natural scotland
SCOTTISH GOVERNMENT

The river basin management plan for the Scotland river basin district 2009–2015

Summary



Scotland is renowned worldwide for the environmental quality of our rivers, lochs and seas, which attract visitors and support our key industries. It is important for our continued economic success and well-being that we maintain this enviable reputation.

This is Scotland's first comprehensive river basin management plan, describing the actions which will make a real difference for the future of our waters. The task now for us – the Scottish Government, the Scottish Environment Protection Agency (SEPA) and all Scotland's other responsible authorities and public bodies – is to turn our plan into action.

Introduction

We all enjoy the benefits of a clean and healthy water environment. Our rivers, lochs and groundwater provide all our drinking water and the water farmers need to grow our food. Water is still at the heart of the economic success for many of our rural towns and villages and our world-renowned whisky and fish farming industries depend on its high environmental quality. Our rivers, lochs, estuaries and coasts attract large numbers of people of all ages, from home and overseas, to take part in a wide range of recreational activities. Our waters support a great diversity of wildlife and a significant number are identified as protected areas because of their importance for the conservation of internationally rare or endangered species. Some of the best salmon runs in the UK are found in our rivers and many of our best known landscapes are associated with water. In short, our water environment is an integral part of Scotland's cultural fabric.

A large proportion of the waters of the Scotland river basin district are of high quality. However, around 35% are under significant pressure from human activity and are not in good condition. This plan outlines the actions that will be taken to improve such waters whilst protecting those that are already in good condition. The overall aim is for 98% of all our waters to be in a good condition by 2027. Achieving that goal will safeguard and increase the water environment's ability to support economically important water uses and supply us with safe drinking water. It will protect and extend the natural biodiversity of our waters and enhance the fish and shellfish stocks on which the future of our commercial and recreational fisheries depends. Improving the water environment will also help Scotland adapt to climate change by increasing resilience to drought and contributing to sustainable flood management.

Realising the goals of this plan will be a challenging and demanding task. It will require a much more co-ordinated and integrated approach than has been the case in the past and it will demand the continued engagement and involvement of waters users and land managers. Public bodies will need to work closely together and take account of this plan's objectives for the water environment. The effects of climate change and the ever-changing demands for water will also have to be taken into account.

The improvements needed to achieve the goals will be phased over a period of 18 years. This will allow time to plan and implement the detailed technical solutions needed, and to make sure they are effective, practicable, proportionate and sustainable. It will also enable effective prioritisation and regular monitoring of progress. The condition of waters will be reviewed annually and progress will be reported in detail when the plan is updated in 2015, 2021 and 2027.



Loch Maree



River Clyde

About the Scotland river basin district

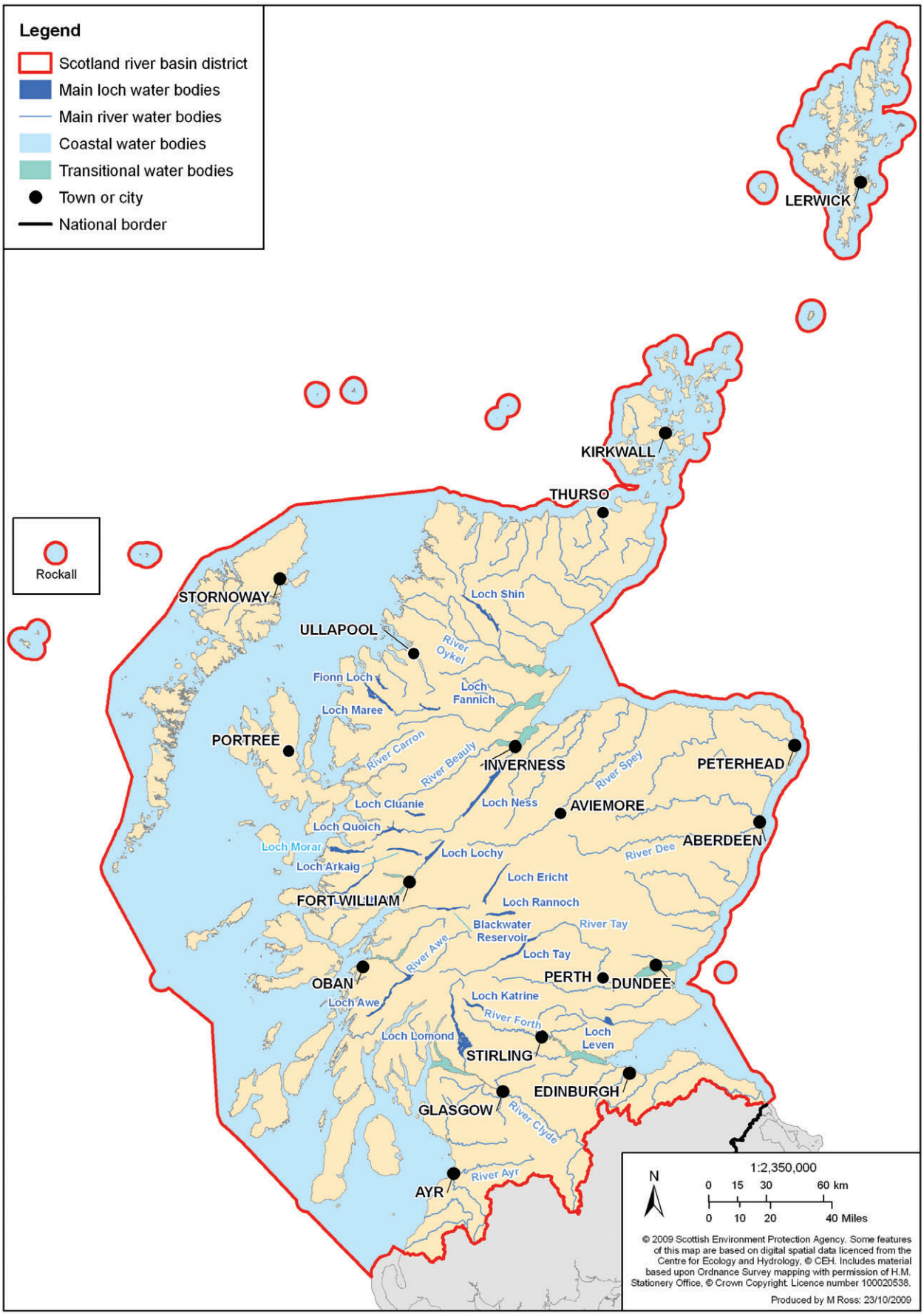
The production of this plan is one of the requirements of the Water Framework Directive[1], which will see similar plans being put in place by other countries for river basin districts throughout Europe. River basins encompass all the rivers, lochs, wetlands and groundwater that eventually drain into the sea as well as estuaries and adjacent coastal waters. Taking a source-to-sea approach and integrating land and water management are essential for the effective protection and improvement of the water environment. This is because impacts on one part of a river basin can often have effects elsewhere in that basin.

This plan covers all the river basins comprising the Scotland river basin district (see Map 1). A similar plan for the Solway Tweed river basin district covers the river basins to the south of the southern uplands, some of which span the border with England. Together, these plans provide Scotland's first comprehensive framework for co-ordinating and integrating the management of our water environment[2].

[1]The Water Framework Directive (WFD), together with supporting information, can be viewed on the European Union's website at: http://ec.europa.eu/environment/water/water-framework/index_en.html

[2]This river basin management plan, together with that for the Solway Tweed river basin district, can be found on SEPA's website at: www.sepa.org.uk/water/river_basin_planning.aspx

Map 1: Area covered by the Scotland river basin district





River Etive

The preparation of this plan has been co-ordinated by the Scottish Environment Protection Agency (SEPA), working closely with a range of other public bodies and the Scottish Government. SEPA has consulted extensively with business representatives, land managers, voluntary organisations and individuals with an interest in the water environment. Many of these bodies and organisations are also represented on the eight Area Advisory Groups and the National Advisory Group that SEPA established in 2006 to advise it on the development of this plan.

Scotland has a long history of successfully managing the quality of its water environment but until recently these efforts have been focused almost exclusively on reducing and preventing pollution. This plan's objective is to protect and improve the ecological quality of the water environment. Efforts to reduce pollution will continue but achieving these broader goals will require action to reduce the adverse impacts of a wide range of other pressures that can affect ecological quality. These include over-abstraction, engineering modifications that have caused damage to the beds, banks and shores of surface waters, and the introduction and spread of invasive non-native plants and animals. The plan identifies where the waters of the Scotland river basin district are under pressure and the proportionate actions that will be taken to improve them.

The current condition of the Scotland river basin district's 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 over 3,000 water bodies. Classifying the condition of each water body provides a picture of where the water environment is in good condition and where improvements need to be made.

SEPA has recently completed the first comprehensive assessment of the condition of our water bodies, for which it established new, risk-based monitoring programmes in 2006. The assessment methods used were developed jointly with the rest of the UK. A number of the methods have also been compared with those being used by other European Union countries, and all are based on criteria set out in the Water Framework Directive. As a result, for the first time Scotland's water environment has been classified on the same basis as that of rest of the UK and the European Union.

The results show that 65% of water bodies in the Scotland river basin district are in a good or better condition (see Table 1 and Maps 2 and 3): this compares favourably with the highest quality water environments elsewhere in Europe. 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 status. Those whose ecological quality has been severely damaged are at bad status.

Table 1: Condition of surface waters and groundwater in the Scotland river basin district in 2008

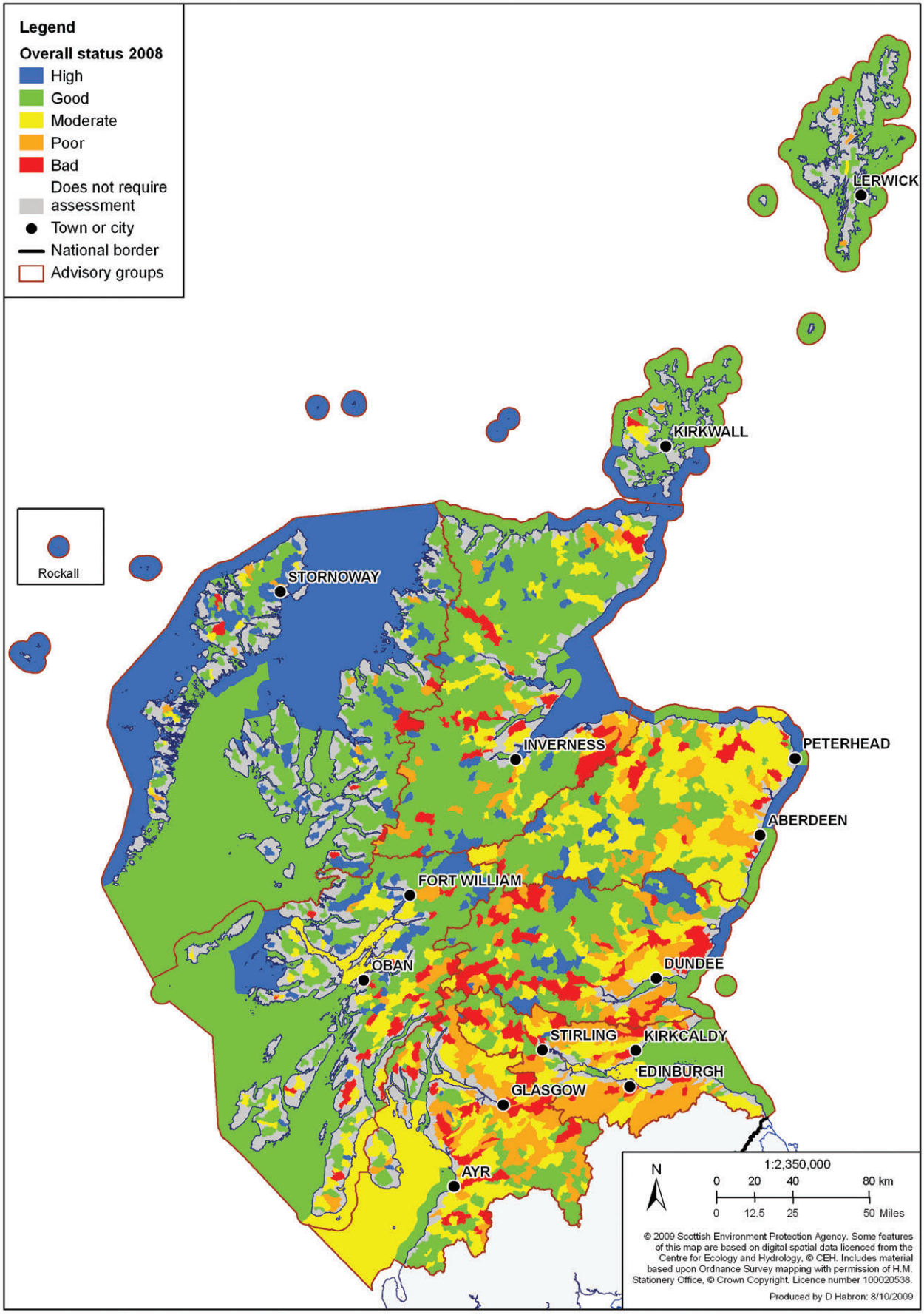
2008 condition	Number of water bodies			
	All water bodies	Surface waters		Groundwater[3]
		Natural, non-heavily modified	Heavily modified or artificial	
High/maximum	423	421	2	n/a
Good	1,576	1,158	203	215
Moderate	489	424	65	n/a
Poor	409	262	78	69
Bad	198	133	65	n/a
Totals	3,095	2,398	413	284
Proportion good or better (%)	65	66	50	76

Just under 14% of our surface water bodies have been substantially changed in character for important purposes such as flood protection, hydropower generation, navigation, land drainage or water storage for drinking water supply. These are known as heavily modified water bodies. Another 1% of surface waters are artificial[4]. The classification of heavily modified and artificial water bodies describes their ecological potential. This is a measure of the extent to which the water bodies' ecological quality has been maximised, given the limits imposed by the physical modifications necessary for the bodies' uses.

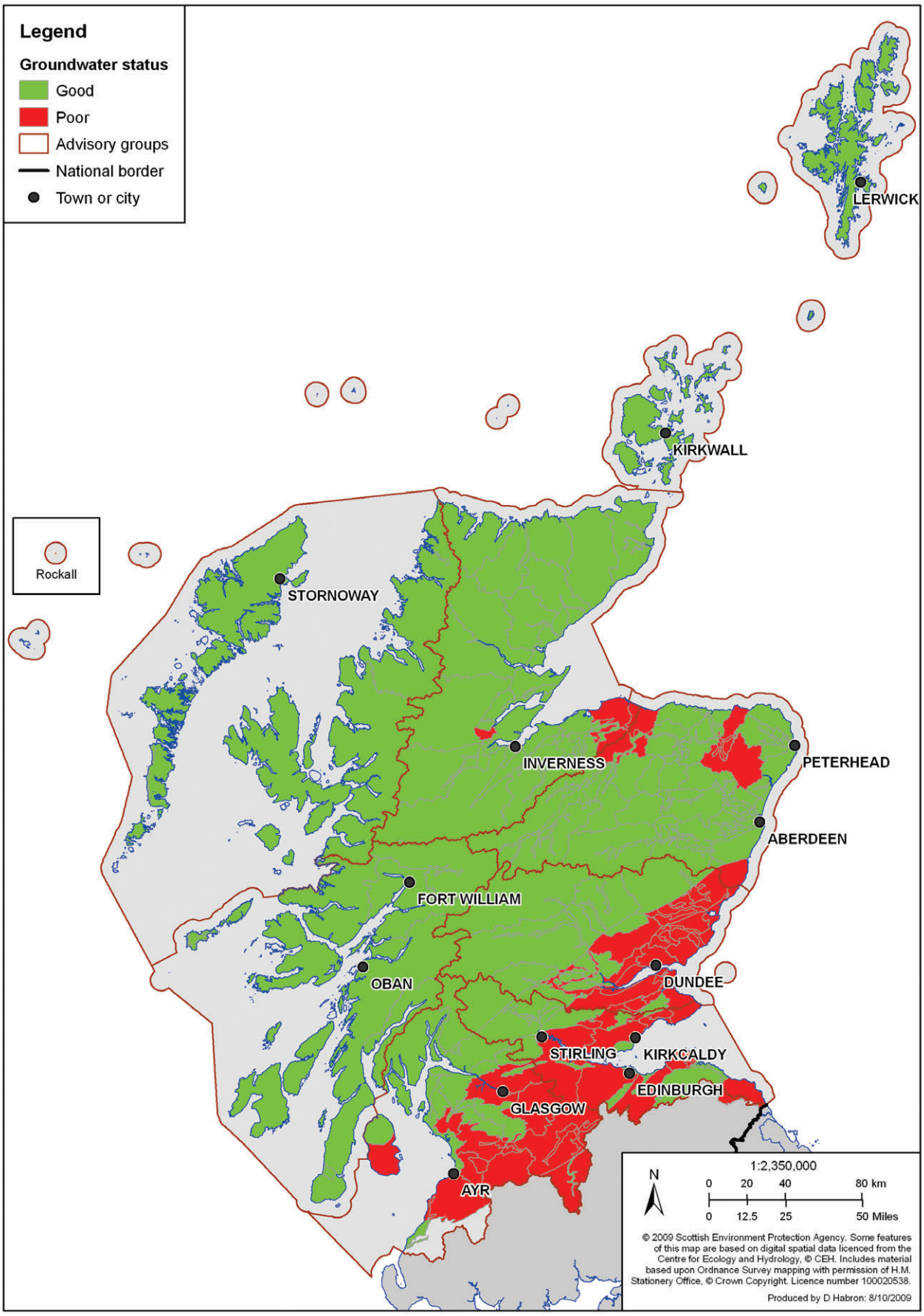
The classification of groundwater bodies describes whether or not they are polluted and whether or not the volume of any water being abstracted from them is sustainable without significant impacts on rivers or wetlands that depend on the groundwater. Unlike the five status classes applying to surface waters, two classes are used to describe the status of groundwater: good and poor.

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

Map 2: Condition of our rivers, lochs, estuaries and coastal waters in 2008



Map 3: Condition of our groundwater in 2008



The classification results provide the best understanding to date of the condition of Scotland's water environment. They show where there is high confidence that action is needed to improve the water environment and where there is less certainty. This information has provided the basis for SEPA to target further monitoring effort to increase confidence and for prioritising action to protect and improve the water environment.

As SEPA gathers more information from its monitoring programmes and as its assessment methods are refined, understanding of the condition of water environment will further improve. These improvements will taken be into account when the plan is updated in 2015, 2021 and 2027.

Objectives for the water environment

The Scotland river basin district has fewer environmental problems than most others in the UK. The task now is to build on this achievement: the overall goal of this plan is for 98% of water bodies to be in good or better condition by 2027. To achieve that, water bodies currently at good or high status will be protected from deterioration and action will be taken to enhance and restore others. Restoring waters to good status will take time, so improvements have been prioritised over the periods 2009–2015, 2015–2021 and 2021–2027. For the small proportion of waters for which achieving good status by 2027 is not feasible[5], 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.

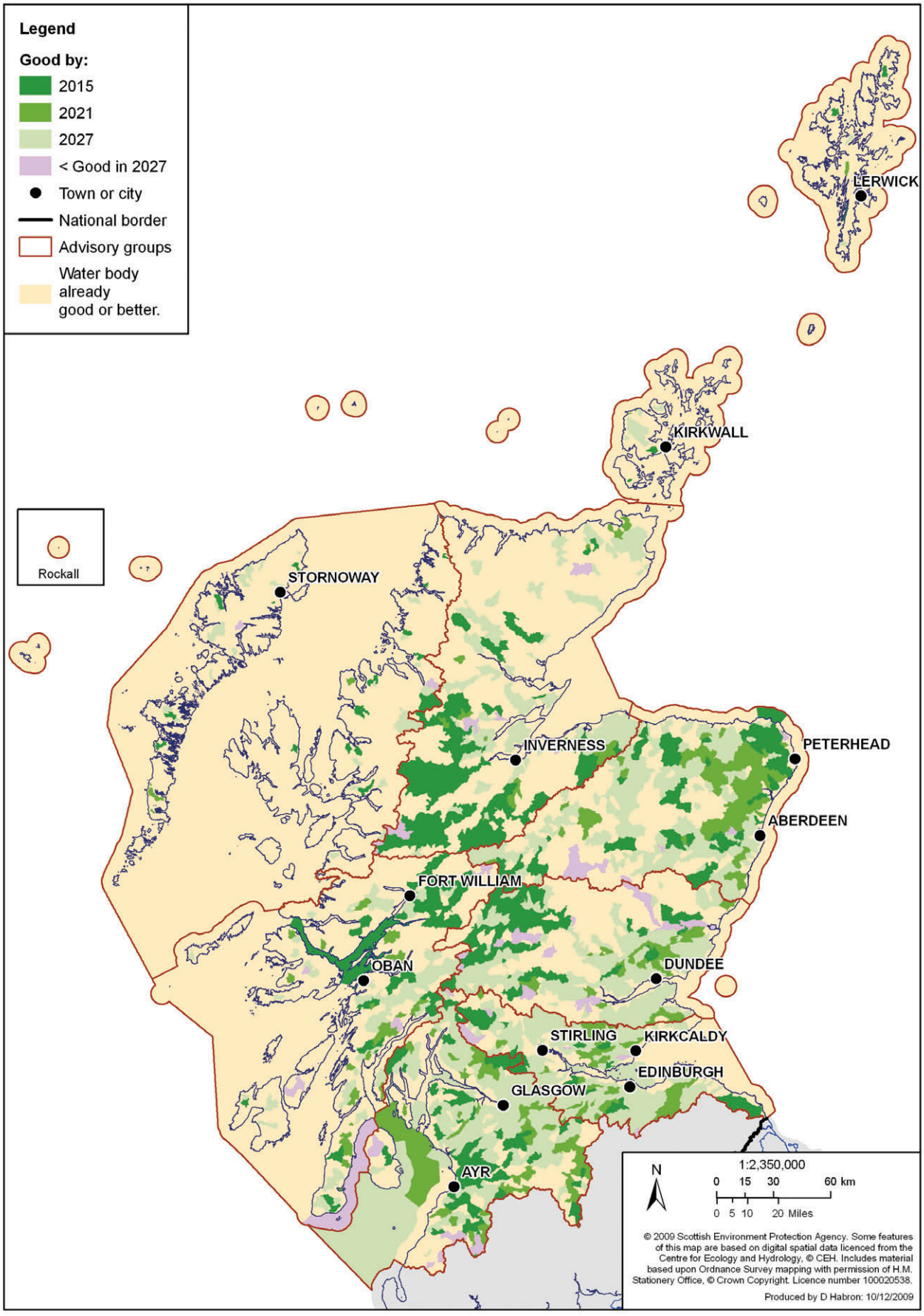
Table 2 describes how improvements to the water environment will be phased. The phasing has been designed so that the pace of improvement provides the time needed to develop and implement the necessary technical solutions and to make the required investments and adjustments without creating disproportionate burdens. Maps 4 and 5 show where these improvements will be made for surface waters and groundwater, respectively.

Table 2: Phased improvements to the condition of water bodies in the Scotland river basin district

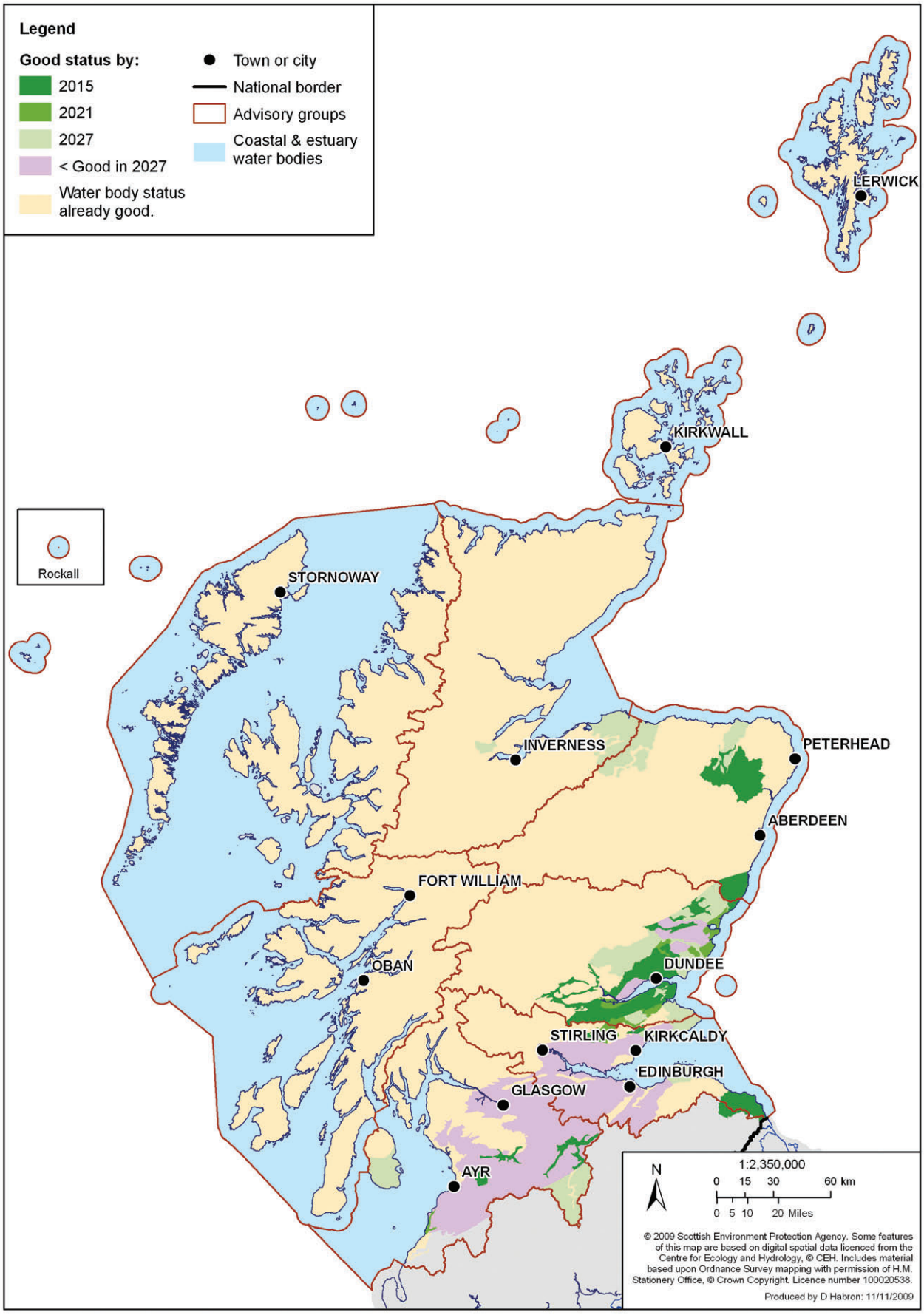
	Proportion of water bodies in a good or better condition (%)			
	2008	2015	2021	2027
All water bodies	65	71	77	98
Rivers	56	63	71	97
Lochs	66	71	77	98
Estuaries	85	85	85	98
Coastal waters	94	97	98	99
Groundwater	76	85	88	94

[5]These waters include groundwater that is recovering from the effects of past mining activity and lochs that are recovering from acidification or the effects of nutrient enrichment.

Map 4: Our objectives for improving the condition of surface waters in the Scotland river basin district up to 2027



Map 5: Our objectives for improving the condition of groundwater in the Scotland river basin district up to 2027



Many water bodies are also part of protected areas. The objectives for these include any additional protection needed 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 the goals for which they were established. The objective for these areas is to protect them from deterioration. Further environmental improvements are needed for other areas that are currently falling short. Planned improvements to these protected areas are summarised in Table 3 below.

Table 3: Planned improvements to protected areas in the Scotland river basin district

Protected area	Proportion of protected areas achieving the goals for which they were established (%)			
	2008	2015	2021	2027
Economically important shellfish	66	67	74	100
Bathing waters	68	100	100	100
Conservation of habitats and species (Special Areas of Conservation and Special Protection Areas)*	91	95	97	100

Note to Table 3
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. All the water quality conditions required to support shellfish life and growth are already being achieved.

*Figures represent the proportion of those special areas of conservation and special protection areas dependent on the status of water where the status of the water environment is sufficiently good to enable the achievement of the areas' conservation objectives.

How the objectives will be achieved

Scotland 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. For example, over the last few decades there has been a substantial reduction in water pollution due to nationally agreed investment programmes that have improved sewage collection and treatment.

This river basin management plan describes the programme of measures that have been established to protect water bodies currently at good status or better from deterioration, and to restore water bodies that are not at good status. The programme includes the latest investment planning work for Scottish Water as well as ongoing work with farmers to reduce pollution from the use of nitrates in agriculture. However, the breadth of the programme is far greater than any previous programme of improvement and the pressures it addresses are not limited to pollution. This plan describes how we intend to tackle pressures resulting from water uses for a wide range of different purposes including agricultural irrigation, drinking water supply, hydropower generation and flood protection. Table 4 below summarises plans for progressively reducing the most significant pressures on our water bodies.

Table 4: Our plan for tackling the principal pressures on the water environment in the Scotland river basin district

Pressure	Activity responsible for pressure	Number of water bodies adversely affected			
		2008	2015	2021	2027
Pollution	Agriculture	345	229	114	7
	Sewage disposal	208	162	90	1
	Other (acidification, abandoned mines)	115	94	67	42
Abstraction and impoundment	Drinking water supply	107	81	65	0
	Agricultural irrigation	100	86	64	0
	Hydropower	125	94	90	8
	Other (eg aquaculture; drinks manufacture)	95	85	71	0
Alterations to beds, banks and shores	Urban land uses and urban flood protection	45	43	31	0
	Agriculture	125	93	52	0
	Forestry	93	87	47	0
	Legacy of past engineering activities	33	27	24	0

The programme of measures includes the mechanisms needed to ensure that the necessary action is taken to manage and reduce pressures.

Action on most of the significant pressures will be secured through the Water Environment (Controlled Activities) (Scotland) Regulations 2005. Among other things, these regulations apply to:

- activities liable to cause water pollution;
- water abstraction;
- water impoundment;
- new engineering alterations to the beds, banks and shores of rivers and lochs.

Anyone carrying out such an activity will be required by SEPA to take appropriate, proportionate and timely action to protect and improve the water environment as conditions of the activity's authorisation.

These regulatory controls have been supplemented with a number of other mechanisms to help achieve the objectives as cost-effectively as possible. For example, at a UK level, marketing and use restrictions have been introduced to reduce risks of pollution from pesticides and other toxic pollutants, while the use of phosphorus in laundry detergents is also scheduled to be banned in order to reduce phosphorus inputs at source. To help tackle diffuse pollution from agriculture, co-ordinated advice and support is being provided (through rural development funding) to assist farmers in making the necessary changes in land management.

Parts of our water environment are also affected by the legacy of past activities, including pollution from old mine workings and from land that has been contaminated with pollutants. These impacts also include adverse effects on the ecological quality of surface waters resulting from past engineering modifications to their bed, banks and shores. Local authorities and SEPA already have powers to tackle pollution arising from contaminated land and the Coal Authority has a programme of works to mitigate the impacts of pollution from old mines as far as is technically feasible. The Scottish Government is in the process of introducing new legislation that will give SEPA powers to ensure action is taken to address other 'legacy' impacts.

SEPA and other public authorities will work together with water users and land managers to reduce pressures on the water environment using solutions that are as cost-effective as possible. Well-designed solutions will often deliver multiple benefits. They will also keep carbon costs as low as possible and contribute to minimising the impacts of climate change.

Ullapool harbour





Achmelvich beach

Putting the plan into action

Achieving the environmental improvements relies on the successful implementation of the programme of measures. This will require action from a wide range of public bodies, water users and land managers. The Scottish Government will oversee implementation, provide policy direction where needed and continue to invest in Scotland's water environment.

Scotland's policy framework for river basin management

The Scottish Government has established a comprehensive framework for managing the waters of the Scotland river basin district. The river basin planning process was established under Water Environment and Water Services (Scotland) Act 2003. The supporting regulatory framework includes the introduction of controls on activities likely to have an adverse impact on the water environment through the Water Environment (Controlled Activities) (Scotland) Regulations 2005. The framework also identifies a range of responsible authorities and sets out their various roles in implementing the plan.

Information on the Government's policy framework is available on the Scottish Government's website at: www.scotland.gov.uk/Topics/Environment/Water/WFD

SEPA will provide overall co-ordination during the implementation of the plan. It will be responsible for checking progress is on track to achieve the objectives and, ultimately, whether they have been achieved. SEPA will use its monitoring programmes and those undertaken by other bodies to gather information for these purposes and will publish an updated assessment of the condition of the water environment each year. SEPA is also responsible for enforcing the Water Environment (Controlled Activities) (Scotland) Regulations 2005.

It will also be SEPA's role to co-ordinate a comprehensive review of progress and make recommendations on updates to the plan every six years. If, when reviewing progress, SEPA identifies that additional action needs to be taken, it will co-ordinate efforts to ensure that this action is taken, provided the action is technically feasible and not disproportionately expensive. SEPA will publish its first review of progress by the end of 2013 and will consult on updates to the plan in 2015 and then every six years thereafter.

To promote co-ordination and integration among public bodies in implementing the programme of measures, Scottish Ministers have identified a number of responsible authorities to work alongside Scottish Ministers and SEPA. They are:

- Scottish Natural Heritage;
- Scottish Water;
- Forestry Commission Scotland;
- British Waterways Board;
- Fisheries Committee;
- local authorities;
- district salmon fisheries board;
- national park authorities.

Scottish Ministers, SEPA and the responsible authorities are required to adopt an integrated approach by co-operating with each other to co-ordinate the exercise of their respective functions. In addition, all public bodies exercising any functions affecting the water environment are required to take the river basin management plan into account. Among other things, this means that the various plans produced by public bodies for other purposes will take account of this plan's objectives for the water environment and, where possible, contribute to their achievement.

As well as the National Advisory Group and eight Area Advisory Groups in the Scotland river basin district, SEPA has established a Diffuse Pollution Management Advisory Group and a Fish and Fisheries Advisory Group. The Diffuse Pollution Management Group will advise on how efforts to tackle diffuse pollution should be updated as knowledge and experience grows. The Fish and Fisheries Advisory Group will provide SEPA with advice on how best to secure the protection and improvement of fish populations, such as Atlantic salmon and brown trout.

Many of the improvements needed to achieve the plan's objectives for the water environment will also help deliver other benefits, including sustainable flood management, biodiversity conservation and improved fisheries. Area Advisory Groups and the National Advisory Group are well placed to help identify such opportunities and realise them through partnership working.



River Almond joining the River Tay

The Scottish Government, SEPA, responsible authorities and other public bodies will continue to work closely with water users and land managers in implementing the plan. Part of putting the plan into action will involve the detailed work of designing, planning and implementing the tailor-made solutions needed to reduce pressures. This will involve consulting with all those with interests in the water bodies concerned. The consultations will provide a further opportunity for anyone who wishes to contribute to the river basin management process.

The lead authorities or groups of authorities who will be responsible for ensuring that each of the actions in the plan is delivered are listed in Table 5.

Table 5: Lead authorities responsible for ensuring action is taken to address the principal pressures on the water environment

Pressure	Activity responsible for pressure	Lead authorities responsible for ensuring action is taken
Pollution	Agriculture	Scotland's Environmental and Rural Services
	Sewage disposal	Scottish Water, SEPA
	Other industry	SEPA
	Legacy sources	Coal Authority, local authorities, SEPA
Abstraction and impoundment	Drinking water supply	SEPA, Scottish Water
	Agricultural irrigation	SEPA
	Hydropower	SEPA
	Drinks manufacture	SEPA
	Other (eg aquaculture, canals)	SEPA, British Waterways
Alterations to beds, banks and shores	Urban land uses & urban flood protection	Local authorities, national park authorities, SEPA
	Agriculture	SEPA, Scotland's Environmental and Rural Services
	Forestry	Forestry Commission Scotland, SEPA
	Other (eg past engineering works, invasive non-native plants)	SEPA, local authorities, Scottish Natural Heritage

Sometimes, solutions will be identified that enable the objectives to be achieved earlier than planned. In other cases, achieving the objectives may take longer than expected or may prove technically infeasible or disproportionately expensive. In such cases, the objectives will be reviewed accordingly as the plan is updated.

For the full river basin management plan and further details of river basin management planning see SEPA's website: www.sepa.org.uk/water/river_basin_planning.aspx

[6]Scotland's Environmental and Rural Services (SEARS) is a partnership of nine public bodies aiming to provide Scotland's rural land managers, with an efficient and effective service. The partners are Animal Health, Cairngorms National Park Authority, Crofters Commission, Deer Commission Scotland, Forestry Commission Scotland, Loch Lomond & The Trossachs National Park Authority, SEPA, Scottish Government and Scottish Natural Heritage. Further information on Scottish Environment and Rural Services (SEARS) can be found on its website at: www.sears.scotland.gov.uk

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