ozone which has a detrimental effect on health. Lead also has a wide range of toxic effects. Petrol engines accounted for almost 75% of carbon monoxide emissions in 1997. Petrol also contains the carcinogens benzene and 1,3 butadiene, which are released to the atmosphere during combustion. Also, fine particulate matter (PM_{10}), emitted by diesel engines, is a contributor to respiratory diseases such as asthma and bronchitis.

The Agency as a statutory consultee to Local Planning Authorities advises on issues within our remit when new roads are proposed. In addition to air pollution, impacts can include:

- Habitat loss and barriers to species movement.
- Diffuse water pollution from accidental spillages.
- Climate change.
- Increased flood risk.
- Cumulative effects on the environment through related land uses such as petrol stations and increased use of raw materials (including aggregates and petroleum).
- Loss of landscape value and increased noise nuisance.

Since 1997 the Agency has been involved in a number of initiatives concerned with transport at a national level, particularly through the National Centre for Risk Analysis and Options Appraisal. The Centre has been closely involved in developing a new approach to appraisal for road schemes, which was used to appraise the short-term programme for roads in 1997. This resulted in the Roads Review in 1998, a process which substantially reduced the number of road-building projects. Our North Wessex Area Office is also working locally on air quality through its membership of the steering group of the University of the West of England's Air Quality Management Centre, and has contributed to the cost of running the Centre.

2.17 Air Quality

The Environment Act 1995 requires Local Authorities to undertake a review of air quality. National Air Quality Standards have been set for seven air pollutants. These standards need to be met by a set date and are enacted through the Air Quality (England) Regulations 2000. Where targets are not expected to be met, Local Authorities must establish an Air Quality Management Area to improve air quality. Responsibility lies with District Councils (or Unitary Authorities) to review and assess air quality, but County Councils are expected to work in partnership with the District Councils throughout the process of local air quality management.

We have been working with Local Authorities to help achieve the objectives, principally through our regulation of emissions from controlled (Part A) major industrial processes under Integrated Pollution Control. Local Authorities are responsible for the regulation of smaller, less complex (Part B) industrial processes, and for reducing traffic pollution.

The Somerset Air Quality Steering Group was formed during 1998 to co-ordinate a review and assessment of air quality on behalf of the Mendip, South Somerset, Taunton Deane and West Somerset Borough and District Councils, together with Somerset County Council. The review and assessment process is in three stages.

Stage 1 has been designed to identify the major sources of seven specified air pollutants (benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide and particulates (PM_{10})). Stage 2 requires simple monitoring and computer modelling to eliminate sources of pollution that are at no risk of exceeding the air quality objectives and Stage 3 involves detailed monitoring and modelling of those pollutants that are likely to exceed the national standards.

If Stage 3 indicates that there is a problem with a particular pollutant then an Air Quality Management Area will be declared and the Local Authority must devise an action plan to improve the air quality and meet the national standard. In Taunton Deane, Stage 1 identified four pollutants as requiring further investigation; nitrogen dioxide, particulates (PM_{10}), sulphur dioxide and carbon monoxide. Monitoring and modelling in Stage 2 revealed that in fact only nitrogen dioxide required further monitoring in order to ensure that national standards are met.

2.17.1 Nitrogen Dioxide (NO_2) in Taunton Deane

The Government has adopted a 1-hour average of 105ppb (200 μgm^{-3}) as an air quality standard for NO_2, not to be exceeded more than 18 times a year, with a specific objective to achieve this by the year 2005. An annual average of 21ppb (40 μgm^{-3}) has also been set as a standard to be achieved by 2005.

In response to Stage 2 of the air quality review and assessment, Taunton Deane Borough Council conducted NO_2 monitoring along side the M5 motorway between Taunton and Wellington. Annual mean concentrations of NO_2 in 2000 were found to be 13.9ppb (27μgm^{-3}) and it was predicted that concentrations in the same location in 2005 are likely to be 12.3ppb (23μgm^{-3}). Therefore, it was concluded that the National Air Quality Standards for NO_2 will be achieved by 2005 and therefore there is no need to designate an Air Quality Management Area.

Taunton Deane Borough Council continues to monitor air quality at various locations throughout the Borough and the data will be used in the next phase of Reviews and Assessments, due to be completed by the end of 2003.

2.18 The Agency's Own Environmental Management

Nationally we have developed an Environmental Management System to monitor our own environmental performance. This is a systematic way of managing the environmental impact of an organisation. A successful system will deliver a continual improvement in environmental performance and create potential for substantial cost savings.

The Agency will support continuous environmental improvement by the establishment of demanding but achievable and measurable environmental performance targets, determined and reviewed annually. These targets cover aspects of energy and resource use, waste minimisation and recycling. Our targets for 2001-2002 are set out in Table 4, and are covered by actions 2.16.1, 2.16.2, and 2.17.1 (see Section 4).

The targets set are national targets to be achieved within a time scale of five years. Achievement of the targets will fulfil the Agency's commitments under the Greening Government Initiative and will also result in real business benefits.

Table 4: National Environmental Performance Targets 2001/2002

AIM: A GREENER BUSINESS WORLD
Target 1: Develop and externally certify the Environment Agency Management System to ISO9001/14001 by April 2002.
AIM: LIMITING AND ADAPTING TO CLIMATE CHANGE
Target 2: To reduce buildings energy consumption by 10% from a 1999/00 baseline by the end of March 2005: • We will progress this through the achievement of site specific targets at 65% of sites by the end of March 2002.
Target 3: To purchase 6 million kWh of renewable generated electricity by the end of March 2005: • We will progress towards this by purchasing an additional 1.2 million kWh from a baseline of 2000/01 by the end of March 2002.
AIM: IMPROVE AND PROTECT INLAND AND COASTAL WATERS
Target 4: To reduce buildings water consumption by 10% from a 1999/00 baseline by the end of March 2005: • We will progress towards this through the achievement of site specific targets at 65% of sites by the end of March 2002.
AIM: WISER, SUSTAINABLE USE OF NATURAL RESOURCES
Target 5: To reduce office waste by the end of March 2005 in the following areas: • residual waste from offices by 20% (5% per annum) from a 1999/00 baseline. • reduce the purchase of paper by 10% (2.5% per annum) from a 1999/00 baseline.
AIM: CLEANER AIR FOR EVERYONE
Target 6: To reduce total vehicle emissions by 10% from a 1999/00 baseline by the end of March 2002, to include: • 9% mileage reduction from a 1996/7 baseline focusing on office based staff and miles driven in private cars. • the purchase of an additional 40 alternatively fuelled badged vehicles.

Reductions in buildings' energy consumption and vehicle emissions are discussed in Section 4, actions 2.16.1, 2.16.2 and 2.17.1.

The reduction of office waste has been achieved through the implementation of the Residual Waste Strategy for Area Offices in North Wessex. The Bridgwater office has reduced its need for Eurobins from six to three. This has been achieved by the provision of two bins in each office; one for paper only (to be recycled) and one for other waste, and the recycling of waste where at all possible. The Agency has also donated old office furniture to a local Royal Society for the Protection of Birds (RSPB) Office. Donations such as this take furniture out of the waste stream, whilst helping to build good relationships with outside organisations.

The reduction of buildings' water consumption is being achieved through the use of devices such as waterless urinals and sprinkler taps. We are progressing towards the national target by reducing consumption by a minimum of 6.2% on baseline by the end of March 2002.

3. Key Achievements

3.1 Water Quality

Progress is good in North Wessex, since 1990 there has been a significant and sustained improvement in water quality across the Area. Two thirds of river lengths have upgraded since 1990. In 2000 68% of river lengths were in the top two Grades ('very good' and 'good') compared with 49.2% in 1995 and 24.2% in 1990. This is an excellent achievement and a reflection of the success of various improvement initiatives, partnerships and enforcement actions.

The following sections provide details of how water quality is measured and give specific results for the Tone catchment (also see Appendix 1 and 2).

3.2 General Quality Assessment (GQA)

The General Quality Assessment (GQA) classification system measures both chemical and biological components, which are measured against the previous year and a baseline year of 1990. It is the tool we use to examine long term trends in river quality.

There can never be total confidence in assigning the true GQA grade to a stretch of river because of statistical and analytical errors. Therefore, river stretches are upgraded or downgraded based on the calculation of the statistical confidence (%) that a grade change has occurred. This information can be used to identify substantial changes (75% confidence or above) in grade and investigate possible reasons for this change.

The scheme has 6 classes and is used to report on chemical quality (A-F) and biological quality (a-f). Chemical river quality is measured annually, while biological quality is measured every five years. The next major review of biological quality is taking place in 2005.

3.2.1 Chemical General Quality Assessment

The chemical GQA describes the quality of rivers in terms of measurements which detect the most common types of pollution; discharges of organic waste from sewage treatment works (STWs), from agriculture and from industry (see Table 5).

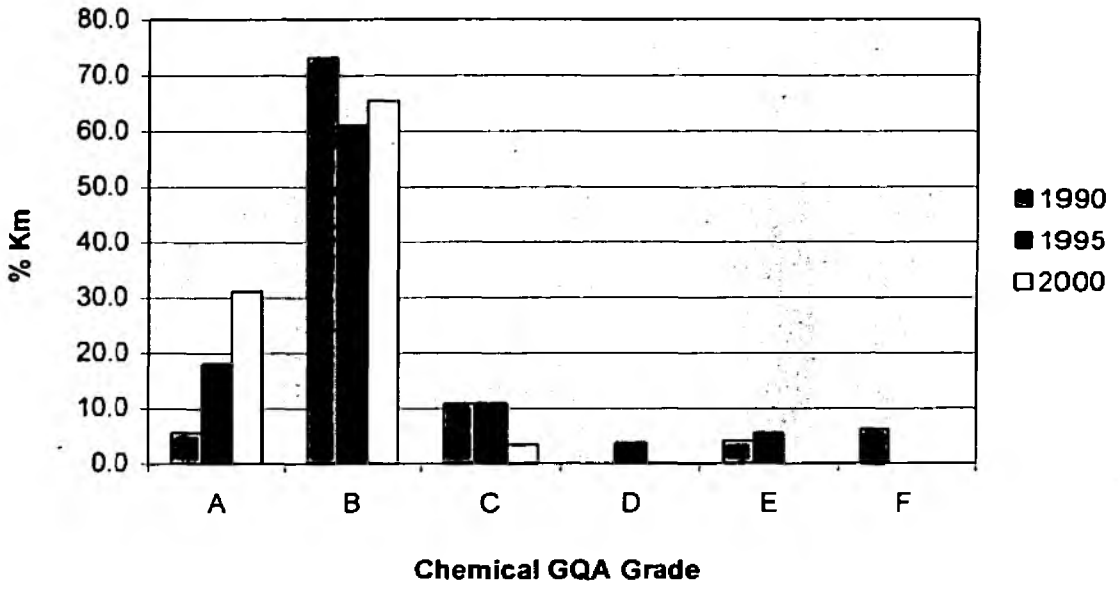
Table 5: Chemical General Quality Assessment (GQA) Classification and Criteria

Water Quality Description	Chemical Class	Dissolved Oxygen % Saturation	BOD* (ATU) mg/l	Total Ammonia mg/l N
Very Good	A	Equal to or > 80	Equal to or < 2.5	Equal to or < 0.25
Good	B	Equal to or > 70	Equal to or < 4.0	Equal to or < 0.60
Fairly Good	C	Equal to or > 60	Equal to or < 6.0	Equal to or < 1.30
Fair	D	Equal to or > 50	Equal to or < 8.0	Equal to or < 2.50
Poor	E	Equal to or > 20	Equal to or < 15.0	Equal to or < 9.00
Bad	F	< 20	>15.0	> 9.00

* BOD: Biochemical Oxygen Demand

We monitor 170.7 km of rivers in the Tone catchment for chemical GQA.

Figure 2: Percentage Length of Watercourse by Chemical General Quality Assessment



Chemical water quality in the Tone catchment has improved significantly since 1990. There has been a massive increase in river lengths graded as very good (from 5.6% to 31%) with a resulting decrease in lengths graded as fairly good. No lengths now remain in the lower 3 grades (fair, poor and bad).

Substantial Upgrades in Chemical GQA

River stretches in the Tone catchment with a substantial upgrade in chemical GQA are shown in Table 6 and are indicative of improvements in water quality.

Table 6: Stretches with Significant Chemical GQA Upgrades 1990-2000

River	Public Stretch Name	Chem. Grade 1990	Chem. Grade 1995	Chem. Grade 2000	Reason for Improvement
Hillfarrance Brook	Source – Preston Bowyer	C	B	A	Improved farming practices to reduce soil erosion - encouraged through the Tone Project.
Hillfarrance Brook	Preston Bowyer – confluence with Tone	C	B	A	As above.
Halse Water tributary (Wick)	Source – confluence with Halse Water.	D	B	B	As above.
Back Stream	Source – confluence with Halse Water.	D	B	A	As above.

3.2.2 Biological General Quality Assessment

The biological assessment is based on the macro-invertebrate communities of watercourses. Macro-invertebrates are the most widely used organisms for biological assessment because they are found in virtually all fresh waters, they do not move far and respond to everything contained in the water, as well as to physical damage to their habitat. They can be affected by pollutants that occur infrequently or in very low concentrations and therefore can indicate pollution that may be missed by chemical sampling.

Biological grading is undertaken using the Biological Monitoring Working Party (BMWP) Ecological Quality Index (EQI) scoring method where macro-invertebrates are identified to the level of taxa (major types). A fall in the number of taxa present is a general indication of ecological damage, including pollution (organic, toxic, thermal, etc) and physical disruption (siltation, damage to habitats or the river channel, etc). However, some species are more susceptible to organic pollution than others and the presence of sensitive species is a sign that water quality is good. The Biological Monitoring Working Party (BMWP) system takes this into account; numerical values have been assigned to around 80 different taxa (known as the BMWP-scoring families) according to their sensitivity to organic pollution. The average of the values for each taxon present, known as the ASPT (average score per taxon) is a reliable index of organic pollution. Thus, combining the number of taxa found with the ASPT is the best way to determine water quality. The best quality is indicated by a diverse variety of taxa and the presence of taxa that are sensitive to organic pollution, poorer quality is indicated by a smaller number of taxa and the absence of sensitive taxa.

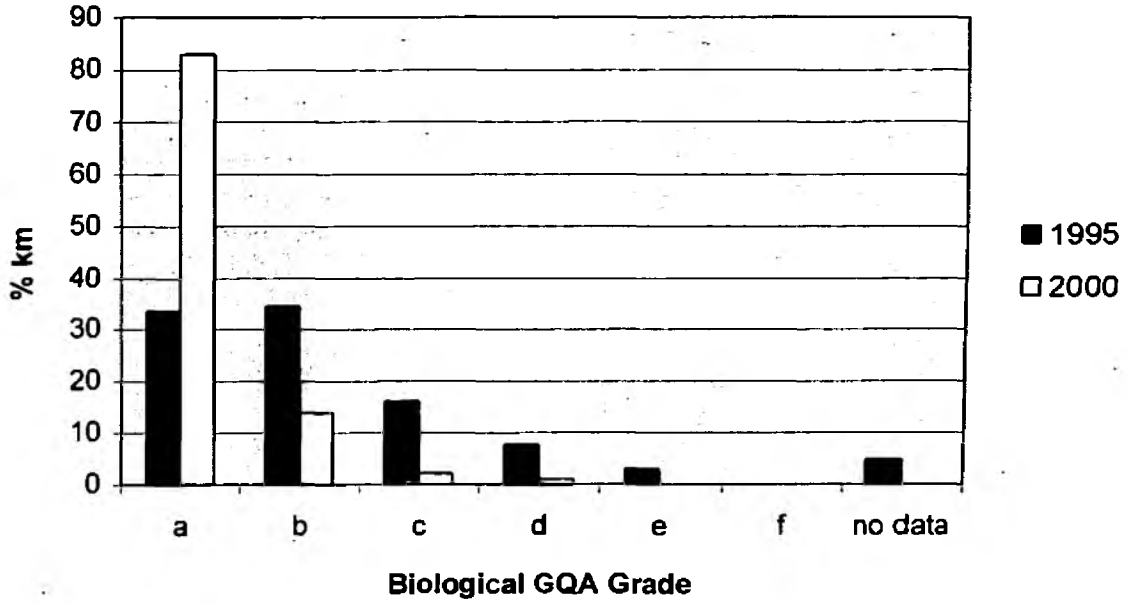
Due to natural differences in watercourses we describe biological quality as the difference between the macro-invertebrate community actually found in the river and that which would be expected under natural conditions (i.e. in an unpolluted river of the same size, type and location). This is achieved using RIVPACS (River Invertebrate Prediction and Classification System). We also combine the results of samples collected in spring and autumn to take account of seasonal variations. To obtain the Ecological Quality Index (EQI) for the watercourse the ASPT and the number of taxa are divided by the equivalent values predicted by RIVPACS, thus an EQI of 1 indicates that the ASPT or number of taxa found was the same as that predicted by RIVPACS. Therefore, an EQI of 1 implies that the watercourse at the sample site is not polluted or ecologically damaged.

Table 7: Biological General Quality Assessment (GQA) Classification and Criteria

Water Quality Description	Biological GQA Class	EQI for ASPT	EQI for no. of taxa	Biological Quality Criteria: EQI_{BMWP}
Very Good	a	1.00	0.85	Equal to or > 1.0
Good	b	0.90	0.70	Equal to or ≥ 0.8
Fairly Good	c	0.77	0.55	Equal to or > 0.6
Fair	d	0.65	0.45	Equal to or ≥ 0.4
Poor	e	0.50	0.30	Equal to or > 0.2
Bad	f	-	-	≤ 0.2

We monitor 146.8 km of rivers in the Tone catchment for biological GQA. The Bridgwater and Taunton Canal is not monitored for biological GQA because it is an artificial channel and therefore does not represent a natural habitat for macro-invertebrates.

Figure 3: Percentage Length of Watercourse by Biological General Quality Assessment



Biological water quality in the Tone catchment has improved significantly since 1995. There has been a massive increase in river lengths graded as very good (from 33.7% to 82.9%) with a resulting decrease in lengths graded as fairly good, fair and poor. No lengths now remain in the lower 2 grades (poor and bad).

Substantial Upgrades in Biological GQA

River stretches in the Tone catchment with a substantial upgrade in biological GQA are shown in Table 8 and are indicative of improvements in water quality. Only one 1 km stretch in the catchment was downgraded.

Table 8: Stretches with Significant Biological GQA Upgrades 1995 - 2000

River	Stretch Name	Biol. Grade 1995	Biol. Grade 2000	Reason for Improvement
Hillfarrance Brook	Castle Hill – confluence with Tone (4 continuous sub stretches)	c	a	Improved farming practices - encouraged through the Tone Project and enforcement activities.
Westbrook Stream	Source – confluence with Preston Bowyer	c	a	As above.
Westford Stream	Beam Bridge – confluence with Tone	e	b	As above.
River Tone	Runnington – confluence with Westbrook Stream (sub stretch)	d	a	As above.
River Tone	Poole – confluence with Haywards Water (sub stretch)	c	a	As above.
River Tone	Confluence with Broughton Brook – Knapp (2 continuous public stretches)	d	b	As above.

4. Actions Update

4.1 Progress Report

The following action tables summarise the Agency's progress to date. Where possible, the costs of actions have been given. Costs are only our estimates of costs to the Agency. They do not indicate that this money has been committed. All costs are given as thousands of pounds (£k) and include an estimation of staff time. The years covered by the plan are represented by a single date. For example, '2001' represents the financial year April 2001 to March 2002. The state of progress of the actions have been identified as:

N	New action	**C**	Completed action
S	Started / ongoing action	**D**	Delayed / no progress

Issue 2.1: The impact of agriculture and forestry on water quality

Action 2.1.1	Progress C Unfunded – Priority 1
We will investigate potential sources of farm, forestry and other pollution and will work with landowners to control both point and diffuse pollution and give advice on best practice in the two stretches: Huish Champflower to Stawley, and Hillfarrance Brook from source to confluence with the Tone.	Unfortunately the Foot and Mouth epidemic hampered us greatly in the carrying out of investigations last year. However, we continued to liaise closely with our partners in the FWAG project and provided advice on reducing soil erosion and improving farm waste disposal techniques.
Cost: £2k	**Timescale:** 2000-2001
Action By: Agency, Somerset Farming & Wildlife Advisory Group (FWAG), Somerset Wildlife Trust, landowners	**Contact:** Team Leader Environment Protection

Action 2.1.2	Progress S Unfunded – Priority 1
We will work with Somerset Farming and Wildlife Advisory Group and Somerset Wildlife Trust on promoting best environmental farming practices.	We have and will continue to work in partnership with FWAG and Somerset Wildlife Trust on promoting best environmental farming practices.
Cost: £1k	**Timescale:** 2000-2004
Action By: Agency, Somerset Farming & Wildlife Advisory Group (FWAG), Somerset Wildlife Trust	**Contact:** Team Leader Environment Protection

Action 2.1.3	Progress C Unfunded – Priority 1
We will investigate potential sources of pollution and advise farmers of best practice to control both point and diffuse pollution in the Back Stream.	We continued to work with FWAG to advise farmers of best practice. FWAG reported several successful measures taken by farmers to improve practice. We believe that the continued water quality improvement is due to the reduction in diffuse pollution sources.
Cost: £0.5k	**Timescale:** 2000-2001
Action By: Agency, Somerset Farming & Wildlife Advisory Group (FWAG), Somerset Wildlife Trust	**Contact:** Team Leader Environment Protection

Action 2.1.4	Progress S Unfunded = Priority 2
We will monitor the Chelston Stream for the effect on biological quality of recent improvements to discharges from vegetable washing activities and investigate the effect of discharges from scrapyard activities.	We currently monitor the Chelston Stream at Bradford-on-Tone. This stream was classified as class B biological quality in 1995 going up to class A in 2000. We will be monitoring this site annually from 2002 as part our Catchment Abstraction Management Strategy (CAMS) monitoring network for the Tone.
Cost: £0.5k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Biology

Issue 2.2: The impact of nutrient pollution and nutrient enrichment

Action 2.2.1	Progress C
We will assess, for review in 2001, whether the River Tone from below Wellington Sewage Treatment Works (STW) to its Normal Tidal Limit should be proposed as a candidate Sensitive Area (Eutrophic).	We completed an assessment and submitted a report in 2001. The data was insufficient to demonstrate that Wellington and Taunton STWs were the principle sources of nutrient enrichment, therefore the River Tone has not been proposed as a potential Sensitive Area (see action 2.2.6).
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Investigations

Action 2.2.2	Progress C
We will work with others to ensure compliance with the Urban Waste Water Treatment Directive: Sensitive Areas (Eutrophic) on the River Tone if designated by the former Department of the Environment, Transport and the Regions (now DEFRA).	The River Tone has not been designated as a candidate Sensitive Area (Eutrophic). However, we will continue to monitor the River and encourage reduction in nutrient input (see action 2.2.6).
Cost: £	**Timescale:** 2000-2001
Action By: Agency, Department for Environment, Food & Rural Affairs, Wessex Water	**Contact:** Team Leader Biology

Action 2.2.3	Progress S Unfunded = Priority 2
We will continue to assess the ecological impact of excess nutrients on the catchment.	We are currently investigating the Hillfarrance Brook using various methods to assess nutrient status. Depending on the results and future resources, this work may be expanded to other parts of the catchment.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Biology

Action 2.2.4	Progress S
We will continue to assess the nutrient status of the River Tone and those Moors directly fed from it (principally Curry Moor). One year's work has already been completed; sampling has been carried out fortnightly and the results statistically analysed and reported.	Monitoring has shown that the Tone and Parrett catchments are suffering from diffuse pollution, which is causing eutrophication of some stretches. We have been working with the Farming & Wildlife Advisory Group (FWAG) and Somerset Wildlife Trust to tackle diffuse pollution, soil erosion and runoff as part of the Tone Project. This has led to many environmental improvements, see section 2.11.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Levels and Moors Project Officer

Action 2.2.5	Progress C
We will collect water samples and analyse existing data and consider the need for additional monitoring in the Tone catchment.	Biological and monthly chemical samples were taken at several sites along the River Tone during 1998, 1999 and 2000. We also used automatic quality monitors to assess the impact of any algal blooms on oxygen concentration in the river. We found that symptoms of eutrophication are widespread throughout the river.
Cost: Unknown	**Timescale:** 2000
Action By: Agency	**Contact:** Team Leader Investigations

Action 2.2.6	Progress S Unfunded – Priority 2
Where necessary we will investigate sources of pollution identified above and draw up a suitable remediation plan.	Although we were unsuccessful in designating the River Tone as a potential Sensitive Area, we will continue to monitor the trophic status of the River and work closely with Wessex Water and farmers to try to reduce nutrient enrichment.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Investigations

Issue 2.3: Land use, river rehabilitation, channel and bank-side management

Action 2.3.1	Progress S Unfunded – Priority 1
We will continue to collaborate in the River Tone Catchment Project (see Issue 2.1 and section 2.11).	The Tone Project continues to run and has now been extended into the West Somerset catchment using the same team of advisors. Many farmers in the Tone catchment have revised their soil management & are exchanging experiences with one another. A soils database has also been set up to pinpoint problem areas.
Cost: £25k (£12k for 1999, £13k for 2000)	**Timescale:** 1999-2004
Action By: Agency, Farming and Wildlife Advisory Group (FWAG), Somerset Wildlife Trust, riparian owners	**Contact:** Team Leader Conservation

Action 2.3.2	Progress D Unfunded – Priority 2
We will identify river control structures for the feasibility of redesign.	In the past 6 fish passes have been built on the River Tone, primarily for salmon. There are currently 16 migration barriers identified within the Tone Catchment. Unfortunately, there is no funding currently available to do this work as the River Tone is not a principal salmon river and is therefore not a national priority. Nevertheless, we survey fisheries every 5 years to assess current fish populations; no results specifically point to the impassable weirs as being a problem. Salmon are so few in number that they are unlikely to be picked up by anglers or survey, though we have found young salmon below the impassable weir at Hornshay (see Action 2.5.1). We continue to be alert to improvement opportunities whenever developments or repairs occur. More recently we have been considering migration barriers in relation to eels (see Action 2.3.4).
Cost: £5k	**Timescale:** 2000
Action By: Agency, riparian owners, British Canoe Union	**Contact:** Team Leader Fisheries

Action 2.3.3	Progress S Unfunded – Priority 1
We will work with Local Authorities to enhance urban streams.	We have advised Taunton Deane Borough Council about habitat enhancements to the Black Brook. A number of groynes have been installed to diversify a canalised channel.
Cost: Unknown / Depends on project	**Timescale:** 2000-2004
Action By: Agency, Local Authorities, Somerset Wildlife Trust	**Contact:** Team Leader Conservation

Action 2.3.4 New Action	Progress N
We will consider migration barriers in relation to eels.	We are aware of potential migration barriers that exist on rivers in the Tone catchment but their significance to eel populations is less well understood. This action is recognised within the Agency's Eel Strategy 2001. We will aim for eel friendly designs for new structures and consider cost-effective solutions to existing structures though no structures in the Tone have been specifically identified as yet for modification. Experimentation with elver passes is being trialed at some locations within North Wessex to investigate cost effective techniques.
Cost: Unknown	**Timescale:** 2001-2004
Action By: Agency, riparian owners, British Canoe Union	**Contact:** Team Leader Fisheries

Issue 2.4: The siltation of spawning gravels in the Upper Tone

Action 2.4.1	Progress S Unfunded – Priority 1
We will promote the prevention of bank erosion and field runoff by encouraging riparian owners to create buffer strips, fence banks and plant riverside trees beside the Tone and its tributaries.	The Tone Project addresses this issue. Riparian initiatives are important for habitat but need to be combined with best agricultural practice to reduce the risk of soil related problems.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency, riparian owners, Farming and Wildlife Advisory Group (FWAG), National Farmers Union, Department for Environment, Food and Rural Affairs (DEFRA).	**Contact:** Team Leader Conservation

Action 2.4.2	Progress S Unfunded – Priority 2
We will encourage the Department for Environment, Food and Rural Affairs (DEFRA) and other grant-aiding bodies to target the catchment for Countryside Stewardship and other grant schemes to help reduce siltation of spawning gravels.	The Tone catchment as part of the Parrett catchment is now a target for Countryside Stewardship. Stewardship initiatives are primarily aimed at habitat enhancement and best agricultural practice is needed as well to reduce the risk of soil related problems.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.4.3	Progress S
Investigate the water release regime at Clatworthy reservoir to see if scouring flows are possible.	We have collected information and data for the development of the River Tone Catchment Abstraction Management Strategy (CAMS) which has helped in the investigation of this issue. We are on target to complete this action by the planned finish date.
Cost: £2k	**Timescale:** 2001-2002
Action By: Agency	**Contact:** Team Leader Area Water Resources

Issue 2.5: The need for fish passes at Wellington and Hornshay Weirs

Action 2.5.1	Progress D Unfunded – Priority 2
We will continue to seek funding and opportunities to provide fish passes at impassable weirs causing obstruction to migrating fish.	Government fisheries funding (Grant in Aid (GIA)) has been severely reduced over the past few years and therefore we have gone as far as we can currently justify using national fisheries funds. We do have designs drawn up for weirs upstream of Hornshay and we will continue to look for opportunities for external funding.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Fisheries

Issue 2.6: Maintaining and enhancing biodiversity

Action 2.6.1	Progress S
Coastal and floodplain grazing marsh: we will collaborate with English Nature to enhance the Curry and Hay Moor Site of Special Scientific Interest by contributing to a Water Level Management Plan and its implementation.	We have contributed to the Water Level Management Plan which has now been produced by the Curry Moor Internal Drainage Board.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, English Nature, Internal Drainage Boards, riparian owners	**Contact:** Team Leader Conservation

Action 2.6.2	Progress S
Coastal and floodplain grazing marsh: we will monitor water quality in the Curry and Hay Moor Site of Special Scientific Interest.	We continue to assess the nutrient status of the River Tone and those Moors directly fed from it (principally Curry Moor). Results show that the Tone & Parrett catchments are suffering diffuse pollution. We work with the FWAG, Somerset Wildlife Trust and Local Authorities on the Tone Project to tackle diffuse pollution and soil erosion.
Cost: £1k	**Timescale:** 2000-2004
Action By: Agency, Local Authorities, FWAG	**Contact:** Team Leader Conservation

Action 2.6.3	Progress S Unfunded – Priority 1
Coastal and floodplain grazing Marsh: we will seek opportunities to restore functional floodplains and wetlands in co-operation with riparian owners and the Wildlife Trust.	We have implemented a number of actions agreed in the Levels and Moors Water Level Management Action Plan, including restoration of wetland (Raised Water Level Areas).
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, English Nature, Somerset Wildlife Trust, riparian owners, Internal Drainage Boards, Farming and Wildlife Advisory Group	**Contact:** Team Leader Conservation

Action 2.6.4	Progress S
Rivers and streams: we will implement the South West Regional Biodiversity Action Plan (BAP) for Rivers and Streams by working with others to maintain and where appropriate improve quality and biodiversity. English Nature is providing funding using its BAP money channelled via Somerset County Council.	Funding from this route has been used to purchase materials, for example to fence riverbanks. Riparian owners through the medium of the Tone Project have identified opportunities.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, English Nature, FWAG, Somerset Wildlife Trust, riparian owners, Local Authorities	**Contact:** Team Leader Conservation

Action 2.6.5	Progress S Unfunded – Priority 2
Otters: we will work closely with the Somerset Otter Group to further the understanding of otter ecology in the catchment and to protect features of importance to the species.	We continue to work closely with the Somerset Otter Group. We have continued to collect otter road casualties for autopsy.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, Somerset Otter Group, Somerset Wildlife Trust, Farming and Wildlife Advisory Group (FWAG), riparian owners	**Contact:** Team Leader Conservation

Action 2.6.6	Progress S
Water vole: we will work with others to further the understanding of water vole ecology in the catchment with particular emphasis on the tidal Tone. We will work to protect features of importance to the species and to ensure that flood defence practices do not compromise water vole habitat.	Work on the Stanmoor Bank capital scheme has necessitated much water vole survey work. The presence of a significant population living under conditions of fluctuating water levels has altered perceptions of the species habitat requirements.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, Somerset Wildlife Trust, Farming and Wildlife Advisory Group (FWAG)	**Contact:** Team Leader Conservation

Action 2.6.7	Progress S
Depressed river mussel: we will investigate the possibility that this species is present in the catchment.	Limited survey work to date has not revealed any depressed river mussels in the Tone catchment.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.6.8	Progress S Unfunded – Priority 2
Native crayfish: we will continue to be vigilant during our routine surveys for presence of native crayfish particularly in its former known habitat on the River Tone.	We are continuing to look for the presence of native crayfish during our routine survey work. To date we have no direct evidence of this species on the Tone.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.6.9	Progress S Unfunded – Priority 1
Locally important species (*Valvata macrostomata* snail and black poplar - the Vale of Taunton Deane has 2% of the British population of black poplar) and Nationally important species (hairy click beetle): we will work with others to sustain viable populations of these species.	We have participated in biodiversity initiatives with Taunton Deane Borough Council. We are following the UK Biodiversity Action Plan (BAP) to maintain hairy click beetle numbers and increase the population by 2010. This involves survey and monitoring work, and habitat protection. Experimental fencing has been erected to protect the beetle's habitat. This was completed using funding from English Nature and will encourage canary reed grass habitat adjacent existing beetle sites, by limiting livestock grazing on riverbanks.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, Internal Drainage Boards, riparian owners, district councils, Somerset Wildlife Trust	**Contact:** Team Leader Conservation

Action 2.6.10 New Action	Progress N
On completion of the National Trout and Grayling Fisheries Strategy we will implement the agreed actions to further maintain, develop and improve trout and grayling fisheries in the Tone catchment.	The National Trout and Grayling Fisheries Strategy is expected to be completed in late 2002 / early 2003. Once completed we will commence work to implement the actions relevant to the Tone catchment.
Cost: Unknown	**Timescale:** 2003-2008
Action By: Agency	**Contact:** Team Leader Fisheries

Action 2.6.11 New Action	Progress N
Subject to the results of pilot trials, we will develop Fisheries Action Plans (FAPs) for the North Wessex Area and implement the agreed actions to ensure the maintenance, development and improvement of fisheries.	It is expected that FAPs will be produced for local areas from 2003. On completion of North Wessex FAPs we will implement the agreed actions to further protect and enhance fisheries in the Tone catchment.
Cost: Unknown	**Timescale:** 2003-2008
Action By: Agency	**Contact:** Team Leader Fisheries

Issue 2.7: The need for extra protection for key designated conservation sites

Action 2.7.1	Progress S
Review all authorisations and actions as required by the Habitats Regulations.	We have a dedicated officer in place to complete this action.
Cost: £50k	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Conservation

Issue 2.8: Invasive plants

Action 2.8.1	Progress S
Extensive River Habitat Surveys planned in this catchment will give a good indication of the distribution of alien invasive plants.	River Habitat Surveys in the Tone catchment were undertaken covering 25% of the stream length.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.8.2	Progress S Unfunded - Priority 2
We will continue to monitor the distribution and status of invasive alien species.	We are continuing this action as part of our River Habitat Surveys and other routine monitoring.
Cost: £2k p.a.	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.8.3	Progress S Unfunded - Priority 1
We will provide appropriate advice to riparian owners on the identification and control of the three alien species through the River Tone Catchment Project.	Advice is provided through the Tone Project, leaflets have been published by the Agency and other organisations, and advice on the use of herbicides has been given by BASIS trained staff.
Cost: £9k	**Timescale:** 2000-2004
Action By: Agency, Farming and Wildlife Advisory Group (FWAG), Somerset Wildlife Trust, riparian owners	**Contact:** Team Leader Conservation

Action 2.8.4	Progress S Unfunded – Priority 1
We will set up a management group for Japanese knotweed (*Fallopia japonica*), to identify management options and control mechanisms.	The Agency in Cornwall has produced a guide on how to beat back Japanese knotweed, one of the most damaging alien species of plant in the country. The new booklet shows how to spot this pervasive species and contains advice on its safe destruction and disposal. In the Tone catchment Japanese knotweed is not as much of a problem as it is elsewhere. However, projects such as the Tone Land Use Project encourage the prevention of knotweed and other invasive species such as Himalayan Balsam. We also welcome reports of sightings of invasive plant species.
Cost: £5k p.a.	**Timescale:** 2000-2004
Action By: Agency, English Nature, Somerset Environmental Records Centre, Somerset Wildlife Trust, Local Authorities, British Trust for Conservation Volunteers, FWAG, Forestry Commission, angling clubs	**Contact:** Team Leader Conservation

Issue 2.9: Disease of alder trees

Action 2.9.1	Progress S
Extensive River Habitat Surveys planned in this catchment will provide an indication of the extent of the disease.	The River Habitat Survey is complete and we are waiting for all the results to be placed on a national database. Once national results are available we will identify habitats of particular importance which can be targeted for work.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.9.2	Progress S Unfunded – Priority 2
We will identify management options, once the outcome of research into disease transmission is known	We are continuing to advise in accordance with the latest Forestry Commission research.
Cost: Unknown	**Timescale:** Unknown
Action By: Agency, Forestry Commission	**Contact:** Team Leader Conservation

Action 2.9.3	Progress S Unfunded – Priority 1
We will formulate a management programme for healthy bank-side alders in partnership with others.	We continue to work on this issue which is an ongoing concern in neighbouring Areas. A guide to coppicing has been produced by Devon Area. A field visit was held in 2000 to look at riparian tree diversity involving experts representing a wide range of interests.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, Forestry Commission, Farming and Wildlife Advisory Group (FWAG), Local Authorities, Somerset Wildlife Trust	**Contact:** Team Leader Conservation

Issue 2.10: The investigation of the spined loach on the Maiden Brook

Action 2.10.1	Progress C
We will investigate the presence of the spined loach in the Maiden Brook by carrying out a population survey.	The spined loach is not ordinarily seen in our Somerset rivers, though the stone loach is. A report from an angler of catching one in the Maiden brook gave rise to this action. We carried out an electric fishing survey in 2000 and again in August 2001. Though we caught good numbers of fish including stone loach, no spined loach were found. Therefore, no actions are required with regard to this species.
Cost: £1k	**Timescale:** 2000
Action By: Agency	**Contact:** Team Leader Fisheries

Issue 2.11: The need for improved flood defence practices in the catchment

Action 2.11.1	Progress S
We will complete the Asset Survey and carry out annual risk-based inspection of flood defences for input to the Flood Defence Management System.	Operations Team staff and the emergency workforce carried out visual inspections to identify structures in need of maintenance. This initial survey was reported to DEFRA in April 2001. 90 metres of bank were identified as poor and will be repaired, and a further 310m will be monitored, along with 13 other structures. The annual risk based inspection for 2001/02 is underway, the report will be made in April 2002. However, inspection time has been lost because of repairs needed due to last year's floods and then Foot & Mouth restrictions.
Cost: £10k p.a.	**Timescale:** 2000-2003
Action By: Agency	**Contact:** Team Leader Flood Defence Strategic Planning

Action 2.11.2	Progress S Unfunded - Priority 2
We will use the Flood Defence Management System and other manuals and guidance notes to justify priorities and implement maintenance works within the catchment.	Prioritisation and implementation of flood defence works is carried out on a continual basis.
Cost: Unknown	**Timescale:** 2000-2003
Action By: Agency	**Contact:** Team Leader Flood Defence Operations

Action 2.11.3	Progress S Unfunded - Priority 3
We will develop the computer model for the Parrett and Tone system and use it to investigate modifications to the operational and maintenance procedures.	The hydraulic model for the Parrett and Tone system has been produced. While parts of the model are being used for the Review of Flood Management Practices, continuing calibration and refinement of the model is being undertaken. We will continue to use the model for investigations into flood management activities.
Cost: £5k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Flood Defence Operations

Action 2.11.4	Progress S
We will carry out capital improvements to the Stanmoor Bank to safeguard its structural stability.	We have completed piling work to the length of bank between Athelney Bridge and the railway. The remaining lengths between Stanmoor Brook and Hook Bridge will be completed in Summer 2002.
Cost: £1200k (2001) £2500k (2002)	**Timescale:** 2000-2003
Action By: Agency	**Contact:** Team Leader Flood Defence Improvements

Action 2.11.5	Progress S Unfunded – Priority 2
We will return Hook Bridge Spillway to design level after we have completed Stanmoor Bank subject to review of flood defence practices.	Raising Hook Bridge spillway and associated banks has been identified as desirable within all the options considered in the Review of Flood Defence Practices. We are currently working on the feasibility study, with construction proposed in 2003 after the completion of work to Stanmoor Bank.
Cost: £100k	**Timescale:** 2003-2004
Action By: Agency	**Contact:** Team Leader Flood Defence Improvements

Action 2.11.6	Progress S
We will carry out capital improvements to Baltmoor Wall, which is now classified as a dam under the Reservoirs Act.	We have completed construction work on the main improvements to Baltmoor Wall. The remainder will be completed early 2002.
Cost: £1650k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Flood defence Improvements

Action 2.11.7	Progress S Unfunded – Priority 3
We will undertake a review of flood defence staffing and field inspection practices within the catchment.	The Review is being undertaken and funding has been provided by the Somerset Local Flood Defence Committee and increases in staffing will occur in 2002/3.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Flood Defence Operations

Action 2.11.8	Progress S
We will endeavour to implement the flood alleviation scheme for the Hillfarrance Brook and then designate the Brook as a main river.	We are currently carrying out a feasibility study and options appraisal. Assuming a technically, economically and environmentally sound option is identified, and a suitable contribution from Taunton Deane Borough Council secured, work is planned to start 2003/2004. The Brook will not be designated as a main river until an option has been identified and funding secured.
Cost: £400k	**Timescale:** 2003-2004
Action By: Agency	**Contact:** Team Leader Flood Defence Improvements

Action 2.11.9	Progress C Unfunded – Priority 2
We will produce a consultation document under the Review of Flood Management Practices to obtain a consensus proposal to present to the Department for Environment, Food and Rural Affairs (DEFRA).	We have completed this document and the following consultation resulted in a number of proposals to improve flood management practices. A Water Management Strategy Action Plan was then produced, which was published in March 2002 (see section 2.12.1).
Cost: £443k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Flood Defence Strategic Planning

Issue 2.12: Flood Warning and Major Incident Plans

Action 2.12.1	Progress S
As part of the Regional study we will implement the Easter Floods Action Plan and review Flood Warning and decide priorities for improvement in the River Tone area.	We have improved the Floodline service by providing 24 hours a day real-time flood warning information. We have carried out extensive surveys of property thresholds to help target flood warning and we will continue to carry out such surveys over the catchment. We will also build a new flood warning station at Tonedale in 2002.
Cost: £1 million p.a. for the South West Region	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Flood Warning

Issue 2.13: A sustainable approach to investment in Somerset's flood defence

Action 2.13.1	Progress C Unfunded – Priority 1
We will combine with the other operating authorities to highlight Somerset's funding shortfall to the Department for Environment, Food and Rural Affairs (DEFRA).	We worked with Somerset County Council, North Somerset District Council, South Somerset District Council, Taunton Deane Borough Council, Sedgemoor District Council and the Parrett Consortium for Internal Drainage Boards to highlight the funding shortfall by producing Policy statements and Area Manager Reports. Meetings were also held between the Chairman of the Somerset Local Flood Defence Committee (SLFDC) and the Minister. This resulted in winter flood costs for 2000/01 being fully funded, and Somerset receiving the highest grant rate in the country.
Cost: Unknown	**Timescale:** 2000
Action By: Agency and other operating authorities	**Contact:** Team Leader Flood Defence Strategic Planning

Issue 2.14: Impact of new development on drainage, flooding & water resources

Action 2.14.1	Progress C
We will produce hydraulic models for identifying definitive floodplains for some Local Authority identified reaches for 1999/2000.	We have produced hydraulic models for some important reaches. The models show the area that would be affected by a flood that has a statistical probability of happening once in 100 years. Work is currently underway to produce a full catchment model for the River Tone.
Cost: £20k	**Timescale:** 1999-2000
Action By: Agency	**Contact:** Team Leader Development Control

Action 2.14.2	Progress S
We will liaise with Planning and Highway Authorities, consultants and contractors to ensure protection for the water environment before, during and after construction of developments.	We have had a very high success rate in protecting the water environment from new development. Agency advice is followed almost 100% of the time, resulting in development plans which protect, and sometimes enhance, the environment. We will continue to liaise with all those involved in new and future development.
Cost: £25k	**Timescale:** 2000-2004
Action By: Agency, Local Authorities, Highways Agency	**Contact:** Team Leader Development Control

Action 2.14.3	Progress S
We will liaise with the Local Planning Authorities to ensure that appropriate policies to protect the environment are included in their Development Plans.	We are continuing to liaise with Local Planning Authorities before, during, and after Development Plans are submitted to ensure the environment is protected. We are appearing as an expert witness for the forthcoming inquiry regarding the Taunton Deane Local Plan. In particular we will be providing a proof of evidence regarding flood risk and other environmental issues relating to the proposed developments at Norton Fitzwarren and Silk Mills in Taunton.
Cost: £50k	**Timescale:** 2000-2004
Action By: Agency, Local Authorities	**Contact:** Team Leader Planning Liaison

Action 2.14.4 New Action	Progress C
We will produce detailed flood risk maps (S105) for land-use planning within Local Development Plans.	As part of a national initiative, we supplied detailed indicative floodplain maps to Local Authorities to assist in steering development away from floodplains. The majority of the Tone catchment is covered by the Taunton Deane Local Plan. Section 105 data, level A & B, has been included on the maps in this Plan.
Cost: £20k	**Timescale:** 1999-2001
Action By: Agency	**Contact:** Team Leader Development Control

Issue 2.15: Somerset Levels and Moors Water Level Management Strategy

Action 2.15.1	Progress S
We will implement actions agreed in the Somerset Levels and Moors Water Level Management Action Plan (WLMAP) (September 1999).	We have been successful in implementing a number of actions agreed in the Levels and Moors WLMAP, including the restoration of wetland (Raised Water Level Areas). We have also made significant contributions to all Internal Drainage Board Water Level Management Plans, and modified some water control structures to facilitate the passage of elvers within the Levels and Moors part of the Tone catchment.
Cost: Total costs for the whole of the Levels and Moors: £524k in 1999; £298k in 2000; £287k in 2001; £269k in 2002 and £95k in 2003	**Timescale:** 1999-2003
Action By: Agency, English Nature, Somerset County Council, Farming and Rural Conservation Agency, RSPB, NFU, Countryside Landowners & Business Association, Association of Drainage Authorities, Internal Drainage Boards, English Heritage	**Contact:** Levels and Moors Project Officer

Action 2.15.2	Progress C
We will carry out a Review of the Agency's Flood Defence Practices on the Somerset Levels and Moors.	We have published our Review of Flood Management Practices and undertaken a review of Agency water management operations as required by the Habitats Directive. Water Management Strategy Action Plans (WMSAPs) are now being produced as a result of the review. The Parrett WMSAP, which incorporates the Tone catchment, was published in March 2002. We are now reviewing our routine maintenance activities.
Cost: Total costs for the whole of the Levels and Moors: £40k in 1999; £80k in 2000; £15k in 2001	**Timescale:** 1999-2001
Action By: Agency	**Contact:** Levels and Moors Project Officer

Issue 2.16: The impact of energy and fossil fuel on climate

Action 2.16.1	Progress S
Reduce buildings' energy consumption by 10% from a 1999/00 baseline by the end of March 2005.	We will progress towards this by reducing consumption by a minimum of 2% on baseline by the end of March 2002. We are in fact meeting the more stringent targets. This is being achieved through movement detector lighting, solar light sensors and a general awareness of staff throughout their work.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Area Business Services Manager

Action 2.16.2	Progress S
Reduce total vehicle emissions by 10% from a 1999/00 baseline by the end of March 2002.	We are striving to achieve this target through our Green Transport Plan to reduce business mileage. Video-conferencing is used where possible, and car sharing is strongly encouraged. We saved around 100,000 miles from April to December 2001 by reducing attendance at non-essential meetings. In the future we aim to reduce emissions to atmosphere, rather than business miles *per se*. Therefore, the type, age and emission percentage of the vehicle will be considered.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Area Business Services Manager

Action 2.16.3	Progress S
We will seek reductions in energy use and greenhouse gas production as part of our regulation of major industry.	The implementation of the Pollution Prevention Control (England & Wales) Regulations 2000 require major industrial installations to apply for permits in a phased process between 2000 and 2007. When determining the conditions of a permit we take into account how efficiently the energy will be used and also include conditions aimed at reducing long distance and transboundary pollution (see section 2.13).
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader PIR/RSR

Action 2.16.4	Progress
We will promote the efficient use of energy in industry and agriculture as part of our regulatory activities.	Certain major agricultural installations are also covered by the Pollution Control Regulations 2000 (see Action 2.16.3). We promote the efficient use of energy by setting conditions in permits that encourage energy efficiency and the reduction of long distance and transboundary pollution (see section 2.13).
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader PIR/RSR

Issue 2.17: Air pollution

Action 2.17.1	Progress
To reduce total vehicle emissions by 10% from a 1999/00 baseline by the end of March 2002.	We are striving to achieve this target through our Green Transport Plan to reduce business mileage. See Action 2.16.2
Cost: Saving	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Area Business Services Manager

Action 2.17.2	Progress
Report any Local Authority air quality monitoring results in future LEAP Annual Reviews (see section 2.17).	We continue to liaise with Local Authorities and where appropriate will report air quality data in future Agency reports.
Cost: Nil	**Timescale:** 2000-2004
Action By: Agency, Taunton Deane Borough Council, West Somerset Borough Council.	**Contact:** Team Leader LEAPs

Issue 2.18: The impact of methane produced by landfill sites and odour nuisances

Action 2.18.1	Progress
We will revise the waste management licence and working plan for Poole landfill.	Wyvern Waste Services Ltd have made a licence modification application for this landfill which includes revised working plan and operational procedures. However, Wyvern's submissions need further work and negotiations are continuing. We have requested that some aspects of site operation are risk assessed and a risk assessment is expected from Wyvern early in 2002. Landfill gas extraction has increased by 150% over the last year and is now up to 1,000m^3/hour of gas being extracted and flared.
Cost: £3k	**Timescale:** 2000-2002
Action By: Agency	**Contact:** Team Leader Waste Licensing

Action 2.18.2	Progress
We will continue to monitor and encourage the operator to minimise odour nuisance at Poole landfill.	Odour nuisance has significantly reduced over the last 6 months due to landfill capping works and increased gas extraction. We are continuing to monitor the site under the Agency's risk based Operator & Pollution Risk Appraisal (OPRA) Scheme approximately twice a month (see section 2.13.1)
Cost: £1k	**Timescale:** 2000-2002
Action By: Agency	**Contact:** Team Leader Environment Protection

Issue 2.19: A better informed and integrated Agency view on waste management

Action 2.19.1	Progress C
We will produce Strategic Waste Management Assessments (SWMA) for the Local Authorities in this area.	We published the South West Region Strategic Waste Management Assessment (SWMA) at the end of 2000 and distributed it to all relevant Local Authorities. An Annual Update of this SWMA will be produced in spring 2002 (see section 2.14.2).
Cost: £1k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Tactical Planning

Issue 2.20: The over-creation of waste

Action 2.20.1	Progress S
We will promote the creation **and maintenance** of waste minimisation partnerships as appropriate.	We are continuing to promote the creation of waste minimisation partnerships. The Somerset Waste Partnership (made up of 5 District Councils) has completed a Best Value Review, which is expected to be available to the public in April 2002.
Cost: £1k	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Tactical Planning

Action 2.20.2	Progress S
We will work with Farming and Wildlife Advisory Group (FWAG), Farming and Rural Conservation Agency and others to give waste minimisation and best practice management advice to farmers.	We continue to work with FWAG to advise farmers of best practice. FWAG have reported several successful measures taken by farmers to improve practice. We believe that the continued water quality improvement is due to the reduction in diffuse pollution sources.
Cost: £1k	**Timescale:** 2000-2004
Action By: Agency, Farming and Wildlife Advisory Group (FWAG), Farming and Rural Conservation Agency	**Contact:** Team Leader Environment Protection

Action 2.20.3	Progress C Unfunded – Priority 1
We will conduct a joint Pollution Prevention and Waste Minimisation survey at Comeytrowe Trading Estate.	We successfully completed this survey in 2001. Advice on waste minimisation and disposal was given to several firms and improved bunding of oil storage facilities was completed at two sites.
Cost: £1k	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Environment Protection

Issue 2.21: Illegal waste disposal

Action 2.21.1	Progress S Unfunded – Priority 1
We will liaise with the Forestry Commission and Taunton Deane Borough Council to develop a plan to combat fly-tipping.	We continue to receive reports of fly-tipping and combating the problem is proving to be difficult. This issue is of increasing concern to us and we are bringing more prosecutions as a result.
Cost: £0.5k	**Timescale:** 2000-2001
Action By: Agency, Forestry Commission, Taunton Deane Borough Council	**Contact:** Team Leader Environment Protection

Action 2.21.2	Progress C
We will continue to hold discussions with the new scrapyard operator at Poole Brickworks to ensure proposed activities fulfil waste-management licensing requirements.	We have issued a Waste Management Licence for this site as all Waste Management Licensing requirements were met. Works to improve the site's infrastructure are also near completion.
Cost: £1k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Waste Licensing

Action 2.21.3	Progress S Unfunded – Priority 1
We will work with the Local Authorities to combat fly-tipping, and remove fly-tipped waste.	We continue to receive reports of fly-tipping and combating the problem is proving to be difficult. This issue is of increasing concern to us and we are bringing more prosecutions as a result.
Cost: £0.5k	**Timescale:** 2000-2004
Action By: Agency, Local Authorities	**Contact:** Team Leader Environment Protection

Issue 2.22: Securing future public water supplies

Action 2.22.1	Progress C
We will revise the Regional Water Resources Development Strategy.	We have completely re-thought and re-written our water strategy. We launched the new strategy in March 2001, which sets down how we can provide enough water for all human uses with an improved water environment for the period up to 2025. The development of Catchment Abstraction Management Strategies (CAMS) will also contribute to this. The River Tone CAMS is the first to be developed in North Wessex and it is due to be published during spring 2003 (see section 2.8).
Cost: £4k	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Regional Senior Water Resources Planner

Issue 2.23: Bridgwater and Taunton Canal water resources management

Action 2.23.1	Progress S
If appropriate we will implement changes to the water management practice, having due regard to the needs of the Canal and the River Tone downstream of Firepool.	In developing the Tone Catchment Abstraction Management Strategy (CAMS) we are determining the needs of abstractors and those of the aquatic environment in consultation with the local community and interested parties. The Tone CAMS is to include the Bridgwater & Taunton Canal and will set it in the context of the whole catchment. Therefore, once the Tone CAMS is complete in 2003, we will review the need for any changes to the water resource practice of the Bridgwater and Taunton Canal.
Cost: £10k	**Timescale:** 2000-2004
Action By: Agency, British Waterways, Wessex Water, English Nature	**Contact:** Team Leader Area Water Resources

Issue 2.24: The impact of sewage and unsewered areas

Action 2.24.1	Progress S
We will work with Wessex Water to ensure that they carry out proposed Asset Management Plan 3 (AMP3) improvements to Taunton (Ham) sewage treatment works by 2004. We will monitor the effectiveness of the improvements.	Improvement works are on target to be completed by 2004. Improved secondary treatment will ensure river quality objectives are met and we will continue to monitor effectiveness on completion. We are currently in the process of establishing which discharge consents will need a review under the Habitats Directive regulations. It is expected that this consent will be reviewed; work will commence at the end of 2002/03.
Cost: £1k	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Tactical Planning

Action 2.24.2	Progress S
We will work with Wessex Water to ensure that they carry out proposed Asset Management Plan 3 (AMP3) improvements to Maundown Water Treatment Works by 2003. We will monitor the effectiveness of the improvements.	Improvement works are on target to be completed for March 2003. Improved secondary treatment and reduction in levels of aluminium, chlorine and suspended solids will ensure river quality objectives are met. We will continue to monitor effectiveness on completion.
Cost: £1k	**Timescale:** 2000-2003
Action By: Agency	**Contact:** Team Leader Tactical Planning

Action 2.24.3	Progress S
We are negotiating with Wessex Water to secure improvements to Galmington Surface Water outfall on the River Tone.	We will be providing Wessex Water with details of our Galmington Trading Estate survey with a view to removing potential sources of contamination from the surface water system.
Cost: £0.5k	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Environment Protection

Action 2.24.4	Progress S
We will monitor Wessex Water's AMP3 progress in improving a number of intermittent discharges by 2005 and we will assess the impact of the improvements.	The programme of improvements relating to around 31 intermittent unsatisfactory discharges in the Tone catchment is underway and on target to meet planned completion dates. We will continue to monitor this progress and assess the impact of improvements.
Cost: £1k	**Timescale:** 2000-2005
Action By: Agency	**Contact:** Team Leader Tactical Planning

Action 2.24.5	Progress S
We will work with Taunton Deane Borough Council to identify wrong connections in the catchment and ensure correct connections are made.	We have completed our investigations into Rowbarton Close and St Patricks Close and five misconnections have been rectified. No new instances of cross connections have been reported to the Agency. We will continue to work with Taunton Deane Borough Council on this issue.
Cost: £0.5k	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader Environment Protection

Action 2.24.6	Progress S
We will work with Wessex Water to ensure that they implement the AMP3 Blagdon Hill and Pitminster Sewerage Scheme by 2003.	This sewerage scheme is on target to be completed in December 2002. On completion we will monitor the impact of the scheme.
Cost: £1k	**Timescale:** 2000-2003
Action By: Agency	**Contact:** Team Leader Tactical Planning

Action 2.24.7 New Action	Progress N
We will carry out a post AMP3 scheme impact assessment. This will be reported once all of the Asset Management Plan 3 work has been completed and sufficient data has been collected.	We are assessing the effectiveness of completed works and will report the outcomes when all other works are completed and assessed. (The period for AMP3 works ends 2005).
Cost: Unknown	**Timescale:** 2006-2008
Action By: Agency	**Contact:** Team Leader Tactical Planning

Issue 2.25: Promotion of sustainable recreation

Action 2.25.1	Progress C
We will review the recreational potential of Agency land on the lower River Tone.	We have contributed to a sustainable regime for the Childrens Wood working with Taunton Deane Borough Council. This seeks to enhance the area for wildlife whilst maintaining access for cyclists & walkers, without compromising flood capacity.
Cost: Unknown	**Timescale:** 2000-2001
Action By: Agency	**Contact:** Team Leader Conservation

Action 2.25.2	Progress S
We will liaise with Local Planning Authorities to ensure appropriate policies are included in Local Development Plans and Community Plans.	This is an ongoing action. We continue to liaise with Local Authorities to ensure that environmental issues are considered.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Local Authorities, Agency	**Contact:** Team Leader Conservation

Action 2.25.3	Progress S
We will work with others to provide sustainable water-based recreation and amenity.	We are working in partnership to investigate the possibility of restoring the route of the Grand Western Canal between Taunton and Silk Mills for use as a recreational green corridor. We are also working to try to ensure that future opportunities for water based recreation are not prevented by inappropriate development.
Cost: Unknown	**Timescale:** 2000-2004
Action By: Agency, Local Authorities, British Waterways, Grand Western Canal Trust, Bridgwater and Taunton Canal User Group angling clubs, British Canoe Union, Sports Council, Countryside Agency,	**Contact:** Team Leader Conservation

Issue 2.26: Local Agenda 21 (LA21)

Action 2.26.1	Progress S
We will supply information to Local Agenda 21 groups where possible, and will develop links with LA21 officers and Local Authorities to promote sustainability.	We have contributed to the Environment Section of Taunton Deane Borough Council's Corporate Plan and have started to engage with their LA21 process. We are hoping to also be involved in the Deane's Community Strategy Process.
Cost: Staff time	**Timescale:** 2000-2004
Action By: Agency	**Contact:** Team Leader LEAPs

Appendices

Appendix 1: Water Quality – River Quality Objectives

We manage water quality by setting targets called River Quality Objectives (RQO). They are intended to protect current water quality and future use, and we use them as a basis for setting consents for new discharges and planned future quality improvements. River Quality Objectives are assigned to all significantly sized rivers based on river flow.

River Quality Objectives are based on the River Ecosystem Classification Scheme that consists of five classes. It sets standards for dissolved oxygen, biochemical oxygen demand, total ammonia, free ammonia, pH, dissolved copper and total zinc. Class RE5 has lower limits and does not in any way denote the worst water quality possible.

Table 9: River Ecosystem (RE) Classification

River Quality Objective	Class Description
RE1	Water of very good quality suitable for all fish species
RE2	Water of good quality suitable for all fish species
RE3	Water of fairly good quality suitable for high class coarse fish populations
RE4	Water of fairly good quality suitable for coarse fish populations
RE5	Water of poor quality, which is likely to limit coarse fish populations

We show failures to achieve River Quality Objectives as significant or marginal failures. Significant failures are those where we are 95% certain that the river stretch has failed to meet its River Quality Objective. Marginal failures are those where we are less certain (between 50% and 95%) that the stretch has failed to meet its River Quality Objective.

Table 10 gives the compliance for all monitored stretches in the Tone catchment. Where significant or marginal failures have occurred, the cause has been identified. The main determinands of non-compliance in the catchment are Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO) and Ammonia (NH_3).

Table 10: River Quality Objective Compliance 1999 & 2000

River Name	Public Stretch Name	River Quality Objective	Compliance 1999	Compliance 2000
Back Stream	Source - confluence with Halse Water	2	Compliant	Compliant
Broughton Brook	Source - confluence with Tone	2	Compliant	Compliant
Chelston Stream	Chelston - confluence with Haywards Water	2	Compliant	Compliant
Halse Water	Source - Halse	2	Compliant	Compliant
Halse Water	Halse - Ash Priors Tributary	2	Compliant	Compliant
Halse Water	Confluence with Ash Priors Tributary - confluence with Back Stream	2	Compliant	Compliant
Halse Water	Confluence with Back Stream - confluence with Tone	2	Compliant	Compliant
Halse Water Tributary (Wick)	Source - confluence with Halse Water	2	Compliant	Compliant
Haywards Water	Ford Stream & Wellington Hill Tributary & Chelston - confluence with Tone	2	Compliant	Compliant
Hele Brook	Lowton - confluence with Tone	2	Marginal fail	Compliant
Hillfarrance Brook	Source (Hillfarrance Brk) & Source (Westbrook Str) - Preston Bowyer	2	Compliant	Compliant
Hillfarrance Brook	Preston Bowyer - confluence with Tone	2	Compliant	Compliant
Sherford Stream	Pitminster - confluence with Tone	2	Compliant	Compliant
Bridgwater & Taunton Canal	Crossing with Tone - crossing with Petherton Park Brook	2	Compliant	Compliant
Bridgwater & Taunton Canal	Crossing with Petherton Park Brook - Bridgwater Dock	4	Compliant	Compliant
Westbrook Stream	Source - confluence with Preston Bowyer	2	Compliant	Compliant
Westford Stream	Beam Bridge - confluence with Tone	2	Compliant	Compliant
Tone	Upstream Clatworthy Reservoir - Huish Champflower	1	Compliant	Significant fail [1]
Tone	Huish Champflower - Chipstable	1	Compliant	Compliant
Tone	Chipstable-Stawley	1	Marginal fail	Significant fail [1]
Tone	Stawley - confluence with Westford Stream	2	Compliant	Compliant

Table 10 Continued: River Quality Objective Compliance 1999 & 2000

River Name	Public Stretch Name	River Quality Objective	Compliance 1999	Compliance 2000
Tone	Confluence with Westford Stream - Wellington STW	2	Compliant	Compliant
Tone	Wellington STW - Poole	2	Compliant	Compliant
Tone	Poole - conf with Hele	2	Compliant	Compliant
Tone	Conf with Hillfarrance Brook / Hele Brook - conf with Halse Water	2	Compliant	Compliant
Tone	Confluence with Halse Water - Bridgwater & Taunton Canal	2	Compliant	Compliant
Tone	Bridgwater & Taunton Canal - confluence with Broughton Brook	2	Compliant	Marginal fail [2]
Tone	Confluence with Broughton Brook - Ham	2	Compliant	Compliant
Tone	Ham - Knapp	3	Significant fail	Significant fail [1]
Tone	Knapp - Haymoor (Tidal Tone)	3	Compliant	Compliant

[1] Of the 30 monitored stretches (170.7 km of river) in the Tone catchment there are three stretches (a total of 10.7 km) which significantly failed to meet their River Quality Objective (RQO) in 2000. These failures are thought to be due to runoff and soil erosion causing pollution and siltation of watercourses. This problem is being addressed through the Tone Project (see section 2.11.1).

[2] Of the 30 monitored stretches (170.7 km of river) in the Tone catchment there is only one stretch (3.4 km) which marginally failed to meet its River Quality Objective (RQO) in 2000. As marginal non-compliance indicates that there is a 50% chance that a stretch has not complied with its RQO, there is equally a 50% chance that this stretch has complied with its RQO. Thus no action will be taken at present; we will continue our routine monitoring and, if repeat failures occur, we will then investigate the possible causes of failure.

A number of Wessex Water discharges are known to cause or contribute to the exceedence of water quality targets. These discharges will be improved through the Water Companies' investment programme. Their investment programme for the period 2000-2005 is known as Asset Management Plan 3 (AMP3). This has been developed along guidelines agreed between the Environment Agency, the Department for Environment, Food and Rural Affairs (DEFRA), the water services companies (in this case Wessex Water) and the Office of Water Services (OFWAT).

In the River Tone LEAP area improvements to the following discharges are to be carried out in Asset Management Plan 3 (2000-2005):

- Blagdon Hill and Pitminster Sewerage Scheme – on target to be completed in December 2002.
- Maundown Water Treatment Works – on target to be completed by March 2003.
- Taunton (Ham) Sewage Treatment Works – on target to be completed by 2004.
- 31 intermittent discharges – on target to meet planned completion dates.

Appendix 2: Water Quality - General Quality Assessment

We also use the General Quality Assessment scheme (GQA) to report at a general level on river quality and to show trends (see section 3.2). Figure 14 gives both chemical and biological GQA results for watercourses in the River Tone catchment. Water quality data is usually reported in LEAPs under the Public stretch name. The Public stretches are made up of a number of sub stretches and, for the purposes of reporting GQA information in this LEAP, sub stretch information is being included. In cases where the sub stretches of a given Public stretch have different GQA values they have been listed separately (for example the Halse – Ash Priors Tributary). For all other stretches it can be assumed that the GQA was consistent along the length of the Public stretch.

Table 11: Chemical GQA 1999 & 2000 and Biological GQA 1995 & 2000

River Name	Public Stretch Name & Sub Stretch Name	Chem. GQA 1999	Chem. GQA 2000	Biol. GQA 1995	Biol. GQA 2000
Back Stream	**Source - confluence with Halse Water:**				
	Source – U/S Bishops Lydeard STW	A	A	a	a
	U/S STW – D/S STW	A	A	b	a
	D/S STW – Confluence with Halse Water	A	A	a	a
Broughton Brook	**Source - confluence with Tone**	B	B	a	a
Chelston Stream	**Ford Stream & Wellington Hill Tributary & Chelston - confluence with Tone**	B	A	b	a
Halse Water	**Source - Halse**	B	B	b	a
Halse Water	**Halse - Ash Priors Tributary:**				
	Halse – Tone Vale	A	B	b	a
	Tone Vale – Ash Priors Tributary	A	B	a	a
Halse Water	**Confluence with Ash Priors Tributary - confluence with Back Stream**	B	B	b	a
Halse Water	**Confluence with Back Stream - confluence with Tone**	B	B	b	a
Haise Water Tributary (Wick)	**Source - confluence with Halse Water**	A	B	b	a
Haywards Water	**Ford Stream & Wellington Hill Tributary & Chelston - confluence with Tone**	B	A	b	a
Hele Brook	**Lowton - confluence with Tone**	C	B	a	a
Hillfarrance Brook	**Source (Hillfarrance Brook) & Source (Westbrook Stream) - Preston Bowyer:**				
	Source – Whitefield	B	A	a	a
	Whitefield – Castle Hill	B	A	a	a
	Castle Hill – confluence with Westbrook Str	B	A	c	a
	Conf Westbrook Str – Preston Bowyer	B	A	c	a
Hillfarrance Brook	**Preston Bowyer - confluence with Tone**	B	A	c	a
Sherford Stream	**Pitminster - confluence with Tone**	B	B	No data	a

Table 11 Continued: Chemical GQA 1999 & 2000 and Biological GQA 1995 & 2000

River Name	Public Stretch Name & Sub Stretch Name	Chem. GQA 1999	Chem. GQA 2000	Biol. GQA 1995	Biol. GQA 2000
Bridgwater & Taunton Canal	**Crossing with Tone - crossing with Petherton Park Brook**	B	B	Unmon.*	Unmon.*
Bridgwater & Taunton Canal	**Crossing with Petherton Park Brook - Bridgwater Dock**	C	C	Unmon.*	Unmon.*
Westbrook Stream	**Source - confluence with Preston Bowyer**	B	A	c	a
Westford Stream	**Beam Bridge - confluence with Tone**	B	B	e	b
Tone	**Upstream Clatworthy Reservoir - Huish Champflower**	B	B	b	a
Tone	**Huish Champflower - Chipstable**	A	A	b	a
Tone	**Chipstable - Stawley**	B	B	a	a
Tone	**Stawley - confluence with Westford Str:** Stawley - Greenham Greenham – Runnington Runnington – confluence Westbrook Str	 B B B	 B B B	 a a d	 a a a
Tone	**Confluence with Westford Stream - Wellington STW**	A	A	c	b
Tone	**Wellington STW - Poole**	B	B	c	b
Tone	**Poole - confluence with Hele:** Poole – confluence with Haywards Water Confluence Haywards Wtr – Norton Hayes Norton Hayes – confluence with Hele	 B B B	 A A A	 c b b	 a a a
Tone	**Confluence with Hillfarrance Brook / Hele Brook - confluence with Halse Water**	A	B	b	b
Tone	**Confluence with Halse Water - Bridgwater & Taunton Canal:** Conf Halse Wtr – conf with Sherford Str Conf with Sherford Stream – B&T Canal	 A A	 B B	 d b	 c c
Tone	**Bridgwater & Taunton Canal - confluence with Broughton Brook**	B	C	c	b
Tone	**Confluence with Broughton Brook - Ham**	A	B	d	b
Tone	**Ham - Knapp**	C	C	d	b
Tone	**Knapp - Haymoor (Tidal Tone)**	B	B	d	d

* Unmonitored (see section 3.2.2)

Also see section 3, 'Key Achievements'.

Appendix 3: Duties, Powers and Interests of the Agency

The Environment Agency has a wide range of interests in the areas of water management, waste management and pollution prevention and control. Whilst many of these interests are supported by statutory duties and powers, much of the Agency's work is advisory, with the relevant powers resting with other bodies such as Local Planning Authorities. The following table therefore summarises the Agency's duties, powers and interests and their relationship to land-use planning.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	• Grant or vary water abstraction and impoundment licences on application with appropriate conditions imposed to safeguard the needs of the environment whilst allowing reasonable and justified use of available and sustainable water resources – with the aim of achieving an equitable balance between competing demands. • Revoke or vary existing licences to reinstate flows or levels to surface waters or groundwater which have become depleted as a result of abstraction. Compensation may be payable if such powers are used. • Secure the proper use of water resources through its role in water resources planning, and the assessment of reasonable need for abstractions and the promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licence conditions. • Issue conservation notices to direct appropriate practices with regard to water resources issues associated with exempt de-watering activities.	• The more efficient use of water by water companies, developers, industry, agriculture and the public and the introduction of water efficiency measures and suitable design and layout of the infrastructure. • Protecting the water environment from any adverse impact due to proposed major developments.	• The Agency uses its position as a statutory consultee to the planning authorities to secure conditions and agreements that protect the water environment and that encourage water conservation measures. The Agency also seeks to influence planning decisions for new development by ensuring that planning authorities allow for any lead-time required for resource development. • The Agency is committed to water-demand management and will work closely with water companies, developers, local authorities, other relevant organisations and the public to promote the efficient use of water. • The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand management measures.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Flood Defence The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.	• Control, through Land Drainage consents, development within 8 m of main river (16 m for tidal Thames and tributaries) (Water Resources Act 1991, Section 109) or construction of a structure that would affect the flow of an ordinary watercourse (Land Drainage Act, 1991 Section 23). • Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991. • Undertake works to main rivers using permissive powers. • Issue flood warnings relating to main river to the public, local authorities and the police. • Consent mineral working within 16 m of main rivers.	• Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by local planning authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a local authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.	• As a statutory consultee on planning applications within main river floodplains the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts or proposed floodplain development. • The Agency will encourage best practice, including source control measures and common standards, among local authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood warning dissemination plans and supports their endeavours to protect communities at risk.
Water Quality The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.	• Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharge consents. • Issue 'works notices' where action is required to reduce the risk of pollution. • Prosecute polluters and recover the costs of clean-up operations.	• The control of runoff from roads and highways. This is a Highways Agency duty. • The greater use of source control measures to reduce pollution by surface water runoff. • Prevention and education campaigns to reduce pollution incidents.	• The Agency will liaise with local authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source control measures. As a statutory consultee on planning applications, the Agency will advise local planning authorities on the water quality impact of proposed developments.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Air Quality The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.	• Regulate the largest technically complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, Best Available Technology Not Entailing Excessive Cost and Best Practicable Environmental Option. • Have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes.	• The vast number of smaller industrial processes which are controlled by local authorities. • Control over vehicular emissions and transport planning.	• The Agency provides data on Integrated Pollution Control processes and advice on planning applications to local authorities. The Agency is willing to offer its technical experience to local authorities on the control of air pollution. The Agency wishes to liaise with local authorities in the production of their Air Quality Management Plans. The Agency will advise and contribute to the government's National Air Quality Strategy.
Waste Management The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to public health or detriment to local amenities.	• Vary waste management licence conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations. • Regulate Producer Responsibility Regulations. • Grant licences subject to conditions. • Refuse licence applications in certain circumstances.	• The siting and granting of planning permission for waste management facilities. The waste industry and local planning authorities conduct this. The Agency, as a statutory consultee on planning applications, can advise on such matters.	• The Agency will work with waste producers, the waste management industry and local authorities to reduce the amount of waste produced, increase reuse and recycling and improve standards of disposal.
Contaminated Land The Agency has a duty to develop an integrated approach to the prevention and control of land contamination, ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment.	• Regulate the remediation of contaminated land designated as special sites. • Prevent future land contamination by means of its Integrated Pollution Control (IPPC), Water Quality and other statutory powers. • Report on the state of contaminated land.	• Securing with others, including local authorities, landowners and developers, the safe remediation of contaminated land.	• The Agency supports land remediation and will promote this with developers and local authorities and other stakeholders.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Conservation The Agency will further conservation, wherever possible, when carrying out water management functions; have regard to conservation when carrying out pollution control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.	• The Agency has no direct conservation powers but uses its powers with regard to water management and pollution control to exploit opportunities for furthering and promoting conservation.	• The conservation impacts of new development. These are controlled by local planning authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to local authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Action Plan for which it is the contact point for over forty species and four habitats.	• The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, local authorities, conservation bodies and landowners to conserve and enhance biodiversity.
Landscape The Agency will further landscape conservation and enhancement when carrying out water management functions; have regard to the landscape when carrying out pollution control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.	• Further conservation and enhancement of natural beauty when exercising its water management powers and have regard to the landscape in exercising its pollution control powers.	• The landscape impact of new development, particularly within river corridors. Local planning authorities control this.	• The Agency produces River Landscape Assessments and Design Guidelines which it uses when working with local authorities and developers to conserve and enhance diverse river landscapes.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	• Promote its archaeological objectives through the exercise of its water management and pollution control powers and duties.	• Direct protection or management of sites of archaeological or heritage interest. This is carried out by local planning authorities, County Archaeologists and English Heritage.	• The Agency will liaise with those organisations which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	• Regulate fisheries by a system of licensing. • Make and enforce fisheries byelaws to prevent illegal fishing. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish entrainment in abstractions. • Promote its fisheries duty by means of land drainage consents, water abstraction applications and discharge applications.	• The determination of planning applications which could affect fisheries.	• Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and local authorities to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	• The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.	• Promotion of water sports. The Sports Council and other sports bodies carry this out.	• The Agency will work with the Countryside Agency, the Sports Council, British Waterways and other recreational and amenity organisations to optimise recreational use of the water environment.

Appendix 4: Useful Publications

British Geological Survey (1994)

Cordrey L (Ed): *Action for Biodiversity in the South West; a series of habitat and species plans to guide delivery* (1997)

Cordrey L (Ed): *The Biodiversity of the South West; an audit of the South West biological resource* (1996)

Department of the Environment Meteorological Office and Air Quality Division: *Air Quality A to Z* (June 1995)

Department of the Environment, Transport and the Regions: *Less Waste More Value* (1998)

Department of the Environment and The Welsh Office: *Making Waste Work* (1995)

Department of Environment: *Methodology for Designating Vulnerable Zones (Nitrates Directive)* Consultation Paper (1993)

Department of Environment: *Methodology for Identifying Sensitive Areas (Urban Waste Water Treatment Directive)* Consultation Paper (1993)

Department of the Environment, Transport and the Regions: *Taking Water Responsibly* (1999)

EC Directive: *Air Quality Standards for Nitrogen Dioxide* (85/203/EEC)

EC Directive: *Bathing Water Quality* (96/160/EEC)

EC Directive: *Conservation of Wild Birds* (79/409/EEC)

EC Directive: *Discharges of Dangerous Substances* (76/464/EEC)

EC Directive: *Drinking Water* (98/83/EEC)

EC Directive: *Freshwater Fish* (78/659/EEC)

EC Directive: *Integrated Pollution Prevention and Control* (96/61/EEC)

EC Directive: *Protection of Waters against Pollution caused by Nitrates from Agricultural Sources* (91/676/EEC)

EC Directive: *Landfill* (1999/31/EEC)

EC Directive: *Species and Habitats* (92/43/EEC)

EC Directive: *Surface Water Abstraction* (75/440/EEC)

EC Directive: *The Protection of Groundwater against Pollution Caused by Certain Dangerous Substances* (80/68/EEC)

EC Directive: *Nitrates* (91/676/EEC)

EC Directive: *Urban Waste Water Treatment* (91/271/EEC, amended by 98/15/EEC)

EC Directive: *Water Framework* (2000/86/EEC)

Forestry Authority: *The UK Forestry Standard: The Government's Approach to Sustainable Forestry* (1998)

Forestry Commission: *England Forestry Strategy: A New Focus for England's Woodlands*

Forestry Commission: *Forests and Water Guidelines (3rd Edition)* (1997)

HMSO: *Biodiversity: the United Kingdom Steering Group Report* London, 2 Vols. (1995)

HMSO: *Control of Pesticide Regulations* (1986) SI 1510

HMSO: *Control of Pollution Act* (1974)

HMSO: *Control of Pollution (Amendment) Act* (1989)

HMSO: *Countryside and Rights of Way Act* (2000)

HMSO: *Environmental Protection Act* (1990)

HMSO: *Health and Safety at Work Act* (1974)

HMSO: *Home Energy Conservation Act*

HMSO: *Land Drainage Act* (1991)

HMSO: *National Waste Strategy* (2000)

HMSO: *Radioactive Substances Act* (1993)

HMSO: *Reducing Emissions of Sulphur Dioxide: A Strategy for the United Kingdom* (1996)

HMSO: *Salmon and Freshwater Fisheries Act* (1975)

HMSO: *Sludge (Use in Agriculture) Regulations* (1989) SI 1263

HMSO: *The Control of Pollution (Special Waste) Regulations* (1980) SI 1709

HMSO: *The Environment Act* (1995)

HMSO: *The Forests & Water Guidelines* (1993)

HMSO: *The Producer Responsibility Obligations (Packaging Waste) Regulations* (1997)

HMSO: *The Special Waste Regulations* (1996) SI 972

HMSO: *Waste Management Licensing Regulations* (1994) SI 1056

HMSO: *Water Resources Act* (1991)

HMSO: *Wildlife and Countryside Act* (1981) HO-6/94-5k-CJTG

Ministry of Agriculture, Fisheries and Food: *Code of Good Agricultural Practice for the Protection of Air* (1992)

Ministry of Agriculture, Fisheries and Food: *Code of Good Agricultural Practice for the Protection of Soil* (1993)

Ministry of Agriculture, Fisheries and Food: *Code of Good Agricultural Practice for the Protection of Water* (1993)

Ministry of Agriculture, Fisheries and Food: *Code of Practice for the Safe Use of Pesticides on Farms and Holdings* (1990)

Ministry of Agriculture, Fisheries and Food: *Controlling Soil Erosion: an advisory booklet for the management of agricultural land* PB3280

Ministry of Agriculture, Fisheries and Food: *Controlling Soil Erosion: an advisory leaflet for preventing erosion caused by grazing livestock in lowland England* PB4091

Ministry of Agriculture, Fisheries and Food: *Controlling soil erosion: a field guide for an erosion risk assessment for farmers and consultants* PB4092

Ministry of Agriculture, Fisheries and Food: *Controlling soil erosion: a manual for the assessment and management of agricultural land at risk of water erosion in lowland England* PB4093

National Audit Office: *Inland Flood Defence, Report HC 299* (2001)

Somerset Air Quality Steering Group: *First Stage Air Quality Review and Assessment* (1998)

Somerset County Council: *Structure Plan*

Somerset County Council: *Making a Start – Somerset Waste Local Plan – Report of survey and key issues*

Taunton Deane Borough Council: *Air Quality Review and Assessment in Taunton Deane Second Stage (Consultation document)* (March 2000)

Taunton Deane Borough Council: *Air Quality Review and Assessment in Taunton Deane Third Stage* (September 2000)

Taunton Deane Borough Council: *Taunton Deane Local Plan*

Vincent Wildlife Trust: *The Water Vole (Arvicola terrestris) in Britain (1989-1990): Its Distribution and Changing Status* ISBN –0-94-6081-23-9

United Kingdom Climate Change Impact Review Group: *A Review of the Potential Effects of Climate Change in the United Kingdom* (1996)

Appendix 5: Environment Agency Publications

A Guide to Information Available to the Public (1996)

A Guide to Sustainable Urban Drainage (1997)

A Price Worth Paying: The Environment Agency's Proposals for the National Environment Programme for Water Companies 2000–2005; a Submission to Government (May 1998)

Agreeing Access to Water for Canoeing (1999)

1998/99 Annual Environmental Report for the Agency's Own Activities (1999)

Aquatic Eutrophication in England and Wales: A Proposed Management Strategy Consultative Report (1998)

Aquatic Weed Control (1997)

Baltmoor Wall (1998)

Conservation Designations in England and Wales (1998)

Corporate Plan 2001/02 (2000)

Corporate Plan Summary 2001/02 (2000)

Educational Resources for Schools, Colleges and Environmental Centres (1997)

Education Resources for Teachers (1999)

Enhancing Biodiversity (1999)

Environmental Planning Issues in North Wessex (2000)

Farm Waste Minimisation (1997)

Floodline (1999)

Flood Warning Information (1999)

Freshwater Crayfish in Britain and Ireland (1999)

Garden with Care and Protect the Environment (1996)

General Guide to the Prevention of Water Pollution (1998)

Green Shoots: Our Vision for Environmental Education

Groundwater Regulations (1999)

Guidance for the Control of Invasive Plants near Watercourses (1996)

Guidance Notes for Riparian Landowners (1996)

Identifying Freshwater Crayfish in Britain and Ireland (1999)

Integrated Pollution Prevention and Control (1998)

Japanese Knotweed: Guidance for Householders and Landowners (2001)

Lessons Learned: Autumn 2000 Floods (2001)

Liaison with Local Planning Authorities (1997)

Living on the Edge: a Guide to the Rights and Responsibilities of a Riverside Owner (1998)

Local Agenda 21 (1998)

Looking After Our Rivers (1996)

Make Your Own Compost (1997)

Making Your Home and Garden More Water Efficient (1998)

Managing Maize: Environmental Protection with Profit (1997)

Managing Water Abstraction – The Catchment Abstraction Management Strategy process (April 2001)

Managing Water Abstraction: Towards a Shared Strategy – Consultation Response (Jan 2001)

National Air Quality Strategy: The Role of the Agency (1998)
Nature's Way: A Guide to Surface Water Best Management Practices
Otters and River Habitat Management (1999)
Phytophthora Disease of Alder (1997)
Policy and Practice for the Protection of Floodplains (1997)
Policy and Practice for the Protection of Groundwater (1998) J40899 4/98
Pond Heaven (1997)
Ponds and Conservation (1998)
Producer Responsibility Obligations (Packaging Waste) Regulations (1999)
Reducing Air Pollution; Improving Air Quality (1999)
Review of Flood Defence Practices on the Somerset Levels and Moors (1999)
River Tone Environment News (1999)
River Tone LEAP Action Plan (2000)
Saving Water: On the Right Track (1999)
Saving Water: On Your Farm (1999)
Saving Water: Taking Action (1997)
Severn Estuary Strategy: Severn Estuary Strategy Joint Issues Report (1998)
Severn Vale LEAP Action Plan (2000)
Somerset Levels and Moors – Review of Flood Management Practices (April 2001)
Somerset Levels and Moors Water Level Management Action Plan (1999)
Somerset Levels and Moors Water Level Management Strategy Review (1999)
Stanmoor Bank (1998)
State of the Environment of England and Wales – Coasts: A Summary Report (1999)
State of the Environment of England and Wales – Freshwaters: A Summary Report (1998)
Summary of Public Consultation for the River Tone LEAP (2000)
Sustainable Urban Drainage (SUDS) (1999)
The Taunton Flood Plan Public Information Leaflet (2001)
The Tone Catchment Abstraction Management Strategy Leaflet (June 2001)
The Environment Agency and Sustainable Development (1996)
The River Tone and the Riverside Development at Hankridge Farm (1997)
Understanding Buffer Strips (1996)
Understanding Riverbank Erosion (1998)
Waste Minimisation and Recycling Directory: North Wessex Area (1998)
Water Resources for the Future – A strategy for South West Region (March 2001)

Appendix 6: The Agency and Public Information

We are committed to being an open organisation and will provide information about our decisions and actions, and ensure consultation for our customers on plans and reports. Our Customer Charter sets out how we aim to achieve this commitment. We must maintain a set of public registers that hold information on the activities we regulate and on the monitoring we carry out. In addition to the information we place in registers, we make available most other environmental information that we hold.

We have produced an information guide available to the public that sets out what information is available and how to obtain it (see above list). Information is usually provided free of charge, but for large and complex requests we may charge for staff time and materials. Confidential information, incomplete or draft reports and information where disclosure may lead to environmental damage are generally not available.

For a copy of any of the above Agency publications or for information on other documents that we produce, please contact:

The Customer Contact Team
Environment Agency
Rivers House
East Quay
Bridgwater
Somerset TA6 4YS

Tel: 01278 457333

General Enquiries:
For general information about the Environment Agency, or information about a specific matter, please contact our Customer Contact Team on 01278 457333.

Internet:
For general information about the Environment Agency including our national State of the Environment Report please visit our website at:
http://www.environment-agency.gov.uk

Environment Agency Leaflets and Publications

Please tick the boxes next to the publications you require. To order, cut out this page, fill in your details overleaf, and return the whole page to:

Customer Contact, Environment Agency, Rivers House, East Quay, Bridgwater, Somerset, TA6 4YS

Abstraction Licensing and Water Resources - a guide for potential abstractors	☐
Accessing Information - the Environment Agency's Pollution Inventory	☐
Addressing Climate Change	☐
Agreeing Access to Water for Canoeing	☐
Agricultural Pesticides and Water	☐
An Environmental Vision - the Environment Agency's contribution to sustainable development	☐
Anglers and the Environment Agency	☐
Angling and Wildlife - golden rules	☐
Aquatic Eutrophication (leaflet)	☐
Aquatic Eutrophication - a management strategy	☐
Aquatic Weed Control - best practice guidelines	☐
Are You Doing Your Bit for the Environment?	☐
Blue-green Algae	☐
Buyer Beware - handling and purchase of wild salmon and sea trout	☐
Charging for Information	☐
Chemical Pollution - how to avoid it	☐
Classification of Special Waste	☐
Coarse Fisheries Strategy	☐
Conservation Designations in England and Wales	☐
Contaminated Land Remediation	☐
Customer Charter - a guide to our services and standards	☐
Disposal of Cut Vegetation - best practice guidelines	☐
Education Resources for Schools	☐
Enjoy Your Garden - care for our environment	☐
Environment Agency and Land Contamination	☐
Environment Agency and the use of Licences to Prevent Pollution	☐
Environment of England and Wales - a snapshot	☐
Environmental Prospectus for South West England	☐
Farm Waste Minimisation	☐
Farm Pollution - how to avoid it	☐
Farm Waste Regulations	☐
Flood Warning Information - what to do if your property is at risk	☐
Freshwater Fisheries and Wildlife Conservation - good practice guide	☐
Garden with Care and Protect the Environment	☐
General Guide to the Prevention of Water Pollution	☐
Genetic Modification and Sustainability	☐
Groundwater Protection Policy	☐
Groundwater Protection Zones	☐
Groundwater Regulations	☐
Guidance for the Control of Invasive Plants near Watercourses	☐
Guidance Notes for Riparian Owners	☐
Guide to Good Environmental Practice for Trading Estates and Business Parks	☐
Habitats Directive - what it means for us and you	☐
Have Fun, Have a Care - information for river canoeists	☐
Home Pollution - how to avoid it	☐
How to Reduce Water Use	☐
Identifying Freshwater Crayfish in Britain and Ireland	☐
Identifying Freshwater Invertebrate Life	☐
Integrated Pollution Control - introductory guide	☐
Landfill Directive	☐
Lessons Learned - the autumn 2000 floods	☐

Living on the Edge - a guide for riverside owners	☐
Local Agenda 21	☐
Make Your Own Compost	☐
Making the Right Connection - avoiding water pollution	☐
Making Your Home and Garden More Water Efficient	☐
Managing Maize - environment protection with profit	☐
Managing Water Abstraction - The Catchment Abstraction Management Strategy Process	☐
Mink	☐
Mobile Sheep Dipping - a guide to reducing pollution risks	☐
National Eel Management Strategy	☐
Nature's Way - a guide to surface water best management practices	☐
New Packaging Regulations - how do they affect you?	☐
North Wessex Area Industrial and Commercial Waste Minimisation and Recycling Directory	☐
Oil Care Code	☐
Phytophthora Disease of Alder	☐
Policy and Practice for the Protection of Groundwater	☐
Policy and Practice for the Protection of Floodplains	☐
Ponds and Conservation	☐
Pond Heaven- how to create your own wildlife pond	☐
Preventing the Spread of Crayfish Plague in the South West	☐
Producer Responsibility Obligations - guidance	☐
Protection through Partnership - North Wessex	☐
Recovering the Cost of Pollution	☐
Safe Storage and Disposal of Used Oils	☐
Saving Water - on the right track	☐
Sheep Dipping	☐
Silage Pollution - how to avoid it	☐
Silt Pollution - how to avoid it	☐
Special Waste Regulations - technical assessment of waste	☐
Spray Irrigation - information for potential irrigators	☐
Stocking Fish - a guide for fishery owners and anglers	☐
Sustainable Urban Drainage - a guide	☐
Waste Minimisation - an environmental good practice guide for industry	☐
Water Plants - their function and management	☐
Water Pollution Incidents in England and Wales	☐
Water Resources for the Future - a strategy for South West Region	☐
What a Waste	☐
Will you be affected by the Landfill Directive?	☐
Understanding Buffer Strips	☐
Understanding Riverbank Erosion	☐
Useful Information for Angling Clubs	☐

Name.....

Address.....
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Please note: The above list is a selection of Environment Agency publications, subject to availability. If you are interested in an area of our work which is not covered, please phone our Customer Contact Team on **01278 457333**.

Further information is also available on our website: **www.environment-agency.gov.uk**.

CONTACTS:

THE ENVIRONMENT AGENCY HEAD OFFICE

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD.
Tel: 01454 624 400 Fax: 01454 624 409

www.environment-agency.gov.uk
www.environment-agency.wales.gov.uk

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN
Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

MIDLANDS
Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

NORTH EAST
Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

NORTH WEST
Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

SOUTHERN
Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

SOUTH WEST
Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

THAMES
Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

WALES
Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0EY
Tel: 029 2077 0088
Fax: 029 2079 8555

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE
0845 933 3111

ENVIRONMENT AGENCY FLOODLINE
0845 988 1188

ENVIRONMENT AGENCY EMERGENCY HOTLINE
0800 80 7060

ENVIRONMENT AGENCY

All enquiries to:
North Wessex Area
Environment Agency
Rivers House
East Quay
BRIDGWATER
Somerset
TA6 4YS

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