Improving the condition of Solway Tweed's water environment

Tweed area management plan
2010–2015

Supplementary to the river basin management plan for the Solway Tweed river basin district

Contents

Introduction

The water environment of the Tweed forms a vital part of the area's economy, community, wildlife and landscape. It contributes to the economy by supporting key industries such as farming, tourism and fishing. It also provides our drinking and bathing waters while supporting internationally important habitats and their species. It is therefore in everyone's interest to ensure that it is maintained and improved wherever possible.

Aims of this area management plan

This area management plan has been produced to focus our attention of the condition of the water environment in the Tweed area and what actions are necessary to maintain and improve it.

This plan presents the current condition of the water environment in the Tweed area and goes on to outline the actions required to maintain and/or improve this environment over the next six years and beyond. These targets have been developed as part of the Solway Tweed river basin management plan published in December 2009 as a requirement of the Water Framework Directive (see www.sepa.org.uk/water/river_basin_planning.aspx for more information).

As the waters in the Tweed straddle the English and Scottish Border, this plan has been developed jointly by SEPA and the Environment Agency, incorporating the experience and skills of the long established Tweed Forum, which has been delivering catchment scale improvements since 1991 through internationally acclaimed partnership working and delivery of the Tweed catchment management plan. The members of the Tweed Forum Executive Committee, supplemented by several key stakeholders, meet as the Tweed Area Advisory Group and have helped to inform and shape this plan. Membership of the Tweed Area Advisory Group is made up of representatives from the following organisations.

Ahlstrom Chirnside
Berwickshire and North Northumberland Coast European Marine Site
Consumer Council for Water
Country Land and Business Association
Environment Agency
Forestry Commission Scotland
National Farmers Union Scotland
Natural England
Northumberland County Council
Northumberland National Park Authority
Northumberland Wildlife Trust
Northumbrian Water Limited
The River Tweed Commission
Royal Society for the Protection of Birds
Scottish Borders Council
Scottish Environment Protection Agency
Scottish Government Rural Payments and Inspectorate Division
Scottish Rural Property and Business Association
Scottish Natural Heritage
Scottish Water
Tweed Forum Staff
Tweed Foundation

This document has been designed to supplement the Solway Tweed river basin management plan and dovetail with the Tweed catchment management plan (www.tweedforum.com/cmp).

Area covered in this plan

This plan includes information on the Tweed water environment, defined as surface waters (eg rivers, lochs, estuaries and coastal water bodies) and those beneath the ground (groundwaters). It considers rivers with a catchment area of more than 10 km^2 and lochs with a surface area greater than 0.5 km^2.

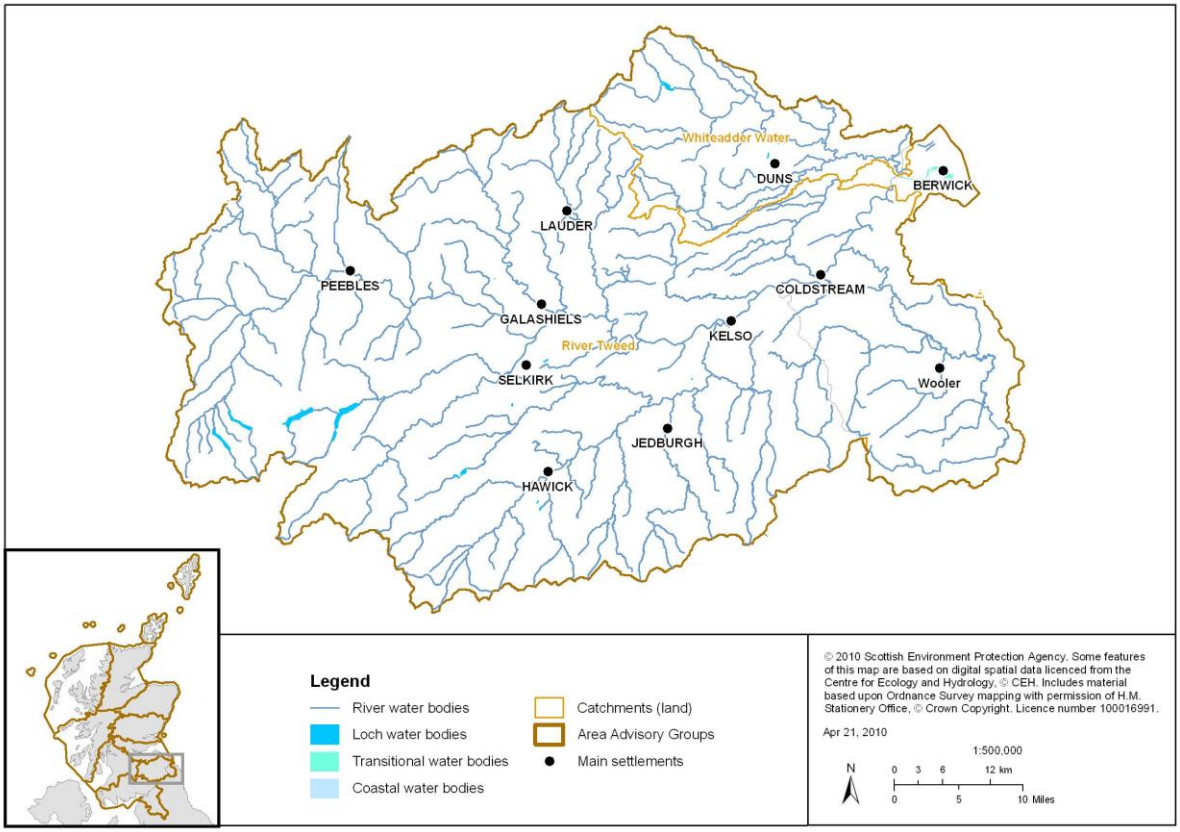
Using these criteria this plan covers 166 river water bodies along the River Tweed and its tributaries (Gala, Ettrick, Teviot, and the Till to the south and the River Whiteadder in the north), 6

lochs, the estuary at the mouth of the Tweed at Berwick upon Tweed and 33 groundwater bodies (see Map 1).

The Water Framework Directive requires targets to be set for wetland areas that depend either on groundwater or surface water. The current groundwater body classification includes an assessment of the impact from groundwater quantity pressures on wetlands, and in the English water bodies the impact from groundwater quality pressures is also assessed. Both the Environment Agency and SEPA aim to classify and set targets for all types of wetland for future river basin cycles. To enable this process, work has begun on the assessment of wetland types and to improve our understanding of the influences and interactions between wetlands, groundwater and surface waters. This includes establishing a Scotland wetland inventory which will incorporate data and research from initiatives such as the recently produced Tweed wetland strategy 2010 and the Cairngorms wetland vision 2010, along with additional research and monitoring and ongoing UK and European Union co-operation.

To the north of the Tweed catchment lies the Eye catchment, which falls within the Scottish Forth advisory group area and is led by SEPA. To the south lies the Northumbrian river basin district, which is led by the Environment Agency.

Map 1: Area covered in this plan – the Tweed advisory group area



Condition of the water environment in the Tweed area

The condition of the water environment is monitored and assessed as one of five classes: high, good, moderate, poor or bad. A water body at high status is considered to be in an almost natural condition. Groundwaters are classified as either good or poor for both water quality and water quantity. These classes, and the standards they represent, apply across the UK and have been agreed across Europe. The focus of the Water Framework Directive is to ensure that all water bodies reach good status and do not deteriorate to less than good status.

Some surface waters in the Tweed are have been designated as heavily modified water bodies (HMWB), which means they have been physically modified for a specific use such as drinking water reservoirs or flood embankments. These water bodies are classified according to five classes by ecological potential instead of status, which is a measure of the extent to which each water body's ecological quality has been maximised within the limits imposed by the physical modifications necessary for its use. No water bodies have been designated as 'artificial' in the Tweed area, using the criteria used under the Water Framework Directive, although man has influenced the environment over many generations.

The classification scheme contains many elements and uses datasets collected over many years in combination with data on newly monitored aspects of the natural environment. Thus, some of the classification results presented in this plan are based on long term datasets, which allow us to make assessments with high confidence levels, while others are based on data collected over only one or two years – or are calculated using a modelled approach – and so our confidence in these assessments are lower.

Nevertheless, the data presented here gives a complete picture of water ecosystem health for the whole Tweed catchment for the first time. The classification scheme will continue to be developed and new data added as river basin planning progresses, thus there is the provision to fine tune the classification assessments over subsequent years.

Condition of surface waters and groundwater

Table 1 presents the current overall classification of water bodies in the Tweed area, and Map 2 shows their geographical distribution.

Just over half (52%) of the natural surface waters in the Tweed area are in good or better condition. The remainder of natural surface waters are mostly in moderate condition (38%) or poor (10%). Around two thirds (66%) of heavily modified water bodies are at less than good ecological potential. The majority of groundwaters (88%) are currently in good condition, with those in the east assessed as poor for water chemistry, water quantity or both (Map 3). As more data is collected, and the newly introduced classification tools improve, our understanding in some aspects of the classification scheme will increase.

The pressures and risks affecting the Tweed water environment are discussed in the "Reasons why some water bodies are not in good condition" chapter of this document.

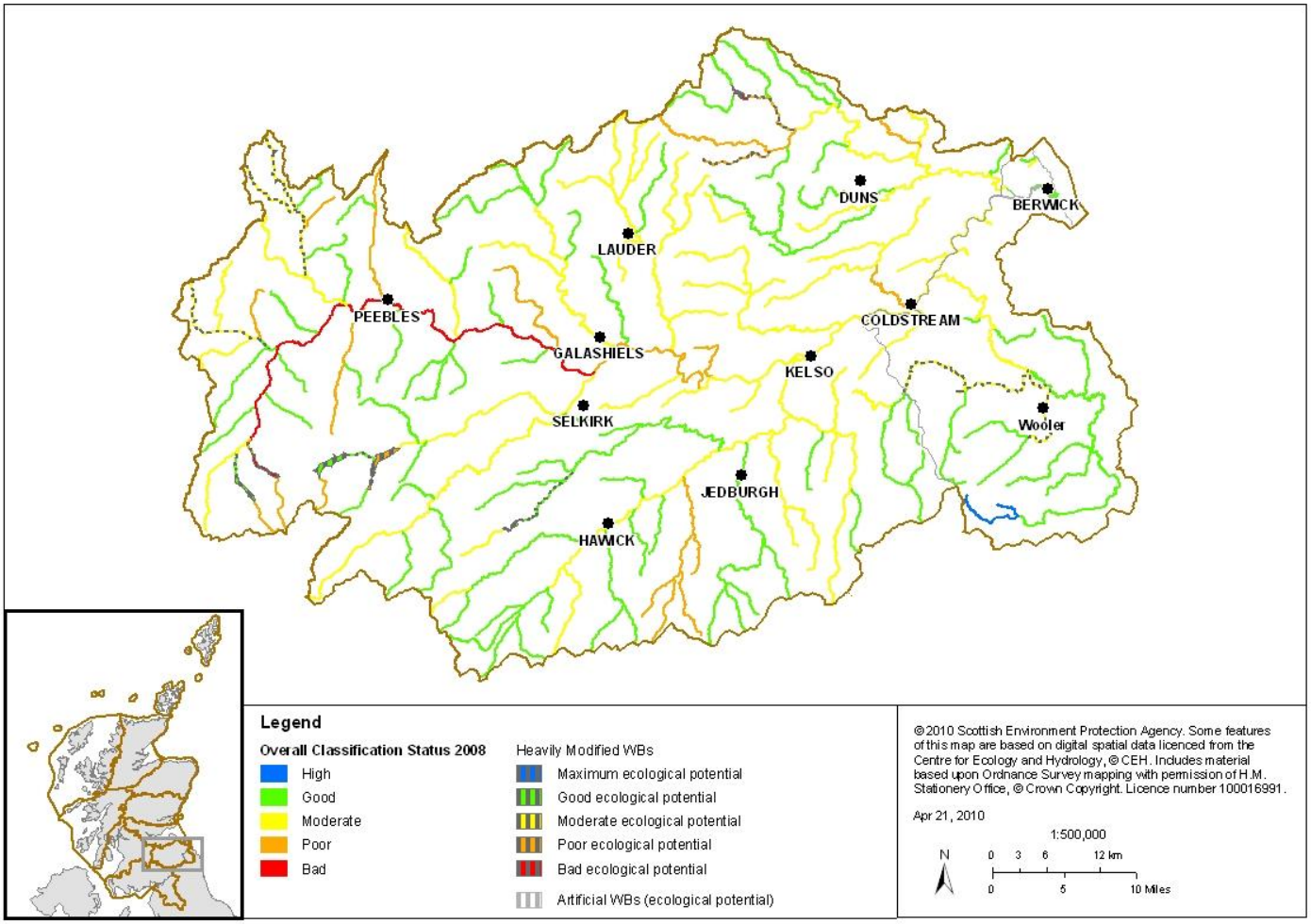
Table 1: Condition of surface waters and groundwater in the Tweed area in 2008

2008 condition (status/potential)	Number of water bodies			
	All water bodies	Surface waters		Groundwater*
		Natural	Heavily modified	
High/Maximum	2	2	0	

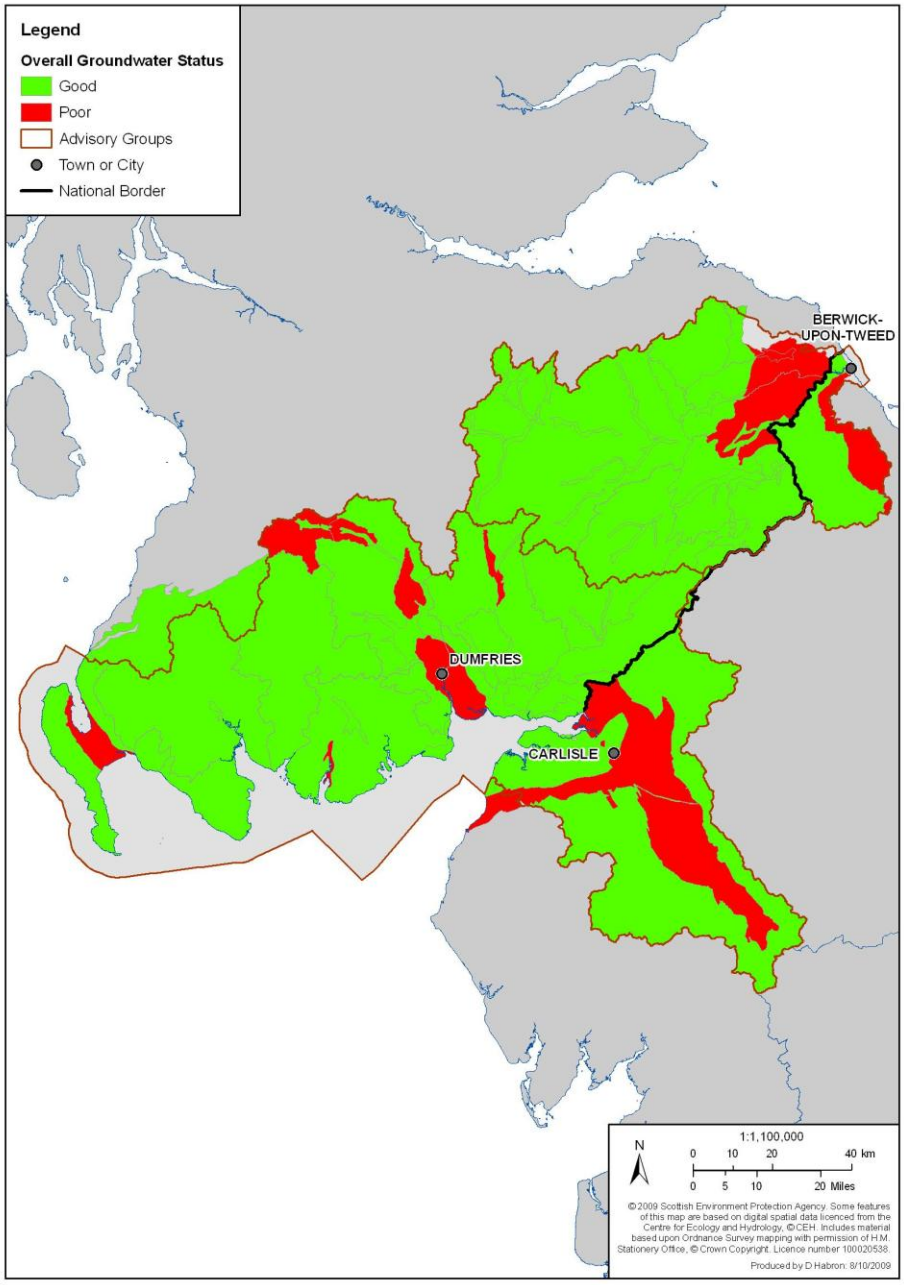
Good	120	84	7	29
Moderate	67	61	6	
Poor	25	17	4	4
Bad	4	2	2	
Totals	218	166	19	33
Proportion good or better (%)	56	52	37	88

*Bodies of groundwater are classed as either of good status or poor status.

Map 2: Condition of surface waters in the Tweed catchment using 2008 information, as presented in the Solway Tweed river basin plan



Map 3: Condition of groundwater across the Solway Tweed river basin district using 2008 information, as presented in the Solway Tweed river basin plan



Condition of protected areas

A large proportion of the water environment in the Tweed area has been identified as requiring special protection because of its particular economic, social or environmental importance or sensitivity to pollution. These areas are water bodies or parts of water bodies that:

- are used for drinking water supply;
- support economically significant shellfish or freshwater fish stocks;
- are designated bathing waters;
- support habitats or species of international biodiversity conservation importance;
- are sensitive to nutrient enrichment.

These areas represent some of the area's most valued natural assets. By protecting them we will help safeguard biodiversity, sustain employment in our rural communities and protect our drinking water sources from pollution.

The classifications of the protected areas in the Tweed catchment are described in the Solway Tweed river basin plan (www.sepa.org.uk/water/river_basin_planning.aspx) and can be summarised as:

- five Special Area of Conservation sites, all achieving favourable status with the exception of the River Tweed Special Area of Conservation (see the "Targets for the water environment in the Tweed area" chapter of this document);
- seven Special Protection Area sites, all at favourable status;
- salmon fisheries across the Tweed catchment are in good condition;
- bathing waters at Spittal Beach are currently in poor condition;
- Nitrate Vulnerable Zones in the Lothian/Borders and Cornhill on Tweed;
- Drinking Water Protection Zones, none of which have been identified as at risk of deterioration.

The majority of these sites are currently meeting the standards set for them; the exceptions and their targets for improvement are discussed in the "Targets for the water environment in the Tweed area" chapter of this document.

Reasons why water bodies are not in good condition

The key pressures and risks causing Tweed water bodies and protected areas to be at less than good ecological status are:

- nutrient enrichment from diffuse pollution (pollution coming from several dispersed sources) from rural land management;
- alterations to beds, banks and shores through rural land use activities, for example channel straightening for drainage on land used for livestock, forestry and mixed farming activities and barriers to fish migration;
- abstraction of water from rivers and lochs for public water supply and farming;
- the presence or risk posed by introduction of invasive non-native species such as the American Signal Crayfish;

This list of key issues does not cover all the pressures found in the Tweed area; detailed information on the individual classifications, pressures and actions for each water body is available from the interactive maps and water body information sheets at: www.sepa.org.uk/water/river_basin_planning.aspx.

Targets for the water environment in the Tweed area

The Solway Tweed river basin management plan has two broad aims:

- to prevent deterioration in the water bodies currently in good or better condition;
- to improve and restore those currently in moderate, poor or bad condition.

Almost 56% of water bodies in the Tweed area are currently at good or better status, so the target for these water bodies is to maintain this status over the coming years. Action is required to improve the remaining surface and groundwaters to good or better condition by 2027 (Table 2). The long-term view (through to 2027) of phased improvement allows us to take the potential cost and feasibility of the work that needs to happen into account, whilst managing uncertainties such as confidence in the monitoring results or the impact of climate change.

Table 2: Number and proportion of water bodies at good or high ecological status (%)

	Total no. of water bodies	**No. of water bodies with percentage (%) at good or better**				**Number and proportion (%) of water bodies remaining less than good by 2027**
		2008	**2015**	**2021**	**2027**	
All surface water bodies	185	93 50%	107 58%	141 76%	182 98%	3 2%
Rivers - natural	165	84 51%	96 58%	129 78%	162 98%	3 2%
Rivers - HMWB	13	4 31%	5 39%	6 46%	13 100%	0 0%
Lochs - HMWB	6	3 50%	5 83%	5 83%	6 100%	0 0%
Estuaries natural	1	1 100%	1 100%	1 100%	1 100%	0 0%
Groundwater quality	33	29 88%	30 91%	30 91%	31 94%	2 6%
Groundwater quantity	33	29 88%	30 91%	30 91%	33 100%	0 0%

The bathing water at Spittal beach is predicted to achieve the sufficient standard by 2015 as defined by the Bathing Water Directive, while the River Tweed Special Area of Conservation is assessed by Scottish Natural Heritage as having unfavourable status due to alien species and diffuse pollution from agricultural sources (as defined by the Habitat Directive), and should be favourable – or at least show signs of recovery – by 2027.

There are circumstances under which deterioration in status may be considered acceptable. Such “exemptions” occur when it is judged that the benefits would improve human health, maintain human safety, allow sustainable development or be in the overriding public interest. To date there are no water bodies in Solway or Tweed area where exemptions have been allowed.

For five water bodies, it is judged that good status cannot be achieved even by 2027. For the most part this is because there is currently no feasible and effective way to make the necessary improvements. For these water bodies, we have set a lower, or less stringent, objective than good status.

- Two water bodies are affected by the presence of North American Signal Crayfish, an invasive non-native species. It is currently judged to be technically infeasible to remove

established populations of North American signal crayfish, or sufficiently mitigate their impact, in order to achieve good ecological status by 2027.

- Winterhope Burn is currently impassable to fish and its target for 2027 will be to remain at poor status.

- Two groundwater bodies, around Coldstream and Duns, will remain poor for groundwater quantity beyond 2027.

Delivering these targets

Meeting these targets will be a big challenge because maintaining or improving the current condition will be a challenge in the face of many factors such as development pressures, changes in agricultural production and climate change. Phasing the improvements over three six-year cycles will allow time to monitor and improve our confidence in our classifications, secure funding and implement measures, track progress and, where appropriate and necessary, adapt the plan. This also means that we can respond to uncertainties, for example around how to tackle particular pressures or the impacts of climate change. Comprehensive reviews of progress will be undertaken during each river planning period and will be reported in updates of this plan.

Actions to meet our targets

There are many actions currently underway or about to begin in the Tweed area which will deliver on our targets. A summary of local actions in place to mitigate the main pressures to 2015, and beyond, is presented in Table 3.

The actions required to deliver the targets consist of a combination of monitoring, data collation, regulation, investment, awareness raising and guidance work led by agencies, stakeholders or partnerships. The work varies considerably in scale, from small projects on a river bank to catchment-wide initiatives examining mitigation of alterations to beds and banks or invasive non-native species.

As river basin planning is new, many of the actions to be implemented in the first cycle involve the collection or collation of data, increasing our confidence around the environmental pressures, the development of working groups to discuss implementation methods and the development of options for implementation (or scoping studies). These actions should evolve into active projects resulting in improvements to classification status as time progresses.

Table 3: Summary of local actions needs to meet the targets set for Tweed				
		Timeframe		
	Action	2015	2021	2027
Diffuse pollution from rural land management	SEPA and Environment Agency actions (regulatory and non regulatory)	➔	➔	➔
	Tweed wetland strategy and collation of data	➔		
	Tweed catchment management plan strategic aim 1	➔	➔	➔
	Revise Scottish Borders rivers and burns habitat action plan	➔		
	Collaborative Action Project Officer	➔		
	Scotland Rural Development Programme	➔	➔	➔
	Catchment sensitive farming: River Till	➔		
	Diffuse water pollution plan (Till/Natural England/Environment Agency)_	➔	➔	➔
	Scottish Borders indicative habitat network model	➔	➔	➔
	Update Scottish Borders Council Borders wetland vision model	➔	➔	➔
Abstraction of water	SEPA and Environment Agency actions (regulatory and non regulatory)	➔	➔	➔
	Tweed catchment management plan strategic aim 2	➔	➔	➔
	Till catchment abstraction management plan	➔		
	Introduce regulation of abstractions in Till (Defra timetable)	➔	➔	
	Revise Scottish Borders rivers and burns habitat action plan	➔		
Alterations to beds, banks and shores	SEPA and Environment Agency actions (regulatory and non regulatory)	➔	➔	➔
	Tweed catchment management plan objectives 4.1–4.3	➔	➔	➔
	Till wetlands restoration project	➔		
	Riverworks: prioritisation of further improvements	➔		
	Tweed Forum Bowmont Glen cross border sustainable flood management	➔		
	Tweed Futures	➔		
	Eddleston scoping study and subsequent implementation	➔		
	Partnerships with other land management agencies/authorities and owners	➔	➔	➔
	Revise Scottish Borders rivers and burns habitat action plan	➔		
	Scottish Borders Council offsite habitat compensation schemes associated with wind farms and other developments (includes linkage to Flood Protection schemes [NFM])	➔		
	River restoration plan (Till)	➔	➔	
	Scottish Borders woodland strategy implementation project "Promotion of woodlands to develop the forest habitat network" (SBC,BFT,SNH,FCS)	➔		
Invasive non-native species	SEPA and Environment Agency actions (regulatory and non regulatory)	➔	➔	➔
	Tweed catchment management plan objective 3.3	➔	➔	➔
	Integration of Tweed invasives data into SEPA classification scheme	➔		
	Tweed riparian invasives project	➔	➔	➔
	Tweed fisheries management plan	➔	➔	➔
	Revise Scottish Borders rivers and burns habitat action plan	➔		

Ensuring integration for effective and efficient delivery

The targets set out in the plan need to be integrated into:

- the many other planning processes such as forest design plans, development planning and local biodiversity action planning;
- the classification data used to determine where delivery is most required.

This can be done as plans are reviewed and through communication with others.

The river basin planning requirements were applied to the comprehensive Tweed catchment management plan review held during 2009/2010, led by the Tweed Forum, and appropriate measures in that plan fed into the Solway Tweed river basin district plan. The relevant Tweed catchment management plan actions are presented in Appendix 1 of this document.

The developing dialogue between the plans and planning processes in place in the Tweed area will ensure efficient, effective and focused implementation.

Working together in the future

To maintain this important dialogue and promote delivery on our targets the Tweed Area Advisory Group has agreed to continue to meet biannually to discuss and propose new measures and report progress on others. It is also the agreed intention that Tweed Forum subgroups, the Riverworks group and the Improving Wetlands and Riparian Habitats group (which incorporates the Scottish Border Council's local biodiversity action plan wetland habitat working group), will discuss and develop specific projects, guidance and communications.

Appendix 1: Relevant actions abridged from the Tweed catchment management plan 2010 (www.tweedforum.com/cmp)

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 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 TCMPI

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	→			