

Statement

SUSTAINABLE DEVELOPMENT AND THE NATURAL HERITAGE

The SNH approach

Policy Statement No 02/01

Background

1. The environment achieved a high profile on the international political agenda for the first time at the 1972 UN Conference on Human Development. The linkage between development and environment led directly to the publication in 1987 by the World Commission on Environment and Development of a report entitled '*Our Common Future*' (the Brundtland Report). This introduced the concept of 'sustainable development', targeted at the long term, and dealing with both environmental and developmental problems.

'Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs... in essence, sustainable development is a process of change in which the exploitation of resources, the directions of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations' (WCED, 1987).

2. This theme was taken further at the UN Conference on Environment and Development (the Earth Summit), held in Rio de Janeiro in 1992. The subsequent Rio Declaration provided a list of principles for the sustainable development of the world community, and the '*Agenda 21 - a plan of action for the 21st century*' led to agreement that all countries should produce national sustainable development strategies.
3. At the European level, the Amsterdam Treaty (1999) incorporated changes to the Treaties of Rome and Maastricht to ensure that sustainable development became a higher-level objective in all European policies. The European Union has agreed the principles of a Sustainable Development Strategy, and has approved a Sixth Environmental Action Programme (6th EAP) to focus attention on environmental priorities. The Environment Council has also issued Conclusions on the Sustainable Development World summit, Rio+10 in Johannesburg, which states that talks should focus on;
 - Protecting the natural resources base of economic/social development;
 - Integrating environment & poverty;
 - Linking globalisation with sustainable development;
 - Enhancing good governance and participation.
4. A UK Strategy for Sustainable Development was published in 1994 and updated as '*A better quality of life - a strategy for sustainable development for the UK*' (DETR 1999). In

Scotland the Government published *'Down to Earth'* (1999) outlining progress in sustainable development in Scotland.

5. A UK Commission on Sustainable Development was established in October 2000 with the task of advocating sustainable development across all sectors in the UK, reviewing progress towards it and building consensus on actions needed.
6. Through the *'Partnership for Scotland' Agreement*, in 1999 the Scottish Executive made a commitment to integrating the principles of environmentally and socially sustainable development into all Government policies. In 2000 a Cabinet sub-committee on Sustainable Scotland was established and is now chaired by the First Minister. The Scottish Executive published *'Meeting the Needs... Priorities, Actions and Targets for Sustainable Development in Scotland'* in April 2002. In a speech given in February 2002 the First Minister confirmed that sustainable development will comprise a major test for the government's spending review for the next four years. He also emphasised the need to address issues of environmental justice in Scotland as part of the sustainable development agenda.

SNH and Sustainable Development - "In a manner which is sustainable"

7. According to its founding legislation, the Natural Heritage (Scotland) Act 1991, the general aims and purposes of SNH are:

"to secure the conservation and enhancement of, and to foster understanding and facilitate the enjoyment of, the natural heritage of Scotland; and... (to) have regard to the desirability of securing that anything done, whether by SNH or any other person, in relation to the natural heritage of Scotland, is undertaken in a manner which is sustainable."

8. The 1991 Act introduced the word 'sustainable' into UK legislation for the first time. SNH's interests in sustainable development lie in the message it conveys about wise use of natural resources and in the belief that the quality of people's lives depends upon having a healthy and attractive environment as well as robust social structures and economic well-being. Our vision is that all activities that make use of or have an impact upon the natural heritage of Scotland should be environmentally sustainable. That is to say that they should not diminish the quality and value to people of Scotland's natural heritage, taken as a whole, and that its benefits and services will continue to be available to future generations in no less measure than at present.
9. SNH first outlined its approach to sustainable development and the natural heritage in 1993. Since then the concept has become widespread in use. Policy makers across social, economic and environmental fields are being encouraged to move towards a common agenda and this requires a common understanding of the principles involved. This guidance therefore updates SNH's 1993 report to provide further explanation of the principles of sustainable development and to identify mechanisms for the application of these principles to the management of the natural heritage.

Sustainable Development and the Natural Heritage

10. The Natural Heritage Scotland Act 1991 defined 'the natural heritage of Scotland' as:

"the flora and fauna of Scotland, its geological and physiographical features, its natural beauty and amenity."

This natural heritage is not limited to particular places or special areas. It exists also in the green spaces in and around settlements (parks, football pitches), and includes all the different kinds of countryside and coast. It is subject to change both naturally and in response to changing patterns of human use. Change needs to be guided by recognition that human well being in its broadest sense is ultimately dependent on the maintenance of our complex environment. We have a clear role as guardians to manage that heritage carefully and to pass it on to posterity, restored and enhanced where possible, so as to allow future generations the options that we ourselves have.

11. We rely on this natural heritage in a number of different ways.

- natural heritage includes the natural resources that provide us with our fundamental life-support systems - clean air, clean water, the food we eat, and genetic material. It provides 'services' such as the creation of the soil, the mitigation of flooding, coastal protection by the sediments accumulated, the means to dispose of waste, and contributes to regulation of the climate. We depend on these aspects of the natural heritage for our very survival.
- the natural heritage offers us opportunities for enhancing and enriching our lives. It comprises the landscapes and wildlife amongst which we live and take our recreation and relaxation. The natural world also contains information about our own evolution, history and current direction, as revealed by scientific investigation. Cultural and historical associations combine with this natural fabric and affect how we value different elements, and influence how we feel about change.
- Many livelihoods depend on the natural heritage - the cultivation and harvesting of crops, livestock, timber and fisheries, and the raw materials for industry. A high quality environment adds value to natural products, enriches people's lives and contributes directly to the economic benefits from tourism and recreation, and to the inward investment which follows from businesses moving to where people choose to live.

12. Each component of the natural heritage may have more than one of these roles. For example, our biological inheritance ("biodiversity") includes the microbes that cycle organic and inorganic materials, the species that comprise the habitats and landscapes of our countryside and coast, as well as breeds and varieties of commercial importance. New technologies are now starting to manipulate genetic material, change its usual combinations, and extend its life. Such steps to increase the economic benefits from biodiversity may impose risks to human wellbeing or to biodiversity itself. The actions we take in relation to biological diversity need to reflect the widest possible range of benefits.

Sustainable Development in Practice

13. In normal speech 'development' is often understood to refer to the process of planning and building of new housing, industry and infrastructure. Used in this way, it has connotations of physical change, usually associated with economic growth. However, where 'growth' is about an increase in *amount*, 'development' is about making things *better*, combining cultural, social, economic and environmental dimensions. Development, therefore, refers to the encouragement of changes which will benefit all aspects of people's lives, going wider than standards of living to include aspirations for more fulfilling lives for everyone, through stronger communities, deeper understanding, and improved surroundings.

14. The word 'sustain' means 'to uphold', or 'to keep (something) going'. 'Sustainable development' reflects concerns about the effects of pollution and resource use, and how our activities are ultimately dependent upon the environment. We have no choice but to live within natural limits, but there is no single blueprint for a sustainable future. Sustainability does not prescribe only a single set of policies, or a single set of actions. The essence of 'sustainability' is found not in any given project or activity, but in the sum of all activities, considered overall.
15. At a global level, sustainable development is conventionally understood as being about integrating social, environmental and economic objectives and recognising that they had *equal* legitimacy. Such an approach appears reasonable, even-handed and equitable; however, it must be seen within the overriding goal of ensuring that human society lives within the environment's limits.
16. Sustainable development is founded on the ethical principle that people everywhere, now and in the future, should be able to meet social and economic needs whilst protecting the environment. In practice, it has become associated with the management of *change*, and the way this should be negotiated and directed within and between countries so as to meet needs while safeguarding the things that are really important. It involves a broadening of conceptual frameworks : from the short-term to the long-term, from on-site to local, regional and global impacts and from sectoral interests to multiple stakeholders. Although the concept had its origins at an international level, sustainable development has implications at all levels - from the global to the local- in how people treat their environment, and how decisions are made which affect it.
17. SNH considers that all social, cultural and economic activities need to take place within agreed environmental constraints. There has to be, first and foremost, an understanding that plants, animals and humankind all fundamentally depend on the air, soils and water of soundly functioning ecosystems for their survival. Due weight therefore needs to be accorded to long-term stewardship of the environment. Without this, there will always be a high risk that long-term natural heritage interests (and often community goals as well) will be sacrificed for short-term economic gain.
18. Over and above the important stewardship of the environment in the interest of long-term survival, the natural heritage is increasingly recognised as fundamental to our lives. We should aim high – clean, attractive, productive and wildlife-rich cities, towns, villages, countryside, coasts and seas able to meet the needs of everyone for work, enjoyment and relaxation. Our decisions about the environment and planning for the future, including decisions about economic well-being which affect the environment, should focus on the need to maintain and enhance all these qualities.
19. It is SNH's view that sustainable development therefore requires a more unified approach within which the aims and activities of different sectors are linked and reconciled and which, whilst guiding social change and economic development, also maintains the integrity of ecosystems and the quality of the natural heritage. Such an approach should not obscure the differences between social, economic and environmental objectives but should enable all parties to be sensitive to each other's need. It should encourage new development that uses natural resources wisely and maximises social, economic and environmental objectives.

Guidelines for sustainable development as it relates to the natural heritage

20. SNH has established the following five broad guidelines for sustainability and the natural heritage as a basis for our own actions and advice to others. These guidelines are strategic, and relatively 'high-level'. They are concerned with ensuring that society's use of and impacts on the natural heritage are sustainable.

Guideline 1: Sustainable Use

Non-renewable resources should be used wisely and sparingly, at a rate that does not restrict the options of future generations.

21. Modern society relies upon a number of resources which are either irreplaceable (minerals, fossil fuels) or which replace themselves very slowly relative to human timescales (peat, etc). We should treat non-renewable elements with care, respecting the need for future generations to draw upon them for utility, scientific understanding, recreation, enjoyment and quality of life in the same way that we do.
22. The natural heritage is also a valuable asset in its own right. The 'web of life' - of which we are part - depends ultimately on the variety and variability of genes, species, populations and ecosystems. We should also use it wisely: for instance by not allowing species to approach extinction, as they are irreplaceable. The same approach also applies to geological features of scientific interest, landscapes of great aesthetic appeal, or other 'natural' qualities such as tranquillity or wildness, which once lost, are unlikely ever to be recreated.

Guideline 2: Carrying capacity

Renewable resources should be used within the limits of their capacity for regeneration.

23. Natural cycles turn inorganic minerals into living tissue, reassemble living tissue through food chains, and break down waste materials into inorganic minerals again. Biological and physical processes between them break down organic pollutants, recycle clean air and water, create the soil, regulate the climate, and govern the movement of water and sediments. We are able to utilise these cycles and processes to our own benefit. However, there are natural limits in each case. It is possible for us to exhaust or erode the soil, over-harvest fisheries or forests, cause pollution beyond the capacity of the surrounding area to degrade it, build on river floodplains in ways that cause flood-damage, or change the climate. Living within the carrying capacity of the ecosystem in this way is therefore an overarching constraint for the whole of humankind.
24. The natural heritage also has capacity limits in the extent to which it can be modified or utilised without diminishing its overall diversity and natural beauty. Accumulated development can change landscape character. Land use changes can make species and habitats of nature conservation interest locally extinct. Different landscapes, species and habitats vary in their sensitivity to different scales, types and designs of development. The capacity of areas to absorb visitor pressures also varies. Staying within carrying capacity means not detracting from the variety and quality of the natural heritage, taken overall.

Guideline 3: Environmental quality

The quality of the natural heritage as a whole should be maintained and improved.

25. The quality of the environment is important for a number of different reasons: utilitarian, aesthetic, scientific and economic. To maintain its utilitarian value, we need to maintain the productivity of natural ecosystems. The lessons of climate change and acidification, flooding in river catchments, and the presence of persistent pollutants, are that we need to maintain the natural functions of the environment, and restore them where they have been interrupted.
26. The natural heritage makes a very important contribution to our personal well being, through its aesthetic qualities, tranquillity and recreational opportunities. It provides inspiration, health, challenge, and fulfilment, contributes to the Scottish sense of identity and is the foundation of powerful cultural links with the land and sea.
27. Scientific study of the natural world gives insights into evolution, the ways in which we depend upon our environment, and how our surroundings have changed over time. This kind of knowledge has practical implications, as well as helping everyday understanding and appreciation, and giving depth to local history. We therefore need to safeguard the most important places for study and education.
28. The natural heritage is also important economically. It is one of Scotland's main tourist attractions, with most visitors saying it is an important reason for coming. Tourism supports some 8% of the Scottish workforce. The natural heritage also supports jobs in industries such as whisky and salmon whose reputations and products depend upon the quality of the natural surroundings and its resources. The quality of our environment also helps to attract inward investment.
29. In all of the above ways a high quality environment brings real benefits. These qualities can be eroded or enhanced, but eroding them risks losing them for all time. Enhancing them, on the other hand, leaves a legacy for future generations. There is good reason to believe that as society becomes materially better off, the value that it places upon a high quality environment will increase yet further.

Guideline 4: The Precautionary Principle

In situations of great complexity or uncertainty the precautionary principle should be applied

30. Scientific uncertainty is common in environmental decision-making. Ecosystems are complex and dynamic, and do not have clear boundaries. Long-term changes are difficult to predict, and chance events are a fact of life. Ecology is also a developing science, still with limited predictive capacity. Experimentation and data gathering may be too expensive, difficult, or time-consuming to fit within decision-making timescales. Existing environmental assessment procedures tend to assume that impacts can be quantified, and hence outcomes evaluated: uncertainty tends to be played down. Against this background, the precautionary principle acknowledges the need to make decisions in situations of uncertainty. SNH interprets this principle to mean that 'full scientific proof of a possible adverse environmental impact is not required before action is taken to prevent that impact'.
31. SNH favours precautionary approaches that consider in advance alternative development options and their potential impacts, and seek to reduce sources of uncertainty where this is possible. SNH recommends a step-by-step procedure to decide firstly *whether* a precautionary approach should apply, by confirming a reasonable causal link between the

proposed activity and significant risk to nationally or internationally important natural heritage. *What form* a precautionary approach might take then depends on circumstances. Where development is of a kind which lends itself to modification, and where the lessons of monitoring can confidently be acted upon, SNH recommends an 'adaptive' approach to monitor the initially-uncertain impacts, and refine the development if it proves to be damaging in practice. Alternatively, if there are risks to the natural heritage but the requirements to minimise them to an acceptable level cannot be met, a 'strict' approach is recommended in which the development should not take place. More detail on this approach is described in SNH's booklet '*Applying the Precautionary Principle to decisions on the natural heritage*' (2000).

Guideline 5: Shared benefits

Decisions about development need to look for a more equitable distribution of costs and benefits (material and non-material).

32. The environment is not uniform. Its appearance, the life that it supports, and its potential to support economic activities vary widely from place to place. Overlaid on this natural geographical variation are the exigencies of human activity and different kinds of economic development. The needs of human society also vary over space and in time and as a result, the ability of the environment to meet society's expectations varies hugely with place and time.
33. Social and economic development and the environment are heavily interdependent. Many activities undertaken for economic production or trade have an impact on the quality of the environment. Such impacts may be adverse, through pollution, use of resources, creating unattractive landscapes or reducing biodiversity; or they may be beneficial, in creating attractive farmland or woodland landscapes. In turn, action to safeguard species or special areas of high environmental quality may have impacts on the opportunities for social and economic development. These impacts, too, may be adverse, in constraining forms of development which are inappropriate in areas valued for their outstanding natural environment, or in requiring higher design quality, or beneficial, for example in fostering economic opportunities from tourism and recreation.
34. The principle of shared benefits is that these costs and benefits should fall *fairly*. Where constraints outweigh benefits, special redistributive measures may be needed to ensure that affected communities have a share in the wider public benefit. Sustainable development recognises that if the disparities between those who enjoy the benefits and those who pay the costs becomes too large, they lead to tensions which are to the detriment of all. This relates to both spatial management of environmental change within our own generation, and in relation to the legacy we bequeath future generations.
35. In a speech given on 18 February 2002, the First Minister identified the biggest challenge of the 21st century as that of finding ways of combining economic progress with social and environmental justice. He identified the importance of addressing the needs of those in Scotland who daily cope with the cumulative impacts of living in degraded environments. Such action needs to be achieved within a sustainable development framework, through planning, regulatory and commercial decisions tied to societal definition of more equitable standards and commitment to more efficient use of resources.

Delivery Mechanisms

36. SNH has identified seven delivery mechanisms to assist in the translation of the guidelines into everyday policy and practice. These are set out below and together with

the strategic guidelines outlined above, will provide the framework for SNH's own action programme.

Delivery mechanism 1: Environmental appraisal - anticipating the effects of our actions on the natural environment

37. It is important that all aspects of development and land-use are scrutinised for their effects upon the environment. Decision-makers and developers need to anticipate the consequences of their choices for the environment, and to be able to guide action to recover losses where damage occurs. The benefits of this approach for the natural heritage are being increasingly recognised as experience has grown in undertaking environmental appraisal of many kinds of development proposals. In addition, there is a need to consider further the design of many developments in terms of the sourcing and type of materials employed; the potential for reuse and recycling; the requirements for energy and water during both construction and use; and the functional longevity of the development.

Example SNH's assessment of the original proposal for a windfarm at Beinn an Tuirc on Kintyre was that it threatened an eagle pair towards the southern edge of its range. Following negotiations, the developer, Scottish Power, agreed to move some of the turbines, and undertook a major habitat improvement scheme on adjacent land in order to allow the development and the eagles to coexist.

38. Environmental appraisal is also necessary at all levels of policy making. Policy frameworks relating to land and sea use, transport, energy, and enterprise need to guide overall development objectives so that they favour the types of development which minimise resource use, reduce pollution and safeguard valued elements of the natural environment. The strategic environmental and sustainability appraisal of policies, plans and programmes can therefore have an important role to play in the development of more environmentally sensitive planning frameworks, and also in identifying a range of policy options which bring social, economic and environmental benefits.

Example Scottish experience in the use of strategic environmental and sustainability appraisal has grown quickly in recent years. The approach has now been used to review plans and strategies in the proposed area of the Loch Lomond & the Trossachs National Park, to inform the development of the local planning framework for Clackmannanshire and the Highland and Islands Objective 1 regional development programme; and in the appraisal of Government's transport policies and programmes. In each case, the use of these appraisal methodologies has led to the adaptation of the policies, plans and programmes, and also to a greater understanding and ownership of the environmental constraints and opportunities that may exist.

Delivery mechanism 2: Rethinking policy processes - approaches to policy making need to be better integrated and should have the environment at their centre

39. Securing the wise use of natural resources and identifying development choices that maximise social, economic and environmental benefits requires a more integrated approach to policy making. Nationally, joined up thinking within government is essential and may require the development of new administrative priorities, structures and ways of working within the Scottish Parliament, the Scottish Executive and its agencies. In the same way that SNH has statutory 'balancing duties' for social and economic interests,

public bodies undertaking social and economic functions should be required to take more tangible account of the impacts of their activities on the environment.

Example: Scottish National Parks have statutory aims to (i) conserve and enhance the natural and cultural heritage, (ii) to promote the sustainable use of natural resources, (iii) to promote understanding and enjoyment by the public, and (iv) to promote sustainable social and economic development of the area's communities. The National Park Authority has a statutory purpose to ensure the collective and co-ordinated delivery of the four aims. This is a highly integrated remit, but one which also secures the conservation of the outstanding natural and cultural heritage for which the Park is designated.

40. Greater policy integration is also required between local, national and more global perspectives. Local priorities for economic well being have to be achieved in ways that are sensitive to global concerns about resource utilisation and climate change. National and global priorities such as climate change and biodiversity conservation have to be delivered on the ground in ways that are sensitive to local needs. A range of approaches is therefore required at a number of geographical scales – international, national, regional or local. Such approaches have to be compatible and enable priorities to be met at other levels. Each plan should guide development decisions at its own level, but should also be informed by, and in turn guide, decisions made at other levels.

Example: Concern over climate change and the recognition that global action would be required to tackle the cause of it led to the development of the UN Convention on Climate Change at the 1992 Earth Summit. This sets targets for countries to reduce emissions of green house gases by 12.5% below 1990 by 2008-2012. The UK has subsequently adopted a tougher national target – to reduce CO2 emissions from all sources by 20% below 1990 levels by 2010 - and to achieve this the Government aims to achieve 10% of the UK's energy needs from renewable sources by 2010. In Scotland this target is 18% by 2010. However, the First Minister has more recently announced the intention to consult on a target of 30% of electricity in Scotland from renewable sources by 2020. To reach this level of provision without causing significant damage to natural heritage interests, it is recognised that a positive and planned approach will be required both nationally and at the local level.

41. At the same time, policy integration is required between the various spatial planning and regulatory frameworks that collectively guide the form, location and scale of development opportunities within specific places. The appropriate boundaries for making different decisions may vary. Decisions about river hydrology and ecology may be best taken at a catchment level, while decisions about landscape are best taken on the basis of landscape character areas, and decisions about transport and town planning on the basis of travel-to-work areas. The boundaries of these areas will not be identical but may often overlap, therefore the aims of each framework should be complementary and the policies in each should inform the other.

Example: Following an outbreak of blue-green algae in 1994 a number of bodies collaborated to draw up a Management Plan for the Loch Leven catchment. This catchment plan has heavily influenced the finalised Kinross Area Local Plan (2001) by directing housing development towards areas of Kinross-shire not within the Loch Leven catchment, and by reducing the housing forecasts within the catchment compared with proposals in the Structure Plan.

Delivery mechanism 3: Getting the signals right - incentives and fiscal signals need to work for the benefit of the environment

42. Business decisions about investment, or about the sourcing of raw materials and the disposal of wastes, or about choices of land and resource management, are all guided in large measure (though not exclusively) by how much they cost. The personal decisions we make as consumers are also heavily guided by prices. These economic signals do not necessarily capture all the factors that are relevant to improving human welfare. They often ignore the impact on common environmental resources that are not 'owned' in the traditional sense. Where prices do not reflect environmental considerations, we are unlikely to act in the best interests of the environment.
43. Only Government, through subsidy, regulation, or taxation, has the capacity to ensure that adequate weight is given to these factors. In many cases it already does so, but there are also examples of incentives which run counter to environmental objectives. In the past, some incentives to encourage particular forms or locations of farming or forestry have had detrimental impacts upon the environment. Further steps need to be taken to design economic signals so as to penalise environmental 'bads' and encourage environmental 'goods'. It is essential that basic environmental standards should be achieved before governmental financial incentives are available to recipients.
44. There is a danger that new taxes that penalise environmental 'bads' may fall disproportionately on lower income groups. Alternatively they may bear more heavily in certain locations: for example a fuel levy could weigh disproportionately on areas without public transport. This is not a reason to avoid such measures but to use them where they help reflect a truer cost – financial *and* environmental – in the price of goods. Better environmental practices of this kind have the potential to benefit all sectors of society. However, ways have to be found to avoid adverse social effects through exemptions or redistributive measures.

Example Along with the climate change levy, the aggregates tax is a significant green tax proposed by the UK Government to reduce resource use and polluting patterns of production and consumption. To be introduced in 2002, the aggregates tax is aimed at tackling the environmental costs of quarrying and encouraging the use of recycled materials. It has been introduced following government commissioned research which concluded that there are significant local environmental costs associated with the extraction and transport of aggregates, including noise, dust, vibration, loss of biodiversity and amenity and visual intrusion. While some of the tax revenues will be returned to business through a cut in employer NICs, the introduction of the tax has raised concern in Scotland over its impact on smaller quarry operators and this will need to be carefully monitored. There is also strong case for putting some of the money raised by the tax into environmental enhancement measures in and around quarries in Scotland, as has been proposed in England.

Delivery mechanism 4: Raising awareness, and changing lifestyles

45. Although price is important, it is not the only influence on the daily decisions we take which can affect the environment (favourably or adversely). Decisions about where we live, how far we will commute to work, the goods we buy and where they come from, where and how we take our leisure, are also guided by personal 'lifestyle' choices. It is possible to lose sight of common environmental consequences as we pursue short-term individual goals of a higher standard of living, or a more convenient, attractive, or mobile lifestyle.
46. As consumers, and as citizens, we need to be guided by aspirations that are framed within the bounds of what is environmentally possible. Education offers us the opportunity to learn about the natural heritage and about how our actions may affect it, directly and indirectly, but it must also foster an ethic of stewardship. Through this we will begin to 'own' responsibility for our impacts upon the environment and to understand how long term self interest for generations yet to come and environmental protection are aligned. Political action also follows public understanding: it is only as that awareness increases that governments become able to take some of the necessary steps towards sustainability.

Example Well-targeted awareness raising campaigns together with the provision of practical alternatives can make a real difference to people's behaviour. Examples include the Water Authorities' "Think before you flush" campaign in the late 1990s (which reduced waste flushing of household items in targeted communities by 50-85%), the green travel plans being produced by companies to influence the transport choices of their workforce, and the award scheme to encourage the introduction of environmental management systems into Scottish Schools. The latter encompasses a broad range of environmental impacts, and promotes individual as well as collective responsibility for their management. The process involves making changes to the way the school is run, as well as looking at the effect these changes have on the community.

Delivery mechanism 5: Working in partnership

47. Everyone has an interest in ensuring that the natural environment can meet our needs in the longer term. Achieving a more sustainable future therefore requires the development of new forms of governance that encourage greater stake-holder involvement in policy making, including more opportunities for communities to be actively involved in decisions which affect them. Public bodies need to work closely alongside each other, to identify common goals, to promote synergy and minimise opportunities for conflict. Public bodies also need to work closely alongside other stakeholders in business and civil society, to

help ensure that the delivery of policy is sensitive to the needs of others, and that public objectives for the environment are shared with other stakeholders. Such an approach may require investment in staff skills and more open ways of working. It also may require capacity building with stakeholder groups, particularly at the community level. However, the rewards are potentially large. Partnership working develops trust, understanding, and an awareness of mutual responsibility through a process of dialogue, negotiation and cooperation. It provides the basis through which multiple benefits can be achieved.

Example: There are now a number of examples of effective partnership working in Scotland. On each of the major Scottish Firths, partnership 'fora' have been established to steer the management of future change and development. For each firth, strategies have now been drawn up to tackle a range of issues ranging from conservation and coastal erosion through to fishing and oil and gas development. Another notable example of partnership working involving local authorities, public bodies and private interests includes the Access Forum. During the last ten years, this forum has managed to achieve considerable consensus between land managing and recreational interests which has paved the way for a new approach to access in Scotland. In 1996, it produced the Access Concordat for Scotland's hills and, in 1998, the proposals for reforming the law of access.

Delivery mechanism 6: Good science - monitoring and managing environmental change

48. An important part of good decision-making is doing the right thing by the environment, so that the biosphere is able to support humankind in the long term, and also provide the quality of life that we now expect. This requires good - and widely shared - information. Science is an important tool to help in interpreting issues to allow societal decisions to be made. It is important in understanding environmental change, especially issues such as climate change, acidification or ozone depletion. However, uncertainties remain on many of these issues, and there is a need for clear scientific explanation, advice and application in management. This should build as wide as possible a consensus on significant trends and explore the actions that are necessary to address issues, while also acknowledging the limits of knowledge.

Example: The MONARCH project is a UK-wide research project set up to assess the impact that future scenarios of climate change may have on species and habitats. The project is funded by a wide range of nature conservation bodies, including SNH. The first part of the project has been published, which outlines shifts in specific species distributions. The second phase will consider whole ecosystems. It is expected that the conclusions reached by this research will have implications for future conservation policy in Scotland.

49. Together with social and economic data, scientific monitoring of the environment reveals trends and can be the foundation of indicators to measure progress and trigger action for sustainable development, both locally and nationally. The selection and range of indicators is fundamental to measuring progress on sustainable development. The suite developed should encompass economic, social and environmental components. Because of the need to reconcile local, national and global perspectives, it should also allow for comparison of trends and progress between different places.

Example 'Quality of Life Counts: indicators for a strategy for sustainable development for the United Kingdom: a baseline assessment' was published in 1999 by the UK Government. This report identified 14 'headline' indicators to give a broad overview of trends; and outlined a set of about 150 indicators to focus on specific issues and to identify areas for action. The headline indicators include emissions of greenhouse gases, rivers of good or fair quality, populations of wild birds, new homes built on previously developed land and waste management. The UK government has set targets for some of these headline indicators – for example reductions in greenhouse gas emissions and the proportion of new homes built on previously developed land. Progress is to be reported annually. The Scottish Executive has initially adopted a set of 24 indicators as set out in its publication 'Meeting the Needs...Priorities, Actions and Targets for Sustainable Development in Scotland'. The usefulness of these indicators will be reviewed in 2003.

Delivery mechanism 7: Thinking long-term

50. In our complex and crowded society people have all sorts of different ambitions for the future. Such ambitions usually revolve around day-to-day decisions concerning families, employment opportunities, a good standard of living, and fun. As a result, it is often difficult to think about the longer changes that are occurring – be it to the economy, to our society or in the environment that surrounds and sustains us – and which need to be addressed through actions over many years. Too often, policy making for the long term is constrained by short-term political objectives or because of a lack of informed discussion over the direction and implications of changes to the way we live.
51. If we are to address many of the sustainability issues we now face, we need to become better at thinking long-term, and in creating a shared vision of the kind of world we want to progress towards. Government and its agencies, both locally and nationally, have a key role to play in facilitating such discussion and in showing effective leadership in its development. In taking forward such thinking, there will be many possible options, but there is also one essential constraint – the finite resources of our planet.

Example: Through *Natural Heritage Futures*, SNH has now set out long-term goals for the natural heritage. As part of this programme, prospectuses have been drawn up and consulted on for twenty-one distinctive natural heritage areas across Scotland. Each prospectus seeks to identify the present trends in the natural heritage of that area, the forces of change acting upon it, and the opportunities that exist for it to be better cared for and enhanced as part of a 25 year vision for its future management and use. Each prospectus covers one or more local authority areas and will provide useful material to inform the preparation of Local Agenda 21 documents, community plans, development plans and other strategies.

Implications for SNH's Work

52. The SNH guidelines for the implementation of sustainable development together with the development and adoption of delivery mechanisms identified in this paper have a number of implications for SNH's own work programme and for the management of the natural heritage. These implications are outlined below.

Implementation of SNH Guidelines

53. In relation to developments that impinge upon **non-renewable natural resources**, SNH shall:
- advocate alternative ways of meeting needs, such as recycling and reuse, and substitution of renewable resources for non-renewable ones;
 - advocate technological changes with the potential to reduce use of environmental resources ;
 - advocate efficient use of resources;
 - identify approaches to safeguarding valued aspects of the natural heritage which are difficult to replace; and
 - keep its own use of natural resources on a downward trend.
54. In relation to the development of **renewable resources** within their carrying capacities, SNH shall:
- advocate that the harvesting of renewable resources, such as fisheries, forestry and agriculture should take into account the ability of the ecosystem to maintain levels of yield in the longer term;
 - advocate that pollution should only occur within the capacity of the system to absorb it, without having a significant impact upon valued features of the natural heritage, or upon health or enjoyment of users; and
 - develop and publicise improved understanding of capacity limits in relation to environmental services and the natural heritage.
55. In working to maintain the **quality of the natural heritage** as a whole, SNH shall:
- raise awareness of the value of the natural environment as an amenity, for recreation and enjoyment, and for its contribution to the quality of life;
 - seek to demonstrate (and when possible quantify) the economic value of the natural environment;
 - encourage investment in the natural heritage resource, and highlight opportunities for restoration where it has been damaged; and
 - press for development and land use change to be undertaken in a way that safeguards and enhances the variety and quality of the natural heritage.
56. In addressing uncertainty, **SNH shall:**
- recommend a precautionary approach to developments that could cause significant damage to valued natural heritage resources; and
 - encourage changes to legislation and policy that allow for adaptive approaches to development to be more actively considered.
57. In achieving a more **equitable distribution of costs and benefits**, SNH shall:
- call into question activity which imposes undue environmental costs on one group, while benefiting another;

- seek reasonable compensation for such costs for affected communities, where the development is seen as necessary in the wider public interest;
- resist damage to environmental assets of public importance; and
- press for greater resources to be made available to communities in areas of high natural heritage value when this is required to facilitate the necessary quality required in development and land use.

Development and Adoption of Delivery Mechanisms

58. To **anticipate the effects of our actions on the environment**, SNH shall:

- advise on the natural heritage impacts of development and land-use proposals;
- encourage strategic environmental assessment and sustainability appraisal of policies, plans and programmes for their effects upon the environment;
- encourage new approaches to the assessment of environmental impacts and their consideration within design processes; and
- advise on schemes for monitoring and evaluating environmental change.

59. To secure better policy integration and ensure that the **environment is at the centre of policy and practice**, SNH shall:

- encourage national and local policy makers to consider the environmental dimensions of their policies, and seeks changes to existing governing priorities, structures and ways of working where necessary to achieve this;
- press for a responsibility to have regard to the need for environmental sustainability within the duties of all public bodies;
- seek to deliver its executive functions in ways which are sensitive to the social and economic needs of those affected; and
- promote strategic approaches and more integrated policy frameworks which actively facilitate development and land-use that is least likely to have an adverse effect upon valued elements of the natural heritage, and most likely to deliver multiple benefits;

60. To encourage the development of **incentives and fiscal measures for environmental benefits**, SNH shall:

- advise on situations where economic signals encourage activity which is detrimental to the natural heritage, and advocate appropriate reform; and
- seek best use in any environmental funds that arise from these fiscal measures.

61. To support **education for sustainable development**, SNH shall:

- work to raise awareness of the natural environment and to increase knowledge and understanding of the processes of change affecting it; and
- seek to broaden public understanding of the way individual behaviour affects the natural environment, working through both formal and informal education opportunities.

62. To facilitate **effective partnership working**, SNH shall:

- look to work in ways which facilitate co-operation, negotiation and consensus, where possible, with all relevant interests in Scotland: public, private, and voluntary organisations and individuals; and.
- develop its understanding of the issues facing other organisations and stakeholders and build capacity both among its staff and these groups to participate effectively in such partnerships.

63. To provide a **rigorous scientific basis for decision making**, SNH shall:

- set an example in the rigour of its own science;
- recognise the diversity of factors at play which influence the natural heritage, and the range of interests to be taken into account;
- accept the onus to explain in clear terms the findings of its work to others, and to make clear the limits of their understanding in certain areas; and
- develop its approach to monitoring and evaluation of environmental change in order to measure progress and trigger action for sustainable development.

64. To champion the development of a **long-term and integrated view**, SNH shall:

- support the Scottish Executive and other public agencies in playing a key role in facilitating discussion on such thinking and in showing effective leadership in its development;
- contribute to the Local Agenda 21 and Community Planning process to help develop a vision for the sustainable development of local areas which takes account of the need for stewardship of natural heritage resources; and
- seek the implementation of the 25-year vision for Scotland's natural heritage set out in *Natural Heritage Futures*.

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