

soil: a precious resource



Our strategy for protecting,
managing and restoring soil

We are the Environment Agency. It's our job to look after your environment and make it **a better place** – for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.

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Soil provides benefits that we have taken for granted for too long. As our understanding of soil increases, we are seeing signs that contamination and poor management are causing problems in England and Wales. Over the years we have seen a steady loss of soil because of development and increasing signs of damage, degradation and erosion.

In places where soil structure is damaged we may see more flooding and water pollution. In turn, this may mean extra clean up costs to us as consumers. Degraded soil structure can also affect the landscape and archaeological features that may result in a loss of revenue from tourism. Where soil organisms are harmed, their role in removing pollution and regulating the balance of gasses in the atmosphere may be impaired. We are just starting to understand the role of soils in storing and releasing carbon. The way that soils are managed could play an important part in mitigating climate change.

Together, we've made good progress on addressing some of these issues but there is still much to do. If we fail to act it may be too late to put the damage right.

To help us carry out our roles and responsibilities efficiently and effectively we have produced this document – our soil strategy. This identifies our priorities, sets out our role and says what action we will take. We will use a mix of regulation, advice and incentives to play our part in tackling these issues, but we also need others to act. A partnership approach to tackling the challenges we face will deliver real results. I hope you will join with us to improve the environment now and for future generations.

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Part 1 Our strategy for protecting, managing and restoring soil

1.1 Why is soil important?

Soils support a huge range of organisms that are essential for a healthy environment.

We use soils to grow our food and the organisms in the soil help keep our drinking water clean, breaking down and locking away substances that may be harmful to people and wildlife. Soils support our diverse landscapes and play a vital role in maintaining the balance of gasses in the air we breathe. We are beginning to understand soil's role in storing and releasing carbon and the potential impact this may have in tackling climate

change. Poorly managed soils can increase downstream flood risk and prevent rainfall from replenishing groundwater supplies. They can also cause substantial economic costs, for example through loss of crop yield, reduction in fish stocks or clean up costs for the removal of soil from roads. If we want to keep enjoying all the benefits of a healthy soil, we need to take action to protect it now.

1.2 Why are we concerned about soil?

Our vision for the environment in England and Wales is a better place for people and wildlife, for present and future generations.

Looking after soil is central to achieving our vision and delivering the nine themes in our corporate strategy, **Creating a better place**. We need to:

- Protect people and wildlife by preventing the build-up of harmful substances in soil
- Protect water, air and soil from pollution by promoting good soil management
- Protect people from flooding by encouraging land management practices which slow the rate at which water reaches the rivers
- Support the clean up of damaged soil to prevent harm to people, wildlife and the environment
- Improve our understanding of soil so we can make better decisions about how to protect people and the environment.

1.3 What is our role?

We have responsibilities for protecting and managing soil and tackling problems resulting from poor soil management.

These include:

- Providing technical advice to the Government on policy development
- Influencing and implementing relevant legislation, such as:

Soil Framework Directive
Water Framework Directive
Groundwater Directive
Sludge (Use in Agriculture) Regulations
Pollution Prevention and Control Regulations
Waste Management Licensing Regulations

- Taking enforcement action where necessary
- Producing and providing advice, and guidance for example on improved agricultural practices and construction site activities

- Assessing the environmental impacts of the way soils are managed
- Reporting on the state of the environment
- Directly managing large areas of land, mainly for flood defence and recreation.

We use a mix of regulation, advice and incentives to help improve the way people protect and manage soil, but we also need others to act. We are often advisers or consultees rather than having lead responsibility. We will work with the governments in England and Wales and their agencies, Non Governmental Organisations, industry and land managers to make improvements and change the way we protect and manage our soils so we create real benefits for everyone.

Soil: a precious resource sets out what we will do and how we can work with others to effectively manage, protect and restore our soil.

1.4 What are the priorities?

Our report **The State of Soils in England and Wales (2004)** reviewed evidence on the state of soils and summarised our current situation. The report identified five main challenges for soil.

- **Integrating management of air, soil and water** – air, soil and water are closely linked and must be managed as a whole so that we can tackle diffuse pollution to improve water quality, protect soils from air pollution and manage flood risk.
- **Tackling the impacts of agriculture** – agricultural activities can be damaging to soils and water. Wiser use of soils and other resources needs to be promoted to reduce diffuse pollution from agriculture, to prevent persistent chemicals and excess nutrients from building up as well as to control erosion.
- **Protecting soil in the built environment** – greater recognition is needed of the importance of green spaces in the urban environment, which provide leisure opportunities and help manage flood risk. We also need to address contaminated land, as this can pose a risk to water quality and deter re-development.
- **Understanding soil biodiversity** – the nature and role of soil biodiversity is vital to healthy soils and we need to understand it better.
- **Improving the knowledge base** – we need to extend our knowledge and improve access to practical information on soils and the pressures on them.

In the following section, we talk more about each of these priorities, identify why they are important, how addressing them will improve the way we work and what we will do to achieve our aims.

We have also identified several activities and issues that cut across all the work that we do. We have grouped these together in a section called **Cross cutting priorities** (p.6).

1.5 How will we deliver our soil strategy?

The Environment Agency's Vision for the Environment describes our long-term aspirations and objectives and how we will contribute to sustainable development.

To make this vision a reality, we have set out our environmental goals and how we will help make them happen. All this is in our corporate strategy, **Creating a better place**. It outlines our overall targets and objectives for the period 2006 – 2011. Many of these aims and objectives require us to take action (both alone and with partners) on tackling soil protection, management and restoration. To ensure this work is co-ordinated, we have produced our soil strategy. This gives details of the work that we will do on soil protection, management and restoration which will help us achieve the goals in **Creating a better place**.

To achieve these goals, many parts of the Environment Agency need to act together.

We also need to work closely with colleagues in the Department of Environment, Food and Rural Affairs (Defra) and the Welsh Assembly Government (WAG) to:

- Provide technical advice on selecting policy options
- Establish and deliver real environmental improvement in the field
- Provide sound science and evidence to support our decisions.

To measure progress we will assess our activities against the targets for soil set out in our **Corporate strategy** and report progress annually in our **Annual report and accounts**.

1.6 What people said about our draft strategy

In 2004, we consulted a range of people on our draft soil strategy, *Soil, the hidden resource*.

We wanted their views on how to develop our strategy and how we should prioritise our work to maximise our contribution to protecting and enhancing soils. We also asked how we can work together to do this more

effectively. We have used these responses to revise and finalise our strategy. You can read the collated responses and how we have taken the comments into account on our website at: www.environment-agency.gov.uk/soils

Part 2 How we will protect, manage and restore soil

This section looks at what we want to achieve for soil.

We have six goals:

- People will value soil and recognise that it is an important natural resource that requires the same level of protection as water and air.
- People will recognise the environmental importance of the links between soil, air and water and take this into account when managing soil.
- Farmers and growers will manage their soils wisely to produce healthy food in a sustainable way that safeguards the environment.
- People will value soil in the built environment because it provides recreation opportunities in gardens and community green spaces, because it supports biodiversity and also because it offers us benefits for air and water quality. Industry will adopt methods of preventing pollution which protect soils and soil will be better managed and used in construction activities.
- We will know more about soil biodiversity. We will also improve our understanding of and ability to monitor the impact human activity and environmental change has on soil so that we can keep soils healthy.
- We will fill the gaps in our knowledge of soils, make information on soils more accessible and share information with others so that we can make better informed decisions about managing and protecting soil.

The rest of this section looks at how each of these will be achieved.

2.1 Cross cutting priorities

People will value soil and recognise that it is an important natural resource that requires the same level of protection as water and air.

2.1.1 Climate change

Why is it a priority for us?

Climate change will have profound effects for soil, both directly and as land management practices change to adapt and reduce its impact. The United Kingdom Climate Impact Programme has produced scenarios for how our climate will change due to global warming. They predict warmer temperatures, wetter winters, drier summers, more intense rainfall and major impacts for soil, including the loss of land through sea level rise. The impact of climate change on soil could also affect water resources and water quality.

We are also beginning to understand that the way we manage soil may affect climate change. Soil plays an important role in storing carbon, which can be released as methane and carbon dioxide, important green house gases. Recent research has shown the release of carbon from upland soil is much higher than previously thought.

All these changes will directly affect our ability to meet our environmental duties and the way we carry out our work now and in the future.

What will we do? We will:

- Understand how carbon is stored in and lost from soil and what this means for the environment (→Action 1).
- Clarify and raise awareness of what climate change may mean for soil, and the implications this will have for the wider environment (→Action 2).
- Encourage others to take these impacts into account when developing good practice guidance for managing soil (→Action 3).

What are we already doing?

Soil organic carbon workshop

The loss of soil organic carbon may have significant impacts on the environment and on climate change. In November 2006 we participated in a workshop on Soil Organic Carbon organised by Natural England. The workshop highlighted the importance of soil

organic carbon in managing climate change and resulted in a commitment by those attending to work together to develop our understanding and to identify how we can improve soil management practices.



Peat Erosion. Paul Leadbitter/NPAP

2.1.2 Sustainability

Why is it a priority for us?

As populations and societies change and demand more space and mineral resources, soil is inevitably lost and damaged. As the Environment Agency we are responsible for protecting and enhancing the environment.

It is therefore important for us to balance the needs of society and the economy with our duty to safeguard soil, now and for the future. After all, soil is pivotal to society, the economy and the environment.

What will we do? We will:

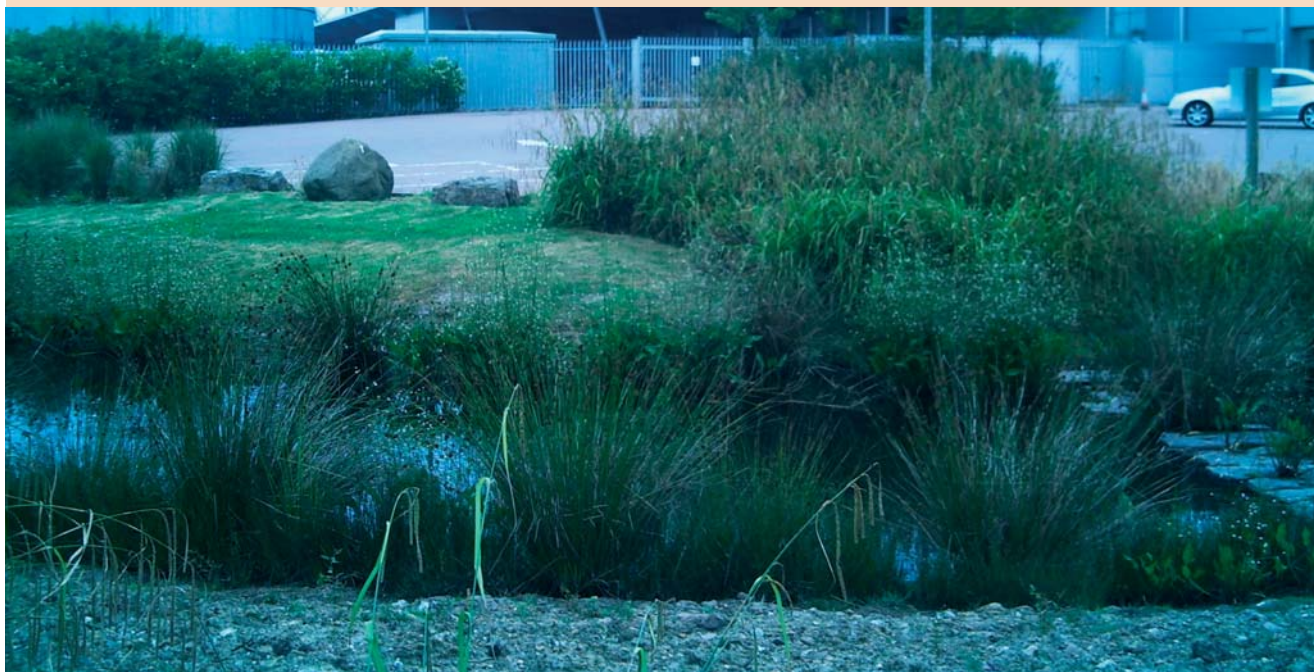
- With others, raise awareness of the essential role soil plays in our environment, so that its importance as a valuable natural resource is more widely recognised (→Action 4).
- Ensure that we consider soil as part of all our future relevant strategies, policies, guidance and the work that we do (→Action 5).

What are we already doing?

Sustainable drainage systems (SUDS)

New developments in urban and rural areas result in increased sealing of the soil surface as it is covered with buildings and paving. The SUDS approach to surface water drainage aims to make the maximum use of infiltration and the capacity of the soil to clean and retain surface water. We are working with government, local authorities, water companies and developers in order to increase the use of the SUDS approach to surface water drainage.

In rural areas the compaction of soil, through animal husbandry, can lead to increased run-off with higher storm flows, poorer quality water and stream erosion. The planting of trees and hedges at Pontbren in mid-Wales has increased soil infiltration by 60 times the rate of the open fields, as well as improving water quality and the general biodiversity of the farms involved.



A SUDS system in place. Phil Chatfield, Environment Agency

2.2 Integrating management of air, soil and water

People will recognise the environmental importance of the links between soil, air and water and take this into account when managing soil.

Why is it a priority for us?

Soil is a living resource that acts as a buffer system, protecting the environment from harm. It is the essential link between air and water. By ensuring that we combine our management of soil, water and air we will be able to:

- Improve the way we manage flood risk and protect water resources by better understanding the links between soil management, aquifer recharge and flood risk
- Reduce diffuse pollution so that we can meet the aims of the Water Framework Directive for improved water quality
- Better regulate industry to reduce the long distance effects of emissions.

What will we do? We will:

- Take soil and land management issues into account when making decisions on our work on flood risk management (→Action 6).
- Use our knowledge of the interactions between air, soil and water to help characterise the pressures on river catchments from soil and land management, then develop measures to tackle them effectively as part of Water Framework Directive River Basin Management Plans (→Action 7).
- Work with land managers and others to improve the way soil and land is managed in urban and rural environments to reduce diffuse pollution of surface and groundwaters (→Action 8).
- Work with industry to identify and assess the possible off-site effects of their activities on soil and how they can reduce them (→Action 9).

What are we already doing?

The Peatscapes Initiative

In 2006, we jointly set up and funded a collaborative project to restore and conserve the internationally important peatland in the North Pennines Area of Outstanding Natural Beauty (AONB). Peat plays a vital role in the interaction between land, air and water, it...

- balances the flow of water off the hills, reducing flood risk and improving water quality,
- acts as a sink of atmospheric carbon, which could influence climate change,
- is the UK's largest terrestrial carbon store,
- contains a record of changes in vegetation over thousands of years,
- is of European and nationally recognised biodiversity importance for key plant community types and bird species,
- has important cultural and economic links to current and past land use.

For more information visit the North Pennine AONB website at www.northpennines.org.uk



A blocked grip helping to conserve the peat. Paul Leadbitter/NPAP

2.3 Tackling the impacts of agriculture

Farmers and growers will manage their soils wisely to produce healthy food in a sustainable way that safeguards the environment.

Why is it a priority for us?

Over 70% of the land in England and Wales is used for farming. Over many centuries local farming practices have developed in response to variations in soil type and the influences of climate and landscape.

This, in turn, has shaped our environment. Managing soil for agricultural purposes can have a major effect on the wider environment. This means that improving agricultural practices will help us to:

- Reduce diffuse water pollution from agriculture
- Reduce the incidence of localised flooding and improve the way we manage flood risk nationally
- Maintain soil structure and fertility by using organic wastes, while protecting the wider environment from harmful substances applied to land
- Improve how we regulate the landspreading of wastes to ensure the benefits to soil structure and fertility are balanced with protection of the long term health of soils, prevention of the build up of harmful substances and protection of the wider environment.

What will we do? We will:

- Work with Department for Environment, Food and Rural Affairs (Defra), Welsh Assembly Government (WAG), Natural England (NE), Countryside Council for Wales (CCW) and others to give farmers the opportunity to improve the way they manage their soil through improved regulation and incentives (→Action 10).
- Advise farmers and develop tools to help them improve soil and nutrient management planning on their farms, to reduce diffuse water pollution and localised flooding (→Action 11).
- Work with Defra, WAG and industry on regulation, guidance and advice for the land-spreading of sewage sludge and industrial, municipal and agricultural waste (→Action 12).

What are we already doing?

Using woodland for sediment control

Erosion caused by overgrazing, land cultivation, drainage and human trampling has caused the loss of soil resource and scarring of the landscape in the catchment of Bassenthwaite Lake in the Lake District. The lake is highly sensitive to pollution and of high conservation value. We have worked with Defra, the Forestry Commission and Lancaster University to

identify how conversion of land to woodland could improve the way the land is managed. The project identified where new woodland could best aid erosion control and the Forestry Commission is now working with the Bassenthwaite Lake Partnership to explain the benefits of new woodland to local landowners.



Bassenthwaite Lake (background). National Trust

2.4 Protecting soil in the built environment

People will value soil in the built environment because it provides recreation opportunities in gardens and community green spaces, because it supports biodiversity and also because it offers us benefits for air

and water quality. Industry will adopt methods of preventing pollution which protect soils and soil will be better managed and used in construction activities.

Why is it a priority for us?

Soils in the built environment are important because a healthy society needs a safe environment with space for recreational activities. Soil is a key part of recreational sites like gardens, parks, playing fields and allotments. If we improve the way that people manage soils in the built environment this will help us to:

- Promote the importance of open spaces for leisure, wildlife and for regulating the flow of water

- Reduce flood risk and pressures on urban drainage
- Reduce the instances of new soil contamination from pollution incidents
- Encourage the construction industry to re-use soils to reduce the amount disposed of as waste
- Encourage the reclamation and clean-up (remediation) of contaminated soil.

What will we do? We will:

- Work with Defra, WAG, industry, professional and trade organisations to prevent new contamination of soil by raising awareness of the problem, developing simple pollution prevention advice and using regulation (→Action 13).
- Work with industry and local authorities so that land with contaminated soil is cleaned up and risks to human health and the environment are reduced (→Action 14).
- Play our role and complement the role of others, including the Department of Communities and Local Government (DCLG) and local authorities, in implementing the Strategic Environmental Assessment Directive. We will do this by encouraging people to consider soils when they are developing relevant policies, strategies and plans (→Action 15).
- Work with Defra, WAG, industry, professional and trade organisations to develop and promote simple good practice guidance on the sustainable use and management of soil in development and construction (→Action 16).

What are we already doing?

SITE Wise II Campaign

In 2006 we produced an information pack on improving environmental performance for the construction industry. This had ten key messages for the industry, which included soil protection.

Details of the SiteWise II pack, a list of quick wins for protecting soil and a copy of the SiteWise II presentation, are available on our website.



Soil storage on a construction site. Environment Agency image library

2.5 Understanding soil biodiversity

We will know more about soil biodiversity. We will also improve our understanding of and ability to monitor the impact human activity and environmental change has on soil so that we can keep soils healthy.

Why is it a priority for us?

Soil is a living ecosystem, home to a huge range of organisms, such as bacteria, fungi, insects and worms. If we have a better understanding of soil biodiversity and maintaining ecosystem viability, this will:

- Allow us to assess and advise on how the processes and activities we regulate affect soil
- Give us a better understanding of how resilient soils are to environmental change, disturbance and contamination
- Help us to tackle diffuse pollution of surface and groundwater through a better understanding of how substances are degraded and transported in soils
- Contribute to our understanding of carbon storage in soils
- Enable us to use soil biodiversity for assessing and cleaning up soil contamination.

What will we do? We will:

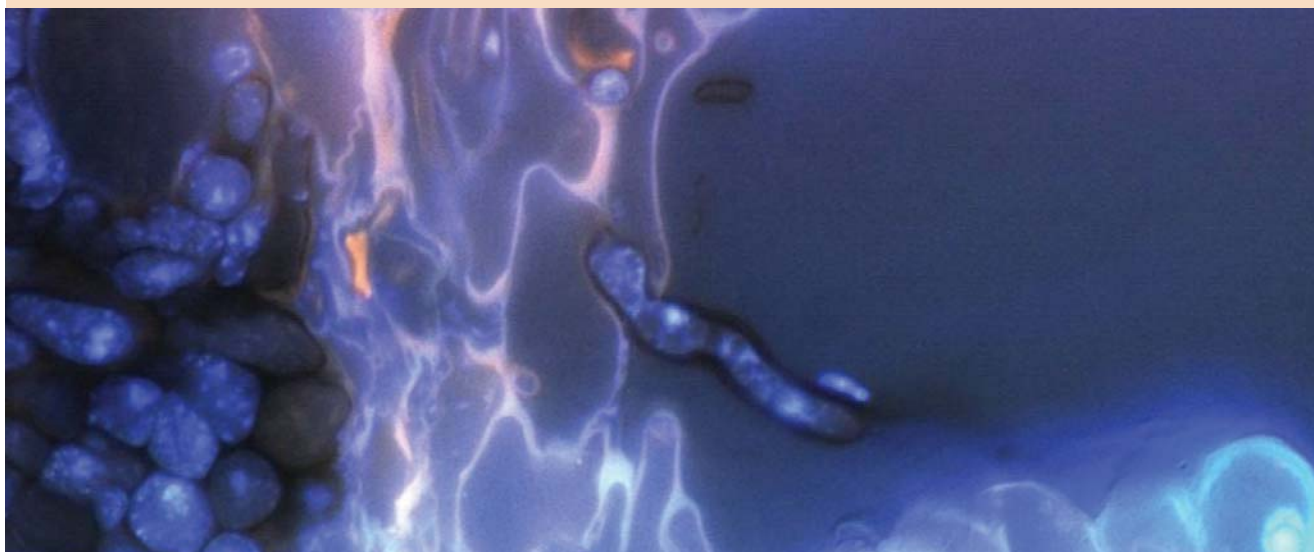
- Work with Defra, WAG, other agencies and researchers to develop indicators and standards for soil biodiversity that can tell us what the state of a particular soil is and whether soils are being harmed (→Action 17).
- Work with industry and researchers to determine the potential of biological approaches and methods in assessing and cleaning up soil contamination (→Action 18).

What are we already doing?

Paper pulp report

In 2005, we reported on the extent, nature and environmental implications of spreading paper waste on agricultural land in England and Wales. The report identifies a number of benefits, including an increase in soil biological activity and earthworm numbers. We also found some disadvantages and gaps in our knowledge and have made appropriate recommendations.

You can find the published report – **Landspreading on agricultural land: nature and impacts of paper wastes applied in England and Wales** on our website at: <http://publications.environment-agency.gov.uk/epages/eapublications.storefront/4576d7a900befcc4273fc0a80296071c/Product/View/SCHO0805BJNJ&2DE&2DE>



Soil micro organisms. Image courtesy of Karl Ritz, National Soil Resources Institute and Scottish Crop Research Institute

2.6 Improving the knowledge base

We will fill the gaps in our knowledge of soils, make information on soils more accessible and share information with others so that we can make better informed decisions about managing and protecting soil.

Why is it a priority for us?

There are gaps in our understanding of how soil works and this affects our ability to protect soil and use it more effectively. Improving the knowledge base and using existing information better will:

- Help us communicate about soil issues with governments in England and Wales, industry, NGOs, researchers and the public, in a way that everyone can understand
- Help us to make more informed decisions on the processes we regulate and advise on
- Provide more up to date information on the state of the environment and how this may change as a result of both the impact of climate change on soils and the contribution soil management makes to it. This will improve our ability to inform the public and others, and to target our actions in the future
- Help us to spot trends and potential problems more quickly so that we can be more active in protecting soil
- Give us more confidence in taking a risk-based approach to regulation.

What will we do? We will:

- Collaborate on science in our research programmes to help us complete the actions in this strategy (→Action 19).
- Work as part of the UK Soil Indicators Consortia to develop and test soil quality indicators that we can use to set targets for and monitor the quality of soils (→Action 20).
- Work with others to make information on soil more accessible (→Action 21).
- Publish an updated version of the state of soils in England and Wales in 2010/11 to help assess progress (→Action 22).

What are we already doing?

Soil Management 'Think Soils' Manual

In 2006 we developed a practical, pictorial guide to help our officers identify soil problems in the field. In February 2007, we used the Think Soils manual in a series of workshops for farmers to evaluate its use in

working with farmers to help them assess soil structure. The manual will be made generally available in 2007 to help farmers, advisors and others to improve soil management.



Environment Agency (for Think Soils manual)

Part 3 What happens now?

3.1 How will we deliver our strategy?

Our strategy sets out the direction in which we would like to travel and the work that we will do at a strategic level. To make this document a reality we will need to:

- work with government
- work other organisations and individuals
- improve the work that we do
- review progress and measure success.

3.2 Working with government

Why is it a priority for us?

We are responsible for regulating the environment in England and Wales. We support the governments in England and Wales with their aims for soil.

In England, Defra has been implementing their **First Soil Action Plan** since May 2004. This sets out the soil agenda for England and includes a list of actions. In order to take the soil agenda further still, Defra are now producing a new soil strategy.

Although many issues are common to England and Wales, Wales also has its own unique issues and circumstances. Welsh Assembly Government (WAG) has published its **Environment Strategy**, which sets out the

priorities for soils in Wales. Within this, there is a commitment to develop a detailed action plan for soil.

The EU Commission's work on the **Soil Thematic Strategy** has developed the agenda for soil in Europe to such a level that a Soil Framework Directive has been proposed. This sets out the issues that national governments need to address. We will work with Defra and the Welsh Assembly Government to ensure that the Directive helps us to address soil issues in a way that is relevant and appropriate to the circumstances of England and Wales.

What will we do? We will:

- Support the England and Wales governments to achieve their aims and objectives for soil (→Action 23).
- Work with Defra and partners to achieve the actions in the **First Soil Action Plan for England** and then develop an appropriate soil strategy (→Action 24).
- Work with WAG and partners to achieve the objectives in the **Environment Strategy** and develop and implement the Wales Soil Action Plan (→Action 25).
- Help to identify and tackle future strategic soil issues for England and Wales (→Action 26).
- Support Defra and WAG to negotiate, develop and implement the actions in the **Soil Thematic Strategy** (→Action 27).

3.3 Working with others

Why is it a priority for us?

We are not alone in our concern for protecting soils. We are part of a community that has been working for greater recognition of the importance of soil for some

time. We need to work with others to improve the way people protect, manage and restore soils.

What will we do? We will:

- Look for opportunities to work with, and welcome contributions from others who can help make improvements in the way we protect, manage and restore soil (→Action 28).
- Encourage training and ongoing professional development programmes for soil advisors (→Action 29).

3.4 Improving the way we do things

Why is it a priority for us?

We have achieved a lot with traditional regulation. But the nature of regulation has to change to keep pace with changes in the economy and society. We are developing modern regulatory approaches that are proportionate and risk based to drive environmental improvements and reward good performance.

This will also allow us to take action against anyone failing to meet acceptable environmental standards. We will use a mix of regulatory and non-regulatory, often advisory, approaches. These approaches help us better manage, protect and restore our soils.

What will we do? We will:

- Continue to improve the way we currently regulate activities relating to soil by focusing on environmental outcomes and targeting our resources on the priorities identified by our soil strategy. Within these areas of activity we will target higher risk activities, poor performers and areas where the results for the environment are the greatest (→Action 30).
- Train our staff on soil issues to improve our regulatory and advisory activities (→Action 31).

3.5 Where do we go from here?

Now you have read our strategy we hope that you will join us in tackling the issues we have identified. We will report on our progress in our annual report and accounts and through updates to our website. But in the meantime, if

you would like further information on the work that we are doing have a look at our website at:

www.environment-agency.gov.uk/soils

Part 4 Summary of actions

What will we do?

Climate Change

1. Understand how carbon is stored in and lost from soil and what this means for the environment.
2. Clarify and raise awareness of what climate change may mean for soil, and the implications this will have for the wider environment.
3. Encourage others to take these impacts into account when developing good practice guidance for managing soil.

Sustainability

4. With others, raise awareness of the essential role soil plays in our environment, so that its importance as a valuable natural resource is more widely recognised.
5. Ensure that we consider soil as part of all our future relevant strategies, policies, guidance and the work that we do.

Air, Soil and Water

6. Take soil and land management issues into account when making decisions on our work on flood risk management.
7. Use our knowledge of the interactions between air, soil and water to help characterise the pressures on river catchments from soil and land management, then develop measures to tackle them effectively as part of Water Framework Directive River Basin Management Plans.
8. Work with land managers and others to improve the way soil and land is managed in urban and rural environments to reduce diffuse pollution of surface and groundwaters
9. Work with industry to identify and assess the possible off-site effects of their activities on soil and how they can reduce them.

Tackling the impacts of Agriculture

10. Work with Department for Environment, Food and Rural Affairs (Defra), Welsh Assembly Government (WAG), Natural England (NE), Countryside Council for Wales (CCW) and others to give farmers the opportunity to improve the way they manage their soil through changes to regulation and improving incentives.

Why?

So that we can prevent large-scale carbon loss contributing to climate change.

So that we can understand what is needed to protect soils from the impact of climate change.

Climate change is happening – we have to adapt the way we manage soils.

Because soil is a valuable and limited natural resource which needs protection.

Soil links with air and water, so we need to take a holistic approach to protecting our environment.

To maximise rainwater infiltration, replenishing groundwater and reducing flood risk.

So that we can target measures to minimise water pollution by sediment from land and help to achieve good ecological status in our water bodies.

To help achieve the Water Framework objective of good ecological status for water bodies (good status for groundwater).

To prevent fresh contamination of soil and groundwater as well as structural damage and erosion.

To protect soil as a living resource, as well as improving groundwater recharge and minimising water pollution and flood risk.

What will we do?

11. Advise farmers and develop tools to help them improve soil and nutrient management planning on their farms, to reduce diffuse water pollution and localised flooding.
12. Work with Defra, WAG and industry on regulation, guidance and advice for the land-spreading of sewage sludge and industrial, municipal and agricultural waste.

Why?

Because farmers manage about 70% of our land.

So that organic material continues to be beneficially recycled to land.

Soil in the built environment

13. Work with Defra, WAG, industry, professional and trade organisations to prevent new contamination of soil by raising awareness of the problem, developing simple pollution prevention advice and using regulation.
14. Work with industry and local authorities so that land with contaminated soil is cleaned up and risks to human health and the environment are reduced.
15. Play our role and complement the role of others, including the Communities and Local Government (DCLG) and local authorities, in implementing the Strategic Environmental Assessment Directive. We will do this by encouraging people to consider soils when they are developing relevant policies, strategies and plans.
16. Work with Defra, WAG, industry, professional and trade organisations to develop and promote simple good practice guidance on the sustainable use and management of soil in development and construction.

So that we can continue to benefit from the services soils offer us in maintaining a healthy urban environment.

To protect human health and maximise the resource value of urban land.

So that soil can continue to provide a wide range of benefits for us in the urban environment because it has been taken into account in relevant policies and plans.

To make sure the best use is made of soil in the construction process and that the amount sent to landfill is minimised.

Understanding soil biodiversity

17. Work with Defra, WAG, other agencies and researchers to develop indicators and standards for soil biodiversity that can tell us what the state of a particular soil is and whether soils are being harmed.
18. Work with industry and researchers to determine the potential of biological approaches and methods in assessing and cleaning up soil contamination.

A better understanding of healthy soils will help us all to protect the essential roles and functions of soil organisms.

So that the best use can be made of land when it has been effectively cleaned up.

Improving the knowledge base

19. Collaborate on science in our research programmes to help us complete the actions in this strategy.
20. Work as part of the UK Soil Indicators Consortium to develop and test soil quality indicators that we can use to monitor the quality of soils.

So that our actions are based on sound science.

So that we can identify the most vulnerable soil types and functions and give them appropriate protection.

What will we do?

21. Work with others to make information on soil more accessible.
22. Publish an updated version of the state of soils in England and Wales in 2010/11 to help assess progress.

Working with government

23. Support the England and Wales governments to achieve their aims and objectives for soil.
24. Work with Defra and partners to achieve the actions in the First Soil Action Plan for England and then develop an appropriate soil strategy.
25. Work with WAG and partners to achieve the objectives in the Environment Strategy and develop and implement the Wales Soil Action Plan.
26. Help to identify and tackle future strategic soil issues for England and Wales.
27. Support Defra and WAG negotiate, develop and implement the actions in the European Soil Thematic Strategy.

Working with others

28. Welcome contributions from and seek opportunities to work with others who can help make improvements in the way we protect, manage and restore soil.
29. Encourage training and ongoing professional development programmes for soil advisors.

Improving the way we do things

30. Continue to improve the way we currently regulate activities relating to soil by focussing on environmental outcomes and target our resources on the priorities identified by our soil strategy. Within these areas of activity we will target higher risk activities, poor performers and areas where the results for the environment are the greatest.
31. Train our staff on soil issues to improve our regulatory and advisory activities.

Why?

So that land managers understand how best to manage the soil they are responsible for.

So that we can identify where things have changed and target future actions.

To develop a proportionate and consistent approach to soil protection.

So that soils can continue to provide the many services we rely on in England.

So that soils can continue to provide the many services we rely on in Wales.

To help to protect the many essential functions of soil into the future.

To help to promote soil protection across the EU states whilst taking account of the needs of the UK.

To share valuable experience, knowledge, data and resources so as to improve the way we protect, manage and restore soil.

So that we share experiences, knowledge and data and improve the way we manage soils.

So that our soils are managed in a sustainable way and that we obtain the maximum benefit from our regulatory and advisory activities.

So that soil issues can be taken into account in our day to day decisions.

Part 5 References

Good soil management plays an essential part in delivering a wide range of benefits for the environment and society. The actions we propose in this document will support the delivery of our ‘Creating a better place’

strategy. They will also assist in delivering a number of other objectives. The following table lists relevant documents and identifies which actions in our Soil Strategy will contribute to achieving their related aims.

Title, publisher and year of publication	Link to actions
Good Farming, Better Environment – The State of the Farmed Environment report. Environment Agency 2006	1, 2, 6, 8, 10–12, 24, 30
The Climate is Changing. Time to Get Ready. Environment Agency 2005	1, 2, 3
The State of Soils in England and Wales. Environment Agency 2004	All
Under ground, Under Threat. The State of Ground Water in England and Wales. Environment Agency 2006	All
Making Space for Water. Taking forward a new government strategy for flood and coastal erosion risk management in England. Defra 2005	6, 10, 11
Creating a Better Place for Wildlife. How our work helps biodiversity. Environment Agency 2006	7, 8, 10–12
A better place? The state of the environment. Environment Agency 2005	8–20, 23
The Environment Plan for Dairy Farming 2006	11
Recycling Organic Materials to land. Environment Agency Position Statement, 2007	10–12, 17, 19, 23, 26
Best Farming Practices: Profiting from a good environment. Environment Agency 2003	7–12
Delivering for the environment. A 21st century approach to regulation. Environment Agency 2005	7, 10–13, 16, 23, 26, 29–31
Communication on a thematic strategy for soil protection (COM(06)231). European Commission 2006	14, 18, 20, 21, 23, 25–27
Sustainable Drainage Systems policy. Environment Agency 2002	6, 8, 16
The land contamination framework policy state of contaminated land report. Environment Agency 2003	14
The UK Biodiversity action plan (BAP). HMSO 1994	17
Working with the grain of nature – taking it forward: Volume 1 & 2. A full report on progress under the England biodiversity strategy 2002-2006. Defra 2006	1–3, 17
Consultation on non-agricultural diffuse water pollution in England and Wales. Defra 2007	8
The first soil action plan for England: 2004-2006. Defra 2004	All
The Environment Strategy for Wales. Welsh Assembly Government 2006	1–3, 8, 10, 12, 13, 16, 23, 25
Groundwater protection: Policy & Practice. Environment Agency 2006	2, 4, 8–14

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