

SNH's climate change commitments – towards a nature-rich future



Scottish Natural Heritage
Dualchas Nàdair na h-Alba

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Climate and nature have been in a marriage for more than three billion years. Major shifts in climate and nature are not unusual in the geological record, but, the rate of the current shift is both unprecedented and phenomenal.

By working with nature we can help moderate the changing climate – and through a more stable climate, we can sustain a far healthier and more resilient environment.

*Francesca Osowska
Chief Executive
Scottish Natural Heritage*

Chair's foreword

Scottish Government has declared a climate emergency and we support the commitment for urgent action to transform how we live and work.

The rate of global change in nature during the past 50 years is unprecedented in human history. For terrestrial and freshwater ecosystems climate change is having a direct impact BUT it is also exacerbating the impact of wider land use change and drivers of biodiversity loss, as set out in painstaking detail in the recently published IPBES Global Assessment Report on Biodiversity and Ecosystem Services.

In order to cut greenhouse gas emissions in line with Scotland's world-leading targets, policies need to change and powers and resources align across the public, private and voluntary sectors. Throughout this collective action we need to ensure this is a just transition that provides jobs, dignity and opportunity for everyone, and be mindful that we don't simply export impacts to other countries.

Our Commitments represent one stage in this process of continued transition for SNH. It's no accident that the first Commitment is about changes in the way Scotland's land is used. It is here that there is greatest potential for using nature to reduce net emissions, and the UK Committee on Climate Change has stressed Scotland's greater opportunities to store carbon. As a landowner myself, I'm well aware of the multiple demands on land but also the tremendous opportunity to provide multiple benefits for people and nature.

Addressing the Climate Emergency requires action at all levels, from the highest policy to the actions of communities and individuals. In this document we highlight how we will accelerate our action as well as expand our support for communities to cope with and adapt to climate change.

Like so many others I'm inspired by the global activism of young people. The full effects of today's emissions will only be felt by future generations. I welcome the ongoing input of SNH's Young Employee Panel to planning our climate change work. We will continue to draw on the commitment and enthusiasm of staff right across the organisation, and where appropriate help them develop skills in climate solutions, as the Government's Climate Emergency Skills Action Plan is rolled out.

A nature-rich future with sustainable use of the sea and land is essential for the transition to a Net Zero-emission economy and to adapt to our warming climate. Nature-based solutions deliver such a wide range of environmental and social benefits that this is a cost-effective and compelling approach. SNH stands ready to play its part in supporting the transformation so that Scotland can meet the exacting targets set by Government and will ensure we achieve net zero greenhouse gas emissions by 2045 – at the latest.



Mike Cantlay
Chair

Headlines

Changing use of the land

We will work with Scottish Government and partners in transforming land-use policy and incentives, and promote habitat expansion, to support nature-rich and resilient landscapes that contribute to net emissions reduction.

Changing use of the sea and coasts

We will further develop policy and practice on maintaining and enhancing the carbon storage capacity of marine habitats, using Marine Protected Areas as pilots and exemplars, and promote adaptation to climate change through marine and coastal nature.

Tackling climate-change effects on native habitats and species

We will expand action to help Scotland's wildlife cope with climate change, developing approaches to protected area conservation. We have to focus on areas that best cope with global change, for some areas that means restoration and for some areas that means adapting to changes out with our control.

Supporting climate-resilient communities

We will help direct green infrastructure investment, and prioritise our advice and guidance on placemaking, to support low-carbon communities that can adapt to the effects of climate change.

Enabling new development that helps address climate change

We will work with partners on ensuring that new development and infrastructure enhances nature to assist the transition to Net Zero and to promote resilience to climate change.

Managing SNH's own emissions and sequestration

We will lead the way as a Low Carbon organisation, moving our activities towards Net Zero, and enhancing carbon storage and sequestration on land we own or manage.

Introduction

Scotland's nature is among the country's greatest assets. Nature gives us food and drinking water, energy and timber. It contributes to a clean and healthy environment and our iconic landscapes, and improves our well-being and quality of life. Nature is also our greatest insurance against climate change.

Climate and nature have been intrinsically linked for more than three billion years, experiencing many major shifts over that time. But the current rate of change is unprecedented. It is also accelerating as human-induced greenhouse gases build up in the atmosphere, trapping heat.

Climate change presents the single greatest threat to Scotland's nature, but we can use **nature-based solutions** to help realise three interlocking benefits¹:

- **reducing net emissions** – contributing to global efforts to moderate future climate change.
- helping our society and economy **adapt** to climate change we are already locked into.
- contributing to **addressing the global biodiversity crisis**, with habitats and species threatened not only by climate change but also by changing use of land and sea, direct exploitation, pollution, and invasive non-native species².

By seizing this triple opportunity we commit to placing nature at the forefront of responding to the challenge of the climate change emergency. Realising this 'win-win-win' through management of the land and sea will yield multiple benefits for people. At the same time, connecting people with nature will help ensure our behaviours, attitudes and lifestyles take account of impacts on climate change and nature.

This document frames our refreshed approach to climate change. SNH has delivered climate change actions for many years, but in responding to the climate emergency, our Commitments focus on expanded and new areas of activity. Within the following six themes we introduce key examples of that work.

Our Commitments are not restricted to only those things which SNH can deliver alone or can lead on. Many will require us to work closely with others and in some cases this will require a step-change in the degree of collaboration, organised around the Place Principle³, Regional Land Use planning, Community Planning Partnerships, and marine and terrestrial planning.

1 The role of nature in both emissions-reduction and adaptation means our work helps to deliver both Scottish Government's **Climate Change Action Plan** and the **Scottish Climate Change Adaptation Programme**.

2 See the **IPBES Global Assessment Report on Biodiversity and Ecosystem Services**.

3 The **Place Principle** states "All those responsible for providing services and looking after assets in a place need to work and plan together, and with local communities, to improve the lives of people, support inclusive and sustainable economic growth and create more successful places."

1. Changing use of the land



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The transition to Net Zero will require radical changes in how we use Scotland's land.

The Net Zero report⁴ published in May 2019 estimates that 20% of the UK's agricultural land must be transformed to uses that maximise carbon storage. This is to compensate for unavoidable emissions in other parts of the economy. Scotland has proportionately greater potential for emissions removal through afforestation and woodland regeneration, so can adopt more ambitious targets. Expanding woodland with a diverse structure and mixture of species not only provides maximum biodiversity benefit, but also promotes more secure carbon sequestration as it is more resilient to the changing climate.

Farming has a strong role to play in reducing emissions and in helping society adapt to climate change. Agricultural practices and systems that reduce the use of resources, by combining ecological principles with modern technology, are very important. Expanding and creating habitats on and around farmland, in both cropped and non-cropped areas, reduces climate-change risks to farmers and wider society, while also sequestering carbon.

As key examples of work to be developed, we will:

- Work with Scottish Government to ensure that the design and delivery of new rural policy and funding enable the land management sector to maximise emissions-reduction, be climate resilient and support a healthy environment. Alongside this, we will work with farmers, crofters and land managers to promote high-nature, low-carbon, resilient farming.
- Help maximise carbon storage and adaptation benefits on the 80% of peatland still in need of restoration, by scaling up our Peatland Action programme, helping to develop clear guidance on wildfire prevention and resilience, and supporting Governments in their commitments to stop the use of peat for horticulture.
- Promote transformations in land use through landscape-scale restoration, expansion and connection of native woodland and other habitats. This will include significant changes to management of deer and livestock. Further work to understand and map natural carbon budgets will underpin robust targeting of locations. This will maximise both carbon storage in habitats, and adaptation benefits such as the role of healthy wetlands in reducing flooding. We will work with partners to fully realise the role of protected areas as hubs of biodiversity in these ecological networks.

Farmland and farming are very important in shaping the Scottish landscape for a nature-rich and diverse future. Hedges provide food and shelter for birds, butterflies and mammals, and act as wildlife corridors, helping animals to travel safely through open farmland.

2. Changing use of the sea and coasts

A close-up, underwater photograph of a kelp forest. The frame is filled with long, dark green and golden-brown kelp fronds. A single, large, reddish-brown leaf, possibly from a nearby plant or a fallen tree, rests prominently in the center-right. The water is slightly hazy, with small particles visible.

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The ocean is the earth's largest carbon sink, but we are still in the early stages of understanding its 'blue carbon' habitats. These include the sediments in our sea lochs and firths, habitats formed by animals or plants – such as kelp forests, maerl, mussel or native oyster beds - and coastal saltmarsh. When these habitats can function naturally within healthy ecosystems, they not only contribute to emissions reduction but also help human activities on our seas and coasts to adapt to climate change.

Threats to blue carbon habitats include damage and disturbance from human activities as well as some of the predicted effects of climate change, such as increased storminess, warmer temperatures and acidification. Further research and monitoring is needed to help ensure future decisions are made in ways which maximise the blue carbon benefits.

As key examples of work to be developed, we will:

- Increase support for the Scottish Government's Dynamic Coast project, ensuring Scotland's public bodies and coastal communities can increase the resilience of coastal habitats that form 'natural flood defences', and better plan for the £13bn of coastal assets protected by those habitats.
- Further develop management planning for Marine Protected Areas to protect and enhance habitats that are most efficient at storing carbon.
- Produce guidance on protecting and maximising blue carbon storage in marine and coastal habitats more widely, based on targeted new research.

More carbon is captured and stored in Scotland's sea lochs alone, than our land (e.g. trees and peat) - the carbon storage in Scotland's marine sediments alone equates to 52% of Scotland's 2011 carbon emissions. Protecting marine life through our network of Marine Protected Areas also helps to combat climate change.

3. Tackling climate-change effects on native habitats and species



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We are rightly proud of our rich terrestrial and marine environment, but climate change is directly affecting habitats and native species. It is interrupting cycles of life, including breeding success, survival and abundance.

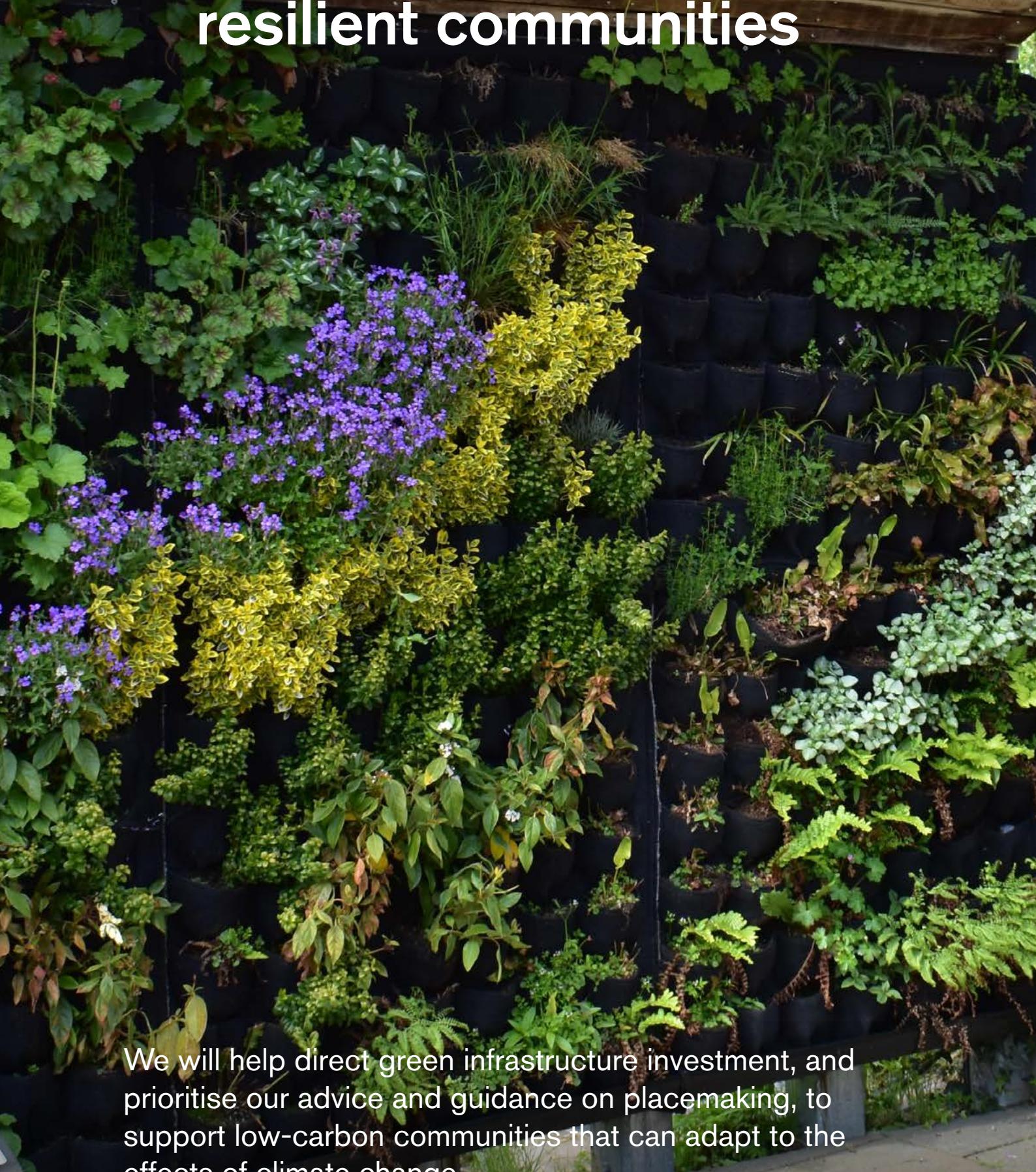
Climate change can accelerate the loss of biodiversity by worsening other pressures on habitats, including the spread of invasive species, pests and diseases. Habitats at greatest risk on land include those dependent on the sub-arctic conditions of high mountains. In the marine environment, we are just beginning to understand the full impact of climate change on habitats and species. Altered seawater temperature and chemistry impacts sensitive communities such as those around maerl beds, as well as over-exploited organisms such as fish on which other species depend.

As key examples of work to be developed, we will:

- Re-align our work on invasive non-native species (INNS) towards climate-change resilience, focusing on nationally important landscape-scale projects and on preventing the establishment of new INNS.
- Lead Scotland-wide initiatives to enhance the resilience of woodlands and of a range of coastal species vulnerable to the effects of climate change.
- Develop a new conservation approach for protected areas. This will allow for change, accommodating unavoidable effects of climate change and where necessary supporting carefully considered species translocations.

The recent *State of Nature* report is concerning. But by improving the state of Scotland's nature, we can help solve the climate emergency. SNH and partners are working hard to restore Scotland's most threatened habitats – peatlands, rivers and woodlands – to help the at-risk species.

4. Supporting climate-resilient communities



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The pressing realities of unavoidable climate change effects urgently require a step-change in how we plan, improve and maintain our settlements. We must weave nature through urban areas to ensure they can better cope with predicted increases in climatic extremes. For example, trees and well-planted greenspaces, together with urban wetlands and watercourses, can help to reduce flooding and alleviate heatwaves.

This ‘green-blue infrastructure’ needs to deliver integrated, multi-functional spaces, which support active travel (reducing car use) and give everyone equal opportunities to benefit from nature. As well as maximising the well-being and resilience of communities, such new and enhanced spaces for nature store carbon and support resilient biodiversity, for example sustaining pollinator species.

The new commitment to the preparation of open space strategies by local authorities in the Planning Act provides a key focus for future planning, provision and management of green infrastructure across the public and private realms.

As key examples of work to be developed, we will:

- Deliver the Green Infrastructure Strategic Intervention Programme, currently generating investment of £37.5m in urban greenspace, to increase the resilience of some of Scotland’s most disadvantaged communities to both physical and societal effects of climate change.
- Support the planning and delivery of new green corridors, pollinator networks and strategic transport routes which combine active travel and other community benefits, while enabling people and wildlife to adapt to climate change.
- Inspire and support public bodies, housing associations and local authorities with landholdings to transform them in ways that use nature enhancements to boost climate resilience and contribute to net emissions-reduction.
- Help people connect with nature using low-carbon modes of transport, both on our own land and with partners, including on the National Walking and Cycle Network.

Climate change is already an immediate and present threat to many communities in Scotland. We’re already facing extreme weather events and disruption. We know that a nature-rich future is key to tackling climate change, and everyone can do their bit to help biodiversity – why not volunteer, create wildlife habitats or take part in citizen science?

5. Enabling new development that helps address climate change



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The development of renewable energy on land and at sea is a key element in Scotland's transition to Net Zero. Our advice is crucial to ensuring this is done in a way that minimises wider environmental impacts. As part of continuing to help enable such development, our support and guidance will give greater recognition to the compelling need to address the climate emergency.

Our advice on incorporating green-blue infrastructure into new development helps the creation of sustainable settlements, reducing the need for high-impact urban expansion on greenfield and prime agricultural land. Although new built developments can have impacts on nature, they are potentially a potent source of investment in nature-based solutions that both store carbon and provide adaptation benefits.

As key examples of work to be developed, we will:

- Continue to facilitate renewable energy developments on and offshore, giving additional weight to the need to de-carbonise Scotland's energy sector.
- Work with Scottish Government to find more effective ways to guide new developments away from areas of peat and other carbon-rich soils to avoid releasing carbon. Carbon calculators will be enhanced to enable more transparent and consistent approaches to measuring the carbon impact of development proposals.
- Work with Scottish Government on green finance mechanisms (informed by a carbon code) that will effectively direct private investment, including commitments arising from new development, into nature-based solutions. In and around settlements these will focus on green infrastructure that delivers on open space strategies.
- Expand our support to national and local government on planning for climate-resilient and low-carbon settlements.

Infrastructure comes in three colours: grey, green and blue. Grey infrastructure is buildings and roads and so on, and green and blue is plants, animals, air, water, soils and minerals. All need to be blended in the infrastructure for a net zero economy.

6. Managing SNH's own emissions and sequestration



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As a public sector organisation, a provider of services, a large employer and a procurer of goods and services, SNH welcomes and supports the Scottish Government's commitment to meet a Net Zero emissions target by 2045. We will build on our effort to date, focusing on the challenges around behaviours, transport, technology, food and energy use.

As key examples of work to be developed, we will:

- Manage our own landholdings as exemplars of ways to measurably enhance carbon storage and sequestration. This will demonstrate best practice that other land managers can follow. We will further develop carbon accounting of our management to monitor progress, and promote the methods to others.
- Invest in renewables on our estate and reduce energy consumption at our buildings by moving towards low-carbon or net-zero options.
- Continue to cut our emissions from flights, transition towards an all-electric vehicle fleet, and continue to promote and facilitate active travel and public transport options for all staff and partners.
- Invest in new technologies that minimise carbon use in the survey work and data collection that underpins decisions about nature.
- Ensure decisions on our policies, projects, investments, and goods and services we use, have as low a carbon footprint as possible.

Nature-based solutions such as woodland expansion are a crucial part of the solution to the global climate emergency, and this is another important step towards ensuring a nature-rich future for Scotland.