Protecting and improving Scotland's environment: an overview

Project Brief, March 2009

Audit Scotland is undertaking this study on behalf of the Accounts Commission (based on the provisions in section 97A of the Local Government (Scotland) Act 1973, 'The Commission shall undertake or promote comparative or other studies designed to enable it to make recommendations for improving economy efficiency or effectiveness in the provision of services by local authorities or by other bodies…') and the Auditor General for Scotland (under the Public Finance and Accountability (Scotland) Act 2000 Section 23, Economy, efficiency and effectiveness examination).

Audit Scotland is a statutory body set up in April 2000. It provides services to the Accounts Commission and the Auditor General for Scotland. All of Audit Scotland's work in connection with the 32 councils, fire and police services is carried out for the Accounts Commission. All of Audit Scotland's other work is undertaken for the Auditor General who reports to the Scottish Parliament.

Introduction

1. The environment provides the essential foundations for all life. Scotland's natural environment is often described as its greatest asset. One recent estimate suggested that Scotland's environment was worth £17.2 billion per year and supported 242,000 jobs.[1] Important Scottish industries (e.g. food and drink and tourism) are dependent on a high quality environment. Public bodies play an important role in protecting and improving the environment for present and future generations.

2. Audit Scotland plans to assess the performance of the Scottish public sector in protecting and improving Scotland's environment. This project brief explains why and how Audit Scotland plans to make this assessment.

Why Audit Scotland is undertaking this study

There are challenges facing Scotland's environment

3. In 2006, the Scottish Environment Protection Agency published *The State of Scotland's Environment*.[2] It concluded that: "…the Scottish environment is generally of good quality" but it identified six key challenges facing the environment:[3]

   - Local air pollution
   - Reductions in high level ozone
   - Threats to water quality from diffuse pollution
   - Increases in the amount of waste produced
   - Ecological damage due to nutrients and acidification
   - Loss of biodiversity.

4. This study will reflect these challenges by examining four themes: **air quality**, **biodiversity**, **waste management** and **water quality**. These themes are not independent of one another. For example, poor water quality may affect biodiversity in water environments. In considering waste management, we will update some of the issues raised in Audit Scotland's report on *Sustainable Waste Management* published in September 2007.

[1] *The Economic Impact of Scotland's Natural Environment*, Scottish Natural Heritage Commissioned Report No. 304, RPA and Cambridge Econometrics, 2008.
[2] *State of Scotland's Environment 2006,* Scottish Environment Protection Agency, 2006.
[3] A glossary of underlined terms is provided in Appendix 1.

5. *The State of Scotland's Environment* also stressed the importance of climate change. Climate change affects all four themes and is a dominant feature of current environmental policy. In December 2008, the Scottish Government introduced the Climate Change (Scotland) Bill to the Scottish Parliament. The Bill requires the Scottish Government to reduce greenhouse gas emissions by 80 per cent by 2050. By reducing greenhouse gas emissions, the Scottish Government aims to contribute to reducing the scale of future climate change. The Bill also requires the Scottish Government to set out how Scotland should adapt to climate change. As the Scottish Parliament is currently considering the Bill, this study will not explicitly consider what progress Scotland is making in reducing greenhouse gas emissions or in adapting to climate change. Audit Scotland will consider what actions it will take to review progress in tackling climate change in the light of the new legislation. However, climate change is important context for the four themes being examined in this study.

The system of protecting and improving the environment is complex

6. The system of protecting and improving the environment is complex, both in terms of the range of laws, policies and targets relating to the environment and the number of different public bodies involved. Many of Scotland's environmental laws, policies and targets originate in the European Union. If European Union targets are not met, there is a risk of significant fines being applied by the European Union.

7. The Scottish Government's National Performance Framework identifies a number of objectives, outcomes and indicators that are relevant to this study. The Greener strategic objective is to improve Scotland's natural and built environment and its sustainable use and enjoyment. Good environmental quality will also contribute to the Healthier and Smarter and Fairer strategic objectives. The Scottish Government also aims to achieve two national outcomes that are relevant to this study:

    - Value and enjoy our built and natural environment and protect it and enhance it for future generations.
    - Reduce the local and global environmental impact of our consumption and production.

8. Within the National Performance Framework, there are a number of indicators relevant to the four themes identified above:

    - Reduce overall ecological footprint
    - Reduce to 1.32 million tonnes waste sent to landfill by 2010
    - Increase to 95% the proportion of protected nature sites in favourable condition
    - Biodiversity: increase the index of abundance of terrestrial breeding birds

9. There are a number of public bodies who work directly, both individually and in partnership, to protect and improve the environment including:

- Councils
- Forestry Commission Scotland
- Scottish Environment Protection Agency (SEPA)
- Scottish Government
- Scottish Natural Heritage (SNH)
- Scottish Water.[4]

10. In some cases, non-governmental organisations (e.g. RSPB Scotland) act as partners in contributing to achieving environmental outcomes.

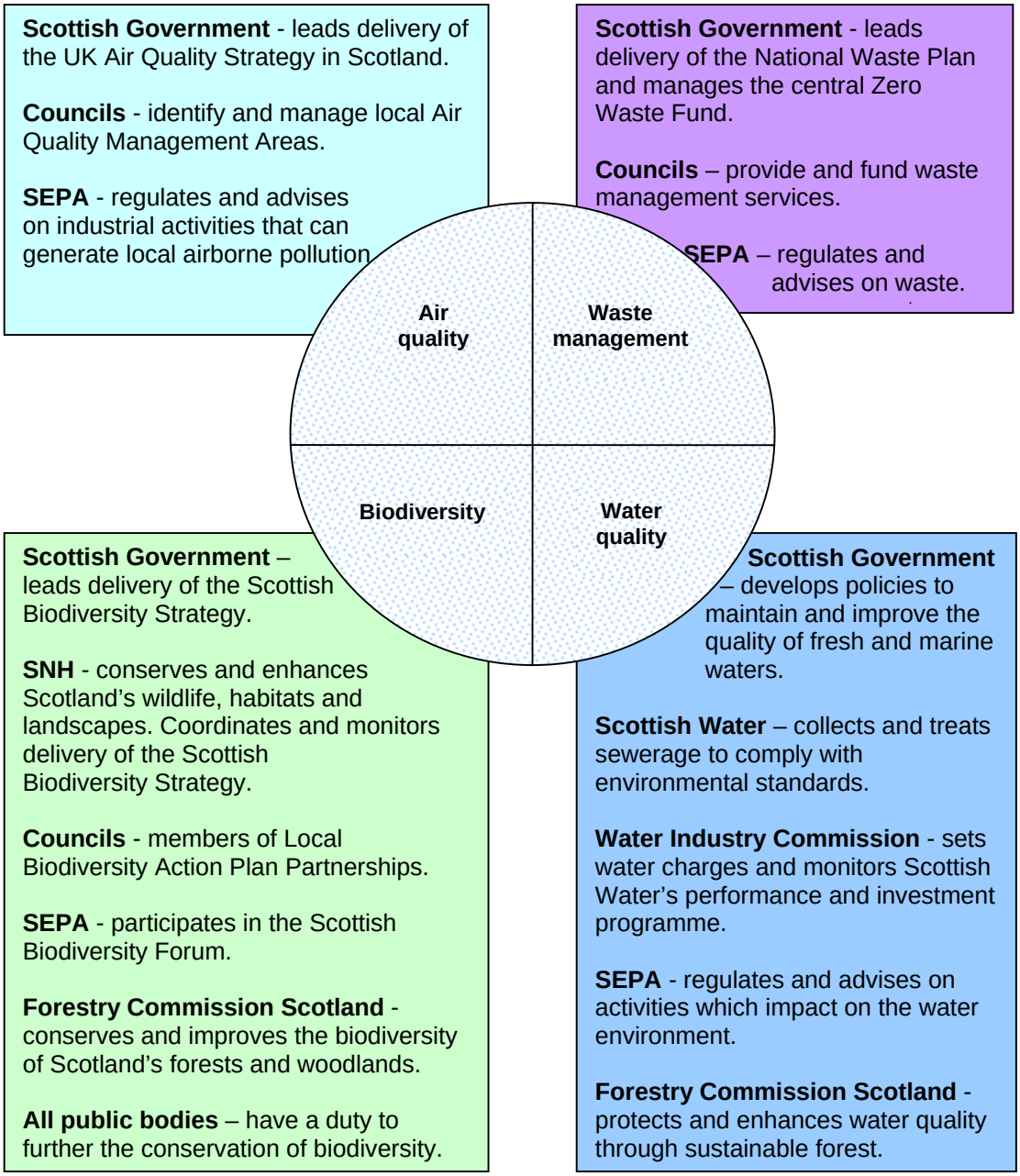
11. Exhibit 1 overleaf describes the different roles played by national public bodies and councils with respect to the four aspects of the environment that will be considered in this study.

12. Audit Scotland is in a unique position to look across the whole public sector (both central and local government), and examine how public bodies are protecting and improving the environment and contributing to meeting European Union targets and the objectives and outcomes described in the National Performance Framework and in Single Outcome Agreements.

[4] The Scottish Fisheries Protection Agency also works at a national level to enforce laws to protect sea fisheries. Its work is outside the scope of this study for reasons explained later in this document.

Exhibit 1

The main roles of public bodies involved in protecting and improving four aspects of the environment



Public bodies spend large amounts of money on protecting and improving the environment

13. In 2007/08, the public bodies directly involved in improving the environment spent significant amounts (see Exhibit 2).

Exhibit 2

Spending on protecting and improving the environment in 2007/08

	£ million
Scottish Environment Protection Agency (SEPA)	38 [i]
Scottish Natural Heritage (SNH)	68
Forestry Commission Scotland	30 [ii]
Councils	340 [iii]

[i] In addition to this level of funding provided by the Scottish Government, SEPA also generates income through charges for environmental licences and permits.
[ii] This is Forestry Commission Scotland's estimate of its spending on a "high quality, robust and adaptable environment".
[iii] This figure is for waste management and is based on data from statutory performance indicators. Councils also spend money on air quality and biodiversity and this data will be sought during the study.

14. In addition to supplying drinking water, Scottish Water plays an important role in protecting and improving the water environment. It is investing £224.2 million between 2006 and 2010 in improving environmental water quality.[5]

Air quality

15. Air pollution reduces the life expectancy of people in the UK by an average of seven to eight months.[6] The European Union's strategy on air pollution aims to reduce the number of premature deaths from air pollution-related diseases by 40 per cent by 2020 from the 2000 level. The Scottish Government has committed to meeting the targets set out in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland. In May 2008, the European Union agreed the Ambient Air Quality and Cleaner Air for Europe Directive which will introduce tighter requirements for air quality.[7] Scotland already has tighter targets for fine particles (PM_{10}) than the rest of the United Kingdom.

[5] *Scottish Water Delivery Plan 2006-10*, Scottish Water, 2006.
[6] *Air Quality Strategy for England, Scotland, Wales and Northern Ireland*, Department of Environment, Food and Rural Affairs, 2007.
[7] The directive introduces targets to reduce the levels of very fine particles (< 2.5 micrometres; 1 micrometre is one-millionth of a metre).

16. Air quality in Scotland is improving.[8] However in locations where Air Quality Strategy targets may not be met, councils are required to designate an Air Quality Management Area and develop an Air Quality Action Plan. There are currently 17 Air Quality Management Areas in 12 councils in Scotland.[9]

Biodiversity

17. Biodiversity is the variety of life. It is frequently used as an indicator of the overall health of an ecosystem. At a global and local scale, there are concerns over the loss of biodiversity due to human activities.

18. The European Union has set a target to stop the loss of biodiversity by 2010. The Nature Conservation (Scotland) Act 2004 requires the Scottish Government to produce a biodiversity strategy and publish a progress report every three years. The Scottish Biodiversity Strategy contains 17 indicators on the state of biodiversity in Scotland. [10] The first progress report was published in 2007 and suggests that progress against the 17 indicators was variable. [11] The next progress report will be in 2010. The Nature Conservation (Scotland) Act 2004 also places a duty on all public bodies to further the conservation of biodiversity.

19. A report on the implementation of the Scottish Biodiversity Strategy during its first three years proposed changes to the structures and systems that deliver the Strategy, for example, raising the status of the Scottish Biodiversity Committee and strengthening SNH's coordination role.[12] Some of these recommendations have been adopted.

Waste management

20. Audit Scotland published a report on *Sustainable Waste Management* in September 2007. The report concluded there is a significant risk that European Union Landfill Directive targets to reduce the amount of biodegradable municipal waste sent to landfill may not be met. It also noted that, although progress has been made in meeting interim recycling targets, increasing the recycling rate further will be challenging.

21. Since the publication of the report, the Scottish Government launched its zero waste policy in January 2008. The policy aims to prevent waste from being produced, ensure that products

[8] *State of Scotland's Environment 2006,* Scottish Environment Protection Agency, 2006.
[9] Air Quality Management Areas are found in Aberdeen City (1), City of Edinburgh (2), Glasgow City (3), Dundee City (1), East Dunbartonshire (1), Falkirk (1), Fife (1), Midlothian (1), North Lanarkshire (3), Perth and Kinross (1), Renfrewshire (1), and South Lanarkshire (1).
[10] *Scotland's biodiversity: it's in your hands*, Scottish Executive, 2004.
[11] *Scotland's biodiversity: it's in your hands. A progress report 2005-07.* Scottish Government, 2007.
[12] *Review of biodiversity delivery structures in Scotland,* Hambrey Consulting, 2008.

can be reused, repaired or recycled and maximise recycling. To implement this policy, the Scottish Government has established a zero waste fund with a total of £154 million allocated for the three years to 2010/11. Under the terms of the Concordat with local government, funding from the former Strategic Waste Fund has been incorporated into the general local authority settlement. The Scottish Government established a set of new waste targets in 2008 which are higher than those recently introduced by the European Union's Waste Framework Directive. The Scottish Government will publish a revised national waste plan in 2010. The Climate Change (Scotland) Bill also includes powers to allow Scottish Ministers to make regulations to reduce waste and encourage recycling.

Water quality

22. The European Union's Water Framework Directive requires that all rivers, lakes, groundwaters and coastal waters are of 'good' status by 2015.[13] It involves setting up planning, regulatory and monitoring systems for all water bodies. The first phase of the implementation of the Water Framework Directive must deliver its environmental objectives by 2015. Fifty-seven per cent of Scotland's waters are currently of good or high status.[14] The Directive also has specific requirements to protect groundwaters used for drinking water. All Scottish groundwaters are designated as Drinking Water Protected Areas.[15]

23. In addition to the Water Framework Directive, there are several other European Union directives relevant to water quality. For example, the Bathing Waters Directive specifies standards for waters (coastal and lake) that are used for bathing, the Urban Waste Water Treatment Directive requires all sewage discharges from urban areas to be adequately treated to protect water quality and the Shellfish Waters Directive provides standards for waters where shellfish are harvested. Scottish Ministers set objectives for Scottish Water, taking account of these Directives and other factors.[16] As a result, Scottish Water has invested, and continues to invest, large amounts of money to meet the requirements of these and other European directives.

[13] The five classifications of water quality (high, good, moderate, poor and bad) are defined in the European Union's Water Framework Directive.
[14] *Implementing the Water Environment and Water Services (Scotland) Act 2003: Scotland's Water: Future Directions*. Scottish Government, 2009.
[15] The Water Environment (Drinking Water Protected Areas) (Scotland) Order 2007.
[16] The Scottish Water (Objectives for 1 April 2006 to 31 March 2010) Directions 2005.

Aims and objectives

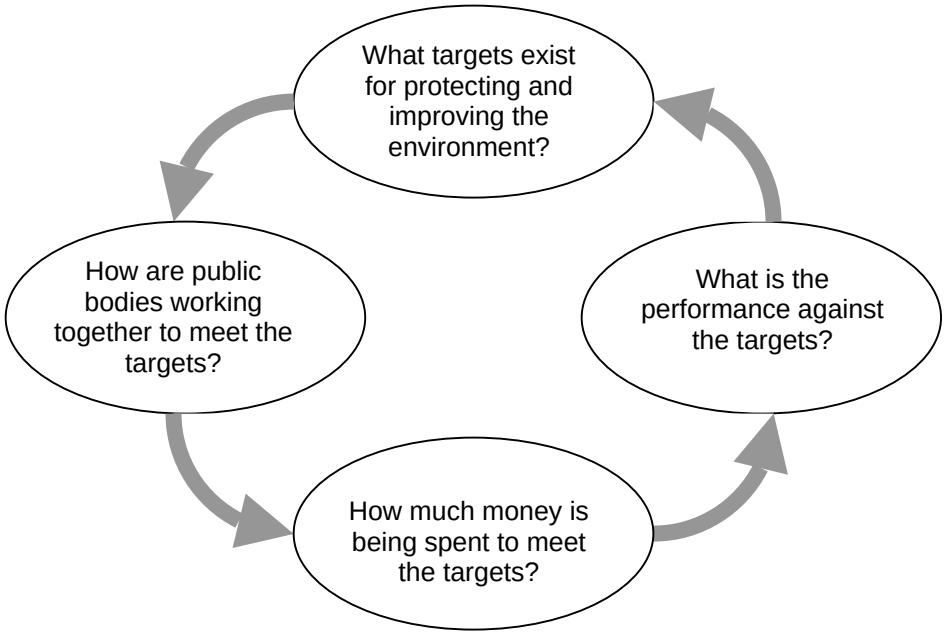
24. The overall aim of this study will be to assess, for the first time, the performance of the Scottish public sector in protecting and improving Scotland's environment. Within this overall aim, the key objectives of the study are, for each of the four themes discussed above:

- To assess how public bodies are working together and with other partners to protect and improve the environment.
- To estimate expenditure on protecting and improving the environment.
- To assess the performance of the Scottish public sector in achieving environmental targets.

25. These aims and objectives are illustrated in Exhibit 3.

Exhibit 3

Illustration of the aims and objectives of the study



Project scope, methodology and potential impact

26. This study will describe progress against the objectives in the UK Air Quality Strategy; examine how much money has been spent on improving air quality in Scotland; and consider how effective local Air Quality Management Areas have been.

27. This study will describe progress against the EU target to stop the loss of biodiversity by 2010 and the 17 biodiversity indicators; and consider the effectiveness of the implementation of the Scottish Biodiversity Strategy.

28. This study will update some of the data in Audit Scotland's *Sustainable Waste Management* report; consider progress against European Union and Scottish Government waste management targets; and provide an update on changes in European and Scottish policy on waste management.

29. This study will assess the overall progress made in implementing the Water Framework Directive in Scotland towards the 2015 target. It will also describe performance against the targets set by other directives and the costs of trying to meet these targets. Audit Scotland will work with the Water Industry Commission for Scotland on this aspect of the study.

What's not included

30. The environment is a large subject area. There are many other aspects of the environment that could be explored but these are being excluded from this study for the reasons outlined below.

31. This study focuses on the natural environment and therefore will not consider the built environment (defined here as buildings, monuments and archaeological remains).

32. The Scottish Government introduced the Flood Risk Management (Scotland) Bill in September 2008. The Bill changes the process that councils have to follow to gain agreement for flood prevention measures and makes the Scottish Environment Protection Agency responsible for preparing flood risk assessments. As the Scottish Parliament is currently considering the Bill, the study will not address flooding-related issues. In addition, Audit Scotland is currently undertaking a study into civil contingencies planning which covers emergency responses to flooding.

33. It is anticipated that a Bill on the marine environment will be introduced to the Scottish Parliament in the first half of 2009. The Scottish Government has announced that the functions of the Scottish Fisheries Protection Agency, the Fisheries Research Services and the Scottish Government's marine directorate will be merged into a new body called Marine Scotland from 1 April 2009. Therefore a significant shift in the management of the marine environment is imminent. Given this shift, the marine environment will be largely excluded from this study. However, coastal bathing water quality will be included.

34. The land use planning system has an important role to play in protecting and improving the environment. Audit Scotland will examine the planning system in a study scheduled for publication in summer 2011 and therefore the role of the planning system in protecting and improving the environment will not be explicitly examined in this study.[17]

35. The European Commission has proposed that there should be a Soil Framework Directive in the future. The Scottish Government consulted on a draft Scottish Soil Framework during summer 2008. The draft Framework proposes 11 outcomes for soil and a range of activities that will contribute to achieving these outcomes. As the Scottish Government is still in the process of developing the Scottish Soil Framework, this study will not consider how soil quality is protected.

36. Land use can have an impact on environmental quality, for example, run-off from agricultural land can affect water quality. There are two significant systems that link land use and the environment. Firstly, farmers must maintain land in good agricultural and environmental condition in exchange for receiving Single Farm Payments from the Scottish Government (which will total £433 million in 2008/09). Secondly, the Scotland Rural Development Programme is a £1.6 billion programme that runs from 2007-13 to promote rural development. The Cabinet Secretary for Rural Affairs and the Environment has recently announced a review of the Scotland Rural Development Programme. The detailed operation of the Single Farm Payments system and the Scotland Rural Development Programme will not be assessed in this study. However, the implications of these systems on the four environmental themes will be considered.

37. There is a statutory target for the maximum dose of radioactivity that individuals should receive each year. Over the last five years, no-one in Scotland has received a dose above

[17] *Programme of Performance Audits 2009/10*. Audit Scotland, 2009.

the statutory target.[18] It is vital that this target continues to be met but, given the success in meeting the target to date, it is not proposed to examine radioactivity in this study.

38. There is a large amount of expenditure on research into the environment which is delivered by a number of institutions (e.g. universities, main research providers such as the Macaulay Institute, and within public bodies such as SEPA, SNH and the Fisheries Research Services). The Scottish Government is currently consulting on a Coordinated Agenda for Marine, Environmental and Rural Affairs Science. It is not intended to examine environmental research explicitly in this study.

Equalities and diversity

39. There are correlations between social deprivation and environmental quality in Scotland.[19] However, given the scope of this study, it will not specifically examine equality and diversity issues.

Methodology

40. The main sources of evidence for this study will be:

- Document review
  - European, UK and Scottish legislation
  - Scottish Government strategies / targets
  - Progress reports against strategies / targets
  - Single Outcome Agreements
  - Public bodies' corporate documents

- Data analysis
  - Data on air quality, biodiversity, waste management and water quality
  - Expenditure data on protecting and improving the environment
  - Assessment of systems of partnership working against criteria based on Audit Scotland's partnership working toolkit

- Interviews
  - Convention of Scottish Local Authorities (COSLA)

[18] Based on information in the Scottish Environment Protection Agency's annual reports from 2003/04 to 2007/08.
[19] *Investigating environmental justice in Scotland – links between measures of environmental quality and social deprivation*. Project UE4(03)01, SNIFFER, 2004.

- Councils (via groups such as the COSLA Officers Waste Network and the Scottish Pollution Control Coordinating Committee)
- Forestry Commission Scotland
- Scottish Environment LINK
- Scottish Environment Protection Agency
- Scottish Government
- Scottish Natural Heritage
- Scottish Water
- Water Industry Commission for Scotland

Potential impact

41. This study will assess, for the first time, the performance of the Scottish public sector in protecting and improving Scotland's environment by:

- giving an overview of the objectives and targets that are in place for protecting and improving the environment
- assessing how effectively public bodies and their partners are working to meet these objectives and targets
- estimating how much money is being spent on meeting these objectives and targets
- assessing whether these objectives and targets are being met.

42. The study will be used to identify other areas for potential studies in the environment sector.

Links to other work

43. This study has links to other Audit Scotland activities and the work of other organisations:

- In October 2005, Audit Scotland published a report on the water industry in Scotland.
- In September 2007, Audit Scotland published a report on sustainable waste management.
- In December 2008, Audit Scotland published a report on improving energy efficiency in the public sector.
- In September 2008, the Audit Commission published a report on waste management.
- In November 2008, the National Audit Office published a report on Natural England's role in improving Sites of Special Scientific Interest.
- The National Audit Office is currently scoping a study on river and coastal water quality.

Project staffing and resources

44. The project will be managed by Mark Roberts (Portfolio Manager) supported by Rebecca Seidel (Performance Auditor) and Gareth Dixon (Project Officer).

Project Advisory Group

45. A project advisory group will be set up to provide advice and feedback to the project team to help them ensure the work is relevant and meets the needs of stakeholders. The group will be involved at key stages of the project and will include individuals from a cross-section of stakeholders (see below).

Stakeholders

46. Key stakeholders will include:

- Scottish Parliament
- Scottish Government
- Public bodies (in particular, Forestry Commission Scotland, SEPA, SNH, Scottish Water and the Water Industry Commission for Scotland)
- Convention of Scottish Local Authorities
- Councils
- National park authorities
- Environmental non-governmental organisations.

Project outputs and target timescales

47. We plan to publish a report and present it to the Scottish Parliament Public Audit Committee in the autumn of 2009. The draft timetable for the project is as follows:

Key project milestone	**Target date**
Agreement of project brief	February 09
Developing the methodology	February 09
Fieldwork and analysis	March – June 09
Report drafting	July – September 09
Approval of report by Auditor General and Accounts Commission	October 09
Publication	December 09

48. The timetable will be kept under review as the scope and audit approach are finalised in consultation with the project advisory group.

Further information

49. For further information contact Mark Roberts at mroberts@audit-scotland.gov.uk, or on 0131 625 1613, or in writing at Audit Scotland, 18 George Street, Edinburgh EH2 2QU.

Appendix 1

Glossary

Acidification	The process of making something more acidic. The acidification of surface water and soils is generally the result of sulphur and nitrogen moving from the atmosphere to the earth's surface as a result of human activity.
Biodegradable municipal waste	Household waste, and any other waste under the control of local authorities, including garden waste and recyclables.
Biodiversity	The range of forms of life within an ecosystem.
Diffuse pollution	Contamination of water, air or soil from a variety of sources (e.g. run off from roads and farmland), rather than a single point of pollution.
Ecosystem	A natural system which involves the interaction of living things with their environment (air, water and soil).
Greenhouse gases	Gases in the earth's atmosphere which trap energy and maintain the earth's surface temperature warmer than it would otherwise be. These gases include carbon dioxide, methane, nitrous oxide, and various compounds containing fluorine.
High level ozone	Ozone found in the earth's stratosphere (15–50 km above the earth's surface) which filters potentially damaging ultra violet rays and stabilises the earth's climate.
Nutrients	Substances that are essential to support life and growth in organisms (e.g. nitrogen and phosphorus) but at high levels can be damaging to the environment.
PM_{10}	Particles in the air less than 10 micrometres in size.