natural scotland
SCOTTISH GOVERNMENT

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

Chapter 5:
Protected areas

Chapter guide*

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*Appendices for this document are available on the SEPA website at: www.sepa.org.uk/water/river_basin_planning.aspx

1. Introduction

1.1 What are protected areas?

A large proportion of the water environment in the Scotland river basin district (RBD) has been identified as requiring special protection because of its sensitivity to pollution or its particular economic, social or environmental importance. These areas are water bodies or parts of water bodies:

- used for the abstraction of water intended for human consumption;
- supporting economically significant shellfish or freshwater fish stocks;
- where a large number of people are expected to bathe;
- supporting habitats or species of international biodiversity conservation importance;
- sensitive to nutrient enrichment.

The areas represent some of Scotland's most valued natural assets. By protecting them, we[1] will help safeguard Scotland's biodiversity, sustain employment in its rural communities and protect drinking water sources from pollution.

You can find the register of protected areas in the Scotland RBD and maps of their location on the SEPA website at: www.sepa.org.uk/water/protected_areas.aspx The register was first produced in 2004 and is updated regularly.

Each protected area has been established under a specific European directive which sets out the requirements to ensure the protection of the area's water environment or protection of wildlife that is directly dependent on that water environment.

Some of the directives will be repealed in 2013. We will ensure the same level of protection is maintained subsequently.

The types and numbers of protected areas included under the Water Framework Directive are given in Table 1. Table 2 tells you where you can find information about protected areas in the Scotland RBD.

1.2 What does this chapter build on

Most of the Scotland RBD's protected areas were originally identified in order to comply with the provisions of earlier European directives, some of which date back to the 1970s. Where necessary to achieve the areas' objectives, "pollution reduction programmes" (PRPs) were developed and implemented.

The pollution reduction programmes were developed to prioritise and promote effluent treatment schemes and other measures to reduce pollution. Very substantial quality improvements were achieved and the relevant pollution reduction plans (available on SEPA's website at: www.sepa.org.uk) have been updated accordingly. Measures have also been implemented to protect those areas already achieving their objectives from deterioration.

Existing pollution reduction programmes have been incorporated into this plan's programme of measures for achieving the environmental objectives for protected areas.

[1]Where used in this Chapter, "we", "our" and "us" are references to the Scottish Government, SEPA, designated responsible authorities and all Scotland's other public bodies.

Table 1: Protected areas in the Scotland RBD included under the Water Framework Directive

Type of protected area as defined by the Water Framework Directive	Protected area name used in this chapter	Number of protected areas	More information
Areas designated for the abstraction of water intended for human consumption	Drinking Water Protected Area	596	Section 3.1 Appendix A
Areas designated for the protection of economically significant aquatic species	Freshwater fish water	104	Section 3.2
	Shellfish water	77	Section 3.3 Appendix B
Bodies of surface water designated as bathing waters	Bathing water	73	Section 3.4 Appendix C
Areas designated as nutrient sensitive areas	Nitrate Vulnerable Zone	3	Section 3.5
	Urban Waste Water Treatment Directive sensitive area	80	Section 3.6
Areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection	Special Area of Conservation (SAC)	178	Section 3.7 Appendix D
	Special Protection Area (SPA)	118	Section 3.7 Appendix D

Table 2: Where to find information about protected areas

Information	Location
Summary of the current condition, future targets and actions to be taken for all protected areas in the Scotland RBD	Section 2 of this chapter
Description of the different types of protected areas, their current condition, improvement targets and the actions planned to achieve the targets	Section 3 and Appendices A–D of this chapter.
Information about a particular protected area	SEPA's interactive map www.sepa.org.uk/water/river_basin_planning.aspx
An appropriate assessment of the impacts of the river basin management plan on areas designated under the Habitats Directive as required by The Conservation (Natural Habitats, &tc.) Regulations 1994	The appropriate assessment can be found at: www.sepa.org.uk/water/river_basin_planning.aspx

2. Summary

2.1 Current condition of Scotland's protected areas

A large part of the Scotland RBD is covered by one or more protected areas. These protected areas can be associated with just one water body or with tens of water bodies over a large catchment area. Details of the different types of protected areas in the Scotland RBD are given in Section 3. Their current condition is summarised below:

- **Drinking Water Protected Areas**
  SEPA and Scottish Water have identified 6 out of 596 Drinking Water Protected Areas where there is a risk of deterioration in water quality.

- **Freshwater fish waters**
  In 2008, we achieved the required mandatory values in all but one of the104 waters designated for the protection of freshwater fish.

- **Shellfish waters**
  In 2008 all of Scotland's designated shellfish waters complied with the required mandatory values and 66% with the more stringent guide values.

- **Bathing waters**
  Projected classification results based on monitoring data from 2005 to 2008 indicate that 50 out of the 73 designated bathing waters meet the required bathing water quality standards.

- **Nitrate Vulnerable Zones**
  All three Nitrate Vulnerable Zones in Scotland have Action Programmes established.

- **Urban Waste Water Treatment Directive (UWWTD) Sensitive Areas**
  All of the waste water discharges affecting those UWWTD Sensitive Areas that have been designated for more than seven years have the appropriate level of treatment.

- **Special Areas of Conservation and Special Protection Areas**
  Scottish Natural Heritage has determined that in 91% of all special areas of conservation and special protection areas dependent on the status of water, the status of the water environment is sufficiently good to enable the achievement of the areas' conservation objectives.

In general, protected areas are currently in good condition. However, some protected areas are not yet reaching the assessment criteria specified by the directive under which they were designated.

Pollution is the main impact affecting protected areas in the Scotland RBD. The main causes are:

- point source pollution from the collection and treatment of sewage;
- diffuse pollution from agriculture, forestry, urban development and other sources.

A variety of other factors have also been identified as causing special areas of conservation and special protection areas to be in unfavourable condition. These include:

- impact of invasive non-native species;
- changes to habitat;
- impacts on water quantity (changes to water levels, flows and flow patterns).

2.2 Future condition of Scotland's protected areas

We will ensure that the generally good condition of protected areas in the Scotland RBD is maintained. This will enable the areas to continue to provide a highly valued water environment that supports quality produce, sport fishing, rich wildlife and a high quality of life.

By 2015, we are aiming to have made the environmental improvements necessary to achieve the objectives for the majority of protected areas that are not currently in good condition. A small number of areas will take longer to improve. The reasons for this are explained in more detail in Appendix D of this Chapter.

2.3 Actions for protected areas

The main actions that will help to address the pressures currently adversely affecting protected areas are summarised in the sections below and detailed in Chapter 3. Both that Chapter and further information about site-specific actions can be found on the SEPA interactive map at: www.sepa.org.uk/water/river_basin_planning.aspx

3. Details of protected areas by type

3.1 Drinking Water Protected Areas

Drinking Water Protected Areas are bodies of water identified as:

- used, or intended to be used, for abstraction for human consumption providing greater than 10m^3 per day as an average, or serving more than 50 people;
- waters intended for such use in the future.

The relevant water bodies have been designated by the Scottish Government[2] and maps of the protected areas are available on the Scottish Government's website[3].

Drinking Water Protected Areas have to be protected with the aim of avoiding any deterioration in their quality that would compromise a relevant abstraction of water intended for human consumption.

A supply intended for human consumption would be compromised if, as a result of deterioration in the quality of the water body:

- an abstraction (or planned abstraction) of water intended for human consumption has to be abandoned and an alternative used to provide the supply;
- water abstracted (or planned to be abstracted) has to be blended with water abstracted from another source;
- additional purification treatment has to be applied;
- the operating demand on the existing purification treatment system has to be increased significantly.

Location and monitoring of Drinking Water Protected Areas

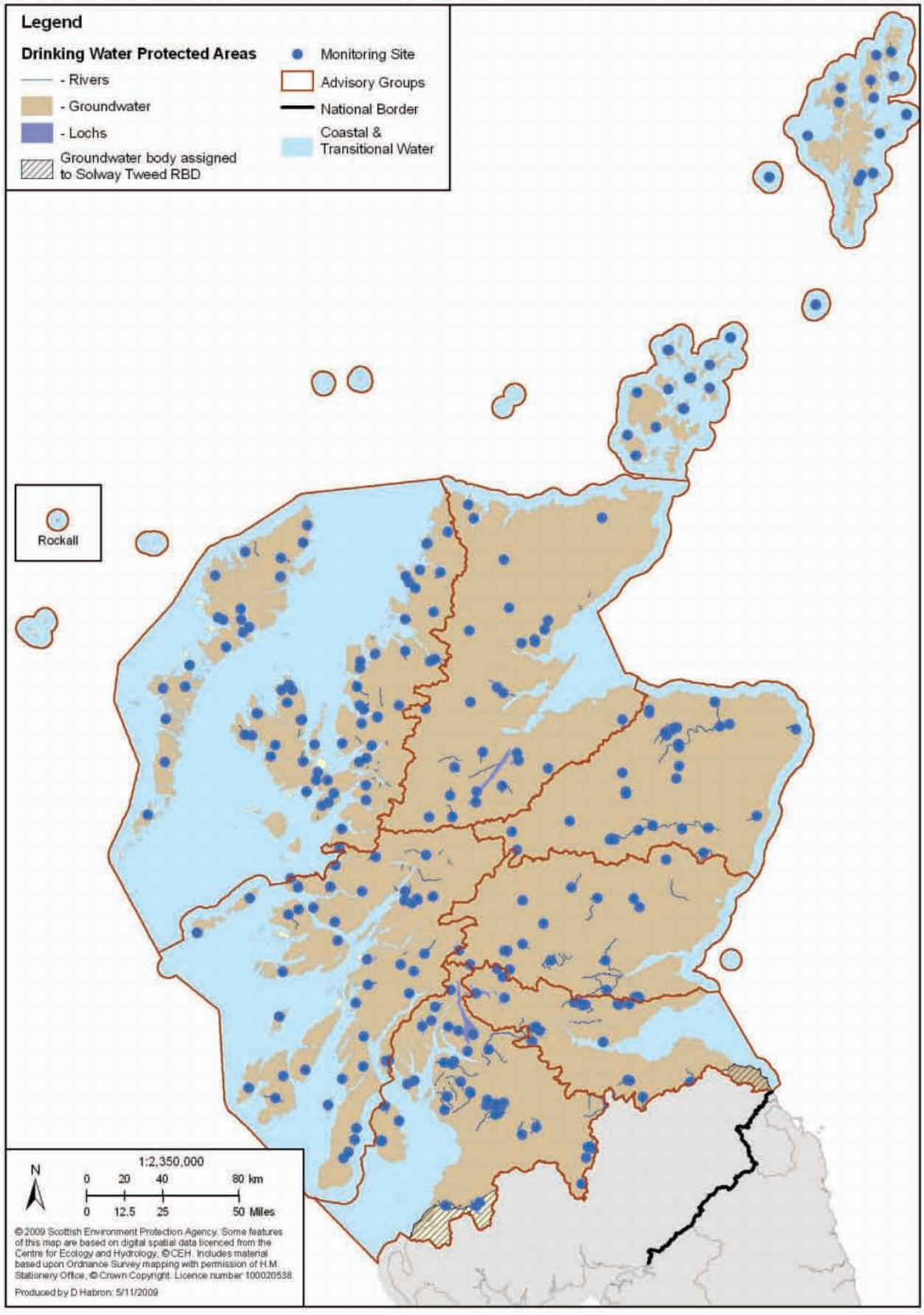
There are 596 Drinking Water Protected Areas in the Scotland RBD. The location of these protected areas, which include all groundwater bodies within the Scotland RBD, is shown on Map 1. Online maps of the Drinking Water Protected Areas can be viewed at: www.scotland.gov.uk/Topics/Environment/Water/15561/mapdwp

Scottish Water and SEPA ensure that all drinking water protected areas that provide more than an average of 100m^3 per day are monitored.

Additional monitoring in these and other drinking water protected areas is undertaken by SEPA or Scottish Water where necessary to assess the risk to the quality of water.

[2]The Water Environment (Drinking Water Protected Areas) (Scotland) Order 2007
[3]www.scotland.gov.uk/Topics/Environment/Water/15561/mapdwp

Map 1: Designated surface water and groundwater Drinking Water Protected Areas and monitoring sites



Current condition of Drinking Water Protected Areas

SEPA is working with Scottish Water, the Scottish Government and other partners as appropriate to assess the risks to Drinking Water Protected Areas.

SEPA and Scottish Water have identified six Drinking Water Protected Areas at risk of deteriorating. Appendix A provides additional information about these Drinking Water Protected Areas. Measures have been introduced or have been planned to secure the protection of the quality of water abstracted or intended to be abstracted from these areas.

Actions for Drinking Water Protected Areas

Actions being taken to protect the quality of water in our Drinking Water Protected Areas from deterioration include:

- regulatory measures, including the requirements for authorisation for point source discharges and for agricultural and forestry operations liable to cause diffuse source pollution;
- risk-based audit monitoring of compliance with the conditions of such authorisations;
- action programmes established for Nitrate Vulnerable Zones under the Nitrates Directive;
- restrictions on the marketing and use of pesticides under the Plant Protection Products Directive and the Biocides Directive;
- targeted action to reduce diffuse source pollution in priority catchments (see Chapter 3). This includes further investigations to characterise the risks to Drinking Water Protected Areas and further action to prevent deterioration in water quality that may adversely affect water supplies.

Further information on these measures can be found in Chapter 3 available on the SEPA website at: www.sepa.org.uk/water/river_basin_planning.aspx

Deterioration in a Drinking Water Protected Area in Fife caused by diffuse source pollution by agricultural nitrates compromised an abstraction intended for human consumption. This happened before the Water Framework Directive came into force and the abstraction is no longer being used. Action programmes have been established under the Nitrates Directive with the aim of restoring the quality of water in this Drinking Water Protected Area so that abstraction for human consumption can be resumed. This action is expected to take some time to be effective because of the lag time for groundwater recovery.

3.2 Protected areas for economically important freshwater fish

Scotland has economically important stocks of freshwater fish including Atlantic salmon, sea trout and brown trout. Protected areas for economically important freshwater fish have been designated under the Freshwater Fish Directive.[4]

The purpose of the Freshwater Fish Directive is to protect or improve the quality of those running or standing waters which support (or which, if pollution were reduced or eliminated, would become capable of supporting) fish belonging to:

- indigenous species offering a natural diversity;
- species whose presence is judged desirable for water management purposes by the competent authorities of the Member States.

This purpose is achieved by meeting specific mandatory water quality values specified by the Freshwater Fish Directive. The Directive also requires us to try to achieve a series of guide values.

The Freshwater Fish Directive will be repealed in 2013. However, the designated waters will continue to be afforded at least the same level of environmental protection through the achievement of our broader ecological objectives for the waters concerned. Nearer the time, Scottish Ministers will consult on if and how some other form of protected area for fish may be of benefit over and above the protection given through our objectives for protecting and improving the ecological status of the water bodies.

[4]Directive 2006/44/EC on the quality of freshwaters needing protection or improvement in order to support fish life

Location and monitoring of areas protected for freshwater fish

There are currently 104 protected areas for freshwater fish in the Scotland RBD. Each protected area comprises one or more water bodies. Of the 104 designated waters, 101 are designated as salmonid waters[5] and three as cyprinid waters.[6] All the cyprinid protected areas are canals.

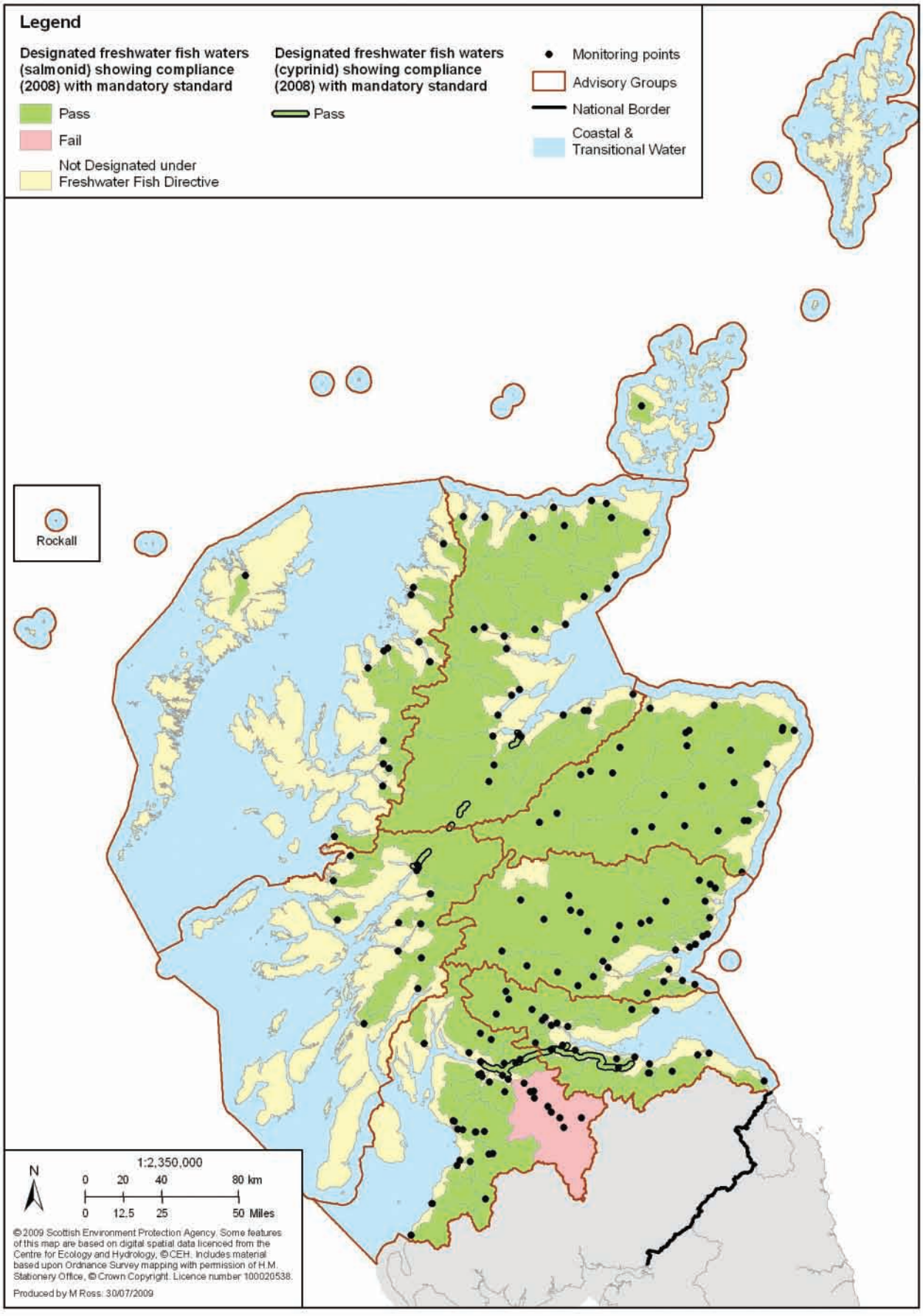
Monitoring of the Scotland's freshwater fish protected areas is carried out by SEPA at 178 salmonid and six cyprinid monitoring stations. Since 2006, this monitoring has been integrated into the monitoring programmes established by SEPA for assessing the status of water bodies (see Chapter 2).

The location of the protected areas for freshwater fish and the associated monitoring network are shown in Map 2.

[5]Salmonid waters are waters that support or become capable of supporting fish belonging to species such as salmon, trout, grayling and whitefish.

[6]Cyprinid waters are waters that support or become capable of supporting fish belonging to the cyprinids (family of fish including carp, tench, roach, rudd, dace) or other species such as pike, perch and eel.

Map 2: Designated freshwater fish waters, monitoring sites and results of the 2008 Freshwater Fish Directive assessment



Current condition of areas protected for freshwater fish

SEPA assesses the water quality of each area protected for freshwater fish and compares this with the standards required for the areas by the Freshwater Fish Directive.

All the areas protected for freshwater fish in the Scotland RBD are currently achieving the required standards (mandatory values) with the exception of the River Clyde. The total length of the River Clyde protected for freshwater fish is 791km of river from the rural headwaters to the estuary in the city of Glasgow. This designation has been divided into 10 sub-designations, nine of which achieved the required water quality standards in 2008. The lower River Clyde, a 54km stretch of river that was newly designated in late 2007, did not achieve the required value for total ammonium in 2008.

Future condition of areas protected for freshwater fish

After 2013, the protection of economically important fish will be achieved by protecting and improving the status of water bodies.

Further information on the classification results for water bodies can be found in Chapter 1.

The objectives for water bodies, which will replace the protection provided by the Freshwater Fish Directive, can be found in Chapter 2. Both Chapter 1 and Chapter 2 can be accessed on the SEPA website at: www.sepa.org.uk/water/river_basin_planning.aspx

Actions to improve and maintain areas protected for freshwater fish

A summary of the principal actions we will be taking to maintain and, where necessary, improve surface waters for fish is given in Chapter 3.

Further details can be found in the pollution reduction plans established by SEPA for areas protected for freshwater fish. These plans may be viewed at: www.sepa.org.uk/water/protected_areas/freshwater_fisheries.aspx

3.3 Protected areas for economically important shellfish waters

The coastal waters to the west of Scotland and around the Northern Isles are particularly significant in supporting economically important stocks of shellfish. We have established protected areas for these economically important shellfish waters under the Shellfish Waters Directive.[7]

The purpose of the Shellfish Waters Directive is to protect and, where necessary, improve the quality of shellfish waters in order to support the life and growth of shellfish (bivalve and gastropod molluscs) and therefore contribute to the high quality of shellfish products available for human consumption.

The Shellfish Waters Directive specifies mandatory water quality values that must be met. The Directive also requires us to try to achieve a series of guide values. These include a guide value for faecal coliforms in shellfish flesh and intravalvular liquid.[8] These bacteria are used as an indicator of faecal contamination of shellfish by sewage and animal excreta (a potential health hazard for those eating the shellfish).

Location and monitoring of areas protected for shellfish

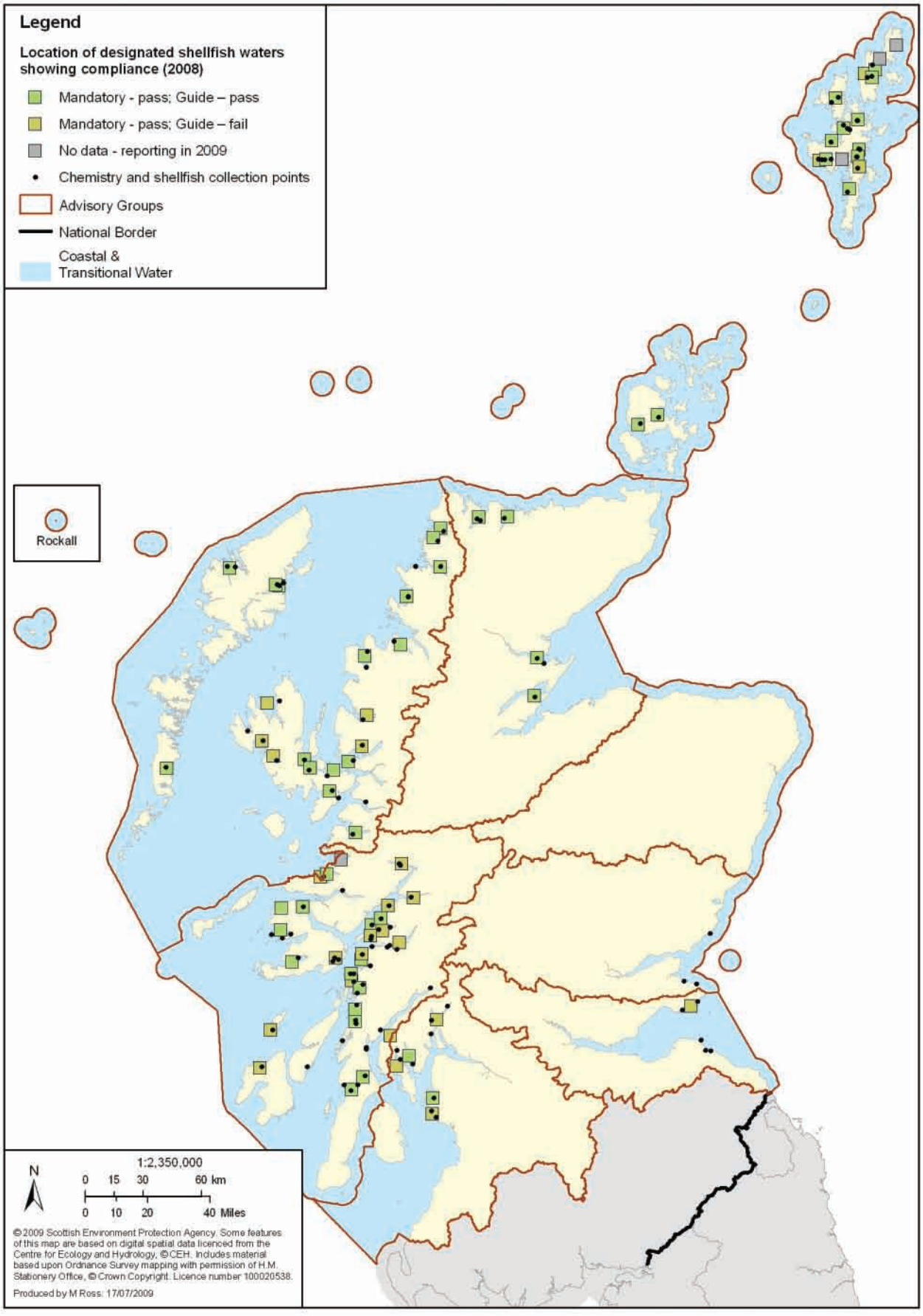
There are currently 77 areas protected for shellfish in the Scotland RBD. Four of these waters were newly designated in November 2008 and will be assessed for the first time using 2009 monitoring results.

Monitoring of areas protected for shellfish is undertaken by SEPA with additional microbiological data provided by the Food Standards Agency Scotland which monitors commercial harvesting beds under the Food Hygiene Regulations (2006).

The location of the areas protected for shellfish and the associated monitoring network is shown on Map 3. The waters newly designated at the end of 2008 are displayed in grey on the map.

[7]Directive 2006/113/EC on the quality required of shellfish waters
[8]Intravalvular fluid is fluid between the valves of shellfish.

Map 3: Designated shellfish waters, monitoring sites and results of the 2008 Shellfish Waters Directive assessment



Current condition of areas protected for shellfish

The Shellfish Waters Directive's mandatory values have been achieved in all 73 of the protected areas for shellfish in the Scotland RBD designated before the start of 2008. We are continuing to work towards achieving the Directive's more stringent guide values; in particular, we need to make further progress in respect of faecal coliform numbers.

In 2008, 48 (66%) of the 73 designated waters achieved the guide value for faecal coliforms. However, due to year-on-year variability in results, SEPA has also made an assessment based on the combined data from the 3 year period 2006-2008. This longer term assessment indicated that 35 (48%) of the designated waters achieved the guide value throughout this period. This assessment provides an indication of how confident we can be that particular designated waters will consistently achieve the guide value in future years.

Achievement of the faecal coliform guide value for designated shellfish waters, based on 2008 data, is presented in Map 3. Full lists of the 2008 and the three-year assessment results for faecal coliforms are presented in Appendix B.

The faecal coliform guide value for shellfish waters has particular relevance because of its similarity to the "A" standard of the Shellfish Hygiene Directive administered by the Food Standards Agency in those waters where there is commercial shellfish production.

Future condition of areas protected for shellfish

The Shellfish Waters Directive will be repealed in 2013. However, at least the same level protection of economically important shellfish will be achieved through this plans broader objectives of protecting and improving the ecological quality of the water bodies concerned.

However, contamination of shellfish flesh by faecal coliforms does not affect the achievement of our objectives for the ecological quality of the water bodies in the protected areas. We think it is important to continue to provide protection against such contamination beyond 2013.

Prior to the repeal of the Shellfish Waters Directive, Scottish Ministers will consult on detailed proposals for the ongoing protection of economically important shellfish waters from pressures that will not be addressed through our objectives for protecting and improving the status of water bodies.

The UK Government is also undertaking research to determine how best to assess risks from faecal coliform contamination. This may result in proposals for a revised bacterial standard for protecting shellfish in protected areas based on the latest scientific understanding.

In the meantime, we have set objectives for areas protected for shellfish based on the guide value for faecal coliforms specified in the Shellfish Waters Directive. For those waters that consistently achieved the guide value in the period 2006 to 2008, we have high confidence that they will continue to achieve the guide value in 2015 and beyond. For those sites that achieved the guide value in 2008 but where the 3 year assessment indicated it is not being achieved every year, we are still predicting achievement by 2015 but with lower confidence.

Through the actions contained in this plan (see Chapter 3), we expect that 49 out of 73 designated shellfish waters will achieve the guide faecal coliform value by 2015, increasing to 54 in 2021, with all 73 achieving the guide value in 2027.

Objectives for the 4 newly designated waters will be set once sufficient data has been gathered to assess their condition (see Appendix B for a full list of results).

Actions for areas protected for shellfish

The main measures necessary to achieve our objectives for shellfish waters in the Scotland RBD are:

- action to reduce diffuse source pollution;
- action to improve the quality of sewage discharges

The planned measures are summarised in Chapter 3 available online at:
www.sepa.org.uk/water/river_basin_planning.aspx

The primary sources of faecal bacteria are often not clear. Work to establish the main sources of pollution is being undertaken by SEPA to inform the development of on-the-ground solutions.

Further details can be found in the pollution reduction plans established for SEPA for areas protected for shellfish. The plans may be viewed at www.sepa.org.uk/water/protected_areas/shellfish_waters.aspx

3.4 Areas protected for bathing

High quality bathing waters are important so that people can enjoy Scotland's water environment safely. They are also important for Scotland's tourism industry.

Protected areas for bathing were first established under the Bathing Waters Directive (76/160/EEC). This Directive has now been replaced by the revised Bathing Water Directive (2006/7/EC) and all bathing water protected areas now come under the revised Bathing Waters Directive.

The revised Bathing Waters Directive changes the parameters and standards used to assess bathing water quality as well as the timeframe over which the assessment is made.

SEPA has made a first assessment of each Bathing Water using this new bathing water quality classification scheme.

The purpose of the revised Bathing Water Directive is to preserve, protect and improve the quality of the environment and to protect human health while bathing in all relevant waters.

The requirements of the revised Bathing Water Directive will be achieved by:

- meeting specified "sufficient" values;
- taking appropriate realistic and proportionate measures with a view to increasing the number of areas protected for bathing waters classified as "excellent" or "good".

A bathing water protected area will be classified as "poor" if it fails to meet the "sufficient" values set out in the revised Directive.

The deadline for achieving, as a minimum, a "sufficient" classification for all designated bathing waters is the end of the 2015 bathing season.

Location and monitoring of areas protected for bathing

There are currently 73 designated bathing waters in the Scotland RBD. Monitoring and assessment are undertaken by SEPA throughout the bathing season. More information on monitoring of areas protected for bathing can be found at: www.sepa.org.uk/water/bathing_waters/results.aspx

The location of the designated bathing waters and associated monitoring network is shown in Map 4.

Current condition of areas protected for bathing

Under the revised Bathing Waters Directive's classification scheme, 50 (69%) out of 73 waters are classified as "sufficient" or better bathing water quality (See Map 4).

Further details of the results of the assessments are given in Appendix C. The assessments are based on the period 2005 to 2008 and will be updated annually with a four year rolling assessment.

Future condition of areas protected for bathing

We are aiming to achieve at least "sufficient" bathing water quality in all protected areas for bathing by 2015.

Actions for areas protected for bathing

The main actions that will contribute towards maintaining and improving bathing water quality in the Scotland RBD are the reduction of point and diffuse source discharges from:

- sewage treatment works;
- combined sewer overflows;
- agricultural diffuse source pollution (livestock and mixed farming sources).

Information on the measures planned to tackle these pressures can be found in Chapter 3.

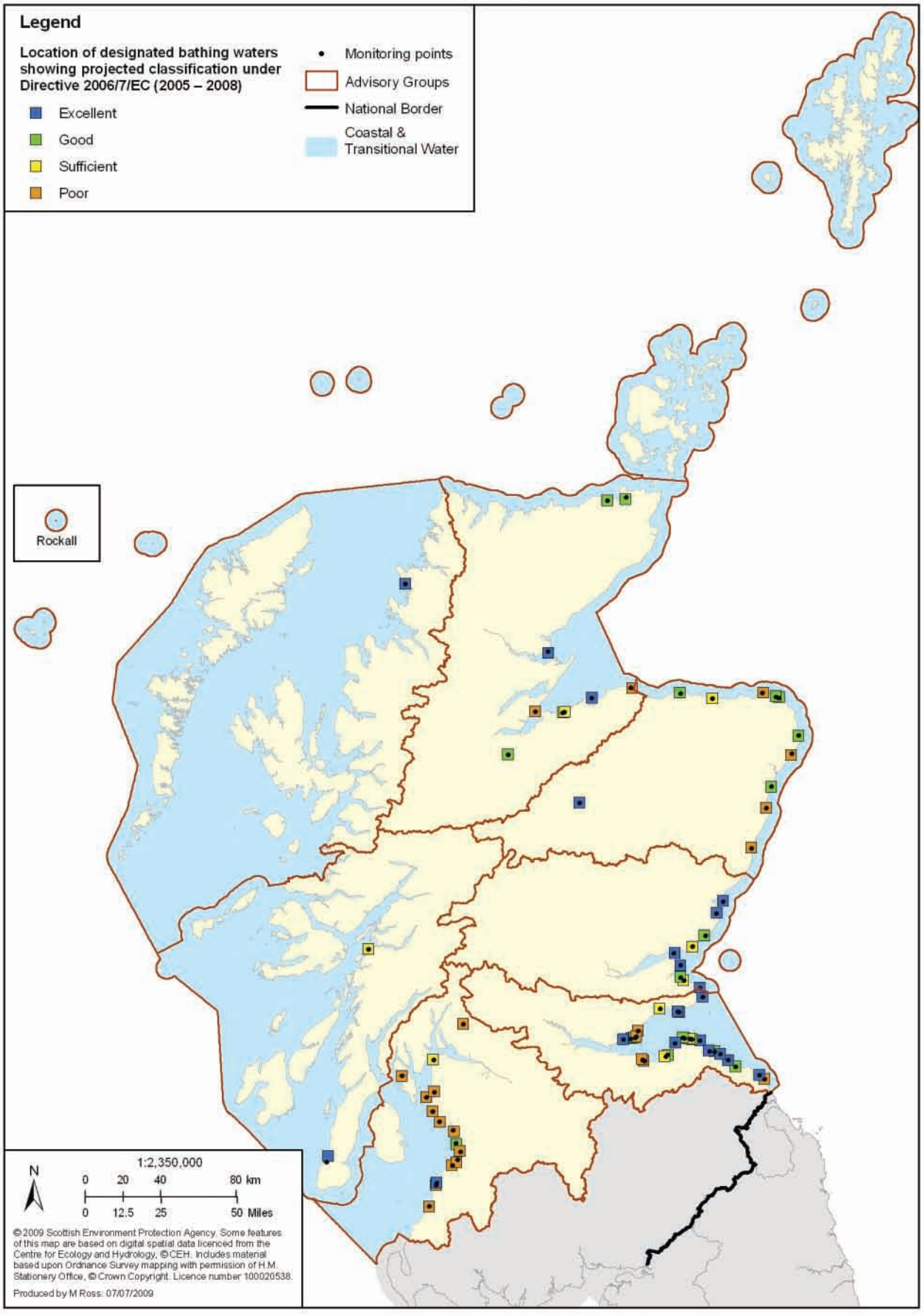
Further details can also be found in the pollution reduction plans established by SEPA for areas protected for bathing. These plans can be viewed at: www.sepa.org.uk/water/bathing_waters.aspx

By the end of March 2011, SEPA will have produced profiles for all designated bathing waters as required by the Bathing Water Directive. These profiles will build on the information already in place in SEPA's pollution reduction plans and contain additional beach management information.

Site-specific information can also be found in SEPA's annual bathing water quality reports at: www.sepa.org.uk/water/bathing_waters.aspx

Litter can also affect the enjoyment and safety of bathing waters. Information on actions that are being taken to manage litter problems (eg through information campaigns) is available on the Keep Scotland Beautiful website at: www.keepscotlandbeautiful.org

Map 4: Designated bathing waters, associated monitoring sites and projected classification, based on data from 2005 to 2008, under the revised Bathing Water Directive



3.5 Nutrient Sensitive Protected Areas: Nitrate Vulnerable Zones

Nitrate Vulnerable Zones are designated under the Nitrates Directive.[9] The purpose of the Nitrates Directive is to reduce or prevent water pollution caused or induced by nitrates from agricultural sources.

Nitrate Vulnerable Zones (NVZs) are designated areas of land which drain into, and contribute to the pollution of:

- waters affected by nitrate pollution;
- waters which could be so affected if action is not taken.

The Nitrates Directive requires action programmes to be established for the protected areas. These action programmes are reviewed regularly and appropriate revisions made.

Location and monitoring of Nitrate Vulnerable Zones

There are three NVZs in the Scotland RBD – one of which is located partially within the Solway Tweed RBD.

Water bodies are monitored to identify and assess the effectiveness of measures taken to prevent and reduce pollution from agricultural sources of nitrates. This monitoring is integrated into SEPA's wider monitoring programmes for assessing the state of the water environment.

Information on SEPA's monitoring programme for the Scotland RBD is available at:
www.sepa.org.uk/water/monitoring_and_classification/scottish_monitoring_strategy.aspx

Additional information on the assessment of polluted waters designated under the Nitrates Directive can be found at:
www.sepa.org.uk/water/protected_areas/nitrates_monitoring.aspx and
www.scotland.gov.uk/Topics/Agriculture/Environment/NVZIntro

The locations of the NVZs and associated surface and groundwater monitoring sites are shown on Map 5.

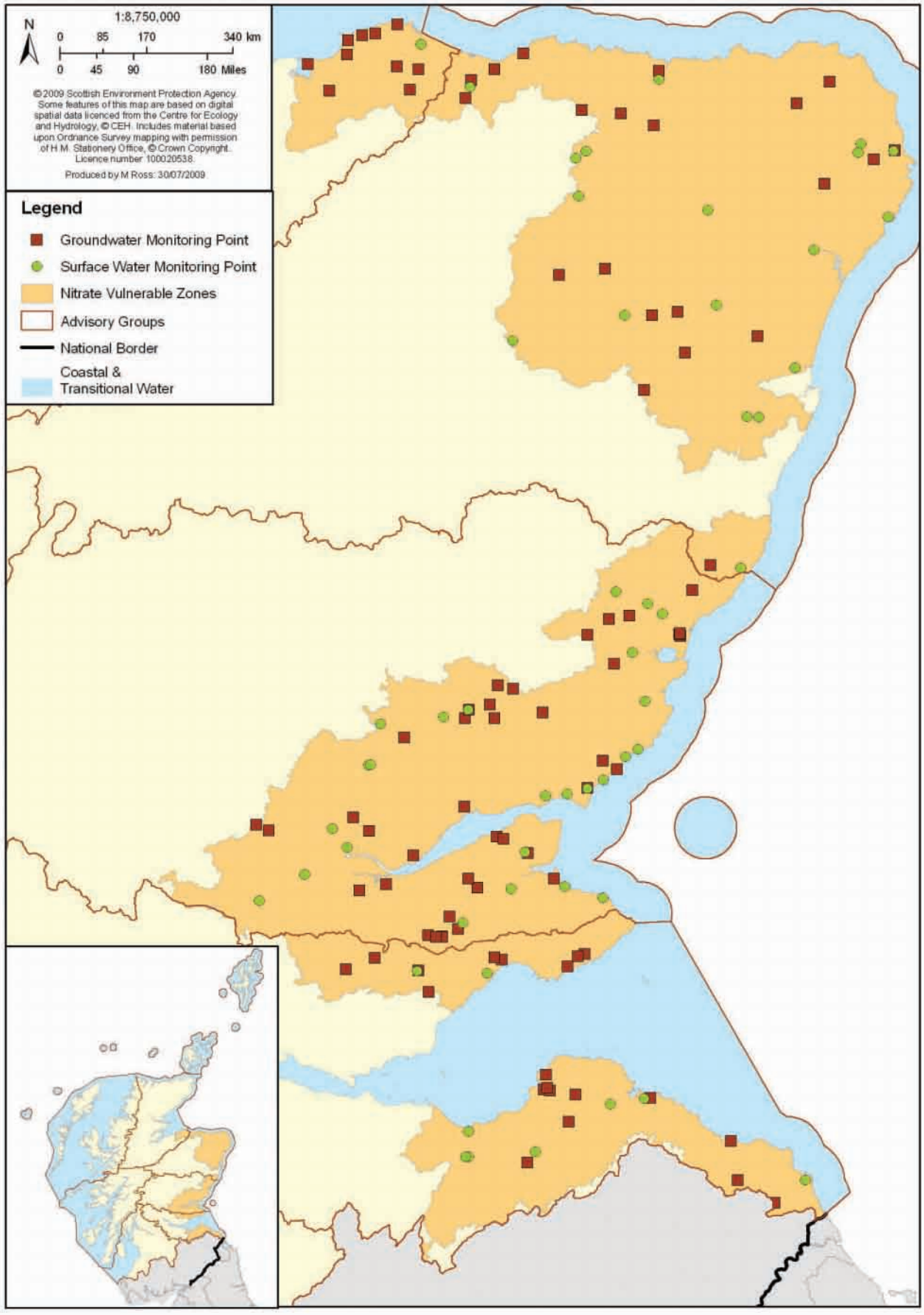
Current and future condition of Nitrate Vulnerable Zones

Action programmes for all three Nitrate Vulnerable Zones in the Scotland RBD have been established. The programmes aim to reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution.

The action programmes will be reviewed and, where necessary, revised every four years based on assessments of the effectiveness of the programmes.

[9]Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources

Map 5: Areas designated within the Scotland RBD as Nitrate Vulnerable Zones and location of surface and groundwater monitoring sites within these zones



Actions for Nitrate Vulnerable Zones

The requirements for the action programmes are laid out in The Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008. The action programmes build on guidelines set out in *Prevention of Environmental Pollution from Agricultural Activity: Code of Good Practice*.[10] This guidance covers topics such as:

- fertiliser planning;
- closed periods for some fertiliser application;
- storage of livestock manure;
- controls on spreading to avoid unsuitable conditions, locations and methods;
- field scale limits on manures;
- crop requirements limits;
- farm scale livestock manure.

More information on measures for NVZs can be found on Scottish Government's website[11].

3.6 Nutrient sensitive protected areas: Urban Waste Water Treatment Directive sensitive areas

Protected areas for waters identified as nutrient sensitive areas have been established under the Urban Waste Water Treatment Directive (UWWTD).[12]

UWWTD sensitive areas are surface water bodies identified as:

- eutrophic[13] or which may in the near future become eutrophic if protective action is not taken;
- intended for the abstraction of drinking water and which could contain elevated levels of nitrate (>50mg/l) if action is not taken;
- areas where further treatment is required to comply with other directives.

An appropriate level of water treatment is required in order to protect the environment from the adverse affects of wastewater discharges from urban and certain industrial sources. The level of treatment required depends on the receiving waters into which a treatment plant discharges. More stringent requirements are set where receiving waters are identified as sensitive.

The UWWTD sets a deadline of seven years from the designation of a sensitive area for appropriately treating the specific discharges affecting that area. The Directive specifies emission standards for nutrients against which discharges are assessed to determine whether the appropriate level of treatment is in place.

Location and monitoring of UWWTD sensitive areas

There are 80 UWWTD sensitive areas in the Scotland RBD, 16 of which receive discharges from large wastewater treatment plants – either direct to the sensitive area or indirectly to the catchment upstream.

SEPA monitors the sensitive areas for nutrients and biological elements relevant to eutrophication.

The locations of the UWWTD sensitive areas are shown in Map 6.

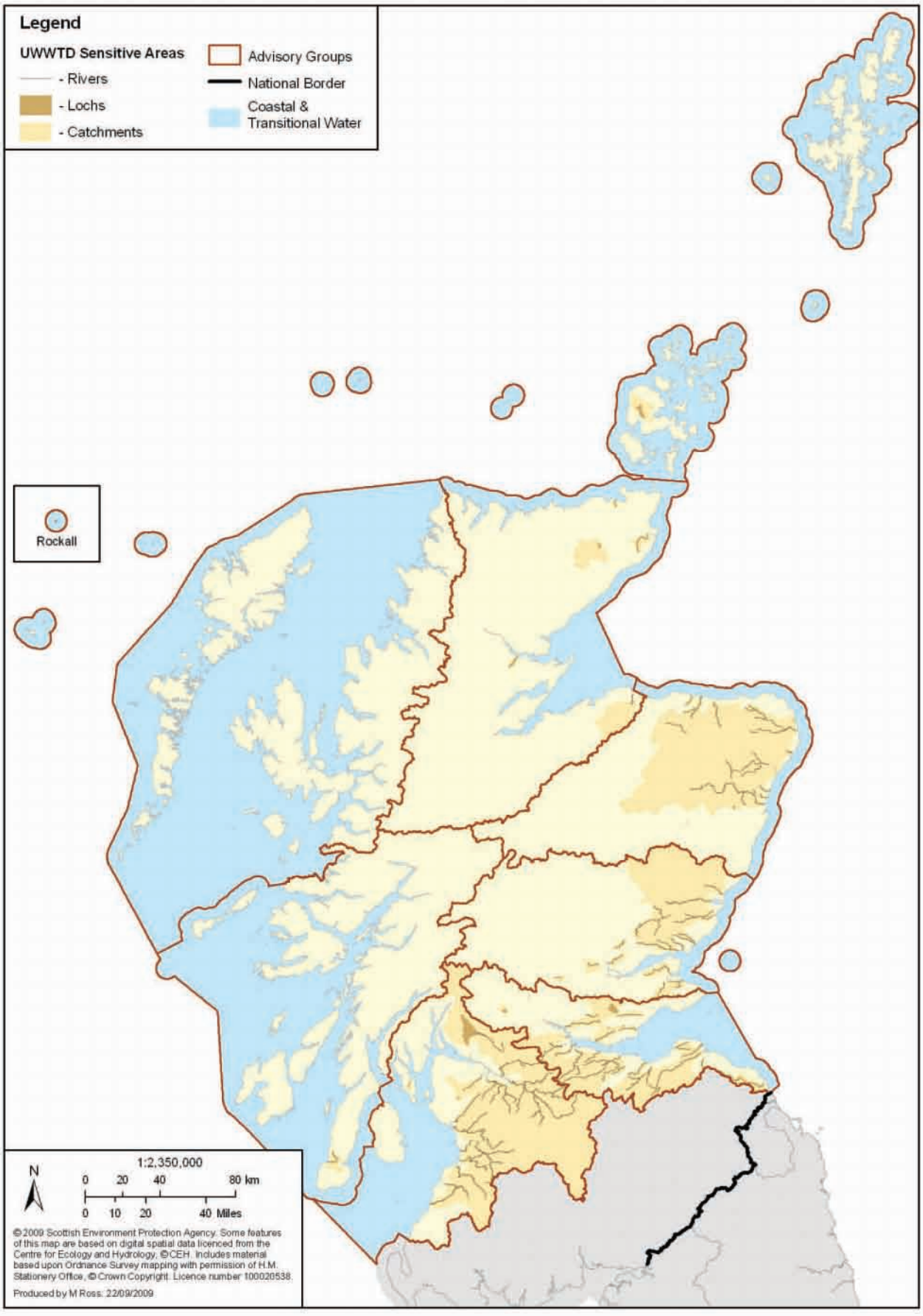
Current and future condition of UWWTD sensitive areas

All the relevant discharges affecting sensitive areas in the Scotland RBD that have been designated for more than seven years are subject to the appropriate level of treatment.

The identification of UWWTD sensitive areas is reviewed at four-yearly intervals. The latest review was completed in 2009 and any new designations of sensitive areas will be made by March 2010.

[10] www.scotland.gov.uk/Resource/Doc/37428/0014235.pdf
[11] www.scotland.gov.uk/Topics/farmingrural/Agriculture/Environment/NVZintro/NVZguidance
[12] Directive 91/271/EEC concerning urban waste water treatment
[13] Eutrophication is the enrichment of water by nutrients (especially compounds of nitrogen and/or phosphorus) causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned.

Map 6: Location of Urban Waste Water Treatment Directive sensitive areas



Actions for UWWTD sensitive areas

As described previously, the principal measure for protecting UWWTD sensitive areas is ensuring appropriate levels of treatment are in place at wastewater discharges affecting sensitive areas.

Where receiving waters are vulnerable to eutrophication, the UWWTD requires higher (or tertiary) standards of treatment. Tertiary treatment involves nutrient (phosphorus and/or nitrogen) removal from the relevant sewage discharge to Directive standards. All relevant wastewater treatment plants in the Scotland RBD have tertiary treatment and so no further action is required at these.

3.7 Protected areas for habitats and species

Natura 2000 is a European network of protected sites that represent areas of the highest value for natural habitats and species of plants and animals which are rare, endangered or vulnerable in the European Community. Scotland's Natura sites will help to protect these important areas now and for generations to come.

The Natura network includes two types of site:

- Special Areas of Conservation (SACs) are sites designated under the Habitats Directive.[14] The Habitats Directive requires the identification and protection of sites that support rare, endangered or vulnerable natural habitats and species of plants or animals (other than birds).
- Special Protection Areas (SPAs) are designated under the Birds Directive.[15] The Birds Directive requires the identification and protection of the most suitable territories, in size and number, for certain rare or vulnerable bird species and for regularly occurring migratory bird species.

Where the maintenance and improvement of the status of water is an important factor in the protection of habitats and species, SACs and SPAs (Natura 2000 sites) are identified as protected areas under the Water Framework Directive.

For Natura 2000 protected areas, we are required to protect and, where necessary, improve the status of the water environment in order to achieve the conservation objectives that have been established for the site.

Conservation objectives aim to protect and improve:

- the site's natural habitat types and species of importance to ensure the site contributes to the achievement of favourable conservation status;
- the site to ensure it contributes to the conservation of bird species listed in Annex 1 of the Birds Directive and regularly occurring migratory species.

No deadline for restoring Natura 2000 sites to favourable condition is specified by the Habitats Directive or Birds Directive. However, if the status of water bodies on which the achievement of their conservation objectives depend is not adequate to enable achievement of those objectives, we are required to aim to improve the status of the water bodies concerned by 2015. Where such improvements cannot be made by 2015 (ie for reasons of technical infeasibility, disproportionate costs or natural conditions), we have set an extended deadline for making the required improvements.

Location and monitoring of water-dependent Natura 2000 sites

There are 178 water-dependent SACs and 118 water-dependent SPAs in the Scotland RBD. Their location is shown in Map 7.

Scottish Natural Heritage is responsible for monitoring these sites through a programme of site condition monitoring. Sites are monitored to see if the features of conservation interest for which they are designated are meeting certain targets. If targets are met then the features are assessed as being in "favourable condition".

Site condition monitoring targets are set out in guidance agreed at a UK level by the conservation agencies. There are different sets of guidance for the range of different features that occur on designated sites. A feature of conservation interest is a particular aspect of the site for which it has been designated (eg freshwater pearl mussels, saltmarsh etc). Measurable targets are set for particular attributes that are important for the feature of conservation interest. If a feature fails to meet its target, further investigation of possible pressures is carried out.

Site condition monitoring is carried out at all sites in a phased programme. The surface water monitoring network described in Chapter 1 also provides monitoring information on the water bodies on which Natura 2000 sites depend.

[14]Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of fauna and flora
[15]Council Directive of 2 April 1979 on the conservation of wild birds (79/409/EEC)

Current condition of water-dependent Natura 2000 sites

The site condition monitoring results for water-dependent Natura 2000 sites in the Scotland RBD are presented on Map 7. Of the 178 SACs, 117 are currently in favourable condition. Of the 118 SPAs, 63 are in favourable condition.

Of the 61 unfavourable SACs and the 55 unfavourable SPAs, 25 SACs and one SPA are assessed as being in "unfavourable condition" due to pressures on the water environment or, where the nature of the pressures is uncertain, where pressures on the water environment cannot be ruled out. Information on these sites is given in Appendix D.

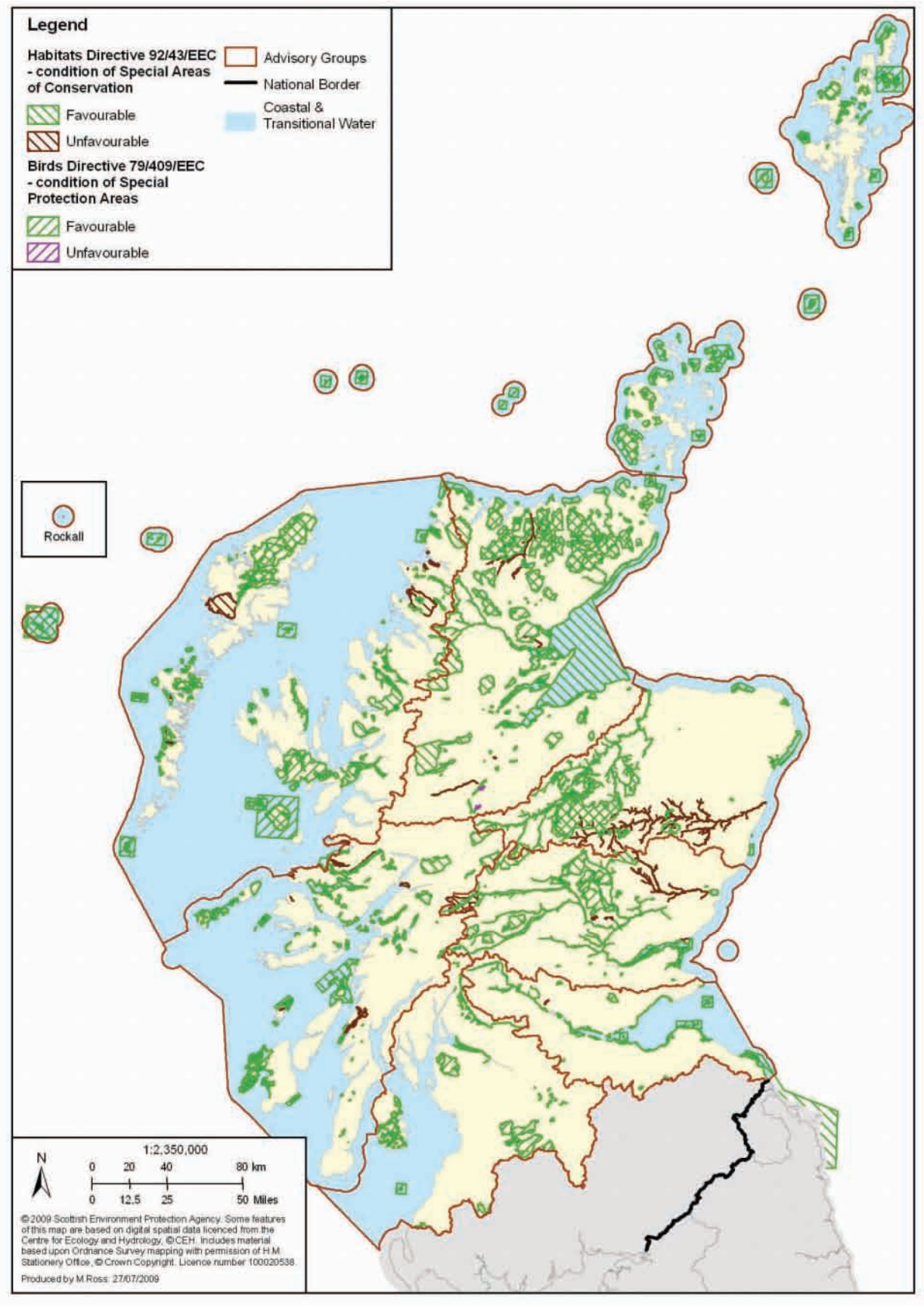
Included within sites in "favourable condition" are sites that are "unfavourable recovering". This is because some features will take a long time to recover even when all appropriate measures are in place. When a feature is reported as "unfavourable recovering", everything has been done to allow a feature to recover, but time is needed before it could be reported as being in favourable condition. The target for Natura 2000 sites is therefore to reach "favourable" or "unfavourable recovering" condition.

Additional information on sites considered to be in unfavourable condition is given in Appendix D.

The uncertainties surrounding the cause(s) of unfavourable condition mean that there may be more sites than currently indicated where the condition of the water environment is sufficient to enable achievement of the conservation objectives. However, it is important to fully understand the nature of the pressure(s) impacting on the site before pressures related to the water environment can be ruled out.

Information on Natura 2000 protected area and the water bodies on which they depend is available on SEPA's interactive map at: www.sepa.org.uk/water/river_basin_planning.aspx

Map 7: Location of water-dependent SACs and SPAs and results of site condition monitoring



Note: The map shows the results for a site, although it is individual features on a site that have been monitored. If one or more water-dependent features on a site is found to be unfavourable condition for a water-related pressure then the site is shown as being in unfavourable condition. The map does not show results for features on the same sites that are not water-dependent or for water-dependent features that are in unfavourable condition but for pressures unrelated to the water environment.

Some Natura 2000 protected areas may require a higher environmental quality in the waters on which they depend than that represented by good ecological status. Consequently, the water bodies on which some Natura 2000 protected areas depend may be in good ecological status but the protected area not be in favourable condition.

Future condition of water-dependent Natura 2000 sites

Our objective is to improve the status of the water bodies on which 11 of the 25 SAC protected areas that are not in favourable condition depend.

We have extended the deadline for achieving our objectives for the remaining Natura 2000 protected areas for which improvements to the status of the water environment may be necessary. Our plan is to have made all the improvements to the status of water necessary to enable the achievement of our objectives for a further:

- 7 SAC protected areas by 2021;
- the remaining 7 SAC and 1 SPA protected areas that are not in favourable condition by 2027.

The phasing of improvements provides us with the time necessary:

- to complete the research required to identify the cause of the impacts on the objectives for the areas;
- to test and develop appropriate techniques for delivering improvements (eg for controlling invasive plants and animals);
- for the measures to be effective (ie where repeated action over a number of years is required).

Summary information on the reasons for phasing improvements for individual protected areas is provided in Appendix D to this Chapter.

Actions for water-dependent Natura 2000 sites

The main actions required to achieve our objectives for Natura 2000 protected areas in unfavourable condition are expected to include those listed below. However, in many cases further work is needed to confirm which pressures are affecting the achievement of the objectives for the areas.

- control and eradication of invasive non-native species;
- work to establish methods of eradication of Canadian pondweed (*Elodea canadensis*) and Nuttall's pondweed (*Elodea nuttalli*);
- research to establish the causes for freshwater pearl mussel decline and subsequently identify actions;
- improving habitats, including fish passage;
- reducing point source pollution by sewerage provision and/or increased treatment;
- reduce diffuse pollution from rural areas.

Actions for each protected area in unfavourable condition are set out in Appendix D. Areas where the cause of impacts is not yet certain, and where research may be required, are also identified. This information will enable stakeholders to:

- identify opportunities to become involved in the delivery of actions;
- contribute to the improvement in the condition of these sites.