



Tweed Catchment
Management Plan





Revised and updated 2010

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EXECUTIVE SUMMARY

The Tweed Catchment Management Plan (CMP) is a single management framework for the many interacting and interdependent ecosystem services provided by the waters of the Tweed catchment. It offers a way forward to integrate the different administrative, planning and regulatory systems and multiple demands on the catchment. Recognising the links between the health of our rivers and land use, it aims to enable all those with an interest in the river to communicate, liaise and work more effectively together. The CMP provides the framework and context to enable a wide range of interests to determine their role in safeguarding the vital ecosystem services that the waters and wetland habitats of the Tweed provide. It should be used to guide and develop the future work programmes of all those involved with the river’s management and development and is crucial in obtaining funding to deliver specific actions outlined in the management framework.

Developed through extensive consultation and public participation, the Tweed CMP is only part of the more all-encompassing Tweed Catchment Management Planning Initiative (TCMPI), in that it sets out a management framework to help the aims of the TCMPI to be achieved.

Only through the CMP’s development and implementation will we continue to achieve the aims and goals of the TCMPI as set out below. Since 2003,

it has become increasingly clear that the TCMPI is more than just a Tweed Forum initiative – it is at the heart of the Forum’s existence and provides strategic focus and direction for everything we do. It offers a common goal for the Forum membership, binds the members together, and most importantly brings expertise, personnel and funding to achieve action on the ground. More information about how Tweed Forum operates can be found in the Business Plan at www.tweedforum.com/publications/content/pdf/bp


AIMS AND GOALS OF THE TCMPI

Conserve, enhance and, where appropriate, restore the total river environment through effective land and resources planning across the Tweed catchment.

In achieving this it will:

- Enable actions on the ground, which benefit both the water environment and its users
- Engage a wide range of parties from government organisations to local communities, interest groups and landowners
- Build a self generating consensus for action
- Harmonise land and water uses within the catchment to an agreed set of common objectives






The management framework of the CMP is set out under a series of 7 strategic aims. These cover the topics of water quality, water quantity, habitats and species, riverworks, flood management, tourism and recreation and, finally, the delivery and development of the CMP. Following the 2008/09 review of the CMP, it became evident that the majority of Tweed stakeholders desired integration of the CMP process with the Water Framework Directive's river basin planning process as far as possible, therefore delivery and development of the CMP, in this phase of the TCMPI, will also take into consideration the underlying aspirations and processes of the Solway Tweed River Basin Management Plan and the supplementary Tweed Area Management Plan (AMP) www.sepa.org.uk/water/river_basin_planning.aspx. Each of the seven strategic aims sets out a broad, aspirational statement for a given management area for the next 3 years. Many of the strategic aims will help the efficient and effective implementation of national and international legislation including the Water Framework Directive (WFD). While for ease they have been presented separately, it is vital that none of the strategic aims are viewed in isolation as many are inextricably linked.

Targets and actions to tackle specific issues and opportunities identified under the strategic aims are set out in an action table. Key organisations have been identified as contributing to a given action in partnership with other vital parties such as farmers, landowners and community interests and, where possible, timescales have also been given. Implementation of the CMP is overseen by the Tweed Forum Executive Committee plus specialist sub-groups and facilitated and coordinated by all Forum staff. As part of the review process, progress towards actions is monitored, priorities for action re-examined, additional actions and targets included where appropriate and key funding requirements identified.

Since the launch of the Plan in 2003, a large amount has been achieved across a very wide spectrum and Tweed Forum has demonstrated the value of the partnership approach in achieving common goals and multiple benefits (see v.ii for more details of the two reviews conducted in 2005/6 and 2008/9). Synergy with the requirements of the WFD is fundamental, and the TCMPI will be instrumental in helping deliver the objectives of the Solway Tweed River Basin Management Plan (RBMP), however the CMP enables us to take a truly holistic view and incorporate key issues such as recreation, access and flood defence that lie largely outwith the scope of the RBMP. Integration with the Floods Directive and the increasing influence of climate change on all areas of work, are challenges we face in both the short and long term. Ultimately, this document ensures that we are addressing the key issues, in the right place and at the right scale; to bring about long lasting benefits on multiple strategic fronts.

For more information on the TCMPI and the work of Tweed Forum, please contact:

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Strategic Aim 1 – WATER QUALITY

Maintain and enhance the water quality of the Tweed Catchment

Strategic Aim 2 – WATER RESOURCES

Ensure that there is water available for abstraction while protecting the needs of the natural environment

Strategic Aim 3 – HABITATS & SPECIES

Maintain and enhance the status and distribution of riverine, riparian and wetland species, and habitats of conservation concern

Strategic Aim 4 – RIVERWORKS

Ensure all riverwork operations respect the physical, ecological and aesthetic integrity of the river system

Strategic Aim 5 – FLOOD MANAGEMENT

Adopt a catchment-based approach to flood management which helps to protect the people, property and prosperity of the Tweed catchment, whilst respecting its physical, ecological and aesthetic qualities

Strategic Aim 6 – TOURISM & RECREATION

Promote the sustainable development of river-related tourism and recreational activities to accommodate a variety of interests

Strategic Aim 7 – JOINT CMP/AMP DELIVERY & DEVELOPMENT

Ensure the delivery and development of the Tweed Catchment Management Plan and Tweed Area Management Plan

STRATEGIC AIMS

Current Status	Key Areas	Key Policy & Process
WATER QUALITY		
Majority of Tweed catchment good to excellent water quality. However there are a number of localised areas of nutrient enrichment resulting in degraded water quality and pollution.	<ul style="list-style-type: none"> • Diffuse agricultural pollution • Impact of industrial and residential development • Failure to meet WFD good ecological status targets 	WFD Nitrates Directive Urban Waste Water Directive Habitats Directive CAR CSF
WATER QUANTITY		
The Tweed catchment is key for meeting public water-supply demands in the Borders and Edinburgh, supplying agriculture and industry and is a vital component of many habitats which support a rich diversity of species.	<ul style="list-style-type: none"> • Ensuring efficient use of water • Ecological impact of reservoir release regimes 	WFD Habitats Directive CAMS CAR
HABITATS & SPECIES		
Great diversity of riverine, wetland and riparian habitats and species, many of which are recognised through local, national and international conservation designations.	<ul style="list-style-type: none"> • Insufficient baseline data • Loss of key habitats such as wetlands, blanket bog, raised bogs, wet woodlands, riparian woodlands and ponds • Non-native, invasive species 	Habitats Directive WFD LBAPs
RIVERWORKS		
Channel modification carried out throughout history, early on to provide water power for the textile industry and more recently to tackle river management issues such as bank erosion, gravel management, flood alleviation, bridge protection and instream habitat improvements.	<ul style="list-style-type: none"> • Lack of understanding of the river system and its response to riverworks • Lack of coordinated advice and guidance for those considering riverworks • Ensuring streamlined and efficient regulation 	WFD Habitats Directive Tweed Riverworks Group CAR
FLOOD MANAGEMENT		
The catchment has a long history of flooding with recent severe floods occurring in 1948, 1977, 1984 and 2008. Currently 9% of the catchment's properties are considered at risk from flooding, mostly from riverine as opposed to coastal flooding.	<ul style="list-style-type: none"> • Development on the floodplain • Lack of a catchment wide approach to flood management issues • The need for Sustainable Flood Management • Potential impact of new developments and land use change on frequency and intensity of flood events 	FLAG WFD Structure and Local Plans Floods Directive Sustainable Flood Management
TOURISM & RECREATION		
Attracting international, national and local visitors, the Tweed catchment is particularly well endowed with outdoor recreational opportunities, which include fishing, walking, cycling, canoeing and a wealth of heritage sites.	<ul style="list-style-type: none"> • Potential conflict between conserving and enhancing the Tweed catchment and increasing tourism and recreational facilities in the area • Potential conflict between river users • Unrealised potential of tourism and recreational activities, based in and around rivers of the catchment, to contribute to the local economy 	Land Reform (Scotland) Act CROW Act Tourism Strategies
DEVELOPMENT & DELIVERY		
Production of the CMP is only the beginning of the process of moving towards the goals and aspirations it sets out. Need to think how we work together as individuals and organisations and commit adequate time and resources.	<ul style="list-style-type: none"> • Lack of effective stakeholder engagement and interaction • Current fragmented, sectoral approach to water resource management • Lack of adequate resources for development and delivery of the CMP 	Tweed Forum WFD and river basin planning
CROSS-CUTTING THEMES		
Climate change	<ul style="list-style-type: none"> • Impact of climate change on the freshwater environment • Level of confidence in climate change predictions 	Climate Change Act Local Climate Impact Profile UK Climate Impacts Programme UK Climate Projections
Planning and Development	<ul style="list-style-type: none"> • Impact of inappropriate planning and development legislation/policy on freshwaters 	UK planning law



FOREWORD

The Tweed is a river of international renown and throughout history its special qualities have inspired verse and literature. Straddling the border between Scotland and England, the river has served as a focus for the economic, cultural and landscape development of the area from the rivulets high in the hills, down to the broad expanses of the estuary. Today, Tweed is a major economic and environmental resource, playing a vital role in the landscape, tourism, wildlife, water supply, drainage and recreation of the area. It harbours a rich variety of flora and fauna, is an internationally famous salmon river and rich agricultural area, attracting thousands of visitors each year and providing drinking water for the Borders and Edinburgh.

In managing a resource with so many interacting and interdependent issues, it is essential to include all those activities associated with the river and ensure that all interested parties are given the opportunity to become involved. This has been the foundation for the Tweed Forum since its inception and underpins the Tweed Catchment Management Plan (CMP) in its development and delivery.

‘ The Forum has been recognised by the UNESCO HELP programme as an exemplar of best practice in catchment management ’

It is now some six years since the Plan was published and a huge amount has been achieved by the Forum partners. In addition the political landscape has changed very rapidly with the arrival of the Water Framework Directive and the Floods Directive. Thus a thorough review and update of the CMP was timely and this revised edition updates all the actions and targets, whilst accommodating new policy frameworks such as the Solway Tweed River Basin Management Plan and growing issues such as climate change and development pressures.

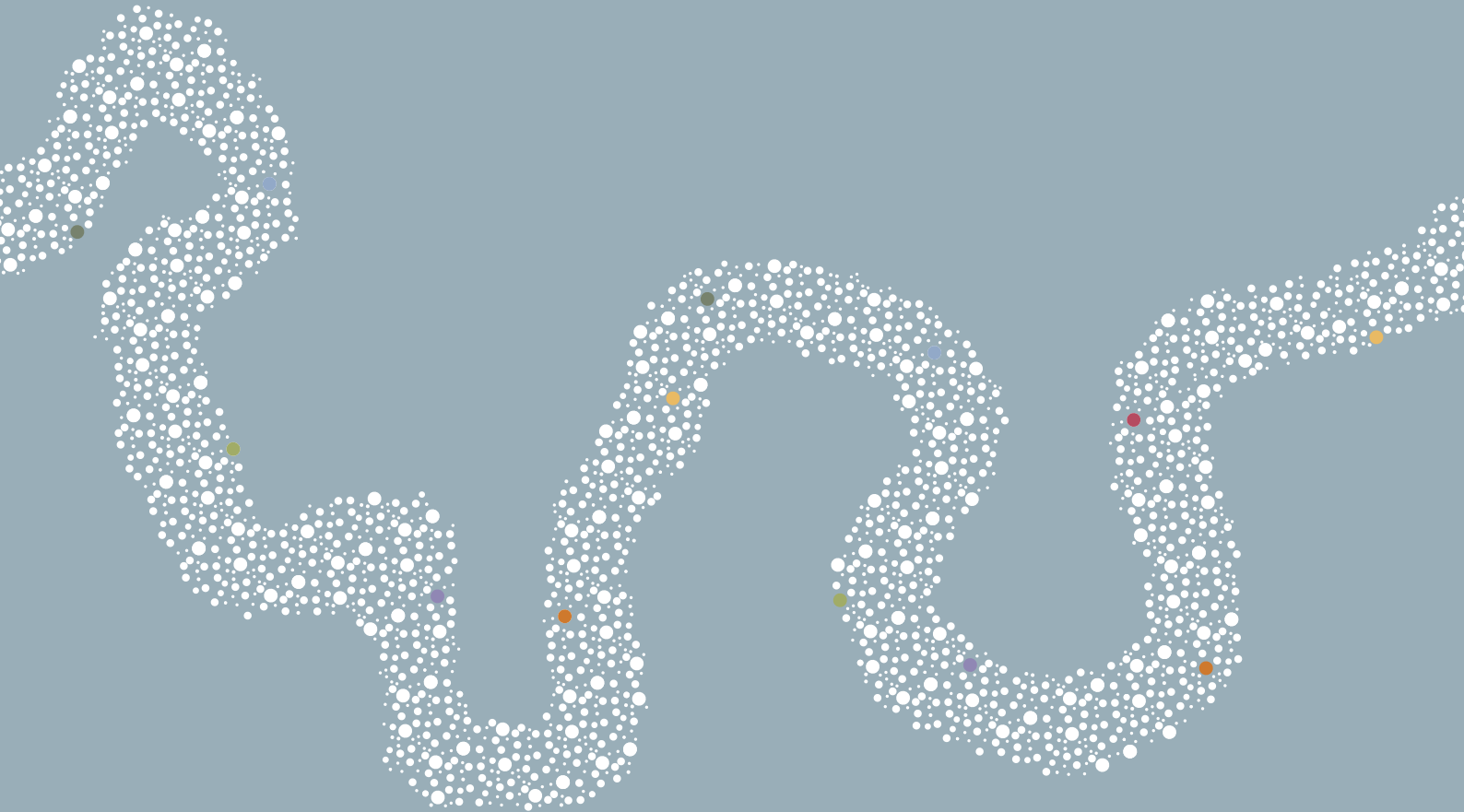
The CMP has shown itself to be a very dynamic document and this is testament to the amount that is being achieved by the partnership in progressing the targets and actions laid out within the CMP. Tweed Forum has shown what can be achieved at the catchment scale by working in partnership to address common issues that address multiple strategic objectives. The Forum philosophy and function has never been more relevant and this is borne out by the fact that it has been recognised by the UNESCO HELP programme as an exemplar of best practice in catchment management.

However, the Forum is nothing without an active membership. Servicing such an ambitious document as the CMP is hard work and we would like to thank all those who have contributed to keeping the Plan up to date and fit for purpose. Our track record over the last six years has shown the giant strides we have made in managing such a key resource and the central role we have to play in the years to come.

Bob Kay CBE, Chairman



INTRODUCTION





INTRODUCTION

i.i Background

The special qualities of Tweed have long been celebrated in literature with few rivers being more lauded. Over the years, writers such as Sir Walter Scott, James Hogg and William Wordsworth have been inspired by its richness of natural beauty and enchanting scenery. For Scott “no music sounded so sweetly as Tweed gurgling over its stony bed”.

Today, Tweed is subject to increasing pressures and demands from a wide range of activities such as agriculture, tourism, recreation and development. All of these need to be managed if the special qualities and unique character of the area are to be secured and ecosystem services sustained. The concept of “ecosystem services” refers to those benefits or “services” that natural habitats and processes provide for humanity, such as the provision of oxygen from plants, water for consumption or carbon storage. It seeks to place these firmly in the economic arena by, where possible, giving a monetary value to each and every ecosystem service that a given resource provides.

Tweed provides a myriad of ecosystem services from drinking water to agricultural irrigation; from world famous fishery to the natural filtration functions of wetlands. While there are already a number of organisations concerned with river management or the many activities that may affect the river environment, each has its own remit and, in a cross-border catchment such as the Tweed, many work under different legislative arrangements. In addition, many issues will only be successfully addressed by engaging the wider community, with farmers and landowners having a vital role to play.

In May 2001, members of Tweed Forum recognised that there was no single management framework to deal with the many interacting and interdependent environmental resources of the catchment. In addition there were few opportunities for vital parties such as landowners, farmers and local communities to become involved in the catchment’s management. It was therefore decided that there was a need to consolidate the partnerships already at work in the catchment and develop a truly integrated framework that enabled all aspects pertaining to Tweed to be considered in a holistic context and engaged with the wider community.

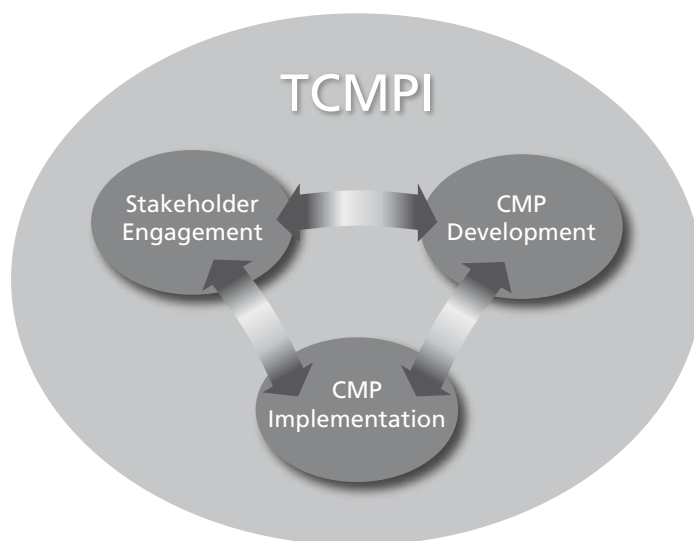
i.ii Catchment Management Planning for Tweed

A catchment is defined as the geographical drainage area of a river and its tributaries. Although the importance of a catchment as a management unit for water resources is increasingly recognised, catchment boundaries rarely match administrative boundaries. As a cross-border catchment, Tweed comes under a number of administrative and regulatory systems. The majority of the catchment lies in Scotland and is principally administered by Scottish Borders Council, the Scottish Environment Protection Agency and Scottish Natural Heritage. Across the border, Northumberland County Council, the Northumberland National Park Authority, Natural England and the Environment Agency have administrative responsibilities. Scottish Water and Northumbrian Water are the two water authorities operating within the catchment.

Catchment Management Planning offers a way forward to integrate the different administrative, planning and regulatory systems and multiple demands on a river catchment. It recognises the links between the health of our rivers and land use and can enable all those with an interest in the river to communicate, liaise and work more effectively together. It promotes the development of greater understanding between parties and allows them to work towards shared objectives to achieve sustainability and improved environmental quality. Indeed, the process of catchment management planning has become so valued that it is a vital component of the European Union Water Framework Directive (WFD), the chief legislation governing management of the freshwater environment, and an important development in the Tweed Catchment Management Plan (CMP) has been integration with the river basin management plans required under the WFD, particularly the Tweed Area Management Plan (AMP) (see i.vii).

It should be noted that the CMP is only part of the more all-encompassing Tweed Catchment Management Planning Initiative (TCMPI), as it represents a management framework to deliver the aims of the TCMPI, see Figure 1.

Figure 1 The relationship between TCMPI and CMP



The CMP provides the framework and context to enable a wide range of interests to determine their role in securing the future of the Tweed. It has been, and will continue to be, used to guide and develop the future work programmes of all those involved with the river's management and development and has also helped in obtaining funding to deliver specific actions outlined in the management framework. Only through the CMP's continued development and implementation will we continue to move towards the goals of the TCMPI set out below.

Box 1 Aims and Goals of the TCMPI

AIMS AND GOALS OF THE TCMPI

Conserve, enhance and, where appropriate, restore the total river environment through effective land and resources planning across the Tweed catchment.

In achieving this it will:

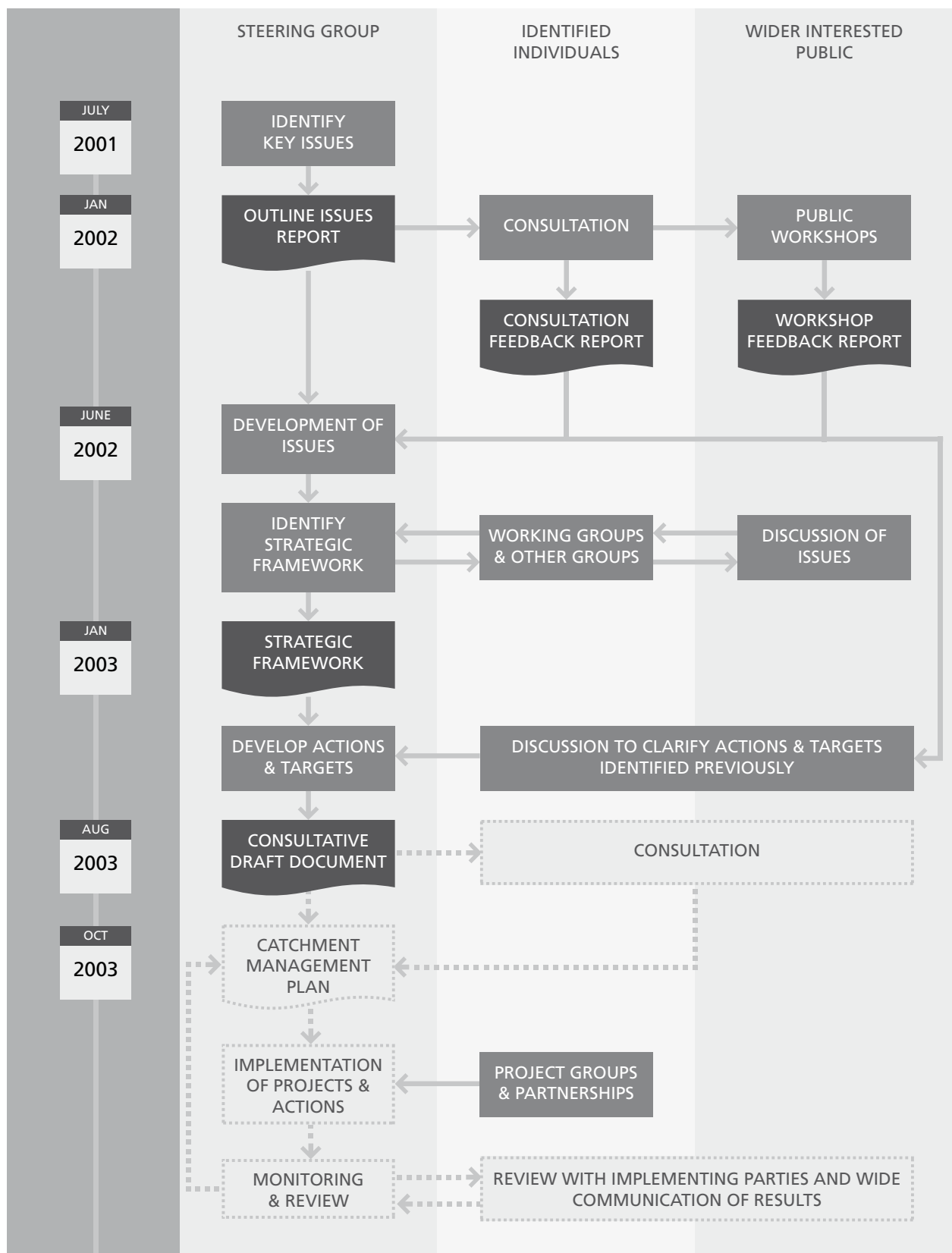
- Enable actions on the ground, which benefit both the water environment and its users
- Engage a wide range of parties from government organisations to local communities, interest groups and landowners
- Build a self generating consensus for action
- Harmonise land and water uses within the catchment to an agreed set of common objectives

i.iii Development of the Catchment Management Plan

The framework for action detailed in the CMP is based upon wide ranging consultation and participation, which has enabled the joint definition of issues and evolution of solutions. The framework was initially developed through a partnership, involving a dedicated project officer and a core steering group comprising representatives from Tweed Foundation (TFn), the Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH), the Environment Agency (EA) and Scottish Borders Council (SBC) and began with a consultation exercise which took place over a 4-month period beginning in January 2002. The aim of the consultation was to establish those issues and opportunities that



Figure 2 Development of the CMP (Hartley 2003)



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people wanted to see taken forward by the process. It included a formal consultation document, a leaflet and 11 public participation workshops and enabled a number of ideas, priorities and goals to be generated. These were collated and developed further by a series of working groups to arrive at a set of draft strategic aims and objectives. Suggestions made during the consultation were all incorporated into the CMP, except where it was felt they fell outside the plan's scope (see i.iv). Further consultation then took place on the draft strategic aims and objectives and all interested parties were encouraged to recommend actions to take forward the aspirations set out in the draft strategic aims and objectives. The process of developing the CMP is presented in Figure 2.

i.iv Scope and structure of the Catchment Management Plan

The Tweed CMP covers the entire 5,000km² of the cross-border Tweed catchment and includes the Eye catchment to the north east of the Tweed catchment (see Figure 3). Looking beyond the confines of the river channel, the TCMP is concerned with those land management practices that have the potential to impact on the overall quality and quantity of the Tweed's water resource as well as riverine habitats and species, including wetland and riparian areas.

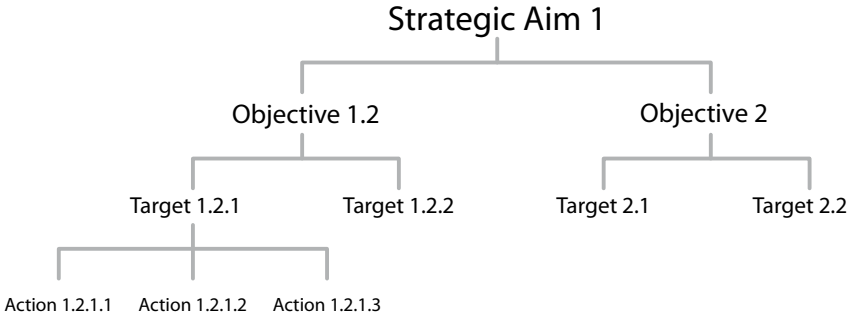
The CMP sets out non-statutory management proposals for the Tweed catchment under a series of seven strategic aims that cover water quality, water quantity, habitats and species, riverworks, flood management, tourism and recreation and joint CMP/AMP delivery and development. While they have been presented separately, it is vital that none of the strategic aims is viewed in isolation. For example, activities to improve water quality will clearly have implications for the habitats and species of the catchment, while riverworks issues are inextricably linked to fisheries management. The key to Tweed Forum's success in delivering the TCMP will be the ability by all those involved to recognise and appreciate these links.

Figure 3 Geographical extent of the Tweed Catchment Management Plan



The structure of the CMP management framework includes strategic aims, objectives, targets and actions (see Figure 4). Each of the seven strategic aims set out a broad, aspirational statement for a given management area for the next 3 years. Any management decisions and actions taken within this time should be in agreement with these aims. The current status for the relevant topic is described under each strategic aim and more information given on relevant policy where appropriate. For each of the strategic aims there are a number of objectives, which broadly indicate how the aims of the Plan will be pursued. Although set in the context of current policy, they are flexible within the wider aims of the Plan and will be responsive to new information and changes such as shifting economic, political and physical pressures. Key issues and opportunities are described under each of the objectives. The targets of the CMP represent achievable steps towards those aspirations set out in the strategic aims and objectives. The actions are actual activities and initiatives necessary to meet the targets. Both the targets and the actions should be viewed as steps towards reaching the aspirations set out in the strategic aims and objectives. They will be reviewed at appropriate intervals and progress monitored (see i.vi).

Figure 4 Structure of CMP Management Framework



For each action, key organisations have been identified who will be involved in taking it forward in partnership with other vital parties such as farmers, landowners and community interests. Timescales are also given for specific actions where possible, although it is recognised that some actions require ongoing commitment while others will be heavily dependent upon overriding political and economic circumstances.

While detailed information is given on specific issues and opportunities, it was felt it was not the place of the CMP to give a detailed catchment description. However, a list of useful references is included where more detailed information on the catchment can be obtained. In addition, information on catchment characteristics such as water quality, geology, habitats and species can be found on Tweed Forum’s website www.tweedforum.com and a catchment “Fact Pack” is available from the Tweed Forum website. Also, a glossary of terms and an acronym and abbreviations index may be found in Appendices A and B respectively, whilst a list of the key organisations involved with the TCMPI and their contact details may be found in Appendix C.

i.v Plan implementation

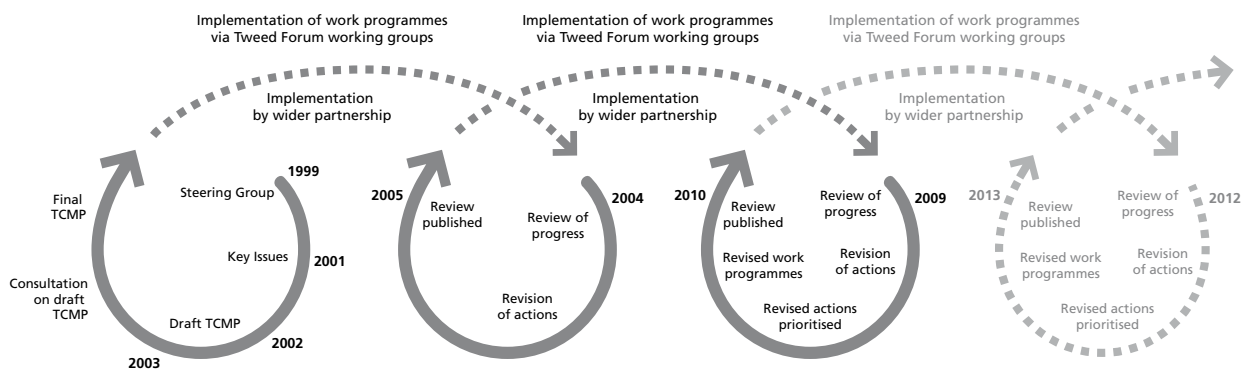
Following the launch of the CMP in 2003, the TCMPI has come to represent the core business of the Forum. Tweed Forum is managed by an Executive Committee who are responsible for key decision making and thus responsible for overseeing the Plan's implementation together with technical sub groups e.g. the "Riverworks Group". For each action, key organisations have been identified who will be involved in taking it forward and engaging other key players, such as farmers, landowners and community interests, whose role in achieving many of the actions is fundamental. Implementation has been coordinated and facilitated by a dedicated project officer since the Plan was launched in 2003. Some of the actions contained within the CMP have proved relatively quick and simple to take forward whereas others have proven more complex. For example, actions to collate information on wetlands have been steadily addressed since 2003, with the ultimate aim of informing future wetland restoration/creation, however it is only in 2010 that a comprehensive wetland strategy for the Tweed will be published, drawing together all of this work. While some of the actions of the CMP are the statutory responsibility of one organisation, others may require the partnership approach where a variety of interests come together to achieve the most effective and efficient solution. The Tweed Forum will play an important role in coordinating and facilitating partnership working and a key part of this process will be the completion of work programmes that summarise the priority targets and actions.

i.vi Monitoring and review

Ongoing monitoring and review of the CMP is a vital component of the catchment management process. The actions presented here are not set in stone. As some actions and targets are achieved, others will be changing, ensuring a truly responsive and dynamic process. Under the management of the steering group, the Forum has carried out reviews at appropriate timescales and ensured that all partners and participants concerned with implementation activities have been involved. As part of the review process, progress of actions is monitored, priorities for action re-examined, additional actions and targets included where appropriate and key funding requirements identified.

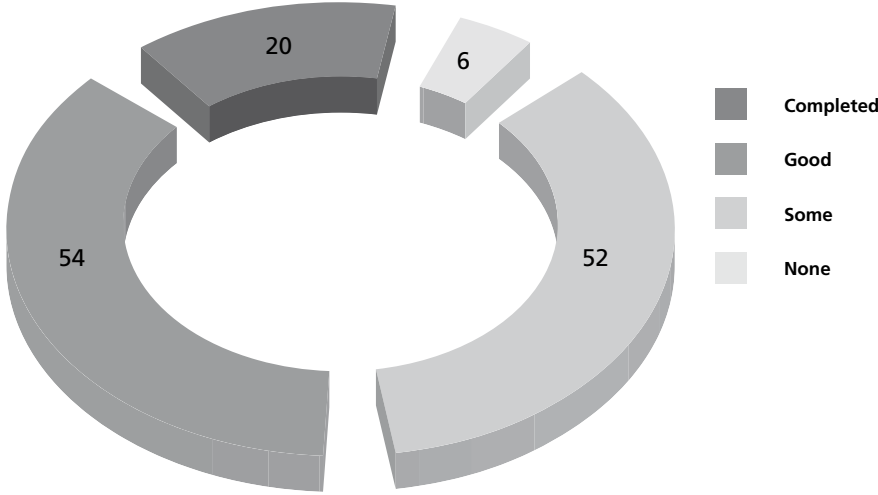
Since its launch in 2003 there have been 2 reviews of the CMP, in 2005 and 2009, making this the third iteration of the CMP (see Figure 5).

Figure 5 The iterative nature of the Tweed CMP



Both reviews have been published and distributed to all CMP partners, relevant organisations and local communities and are also available online – see www.tweedforum.com/cmp to download copies of the CMP Reviews. Figure 6 shows overall progress, from 2005 to 2009, towards achieving the CMP actions and, for a brief overview of one organisation’s progress towards the TCMPI, please see Box 2, where Tweed Forum’s progress is summarised.

Figure 6 Progress of all CMP Partners towards achieving CMP actions (2005-09)



Progress towards achieving CMP actions (%) 2005-2009

i.vii Links with relevant legislation, plans and guidance

The implementation of the European Water Framework Directive (WFD) has been the single most influential process since the launch of the CMP in 2003. The WFD requires member states to implement sustainable water resource management at the “river basin” (or catchment) scale which in turn should ensure the integration of landuse and water resource management, resulting in an improvement in water quality (see Box 3). The process by which these aims are delivered is termed “river basin planning” a term that may be considered synonymous, in many ways, with “catchment management planning”. As the river basin planning process has taken shape, a clear synergy between the river basin planning process and the TCMPI has become evident. Whilst it is recognised that the TCMPI goes outside the remit of the WFD (see Figure 7), a clear desire to integrate the two processes as far as possible was clearly expressed by both the Tweed CMP stakeholders and those engaged in river basin planning. With this in mind, work to synchronise both river basin planning and CMP implementation is currently underway.

The introduction of the WFD has also resulted in additional regulatory powers for SEPA through the Controlled Activities Regulations (CAR) 2005. CAR allows regulatory controls over activities such as engineering works and abstraction, in order to protect and improve the water environment in Scotland.

Other European legislation relevant to the TCMPI includes the Nitrates Directive, the Birds and Habitats Directive and the Floods Directive. In reviewing the CMP, discussions have taken place with SEPA, the EA, SNH, SBC and Natural England (NE) to ensure that targets and actions of the CMP will help the requirements of these European Directives to be met more effectively and efficiently in the Tweed catchment.

Box 2 Key achievements of the Tweed Forum and the TCMPI – 2003 to 2009

Over the last 6 years, Tweed Forum has developed a strong track record in delivery and adding value in the field of integrated catchment management. Key achievements include:

- The development and delivery of the £9 million Tweed Rivers Heritage Project on time, to budget and to standard (underspend of £2144 or 0.00023%). This is still considered a blue print for partnership working at the landscape scale by the Heritage Lottery Fund. Amongst other outputs this brought about 130km of river fenced and planted, 1400 hectares of woodland, wetland and moorland enhanced, 140,000 trees planted, 80 ponds created, 36km of hedgerow created, eradication of alien species along 300km of river etc.
- The development and servicing of the Tweed Catchment Management Plan, one of the most thorough and dynamic strategies of its kind in the UK. The Forum was recently selected as an exemplar of best practice under the UNESCO HELP programme (Hydrology for the Environment, Life and Policy), see Box 14.
- Identification and agreement, across a broad range of stakeholders, of priority issues within the catchment, with accompanying strategic delivery of practical measures and projects to deal with those issues including loss of habitats and biodiversity, diffuse pollution control, natural flood management etc.
- The servicing of working groups – such as the Riverworks Group - to help ensure streamlined regulation between agencies, on both sides of the border.
- Inputting at a policy level to key policy consultations as well as contributing to national steering/working groups in key catchment management areas.
- Ensuring integration of the CMP with other planning processes through inputting to the Local Biodiversity Action Plan (LBAP), river basin planning (WFD), Flood Liaison Group, Community Planning (New Ways) etc.
- Focusing on work that delivers multiple benefits on multiple strategic fronts (i.e. fulfilling targets under the Habitats, Water Framework and Floods Directive) and championing the ecosystem services philosophy.
- Leading the way in catchment scale control of invasive plant species at a UK level.
- Coordinating and developing two of the first Natural Flood Management demonstration sites in Scotland (Craik and Eddleston).
- Demonstrating the widespread application of the wetland filtration systems approach to controlling diffuse pollution.
- Assisting SEPA and the EA in engaging stakeholders in the River Basin Planning process, through co-delivery of the Tweed Area Advisory Group (AAG), a requirement in their River Basin Planning duties.
- Employing a facilitator to ensure that the SRDP environmental measures pertaining to water management are rolled out in a collaborative way and, crucially, ensuring that the right measures are taken up in the right places at the right scale.
- Communications with all stakeholders from small communities through to Ministerial level.
- Establishing a trading arm of the Forum to enable consultancy work to take place outside our immediate remit and thus raise funds to help ensure the continuation of the Forum.
- Facilitating and sourcing funding for a wide range of projects and crucially, multiplying contributions to achieve significant gearing and leverage. This is one of the most compulsive arguments/justification for the Forum approach. For example, over the last few years for every pound that SEPA contributed to the Forum a further £13 was added in terms of work (physical restoration, communication, education, research etc) that fulfils their strategic aims. Likewise with SNH, the gearing is 14 to 1.
- Ensuring a joined up approach and efficient use of available resources to maximise 'bang for buck'.



The TCMPI also complements and builds upon a number of regional statutory and non-statutory plans, many of which adopt principles from national and international strategies such as the UK Biodiversity Action Plan. Many agencies and organisations within the catchment have their own plans and strategies, which deal with issues such as fisheries, tourism or forestry. Guidance on key issues raised in the CMP, such as sustainable urban drainage, is also issued by a number of organisations and government departments. While it is not possible to list all of the plans, strategies and guidance here (see Appendix D for the key documents), they have been highlighted in the relevant sections of the CMP and, where appropriate, the TCMPI will contribute to their development and implementation. The TCMPI also has a key role to play in the integration of relevant plans, to ensure that common goals are delivered using a partnership approach.

Box 3 The European Water Framework Directive

The Water Framework Directive (WFD) 2000, seeks to achieve an integrated approach to the protection, improvement and sustainable use of the water environment. It applies to all surface freshwater bodies (including lochs/lakes and rivers), groundwater, estuaries and coastal waters and also encourages the water environment to be managed to a consistent framework throughout the European Union.

The Water Framework Directive establishes a framework for Member States to use to achieve the following aims for surface waters:

- prevent deterioration in status of water bodies;
- aim to achieve good ecological and chemical status in water bodies by 2015;
- aim to achieve good ecological potential for artificial and heavily modified water bodies by 2015;
- achieve the objectives and comply with the standards for protected areas, where relevant;
- reduce pollution from priority substances, discharges and emissions;
- cease losses of priority hazardous substances into the aquatic environment.

In summary, the environmental objectives for groundwater are to:

- prevent deterioration in status;
- aim to achieve good quantitative and chemical status by 2015;
- reverse any significant and sustained upward trend in pollutant concentrations;
- comply with objectives and standards for protected areas, where relevant;
- prevent or limit input of pollutants into groundwater.

The Water Framework Directive is implemented through river basin planning which introduces a six-yearly cycle of planning, action and review.

The first Solway Tweed river basin plan was published jointly by SEPA and the Environment Agency in December 2009 and the plan, including information on classification, maps and other data sources, can be found at www.sepa.org.uk/water/river_basin_planning.aspx.

Further information on the Water Framework Directive can be found on the European Union website (http://ec.europa.eu/environment/water/water-framework/index_en.html).

Figure 7 Scope of the Tweed Catchment Management Plan, in the context of the Solway Tweed River Basin Management Plan

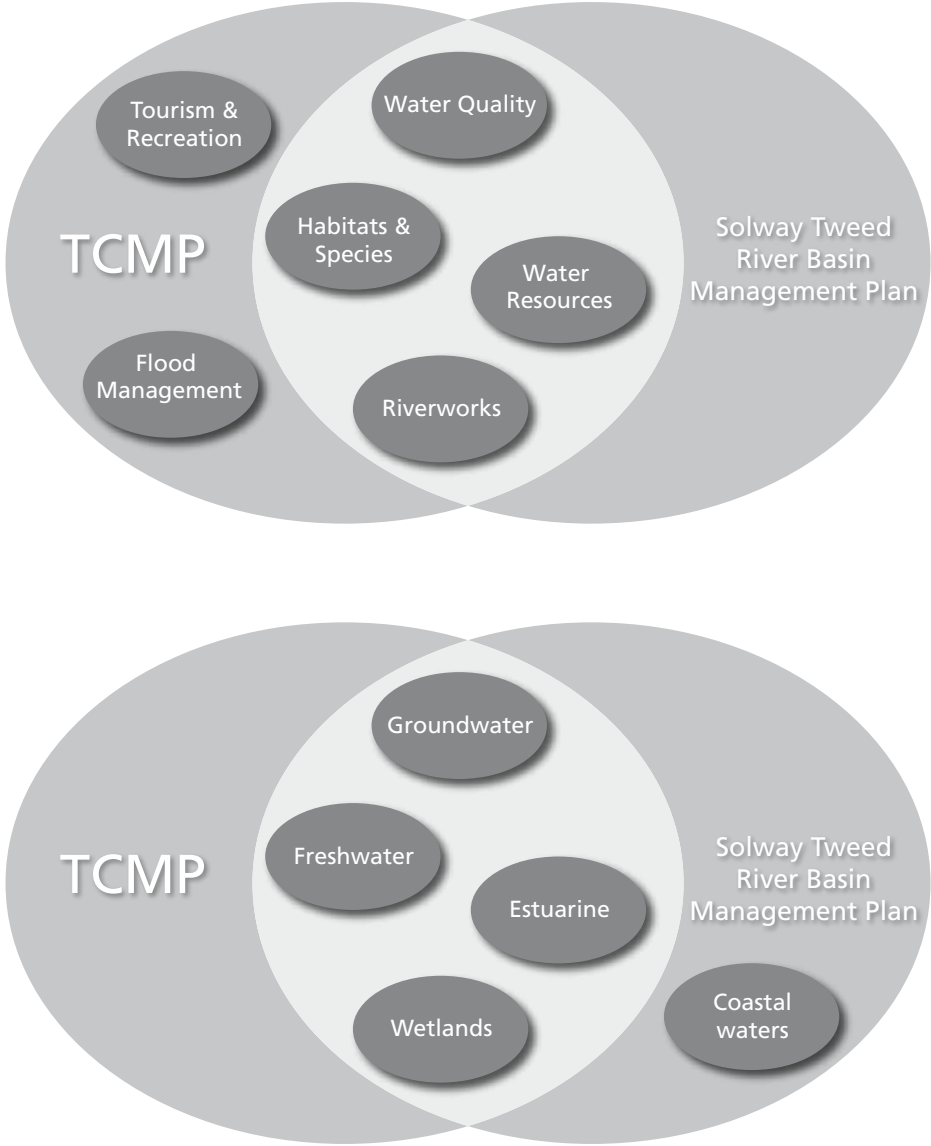
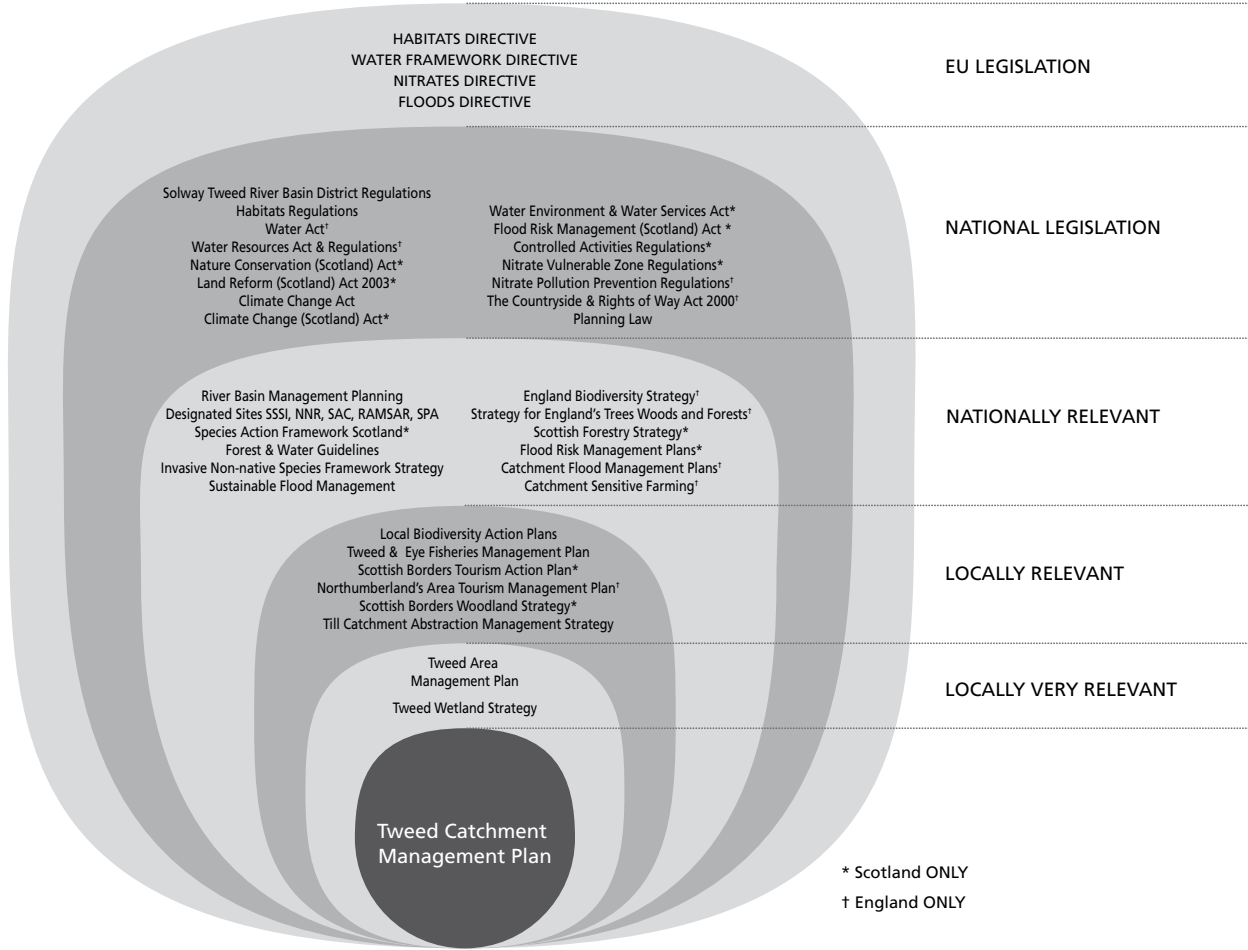


Figure 8 gives a broad overview of where the CMP sits within a complex web of legislation, strategic plans and other relevant processes.

i.viii Climate change

Notwithstanding the advent of the WFD, climate change, and its likely impacts on the freshwater environment, may be the single most influential issue for freshwater management in the UK. Certainly, since the last review of the CMP in 2005, the issue of climate change and awareness of the need to build resilience into our environment and communities has taken centre stage. UK climate change predictions¹ currently suggest that temperatures will increase throughout the seasons with wetter winters and relatively drier summers. It is now universally recognised that building resilience i.e. taking prior action to prepare habitats, species, farming and land management practices etc. for rapid environmental change and more extreme events, is a key element in reducing the impacts of climate change. The concept of restoring natural systems to withstand and adapt to climate change is fundamental and cuts across every element of the CMP.

Figure 8 Legislation, plans and processes relevant to the CMP



¹ UK Climate Projections <http://ukclimateprojections.defra.gov.uk/>



i.ix Contact details

If you have any suggestions about any aspect of this document, would like to become involved or would like to find out more about the Tweed Catchment Management Planning Initiative, please contact:-

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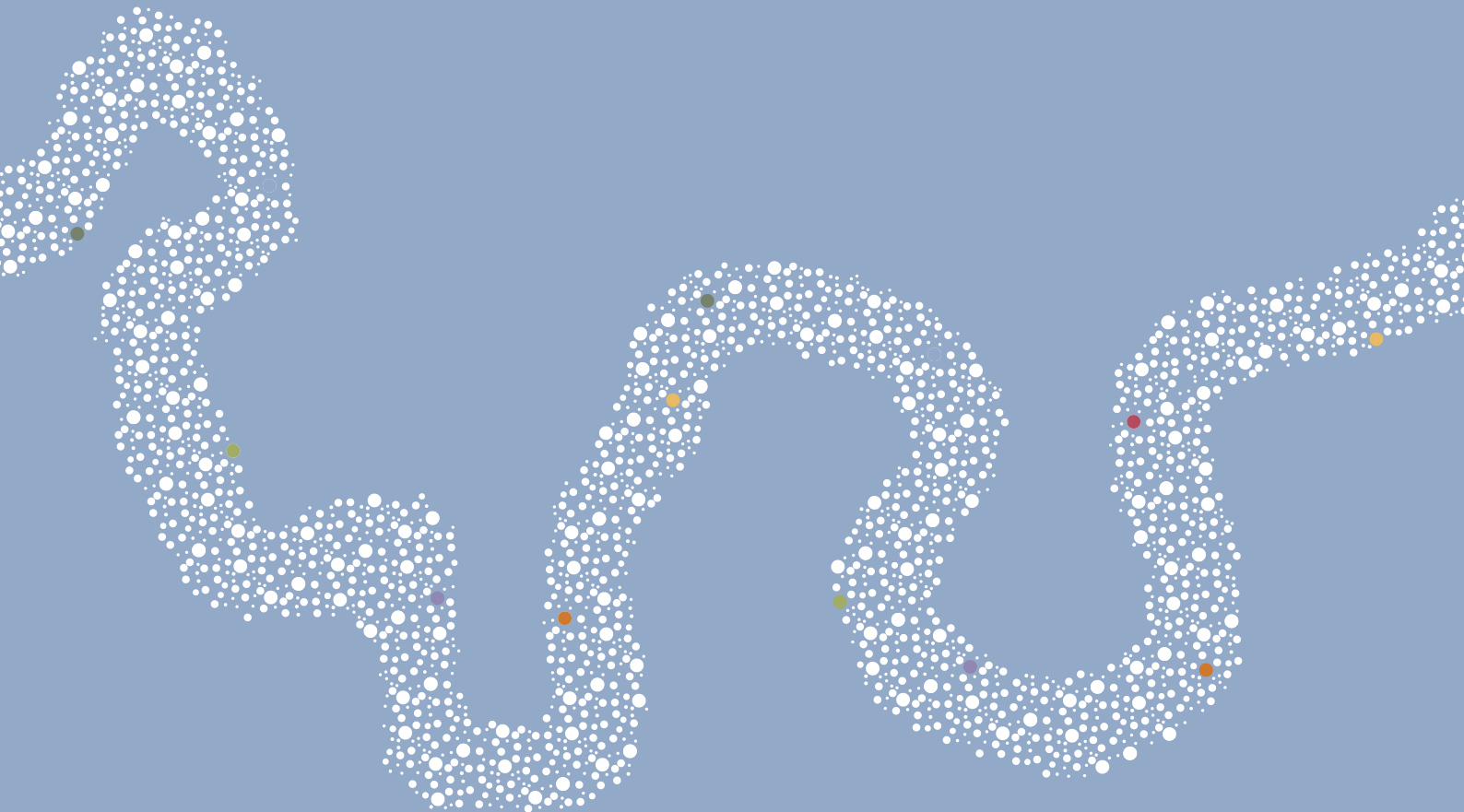
E info@tweedforum.com

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Strategic Aim One

WATER QUALITY

Maintain and enhance the water quality of the Tweed Catchment





MANAGEMENT FRAMEWORK

Strategic Aim 1

Maintain and enhance the water quality of the Tweed Catchment

Current status

Good water quality is the foundation for the rich variety of habitats and species in the catchment. Many of the tourism and recreational activities rely on good water quality and it is important for water supply purposes. In this sense, maintaining and enhancing the water quality of the Tweed catchment is inextricably linked to many of the other strategic aims outlined in the CMP and is vital to maintain the unique and special qualities of Tweed.

SEPA (in Scotland) and the EA (in England) are responsible for monitoring and protecting the water quality of the River Tweed and many of its tributaries. Monitoring results have found around 50% of the river water bodies to have good or high water quality, however the remainder is impacted by varying degrees of nutrient enrichment, as indicated by results from diatom records (organisms sensitive to nutrient enrichment).

Implications of the WFD

The European Water Framework Directive (WFD) acknowledges that the health of our rivers is based on many different indicators of ecosystem health. As a result the aquatic environment is now assessed not just by its chemical composition but also by the river's physical characteristics and the quality of the associated flora and fauna. This new, strengthened classification system enables the protection and improvement of water quality and dependent ecosystems and introduces new statutory requirements to set and achieve ecological objectives for all surface and groundwaters.

Objective 1.1

Monitor, evaluate and address the impact of agriculture and forestry on the water quality of the catchment.

Issues

With a predominantly rural catchment, the water quality status of the Tweed and its tributaries is heavily influenced by agricultural and, to a much lesser extent, forestry practices.

At present 81% of the catchment is in agricultural landuse. Arable farming predominates in the lower Tweed valley, while the upper Tweed is dominated by hill sheep and beef farming. The Tweed catchment was targeted by the Forestry Commission as one of the first areas for large scale conifer planting after the Second World War which, together with tax relief schemes, led to forest cover increasing from 4.6% in 1947 to 17.4% today. This forest cover is heavily dominated by non-native species such as Sitka Spruce.

Unlike much of the pollution resulting from industrial activities, pollution resulting from agricultural and forestry practices is often diffuse and constitutes a gradual seepage of polluting material from a number of sources into the surrounding environment. This makes it difficult to locate and control, and requires changes, at the catchment scale, to specific management practices which cause water quality degradation.

Target 1.1.1 - Reduce the impact of diffuse agricultural pollution on the surface and ground water quality of the Tweed catchment.

It is generally accepted that, as in other intensively farmed rural areas, one of the major issues affecting the water quality of the Tweed and its tributaries is diffuse agricultural pollution. Diffuse pollution as a result of agricultural practices was agreed as a RBMP Significant Water Management Issue for Tweed in 2007, through public consultation, and measures to address its impact on the water environment are listed in the Solway Tweed river basin plan (www.sepa.org.uk/water/river_basin_planning.aspx).

Fertiliser and manure application, pesticide use, runoff from farm steadings and soil erosion all have the potential to contribute to diffuse agricultural pollution and degrade water quality. A large area of the catchment is designated as a Nitrate Vulnerable Zone (NVZ) with levels of nitrates at or beyond the acceptable water quality limits of the EU, as a direct result of diffuse agricultural pollution.

Whilst the designation of areas of the Tweed catchment as NVZs is an important step to help reduce diffuse agricultural pollution, there is a real need to engage farmers and landowners on a catchment wide basis, in practical measures to address diffuse agricultural pollution. In the Till sub-catchment, the Catchment Sensitive Farming Delivery Initiative (CSF) (www.defra.gov.uk/foodfarm/landmanage/water/csf/index.htm) works to reduce diffuse agricultural pollution of surface water bodies with targeted action delivered by a specialist team and a bespoke capital grant scheme. In Scotland, the advent of diffuse pollution General Binding Rules in 2008 (one of a suite of measures under CAR) should begin to yield results in improving water quality in the Scottish Tweed and there are also financial incentives under the Scottish Rural Development Programme (SRDP) to bring about action to curb diffuse pollution as well increasing enforcement through cross compliance.

Target 1.1.2 – Minimise the potential of agrochemicals and sheep dips to degrade water quality.

Both Scotland and England have statutory sheep dipping codes of practice that aim to ensure best environmental practice and to safeguard surface and groundwater against pollution from sheep dip activity (Groundwater Regulations 1998 and CAR).

Agrochemicals such as pesticides and herbicides can enter the environment through drift, run off, accidental spillage or inappropriate disposal. While comprehensive advice on the use and storage of pesticides and herbicides is available in the PEPFAA code (Scottish Office 2005), pollution incidents still occur in the catchment, (Groundwater Regulations 1998 and CAR).



Box 4 The European Nitrates Directive

The European Nitrates Directive aims to reduce nitrate pollution from agriculture by establishing Nitrate Vulnerable Zones (NVZs) where surface and ground waters are at risk from nitrate pollution from agriculture. The Directive requires that a set of rules are put in place in NVZs to reduce existing nitrate pollution from agricultural land and prevent further pollution arising. Compliance with the rules is a legal requirement within designated NVZs, however grants are available to help farmers meet the requirements of the Directive. Rules cover the use of nitrogen fertilisers and organic manure as well as silage and slurry storage.

Target 1.1.3 – Continue to reduce the potential of forest management activities to adversely affect water quality in the catchment.

Forestry is a vital part of the economy of the Tweed catchment and is increasingly important for both tourism and recreation. However, poor planting practices, fertiliser and herbicide applications, cultivation, drainage and harvesting operations can all have detrimental impacts on water quality. Many of these effects can and have been alleviated in recent years through careful forestry management practices, which are set out in the Forest and Water Guidelines (Forestry Commission 2003). However, we must continue to be proactive in minimising the impact of forestry activities on water quality.

Objective 1.2

Minimise the impact of residential and industrial development on the water quality of the catchment.

Issues

Historically, the rivers of the Tweed catchment have suffered from domestic and industrial pollution, particularly as a result of the booming textile industry of the 19th Century.

“Oozing not flowing between its wooded banks, a mere sluggish injection among poisonous pools of scum covered ink. As we ascend, the water of Teviot becomes more and more foul varying.....from black, to a most unwholesome light blue.”

John Ruskin’s description of the Teviot in the 1850’s.

Great improvements in water quality have been made since the industrial revolution. Discharges of trade or sewage effluent to the majority of watercourses in the Tweed catchment now require consents from either SEPA or the EA and are subject to review. In addition the Special Area of Conservation (SAC) status of the Tweed means that all consents that have the potential to impact on the SAC must be reviewed and assessed for any likely significant effects on the “special interest features”.

Target 1.2.1 – Promote and extend the use of sustainable surface water management systems such as Sustainable Urban Drainage Systems (SUDS).

Sustainable surface water management systems are designed to drain surface waters in a more natural manner using, for example, soakaways, filter drains, detention basins and purpose built ponds and wetlands. This is a step forward from the traditional approach of draining surface waters as rapidly as possible and allows for a reduction in the rate of flow (alleviating flooding and reductions in water quantity in summer months) and/or the removal of pollutants.

Sustainable surface water management systems are now recognised as best practice and are generally required for all new developments.

Target 1.2.2 – Ensure discharges from waste water treatment works and septic tanks do not contribute to the deterioration of water quality.

Currently, the majority of wastewater treatment plants in the catchment treating both sewage and industrial effluent meet discharge consents set by SEPA and the EA. However, degraded water quality can occur due to insufficient treatment of the discharge, insufficient dilution in the receiving watercourse, lack of maintenance, overloading of the treatment system or a high frequency of storm overflow discharges.

The Urban Waste Water Treatment Directive (UWWTD) has a statutory timetable for upgrading sewage treatment works to ensure appropriate treatment. Scottish Water and Northumbrian Water are taking this forward in the catchment in partnership with SEPA and the EA. However, with increasing housing development pressures in the catchment, it is important that wastewater treatment capacities are taken into account when siting new developments and that, in those areas not served by public sewers, sewage treatment systems are properly monitored and maintained.

Objective 1.3

Locate, investigate and address specific water quality problem areas within the catchment.

Issues

Routine water quality monitoring carried out by SEPA and the EA throughout the catchment has identified a number of specific areas where water quality is degraded. These include localised areas of nutrient enrichment as well as seasonal water quality problems that can result from long periods of dry weather. While the targets outlined above and their associated actions will go some way to tackling these problems, site-specific action plans addressing a variety of landuse practices are also required to improve water quality in these areas.

Target 1.3.1 – Investigate the causes behind failures to meet WFD water quality targets and draw up and implement action plans to ensure future compliance.

In order to protect and improve water quality, SEPA and the EA define WFD water quality targets for particular stretches of water. In the Tweed catchment a number of areas have been identified by SEPA and the EA as failing to meet WFD targets and this information will be available, and updated on a yearly basis, via the AMP www.sepa.org.uk/water.aspx.

Strategic Aim Two

WATER RESOURCES

Ensure that there is water available for abstraction while protecting the needs of the natural environment





MANAGEMENT FRAMEWORK

Strategic Aim 2

Ensure that there is water available for abstraction while protecting the needs of the natural environment

Current status

In terms of total flow, the Tweed is one of the largest rivers in the UK, with long-term average flows ranging from 16m³ per second in the upper Tweed to 65m³ per second in the lower Tweed (SEPA). SEPA operates 80 rain gauges and 26 river gauging stations in the Scottish part of the catchment, while the Environment Agency has responsibility for water flow and water level monitoring in England.

The Tweed catchment is key to Scottish Water meeting local demands within the Borders as well as Edinburgh. Scottish Water currently has 13 supply reservoirs within the Tweed catchment and a number of bore holes. Major abstractions for public water supply are regulated by SEPA through a series of CAR licences, which control the volumes of water that can be abstracted. Abstractions of surface water and ground water also take place within the Tweed catchment to support a number of industrial and agricultural activities and these are regulated in Scotland by SEPA (via CAR) and in England by the Environment Agency (via Catchment Abstraction Management Strategies (CAMS)).

Implications of the WFD

The WFD explicitly requires controls over the abstraction of fresh surface water and groundwater in Tweed, as necessary, to achieve and maintain good ecological status and prevent deterioration. This means that the environmental impact of each abstraction and impoundment must be carefully considered as well as the cumulative effect of abstractions within any given catchment. The cross-border nature of Tweed further complicates water resource management, with differing legislation and processes on each side of the border working to implement WFD requirements on a catchment basis. Regulations introduced under the WFD require a register of all abstractions and impoundments, sufficient information to determine if an abstraction or impoundment is having a detrimental impact and where necessary powers to issue licenses. Currently, in Scotland, all water abstraction activities in the catchment are being reviewed to ensure compliance with WFD requirements.



Objective 2.1

Consider the needs of the environment alongside those of all other water users.

Issues

While it is important that public water-supply demands are met and there is sufficient water to support agricultural and industrial activities, environmental requirements also need to be taken into account when managing and allocating water resources. Habitats and species that depend on the water environment have specific water requirements and we need to ensure that abstraction does not cause river flows, groundwater levels or water levels in wetlands to fall below the minimum level required for the conservation of the aquatic environment.

Target 2.1.1 – Reduce the impact of surface and groundwater abstractions on riverine, riparian and wetland ecology.

Reduced river flow resulting from over-abstraction can cause habitat loss, hinder fish migration or reduce the area of riverbed available for spawning or colonisation by aquatic vegetation. Currently, we are addressing the knowledge gap on the level of abstraction taking place within the Tweed catchment to enable its sustainable management. Both CAMS (England) and CAR (Scotland) require data on the location and volumes of water being abstracted. Once this data is available we can begin to manage water resources at the catchment scale in Tweed.



Box 5 CAR – the Controlled Activities Regulations

(Taken from The Water Environment (Controlled Activities) (Scotland) Regulations 2005 A Practical Guide)

“The Water Environment and Water Services (Scotland) Act 2003 (or WEWS) gave Scottish ministers powers to introduce regulatory controls over activities in order to protect and improve Scotland’s water environment. This includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater. These regulatory controls – the Water Environment (Controlled Activities) (Scotland) Regulations 2005 (CAR) – were passed by the Scottish Parliament on 1 June 2005 and came into force on 1 April 2006. They were amended by The Water Environment (Controlled Activities) (Third Party Representations etc) (Scotland) Regulations 2006, with effect from 14 December 2006. On 1 April 2007 the list of General Binding Rules (Schedule 3) was amended and expanded by The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2007. Schedule 3 was further expanded by The Water Environment (Diffuse Pollution) (Scotland) Regulations 2008, which came into force on 1 April 2008.

Since 1 April 2006 it has been an offence to undertake the following activities without a CAR authorisation:

- *discharges of polluting matter to all wetlands, surface waters and groundwaters (replacing the Control of Pollution Act 1974);*
- *disposal of waste sheep dip and waste pesticides;*
- *abstractions from all wetlands, surface waters and groundwaters;*
- *impoundments (dams and weirs) of rivers, lochs, wetlands and transitional waters;*
- *engineering works in inland waters and wetlands.*

If any of these activities are already authorised by one of the following environmental regulatory regimes, it will already be considered to be authorised under CAR. You will not need to apply for separate authorisation:

- *Radioactive Substances Act 1993*
- *Integrated Pollution Control (Part 1 of Environmental Protection Act 1990)*
- *The Pollution Prevention and Control (Scotland) Regulations 2000*
- *Waste Management Licensing (Part II of Environmental Protection Act 1990)*

CAR authorisation is intended to control impacts on the water environment, including mitigating the effects on other water users. Additional forms of control may be required from other authorities, such as planning permission or permission associated with conservation areas or protected species. For a more detailed overview of CAR and its provisions, please refer to “Introduction to the Controlled Activities Regulations: www.sepa.org.uk/water/water_regulation/lidoc.ashx?docid=4de3fb18-436e-41ec-9bd6-0c3aa137bba5&version=-1”

Target 2.1.2 – Ensure flows in the rivers and burns of the Tweed catchment meet the requirements of riverine, riparian and wetland species and habitats.

Predicting how much water can safely be abstracted without impacting on aquatic species and habitats is a difficult task as it requires an understanding of the habitat requirements of a wide range of fish, mammals, insects and plants, many of which have different flow requirements at different life stages. At a national scale, work has been ongoing on identifying the flow requirements of specific species. For example, the Life in UK Rivers Project (www.english-nature.org.uk/LIFEinUKRivers) helped to define favourable conservation status for freshwater species and habitats of European importance, including the consideration of flow requirements. At the catchment scale, in the English part of the Tweed catchment, the Environment Agency has done a lot of work on the ecological flow requirement of the Till as part of the subcatchment's CAMS. As more data is collected as a requirement of the WFD, there is a real need to begin to coordinate hydrological and ecological data.

Target 2.1.3 – Ensure reservoir release regimes minimise ecological impacts and where feasible reflect more natural hydrological conditions.

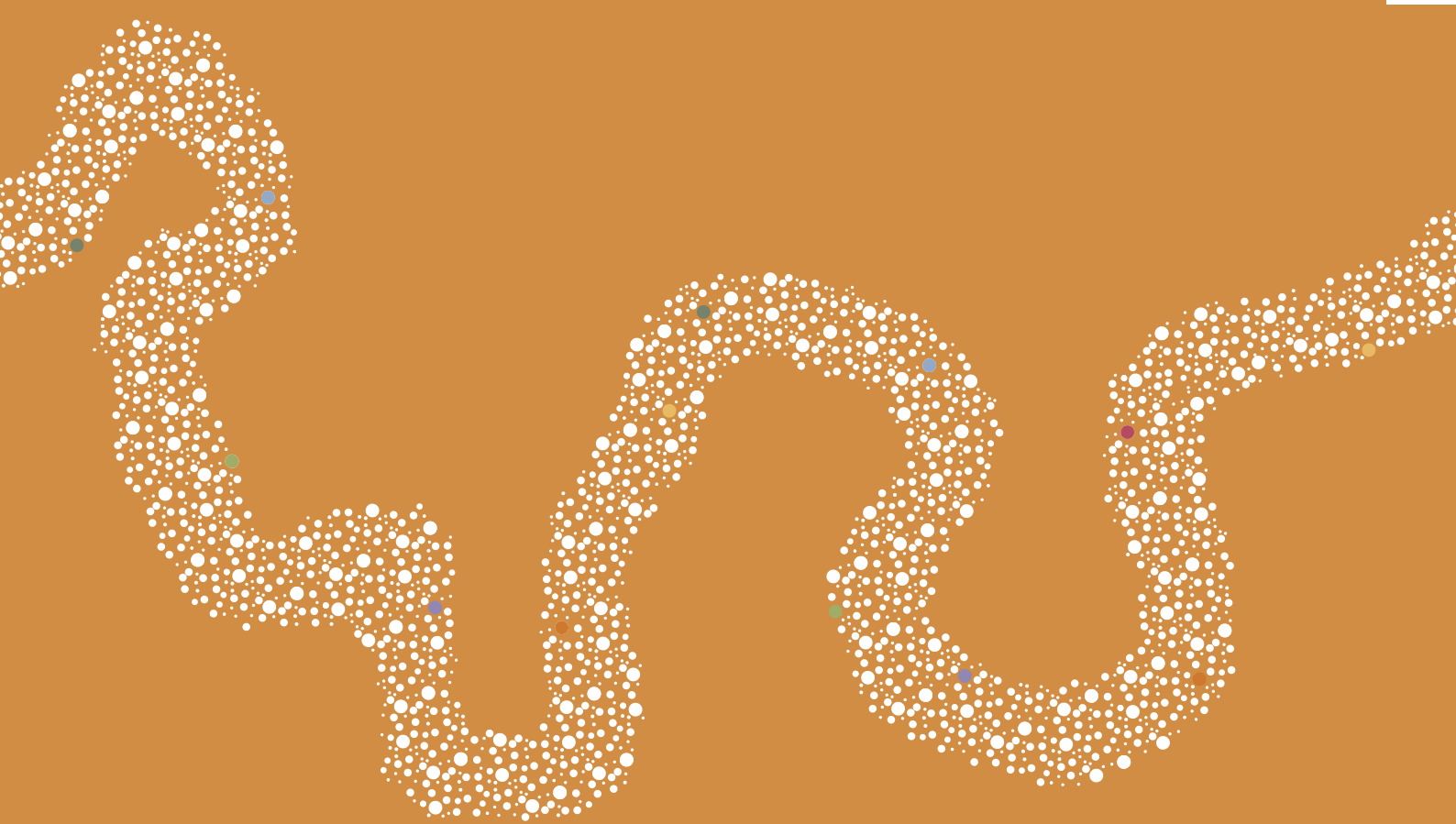
The reservoirs of the Tweed catchment have a major impact on the flow regime of downstream rivers, with the larger reservoirs such as Fruid, Talla, Whiteadder and Megget being used to augment low flows, to reduce peak flows (and therefore flood risk) and to mitigate the effects of algal growth in the river during prolonged periods of dry, sunny weather.

Compensation water and freshets are released to maintain the flow downstream of the reservoirs and compensate the rights of downstream water users. Provision for this is given under CAR licences, which outline the volume and rate of releases. For the majority of reservoirs within the catchment, the volume and timing of compensation and freshet releases were set in the 19th century when little was known of the rivers' ecological needs. Under the WFD the ecological impact of impoundments is currently being considered and where necessary release regimes altered to improve ecological conditions downstream. The Habitats Directive requires reservoir release regimes to be reviewed to ensure, where possible, they protect and where feasible enhance downstream ecological conditions.

Strategic Aim Three

HABITATS & SPECIES

Maintain and enhance the status and distribution of riverine, riparian and wetland species and habitats of conservation interest





MANAGEMENT FRAMEWORK

Strategic Aim 3

Maintain and enhance the status and distribution of riverine, riparian and wetland species and habitats of conservation interest

Current Status

The Tweed and its tributaries have a wide diversity of habitats, which support an array of flora and fauna. The number of major tributaries of the Tweed rising from sources of differing geology and topography has resulted in the formation of individual characters of river, which are quite distinct in their own right. In this respect, the Tweed system is very much a collection of rivers rather than a single entity, which has led to the great diversity of riverine and riparian habitats and species.

The main features of interest of the rich aquatic and riparian fauna include otters, Atlantic salmon, sea trout and brown trout, lampreys and a great variety of invertebrate fauna. In addition, the Tweed system is known for the presence in strong numbers of many birds, which include osprey, kingfishers, yellow wagtails, dippers, black-headed gulls and oystercatchers as well as a large population of mute swans, particularly in the estuary.

Where appropriate, the TCMPI will help develop and take forward specific actions to improve the biodiversity of riverine, wetland and riparian habitats.

Box 6 Conservation status of the Tweed

In 1976 the Scottish section of the River Tweed, including all its major tributaries, was designated a Site of Special Scientific Interest (SSSI) under the National Parks and Access to the Countryside Act 1949 for its biological interest. This is called the Tweed River SSSI.

In the English section of the catchment, the England: Till Catchment SSSI was notified in 1999. The main stem of the Tweed and the Whiteadder was notified in 2001 as the Tweed Catchment Rivers – England: Lower Tweed and Whiteadder SSSI.

The River Tweed and some of its most characteristic tributaries (Blackadder, Bowmont, Ettrick, Teviot, Tweed, Whiteadder and Yarrow) were also designated in 2001 under the more recent 1981 Wildlife and Countryside Act for its biological interest, particularly as a prime example of a 'whole river system'. This is called the River Tweed SSSI.

The designated status of the River Tweed as a SSSI means that the features that make it important have legal protection. All owners and occupiers of the river are therefore required to consult Scottish Natural Heritage or Natural England before carrying out activities which could damage the scientific interest of the river.

The River Tweed, and its selected tributaries, is also a SAC under the European Habitats Directive, making it part of the Natura 2000 network, which represents some of the finest nature and conservation areas in the European Community. The designation is for the biological interest present within the river system and this includes river lamprey, brook lamprey, sea lamprey, otter, Atlantic salmon and water-crowfoot vegetation. All of these species and habitats are vulnerable within a European context.



Objective 3.1

Ensure there is sufficient data on riverine, wetland and riparian habitats and species to inform sustainable management practices.

Issues

To maintain and enhance the status and distribution of riverine, riparian and wetland species and habitats, high quality accessible information is required upon which to base management decisions. If biological trends, impacts and changes are to be successfully monitored then there is a need to develop comprehensive baseline data.

Within the Tweed catchment, there are many organisations and individuals collecting and storing data on species and habitats. Coordinating recording activity and ensuring that the information is available to all who need it is of primary importance.

While a number of organisations hold species or site specific biological information, the major centre holding biological data concerning the Tweed Catchment is now The Wildlife Information Centre (based at Vogrie, Midlothian), with the Scottish Borders Biological Recording Centre ceasing to function independently in 2009. While this offers a useful resource, there is a need to establish what data is being held by whom, to identify gaps and prioritise solutions.

Target 3.1.1 – Improve knowledge of the extent, status and distribution of riverine, riparian and wetland habitats.

Generally, habitat data is less widely recorded than species data. However, there are a number of standardised methodologies that are used specifically to monitor and assess riverine and associated habitats such as River Habitat Survey (RHS).

To target and prioritise conservation, restoration and enhancement programmes, current habitat areas need to be assessed, mapped and put into the context of their historical distribution.

Target 3.1.2 – Improve knowledge and understanding of species of conservation interest.

Whilst the broader needs of many species will be met through careful habitat management, there is also a need to improve our knowledge and understanding of the most threatened species if we are to ensure their on-going conservation. The Tweed Foundation is already carrying out a lot of work on the fisheries of the Tweed system; however, sustainable management can only be ensured through ongoing monitoring activities.

Objective 3.2

Promote the restoration and expansion of riparian, riverine and wetland habitats and conserve and enhance associated species.

Issues

The intensification of agriculture over the last century coupled with increased forestry and urban development has seen a corresponding decline in the ecological range and diversity of the river environment and associated habitats through activities such as overgrazing, drainage and channelisation. This has resulted in habitat loss, degradation and fragmentation, which in turn has had a detrimental impact on the area's biodiversity. There is a real need to protect and enhance the riverine, riparian and wetland habitats of the Tweed catchment to benefit the wildlife and landscape value of the region, protect the area's biodiversity and safeguard habitats and species of local, national and international importance.

Target 3.2.1 – Encourage the strategic development of habitat networks throughout the catchment, linking riparian, floodplain, wetland, upland and native woodland habitats.

Habitats rarely function in isolation. There is an opportunity to increase the abundance and diversity of wildlife by protecting, connecting and expanding habitat fragments. The Tweed and its tributaries link habitats and species throughout the catchment, spanning whole geological and altitudinal ranges. In a number of areas a corridor of semi-natural habitats has been formed around the river network. If the natural heritage of an area is to be enhanced then a catchment or sub-catchment based approach is required which considers a range of habitats and how they interact with each other.

A number of organisations such as Tweed Foundation, the Northumberland National Park Authority and Borders Forest Trust have already carried out a lot of habitat enhancement work, much of it in the riparian zone. More recently Tweed Forum itself has become an active agent in delivering wetland-related habitat projects, proactively recruiting projects to ensure that the right measures are taken up in the right places, at the right scale. One such example is the River Till Wetland Restoration Project. This initiative, led by Tweed Forum, seeks to work with farmers and land managers within the Till Catchment to find a sustainable approach to flood management by returning land to the natural floodplain, changing management practices and allowing the development of wetland habitats. Also, the Forum's Collaborative Action Coordinator uses the SRDP to tackle key issues such as diffuse pollution, natural flood management and habitat loss in those areas where it is most required, including upland blanket bogs. To maximise the benefits the Forum works very closely with the other major NGO habitat facilitators in the region – Borders Forest Trust (majoring on woodland expansion) and Southern Uplands Partnership (focusing on heather and moorland restoration).

Target 3.2.2 – Encourage the retention and expansion of wetlands and natural ponds to safeguard and enhance ecosystem services.

The Tweed catchment is home to an outstanding variety of wetland habitats, which include internationally recognised lowland raised bogs and mosses such as the Whitlaw Mosses in addition to upland mires, flushed wetlands and blanket bog. These provide important ecosystem services such as habitat for scarce plant communities and insects such as rugged stonewort or fibrous tussock sedge found nowhere else in the UK, and reducing diffuse pollution. Wetland environments have also been important in providing data such as pollen, which helps historical vegetational communities in the catchment area to be determined. However, the wetlands found in the catchment today are only a fraction of what was there in the past. As a result of state aid for agricultural improvements, large areas of the catchment were drained in the early 19th century, continuing through to the late 20th century, resulting in habitat loss, degradation and fragmentation. The Tweed Wetland Strategy will support this target by raising awareness of the importance of wetlands and outline priority areas for action to restore wetland ecosystems.

New Statistical Account (Anon 1841)

Parish of Coldstream "Many species of wildfowl which formerly frequented the Tweed have entirely disappeared – such as the Coot, wild duck, diver and teal. This is to be accounted partly from the drainage of those marshy lands in which these birds used to breed."

Target 3.2.3 – Develop and implement a wetland and riparian habitat strategy to inform future management.

The riparian zone is crucial to the integrity and productivity of the river; it provides essential habitats, protects riverbanks from soil erosion, aids flood attenuation and helps to maintain water quality by creating a buffer zone that traps sediment and pollutants. Much has been done in recent years to reverse the degradation caused by agricultural pressures. More recently, work has begun to restore and create wetland areas (such as ponds, scrapes, mires, fen, lowland raised bog and blanket bog) and the publication of a Northeast Wetland Feasibility Study and Borders Wetland Vision has provided critical data on existing/potential wetland sites. Increasingly there is a need to provide focus to



this work and for this reason a wetland strategy for Tweed will be published in 2010 and the next cycle of catchment management planning will see its implementation.

Target 3.2.4 – Conserve and enhance the fisheries of the Tweed catchment.

The Tweed catchment currently represents around 15% of all spawning water available to Atlantic Salmon in Scotland and is one of the most important salmon fisheries in the UK. As well as sustaining internationally important stocks of both salmon and trout, the Tweed is also home to important populations of all three lamprey species found in the UK. Other fish species found in the Tweed system include grayling and sea trout as well as the rare allis shad, a freshwater-spawning relative of the herring.

The River Tweed Commission (RTC) under the Scotland Act (River Tweed) Order 2006 is charged with the general preservation and increase of salmon, sea trout and other freshwater fish in the River Tweed and its tributaries. The Tweed Foundation is a charitable trust set up by the RTC to promote the development of salmon and trout stocks in the Tweed system. The management activities of the Tweed Foundation are set out in the Tweed & Eye Fisheries District Fisheries Management Plan. Through the work of the Tweed Foundation the majority of the Tweed catchment is now open to salmon for the first time in 190 years as the last remaining obstacles in the system were removed in 2002. The Tweed Foundation carries out a range of research and monitoring work including genetics analysis and electro fishing monitoring.

The RTC also employ bailiffs, who are responsible for ensuring the Tweed Fisheries legislation is enacted. The bailiffs act as river wardens, monitoring not only the fish stocks but also habitat changes on a daily basis.

Throughout the catchment there are a number of angling associations and the Federation of Border Angling Associations was set up in an attempt to coordinate and represent the different angling associations.

Box 7 The Tweed and Eye Fisheries District Fisheries Management Plan Fourth Edition, 2005-2009

The strategy of this fisheries management plan is to define the management levels that will ensure enough salmon, sea trout, brown trout and grayling stock survive all the pressures on them to fully stock their spawning areas with the next generation and to maximise production in these nursery areas by removing bottlenecks such as poor access to spawning areas and rehabilitation of areas of degraded habitat. Defining these management levels will be reliant on various categories of information or 'inputs'.

www.tweedfoundation.org.uk/Tweed_Management/tweed_management.html

Objective 3.3

Monitor and control the introduction and establishment of non-native riverine and riparian species and where appropriate control or eradicate established populations

Issues

Non-native animal and plant species are threatening key habitats and species throughout the Tweed catchment, through disease, predation, direct competition and hybridisation.

Some non-native species are already firmly established in the catchment such as giant hogweed, Japanese knotweed and American signal crayfish (highlighted as a RBMP Significant Water Management Issue in 2007). Others such as Chinese mitten crab are yet to invade the catchment. There is a need to control and, where feasible, eradicate established non-natives that are threatening native habitats and species. Some work is already progressing in this area. For example, the Tweed Invasives project is working to control giant hogweed and Japanese knotweed in the catchment and the Rivers and Fisheries Trusts of Scotland (RAFTS) have a biosecurity planning project underway. There is also legislation in place to guard against the introduction and spread of non-natives. For example, under the Wildlife and Countryside Act 1981, any person who releases or allows to escape into the wild any animal which is not resident or a regular visitor to Great Britain in a wild state or is included in Part I of schedule 9 of the Act will be guilty of an offence. However, application and enforcement of this legislation remains a major challenge.

Target 3.3.1 – Improve knowledge, understanding and awareness of the potential threats of non-native riverine and riparian species and the need to prevent their introduction.

Non-native species are often introduced without consideration of the damage that can result. This means that education has a key role to play in preventing further introductions. For example, anglers need to be made aware of the need to clean and treat all fishing equipment which has been used outside Britain and gardeners need to be more aware of which species are classed as invasives. Education also has a role to play in halting the spread of already established non-native invasive species. Information on identification and control methods should be made widely available and reporting systems put in place to enable people to report sightings of any potentially threatening non-native species.

Target 3.3.2 – Control and where possible eradicate priority non-native species.

There are a number of priority non-native species in the Tweed catchment including, giant hogweed, Japanese knotweed, Himalayan balsam, and American signal crayfish.

Giant hogweed and Japanese knotweed were introduced into the Tweed catchment in the 19th century as ornamental plants. In the absence of natural competition, they, along with Himalayan balsam have aggressively colonised large areas of the catchments riverbanks and riparian woodlands, out-competing native plant species. This has resulted in degraded habitats and disturbance of the natural ecology of the area. The problems posed by these invasives have steadily increased over the years as more and more areas have been colonised.

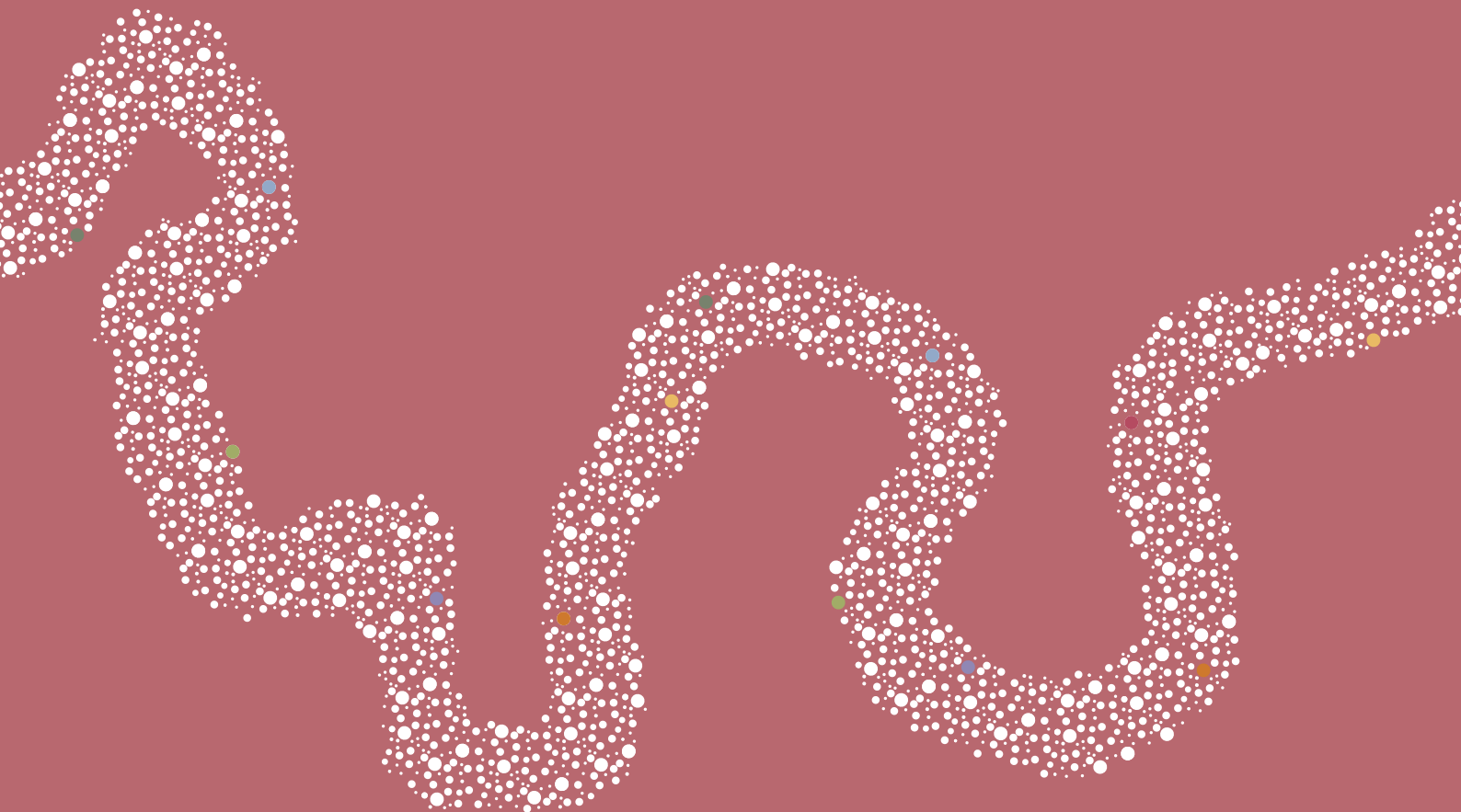
Signal crayfish were first detected in the Tweed catchment in 2005 in the Ettrick Water and River Leithen with a secondary population detected in the Till sub-catchment in 2006. Signal crayfish will severely impact freshwater ecosystems by eating freshwater insects, beetles, frogs, juvenile fish and eggs, including Atlantic salmon. They also exhibit burrowing behaviour which undermines riverbanks and other riparian features. It is a criminal offence to either keep or release American signal crayfish except under licence, however lack of awareness of the impact of these creatures and the penalties associated with them is a major factor in their continuing spread.

The Tweed Invasives Project, launched in September 2002, is an ambitious project aimed at the long-term, sustainable control of giant hogweed and Japanese knotweed within the Tweed catchment. The project co-ordinates the treatment of these species in partnership with local landowners, riparian interest groups and statutory authorities within the Tweed catchment. In addition to controlling invasive plants across 300 miles of water course, the project works to share best practice in this field and is considered one of the most successful catchment control programmes in the UK.

Strategic Aim Four

RIVERWORKS

Ensure all riverwork operations
respect the physical, ecological
and aesthetic integrity of
the river system





MANAGEMENT FRAMEWORK

Strategic Aim 4

Ensure all riverwork operations respect the physical, ecological and aesthetic integrity of the river system.

Current Status

Rivers are by nature dynamic systems, continually modifying their form through processes of erosion, transport and deposition. A wide range of different channel types and rates of channel adjustment are evident in the Tweed catchment, from the swift, shallow, boulder-strewn waters of the Ettrick to the sluggish, meandering, sandy channels of the middle Till.

Early efforts to manage and control the river channels of the catchment were driven by the need for waterpower within the textile industry and the improvement of agricultural land. More recently, river management issues such as bank erosion, gravel management, flood alleviation, bridge protection and in-stream habitat improvements have been the focus. As a result of this, river engineering works such as rock revetment and croys now affect much of the Tweed system.

The regulation of riverworks is a complex issue with four statutory consultees on each side of the border. The Riverworks Group has for many years strived to make the system more streamlined and transparent. However, this has been largely superseded in recent years by the advent of the WFD and the SEPA administered CAR. Whilst CAR provides a transparent framework for regulating riverworks in Scotland, this is still complicated by the Habitats Directive legislation and there is a need to streamline regulatory processes. The issue of cross-border integration is also key here and, in England, the process has been unchanged for years, with applications submitted to either Natural England under the Countryside & Rights of Way (CROW) Act or the EA under the Water Resources/Land Drainage Acts.

Objective 4.1

Continue to develop an understanding of the river system and its response to riverworks.

Issues

While the Habitats Directive and Water Framework Directive can contribute positively to riverworks management, the knowledge is currently scarce and there is insufficient information to adequately support and inform decision makers. What is required is practical guidance for those managing river works, to enable effective management decisions to be made. It is vital that this work is underpinned with detailed hydrogeomorphological information from the local level.

Target 4.1.1 – Improve knowledge of the hydrogeomorphology of the river system.

If we are to successfully manage riverworks in the Tweed catchment then it is essential that we have a clear understanding of the natural dynamics of the river system. A number of hydrogeomorphology studies have already been undertaken within the catchment, which now need to be assessed and collated. In addition, a historical context is required for current river processes to enable past and present rates of channel activity to be identified and appropriate management devised. This can be gained from old photographs, maps, archaeological work and logged events as well as through engaging with people with historical knowledge of the rivers in the catchment.

Target 4.1.2 – Improve knowledge of current and historical riverworks throughout the catchment.

In addition to an understanding of the rivers' hydrogeomorphological processes, effective decisions on individual riverworks need to be made within the context of how the natural river systems have already been artificially modified. In this respect the cumulative impact of riverworks need to be taken into account.

Records of riverworks are held by a number of organisations including SEPA, SNH, the EA and Tweed Foundation; and people living and working in the catchment have a wealth of knowledge on how specific riverworks have performed. There is a need to collate this information to enable a catchment wide appreciation of riverworks operations. Tweed Forum collated all EA, SEPA, and SNH riverworks records into a central database and this has been taken on by SEPA, however more work is required to ensure that this information is disseminated and kept up to date.

Objective 4.2

Improve the knowledge, understanding and awareness of river processes and issues surrounding riverworks and seek to address degraded stretches.

Issues

It is essential to understand the causes of the problem before undertaking any riverworks as, if the original cause has not been addressed, the proposed works may be ineffective or may even make the problem worse.

If landowners and riparian owners are to be encouraged to minimise impacts upon the river, then it is essential that the organisations responsible for regulating riverworks are more co-ordinated and integrated in their approach and that it is clear where to go to for any advice. In addition, there needs to be opportunities to learn from each other about successful and unsuccessful riverworks activities. Having improved the knowledge base of individuals and organisations, it is important that we facilitate remedial action to improve degraded stretches.

Target 4.2.1 – To further promote best practice and strengthen provision of advice to anyone considering riverworks within the Tweed catchment.

Riverworks is a complex subject, and while there is some information for people wishing to carry out work on the river, it may be difficult to access or understand. The advent of CAR has led to a proliferation in best practice/guidance documents, however there is still the need to disseminate such resources and also examples of best practice throughout the catchment.



Target 4.2.2 – Identify the different groups involved in riverworks and develop suitable methods to engage, learn and raise awareness of management issues.

There are many organisations, statutory authorities and private landowners involved in riverworks within the Tweed catchment. Public bodies undertake riverworks such as bridge repairs and flood alleviation works while the majority of the riverworks carried out by private landowners are for fisheries improvement. Education and awareness raising is required within, and between, each of these groups. However, if this is to be effective it must be carefully targeted, focused and meaningful.

Target 4.2.3 – Encourage all those involved in riverworks to gain the necessary knowledge, expertise and training.

Riverworks management involves a wide range of interacting and interdependent factors. Many of those tasked with managing riverworks have their own specific area of expertise such as species and habitat conservation, fisheries management or highway maintenance. However, in some instances, there is little specific knowledge on riverworks issues themselves, or appreciation of the interdependent nature of many of the issues surrounding riverworks management.

Target 4.2.4 – Investigate and facilitate the restoration of priority waterbodies which are failing WFD targets due to morphological pressures.

Specific data on the impact of morphology on the ecological status of a water body should be forthcoming via the RBMP process and it is vital that we use this information to inform restoration efforts in the catchment.

Objective 4.3

Work with regulatory bodies to ensure that riverworks processes are streamlined and efficient as possible.

Issues

The large number of overlapping pieces of legislation regarding riverworks, coupled with the cross-border nature of Tweed, makes the regulatory process for riverworks extremely complex. On the Scottish side we have CAR (implemented by SEPA), Habitats Directive (implemented largely by SNH), Planning law (the local authority) and the Tweed Acts (River Tweed Commission). On the English side, the Environment Agency and Natural England have jurisdiction under the CROW, Land Drainage and Water Resources Acts. Whilst there has been considerable simplification and streamlining of the process on the Scottish side, in both cases there is the requirement, by the Habitats Directive, for all operations to be assessed to determine any impact on the designated site. This has caused duplication of effort in the past and there is still a need to make the process more efficient and pragmatic.

Target 4.3.1 – Support the Controlled Activities Regulation (CAR) process to ensure transparent and effective regulation

The CAR process is relatively new and it should be recognised that it will take time for individuals, organisations and agencies to become familiar with its structure and requirements. With support from the CMP partnership we can ensure that the CAR process within (Scottish) Tweed is implemented effectively and transparently. A cross-border protocol has been developed to assist agencies with cross-border regulation and work is also underway to ensure that there is consensus on what can be consented either side of the border, see Box 8.

Box 8 Tweed Cross-Border Riverworks - A Working Protocol

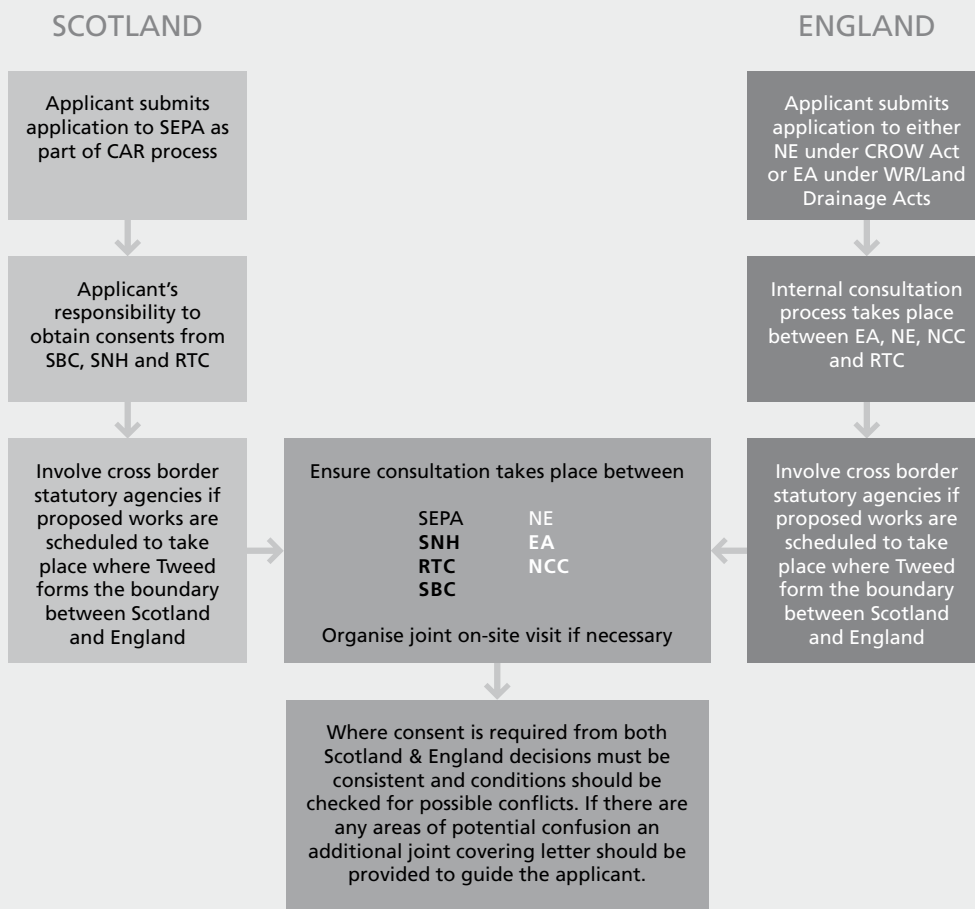
Proposed situation under Working Protocol

Basic Principles

This Memorandum of Understanding applies when:

- a) the proposed riverworks are scheduled to take place where the Tweed forms the border and/or
- b) where there might be an impact across the border.

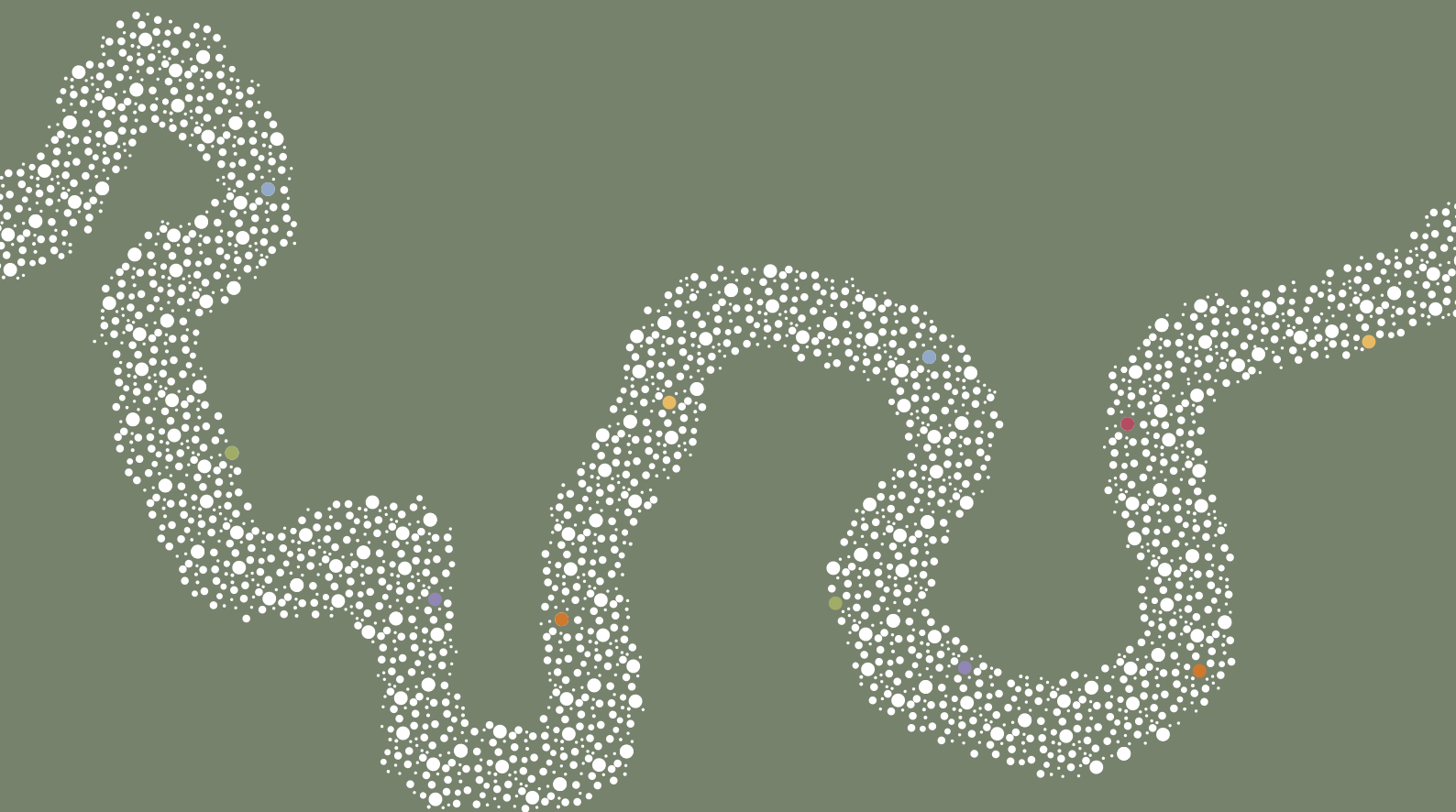
There is a need to ensure the relevant statutory agencies are involved in the process and the consents are coordinated where required. The circulation of draft consents between agencies would be useful in ensuring coordination.



Strategic Aim Five

FLOOD MANAGEMENT

Adopt a catchment-based approach to flood management which helps to protect the people, property and prosperity of the Tweed catchment whilst respecting its physical, ecological and aesthetic qualities.





MANAGEMENT FRAMEWORK

Strategic Aim 5

Adopt a catchment-based approach to flood management which helps to protect the people, property and prosperity of the Tweed catchment whilst respecting its physical, ecological and aesthetic qualities.

Current Status

The flooding of water courses at times of peak flow is a natural process which can bring both benefits, e.g. the input of rich sediments to depleted fields, and harm, through the destruction of property and infrastructure and even loss of life. The Tweed has a long history of flooding with the largest and most widespread flooding in recent years occurring during August 1948, when severe flooding was seen on the lower stretches of the Tweed, on the Gala Water, Leader Water and particularly in Berwickshire. Other significant floods in the catchment included a more localised flood on the Till in September 2008, flooding of the Gala and Jed waters in 1984 and on the Ettrick and Yarrow in October 1977. It is currently estimated that just over 9% of the catchment's properties are considered at risk from flooding (Werritty et al 2002). This equates to some 4,575 'at risk' properties, the majority from riverine flooding as opposed to coastal flooding.

While flooding is a natural process it can be exacerbated by activities such as canalisation; riverworks; modification and diversion of rivers; land drainage; poor agricultural and forestry practices or floodplain development. Addressing those land management practices that increase flood risk assists effective and sustainable flood management. However, there is also a need to avoid short-term localised solutions and move towards a more catchment-based approach which does not transfer problems from one part of the catchment to another. Indeed, a catchment based approach is required by EU legislation such as the WFD and Floods Directive, as is the need for exploring land management practices that allow the natural processes of a river to function (Sustainable Flood Management).

Box 9 The EU Floods Directive

The EU Floods Directive focuses on the assessment and management of flood risks and came into force on 26 November 2007. The Directive requires Member States to assess whether water courses and coastlines are at risk from flooding, to map the flood extent, assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. The Directive also reinforces the rights of the public to access this information and to have a say in the planning process. Its aim is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. The Directive requires Member States to carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such "at risk" zones, flood risk maps must be drawn up by 2013 and flood risk management plans, which will focus on prevention, protection and preparedness, established by 2015. The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU.

The Directive should be carried out in coordination with the Water Framework Directive, notably by flood risk management plans and river basin management plans being coordinated, and through coordination of the public participation procedures in the preparation of these plans. All assessments, maps and plans prepared shall be made available to the public. Flood risk management practices must also be coordinated for cross-border river basins to ensure measures taken in one area do not increase flood risk in another. Consideration must also be given to long term developments, including climate change, as well as sustainable land use practices in the flood risk management cycle.

Objective 5.1

Improve knowledge, understanding and awareness of flood management issues within the Tweed catchment.

Issues

With climate change models predicting increases in annual precipitation (UK Climate Projections 09) it is likely that there will be an increased risk from flooding in the future. If we are to effectively manage this increased flood risk then we need to improve our knowledge and understanding of flood risk management issues and ensure that those at risk are fully aware of whom to contact for help and advice. A key remit of Scottish Borders Council's Flood Liaison Advisory Group is to improve knowledge and understanding of flooding in the Borders while the EA has been working with a wide range of interests including local authorities and community interests to help improve its understanding of flood management issues.

Target 5.1.1 – Identify the different groups involved in and affected by flood management in the catchment and develop suitable methods to educate and raise awareness.

A wide range of interests are involved in and affected by flood risk management issues, including those with statutory remits to manage, control and protect against flooding, land managers whose working practices have the potential to exacerbate flooding frequency and intensity, planners whose decisions can result in the conservation or impairment of the natural flood plain as well as those whose homes and businesses are at risk from flooding. Focused, meaningful awareness-raising events are required as well as opportunities to learn of the experiences and requirements of the different groups. For example, SEPA and the EA organise a Floodline Roadshow which publicises the Floodline service (which provides easy access to up to date information on flood risks and river levels) and SBC have produced a leaflet ("Emergency Assistance to the Public") which outlines the extent of short term assistance provided to householders and

Box 10 Scottish Borders Council Flood Appraisal Group (FLAG)

The Scottish Borders FLAG was originally set up in April 2002 on the recommendation of the Scottish Borders Structure Plan. Having undergone a period of review in 2008, the re-formed group included a cross-border presence after discussions with Tweed Forum. The group now comprises a range of Council departments plus organisations such as SEPA, SNH, Scottish Water and Tweed Forum in addition to representatives from English agencies. The aim of the group is to provide a clearer and more up to date approach to flooding and planning issues in the Borders. Key objectives of the group include:- provision of a forum to share information on flooding, discuss issues and improve knowledge and understanding of flooding in the Borders; inform decision making on spending priorities for research, flood studies and flood defences and to inform the development and implementation of planning policy.

businesses to avert or alleviate the effects of flooding. Scottish Borders Council has encouraged and supported the setting up of local Self-Help Groups in the flood warning areas, providing both equipment and training and a similar initiative is now running in Northumberland. The Scottish Flood Forum has also recently been established and this works in partnership with local authorities and the voluntary sector to enable community groups to deal with flood issues. Scottish Borders Council has also taken forward a subsidised flood protection products scheme to encourage those at risk to be prepared for the eventuality of a flood.

Target 5.1.2 – Improve knowledge of historic flood events within the catchment

Improving knowledge of historic flood events helps us to predict areas at risk from flooding both now and in the future. The Scottish Borders FLAG has investigated historical flood risk areas in the Scottish section of the catchment. By looking at old flood reports, newspaper accounts, publications and by encouraging people to share their knowledge of past flood events a much better picture of historic flood risk areas has been built up. The EA National Flood and Coastal Defence Database and Flood Risk Mapping team now hold data on historic flood events which will assist with flood risk planning in the Till sub-catchment.

While our knowledge of historic flood events is improving there are still gaps in our knowledge and the FLAG report made a number of recommendations where further research is required.

Target 5.1.3 – Improve cross-border communication and co-ordination on issues of flood management

As a cross-border catchment, responsibility for flood management is split between English and Scottish authorities. In Scotland, Local Authorities (with SEPA doing flood warning) have the leading role while in England, this responsibility falls to the Environment Agency. Development control and planning responsibilities, which are important components of flood management, are also split within the Tweed catchment between Scottish Borders Council on the Scottish side and Northumberland County Council on the English side. As previously highlighted, sustainable flood management relies on a catchment-based approach, however, in a cross-border catchment such as Tweed, there are clearly a number of different approaches to flood management across a wide range of organisations. To move towards a catchment-based approach to flood management there is a need to improve communication and coordination between the different approaches and different organisations involved. The severe flooding experienced in the Cheviots over the last two years has shown exactly how important this is with, for example, floodwaters and sediment generated in Scotland, on the Bowmont Water, having major implications for land managers and communities downstream in England. Tweed Forum is playing an active role in bringing together the many relevant agencies and land owners to develop a long term, integrated flood management plan for the catchment.

Box 11 Natural Flood Management (NFM)

NFM is one element within the broader Sustainable Flood Management framework. Sustainable Flood Management uses a catchment based approach with the emphasis on soft engineering solutions, rather than “hard” engineering such as concrete barriers and incorporates all aspects of social, economic, planning and natural processes. NFM addresses specifically those “natural” riverine processes which assist in the alleviation of flooding and seeks to restore, rehabilitate or protect components such as:

- upland wetlands (to increase flood storage in headwater areas)
- upland forestation (to increase interception of rainfall and snowfall and increase potential soil water storage)
- drains and watercourses in plantation forests (to reduce run-off rates)
- river channels – rehabilitate canalised reaches and restore meanders (to slow down flood flows)
- lochs and reservoirs (to increase their capacity for flood water storage)
- floodplain storage (to increase the areas of land available for inundation and increasing retention rates for floodplain storage)
- boulders and large woody debris in upland rivers (to slow down the flow rates and removal of obstructions from lowland river channels to increase the river channel capacity)
- urban watercourse rehabilitation (to reduce the risk of channel blockage)

Objective 5.2

Encourage Sustainable Flood Management, where appropriate.

Issues

Flooding is a natural process which can have terrible consequences for humankind and there has been a long history of flood management in the catchment. Recognising that flooding is a natural consequence of climatic variation, many flood management experts are now turning to the model of sustainable flood management (SFM) which promotes a catchment based approach, emphasises soft engineering solutions, rather than “hard” engineering such as concrete barriers, and incorporates all aspects of social, economic, planning and natural processes in delivering flooding solutions.

While WFD legislation puts a duty on the relevant authorities to promote SFM there needs to be a clearer understanding of the individual elements that make up SFM and how best to apply the model to specific areas and specific needs.

Target 5.2.1 – Protect the floodplain from inappropriate development

Natural floodplains can make an important contribution to the long-term reduction of flood risk and appropriate management offers considerable natural heritage benefits. Floodplain development reduces the river’s ability to rejuvenate and create new habitat and alters natural patterns of sediment transport and nutrient exchange. It can also affect the relationship and recharge of groundwater resources in the area and can reduce floodplain storage. Scottish Borders Council planning policies promote protection of the floodplain and development is not permitted where it would be at risk from flooding, would intensify the risk of flooding, would require high levels of public expenditure on flood protection works or would result in extensive channel modification.



Target 5.2.2 – Pursue opportunities for Natural Flood Management (NFM).

In many instances, rivers have been hydraulically isolated from their floodplains as a result of development decreasing the incidence and duration of flooding. This has resulted in habitat loss for wildlife and reduced the ability of floodplains to carry out many of their natural functions such as flood control and nutrient sediment storage. Natural Flood Management (one element of Sustainable Flood Management) seeks to restore natural riverine processes in order to alleviate flooding further downstream and has been the focus of a demonstration project on the Borthwick Water, just downstream of Craik village <http://www.tweedforum.com/projects>.

Target 5.2.3 – Ensure all flood alleviation schemes respect the physical, ecological and aesthetic integrity of the river system.

In the past the widely held view has been that flood protection could only be achieved through ‘hard’ engineered flood defences, such as concrete channels, barriers and so on. Existing developed urban areas situated on the flood plain may require flood defences, however, it is important that these do not result in loss of wildlife, habitats and visual amenity.

Objective 5.3

Evaluate and address the impact of land management practices on the frequency and intensity of flood events

Issues

Whilst flooding is a natural event, its frequency and intensity can be exacerbated by land management practices. A clear example of this was seen in the Tweed catchment in the middle of the 19th century when complaints were made about the effect of hill drainage on the catchment’s hydrology. Floods were said to have become more severe and of shorter duration and were attributed to an increase in the rate of the run off due to the presence of drains and the absence of wetlands (where water could be held for longer periods).

New Statistical Account 1836

“The rain which formerly filled the bogs or side of hills, and which then kept giving a constant and regular supply to the river, is now carried off at once by these drains.....causing sudden and violent floods, as short as they are sudden”.


Development which increases the area of impermeable surfaces: poor forestry and farming practices such as badly aligned ploughing and drainage, intensive sheep farming and inadequate or inappropriate culverting are all examples of land use practices that can lead to changes in runoff characteristics and an increase in flood risk. Recent work in Wales has shown that rainfall infiltration rates are very low on sheep pasture, compared to new hillslope woodlands. This results in faster run-off from large areas and can exacerbate soil erosion and flooding (www.pontbrenfarmers.co.uk).

Target 5.3.1 – Ensure all new developments take into account their potential impact on the frequency and intensity of flood events.

Run-off treatment and drainage design should be undertaken to reduce flood risks and a drainage impact assessment should be undertaken for all new developments. SUDS can help to delay storm runoff and reduce urban flood risk and are now required for new developments.

Target 5.3.2 – Ensure forestry activities do not adversely impact on flooding frequency and intensity.

Much is now known about the impact of forestry practices on extreme flows and advice on the impact of forestry on flood events has been updated in the most recent edition of the Forest and Water Guidelines. However, it is important that the results of long-term catchment studies and the advice contained within the Forest and Water guidelines continue to be fed into forestry management practices within the Tweed catchment.



Target 5.3.3 – Improve knowledge on the effect of riparian and floodplain woodland on flood flows.

It is generally accepted that riparian and floodplain woodlands have the ability to reduce peak flood flows, but more data is required. The Forestry Commission has been increasing its research in this area and there are more and more opportunities for research both in terms of funding and sites. The Craik NFM Demonstration Project is one such site established by the Forum, SBC, WWF, Scottish Government, Forestry Commission Scotland (FCS) and the Environment Agency. The Forum is working to establish other sites, such as the Eddleston Water, which will help strengthen the knowledge base in this area.

Strategic Aim Six

TOURISM & RECREATION

Promote the sustainable development of river-related tourism and recreational activities to accommodate a variety of interests

TOURISM & RECREATION





MANAGEMENT FRAMEWORK

Strategic Aim 6

Promote the sustainable development of river-related tourism and recreational activities to accommodate a variety of interests

Current status

Tourism is an increasingly important sector of the area's economy with the Tweed catchment attracting international, national and local visitors. The area is particularly well endowed with outdoor recreational opportunities, which include fishing, walking, cycling, canoeing and a wealth of heritage sites.

The dual and potentially conflicting objectives of protecting a natural resource and increasing tourism and recreational facilities have to be managed carefully. Opportunities need to be identified, interests balanced and conflicts resolved, involving all relevant parties.

Objective 6.1

Support the Scottish Outdoor Access Code and facilitate an access code for the Till sub-catchment which accommodates the widest variety of interests, promotes good practice and does not come into conflict with other aims and objectives set out in this document.

Issues

The Tweed and its tributaries support a wide range of recreational activities from bankside pursuits of sightseeing, walking, cycling and riding to water-based activities such as canoeing and angling. Access rights enable everyone to enjoy the outdoors provided they act responsibly in relation to people's privacy, safety and livelihoods and respect wildlife and historic features. The Scottish Outdoor Access Code, defines responsible practice for a range of recreational activities and helps to minimise conflicts. In England and Wales, the CROW makes provision for public access to the countryside, under a right to roam.

While the Scottish Outdoor Access Code and the Countryside Code in England and Wales promote responsible access at a national level, there is also a need to tackle access issues at a local level and encourage different recreational users to understand and respect each other's activities. Also the cross-border nature of Tweed can complicate access issues i.e. some land managers and access users need to be aware of both the differences in legislation between England and Scotland and where the actual border lies (www.outdooraccess-scotland.com).

Target 6.1.1 – Promote responsible access by all river users.

Not all water bodies are necessarily suitable for particular recreational activities, either because of size, depth or other constraints such as a strong nature conservation interest. Developing codes of conduct can help to avoid conflict between river users and ensure protection of the natural environment and, where already in existence, such as the National Canoeists' Code of Conduct and the Tweed Angling Code, their adoption should be encouraged. If the Scottish Outdoor Access Code and the Countryside Code are to be effective then it is important that there is a clear understanding of their implications by recreational users as well as land managers.

Target 6.1.2 – Create an effective communication network to ensure that water users acknowledge and respect each other's rights and responsibilities.

While many recreational activities can co-exist, others are less compatible. For example, without a clear understanding and respect for each other's activity, conflicts between canoeing and fishing or between trout and salmon anglers can occur. Research by the Environment Agency in 2000 reaffirmed the need for an effective communication network between anglers and canoeists. Some types of recreation can also adversely affect nature conservation interests through, for example, disturbance to wildlife or damage to aquatic plants. A planned approach to the management of sites shared by different users and activities, facilitated by dialogue between all interested parties, is required if resolution of such issues is to be achieved.



Objective 6.2

Promote and establish tourism and recreational activities based on the built, natural and cultural heritage of the Tweed and its tributaries.

Issues

The Tweed catchment offers a wealth of opportunities for tourism and recreation. There are a number of long-distance walking routes and cycling routes that pass through the catchment such as the Southern Upland Way, the Pennine Way and the Tweed Cycle Way. The Forestry Commission manages a large area of forestry in the catchment, which provides recreational opportunities such as mountain-biking/cycling, orienteering and bird watching. People come from all over the world to fish the internationally famous salmon rivers of the catchment. Trout fishing is also a major attraction.

While much of the tourism of the Tweed catchment already uses the exceptional resources provided by the built, natural and cultural heritage of the area there is still great potential to attract further visitors, which in turn will strengthen the area's economy.

Target 6.2.1 – Increase educational and interpretation facilities based on the built, natural and cultural heritage of the Tweed and its tributaries at appropriate sites.

The Tweed catchment offers great potential for attracting visitors and developing their understanding and appreciation of the area's heritage. The Tweed Rivers Interpretation Project ran for 6 years between 1999 and 2005 as part of the larger Tweed Rivers Heritage Project. With a spend of around £500k this project enhanced and developed a number of key sites along the river through landscaping, provision of interpretation boards and in some cases the commissioning of artworks such as the Temple of the Muses at Drygrange. The work of the Tweed Rivers Interpretation Project has provided a string of interpretation sites along the Tweed and its tributaries and this has been added to more recently with the likes of the Philiphaugh Salmon Viewing Centre.


Education has a crucial role both underpinning and linking together the component parts of the TCMPI, and must take place at a variety of levels and involve a wide range of groups of a variety of ages.

Target 6.2.2 – Support tourist and recreational activities based in and around the Tweed and its tributaries, which aid the sustainability of the local economy.

The Tweed's international reputation as a premier salmon river attracts people from all over the world to fish its waters. It is estimated that it brings in over £18 million a year to the local economy and supports over 500 jobs. Tweed also has an excellent population of brown trout and grayling, which supports an important angling resource for local anglers and is increasingly marketed to visitors. With increasing competition from countries such as Russia and Norway it is important that measures are taken to continuously improve and upgrade the Tweed fishing experience to enable Tweed to remain a world class angling destination.

In the past, a Borders Angling Guide was published which contained all the information required to plan a coarse or fly fishing trip in the Borders, however in the past few years the "Fish Tweed" website (www.fishtweed.com) has come to the fore with information on most of the Tweed's salmon beats and contains a host of information to help people choose and organise a fishing trip to the Tweed. Visitors to the site can check river levels, fishing availability and book salmon fishing on-line or by telephone.

Nature based tourism is increasingly being seen as a real opportunity to enable landowners in the catchment to diversify their income, strengthen the area's economy and increase visitor numbers. "Making Tracks" was a nature based tourism project supported by the Scottish Executive with the aim of developing a network of sustainable nature based tourism products across the south of Scotland. Key objectives of the initiative were to improve links between tourism businesses, farming and the environment and to contribute to the region's economic regeneration following the foot-and-mouth crisis. Facilitated by Tweed Forum, a number of projects were completed through the Making Tracks initiative, including an Osprey viewing project in Peebles http://www.kailziegardens.com/osprey_watch.html and a fish viewing project at Philiphaugh, Selkirk <http://www.salmonviewingcentre.com/>.



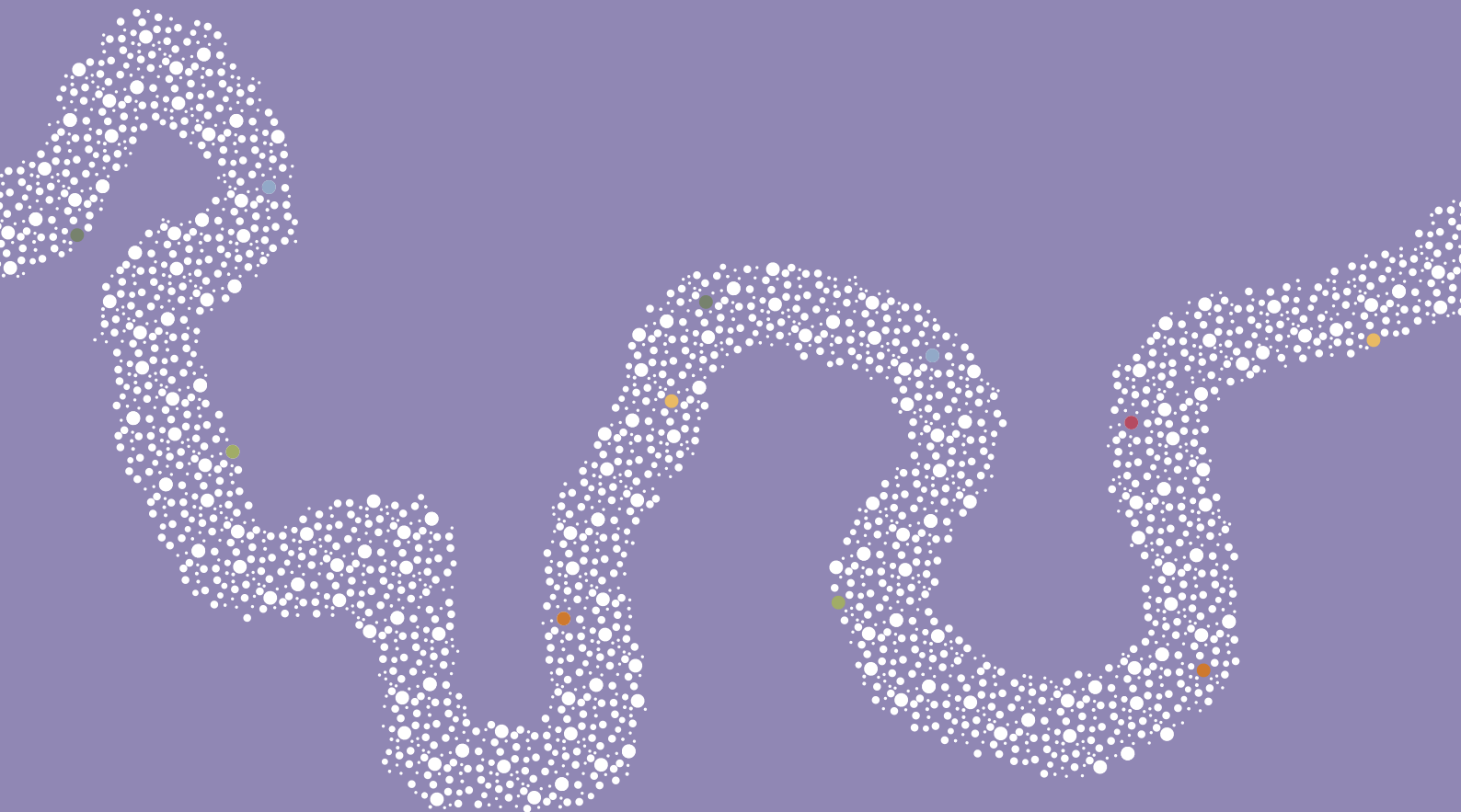
Target 6.2.3 – Encourage the enhancement and expansion of the access network in and around the Tweed and its tributaries where it does not come into conflict with other objectives set out in this document.

A balance needs to be struck between protecting sensitive habitats and establishing and maintaining routes in areas that have been identified as being able to withstand recreational pressure. The Scottish Borders Access Forum is responsible for developing a strategic overview of access in the area. The Access Forum has a wide membership of all access interests including walking, cycling and equestrian interests as well as local community access groups and government organisations such as Scottish Natural Heritage and the Forestry Commission.

Strategic Aim Seven

JOINT CMP/AMP D&D

Ensure the joint delivery and
development of the Tweed
Catchment Management Plan and
Tweed Area Management Plan





MANAGEMENT FRAMEWORK

Strategic Aim 7

Ensure the joint delivery and development of the Tweed Catchment Management Plan and Tweed Area Management Plan

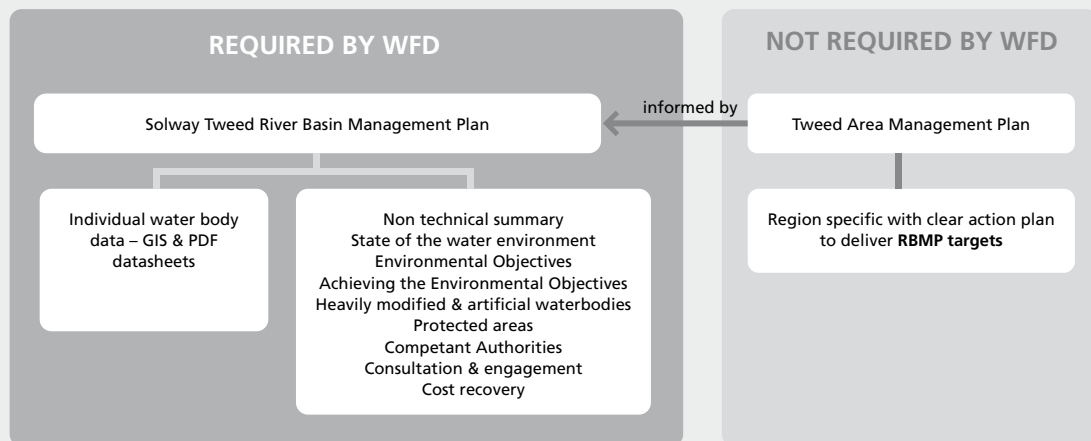
Current status

The production of the Tweed CMP in 2002 was only the beginning of the process to achieve the goals and aspirations it set out - ensuring successful delivery was the challenge for the entire CMP partnership. In the seven years of implementation since 2002, the CMP has changed most markedly in response to the WFD and this current revision of the CMP seeks to clearly integrate with the Solway Tweed River Basin Management Plan, its aims, goals and associated processes. It is that regional aspect of the Solway Tweed RBMP, the Tweed AMP, that most closely allies with the Tweed CMP and we therefore seek to deliver the CMP in tandem with the AMP, where appropriate.

Box 12 Solway Tweed River Basin Management Plan (2009)

The Solway Tweed RBMP provides a comprehensive framework for coordinating and integrating the management of the water environment of the Solway Tweed river basin, though purely within the remit of the EU WFD (see Box 3). It spans 6 years (from 2009 to 2015) and updated plans, including a review of progress, will be published every 6 years (in 2015, 2021, 2027 etc.). The river basin plan assesses the condition of rivers, lochs/lakes, estuaries, coasts and groundwater and includes objectives for their sustainable management.

The plan is based on the most comprehensive monitoring and assessment programme of the state of the water environment ever undertaken in the Solway Tweed river basin district. The results show that 49% of all water bodies in the Solway Tweed river basin are currently in good condition with a target of 56% being in good condition by 2015, increasing to 91% in 2027. It is acknowledged that reaching this challenging and demanding target will require partnership working, a source to sea approach and integrated land/water management: an approach championed by the Forum since its inception.



Objective 7.1

Continue to ensure effective stakeholder engagement and interaction.

Issues

It is now widely accepted that attempts to manage complex environmental situations will not be successful if they adopt exclusively top down approaches which impose management practices on people. For the CMP/AMP to be successful, it is vital that they engage all stakeholders by responding to local needs and aspirations and not merely to overarching international and national policy.

The Tweed catchment is very much at the forefront of partnership working in the UK and has been moving forward, since the CMP's inception in 2002, on the basis of partnership, cooperation, trust and negotiation, where the decision-making process is open to all potential stakeholders. Ownership, support and engagement from stakeholders are the necessary precursors to concerted action on the ground. Without them, the CMP/AMP cannot succeed.

In order to meet many of the aspirations set out in the CMP/AMP we must continue to address how we work together as individuals, organisations and institutions. We must continue to fully engage with and learn from all those who have an interest in, and are affected by, the catchment's management.



Box 13 The Tweed Area Advisory Group, the Tweed Area Management Plan and the Tweed Forum

The Water Framework Directive requires stakeholder engagement and public consultation in the river basin planning process and in the Solway Tweed, SEPA and the Environment Agency have facilitated this through the formation of Tweed and Solway "Area Advisory Groups" (AAG). In Tweed, this Group has been co-delivered by the Agencies and Tweed Forum due to strong opinions within the catchment that the Forum's stakeholder engagement programme should not be duplicated. Tweed is the only area in Scotland, and perhaps the UK, where another organisation has been co-opted to deliver an AAG and this is testament to the strength of Tweed Forum's presence in the catchment and the positive way in which the Forum is perceived.

The Tweed Area Management Plan is intended to supplement the Solway Tweed River Basin Management Plan and focuses specifically on the condition, targets and actions required for the Tweed catchment. It will present the current health of the water environment for the Tweed catchment specifically and sets out a clear plan of action for maintaining and/or improving the Tweed water environment over the coming six years, from 2009 until 2015. In addition, there is a forward look to 2027, to help with planning measures over the long term. This plan takes into account the relevant workstreams of the Tweed Catchment Management Plan and other national and local projects, actions and initiatives that are already successfully underway in Tweed.

Target 7.1.1. – Ensure opportunities for ongoing involvement and engagement with the Catchment Management Plan and the RBMP process.

To enable consensus for action which is self-generating and has both vision and momentum, the TCMP must create opportunities for the ongoing involvement and engagement of all interested parties. While information dissemination and awareness raising are important components of this, active involvement and the opportunity to interact with and learn from other stakeholders will also prove key to the CMP/AMP's success.

Target 7.1.2 – Develop a learning approach to the decision-making, development and delivery of the CMP and RBMP to ensure effective implementation.

To ensure collective action the development and delivery of the CMP/AMP should continue to open up the decision-making process to all interested parties. By integrating science-based knowledge with local knowledge, and equally valuing knowledge from all sides, opportunities to learn from each other will be created. To enable this to happen, stakeholders and organisations need to have the necessary skills and capacity. Tweed Forum works to embody this kind of approach in the delivery of the CMP and has acted as a catalyst to bring stakeholders together and enable them to learn from each other's perspectives.

Box 14 UNESCO, Tweed Forum and HELP (Hydrology for the Environment, Life and Policy)

HELP is a major initiative of the United Nations Educational Scientific Organization (UNESCO) that is creating a **new approach to integrated catchment management**. HELP works by bringing together catchment managers, scientists, policy-makers and local communities from river basins around the world to share best practice and learn how each other is approaching the many and diverse challenges that catchment management presents.

The Tweed is one of these global HELP Basins, and Tweed Forum has been awarded UNESCO recognition for its work in the Tweed catchment. The UNESCO HELP evaluation committee noted that the Tweed basin was already utilising the HELP philosophy in its application of integrated water resource management, and particularly commended the work on governance and stakeholder engagement. The Catchment Management Plans form a key part of this process, helping both to focus everyone's attention on protecting, enhancing and restoring the total river environment, and then on facilitating actions to implement this.

As Professor Shahbaz Khan, Global Co-ordinator for the HELP programme, reported the Tweed Forum *"can be considered a model for other[s]"* for its work in *"setting a standard for Scotland and the UK"*.

The only UK institution designated by UNESCO under the HELP Programme is Dundee University's UNESCO Centre for Water Law, Policy and Science. As well as research and teaching focused on the interface between science and policy, they are the Coordinating body for the European HELP basins and are working closely with Tweed Forum. The desire for the HELP programme is to be truly **"user-driven"** - and it is clear that Tweed Forum, through the Catchment Management Planning initiative and the other work they do, are successfully encouraging the active involvement of water and land resource managers alongside local communities, scientists and policy groups.

Over the last decade, Tweed Forum and its members have always focussed on real action on the ground, but Tweed Forum has also always been keen that the lessons learnt by land managers and professionals working at the coal face, gets fed back up into the policy level - thus ensuring that policy makers have the right information upon which to make decisions – itself another key aim of the UNESCO HELP programme.

Prof. Chris J. Spray MBE

Deputy Director, UNESCO Centre for Water Law, Policy and Science, University of Dundee



Objective 7.2

Overcome institutional barriers affecting the delivery and development of the CMP/AMP.

Issues

Institutional barriers can occur both within and between organisations and can have a significant impact on stakeholders' ability to engage with and commit to the TCMP/IBMP process. For the CMP/AMP to succeed they must be responsive to the needs of a wide range of stakeholders within their own institutional contexts and tackle the problems and needs of agencies in terms of policy fulfilment.

Target 7.2.1 – Address the fragmented, sectoral approach to, and the cross-border nature of, water resource management in the Tweed catchment

The current style of water resource management in the UK remains fragmented with many agencies and organisations involved, including the European Union, Government, statutory agencies, public agencies, commercial organisations, voluntary bodies and local interest groups. Even with the advent of the WFD and its requirement to manage catchments across political boundaries, the practical aspect of managing a cross-border catchment such as the Tweed with different legislative, policy and working arrangements each side of the border, are proving challenging.

Tackling this fragmented approach to water resource management is a real challenge that will require a flexibility of thinking and a willingness to build capacity to support interdisciplinary and inter-organisational approaches. In addition, opportunities need to be created to enable different sectoral interests to meet and learn from each other's perspectives.

Objective 7.3

Review and monitor the effectiveness of the CMP and ensure integration with other relevant plans.

Issues

Monitoring the progress of implementation of the action plan and the achievement of aspirations set out in the strategic objectives is essential to understand where efforts and resources need to be targeted in the future. However, since the CMP cannot anticipate all eventualities, an ongoing review of the CMP will enable it to be responsive to changing circumstances and to reflect new information and knowledge gained through the development and implementation process. Both monitoring and review activities should take place in partnership with all those who have been involved in implementation activities.

Target 7.3.1 – Review the CMP at appropriate intervals.

Local, non-statutory initiatives, such as the Tweed CMP, cannot achieve effective sustainable solutions to problems which are overwhelmingly influenced by major national or international policies. Nonetheless, to be successful, the CMP must be sensitive to changes in political, social and economic contexts at national, regional and local scales. Reviewing the CMP should enable it to remain responsive to a wide range of interests as well as changing social, physical, economic and political circumstances.



Objective 7.4

Ensure adequate commitment of time and resources to the TCMPI.

Issues

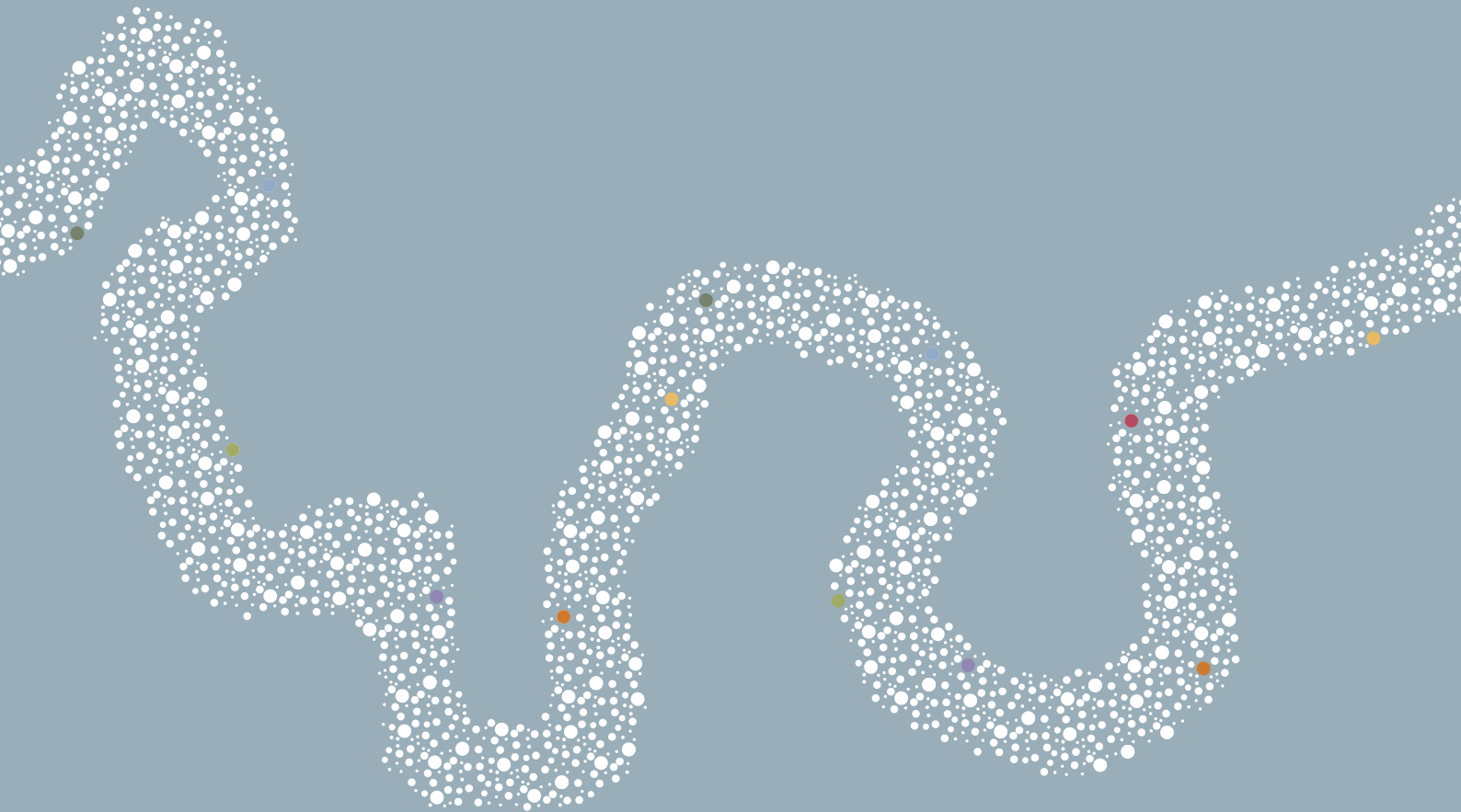
Whilst the entire Tweed Forum staff are delivering CMP targets and actions, the Tweed CMP Project Officer is dedicated to coordinating and facilitating implementation of the TCMPI. However, Tweed Forum staff alone will not be able to ensure the successful implementation of the CMP. Clear commitment of both time and resources from a wide range of organisations and individuals will be essential to achieve the objectives set out in the CMP.

Target 7.4.1 – Secure resources to deliver actions identified in the CMP and AMP.

The TCMPI offers stakeholders a more effective and more integrated approach to management of the catchment. In this sense, the process of implementing and developing the CMP/AMP should be seen as a tool to help agencies fulfil and add value to their existing statutory duties and practices. Many of the identified actions can be achieved by building on existing institutional and community capacities. However, some actions identified in the CMP/AMP will require financial resources and it will be important to be responsive to funding opportunities.

A variety of resources will be required to enable the successful implementation and development of the CMP/AMP over time. These resources include financial resources as well as time, commitment and enthusiasm from a wide range of stakeholders. New skills training and new organisational capacities may also be required to enable stakeholders to learn and work together.

ACTION TABLES





OBJECTIVE 1.1 Monitor, evaluate and address the impact of agriculture & forestry on the water quality in the catchment

Target	Key Partners	2010	2011	2012	2013+
Target 1.1.1 Reduce the impact of diffuse agricultural pollution on the surface and ground water quality of the Tweed catchment (page 26)					
1.1.1.1 Address those agricultural sectors that contribute most to diffuse agricultural pollution with targeted and coordinated action	EA, FWAG, NE, NFUS, ScAC, SEPA	→			
1.1.1.2 Continue to implement improved farm waste management through nutrient budgeting and other waste minimisation and efficiency measures, where possible	EA, NFUS, ScAC, SEPA	→			
1.1.1.3 Promote the use of Constructed Farm Wetland systems	EA, FWAG, NCC, NE, NFUS, ScAC, SEPA, TForum	→			
1.1.1.4 Increase awareness and promote action amongst farmers of practical ways to reduce diffuse pollution, highlighting the potential economic savings that can be made	EA, FWAG, NE, NFUS, NWT, RSPB, ScAC, SEPA, TForum	→			
1.1.1.5 Continue to reduce the effect of nitrates on ground water in the nitrate vulnerable zone (NVZ) through improved nutrient budgeting	EA, NFUS, NWT, ScAC, SEPA	→			
1.1.1.6 Increase awareness of both statutory and non-statutory diffuse pollution codes of practice	EA, NE, SEPA, TForum	→			
Target 1.1.2 Minimise the potential of agrochemicals and sheep dips to degrade water quality (page 26)					
1.1.2.1 Raise awareness amongst the farming community of the potential effects of sheep dips and other agrochemicals on water quality and associated ecology	EA, FWAG, NFUS, ScAC, SEPA	→			
1.1.2.2 Raise awareness of the legislative requirements surrounding the use of agrochemicals	EA, FWAG, NFUS, ScAC, SEPA	→			
1.1.2.3 Where necessary increase monitoring activity to determine the impact of agrochemical and sheep dip incidents on water quality and associated ecology	EA, SEPA	→			
Target 1.1.3 Continue to reduce the potential of forest management activities to adversely affect water quality in the catchment (page 27)					
1.1.3.1 Encourage compliance with the "Forest and Water Guidelines" by all sectors of the forestry industry	EA, FCS, SEPA	→			

OBJECTIVE 1.2 Minimise the impact of residential and industrial development on the water quality of the catchment

Target	Key Partners	2010	2011	2012	2013+
Target 1.2.1 Promote and extend the use of sustainable surface water management systems such as Sustainable Urban Drainage Systems (SUDS) (page 27)					
1.2.1.1 Survey, map and assess SUDS currently operating in the catchment	EA, NCC, SEPA	→			
1.2.1.2 Develop and disseminate best practice guidance notes for developers and regulators	EA, NCC, NW, SBC, SEPA, SW	→			
1.2.1.3 Raise awareness of the benefits of SUDS and the SUDS General Binding Rules through education events, practical trials and the use of demonstration sites	EA, NCC, NW, SEPA, SW	→			
1.2.1.4 Investigate and eliminate existing contamination sources in industrial estates	EA, NW, SEPA, SW	→			
Target 1.2.2 Ensure discharges from waste water treatment works and septic tanks do not contribute to the deterioration of water quality (page 28)					
1.2.2.1 Review and set discharge consents at appropriate levels to protect and, where appropriate enhance, water quality	EA, SEPA	→			
1.2.2.2 Identify and improve those WWTPs and discharges that are currently having a detrimental impact on water quality	EA, NW, SEPA, SW	→			
1.2.2.3 Raise awareness of the maintenance requirements of sewage treatment systems	EA, NCC, NW, SEPA, SW	→			
1.2.2.4 In the context of the Local Authority Development Plans, agree a prioritised programme for upgrading waste water treatment plants in the catchment	EA, NCC, NW, SEPA, SW	→			

OBJECTIVE 1.3 Locate, investigate and address specific water quality problem areas within the catchment

Target	Key Partners	2010	2011	2012	2013+
Target 1.1.1 Target 1.3.1 Investigate the causes behind failures to meet WFD water quality targets and draw up and implement action plans to ensure future compliance (page 28)					
1.3.1.1 Continue to monitor and address the Bathing Water quality issue at Spittal Beach and draw up and implement action plans to ensure future compliance	EA, EMS, SEPA	→			
1.3.1.2 Continue investigations into BOD failures in the lower catchment on stretches of the Till and Wooler water	EA, FWAG	→			
1.3.1.3 Continue to address priority catchments and encourage take-up of relevant Rural Development Contracts	SEPA, TForum	→			

OBJECTIVE 2.1 Consider the needs of the environment alongside those of all other water users

Target	Key Partners	2010	2011	2012	2013+
Target 2.1.1: Reduce the impact of surface and groundwater abstractions on riverine, riparian and wetland ecology (page 32)					
2.1.1.1 Survey, map and where possible quantify abstractions from the Tweed and its tributaries	EA, FWAG, NE, RTC, SEPA			●	
2.1.1.2 Seek reductions in abstractions where negative environmental impact is found	EA, NE, SEPA, TForum	→			
2.1.1.3 Explore demand management and storage measures which encourage water conservation and reduce overall abstraction volumes	EA, NE, NW, SEPA, SNH, SW	→			
2.1.1.4 Assess the potential impact of land use changes on flows and undertake monitoring as required	NCC, SEPA	→			
2.1.1.5 Determine the impact of ground water abstraction on ground water levels and establish means to minimise the pressures on falling ground water levels	EA, NW, SEPA, SW	→			
Target 2.1.2: Ensure flows in the rivers and burns of the Tweed catchment meet the requirements of riverine, riparian and wetland species and habitats (page 34)					
2.1.2.1 Address, via CAMS or CAR, those areas within the catchment where low flows are having a detrimental ecological impact	EA, NE, SEPA, SNH, TFn		●		
2.1.2.2 Where necessary, carry out additional ecological and hydrological research and monitoring to help determine ecologically acceptable flow regimes for the catchment	EA, NE, NWT, SEPA, SNH, TForum, TFn	→			
Target 2.1.3: Ensure reservoir release regimes minimise ecological impacts and where feasible reflect more natural hydrological conditions (page 34)					
2.1.3.1 Carry out a critical review of water orders and freshet release schemes	RTC, SEPA, SNH, SW	→			
2.1.3.2 Continue physical, hydrological, biological and fisheries surveys to gather baseline data to inform future management decisions	SEPA, SNH, TFn	→			
2.1.3.3 Review current decision making processes and monitoring systems regarding reservoir releases	RTC, SEPA, SNH, SW, TForum	→			
2.1.3.4 Continue to disseminate information on the timings and volumes of reservoir releases to agreed parties	SEPA, TForum	→			
2.1.3.5 Publish data annually on how well reservoir releases have met legal requirements	SEPA, SW, TForum	→			



OBJECTIVE 3.1 Ensure there is sufficient data on riverine, wetland and riparian habitats and species to inform sustainable management practices

Target	Key Partners	2010	2011	2012	2013+
Target 3.1.1: Improve knowledge of the extent, status and distribution of riverine, riparian and wetland habitats (page 39)					
3.1.1.1 Digitally map current and historical wetland sites and use this to target restoration programmes	BFT, EA, FCS, FWAG, LBAP, NE, NNPA, NWT, RSPB, SBBRC, SEPA, SNH, TForum			●	
3.1.1.2 Digitally map current riparian habitat restoration work and use this to inform future work and establish habitat networks	BFT, EA, FCS, LBAP, NE, NNPA, NWT, SEPA, SNH, TFn, TForum		●		
3.1.1.3 Determine the requirement for RHS/MIMAS in the catchment and implement what is practical	EA, LBAP, NE, NWT, SEPA, SNH		●		
3.1.1.4 Identify priority areas of riverine, riparian and wetland habitats that require protection and restoration	BFT, EA, LBAP, NE, NNPA, NWT, RSPB, SBBRC, SEPA, SNH, TForum, TFn			●	
3.1.1.5 Develop and maintain a register of designated riverine, riparian and wetland sites in the catchment which includes information on reasons for designation, potential threats and their relevance to local and national biodiversity	EA, LBAP, NE, NNPA, NWT, SBBRC, SEPA, SNH, TForum	→			
Target 3.1.2 Improve knowledge and understanding of species of conservation interest (page 39)					
3.1.2.1 Review data on all priority species and assess the need to commission further survey and monitoring work	EA, LBAP, NE, NNPA, NWT, RSPB, SBBRC, SNH, TForum	→			
3.1.2.2 Coordinate all existing and incoming species data referenced to the river and river corridor and encourage participation of local experts and recorders to achieve this	EA, LBAP, NE, NNPA, NWT, RSPB, SBBRC, SEPA, SNH, TForum, TFn	→			
3.1.2.3 Ensure that monitoring of designated species and habitats of the River Tweed SAC/SSSI is used to inform future management	EA, FCS, NE, NWT, SNH, TFn	→			
3.1.2.4 Continue monitoring and research programmes for salmon, brown trout, sea trout and other local fish species as set out in the Tweed Fisheries Management Plan	FBAA, RTC, TFn	→			

OBJECTIVE 3.2 Promote the restoration and expansion of riparian, riverine and wetland habitats and conserve and enhance associated species

Target	Key Partners	2010	2011	2012	2013*
Target 3.2.1 Encourage the strategic development of habitat networks throughout the catchment, linking riparian, floodplain, wetland, upland and native woodland habitats (page 40)					
3.2.1.1 Monitor and evaluate the outcomes of sub catchment habitat network projects	BFT, FCS, LBAP, SNH, TFn				→
3.2.1.2 Using the Borders Woodland Strategy tools, promote the creation and enhancement of native woodland, and riparian habitats which form part of a strategic network, linking woodlands to other semi natural habitats on a catchment scale	BFT, FCS, LBAP, RSPB, SBBRC, SNH, SUP, TForum				→
Target 3.2.2 Encourage the retention and expansion of wetlands and natural ponds to safeguard and enhance ecosystem services (page 40)					
3.2.2.1 Ensure that Local Plan policy reflects the importance of wetlands and ponds and the planning process encourages the inclusion of ponds and wetlands in landscape development	EA, LBAP, NCC, NNPA, NWT, RSPB, SEPA, TForum				→
3.2.2.2 Raise awareness of the importance of wetland sites with appropriate interpretation and guided walks for the public and schools	BFT, EA, LBAP, NE, NNPA, NWT, RSPB, SEPA, SNH, TForum				→
3.2.2.3 Promote and encourage agricultural practices, which maintain, enhance and create wetland areas and ponds	EA, FWAG, LBAP, NE, NFUS, NNPA, NWT, RSPB, ScAC, TForum				→
Target 3.2.3 Develop and implement a wetland and riparian habitat strategy to inform future management (page 40)					
3.2.3.1 Encourage reduced stock numbers in riparian areas and where appropriate exclude stock to minimise erosion and retain/re-establish bankside vegetation	BFT, EA, FWAG, LBAP, NE, NNPA, NWT, RSPB, SEPA, SNH, SUP, TForum, TFn				→
3.2.3.2 Periodic review of the management of habitat enhancement sites to produce a mosaic of habitats	BFT, EA, LBAP, NE, NNPA, NWT, RSPB, SEPA, SUP, TForum, TFn				→
3.2.3.3 Encourage management of riparian habitats in urban areas and encourage community participation in such schemes	BFT, EA, LBAP, NCC, NE, NWT, SEPA, SNH, SUP, TForum				→
Target 3.2.4 Conserve and enhance the fisheries of the Tweed catchment (page 41)					
3.2.4.1 Implement monitoring of fish stocks, habitat availability and exploitation rates as per the Tweed Fisheries District Management Plan	EA, RTC, TFn				→
3.2.4.2 Implement habitat improvement programmes as set out in the Tweed Fisheries District Management Plan	RTC, TFn				→
3.2.4.3 Continue to implement management policies as required to prevent overexploitation of fish stocks	FBAA, RTC				→



OBJECTIVE 3.3 Monitor and control the introduction and establishment of non native riverine and riparian species and where appropriate control or eradicate established populations

Target	Key Partners	2010	2011	2012	2013+
Target 3.3.1 Improve knowledge, understanding and awareness of the potential threats of non native riverine and riparian species and the need to prevent their introduction (page 42)					
3.3.1.1 Identify and catalogue non native riverine and riparian species that currently pose a threat to the habitats and species of the Tweed catchment	EA, FWAG, LBAP, NE, NWT, SBBRC, SEPA, SNH, TForum, TFn	—————→			
3.3.1.2 Continue research into the impact and control of non native species on the native habitats and species of the catchment	EA, LBAP, NE, NWT, SNH, TForum, TFn	—————→			
3.3.1.3 Carry out a publicity campaign to raise awareness of the potential threats posed by non-natives, measures to prevent their spread/introduction and methods of control	EA, LBAP, NE, NWT, SNH, TForum, TFn		●		
3.3.1.4 Review, and update when necessary, the "Invasives Plants" leaflet containing information on threats, species identification and control methods	LBAP, NWT, TForum	—————→			
3.3.1.5 Promote the national RAFTS biosecurity planning process and support any local measures that contribute to this process	RTC, SEPA, TForum, TFn	—————→			
Target 3.3.2 Control and where possible eradicate priority non-native species (page 42)					
3.3.2.1 Continue to map the extent of giant hogweed and Japanese knotweed and sources of invasion	LBAP, NWT, SEPA, SNH, TForum	—————→			
3.3.2.2 Continue with the coordinated catchment wide control programme for giant hogweed/Japanese knotweed	EA, LBAP, NE, NW, SEPA, SNH, TForum, TFn	—————→			

OBJECTIVE 4.1 Continue to develop an understanding of the river system and its response to riverworks

Target	Key Partners	2010	2011	2012	2013+
Target 4.1.1 Improve knowledge of the hydrogeomorphology of the river system (page 46)					
4.1.1.1 Identify, collate and log all information currently available on the hydrogeomorphology of the river system	EA, , NE, RTC, SBC/FLAG, SEPA, SNH, TForum		●		
4.1.1.2 Using historical information such as photographs, maps, remote sensing and logged events establish the past changes of river dynamics within the catchment	BFT, EA, SBC/FLAG, SEPA, SNH, TForum		●		
Target 4.1.2 Improve knowledge of current and historical riverworks throughout the catchment (page 46)					
4.1.2.1 Survey, catalogue, map and assess all current and historical riverworks throughout the catchment	EA, NE, RTC, SEPA, SNH, TForum, TFn		●		
4.1.2.2 Develop, publish and disseminate a catalogue of riverworks best practice examples in the Tweed catchment with appropriate demonstration sites	EA, NE, RTC, SEPA, SNH, TForum, TFn		●		

OBJECTIVE 4.2 Improve the knowledge, understanding and awareness of river processes and issues surrounding riverworks and seek to address degraded stretches

Target	Key Partners	2010	2011	2012	2013+
Target 4.2.1 To further promote best practice and strengthen provision of advice to anyone considering riverworks within the Tweed catchment (page 46)					
4.2.1.1 Ensure information on the legislative requirements surrounding riverworks, the competent authorities involved with their management as well as advice on when to carry out riverworks is available online	EA, NE, RSPB, RTC, SEPA, SNH, TForum	●			
4.2.1.2 Ensure open access to the register of independent fluvio-geomorphological assessors, civil engineers and ecologists who are able to advise on riverworks matters within the Tweed catchment	EA, RTC, SEPA, SNH, TForum	→			
4.2.1.3 Raise awareness of the need to notify the relevant authorities of all riverworks, even those outside statutory controls	EA, NE, RTC, SEPA, TForum	→			
Target 4.2.2 Identify the different groups involved in riverworks and develop suitable methods to engage, learn and raise awareness of management issues (page 47)					
4.2.2.1 Continue to raise awareness amongst anglers, fishery managers, riparian owners, ghillies, farmers, landowners and contractors operating within the catchment	EA, FBAA, RTC, SNH, TForum, TFn	→			
Target 4.2.3 Encourage all those involved in riverworks to gain the necessary knowledge, expertise and training (page 47)					
4.2.3.1 Develop and implement appropriate training programmes for all those involved in managing riverworks	EA, NE, NWT, SEPA, SNH	→			
Target 4.2.4 Investigate and facilitate the restoration of priority waterbodies which are failing WFD targets due to morphological pressures (page 47)					
4.2.4.1 Prioritise those stretches of Tweed which are failing due to morphological pressures.	EA, FCS, NE, SEPA, TForum	→			
4.2.4.2 Facilitate restoration works, in partnership with relevant stakeholders, on priority stretches.	EA, FCS, NE, SEPA, TForum	→			

OBJECTIVE 4.3 Work with regulatory bodies to ensure that riverworks processes are streamlined and efficient as possible.

Target	Key Partners	2010	2011	2012	2013+
Target 4.3.1 Support the Controlled Activities Regulation (CAR) process to ensure transparent and effective regulation (page 47)					
4.3.1.1 Revisit the use of "emergency powers" to ensure they are appropriate in scope and duration	EA, SEPA, TForum	●			
4.3.1.2 Support measures to reduce duplication of effort which may occur during the CAR process	SEPA, TForum	●			
4.3.1.3 Continue the riverworks group as a Forum for sharing best practice, disseminating guidance, discussing forthcoming work in the catchment and ensuring cross-border integration.	EA, SEPA, TForum	→			



OBJECTIVE 5.1 Improve knowledge, understanding and awareness of flood management issues within the Tweed catchment.

Target	Key Partners	2010	2011	2012	2013+
Target 5.1.1 Identify the different groups involved in and affected by flood management in the catchment and develop suitable methods to educate and raise awareness (page 52)					
5.1.1.1 Update, as necessary, any resources (e.g. Floodline Pack) that assist the public in preparing for floods, including useful contacts and information sources	EA, SBC/FLAG, SEPA, TForum	—————→			
5.1.1.2 Promote "Floodline" as a means of obtaining up to date information on flood risks and river levels	EA, SBC/FLAG, SEPA	—————→			
5.1.1.3 Disseminate clear information to residents on what to do before, during and after a flood	EA, SBC/FLAG, SEPA	—————→			
5.1.1.4 Support, and input to, the flood planning process under the Floods Directive	EA, NE, SBC/FLAG, SEPA, SNH, SW, TForum				●
Target 5.1.2 Improve knowledge of historic flood events within the catchment (page 53)					
5.1.2.1 Gather information from local community groups, landowners and members of the public to share their knowledge of historical flood events	BFT, EA, SBC/FLAG	●			
5.1.2.2 Study and collate historical information such as photographs, archived material and logged events to establish historical flood events.	BFT, EA, SBC/FLAG, TForum	●			
Target 5.1.3 Improve cross-border communication and coordination of issues of flood management (page 53)					
5.1.3.1 Support a cross-border presence at the Scottish Borders Council FLAG meetings	EA, SBC/FLAG, SEPA, TForum	—————→			
5.1.3.2 Produce and circulate a flood management contacts list for the Tweed catchment, containing the main tasks and responsibilities of individuals involved in flood management as well as their contact information	EA, SBC/FLAG		●		

OBJECTIVE 5.2 Encourage Sustainable Flood Management, where appropriate

Target	Key Partners	2010	2011	2012	2013+
Target 5.2.1 Protect the floodplain from inappropriate development (page 54)					
5.2.1.1 Ensure relevant strategic and local planning policies clearly identify flood risk areas and include policies to control development in such areas	EA, NCC, NE, RSPB, SBC/FLAG, SEPA, TForum	→			
5.2.1.2 Develop a framework for the integrated and open consideration of all new floodplain development proposals throughout the catchment	EA, NCC, RSPB, SBC/FLAG, TForum		●		
5.2.1.3 Ensure indicative flood risk maps developed by SEPA and the EA are used to identify non-development areas to planners	EA, NE, SBC/FLAG, SEPA, SNH, TForum	→			
Target 5.2.2 Pursue opportunities for Natural Flood Management (NFM) (page 55)					
5.2.2.1 Create floodplain habitats to alleviate flooding risks, allowing the natural functioning of the floodplain	BFT, EA, NCC, NWT, RSPB, SBC/FLAG, TForum	→			
5.2.2.2 Disseminate and, where appropriate, implement NFM approaches that exploit rather than resist the natural dynamics of rivers and wetlands	BFT, EA, LBAP, RSPB, SBC/FLAG, TForum	→			
5.2.2.3 Monitor/assess NFM activities in the catchment and disseminate findings	EA, NE, SBC/FLAG, SEPA, TForum	→			
5.2.2.4 Investigate opportunities for establishing or enhancing riparian and floodplain woodland	BFT, EA, FCS, FWAG, LBAP, RSPB, SBC/FLAG, TForum	→			
Target 5.2.3 Ensure all flood alleviation schemes respect the physical, ecological and aesthetic integrity of the river system (page 55)					
5.2.3.1 Ensure any flood alleviation schemes are planned and carried out on a catchment scale basis	EA, RSPB, SBC/FLAG, SEPA, TForum	→			
5.2.3.2 Ensure all flood alleviation proposals are developed in relation to other ecological plans to ensure schemes do not exacerbate flooding elsewhere or have a detrimental ecological impact	EA, RSPB, SBC/FLAG, SEPA, TForum	→			

OBJECTIVE 5.3 Evaluate and address the impact of land management practices on the frequency and intensity of flood events

Target	Key Partners	2010	2011	2012	2013+
Target 5.3.1 Ensure all new developments take into account their potential impact on the frequency and intensity of flood events (page 55)					
5.3.1.1 Influence relevant strategic and local planning policies to require developers to assess flow impacts and flood risk for all new developments	EA, NCC, RSPB, SBC/FLAG, SEPA, SW	→			
5.3.1.2 Promote the use of SUDS to attenuate surface water and reduce peak run off from all new developments	EA, NCC, RSPB, SBC/FLAG, SEPA, SW	→			
Target 5.3.2 Ensure forestry activities do not adversely impact on flooding frequency and intensity (page 55)					
5.3.2.1 Revisit the Forest and Water Guidelines to ensure that recommendations to reduce the impact of forestry activity on flooding intensity and frequency are based on current science	FCS, LBAP, RSPB, SBC/FLAG	→			
Target 5.3.3 Improve knowledge on the effect of riparian and floodplain woodland on flood flows (page 56)					
5.3.3.1 Continue to carry out research on the impact of floodplain woodland on flood flows to build up evidence base	BFT, FCS, RSPB, SBC/FLAG, SEPA, TForum	→			



OBJECTIVE 6.1 Support the Scottish Outdoor Access Code and facilitate an access code for the Till sub-catchment which accommodates the widest variety of interests, promotes good practice and does not come into conflict with other aims and objectives set out in this document

Target	Key Partners	2010	2011	2012	2013+
Target 6.1.1 Promote responsible access by all river users (page 60)					
6.1.1.1 Encourage safe, responsible use of the water resource through the promotion of the Scottish Outdoor Access code and the Countryside Code for England.	EA, NE, SNH	→			
6.1.1.2 Encourage adoption of the National Canoeists Code of Conduct developed by the Scottish Canoe Association	EA, VSB, TForum	→			
6.1.1.3 Encourage adoption of the RTCs Tweed Angling Codes	RTC, VSB	→			
Target 6.1.2 Ensure that water users acknowledge and respect each other's rights and responsibilities (page 60)					
6.1.2.1 Formalise a code of conduct between trout and salmon anglers and disseminate widely	EA, FBAA, SBC		●		
6.1.2.2 Address the potential need for mediation between anglers and canoeists and where feasible develop formal agreements and disseminate widely	EA, FBAA, RTC, TForum	→			
6.1.2.3 Increase dialogue between different recreational users and between water based recreational activities and land management and conservation activities through seminars, magazine and newspaper articles and information leaflets	AF, TForum	→			
6.1.2.4. Raise awareness of the risk posed by recreation in the spread/introduction of non native species.	EA, NE, RTC, SEPA, SNH, TForum, TFn	●			

OBJECTIVE 6.2 Promote and establish tourism and recreational activities based on the built, natural and cultural heritage of Tweed and its tributaries.

Target	Key Partners	2010	2011	2012	2013+
Target 6.2.1 Increase educational and interpretation facilities based on the built, natural and cultural heritage of the Tweed and its tributaries at appropriate sites (page 61)					
6.2.1.1 Continue to identify further interpretation opportunities in the catchment	NE, NNPA, SNH, TForum, TFn, VSB	→			
6.2.1.2 Support the provision of environmental education in the Tweed catchment	NNPA, SEPA, SNH, TForum, TFn	→			
Target 6.2.2 Support tourist and recreational activities based in and around the Tweed and its tributaries, which aid the sustainability of the local economy (page 61)					
6.2.2.1 Maintain and promote Tweed as a world class angling destination	FBAA, RTC, TFn, VSB	→			
6.2.2.2 Update and republish the Borders Angling Guide	EA, FBAA, VSB		●		
6.2.2.3 Improve the brown trout and coarse fishing resource	FBAA, RTC, TFn	→			
6.2.2.4 Encourage nature based tourism based on the Tweed and its tributaries	EA, NE, NNPA, RSPB, SNH, SUP, VSB, TForum	→			
6.2.2.5 Continue to facilitate conservation of the built and cultural heritage associated with the river	NE, SBC, VSB, TForum	→			
Target 6.2.3 Encourage the enhancement and expansion of the access network in and around the Tweed and its tributaries where it does not come into conflict with other objectives set out in this document (page 62)					
6.2.3.1 Maintain and develop the local path network with due regard for other interests	AF, EA, NCC, NNPA, SNH	→			
6.2.3.2 Promote all multipurpose routes that are centred on the river	AF, EA, VSB	→			
6.2.3.3 Improve signage and promotion of the local path network	AF, EA, NNPA, SNH, VSB	→			

OBJECTIVE 7.1 Continue to ensure effective stakeholder engagement and interaction

Target	Key Partners	2010	2011	2012	2013+
Target 7.1.1 Ensure opportunities for ongoing involvement and engagement with the Catchment Management Plan and the RBMP process (page 67)					
7.1.1.1 Establish opportunities for stakeholders to learn together to address issues raised in the CMP/Area Management Plan (AMP)	SEPA, TForum	→			
7.1.1.2 Ensure wide dissemination of all information relating to the CMP/AMP using a variety of media including the project web page	SEPA, TForum	→			
Target 7.1.2 Develop a learning approach to the decision-making, development and delivery of the CMP and RBMP to ensure effective implementation (page 67)					
7.1.2.1 Improve the skills base and capacity amongst stakeholder groups to enable them to collectively address issues raised in the CMP and RBMP process	SEPA, TForum	→			

OBJECTIVE 7.2 Overcome institutional barriers affecting the delivery and development of the CMP/AMP

Target	Key Partners	2010	2011	2012	2013+
Target 7.2.1 Address the fragmented, sectoral approach to, and the cross-border nature of, water resource management in the Tweed catchment (page 69)					
7.2.1.1 Ensure Tweed Forum continues to enable different stakeholders to meet and engage with each other	TForum	→			
7.2.1.2 Continue to improve cross-border communication through the work of Tweed Forum and where necessary develop additional opportunities	TForum	→			

OBJECTIVE 7.3 Review and monitor the effectiveness of the CMP and ensure integration with other relevant plans

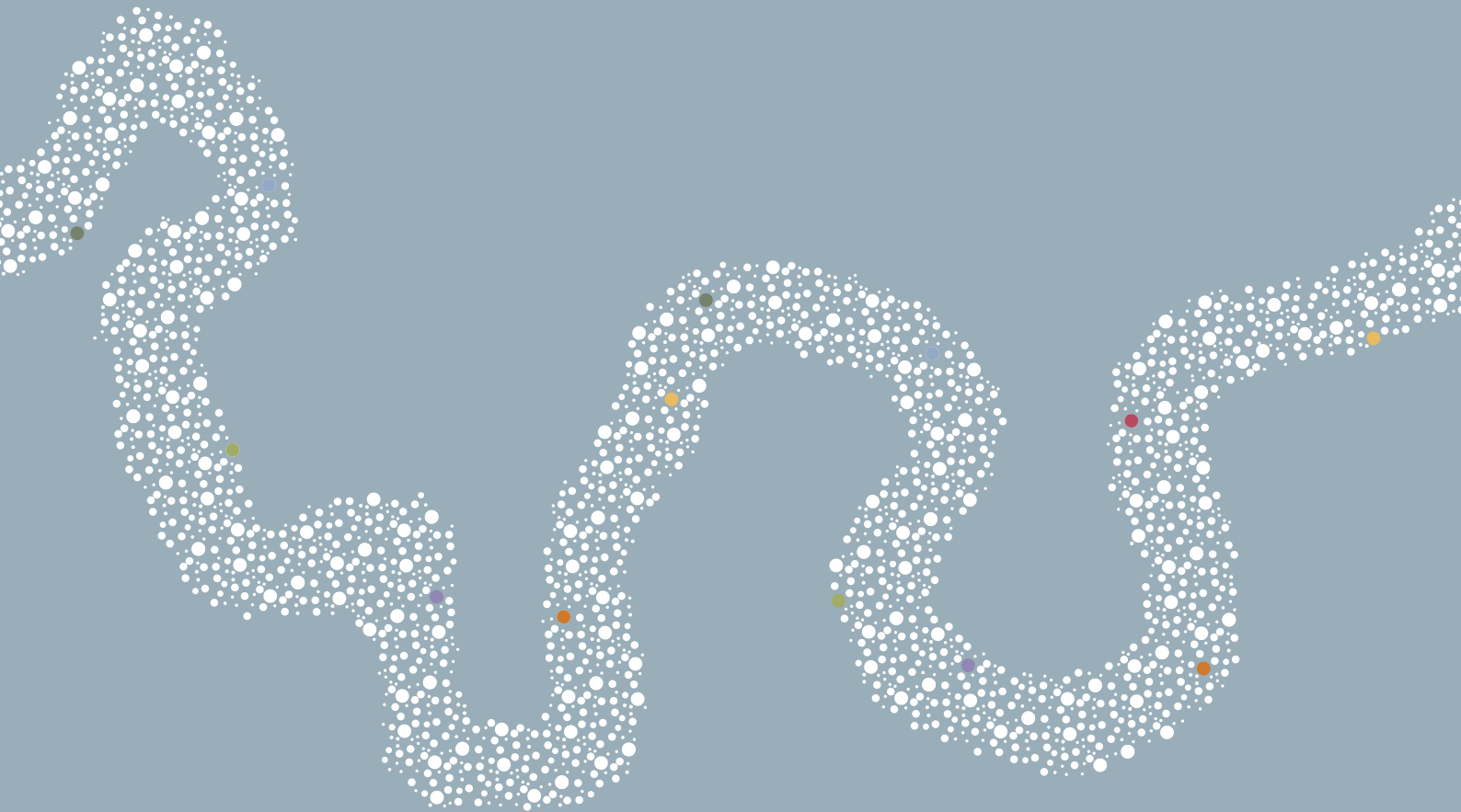
Target	Key Partners	2010	2011	2012	2013+
Target 7.3.1 Review the CMP at appropriate intervals (page 69)					
7.3.1.1 Ensure CMP process dovetails with the objectives of RBMP and Flood Planning process to avoid duplication of effort	EA, SEPA, TForum	→			
7.3.1.2 Carry out reviews as appropriate of CMP actions, engaging all stakeholders involved in implementation activities and ensure this review also takes into account the needs of the RBMP Measures Delivery planning process	SEPA, TForum	→			
7.3.1.3 Update the CMP and ensure new issues, actions and targets are incorporated where appropriate	SEPA, TForum	→			
7.3.1.4 Prioritise, programme and cost, where appropriate, CMP actions and use this information to inform the Working Groups	TForum	→			
7.3.1.5 Continue to service the Working Groups and progress the priority actions in the CMP work programmes and RBMP	SEPA, TForum	→			
7.3.1.6 Use WFD classification/objectives and the flood planning process to target activity within the catchment	EA, SBC, SEPA, TForum	→			
7.3.1.7 Tweed Forum to review research needs and identify gaps	TForum		●		



OBJECTIVE 7.4 Ensure adequate commitment of time and resources to the TCMP

Target	Key Partners	2010	2011	2012	2013+
Target 7.4.1 Secure resources to deliver actions identified in the CMP and AMP (page 70)					
7.4.1.1 All Tweed Forum members to identify opportunities and partners to fund CMP and relevant AMP implementation activities	All partners	→			
7.4.1.2 All Tweed Forum members to identify where activities in the CMP action plan help meet statutory obligations	All partners	→			
7.4.1.3 All Tweed Forum members to identify and build upon existing institutional and community capacities to deliver actions set out in the CMP/AMP	All partners	→			
7.4.1.4 Be open and responsive to emergent opportunities, which enable delivery of the CMP/AMP	All partners	→			
7.3.1.5 Continue to service the Working Groups and progress the priority actions in the CMP work programmes and RBMP	SEPA, TForum	→			

APPENDICES





APPENDIX A - Acronyms & Abbreviations

AAG	Area Advisory Group	NWT	Northumberland Wildlife Trust
AF	Access Forum	PEPFAA	Preventing Environmental Pollution from Agricultural Activity
AMP	Area Management Plan	RAFTS	Rivers and Fisheries Trusts of Scotland
BFT	Borders Forest Trust	RBMP	River Basin Management Plan
BOD	Biological Oxygen Demand	RHS	River Habitat Survey
CAMS	Catchment Abstraction Management Strategy	RSPB	Royal Society for the Protection of Birds
CAR	Controlled Activities Regulations	RTC	River Tweed Commission
CMP	Catchment Management Plan	ScAC	Scottish Agricultural College
CROW	Countryside and Rights of Way Act	SAC	Special Area of Conservation
CSF	Catchment Sensitive Farming	SBBRC	Scottish Borders Biological Records Centre
DEFRA	Department for the Environment Food and Rural Affairs	SBC	Scottish Borders Council
EA	Environment Agency	SEPA	Scottish Environment Protection Agency
EMS	European Marine Site	SFM	Sustainable Flood Management
FBAA	Federation of Border Angling Associations	SNH	Scottish Natural Heritage
FCS	Forestry Commission Scotland	SRDP	Scottish Rural Development Programme
FLAG	Flood Liaison Advisory Group	SSSI	Site of Special Scientific Interest
FWAG	Farming and Wildlife Advisory Group	SUDS	Sustainable Urban Drainage Systems
LBAP	Local Biodiversity Action Plan	SUP	Southern Uplands Partnership
MIMAS	Morphological Impact Assessment System	SW	Scottish Water
NCC	Northumberland County Council	TCMPI	Tweed Catchment Management Planning Initiative
NE	Natural England	TFn	Tweed Foundation
NFM	Natural Flood Management	UWWD	Urban Waste Water Directive
NFUS	National Farmers Union (Scotland)	UNESCO-HELP	UNESCO Hydrology for the Environment, Life and Policy
NGO	Non-Governmental Organisation	VSB	Visit Scotland (Borders)
NNPA	Northumberland National Park Authority	WEWS	The Water Environment and Water Services (Scotland) Act
NVZ	Nitrate Vulnerable Zone	WFD	Water Framework Directive
NW	Northumbrian Water	WWF	World Wide Fund for Nature

APPENDIX B - Glossary of Terms

Abstraction	The removal of water from a source of supply which includes surface or groundwater.
Alien Species	A species accidentally or purposefully introduced to an area where it did not formerly occur. Often they have undesirable effects on native species and the ecological integrity of the native ecosystem.
Biodiversity	The range of living organisms in an area which includes the variability among living organisms.
Biosecurity	Measures taken to minimise the risk of introducing alien/invasive species into a given ecosystem.
Buffer Zone	A strip of vegetated land adjacent to the watercourse which can reduce the levels of silt, nutrients and other pollutants reaching the watercourse and can also improve the habitat quality.
Catchment	A geographic area of land defined by the drainage of a river and its tributaries.
Catchment management abstraction strategy	CAMS are strategies for management of water resources at a local level. They will make more information on water resources and licensing practice publicly available and allow the balance between the needs of abstractors, other water users and the aquatic environment to be considered in consultation with the local community and interested parties.
Catchment management planning	A process whereby the different administrative, planning and regulatory systems and multiple demands on a river catchment are integrated and a consensual plan of action is formulated.
Compensation release	A continuous release of water from a reservoir or dam, which compensates the downstream river needs.
Croy	Man made riverworks, often stone or concrete, which can be used to improve fisheries and offer bank protection.
Culvert	A drain that crosses under a road or railway.
Designated area	An identifiable unit of land or water often with an associated legally binding mandate, that requires specific management practices to adequately protect important resource values, habitats or species.
Diffuse pollution	Pollution that cannot be traced to a single, identifiable source.
Ecosystem services	The provision of benefits or services from ecosystems e.g. water supply, oxygen from plants, nutrient recycling.
Eutrophication	The natural but often human induced process of nutrient enrichment resulting in high organic production rates. It produces several undesirable effects including algal blooms and seasonably low oxygen levels.
Fisheries management plan	A plan to achieve specified management goals for a fishery, typically includes an assessment of the fishery followed by management prescriptions.
Flood alleviation schemes	Structures that are erected to protect houses and other developed areas from flooding.
Floodplain	Flat land, bordering a stream or river onto which a river in flood will spread.
Freshet	A one off compensatory release of water from a dam or reservoir often used to freshen up the river or encourage migratory fish to move upstream.



APPENDIX B - Glossary of Terms (continued)

General binding rules	Part of the Controlled Activities Regulations, these rules represent the lowest level of control and cover specific low risk activities by requiring a statutory baseline of good practice.
Habitat networks	A configuration of habitat that allows species to move and disperse through a landscape.
Hydrogeomorphology	The study and science of fluvial landforms and the processes that form them.
Indicative flood risk maps	Maps developed by the Environment Agency and SEPA to provide an overview of flood risk areas.
Indigenous	A plant or animal originating naturally in a region.
Invasives	Species of plants or animals that have been transported with human aid, beyond the limits of their native geographic ranges. They often displace indigenous species and can reach pest status.
Natural flood management	Managing those “natural” riverine processes which assist in the alleviation of flooding by restoring, rehabilitating or safeguarding as necessary.
Point source pollution	Pollution that is traceable to a single, discrete source.
Riparian	Being of, or on, the riverbank.
Riparian zone	This zone is generally held to include the watercourse and the area affected by the watercourse to a distance of some 10 metres either side of the river bank.
Riverworks	Temporary or permanent works that artificially modify the river bed, banks or in stream morphology of a watercourse.
River basin management plan	Arising from the river basin planning process, this document sets out how the water environment within each district should be managed to achieve WFD requirements over a six year period. The plan will set out what needs to be achieved for all the water bodies in the district and will also specify measures or actions to achieve those objectives.
River basin planning process	Arising from the EU Water Framework Directive, this process involves integrated management at the “river basin” or catchment scale with the aim of sustainable water use.
Salmonid	General term used for fish of the trout and salmon family.
Special Area of Conservation (SAC)	An area designated under the European Habitats Directive which has a legally binding mandate to ensure protection of notified habitats and species.
Sustainable Development	Development that meets the needs of the present generation without compromising the ability of future generations to meet their needs.
Sustainable Flood Management	A catchment based approach with the emphasis on soft engineering, rather than “hard” engineering, solutions to flooding issues.
Water Order	A legal agreement enabling the abstraction of water for public water supply.

APPENDIX C - Responsibilities & contact details of key organisations

<p>Borders Forest Trust (BFT) Monteviot Nurseries Ancrum Jedburgh TD8 6TU 01835 850 750 enquiries@bordersforesttrust.org www.bordersforesttrust.org/</p>	<p>The Borders Forest Trust (BFT) is an environmental charity formed in January 1996 by a group of people living and working in the Scottish Borders. The Trust was established to enable the development of a range of integrated environmental, social and economic projects that would contribute towards the restoration of the area's native woodland heritage and the development of a new community-based woodland culture. BFT works in partnership with community groups, agencies, NGOs and individuals.</p>
<p>Commission for Rural Communities John Dower House Crescent Place Cheltenham GL50 3RA 01242 521381 http://www.ruralcommunities.gov.uk/</p>	<p>Our role is to provide well-informed, independent advice to government and ensure that policies reflect the real needs of people living and working in rural England, with a particular focus on tackling disadvantage. We have three key functions:</p> <ol style="list-style-type: none"> 1) Rural advocate: the voice for rural people, businesses and communities 2) Expert adviser: giving evidence-based, objective advice to government and others 3) Independent watchdog: monitoring and reporting on the delivery of policies nationally, regionally and locally
<p>Department for the Environment, Food and Rural Affairs (DEFRA) Customer Contact Unit East Bury House 30-34 Albert Embankment London SE1 7TL 08459 33 55 77 helpline@defra.gsi.gov.uk www.defra.gov.uk</p>	<p>The overarching challenge for Defra is to secure a healthy environment in which we and future generations can prosper. As we build a low carbon, resource efficient economy, Defra helps people to adapt to changes, deals with environmental risks and makes the most of the opportunity we now have to secure a sustainable society and a healthy environment.</p>
<p>Environment Agency (EA) Northumbria Area Tyneside House Skinnerburn Road Newcastle Upon Tyne NE4 7AR 0191 203 4000 enquiries@environment-agency.gov.uk www.environment-agency.gov.uk</p>	<p>The Environment Agency is a Government Organisation established to provide an efficient and integrated environmental protection system for England and Wales, which will both improve the environment and contribute to the Government's goal of sustainable development. It has a wide range of duties including integrated pollution control, water quality, water resources, flood defence and fisheries management (except in the Tweed catchment, see Tweed Foundation and River Tweed Commission). In fulfilling these duties, the Environment Agency issues abstraction licences and discharge consents and operates a hydrological network of river and rain gauges.</p>
<p>Farming and Wildlife Advisory Group – Northumberland (FWAG) Glendale Business Park Haugh Head Wooler Northumberland NE71 6QP 01668 283848 Northumberland@fwag.org.uk www.fwag.org.uk</p>	<p>FWAG exists to provide farmers, crofters, landowners and their other clients with the best opportunity for environmental gain through cost effective, quality solutions. FWAG provides farmers and landowners with practical advice on making adjustments to farm operations and enhancing farm features in order to support wildlife, landscape, archaeology, access and other conservation issues.</p>
<p>Federation of Border Angling Associations (FBAA) Peter Reith Crask Leithen Mills Innerleithen Peebleshire EH44 6JJ 01896 830285 peter@reith.org.uk</p>	<p>The Federation of Borders Angling Associations represents all the Trout Angling Clubs within the Scottish Borders. Through the various angling clubs that it represents, it aims to preserve fish species, promote good river management and ensure that angling is accessible for all.</p>



APPENDIX C - Responsibilities & contact details of key organisations (Continued)

<p>Forestry Commission Scotland (FCS) South Scotland Conservancy Area Office North Wheatlands Mill Wheatlands Road Galashiels TD1 2HQ 01896 750 222 southscotland.cons@forestry.gsi.gov.uk</p>	<p>The Forestry Commission is the Government Department responsible for protecting and expanding Britain's forests and woodlands and increase their value to society and the environment. FC takes the lead, on behalf of all three administrations, in the development and promotion of sustainable forest management. We deliver the distinct forestry policies of England, Scotland and Wales through specific objectives drawn from the country forestry strategies so our mission and values may be different in each.</p>
<p>Forestry Commission England (FC) North East England Conservancy 1 Walby Hill Rothbury Morpeth Northumberland NE65 7NT 01669621 591 Fc.nee@forestry.gsi.gov.uk www.forestry.gov.uk</p>	<p>Public forests, woodlands and other lands in England and Scotland are managed by Forest Enterprise agencies on behalf of the Forestry Commission in that country. Forest Research is a GB-wide agency which aims to deliver high-quality scientific research and surveys, to inform the development of forestry policies and practices, and promote high standards of sustainable forest management</p>
<p>National Farmers Union (Scotland) – NFUS NFU Office Eildon House Newton St Boswells Melrose Roxburghshire 01835 822388 www.nfus.org.uk</p>	<p>The NFU Scotland is a national organisation promoting and protecting the interests of the Scottish farming industry. It is involved in representing and advising farmers in all aspects of their businesses with particular reference to financial, legal, political and administrative standpoints. It influences Government in Scotland, Whitehall and Brussels and assists its members to meet the needs of their customers, consumers and the environment.</p>
<p>Natural England (NE) North East Region The Quadrant Newburn Riverside Newcastle upon Tyne NE15 8NZ 0300 060 2219 northeast@naturalengland.org.uk www.naturalengland.org.uk</p>	<p>Natural England is the Government Funded body established to promote the conservation of England's wildlife and natural features. To achieve this, Natural England works in partnership with owners, occupiers and others with a key interest in the river to secure the management of the river to benefit its important wildlife. The recognition of the National and International importance of the Tweed and its surrounding landscapes gives Natural England an important role to play in ensuring those parts of the catchment within England are adequately protected and conserved.</p>
<p>Northumberland County Council Director of Development & Regulatory Services County Hall Morpeth NE61 2EF 0845 600 6400 www.northumberland.gov.uk/</p>	<p>Northumberland County Council exercises a range of statutory duties including strategic planning and highway maintenance (including public rights of way) as well as discretionary activities in the area of access promotion and information provision in the countryside, and ecological, archaeological and historic building advice. The Council also works to promote tourist interest in the attractions and recreational resources of Northumberland and manages public rights of way and promotes visitor appreciation. The County Structure Plan for which the Council is responsible, provides an overall planning framework to guide development and contains policies concerning the countryside and outdoor recreation. The County Council is also responsible for the management of the Berwickshire and North Northumberland European Marine Site.</p>
<p>Northumberland National Park Authority (NNPA) Eastburn South Park Hexham Northumberland NE46 1BS 01434 605555 admin@nnpa.org.uk www.nnpa.org.uk</p>	<p>The Northumberland National Park is managed by Northumberland National Park Authority (NNPA). The NNPA's main objective is the conservation and enhancement of the park's natural beauty, including the built and cultural heritage, providing opportunities for quiet recreation and enjoyment. In achieving these objectives, it strives to promote thriving communities and a sustainable local economy. The NNPA also constitutes the planning authority within the national park, preparing development plans and deciding on planning applications. The headquarters of the NNPA are in Hexham. There are three Visitor Centres: Once Brewed on Hadrian's Wall, another at Rothbury and a third at Ingram in the Breamish Valley. Rangers and Field staff are based at Once Brewed and Rothbury. A Voluntary Wardens' service is in operation with over 90 active members who carry out regular patrols and practical tasks.</p>

APPENDIX C - Responsibilities & contact details of key organisations (Continued)

<p>Visit Northumberland Northumberland Tourism Ltd Micklewood House Longhirst Hall Morpeth NE61 3LL www.visitnorthumberland.com info@northumberlandtourism.co.uk</p>	<p>The voice of tourism in Northumberland working on behalf of business and public agencies to promote the area and ensure visitors have the best possible experience.</p> <p>Our vision is to establish Northumberland as England's premier rural tourism destination and our long term objectives are to attract and create more satisfied customers, increase visitor spend, increase visits throughout the year and lengthen the season, increase employment, investment and productivity, improve quality standards, develop a more skilled workforce and enhance and conserve the county's heritage</p>
<p>Northumbrian Water Customer Contact Centre Northumbrian Water Limited Abbey Road Pity Me DURHAM DH1 5FJ 08457 171 100 www.nwl.co.uk</p>	<p>Northumbrian Water provides water and waste water services to household and business customers across Northumbria. Alongside the core water and sewage aspects of their business, Northumbrian Water are committed to improving the environment we all live in and has implemented an environmental policy that includes Northumbrian Water's own Biodiversity Strategy.</p>
<p>River Tweed Commission (RTC) River Tweed Commission The North Court Drygrange Steading MELROSE Roxburghshire TD6 9DJ 01896 848 294 enquiries@rtc.org.uk www.rtc.org.uk</p>	<p>The River Tweed Commission is charged under the Tweed Fisheries Acts of 1858, 1859 and 1969 with the general preservation and increase of salmon, sea trout and other freshwater fish in the River Tweed and its tributaries, and in particular with the regulation of fisheries, the removal of nuisances and obstructions and the prevention of illegal fishing. The area of jurisdiction extends 5 miles out to sea and includes the coastline between Cockburnspath and Holy Island. Powers are granted to the Commissioners by these and other Acts of Parliament to help fulfil these duties. The River Tweed Commission is the only Fishery Board in Scotland with multi-species remit covering all freshwater fish, and its unique management structure reflects these broader responsibilities. The Governing body of the Commissioners is the Council which consists of forty three members appointed by Local Authorities (twenty three from local Angling Clubs and twenty from independents), and thirty eight members elected by the proprietors of the river. The Council levies an Annual assessment on the owners of all salmon fisheries, which is used to fund the management, conservation and protection of fish and fisheries throughout the catchment.</p>
<p>Royal Society for the Protection of Birds (RSPB) RSPB Conservation Officer Lindean Mill 2nd Floor Galashiels TD1 3PE 01750 725 323 www.rspb.org.uk</p>	<p>The RSPB is a registered charity whose principal objectives are the conservation of wild birds and their habitats and the promotion of public interest therein. All the RSPB's conservation work is targeted on the most endangered species, habitats and sites and is guided by strong scientific research. As well as managing a number of reserves, the RSPB takes an active interest in farming, forestry and other land uses and employs specialists such as land economists to guide its policies on these. It is increasingly involved in energy, transport and water-use issues and is the foremost body assisting the police with the enforcement of wildlife legislation. It is also actively involved in both formal and informal education and active membership involvement is encouraged through Local Members' Groups, such as that in Borders.</p>
<p>Scottish Agricultural College (ScAC) SAC Area Office Farm & Rural Business Division SAC Greycrook St Boswells Melrose TD6 0EU 01835 823322 aostboswells@ed.sac.ac.uk www.sac.ac.uk</p>	<p>ScAC is an innovative, knowledge-based organisation, which supports the development of rural industries and communities through its specialist research and development resources, its education and training provision and its expert advisory and consultancy services. Its work is wide-ranging but there is a particular emphasis on agriculture and related sciences, rural business development and management, food chain quality and safety, and rural resource and environmental management. Using its Scotland-wide network, ScAC provides a unique mechanism for the transfer of knowledge and ideas which emerge both from its own research and development activities and from other expert sources.</p>
<p>Scottish Borders Council Scottish Borders Council Council Headquarters Newtown St Boswells Melrose TD6 0SA 01835 824 000 enquiries@scotborders.gov.uk www.scotborders.gov.uk</p>	<p>Scottish Borders Council is the unitary local authority responsible for the provision of all local government services for the Borders region. It exercises a range of statutory duties which include that of District Planning Authority and responsibility for implementation of the Structure Plan. Other key areas of work include environmental planning, transport, housing, environmental health, sport and recreation and emergency planning.</p>



APPENDIX C - Responsibilities & contact details of key organisations (Continued)

<p>Visit Scotland (Borders) Ocean Point One 94 Ocean Drive Edinburgh EH6 6JH 0131 472 2222 www.scot-borders.co.uk</p>	<p>The main objective of Visit Scotland (Borders) is to develop and promote the Scottish Borders as an area of outstanding quality that attracts growing numbers of visitors throughout the year. It aims to achieve this by strengthening the tourist facilities, providing a comprehensive and accurate information service to visitors and developing strong and effective partnerships with tourism businesses and public sector agencies.</p>
<p>Scottish Environment Protection Agency (SEPA) Borders Office Burnbrae Mossilee Road Galashiels TD1 1NF 01896 754 797 www.sepa.org.uk</p>	<p>SEPA is a national government agency established to provide an efficient and integrated environmental protection system for Scotland, which will both improve the environment and contribute to the Government's goal of sustainable development. Water quality, water resources, pollution prevention and advice on riverworks activities are all key areas of SEPA's work relating to Tweed. They are responsible for running and maintaining the hydrological network in the catchment and historical and up to date hydrological information on rainfall and river flow is available online. In addition, they are responsible for administering the Controlled Activities Regulations as well as providing a flood warning service.</p>
<p>Scottish Rural Property & Business Association Stuart House Eskmills Business Park Musselburgh EH21 7PB 0131 653 5400 info@srpba.com www.srpba.com</p>	<p>The Scottish Rural Property and Business Association (SRPBA) represent the role and interests of those involved with rural property and businesses connected with the land. They aim to bring together those whose homes, interests and businesses are found within the countryside and rural settlements; to represent members' interests at the highest level, in an influential, proactive, professional, responsive and efficient manner; to demonstrate the wider benefits of members' activities to the community and to the Scottish rural economy; to contribute to the formulation of rural policy and to demonstrate a new approach in enhancing the political, social and economical climate within their sphere of influence; to promote rural enterprise and rural development in Scotland; to work with government and other organisations, to achieve mutual objectives and to provide a highly valuable and unique service to members</p>
<p>Scottish Natural Heritage (SNH) Operational Manager Scottish Natural Heritage Anderson's Chambers Market Street GALASHIELS TD1 3AF 01896 756 652 enquiries@snh.gov.uk www.snh.org.uk</p>	<p>Scottish Natural Heritage is an independent government agency, which aims to safeguard and enhance Scotland's natural heritage, particularly its natural, genetic and scenic diversity. To achieve this, it strives to foster awareness and understanding of the natural heritage; to promote public enjoyment of the natural heritage; to engage public support and harness voluntary effort for the benefit of the environment and to encourage environmental sustainability in all forms of economic activity. The recognition of the national and international importance of the Tweed and its surrounding landscapes gives Scottish Natural Heritage a role in not only encouraging the responsible enjoyment of recreation, environmental education and access on and around the river but also in safeguarding the special biological interest of the river and surrounding scenery.</p>
<p>Southern Uplands Partnership Studio 2 Lindean Mill Galashiels TD1 3PE 01750 725154 www.sup.org.uk piptabor@sup.org.uk</p>	<p>The Southern Uplands Partnership is a company registered by guarantee with charitable status. It is active across the rural south of Scotland with projects undertaken in South and East Ayrshire, Dumfries & Galloway, South Lanarkshire and the Scottish Borders. We use the term Southern Uplands to describe rural south Scotland - coast to coast, from the border to edge of the central belt.</p> <p>SUP is not 'just another talking shop'. It addresses practical land use issues faced by those working and living in the rural south of Scotland. SUP works to inform policy makers and to initiate sustainable social, economic and environmental projects.</p>
<p>Scottish Water Pentland Gait Edinburgh EH11 4HJ 08457 450 450 customer.service@scottishwater.co.uk www.scottishwater.co.uk</p>	<p>Scottish Water provides water and waste water services to household and business customers across Scotland. It is answerable to the Scottish Parliament and the Scottish people and aims to run the business as efficiently and effectively as possible, meeting targets set by its regulator the Water Industry Commissioner. In addition to its main role of providing water and waste water services, Scottish Water is also involved in education as well as conservation, access and recreation activities. The Tweed catchment plays an important role in providing high quality water for domestic and industrial use in the Borders and in the Edinburgh area.</p>
<p>Tweed Foundation The Tweed Foundation Drygrange Steading MELROSE Roxburghshire TD6 9DJ 01896 848271 info@tweedfoundation.org.uk www.tweedfoundation.org.uk</p>	<p>The Tweed Foundation is a Charitable Trust set up by the River Tweed Commission to promote the development of salmon and trout stocks in the Tweed River System. The Foundation aims to acquire the objective scientific data that is essential in taking sound and effective management decisions, protecting and enhancing the Tweed's valuable fish stocks by maximising the river's natural productivity. The Foundation operates a comprehensive monitoring and research programme for the whole river system including electrofishing surveys of juvenile stocks, habitat surveys of the spawning and nursery streams, scale reading, radio tracking of salmon, fish counters and angling exploitation studies. An ambitious programme of habitat enhancement work ensures that spawning fish have access to as much of the river system as possible and that the best possible environmental conditions exist in the spawning and nursery streams. The Foundation works very closely with a wide range of individuals and organisations in delivering its programmes, including landowners, fishery owners, angling associations, conservation, forestry and many other interest groups represented within the Tweed Forum. The Foundation is funded by private donations, public grants and membership.</p>

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http://www.wwf.org.uk/filelibrary/pdf/slowingflow_web.pdf

APPENDIX D - Useful Links

Biological and Environmental Evaluation Tools for Landscape Ecology – BEETLE

<http://www.forestresearch.gov.uk/fr/infid-69pla5>

Birds Directive EC 79/409/EEC 1979

http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm

Borders Forest Trust

<http://www.bordersforesttrust.org/>

Countryside and Rights of Way Act 2000

http://www.opsi.gov.uk/acts/acts2000/ukpga_20000037_en_1

DEFRA

<http://www.defra.gov.uk>

England Biodiversity Strategy; Working with the Grain of Nature, 2002

<http://www.defra.gov.uk/environment/biodiversity/documents/biostrategy.pdf>

Environment Agency

<http://www.environment-agency.gov.uk>

Farm Soil Plans

<http://www.scotland.gov.uk/Resource/Doc/47121/0020243.pdf>

Federation of Border Angling Associations

<http://www.tweedforum.com/members/fbaa>.

Floods Directive 2007/60/EC

http://ec.europa.eu/environment/water/flood_risk/index.htm

The Floods Risk Management (Scotland) Act 2009

<http://faolex.fao.org/docs/pdf/uk89857.pdf>

Forestry Commission Scotland

<http://www.forestry.gov.uk/scotland>

Habitats Directive, Council Directive 92/43/EEC 1992

http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

Mullti-Agency Geographic Information for the Countryside – interactive maps England

<http://www.magic.gov.uk/>



Natura 2000

<http://www.natura.org/>

Natural England

<http://www.naturalengland.org.uk>

Nature on the Map

<http://www.natureonthemap.org.uk/>

Nature Conservation (Scotland) Act 2004

http://www.opsi.gov.uk/legislation/scotland/acts2004/asp_20040006_en_1

Netregs

<http://www.netregs.gov.uk/>

Nitrate Vulnerable Zones (England)

<http://www.defra.gov.uk/environment/quality/water/waterquality/diffuse/nitrate/help-for-farmers.htm>

Nitrate Vulnerable Zones (Scotland)

http://www.oqps.gov.uk/legislation/ssi/ssi2008/ssi_20080298_en_1

Northumberland County Council

<http://www.northumberland.gov.uk/>

Northumberland National Park Authority

<http://www.northumberland-national-park.org.uk>

Northumberland Wildlife Trust

<http://www.nwt.org.uk/>

Northumbrian Water

<http://www.nwl.co.uk>

RAFTS

<http://www.rafts.org.uk>

The RAMSAR Convention on Wetlands

<http://www.ramsar.org/>

Royal Society for the Protection of Birds

<http://www.rspb.org.uk>

River Tweed Commission

<http://www.rtc.org.uk>

Scottish Advisory & Implementation Forum for Flooding (SAIFF)

<http://www.scotland.gov.uk/Topics/Environment/Water/Flooding/advisory-groups/saif>

Scottish Agricultural College

<http://www.sac.ac.uk>

Scottish Borders Council

<http://www.scotborders.gov.uk>

Scottish Borders Rural Partnership

<http://www.sbrp.org.uk>

Scottish Enterprise Borders

<http://www.scottish-enterprise.com>

Scottish Environment Protection Agency

<http://www.sepa.org.uk>

Scottish Forestry Strategy and Implementation Plan 2009-12

<http://www.forestry.gov.uk/forestry/INFD-6AGGZW>

Scottish Government

<http://www.scotland.gov.uk>

APPENDIX D - Useful Links (cont.)

Scottish National Farmers Union

<http://www.nfus.org.uk>

Scottish Natural Heritage

<http://www.snh.org.uk>

Scottish Rural Property & Business Association

<http://www.srpba.com/>

Scottish Water

<http://www.scottishwater.co.uk>

Scottish Wildlife Trust

<http://www.swt.org.uk/>

SNH Sitelink

<http://www.snh.org.uk/snh/>

Southern Uplands Partnership

<http://www.sup.org.uk>

Species Action Framework Scotland

<http://www.snh.org.uk/speciesactionframework/>

Strategy for England's Trees, Woods and Forests 2008-12

[http://www.forestry.gov.uk/pdf/eng-etwf-delivery-plan.pdf/\\$FILE/eng-etwf-delivery-plan.pdf](http://www.forestry.gov.uk/pdf/eng-etwf-delivery-plan.pdf/$FILE/eng-etwf-delivery-plan.pdf)

Till and Breamish Catchment Flood Management Plan (summary report December 2009)

<http://publications.environment-agency.gov.uk/pdf/GENE1109BRCl-e-e.pdf>

Tweed Foundation

<http://www.tweedfoundation.org.uk>

UK Climate Impacts Programme - UKCIP

<http://www.ukcip.org.uk/>

UK Forestry Standards 2004

[http://www.forestry.gov.uk/pdf/fcfc001.pdf/\\$FILE/fcfc001.pdf](http://www.forestry.gov.uk/pdf/fcfc001.pdf/$FILE/fcfc001.pdf)

Visit Scotland Borders

<http://www.visitscottishborders.com>

Voluntary Initiative – promoting responsible pesticide use

<http://www.voluntaryinitiative.org.uk/>

The Water Environment and Water Services (Scotland) Act 2003 (WEWS)

<http://www.scotland.gov.uk/Topics/Environment/Water/WFD/WEWSAct>

The Water Environment (Controlled Activities) (Scotland) Regulations 2005 (CAR)

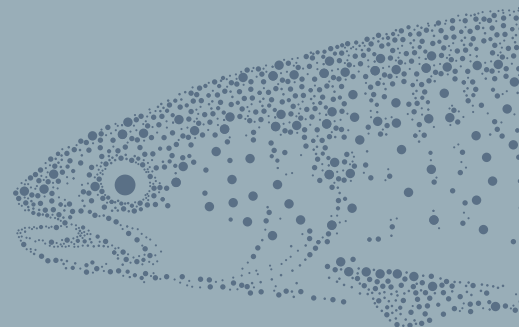
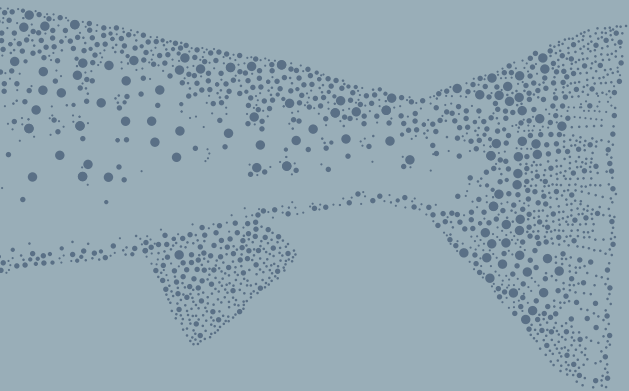
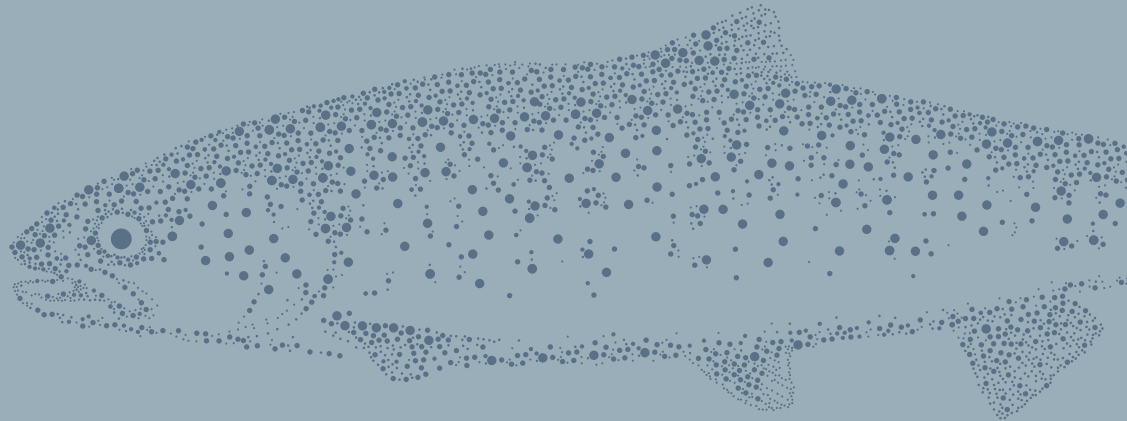
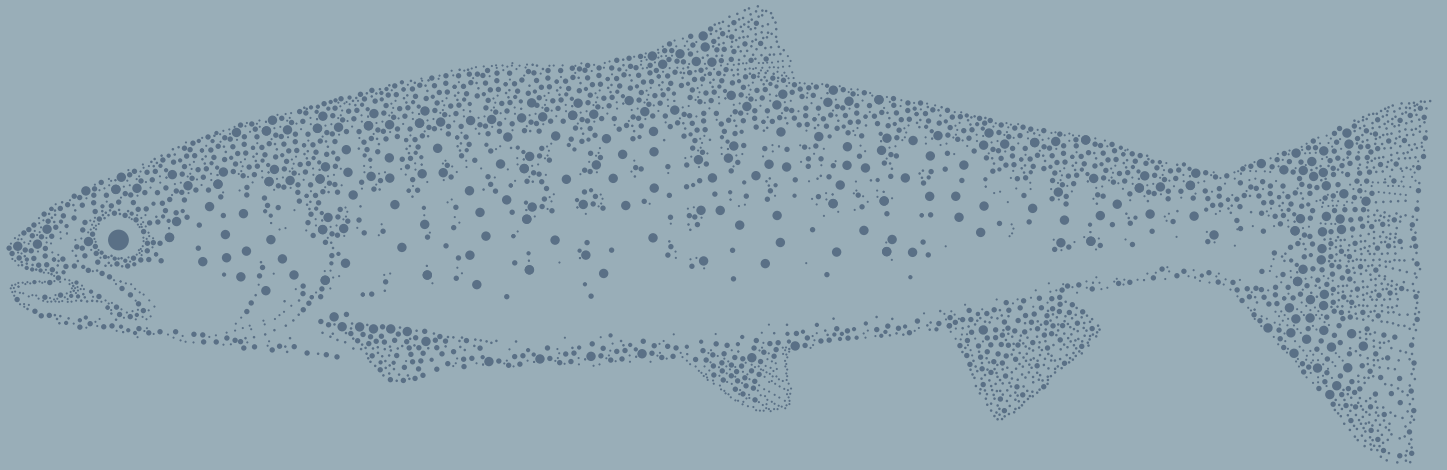
<http://www.opsi.gov.uk/legislation/scotland/ssi2005/20050348.htm>

Water Framework Directive 2000/60/EC

http://ec.europa.eu/environment/water/water-framework/index_en.html

Wildlife and Countryside Act 1981

<http://www.jncc.gov.uk/page-3614>



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