Improving the quality of Scotland's water environment

Tay area management plan

2009–2015

Supplementary to the river basin management plan for the Scotland river basin district

Executive summary

The purpose of this plan is to maintain and improve the quality of the rivers, lochs, estuaries, coastal waters and groundwaters in the Tay Area Advisory Group area. The plan supplements the *River basin management plan for the Scotland river basin district*, and will help to deliver Water Framework Directive requirements. It focuses on local actions and highlights how work partnerships can ensure wider benefits to the water environment.

The plan has been drafted by the partners who make up the Tay Area Advisory Group (see Page 3 for details), while the Scottish Environmental Protection Agency (SEPA) have provided much of the scientific information. A wider forum has also been established to allow the public to be involved in planning developments.

The actions set out in the plan will bring important benefits for drinking water, flood prevention, natural habitats and will help to mitigate the impacts of climate change.

In 2008, 48% of water bodies in the Tay area were classified under the Water Framework Directive as being at good or high ecological status, and this plan aims to maintain these. It also aims to secure continuous improvement of those waters that are currently below good ecological status. The planned improvement targets until 2027 are set out in Table 1. As they are ambitious, they can only be achieved through working in partnership with the Area Advisory Group and other stakeholders from the region.

Table 1: Overview of planned improvements for Tay Area Advisory Group, 2008–2027

	2008	2015	2021	2027
Number and % of water bodies at good (or high) ecological status	170 48%	206 58%	231 65%	338 95%

The priorities to secure these improvements in the Tay area are:

- to reduce the number of water bodies affected by abstraction;
- to reduce the number of water bodies affected by diffuse pollution;
- to reduce the number of water bodies affected by alterations to banks and beds;
- to reduce the number of water bodies affected by barriers to migratory fish movement;
- to reduce the number of water bodies affected by point source pollution.

Delivering these improvements will require actions from many partners, so the Area Advisory Group will ensure that appropriate networks and stakeholders are involved in this process. The group will also oversee the development of new actions and monitor the actions and improvements.

The river basin management plan (RBMP) for the Scotland river basin district and the eight supplementary area management plans outline how we are going to manage and improve our water environment over the next six years. This plan will run from 2009–2015, after which it will be reviewed and the next six year cycle of planning will begin.

Contents

Introduction to the Tay area management plan 4
- Purpose 4
- What area does this plan cover? 5
- How to use the Tay area management plan 7

The water environment and achieving the environmental improvements 9
- The current condition of the water environment 9
- Pressures and risks 13
- Objectives for the water environment 13

Actions planned to achieve our objectives 22
- Putting the plan into action: 2010 25

This plan has been produced in partnership with the Tay Area Advisory Group, which is made up of representatives from the following organisations:

- Angus Council
- Dundee City Council
- Esk District Salmon Fisheries Board (member since April 2010)
- Fife Council
- Forestry Commission Scotland
- Forth Ports
- Loch Lomond and the Trossachs National Park
- National Farmers Union Scotland
- Perth and Kinross Council
- Royal Society for the Protection of Birds
- Scottish Environment Protection Agency
- Scottish Government Rural Payments and Inspections Department
- Scottish Natural Heritage
- Scottish and Southern Energy
- Scottish Rural Property and Business Association
- Scottish Water
- South Esk Catchment Management Partnership
- Tay Estuary Forum
- Tay Salmon Fisheries Board

SEPA would like to thank these group members and other organisations who have worked to prepare this first area management plan for Tay.

Introduction to the Tay area management plan

Purpose

The purpose of this management plan is to maintain and improve the quality of the rivers, lochs, estuaries, coastal waters and groundwaters in the area (shown on Map 1). It will supplement the river basin management plan for Scotland river basin district, and will help to deliver Water Framework Directive requirements. The river basin planning process has to link with, and reflect the requirements of, other plans and processes – including flood management and climate change. The Tay area management plan focuses on local actions and highlights the opportunities for partnership working to ensure that we all benefit from improvements to the water environment.

> Delivering improvements will require actions from many partners. The Area Advisory Group will ensure the appropriate networks and stakeholders are involved in this process. The group will also oversee the development of new actions and monitor progress. How this will work is outlined in the 'putting the plan into action' section.
>
> The work of the Tay Area Advisory Group can be found on SEPA's website at: www.sepa.org.uk/water/river_basin_planning/area_advisory_groups/Tay.aspx

The plan has been produced in partnership with members of the Tay Area Advisory Group. The group expect river basin planning to maintain the water quality of the area and improve the natural function of water habitats, as well as encouraging more native plants and animals to live in natural habitats along water edges. This plan will run from 2009–2015, when it will be reviewed, and the next six year cycle of planning will then begin.

Ecological status is divided into five classes – high, good, moderate, poor and bad – from those water bodies in a near natural condition, to those whose ecological quality been severely damaged. Water bodies which have been significantly altered for human uses (eg for hydropower generation) are known as heavily modified. These are classified in the same manner as the others, although it is important to note that this refers to their ecological *potential*, rather than their current status, and is a measure of the extent to which their ecological quality has been maximised, given the limits imposed by the physical modifications. The same assessment also applies to entirely artificial water bodies such as canals.

In 2008, 170 (48%) water bodies in the Tay Area Advisory Group area were classified as being at good or high ecological status. This plan aims to prevent deterioration in all water bodies and secure continuous improvement in the ecological status of water bodies that are currently less than good. The improvement targets, up to 2027, are set out in Table 2.

Table 2: Overview of planned improvements in the Tay advisory group area, 2008–2027

	2008	2015	2021	2027
Number and % of surface water bodies at good or high ecological status/potential	153 50%	172 56%	194 63%	295 95%
Number and % of groundwaters at good status	17 37%	34 74%	37 80%	43 93%
Number and % of all water bodies at good or high ecological status/potential	170 48%	206 58%	231 65%	338 95%

What area does this plan cover?

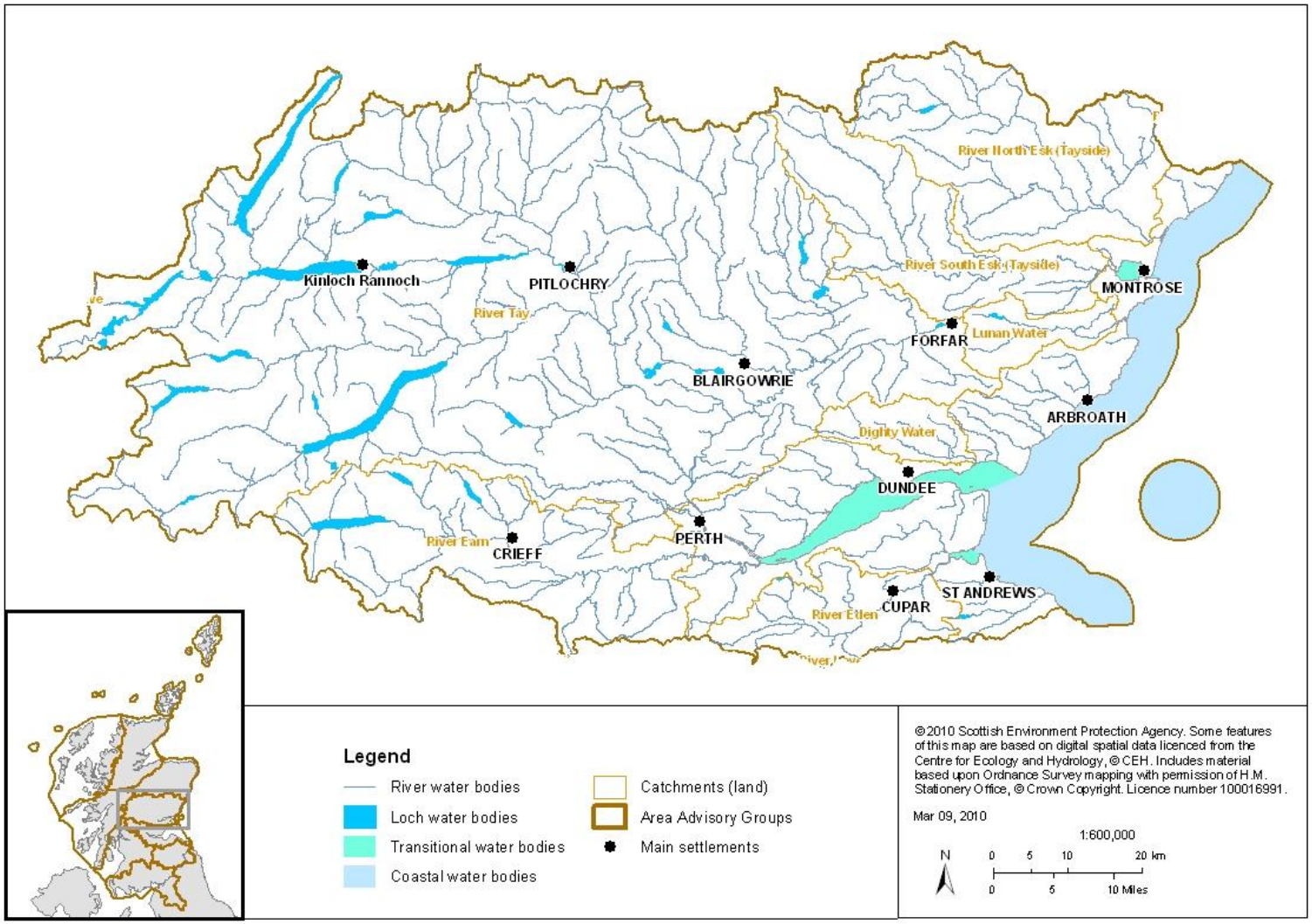
The Tay area (shown on Map 1) covers an area of approximately 9,000km^2, with a diverse landscape. It stretches from the Montrose Basin in the east, to Rannoch Moor in the west; from the Grampians in the north, to lowland Perthshire and Fife in the south. It contains notable areas of interest, including the eastern expanses of the Loch Lomond and Trossachs National Park, the south-eastern extremes of the Cairngorms National Park, and the length of Britain's largest flowing river, the Tay.

The classification process assesses the current condition of all water bodies over a certain size (rivers with a catchment area of more than 10km^2 and lochs which have a surface area greater than 0.5 km^2) and all estuaries and coastal water bodies regardless of size. These are referred to as baseline water bodies. River and lochs which are below the baseline are not classified, although their improvement is still encouraged. Actions that partners are taking to protect or improve any aspect of the water environment are of interest to the Area Advisory Group

The catchments in the Tay area are:

Tay	River North Esk	Earn Coastal
Eden	North Fife Coastal	Kincardine and Angus Coastal
River Earn	Perth Coastal	Dundee Coastal
Dighty	River South Esk	Lunan

Map 1: Tay advisory group area (showing main river catchments)



How to use the Tay area management plan

This plan is for the Tay Area Advisory Group and:

- anyone who manages or uses the water environment;
- anyone who manages activities on land that interacts with the water environment;
- anyone who wants to know more about how our water environment is being protected.

This plan is to co-ordinate the delivery of the river basin management plan for Scotland river basin district [1] within the Tay area. You may find it helpful to see how the aims and objectives of this plan will contribute to what we are trying to achieve on a larger, national scale. The river basin management plan for Scotland river basin district also includes a number of chapters that explain the different parts of the river basin planning process.

This plan has three key components which are all available on the SEPA website www.sepa.org.uk/water/river_basin_planning.aspx:

1. **Area management plan summary** (this document) is an overview of the Tay catchment area – including classification, objectives, key measures and an outline of the work plan for the advisory group for the next year.

2. **Catchment profiles** provide information on classification, pressures, measures and objectives for each catchment. Catchment profiles will be produced during 2010 and will be developed and kept as live documents during this first river basin planning cycle.

3. **Action plan** with information about how the advisory group will work together to deliver the district plan and a record of where new actions are being developed. This will also be kept relevant as a live document during the first river basin planning cycle.

The environmental quality and natural characteristics of surface waters and groundwater vary widely. To reflect this variation SEPA has subdivided the water environment into water bodies. Detailed information for individual water bodies (whether they are part of the coast, groundwater, rivers, lochs or estuaries) is held in the **web-based interactive map** available on the SEPA website www.sepa.org.uk/water/river_basin_planning.aspx

The organisations that are part of the Tay Area Advisory Group helped to draft this plan. This group is responsible for sharing the information contained in the plan with a wider range of stakeholders, to encourage them to implement the actions where required in the Tay advisory group area. SEPA's role in the development of the plan has been to provide information, particularly with regard to classification, and to co-ordinate information and input from others. In this document 'we' refers to all those involved in the production of this report, not just SEPA.

A wider forum has also been established. This forum is open to the public and provides an opportunity for a wider group of stakeholders to be involved in river basin

[1] Available at www.sepa.org.uk/water/river_basin_planning.aspx

planning developments. There have been a number of forum events in Tay (in partnership with Tay Estuary Forum), and we hope that this engagement approach can be developed and improved in the future.

The water environment and achieving the environmental improvements

This section summarises the condition of the water environment in the Tay area, the improvements we plan to achieve and the key pressures and impacts that we need to address. Catchment profiles – giving summaries of the condition of the water environment, the improvements we plan to achieve and the key pressures and impacts that we need to address – are available on the SEPA website at the address below.

Information on the classification, objectives and measures for the Scotland river basin district, as well as detailed supplementary information on how we classify and how objectives have been set can be found in the Scotland plan.

Information on individual water bodies can be accessed through the map application on SEPA's website at www.sepa.org.uk/water/river_basin_planning.aspx.

The current condition of the water environment

The water environment includes all rivers, lochs, estuaries, coastal waters, artificial waters (such as canals and reservoirs) and groundwater. It also includes all the wetlands that depend on surface waters or groundwater for their water needs.

The environmental quality and natural characteristics of surface waters and groundwater vary widely. To reflect this variation, SEPA has subdivided these waters into 355 water bodies in the Tay area. Of these, 46 are groundwaters, 6 are coastal waters, 28 are lochs, 5 are transitional and 270 are rivers. Classifying the condition of each provides a picture of where the water environment is in good condition and where improvements need to be made.

In general, the classification of surface water bodies describes by how much their condition, or status, differs from near natural conditions. Water bodies in a near natural condition are at high ecological status. Those whose ecological quality been severely damaged are at bad ecological status.

The results for the Tay area show that 170 (48%) water bodies are at good or high ecological status and 185 (52%) are at less than good status (see Table 3 and Map 2a below).

Table 3: Condition of surface waters and groundwater in the Tay advisory group area in 2008

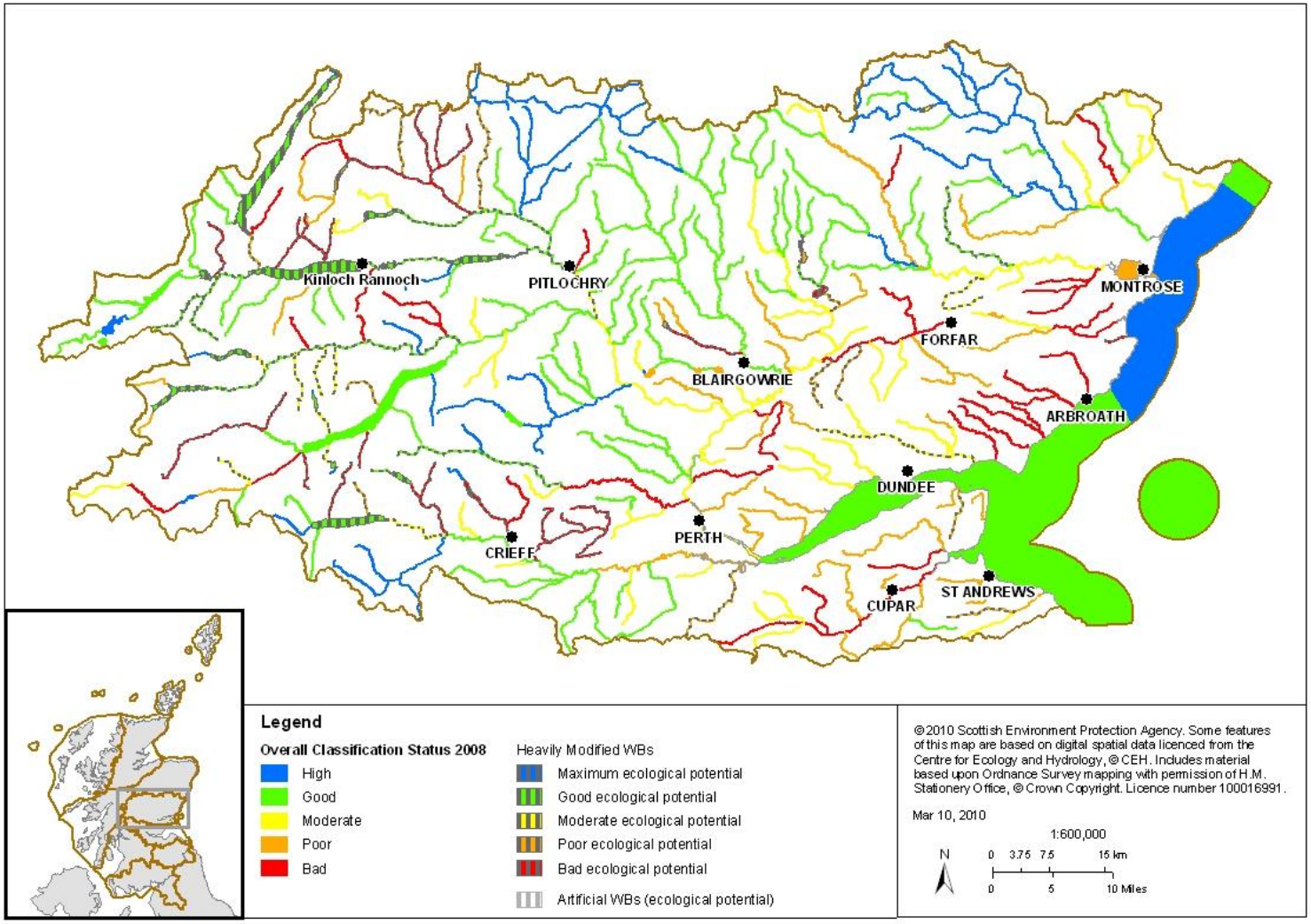
2008 condition	Number of water bodies				
	All water bodies	Surface waters			Groundwater[2]
		Natural	Heavily modified	Artificial	
High/Maximum	38	38	0	0	
Good	132	89	25	1	17
Moderate	56	43	13	0	
Poor	81	38	14	0	29
Bad	48	31	17	0	
Totals	355	239	69	1	46
Proportion good or better (%)	48	53	36	100	37

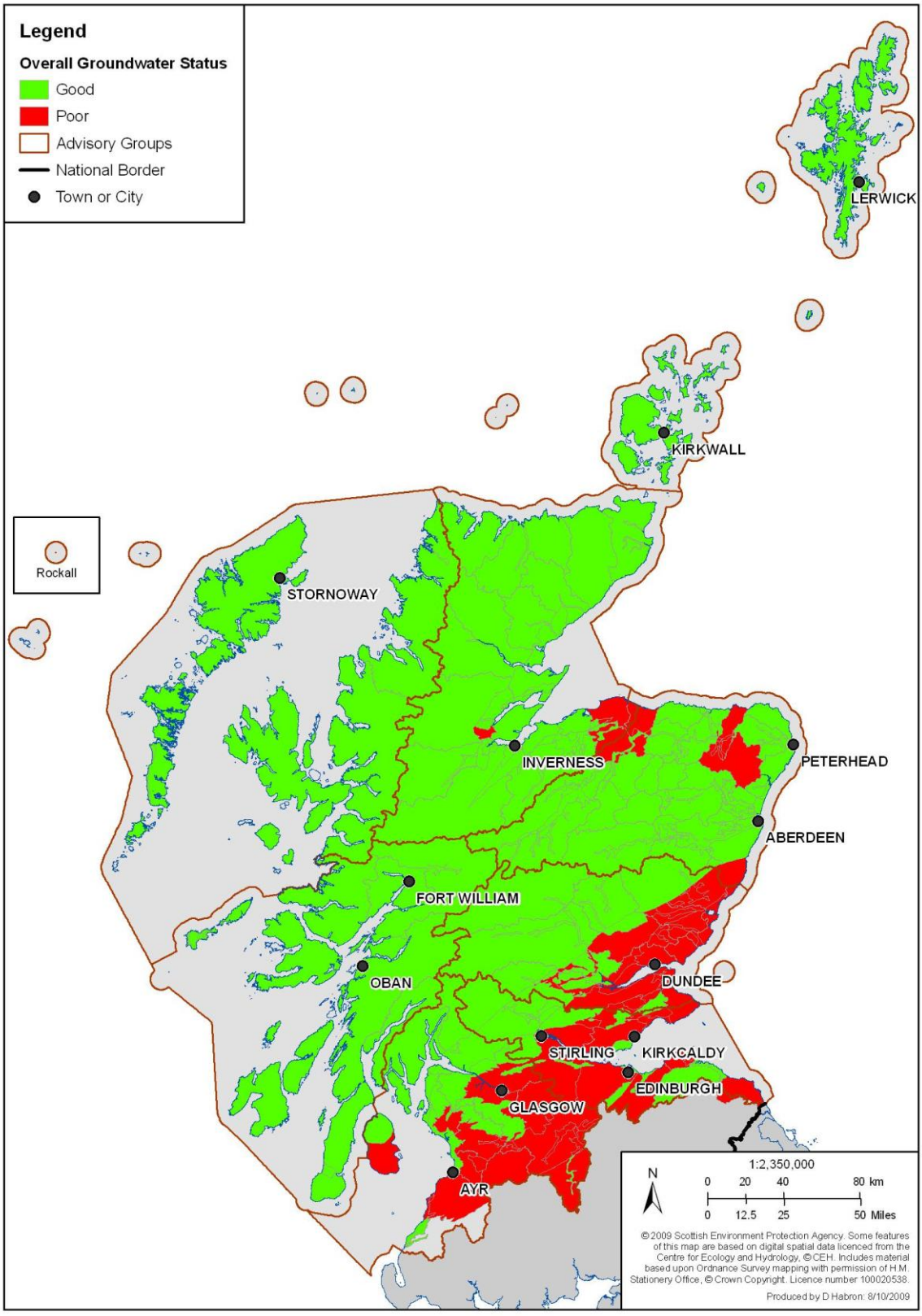
Sixty-nine (19%) of these surface water bodies have been substantially changed in character for important purposes such as flood protection, hydropower generation, navigation, land drainage or for drinking water supply. These are known as heavily modified water bodies. Only one surface water body is artificial[3]; the Stormontfield Lade. The classification of heavily modified and artificial water bodies describes their ecological potential. This is a measure of the extent to which their ecological quality has been maximised, given the limits imposed by the physical modifications necessary for the water bodies' uses.

The classification of bodies of groundwater describes whether they are polluted and whether any water being abstracted significantly affects those rivers or wetlands that depend on this source of water. Only two classes are used to describe the status of groundwater – good and poor. In this area 17 (37%) of groundwaters are at good ecological status (See Map 2b below).

[2] Bodies of groundwater are classed as either of good status or poor status.
[3] Artificial water bodies are man-made water bodies, such as many canals.

Map 2a: Current condition of surface and coastal water bodies in the Tay advisory group area





Map 2b: Classification of groundwater bodies in the Scotland river basin district, 2008

Pressures and risks

The main reasons for not achieving good ecological status across the main catchments in the area are described as pressures. The key pressures affecting the Tay area are:

- abstraction for arable farming purposes;
- abstraction and flow regulation for the production of renewable energy;
- alterations to beds and banks from water collection, purification and distribution, production or renewable energy, fisheries management and farming;
- diffuse pollution from both farming and sewage disposal sources;
- point source pollution from sewage disposal;
- the risk posed by the introduction/expansion of water-related invasive non-native species (INNS).

INNS have been identified as currently having an impact on the River Earn and the South Esk. However, by recording their presence on the local level, SEPA hopes to supplement the national work currently being compiled on INNS.

The above list does not include all impacts, and there are other issues that will also need to be addressed. More detailed information on impacts in each catchment – including the water bodies affected, measures and objectives – is included in the catchment profiles and in the water body information files, both available at: www.sepa.org.uk/water/river_basin_planning.aspx.

Objectives for the water environment

Over the past 20 years the water quality in the Tay area has improved. The task now is to improve the remaining failing water bodies to good ecological status or potential, either by 2015 or over the first three river basin planning cycles. The overall goal for the Scotland river basin district is for 97% of water bodies to be at good or high ecological status by 2027. In the Tay area we aim to have 338 water bodies (95%) at good or high ecological status by 2027. To achieve this, those currently at good or high ecological status will be protected from deterioration, while action will be taken to enhance and restore others. Protecting the status of a water body does not just mean preventing deterioration of their overall status. The overall status depends on the condition of the different elements (eg plant community, fish populations, water quality etc).

Restoring waters to good status will take time, so improvements have been prioritised over the three river basin planning cycles. For the small proportion of waters for which achieving good ecological status by 2027 is not feasible[4] all reasonably achievable improvements will be made. Comprehensive reviews of progress will be undertaken during each period and will be reported in updates of this plan.

Table 4 describes how improvements to the water environment will be phased (illustrated in Map 3). The phasing has been designed so that the pace of improvement provides the time needed to develop and implement the necessary

[4] These waters include water bodies that are recovering from acidification

technical solutions and to make the required investments and adjustments without creating disproportionate burdens.

Table 4: Condition of water bodies throughout the river basin planning cycles in the Tay Area Advisory Group area

		Total number of water bodies	Number and proportion of water bodies at good or high ecological status (%)				Number and proportion (%) of water bodies remaining less than good by 2027
			2008	2015	2021	2027	
All water bodies		355	170 48%	206 58%	231 65%	338 95%	17 5%
Rivers	**Natural**	218	111 51%	124 57%	139 64%	206 95%	12 5%
	Heavily modified	51	13 25%	17 33%	21 41%	50 98%	1 2%
	Artificial	1	1 100%	1 100%	1 100%	1 100%	0
Lochs	**Natural**	10	6 60%	6 60%	9 90%	10 100%	0
	Heavily modified	18	12 67%	14 78%	14 78%	18 100%	0
Estuaries		5	4 80%	4 80%	4 80%	4 80%	1 20%
Coastal waters		6	6 100%	6 100%	6 100%	6 100%	0
Groundwater		46	17 37%	34 74%	37 80%	43 93%	3 7%

Lower (less stringent) objectives

For 17 water bodies in the area we believe that good ecological status cannot be achieved even by 2027. For these water bodies, we have set a lower (less stringent) objective than good ecological status. Table 5 lists these and the reasons for their less stringent objectives.

Table 5: Water bodies with less stringent objectives and reasons

Status (current and by 2027)	Water body name	Reason for less stringent objective
Moderate, remaining moderate	River South Esk (White Burn confluence to estuary)	Invasive non-native species – presence of North American signal crayfish (*Pacifastacus leniusculus*). It is currently unfeasible to remove established populations of these crayfish, or sufficiently mitigate their impacts, in order to enable good status to be achieved.
	River South Esk (source to White Water confluence)	
	Montrose Basin	Diffuse pollution. Less stringent objective set due to natural recovery time required.
Moderate ecological potential, remaining moderate ecological potential	River Earn (Loch Earn to Water of Ruchill confluence)	Invasive non-native species – presence of North American signal crayfish. It is currently unfeasible to remove established populations of these crustaceans, or sufficiently mitigate their impacts, in order to enable good status to be achieved.
Poor, improving to moderate	River South Esk (White Water to White Burn confluences)	
	River Earn	
Poor remaining poor	Allt Caillich	Barriers to fish migration.
	Abhainn Glas	
	Carse of Gowrie bedrock and localised sand and gravel aquifers	Presence of nitrate in groundwaters.
	Lunan/Pow bedrock and localised sand and gravel aquifers	
	Brechin bedrock and localised sand and gravel aquifers	
Bad remaining bad	Kinnaird Burn	Abstraction causing a change to natural flow conditions.
	Invervar Burn	
	Innerhadden Burn	
	Allt a Mhuic	
	Keltney Burn	

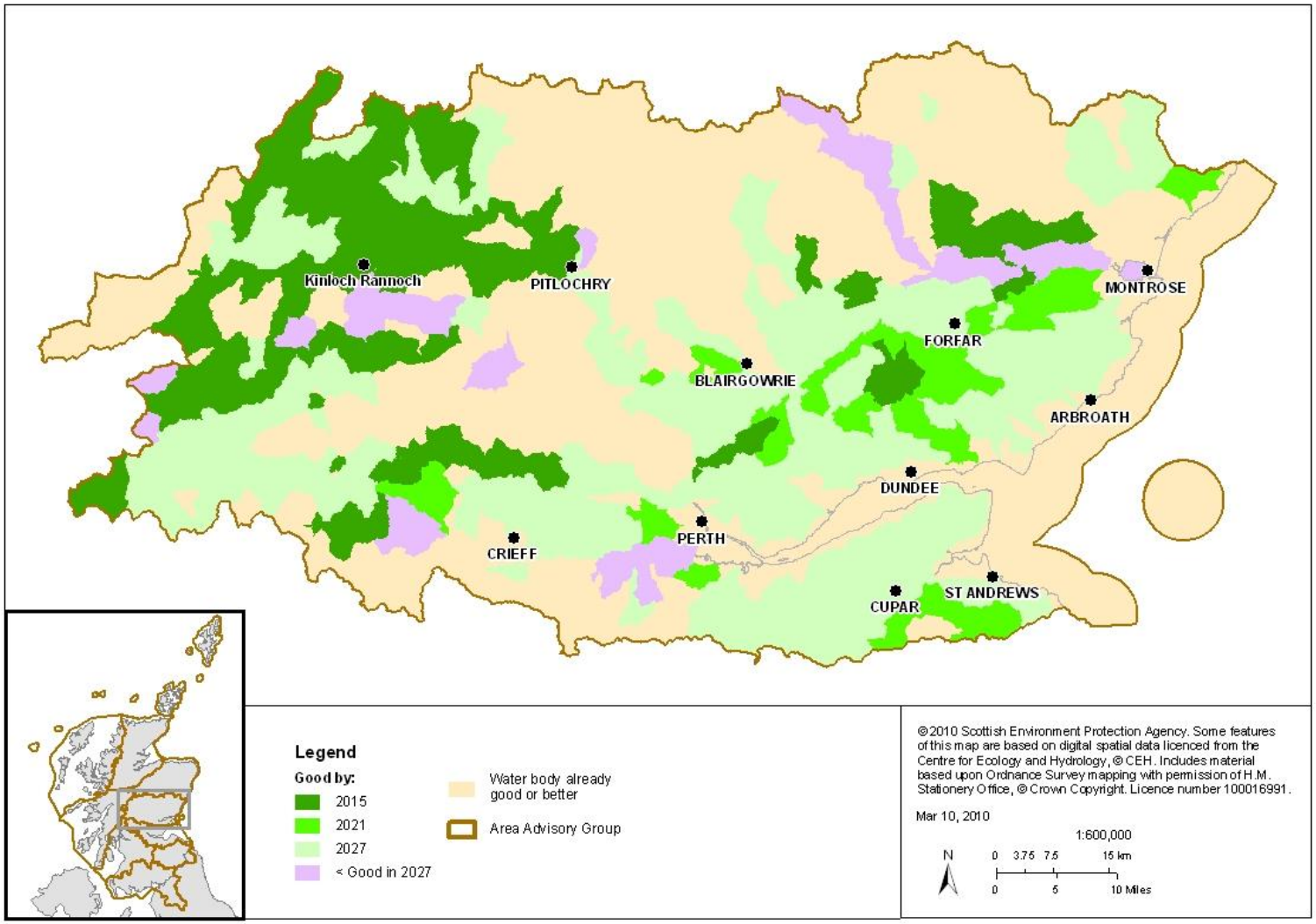
Water bodies where deterioration of status has been permitted

We have allowed exemptions from the objective of preventing deterioration in status for five water bodies in the Tay advisory group area, as shown in Table 6.

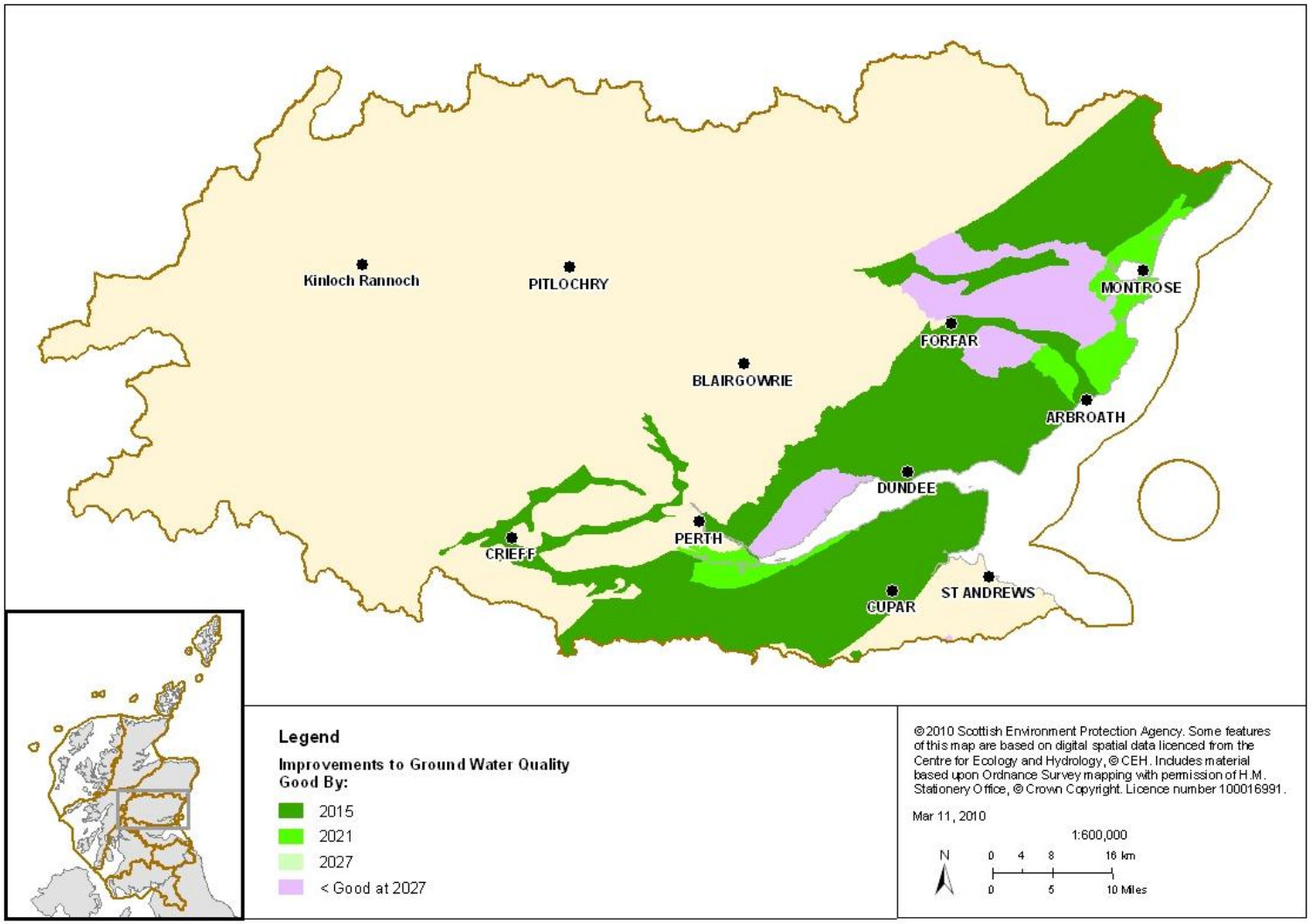
Table 6: Water bodies where deterioration in status has been permitted and reasons

Status (current and by 2027)	Water body name	Reason for less stringent objective
High to moderate	Kinnaird Burn	For abstraction and impoundment for hydropower to benefit sustainable development. All mitigation measures in place.
High to poor	Invervar Burn	
	Innerhadden Burn	
High to bad	Keltney Burn	
Good to poor	Urlar Burn	
	Allt a Mhuic	

Map 3: Planned improvements for surface waters, 2015–2027



Map 4: Planned improvements for groundwaters, 2015–2027



Protected area objectives

Many water bodies are also part of protected areas. As well as being required to meet good ecological status/potential, these water bodies must also help to achieve the purposes for which the protected area was established. Protected areas include waters that:

- support economically important shellfish;
- have been designated as bathing waters;
- provide water for human consumption;
- support species or habitats identified as requiring special protection under European legislation.

Many protected areas are already achieving their goals, although further environmental improvements are needed for those areas that are currently falling short. Planned improvements to these protected areas are summarised in Table 7 below, while maps showing the location of protected areas are available on SEPA's interactive map.

Table 7: Planned improvements to protected areas in the Tay Area Advisory Group area

Protected area	Number and proportion (%)of protected areas achieving the goals for which they were established					
	Total	**2008**	**2015**	**2021**	**2027**	**Number and proportion not achieving goals by 2027**
Bathing waters	9	9 100%	9 100%	9 100%	9 100%	0
Conservation of habitats and species (Special Areas of Conservation and Special Protection Areas) *	14	11 78%	12 86%	12 86%	13 93%	1 7%
Economically important shellfish	1	Not achieved	Not achieved	Not achieved	Achieved	0

Note to Table 7

All the water quality conditions required to support shellfish life and growth are already being achieved (mandatory standards).The projected improvements in protected areas for economically important shellfish refer to objectives for bacteria that can contaminate shellfish flesh and prevent harvested shellfish being marketed unless first treated in a purification centre (more stringent guide values).

Figures are given for Special Areas of Conservation (SACs) and Specially Protected Areas (SPAs) that have water dependant features and where these features are affected by water related pressures.

It is also an overall aim to increase the proportion of bathing waters attaining good or excellent classification rather than sufficient status.

In addition:

- There are currently 75 designated Drinking Water Protected Areas (which includes all 46 groundwaters) in the area. Seventy-three are meeting their current standards with none at risk of deterioration, while the River Farg and Loch of Lintrathen are currently listed as being at risk of deterioration due to pesticides from arable farming. As part of our strategy for managing diffuse pollution, measures are in place to tackle diffuse source pollution such as this and further information can be found at: www.sepa.org.uk/water/river_basin_planning/diffuse_pollution_mag.aspx#DP_Plan

  Drinking Water Protected Areas are currently under review and any changes to designations will be reflected in updates of this plan.

- A substantial section of the Tay area is designated as the Strathmore and Fife Nitrate Vulnerable Zone (NVZ). An action programme has been established, aiming to reduce water pollution caused by nitrates from agricultural sources. The action programme will be reviewed and, where necessary, revised every four years, based on assessment of its effectiveness.

- There is one economically important shellfish protected area (Fife Ness to Elie) which crosses the Tay/Forth border.

- There are 16 water bodies designated under the Urban Waste Water Treatment Directive (UWWTD) sensitive area; the Annaty Burn, Buddon Burn, Burrelton Burn, Ceres Burn, Forfar Loch, Dighty Water, Drummond Burn, East Pow Burn, Kinness Burn, Lunan Water, Monikie Burn, Motray Water, North Esk, South Esk and the Dean Water. The directive sets a timescale for the appropriate treatment for sewage discharges which, for example, would require secondary treatment for all sizeable communities unless the discharge is to highly dispersive receiving waters. It also specifies quite demanding regulation in terms of sampling and analysis.

Further information

The nine EC designated bathing waters in the Tay area are: St Andrews East Sands, St Andrews West Sands, Broughty Ferry, Carnoustie, Arbroath (West Links), Kingsbarns, Montrose, Lunan Bay and Tentsmuir Sands.

There are six Special Protection Areas; Montrose Basin, Loch of Kinnordy, Loch of Lintrathen, Firth of Tay and Eden Estuary, Cameron Reservoir and Forest of Clunie.

There are eight Special Areas of Conservation; Dunkeld – Blairgowrie Lochs, Ben Lawers, Barry Links, the South Esk, Shingle Islands, Firth of Tay and Eden Estuary, River Tay and Rannoch Moor (cross border with Argyll). Barry Links is the only SAC likely to be in an unfavourable condition in 2027. This is due to a combination of morphological and unknown pressures so it is not yet feasible to identify required actions until these factors are fully understood.

There are 13 freshwater fish protected areas (defined areas designated for the protection of economically viable freshwater fisheries, specifically salmonids): River Tay, Barry Burn, Brothock Water, Dighty Water, River Eden, Elliot Water, Kenly Water, Kinness Burn, Lunan Water, Monikie Burn, Motray Water, and the North and South Esks.

Actions planned to achieve our objectives

The Tay area has a successful track record of protecting and improving the water environment through planned programmes to manage and reduce pressures. Until recently this work has been largely focused on tackling polluting discharges.

River basin management planning requires us to establish a programme of measures to protect water bodies currently at good or better status and restore water bodies that are not at good status. The programme for Scotland includes the latest investment planning work for Scottish Water, work with landowners to reduce pollution and ways to tackle pressures from irrigation, drinking water supply, hydropower generation and flood protection.

The Tay area management plan will deliver improvements through a combination of regulation, investment, raising awareness, guidance and further background information and is included in the river basin management plan for Scotland river basin district.

Some key measures to achieve the priorities for the Tay area and how they link to national processes are described below. Information on the key measures that the Tay Area Advisory Group will take forward is included in the action plan on the website www.sepa.org.uk/water/river_basin_planning.aspx . The action plan will be kept as a live document during the planning cycle and updated as more measures are developed and implemented.

Table 8: Pollution

	Pressure identified as reason for not achieving good status		
	Rural diffuse pollution	Urban drainage and diffuse pollution	Point source pollution
National process	National implementation plan for diffuse pollution – www.sepa.org.uk/water/river_basin_planning/diffuse_pollution_mag.aspx Development of priority catchments process and guidance for targeted awareness raising. See below for further information.	National Sustainable Urban Drainage (NSUD) working party.	Water Environment (Controlled Activities) (Scotland) Regulations 2005 (CAR).
Advisory group activity	Link to priority catchment work www.sepa.org.uk/water/river_basin_planning/dp_priority_catchments.aspx and assist with communication.	Promotion of SUDs and drainage plans.	Raising awareness for disposal. Education campaigns. Measures delivery plans.
Lead authorities responsible for	Scotland's Environmental and Rural Services	Scottish Environment Protection Agency (SEPA), Scottish Water, Local	SEPA, Scottish Water, Coal Authority and local authorities.

ensuring action is taken	(SEARS), National Farmers Union Scotland (NFUS), Diffuse Pollution Management Advisory Group (DPMAG), Scottish Rural Property and Business Association (SRPBA).	Authorities.	

Priority catchments

The selection of priority catchments is a necessary step in implementing SEPA's diffuse pollution mitigation strategy. The catchments impacted by diffuse pollution have been prioritised and scheduled for targeted measures in the future three river basin management plan (RBMP) cycles. Its aim is for water bodies within the priority catchments to improve by one class during the cycle they are being targeted in, aiming to reach good status by 2027.

Priority catchment work will cover diffuse pollution, morphology, non-native invasive species and abstraction pressures. The first step in this process is to carry out catchment walks, followed by raising awareness of the issues with land managers and finally inspections and audits to assess legislative compliance, as well as suggesting measures to mitigate pressures.

Table 9 shows the RBMP cycles for the two priority catchments and the 10 proposed candidate priority catchments in cycle 2 and 3. To make best use of resources the Tay area advisory subgroup activity will coincide with the timescale for priority catchment work. This work fits with the RBMP aims of working with established processes and creating strong partnerships.

Table 9: Priority catchment timescale within the Tay area

	Cycle 1 (to 2015)	Candidate catchments cycle 2 (to 2021)	Candidate catchments cycle 3 (to 2027)
Fife catchment			
River Eden		●	
North Fife Coastal		●	
Earn Coastal		●	
River Earn			●
Perth Coastal			●
Dundee			
Dundee Coastal		●	
Dighty Water		●	
Dundee/Angus			
Kincardine & Angus Coastal		●	
Lunan Water		●	

River North Esk			●
River South Esk	●		
River Tay			
River Tay	●		
Tay AMP	2 catchments	7 catchments	3 catchments

Table 10: Abstraction and impoundment

	Pressure identified as reason for not achieving good status		
	Water resource, agricultural irrigation.	Water resource, drinking water supply.	Hydropower.
National process	Water Environment (Controlled Activities) (Scotland) Regulations 2005.	Water Environment (Controlled Activities) (Scotland) Regulations 2005, Scottish Water.	Water Environment (Controlled Activities) (Scotland) Regulations 2005.
Advisory group activity.	Targeted education on best practice. Tay agriculture abstraction pilot project.	Review water bodies where this pressure is identified to assess any possible contributions.	Review water bodies where this pressure is identified to assess any possible contributions.
Lead authorities responsible for ensuring action is taken.	SEPA, Scottish Water, SEARS.	SEPA, Scottish Water.	SEPA.

Table 11: Alteration to beds, banks and shores

	Pressure identified as reason for not achieving good status		
	Urban land uses and urban flood protection.	Invasive non-native species (INNS).	Fish barrier removal.
National process.	HMWB assessments and workshops, flooding implementation.	National INNS group.	National projects to assess priority barriers.
Advisory group activity.	Link to flooding. groups, identify areas for natural flood plain management.	Esk biosecurity plan. Review water bodies where this pressure is identified to identify future projects to eradicate INNS.	Review water bodies. where this pressure is identified and encourage restoration fund applications.
Lead authorities responsible for ensuring action is taken.	Local Authorities, National Park Authorities, SEPA.	SEPA, SNH, Esk District Salmon Fishery Board.	Local Authorities, SEPA, SNH (focused on designated sites)

Catchment management planning is well developed for the South Esk, where it has catchment. The South Esk Catchment Management Plan has been developed through extensive engagement with stakeholders, and the Tay area management plan must link closely with these plans without trying to replicate them. It is hoped

that RBMP can offer data and an overarching framework for catchment management plans.

Putting the plan into action

The advisory group has worked to develop an action programme for this first area management plan, and will continue to assess how well these measures are working. The group will review the status of water bodies and the progress of measures in the Tay area on an annual basis, and will amend existing measures and develop new measures as required.

The group will consider the interaction of national processes with local initiatives, and will use their local knowledge to identify gaps where additional action is needed. The group has agreed that its efforts should be focused on complex issues where partnership working is required, and has identified five priorities for action during the first period of river basin planning (2010–2015):

- diffuse pollution from farming and sewage disposal;
- abstraction for arable farming and production of renewable energy;
- flow regulation for the production of renewable energy;
- alterations to beds and banks from drinking water supply, production or renewable energy and farming;
- point source pollution from sewage disposal.

To help with these priorities, the group has agreed a number of partnership and subgroup working approaches to focus their efforts and develop pilot projects during 2010.

Establishing subgroups

At the start of the river basin planning process, the advisory group decided to look at particular issues, data and measures at a catchment scale. Four subgroups linking together catchments (in Fife, Dundee, Dundee/Angus and Tay) were consequently established. This made sense for the members of the advisory group who may only be covering a small part of the Tay area. Working on smaller areas also made it easier to understand and interpret the data and discuss measures. Responses on the draft area management plans further emphasised the need for information to be given and discussed at a smaller scale than at full group level.

Therefore, throughout the river basin planning process, the advisory group will form subgroups to deal with pressures at a catchment scale. The timing of establishing the subgroups will coincide with priority catchment work, therefore subgroup activity will focus on the South Esk and Tay catchments in the first cycle of river basin planning (2009 until 2015).

Diffuse pollution from farming and sewage disposal

South Esk catchment

It has been agreed that the established South Esk catchment management plan group will act as a subgroup for RBMP work. The Tay Area Advisory Group will work closely with this group and the South Esk priority catchment co-ordinator to ensure that the diffuse pollution, morphology, alien species and abstraction pressures within the South Esk are addressed. This may involve advisory group members inputting

local knowledge of the area, raising awareness of the issues and advising on measures.

Tay catchment
A specific subgroup for the Tay catchment will be established at the end of 2010. The advisory group will advise of the correct membership of this and work with the River Tay priority catchment co-ordinator to establish a work plan. Lessons learnt from working in the South Esk will be drawn upon.

Abstraction for arable farming and production of renewable energy

An abstraction pilot project is underway in Angus and its findings will inform the work of the group.

Flow regulation and barriers to fish

We will form a small subgroup to review knowledge on fish barriers, prioritise action and seek funding to remove or mitigate barriers. This is likely to link with SEPA's annual data review meetings.

Alterations to beds and banks from water collection, purification and distribution, production or renewable energy and farming

We will highlight potential areas outwith priority catchments suitable for morphological mitigation measures and facilitate projects potentially using SEPA's restoration funding www.sepa.org.uk/water/restoration_fund.aspx

Point source pollution

The Area Advisory Group will receive regular updates from Scottish Water and SEPA on progress with planned investment in water treatment, sewerage and abstraction levels. Local authorities will also be asked to provide updates on their planning policies which relate to water treatment and drinking water supply, and how these are working to tackle point source pollution and abstraction.

Awareness raising and helping to promote wider action

We will form a small communications task group to develop a programme of events and prepare a communication plan to improve public engagement with river basin planning.

The Area Advisory Group will receive updates from the subgroups which will enable them to monitor progress. They will produce a short briefing each year which will outline progress in delivering river basin planning in the Tay area, and highlight significant areas of achievement and issues of concern. Short action plans will be produced by subgroups to tackle any issues of concern.