The river basin management plan for the Solway Tweed river basin district 2009–2015

Chapter 5:
Protected areas

Contents*

*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 Solway Tweed river basin district 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.

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

For the Solway Tweed river basin district you can find the register of protected areas:

- in Scotland at www.sepa.org.uk/water/protected_areas.aspx
- in England at www.environment-agency.gov.uk/research/planning/33346.aspx

These registers were first produced in 2004 and are 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Some of the directives will be repealed in 2013.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 out information about protected areas in the Solway Tweed river basin district.

1.2 What does this chapter build on?

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

These pollution reduction programmes have been used to prioritise and promote effluent treatment schemes and other measures implemented by SEPA, the Environment Agency and predecessor authorities through environment improvement action plans. Very substantial quality improvements have already been achieved and relevant pollution reduction plans (available on the SEPA and Environment Agency websites) have been updated accordingly. Measures have also been implemented to maintain good quality where it has been achieved.

By definition, the Water Framework Directive provides at least the same level of protection to 'protected areas' as the predecessor legislation, some of which is consequently revoked in 2013. Existing pollution reduction programmes have been updated and further developed into Water Framework Directive 'programmes of measures' to tackle remaining issues and ensure that the original environmental objectives will be achieved and maintained.

Table 1: Protected areas in the Solway Tweed river basin district included under the Water Framework Directive

Types 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	85	Section 3.1 Appendix A
Areas designated for the protection of economically significant aquatic species	Freshwater fish water	256	Section 3.2
	Shellfish water	3	Section 3.3 Appendix B
Bodies of surface water designated as bathing waters	Bathing water	10	Section 3.4 Appendix C
Areas designated as nutrient sensitive areas	Nitrate Vulnerable Zone	18	Section 3.5
	UWWTD* sensitive area	13	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	33	Section 3.7 Appendix D
	Special Protection Area	13	Section 3.7 Appendix D

*Urban Waste Water Treatment Directive

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 Solway Tweed river basin district	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	A link to the appropriate assessment will be added when available.

2. Summary

2.1 Current condition of Solway Tweed's protected areas

A large part of the Solway Tweed river basin district is covered by one or more protected areas. These protected areas, which range in size, can be associated with just one water body and others include tens of water bodies over a large catchment area. Details of the different types of protected areas in the Solway Tweed river basin district are given in Section 3. Their current condition is summarised below:

Drinking water protected areas

SEPA, the Environment Agency and the water companies have identified five out of 85 Drinking Water Protected Areas where there is a risk of deterioration in water quality.

Freshwater fish waters

In 2008 the required mandatory values were met in 253 of the 256 waters designated for the protection of freshwater fish.

Shellfish waters

In 2008 all three of the Solway Tweed's designated shellfish waters complied with the specified mandatory standards. One also compiled with the more stringent guide values.

Bathing waters

Projected classification results based on monitoring data from 2005 to 2008 indicate that two out of the 10 designated bathing waters meet the required sufficient standards.

Nitrate Vulnerable Zones

All 18 Nitrate Vulnerable Zones in the Solway Tweed have action programmes established.

Urban Waste Water Treatment Directive (UWWTD) sensitive areas

All 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 and Natural England have determined that in 23 of the 33 water-dependent SACs and in 12 of the 13 water-dependent SPAs 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, for reasons outlined below.

Reduced water quality has been identified as the main impact affecting protected areas in the Solway Tweed river basin district. The main causes of the reduced water quality 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 been identified as causing Special Areas of Conservation and Special Protection Areas to be in unfavourable condition including:

- presence 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 Solway Tweed's protected areas

The good condition of protected areas in the Solway Tweed river basin district will be maintained in the future. These areas will therefore continue to reflect and provide a highly valued water environment that supports quality produce, sport fishing, rich wildlife and a high quality of life.

By 2015 actions will have been taken to ensure that most protected areas will meet the required assessment criteria. Two SACs will take longer to improve. The reasons for this are explained in more detail in Appendix D and in Chapter 2: www.sepa.org.uk/water/river_basin_planning.aspx

2.3 Actions for protected areas

The main actions that will help to address the issues currently affecting protected areas are summarised below and detailed in Chapter 3: www.sepa.org.uk/water/river_basin_planning.aspx

Information about site-specific actions can be found on the interactive map: www.sepa.org.uk/water/river_basin_planning.aspx

Water quality – point source pollution

Significant reductions in pollution from sewage sources will be brought about by capital investment in the sewerage system by the relevant water companies. Sewage discharges that affect protected areas have already been given priority for improvement in the current investment programme.

Water quality – diffuse source pollution

Targeted approaches are being used to address diffuse pollution in protected areas with a protected area designation giving action a higher priority.

For example, in Scotland rural catchments with significant diffuse pollution problems have been prioritised for targeted action over the three planning cycles (2015, 2021 and 2027). Protected areas designated for the protection of human health (drinking waters, bathing waters and shellfish waters), have been heavily weighted in this prioritisation, as have waters that are important for economically significant freshwater fish. In England, actions on water bodies which are not achieving protected area standards are also prioritised in measures such as catchment sensitive farming. This is not limited to failures due to diffuse pollution, but covers all reasons for failure. Water bodies which are linked to protected areas are given a greater weighting, so resources can be targeted to them.

Where diffuse pollution from forestry is identified as impacting on protected areas, consideration is given to prioritisation and timing of work to address these pressures.

The sensitivity of all catchments, including those in protected areas, is considered in the preparation of forest plans for both the National Forest Estate and private woodlands and will follow best practice guidance as detailed in the Forests & Water Guidelines.

A national strategic approach for tackling urban diffuse pollution and co-ordinating awareness raising will be developed during the first river basin management planning cycle. This is most relevant to Scotland as urban diffuse pollution is not considered to be a significant problem in the English part of the Solway Tweed.

Other issues

The Environment Agency recently completed a review of licensed abstractions and impoundments with the potential to affect SACs and SPAs in the English parts of the Solway Tweed. Measures to deal with problem abstractions are already being taken or will be implemented during the period of this plan. A similar process has begun in the Scottish parts of the Solway Tweed.

Actions to tackle issues with invasive non-native species in the Solway Tweed are explained in Chapter 3, available on SEPA's website: 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 waters designated under the Water Framework Directive[1] 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.

Drinking water protected areas have to be protected to avoid deterioration in water quality which would compromise 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 85 drinking water protected areas in the Solway Tweed river basin district. Their location is shown on Map 1.

Under the Water Framework Directive, drinking water bodies which provide more than an average of 100m^3 per day must be monitored. This monitoring is carried out by Scottish Water and SEPA, and by United Utilities, Northumbrian Water and the Environment Agency in their respective parts of the river basin district.

Current condition of drinking water protected areas

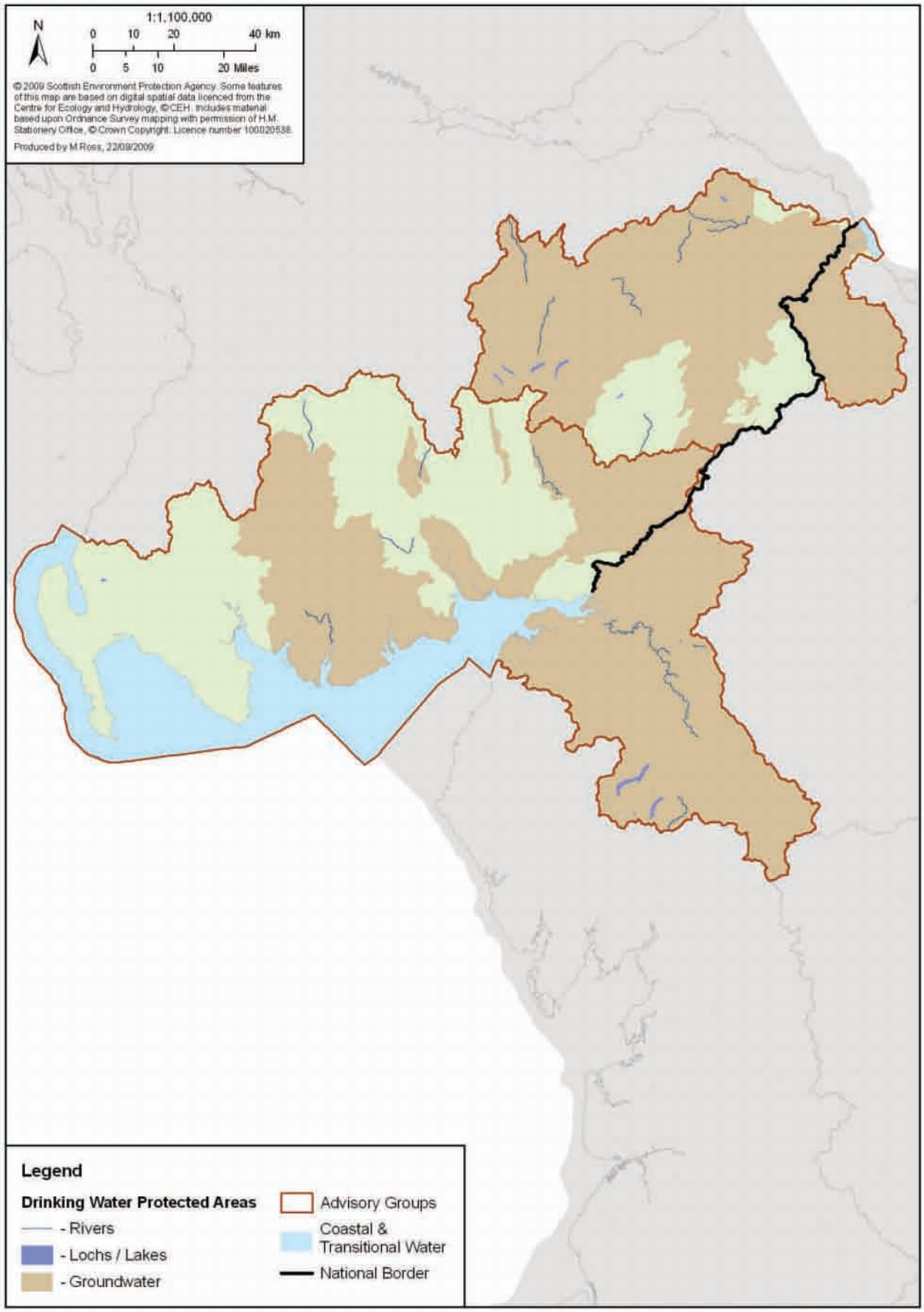
Drinking water protected areas are assessed by determining whether deterioration in the quality of water abstracted, or intended to be abstracted, from the area has compromised drinking water supplies or would compromise intended drinking water supplies.

SEPA and the Environment Agency have been working with the water companies and other partners as appropriate to carry out risk assessments for drinking water protected areas. Where necessary, measures will be introduced to secure the protection of the quality of water abstracted or intended to be abstracted from these areas. These risk assessments will be kept under review, incorporating new data as they become available.

SEPA and the Environment Agency have identified, via a risk assessment process, six drinking water protected areas that are at risk of failing to meet Water Framework Directive objectives. Appendix A provides additional information about these areas.

[1]Article 7

Map 1: Designated surface water and groundwater drinking water protected 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 a requirement 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 under SEPA's Priority Catchment Strategy. This will include further investigations to characterise the risks to drinking water protected areas and any necessary compliance and further controls to prevent deterioration in water quality that may adversely affect water supplies;
- targeted action to reduce diffuse source pollution from agriculture through the Catchment Sensitive Farming Programme in England[2].

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

3.2 Protected areas for economically important freshwater fish

The Solway Tweed has economically important stocks of freshwater fish, including Atlantic salmon, sea trout and brown trout. Protected areas for our economically important freshwater fish are designated under the Freshwater Fish Directive.[3]

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:

- native 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. From 2013 the designated waters will be afforded at least the same level of environmental protection under the Water Framework Directive. Nearer the time, Scottish Ministers will consult on if and how protected areas for fish in some other form may be of benefit over and above the protection given to the ecological status of water bodies.

Location and monitoring of areas protected for freshwater fish

There are 256 protected areas for freshwater fish in the Solway Tweed river basin district. Fifteen salmonid waters[4] are located in the Scottish part of the Solway Tweed, although each designated salmonid water comprises one or more catchment.

There are 238 salmonid and three cyprinid waters[5] in the English part of the river basin district but the designated stretches are much smaller.

Monitoring of the Solway Tweed's freshwater fish protected areas is carried out by SEPA and the Environment Agency at 279 salmonid and three cyprinid monitoring points.

[2]See www.environment-agency.gov.uk/business/sectors/32767.aspx
[3]Directive 2006/44/EC on the quality of freshwaters needing protection or improvement in order to support fish life.
[4]Salmonid waters: waters which support or become capable of supporting fish belonging to species such as salmon, trout, grayling and whitefish.
[5]Cyprinid waters: waters which 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.

In Scotland, where the designated waters are larger, differences in water quality can occur within a designated area and a single monitoring point is not considered to be representative of the area. In this case, more than one monitoring point is assessed for each designated area. Since 2006 this monitoring has been integrated into the monitoring programme established by SEPA and Environment Agency for assessing the status of water bodies.

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

After 2013 reporting of the results of the Water Framework Directive monitoring programme will replace reporting under the Freshwater Fish Directive.

Current condition of areas protected for freshwater fish

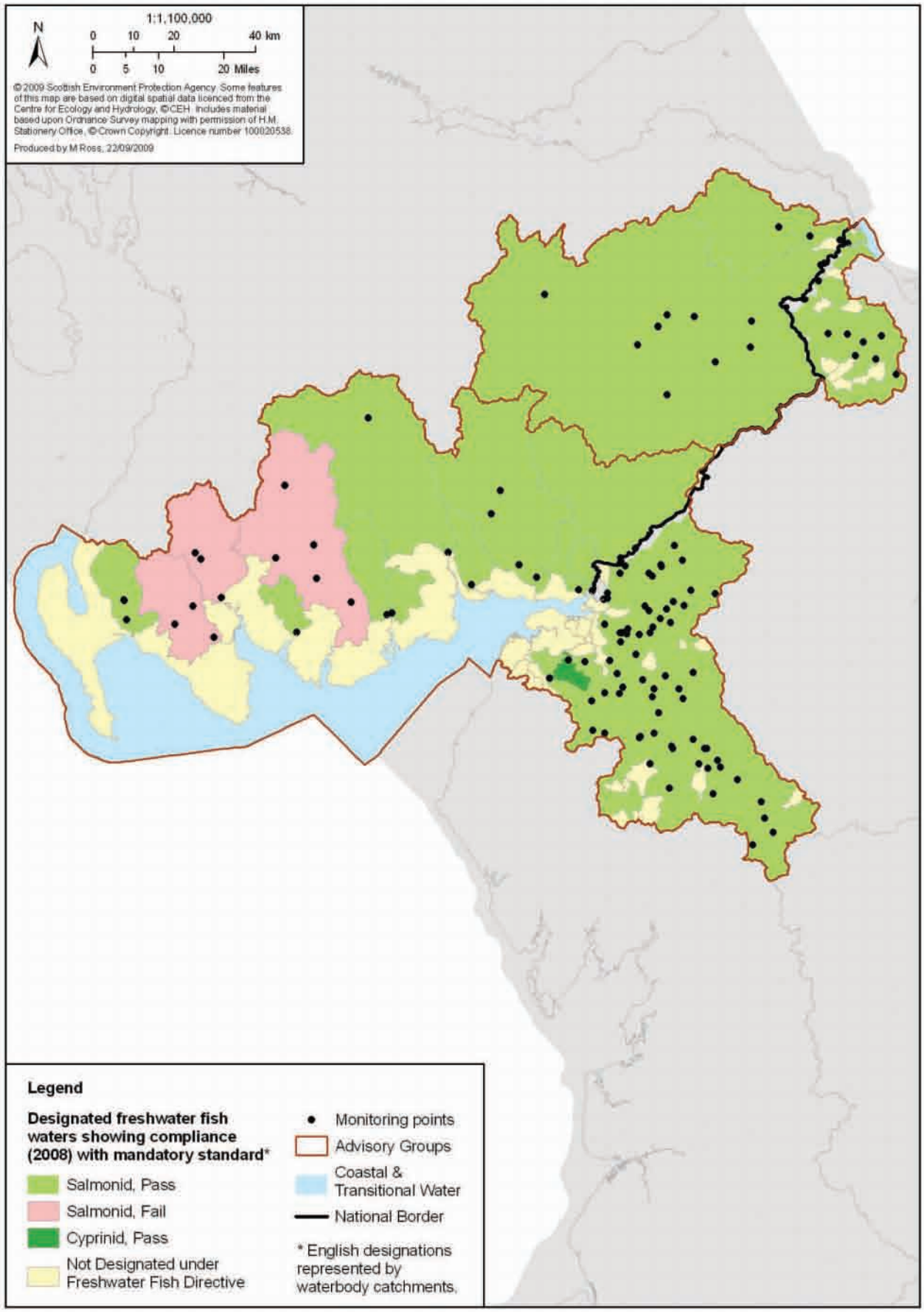
SEPA and the Environment Agency assess the water quality of each area protected for freshwater fish and compare this with the standards required for the areas by the Freshwater Fish Directive.

In 2008, the required standards (mandatory values) were met in 253 of the 256 areas protected for freshwater fish in the Solway Tweed river basin district. The three designated waters not currently achieving all the mandatory values are:

- River Bladnoch (UKS7865920);
- River Cree (UKS7865931);
- River Dee (UKS7865934).

All three waters are impacted by acid deposition, resulting in a lower pH than specified by the Freshwater Fish Directive. Past forestry management practices in their catchments has compounded the problem of low pH in the water bodies.

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



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: www.sepa.org.uk/water/river_basin_planning.aspx

The objectives for water bodies, which will replace the protection provided by the Freshwater Fish Directive, can be found in Chapter 2: 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: www.sepa.org.uk/water/river_basin_planning.aspx

Further details can be found in the pollution reduction plans for areas protected for freshwater fish. The English plans are available on request from the Environment Agency. The Scottish plans can be viewed on the SEPA website: www.sepa.org.uk/water/protected_areas/freshwater_fisheries.aspx

3.3 Protected areas for economically important shellfish waters

Protected areas for our economically important shellfish waters were established under the Shellfish Waters Directive[6].

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[7]. 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).

The Shellfish Waters Directive will be repealed in 2013. We will aim for the same level of protection after the Directive's repeal.

Location and monitoring of areas protected for shellfish

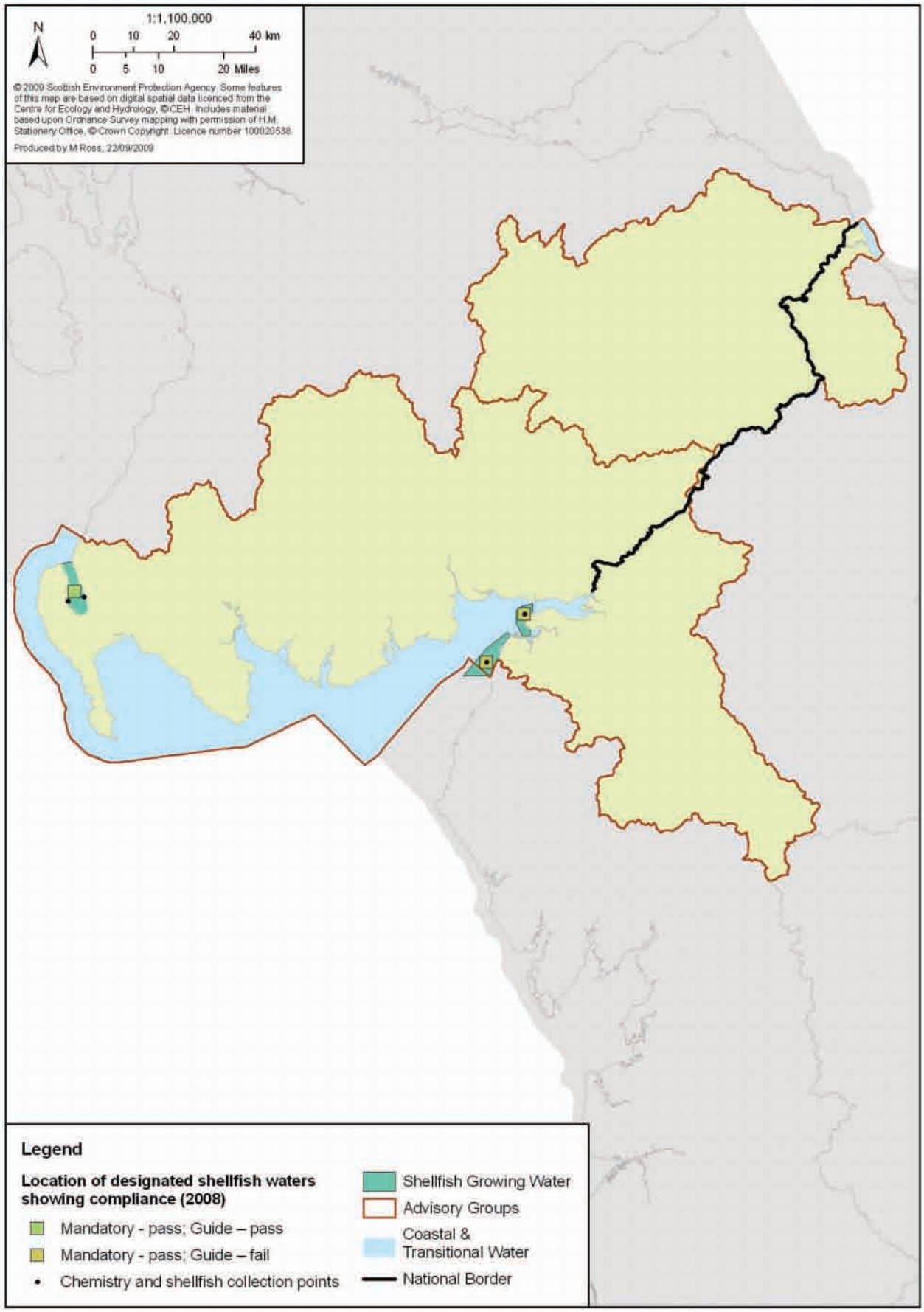
There are three designated shellfish waters in the Solway Tweed river basin district.

Monitoring of areas protected for shellfish is undertaken by SEPA and the Environment Agency for Scotland and England respectively. Additional microbiological data are provided by the Food Standards Agency, which monitors commercial harvesting beds under the Food Hygiene Regulations 2006.

The location of the areas protected for shellfish and associated monitoring network are shown in Map 3.

[6]Directive 2006/113/EC on the quality required of shellfish waters.
[7]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 mandatory values have been achieved in all three of the areas protected for shellfish in the Solway Tweed river basin district. 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, one out of the three (33%) designated waters achieved the guide value for faecal coliforms. Examination of guide faecal coliform assessments between 2006 and 2008 revealed that none of the waters achieved the standard in each of those three years. Due to year-on-year variability in results this three-year assessment, whilst not being an official measure of achievement, gives us a better indication of the risk of designated waters not achieving the guide value for faecal coliforms in years to come.

Achievement of the faecal coliform guide values 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.

Future condition of areas protected for shellfish

The Shellfish Waters Directive will be repealed in 2013. The Water Framework Directive will provide shellfish waters with wider protection, as the achievement of Water Framework Directive objectives also requires the management of other pressures on coastal waters.

However, obtaining good status under the Water Framework Directive does not take account of the risk of faecal contamination of shellfish and we think it is important to continue to provide protection against such contamination. The UK governments are undertaking research to determine how best to achieve this. This may result in proposals for a revised bacterial standard for protecting shellfish in protected areas based on the latest scientific understanding.

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

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. We anticipate that one of the three designated shellfish waters will achieve the guide faecal coliform value by 2015, with all three achieving the guide value by 2021.

Actions for areas protected for shellfish

The main actions that will contribute towards improving shellfish waters in the Solway Tweed river basin district are:

- addressing diffuse pollution from agriculture;
- improving sewage discharges.

The actions required to address these pressures are summarised in Chapter 3, available on SEPA's website: www.sepa.org.uk/water/river_basin_planning.aspx

The primary sources of faecal bacteria in a particular shellfish water are often not clear. Therefore it has not been possible to determine the specific measures necessary to enable these waters to achieve the required objectives by 2015 and 2021. In these cases, work to establish what the sources of pollution are is needed before on-the-ground actions can be implemented.

Further details can be found in the pollution reduction plans for areas protected for shellfish.

The plans for the Scottish part of the river basin district can be viewed on the SEPA website: www.sepa.org.uk/water/protected_areas/shellfish_waters.aspx

The plans for the English part of the river basin district can be viewed on the Environment Agency website: www.environment-agency.gov.uk/business/regulation/31931.aspx

3.4 Protected areas for bathing waters

High quality bathing waters are important for a wide variety of interests and help to promote the important and valuable tourism industry in the Solway Tweed river basin district.

The requirements for bathing waters are laid down by the Bathing Water Directive (76/160/EEC) and the revised Bathing Water Directive (2006/7/EC). All bathing water protected areas now come under the revised Bathing Water Directive and the original directive will be repealed in 2014.

The revised Bathing Water Directive changes the parameters and standards used to assess bathing water quality, as well as the timeframe over which the assessment is made. SEPA and the Environment Agency will continue to report the parameters in the original Bathing Water Directive until 2014. The standards required for the revised Bathing Water Directive will first be reported in 2015 – the target date for achieving improvement objectives under the Water Framework Directive.

An assessment has been undertaken of each bathing water against the new classification set out in the new Bathing Waters Directive. The term 'Bathing Water Directive' is used below to refer to the revised Bathing Water Directive (2006/7/EC).

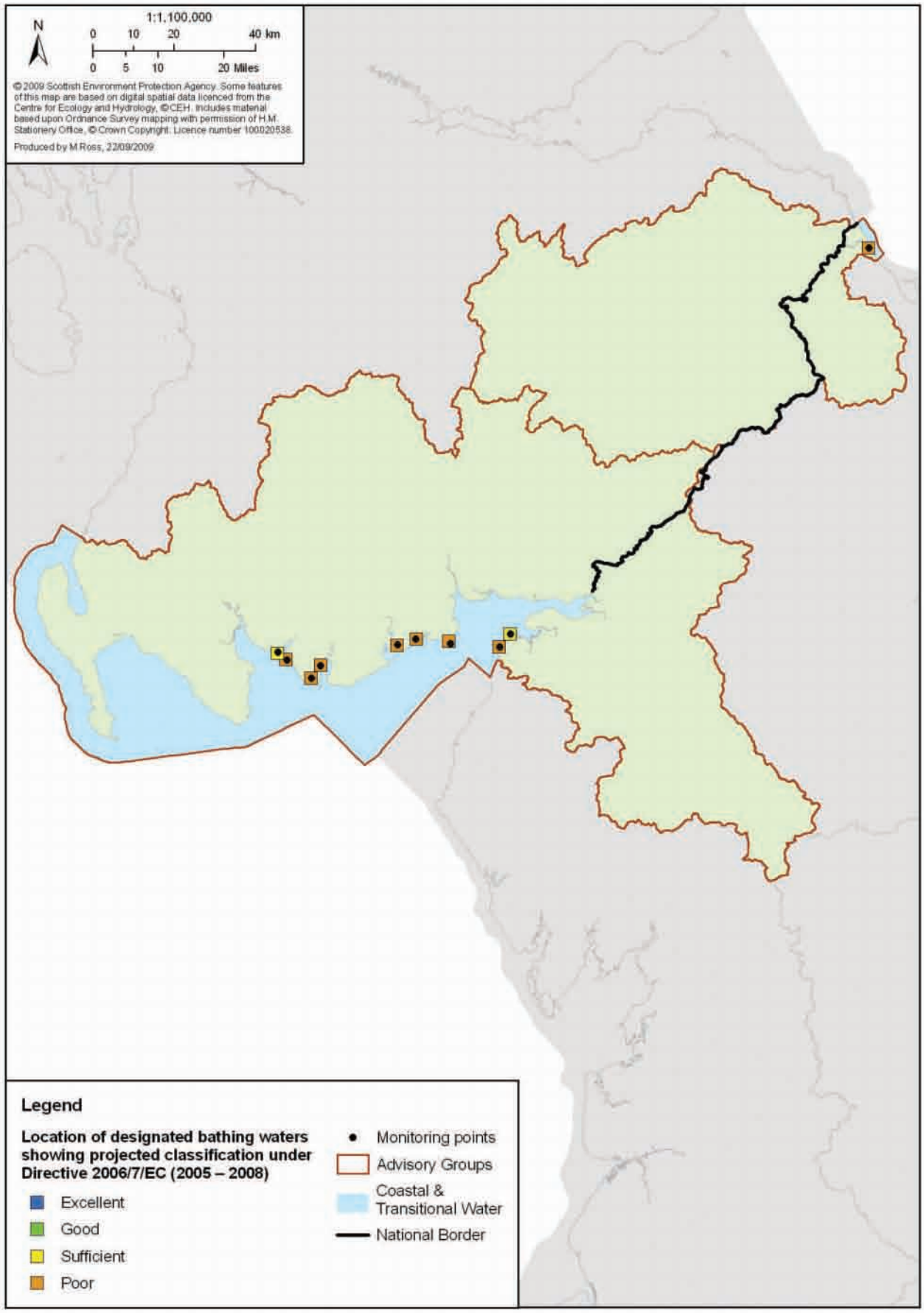
The purpose of the Bathing Water Directive is to preserve, protect and improve the quality of the environment and to protect human health while bathing in all relevant waters. Its requirements will be achieved by:

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

A bathing water will be classified as 'poor' if it fails to meet the 'sufficient' values set out in the directive.

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

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



Location and monitoring of bathing waters

There are 10 designated bathing waters in the Solway Tweed river basin district. Monitoring and assessment of the designated bathing waters is undertaken by SEPA and the Environment Agency throughout the bathing season. More information on the monitoring of bathing waters in the Solway Tweed river basin district can be found at:

- www.sepa.org.uk/water/bathing_waters/results.aspx
- www.environment-agency.gov.uk/business/regulation/31943.aspx

The location of the designated bathing waters and associated monitoring network are shown on Map 4.

Current condition of bathing waters

The projected classification with the bathing water quality standards shown on Map 4 indicates that two out of the 10 designated waters are classified as 'sufficient' and therefore meet the directive's requirements.

A full list of the classification results is presented in Appendix C. The results use data for the period 2005 to 2008 and will be updated annually with a four-year rolling assessment.

Future condition of bathing waters

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

Actions for bathing waters

The main actions that will contribute towards maintaining and improving bathing water quality in the Solway Tweed river basin district are the reduction of point and diffuse source pollution from:

- sewage treatment works;
- combined sewer overflows;
- livestock and mixed farming.

These reductions will be achieved through:

- reduction of pollution at source;
- modernising and improving water and sewerage services;
- agricultural land management measures – specifically the application of general binding rules in Scotland, which are authorisations, and hence a legal requirement under the Water Environment (Controlled Activities)(Scotland) Regulations 2005 and the Catchment Sensitive Farming Initiative in England. More information can be found in Chapter 3: www.sepa.org.uk/water/river_basin_planning.aspx

To maintain the currently high quality waters and improve the projected classification under the revised Bathing Waters Directive, SEPA has produced pollution reduction plans for all bathing waters in the Scottish part of the river basin district designated before 2008. The plans include information about the pollution pressures on each identified water and a description of the actions taken and planned to ensure continuous improvement. The plans will be revised during the period covered by the first river basin management plan with the aim of ensuring the standards and objectives of the revised Bathing Water Directive are achieved. These plans can be viewed on SEPA's website: www.sepa.org.uk/water/bathing_waters.aspx

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

Site-specific information can also be found:

- in SEPA's annual bathing water quality reports www.sepa.org.uk/water/water_publications/bathing_water.aspx
- on the Environment Agency's 'What's In Your Backyard' web pages www.environment-agency.gov.uk/homeandleisure/37793.aspx

3.5 Nutrient sensitive protected areas: Nitrate Vulnerable Zones

Nitrate Vulnerable Zones are designated under the Nitrates Directive.[8] The purpose of the Nitrates Directive is to reduce or prevent water pollution caused or induced by nitrates from agricultural sources by controlling land use management.

Nitrate Vulnerable Zones (NVZs) are designated areas of land which drain into:

- waters identified as affected by pollution;
- waters which could be affected by pollution if action is not taken.

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

Location and monitoring of Nitrate Vulnerable Zones

There are 18 NVZs in the Solway Tweed river basin district (some are contiguous or overlapping). The location of the NVZs and associated surface and groundwater monitoring sites are shown in Map 5.

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 the wider monitoring programmes for assessing the state of the water environment undertaken by SEPA and the Environment Agency.

Information on SEPA's monitoring programme for the Scottish part of the Solway Tweed is available at:

- www.sepa.org.uk/water/monitoring_and_classification/scottish_monitoring_strategy.aspx

Information on water quality assessments in England is available at:

- www.environment-agency.gov.uk/research/library/data/34383.aspx

For Scotland, 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
- www.scotland.gov.uk/Topics/Agriculture/Environment/NVZIntro/

For England, information can be found at:

- www.defra.gov.uk/environment/quality/water/waterquality/diffuse/nitrate/directive.htm

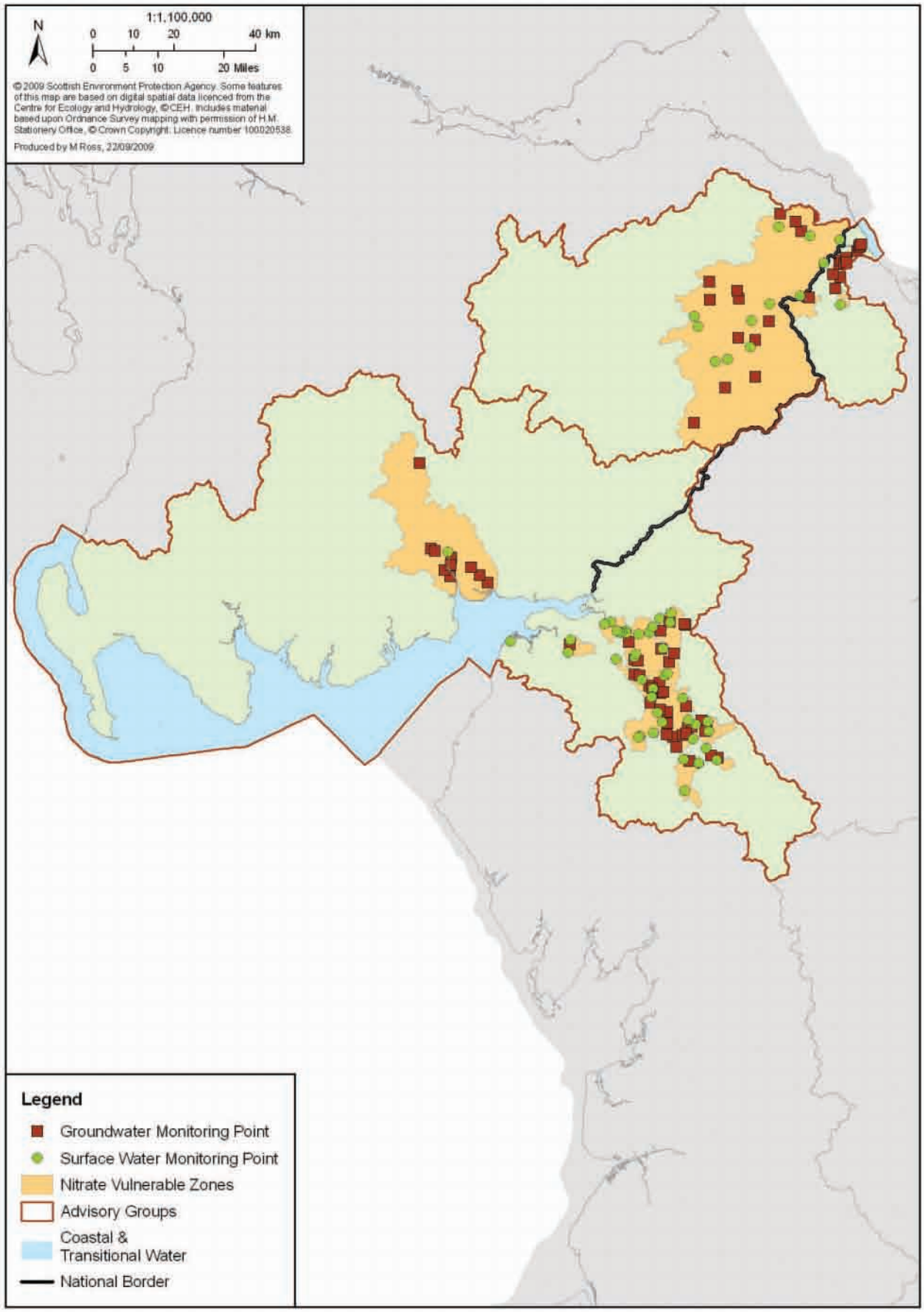
Current and future condition of Nitrate Vulnerable Zones

All 18 Nitrate Vulnerable Zones in the Solway Tweed river basin district are subject to action programmes which aim to reduce water pollution caused by 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.

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

Map 5: Areas designated within the Scotland river basin district 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 Programmes for Nitrate Vulnerable Zones (Scotland) Regulations 2008;
- The Nitrate Pollution Prevention Regulations 2008 (for England).

The action programmes build on guidelines set out:

- for Scotland, in the *Prevention of Environmental Pollution from Agricultural Activity Code of Good Practice*;[9]
- for England, in *Protecting our Water, Soil and Air – A Code of Good Agricultural Practice for farmers, growers and land managers* (CoGAP).[10]

The 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 requirement limits;
- application rates for livestock manure.

More information on measures for NVZs can be found on the Scottish Government's website:

- www.scotland.gov.uk/Topics/farmingrural/Agriculture/Environment/NVZintro/NVZGuidanceforFarmers

Information on implementation of the Nitrates Directive in England can be found on the Defra website:

- www.defra.gov.uk/environment/quality/water/waterquality/diffuse/nitrate/directive.htm

3.6 Nutrient sensitive protected areas: Urban Waste Water Treatment Directive (UWWTD) sensitive areas

Protected areas for waters identified as 'sensitive areas' were established under the Urban Waste Water Treatment Directive (UWWTD)[11].

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

UWWTD sensitive areas are surface water bodies identified as:

- eutrophic[12] or which may in the near future become eutrophic if protective action is not taken;
- intended for the abstraction of drinking waters 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.

The UWWTD sets a deadline of seven years from the designation of a sensitive area to appropriately treat 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.

[9] www.scotland.gov.uk/Resource/Doc/37428/0014235.pdf
[10] www.defra.gov.uk/foodfarm/landmanage/cogap/index.htm
[11] Directive 91/271/EEC concerning urban waste water treatment
[12] 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.

Location and monitoring of UWWTD sensitive areas

There are 13 UWWTD sensitive areas in the Solway Tweed river basin district. Three of these areas receive discharges from large wastewater treatment plants – either direct to the sensitive area or indirectly to the catchment upstream.

SEPA and the Environment Agency monitor the sensitive areas for nutrients and biological elements relevant to eutrophication.

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

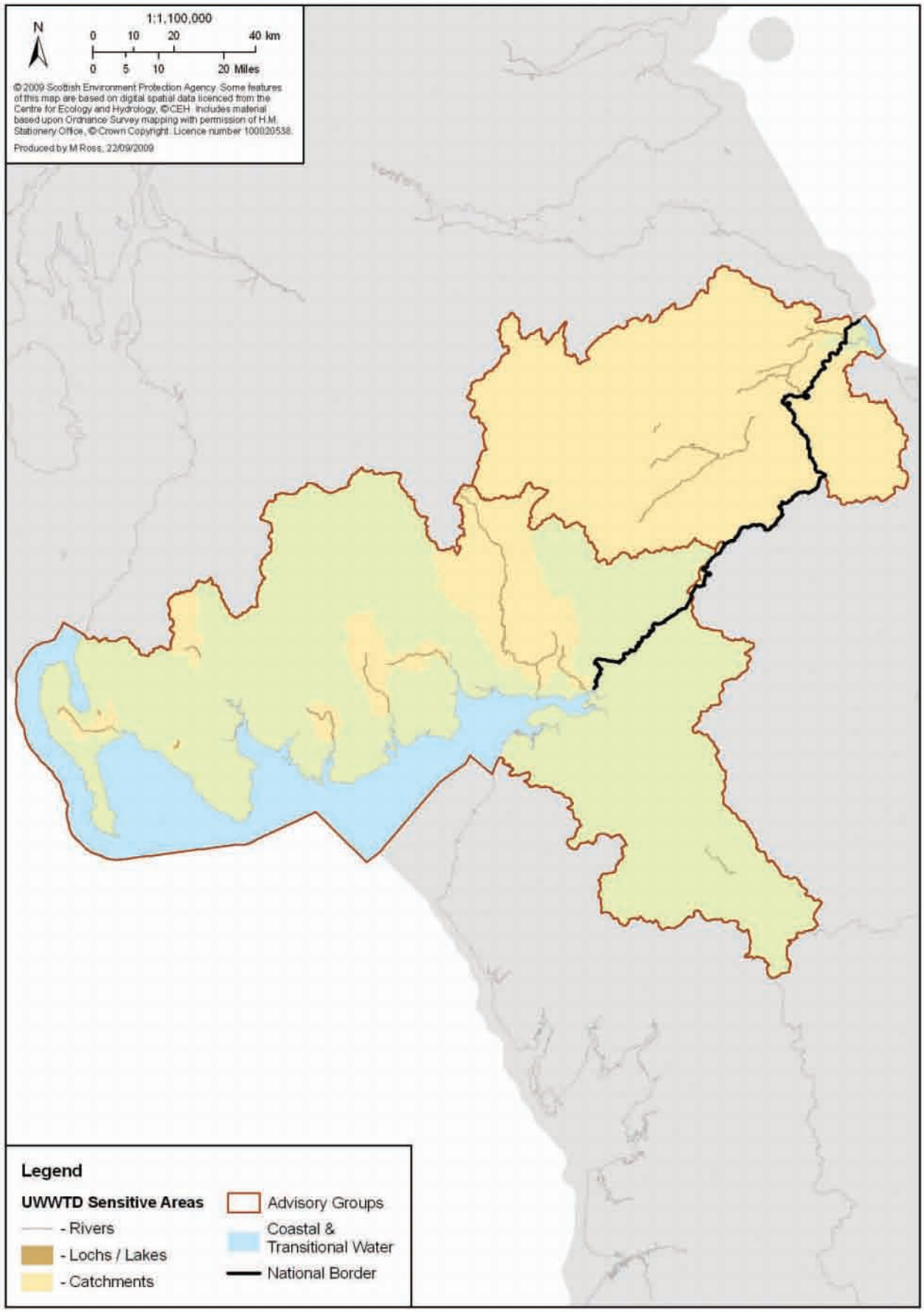
Current and future condition of UWWTD sensitive areas

All the discharges affecting the 13 sensitive areas in the Solway Tweed river basin district that have been designated for more than seven years are subject to the appropriate level of treatment.

Appropriate levels of treatment will be in place at all large wastewater treatment plants discharging into sensitive areas within the seven-year period following designation of a sensitive area.

The identification of sensitive areas is reviewed at four-yearly intervals by SEPA and the Environment Agency and recommendations are made to government ministers, who make or authorise identifications of sensitive areas. The next review date is due in 2009 although any newly designated sensitive areas are unlikely to be made official until March 2010.

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



Actions for Urban Waste Water Treatment Directive Sensitive Areas

As described above, 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 Solway Tweed river basin district 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.

The Natura network includes two types of site:

- Special Areas of Conservation (SACs) are sites designated under the Habitats Directive.[13] 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.[14] 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 classed as protected areas under the Water Framework Directive.

Under the Water Framework Directive, the requirement for Natura 2000 sites is 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.

Meeting the requirements of the Water Framework Directive for surface water and groundwater will support the achievement of conservation objectives for Natura 2000 sites.

No deadline for achieving favourable condition of Natura 2000 sites is specified by the Habitats and Birds directives. Consequently, the Water Framework Directive deadline of 2015 applies unless a longer time frame can be justified.

Location and monitoring of water-dependent Natura 2000 sites

There are 33 water-dependent SACs and 13 water-dependent SPAs in the Solway Tweed river basin district. Their location is shown in maps 7 and 8.

Scottish Natural Heritage and Natural England are responsible for undertaking site condition monitoring and assessment of these areas in Scotland and England respectively. 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 of conservation interest that occur on designated sites. A feature of conservation interest is a particular aspect of the site for which it has been designated, eg Atlantic salmon or saltmarsh. 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.

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

Site condition monitoring is carried out at all sites in a phased programme. The surface water monitoring network described in Chapter 1 (www.sepa.org.uk/water/river_basin_planning.aspx) also provides monitoring information on the water bodies on which Natura 2000 sites depend.

Current condition of water-dependent Natura 2000 sites

Site condition monitoring results for water-dependent Natura 2000 sites in the Solway Tweed river basin district are presented in maps 7 and 8 respectively. Of the 33 SACs, 23 are currently in favourable condition. Of the 13 SPAs, 12 are currently in favourable condition.

All the 10 unfavourable SACs and the one unfavourable SPA are assessed as being in 'unfavourable condition' due to pressures on the water environment or, where the nature of the pressures is uncertain, 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 still 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.

The uncertainties surrounding the cause(s) of unfavourable condition mean there may be more sites than currently indicated where the condition of the water environment is sufficiently good to enable achievement of their 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.

Where a Natura 2000 site forms part of a water body, or where a water body lies within a Natura 2000 site, the Water Framework Directive status objectives apply in addition to the requirement for the site to be in favourable condition.

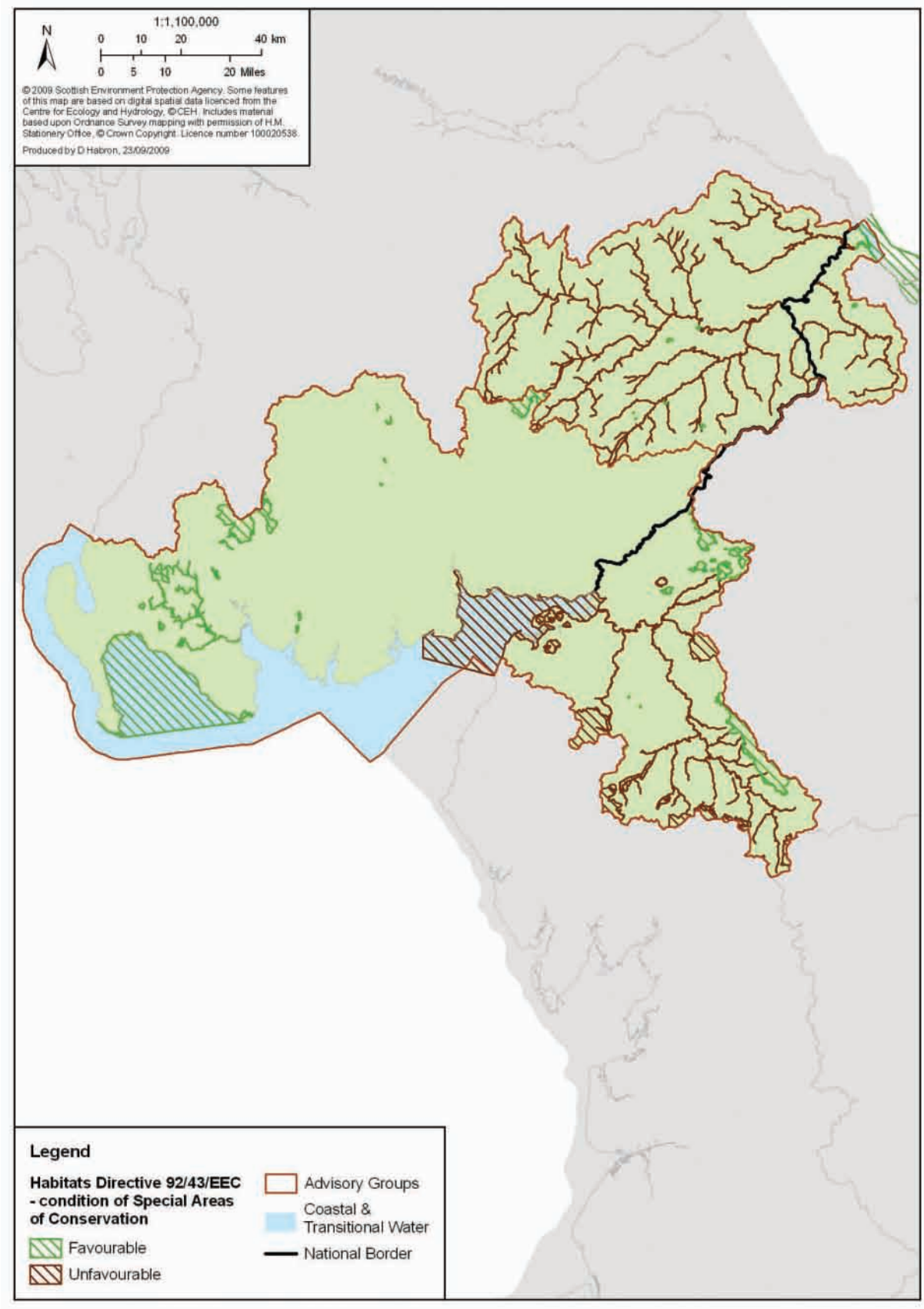
Information on each water body and protected area – and where these coincide – is available on SEPA's interactive map: www.sepa.org.uk/water/river_basin_planning.aspx

The water body status and targets under the Water Framework Directive will not always fully reflect those for Natura 2000 sites, even where the element in question is the same (eg phosphorus). This can be for a number of reasons, for example:

- the size and scale of water bodies under the Water Framework Directive may be larger than waters identified as protected areas;
- the use of a particular environmental standard or condition is different under the Water Framework Directive compared with the EC Habitats and Birds directives.

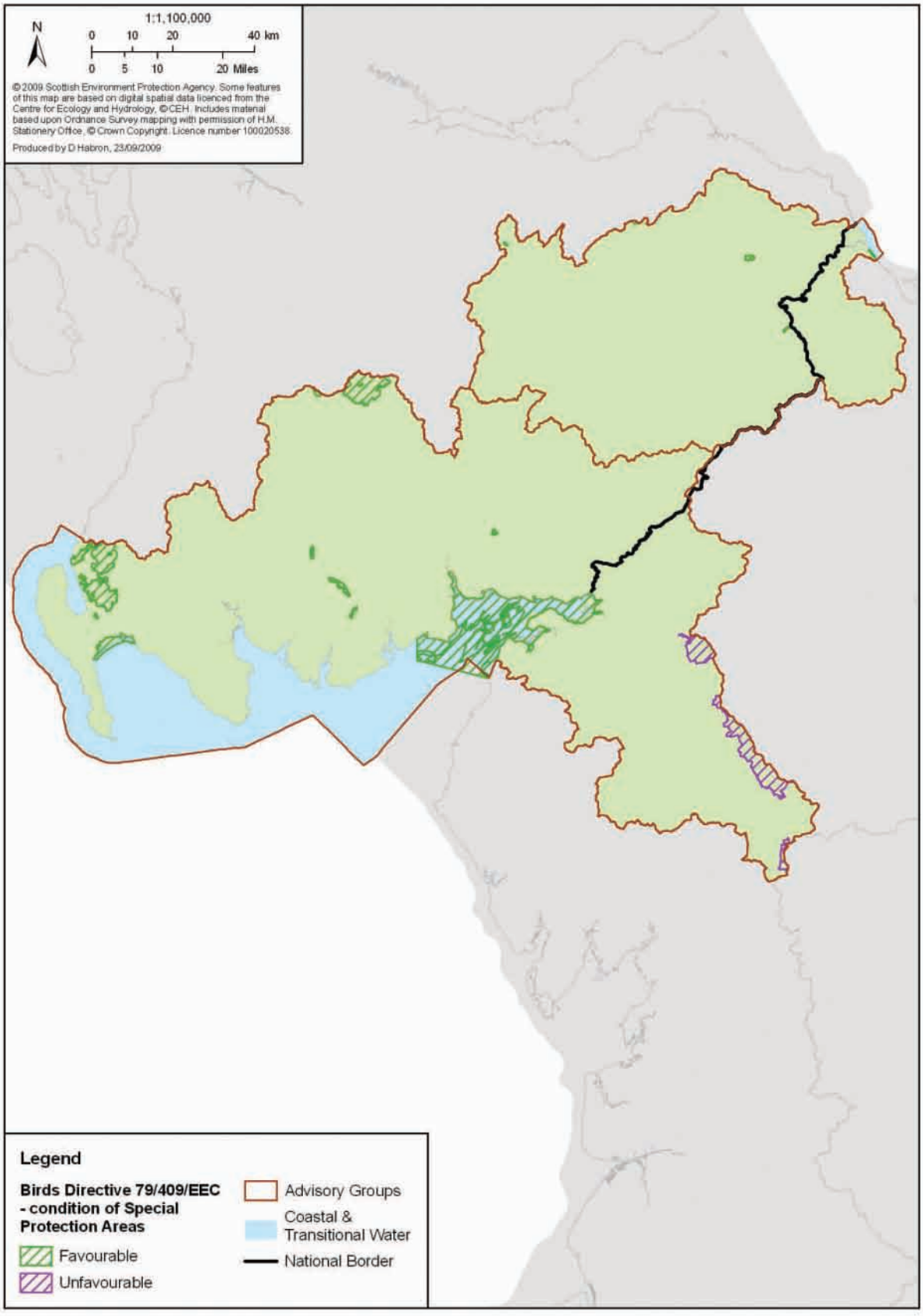
It is therefore possible for a water body to meet the Water Framework Directive objectives for 'good status' but fail the Natura 2000 protected area objective of 'favourable condition'.

Map 7: Location of SACs 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 of the water-dependent features on a site are found to be in 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 due to pressures unrelated to the water environment.

Map 8: Location of 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 of the water-dependent features on a site is found to be in 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 due to pressures unrelated to the water environment.

Future condition of water-dependent Natura 2000 sites

The target for water-dependent Natura 2000 sites is to achieve favourable/unfavourable recovering condition at all sites by 2015 unless an extended deadline can be justified.

It is anticipated that eight of the 10 currently unfavourable SACs and the one currently unfavourable SPA will be in favourable/unfavourable recovering condition by 2015.

There are currently uncertainties about the most appropriate measures to adopt and whether there is an effective measure that can be applied at two SACs. Planned on-site research and work should enable improvements to be delivered at these two SACs so that they are in favourable/unfavourable recovering condition by 2027.

For more information on why deadlines have been extended from 2015 to 2027 see Chapter 2: www.sepa.org.uk/water/river_basin_planning.aspx

All Natura 2000 sites are expected to be in favourable/unfavourable recovering condition by 2027.

Actions for water-dependent Natura 2000 sites

The main actions that are required, or that are already in place to address water-related pressures on Natura 2000 sites in unfavourable condition include:

- reducing point source pollution by sewerage provision and/or increased treatment;
- reducing diffuse pollution from rural areas;
- controlling and eradicating invasive non-native species;
- working to establish methods to eradicate the North American signal crayfish;
- improving habitats by appropriate habitat management, including fish passage.

Actions for each Natura 2000 sites in unfavourable condition are set out in Appendix D. Where more than one pressure impacts upon a site, each separate pressure has been identified. Sites where the nature of the pressure 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.