Scotland's Biodiversity Strategy

A Consultation

June 2022

Scottish Government
Riaghaltas na h-Alba
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1. Introduction

a. What Is biodiversity and why Is It Important?

Biodiversity is the variety of all living things and ecosystems. It includes plants, animals, fungi and micro-organisms. It comprises the living organisms in a particular space, whether in a window-box, garden, park, meadow, river, loch, estuary, our oceans, sandy beaches or mountain tops.

It is this web of relationships between inter-dependent organisms and the environment which provides the benefits that people get from nature, such as food, medicines, fibre and other natural materials – all of the things we need to survive.

'Nature' includes 'biodiversity' and the processes underpinning it. The terms are sometimes used interchangeably but they are not precisely the same. In this document:

Biodiversity means the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes they are part of; this includes diversity within species, between species and of ecosystems.

In other words, biodiversity is the part of nature that is alive, and includes every living thing on Earth. Nature is all the existing systems created at the same time as the earth, all the features, forces and processes, such as the weather, the sea and mountains.

Nature means all life on Earth (i.e. biodiversity), together with the geology, water, climate and all other inanimate components that comprise our planet.

Perhaps the best way to truly understand the importance of biodiversity is try to imagine what nature would look like without it.

Some of these things can seem quite distant but they are important for everyone – for our economic success, our society and our way of life. Biodiversity enables businesses to operate effectively, for example through pollination by insects, and resilient fishing stocks and productive seas which our fishing and aquaculture industries depend on; it prevents soil erosion, purifies water and helps prevent flooding; and it contributes to our wellbeing, providing recreation, relaxation and a sense of place.

Critically, biodiversity is central to our survival as a species. It is the diversity of living organisms which provides nature's resilience in the face of climate change. Globally around 50% of human-made CO_2 emissions are removed from the atmosphere each year by our vegetation, oceans and soils. It is now accepted that we face **twin reinforcing crises**: a decline in biodiversity will exacerbate the climate crisis – and a changing climate will accelerate the rate of biodiversity loss. Biodiversity is the best chance we have to adapt to climate change and ensure continued provision of nature's services on which we all depend.

b. The Context

i. International Context

We are now well into the UN Decade of Ecosystem Restoration. At COP26, the Scottish Government joined other nations in endorsing the Leaders Pledge for Nature: to reverse nature loss by 2030. However, the development of a new Global Biodiversity Framework, which will include a 2050 vision and a 2030 set of targets, has been delayed by ongoing postponements to the fifteenth Conference of Parties (CoP15) to the United Nations Convention on Biological Diversity (CBD).

Scottish Ministers are also committed to maintaining or exceeding EU environmental standards. In preparing our new Scottish biodiversity strategy, we will need to take close account of the global biodiversity framework and targets and the emerging EU Biodiversity Strategy.

ii. Scotland's Strategic Context

The Environment Strategy for Scotland creates the overarching framework for Scotland's strategies and plans on the environment and climate change. Its vision and outcomes describe our long-term ambitions for Scotland's environment and our role in tackling the global climate and nature crises. The vision states:

> '*By 2045 - By restoring nature and ending Scotland's contribution to climate change, our country is transformed for the better - helping to secure the wellbeing of our people and planet for generations to come.*'

To achieve this vision, the Scottish Government and partners will focus collective efforts on delivering six outcomes, including:

> *'Scotland's nature is protected and restored with flourishing biodiversity and clean and healthy air, water, seas and soils.'*

In light of the delays to COP15, the Scottish Government published a Statement of Intent on biodiversity in December 2020 setting out our ambition to take strong action to tackle biodiversity loss. In that, we committed to publishing a new Scottish Biodiversity Strategy by the Autumn of 2022 to replace the existing strategy published in 2013.

The Scottish Government's Agriculture Vision: Sustainable and regenerative farming - next steps: statement sets out our ambition to be a leader in sustainable and regenerative farming. Our farmland is important for sustainable food production and the Vision recognises the need to meet the key outcomes of high quality food production, climate mitigation and adaptation, and nature restoration. It is important that we seek to deliver against all of these outcomes in a complementary manner.

The Scottish Government's Forestry Strategy 2019 – 2029 sets out our vision for forestry, where in 2070, Scotland will have more forests and woodlands, sustainably managed and better integrated with other land uses. We need to balance their key role sequestering 14% of Scotland's gross carbon emissions, with sustainable wood production to support a

strong economy, and avoid importing more timber to meet our needs, and ensuring thriving nature, and healthy and flourishing communities.

The Scottish Government is committed to land reform on an ongoing basis. Many communities who own land make biodiversity central to their use and management of land assets. Furthermore, we have the world's first Land Rights and Responsibilities Statement ("the statement") which we are currently revising. We are currently considering responses to a recent consultation on the statement and revisions will reflect the importance of biodiversity. The Scottish Government is committed to a further land reform bill to be introduced by the end of 2023. Our proposals for that Bill reflect the role of land reform in contributing to the end of biodiversity loss, and we will shortly be publishing a consultation on our proposals.

Scotland's Blue Economy Vision recognises that our economies, livelihoods and well-being all depend on our most precious asset – nature – and that Scotland's marine ecosystems are healthy and functioning, with nature protected and activities managed using an ecosystem-based approach to ensure negative impacts on marine ecosystems are minimised and, where possible, reversed.

Sustainable practice will be supported through Scotland's Future Fisheries Management Strategy, the production of a new Vision for sustainable aquaculture and a blue economy action plan in 2022, and we will carefully manage offshore wind development, which has the potential to transform and provide clean energy production for Scotland, in addition to delivering a Highly Protected Marine Area programme to protect biodiversity and ecosystem function of at least 10% of Scotland's seas.

We are also committed to delivering the Scottish Wild Salmon Strategy to ensure the protection and recovery of Scottish Atlantic wild salmon populations.

The global use of natural resources has more than tripled since 1970 and continues to grow. Around four fifths of Scotland's carbon footprint comes from the products and services we manufacture, use and throw away. We also know that 90% of global biodiversity loss and water stress is caused by resource extraction and processing. Using resources sustainably is essential to tackling both the climate and nature crises. We have set out proposals for tackling this in our circular economy Route Map consultation and Circular Economy Bill consultation.

The new Scottish Biodiversity strategy will signal our ambitions to end biodiversity loss by 2030 and restore / regenerate biodiversity by 2045. It will ensure the conditions are in place to drive the transformation needed in the way we use and manage natural resources and provide a framework for prioritising and coordinating actions and investments.

The new biodiversity strategy is the starting point in a process which will lead into the development of rolling delivery plans and, through the introduction of a Natural Environment Bill, statutory nature restoration targets.

c. The Consultation

This consultation forms part of an engagement process with a wide range of stakeholders who have an interest in Scotland's biodiversity, including land managers, environmental organisations, local authorities and other partners. We held a series of workshops to scope out the detail of the strategy, develop ideas and test concepts. We now want to hear the

views of a wider range of organisations and individuals to test and further develop our ideas.

The rest of this document is set out as follows:

- **The Evidence**: a short section setting out the evidence of biodiversity loss both globally and in Scotland
- **Our Strategic Vision**
- **How Will We Know When We Have Succeeded:**
    - high level milestones for the strategy
    - an outline of the outcomes approach we have developed to help us think about what we need to do to get to what we want to achieve
    - indicative outcomes for 2045 and 2030 milestones
- **Conditions for Success:** what do we need to put in place to ensure that we deliver the outcomes we want

Questions designed to get your views on our thinking are included after each section.

2. The Evidence of Biodiversity Loss

The evidence of biodiversity loss, both nationally and globally, continues to mount. In Scotland, sources of evidence include Scotland's Biodiversity Strategy Indicators; the 2019 *State of Nature* report; the Biodiversity Intactness Indicator; Scotland's Marine Assessment 2020; the 6-yearly assessment of progress towards Good Environmental Status under the UK Marine Strategy (which was last updated in 2019); and periodic assessments undertaken by The Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention').

Internationally, the UN's Global Biodiversity Outlook (September 2020) and the IPBES Global Assessment of Biodiversity (May 2019) describe the pressures on nature. The latter identified five direct drivers of global biodiversity loss:

- Changing use of the land and sea especially for agriculture, forestry, fish farming and coastal infrastructure;
- Direct exploitation of organisms via harvesting, logging, hunting and fishing;
- Climate change;
- Pollution; and
- Invasive non-native species.

These emerge from a range of indirect drivers of biodiversity loss, including socio-cultural values and behaviours, demographic and consumption factors, poor governance and the impacts of some technological innovations.

In Scotland, almost all of the land surface has been altered by us, resulting in one of the lowest biodiversity intactness indexes in the world undermining our ability to rely on our natural environment to hold onto its carbon stocks and sequester greenhouse gas emissions. It is increasingly recognised that the climate and biodiversity crises are intrinsically linked and need to be tackled together.

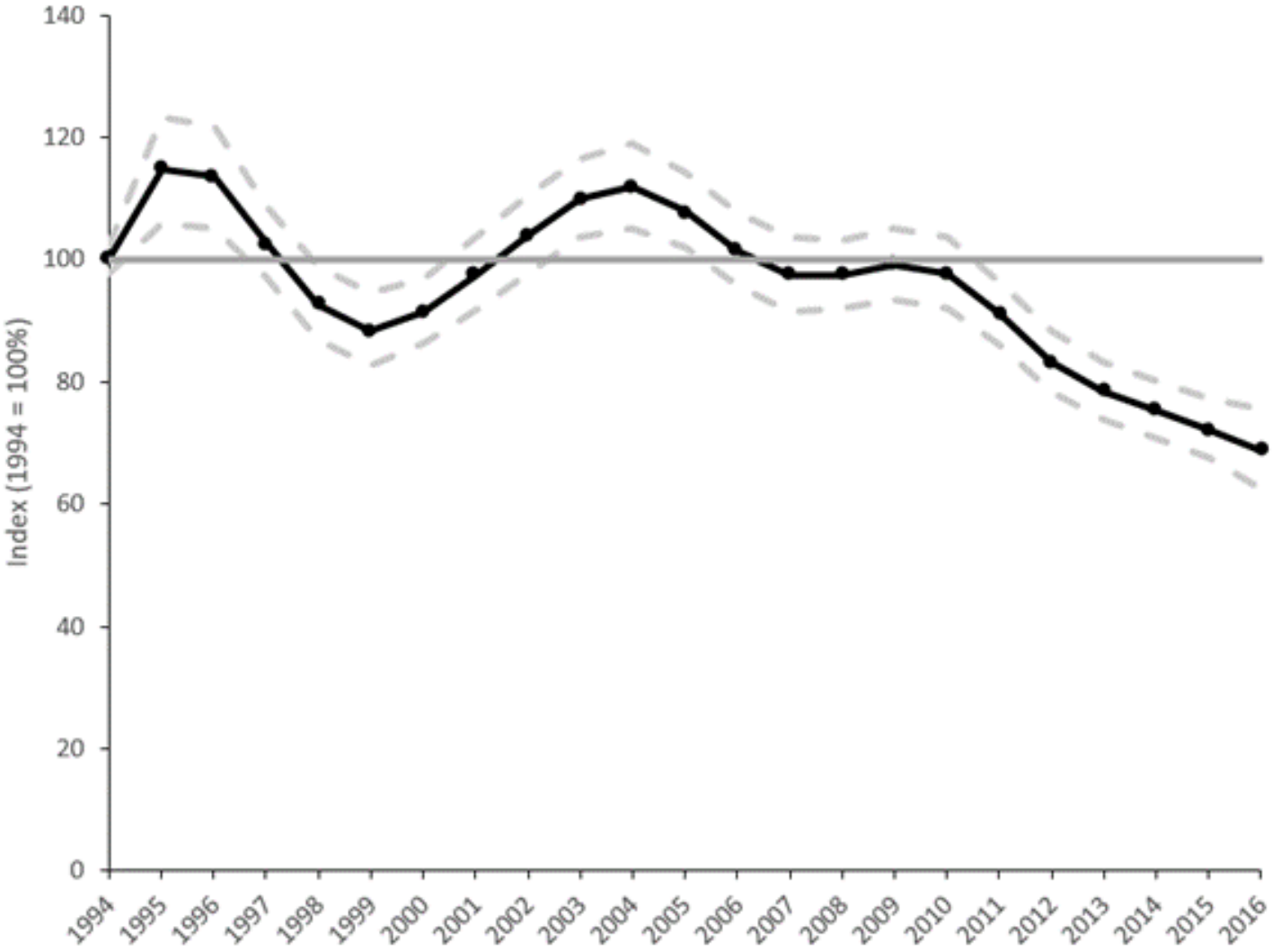
17.6% of Scotland is protected specifically for nature either as SSSIs[1], SACs[2], SPAs[3] or Ramsar[4] sites. 37% of our seas now form part of the Scottish MPA network.

In Scotland, the evidence on biodiversity decline is strong and demonstrates that Scotland is seeing dramatic declines in its biodiversity:

- There has been a 24% decline in average abundance of 352 terrestrial and freshwater species since 1994 – noting that 1994 was not, itself, a high point;
- There has been a 14% decline in range for 2,970 terrestrial and freshwater species since 1970;
- Peatlands are in such poor condition that they are emitting, instead of storing, carbon and are responsible for 20% of Scotland's total emissions;
- Only around 64% of Scotland's protected woodlands are in a favourable or recovering condition;

[1] Sites of Special Scientific Interest
[2] Special Areas of Conservation
[3] Special Protection Areas
[4] Areas designated under the international Ramsar Convention for the Protection of Wetlands

- Out of 15 components in the UK Marine Strategy, 11 of them had not achieved Good Environmental Status by 2020, with recognition that more action is required;
- Scotland's Marine Assessment 2020 highlighted declines in biogenic habitats and species such as Atlantic salmon; that fishing remains a widespread impact on the seabed; and that climate change is now the most critical factor affecting the marine environment;
- There has been a 38% decline in the Scottish breeding seabird indicator between 1986 and 2016. Abundance indicators for fish species show some signs of recovery from deep historic lows;
- Our new terrestrial and marine species indicator gives a robust image (below) of decline[5];



Combined Terrestrial and Marine Biodiversity Indicator for Scotland (National Performance Framework)

- Only 30,000 hectares of Scotland's unique Atlantic rainforest remains and is highly fragmented;

[5] Based on data for 133 bird, 9 mammal, 204 moth and 25 butterfly species: 1994-2016

- Indicators show an increasing spread of 190 established invasive non-native species (INNS) across terrestrial, freshwater and marine environments in GB during the last six decades – with a northwards shift a common pattern.

Globally, when they are functioning well, ocean and land ecosystems remove around 50% of human-made CO_2 emissions each year: our failure to protect our natural resources is reducing our ability to tackle climate change. The more global warming exceeds 1.5°C, the more likely we are to experience major impacts on ecosystems, triggering feedback loops that will accelerate warming.

Children's contact with the natural world is in decline and according to recent research from the RSPB, four out of five UK children are not connected to nature.

A 2017 RSPB Birdwatch survey, assessing nature knowledge in parents rather than children, found that of 2,000 adults, half couldn't identify a house sparrow, a quarter didn't know a blue tit or a starling, and a fifth thought a red kite wasn't a bird – but nine out of 10 said they wanted children to learn about common British wildlife.

Question:

Using your own knowledge and the evidence presented, to what extent do you agree that there is a nature crisis in Scotland? Why do you think that?

Question:

What do you see as the key challenges and opportunities of tackling both the climate and biodiversity crises at the same time?

3. Our Strategic Vision – Framing and Context

We have developed the following vision for Scotland's new biodiversity strategy which captures what success looks like in 2045 – what the strategy is setting out to accomplish:

Draft Vision

By 2045 we will have substantially restored and regenerated biodiversity across our land, freshwater and seas.

Our natural environment of plants, animals, insects, aquatic life and other species will be richly diverse, thriving, resilient and adapting to climate change.

Everyone will understand the benefits from and importance of biodiversity and will play their role in the stewardship of nature in Scotland for future generations.

Questions:

Is the draft vision clear enough?

Is the draft vision ambitious enough?

Do you have any suggestions for a short strategic vision which would form the title for the strategy?

4. How Will We Know When We Have Succeeded?

a. Development of an Outcomes Framework

Ministers have defined two key milestones to guide us in delivering the strategy and its vision:

- reverse biodiversity loss by 2030 (in line with the Leaders' Pledge for Nature); and
- deliver the Vision by restoring and regenerating biodiversity by 2045.

A group of experts have been advising the strategy development process and with some of our stakeholders have helped us to develop a set of outcomes which will deliver these 2030 and 2045 milestones. These outcomes are framed by broad landscape type and marine environments and draw on recently published works[6].

- **Rural environments;**
  - farmland;
  - woodlands / forestry;
  - soils;
  - uplands (including peatlands);
- **Marine environment;**
- **Fresh water environments** – rivers, lochs and wetlands;
- **Coastal environments;**
- **Urban environments** – towns and cities;
- **Across our land and seas** – overall ecosystem health, resilience and connectivity.

b. Proposed Outcomes

1. Scotland's Rural Environment – Farmland, Woodlands and Forestry, Soils and Uplands

The Issues

The way rural land is managed is one of the most important drivers of biodiversity loss in Scotland. Transforming the way we use and manage land will be critical if we are to deliver our vision. The outcomes below focus both on the quality of landscapes (their health and resilience) and quantity of landscape-types (area of e.g. woodland and restored peat).

[6] Notably the direct and indirect IPBES drivers, 'Bending the curve of terrestrial biodiversity needs an integrated strategy' (Leclère *et al.,* 2020; see diagram above), material in the Dasgupta Review, the Just Transition Commission, and a range of international documents such as Biodiversity Strategy for New Zealand 2020. We have also noted carefully the *EU biodiversity strategy for 2*030, and the first draft of a *Post-2020 Global Biodiversity Framework* with its 21 targets, which will be negotiated towards and during COP15. In Scotland, the *Edinburgh Declaration on post-2020 global biodiversity framework* and *Scottish biodiversity strategy post-2020: statement of intent* are key guiding documents.

Although these outcomes have their own distinctive issues there is substantial overlap between them.

i) Farmland

70% of Scotland is solely or partially managed for agriculture (roughly 10% arable; 20% pasture; with the remainder rough grazing, much of which in the **Uplands** is secondary to grouse moor and deer estate management).

The past 50 years has seen an increased use of pesticides and fertilisers, continuous cropping, changed sowing seasons, a loss of non-cropped habitat and major loss and fragmentation of farmland habitats. There have been substantial long-term decreases in some key farmland bird populations: declines of more than 50% for greenfinch, kestrel, and lapwing, and 25-50% declines in oystercatcher and rook. There have been substantial long-term decreases in pollinators and species-rich grasslands, e.g. 39% loss of lowland meadow.

ii) Woodlands and Forestry

Scotland is the most wooded of the UK countries (19% woodland cover) but the UK remains one of the most heavily deforested countries in Europe, with woodland cover well below the current European average of 37%. Approximately a third, 442,611 hectares of Scotland's woodland is considered native. This includes globally important areas of Scottish rainforest, including oak and hazel woodland, and Caledonian pine forest – recognised as being of very high value to biodiversity, but currently fragmented and restricted in range.

Woodland biodiversity faces a huge challenge from invasive non-native species, specifically rhododendron. Ever increasing deer numbers restrict natural regeneration, habitat restoration and undermine replanting efforts.

iii) Soils

Changes to ploughing, crop rotations, fertiliser use and livestock numbers have negatively impacted soil and water quality, carbon storage and led to increasing greenhouse gas emissions, which contribute to climate change.

Soil sealing (the process of covering soil in impervious substances such as concrete or tarmac) has increased the rate and extent of **Wetland** loss, and changes in **Farming** practices have led to the disappearance of many lowland ponds formerly used to water livestock. Soil erosion through cultivation and trampling by animals close to watercourses has added individually small, but cumulatively large, pollution loads. Inappropriate muirburn, including on deep peat, can damage vegetation and soil, leading to nitrogen deposition and release of carbon.

Towards a nature-rich landscape in the lowlands

1. Restoring lowland raised bogs to a more natural state contributes to a more diverse lowland landscape and delivers climate benefits
2. Mixed forestry sequesters carbon, produces timber, and is more resilient to the changing climate and more beneficial to wildlife than single species plantations
3. Natural open woodlands and scrub at higher elevations bring climate benefits, and a natural and scenic diversity that is currently missing
4. A more nature-rich landscape in the lowlands can improve the well-being of local communities and visitors
5. Species-rich grasslands support scarce plant species, provide food to pollinators and other insects and bring colours to the landscape
6. Hedges wide and tall support more biodiversity, prevent erosion, sequester carbon and connect habitats, enabling wildlife to move through the landscape

7. Buffer zones of wetland vegetation growing by the side of the river, away from crops and fenced off from livestock, enable the resurgence of wetland plants and animals
8. The integration of trees in grassland or in crops in an agroforestry system can deliver multiple benefits for the environment and for farm productivity
9. A re-naturalised river system that supports wildlife and brings back riverine habitats enhances landscape beauty and reduces flood risk
10. Removing land at the field edge to create or enhance wildlife habitats is important as part of a network of nature-friendly linear features around fields
11. Cover crops, legumes and wild bird cover provide an additional boost to wildlife while reducing soil erosion

iv) Uplands (including peatland)

In the uplands of Scotland, essentially land above the limits of enclosed farmland, there are a range of habitats including moorland, rough grassland, blanket bog, woods, species-rich grasslands, etc. Much of this is managed for field-sports, livestock, renewable energy, nature conservation and amenity interests. Large areas of the uplands are under agriculture management. Approximately a quarter of Scotland's area is covered in peat, storing over 3 billion tonnes of carbon. However, it is estimated that around 70% of Scotland's peatlands (1.6 million hectares) are degraded. At least 25% of wider uplands are also considered to be in poor condition.

The greatest decline in birds has been in uplands, with 18% decline since 1994; 17 species contribute to this indicator with nine in long-term decline. A range of species and habitats are declining, especially waders, hen harriers, mountain willow and juniper.

Rural Environment Proposed Outcomes

By 2045 we expect that:

- **Farmland** practices have changed resulting in a substantial increase in biodiversity, ecosystem and soil health and markedly reduced carbon emissions while sustaining high quality food production;
- A range of nature recovery activity enables:
    - sustainable natural regeneration of **woodlands**;
    - greater diversity of **woodland** species and woodland age structure;
    - increased woodland cover and connectivity between **woodlands**;
- Restoration of degraded ecosystems increasingly incorporates **soils** as a nature-based solution for issues including flooding, erosion and biodiversity loss;
- Deer range and grouse moor management and upland agriculture are contributing to high standards of sustainable land use in **upland areas** supporting regenerating habitat and wildlife interests.

Which means that by 2030 we need to have:

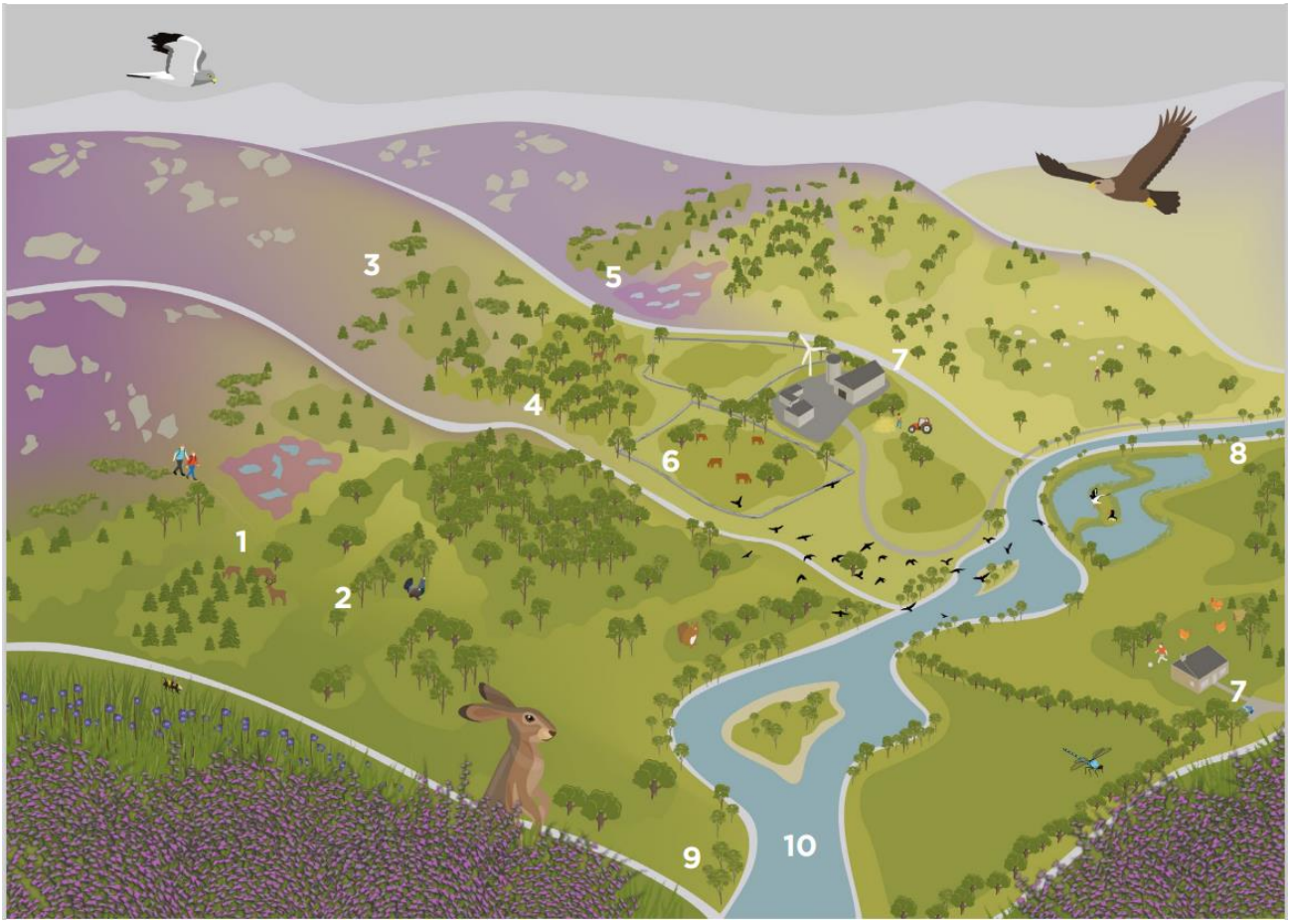
- **Farmland** practices which demonstrate an increased uptake of high diversity, nature-rich, high soil carbon, low intensity farming methods while sustaining high quality food production;
- Decreasing carbon emissions across arable and pastoral **farmland** allied to improving soil health;
- Native **woodland** cover and **woodland** ecosystem health sustaining rich biodiversity, and large-scale regeneration is steadily increasing, largely through reductions in deer browsing and grazing impacts, and removal of INNS;
- A reformed agricultural subsidy scheme which delivers for nature restoration and biodiversity as well as high quality food production, and climate mitigation and adaptation.

- The number of deer and their impacts is reduced alongside other herbivore impacts to enable peatland restoration, natural regeneration of woodlands and increased structural diversity in our uplands;
- Productive forests and woodlands are designed and managed in ways that deliver increased biodiversity and habitat connectivity whilst sustaining timber production and carbon sequestration to meet the climate crisis;
- Healthy functioning **soils** support increasing biodiversity;
- Substantial increases in biodiversity richness and ecosystem health, especially soil health;
- **Uplands** and restored peatlands rich in biodiversity with high ecosystem health;
- Peatland restoration targets which are being met with the gap closing between peatland carbon sequestered and peatland carbon emissions;

  Large-scale **upland** biodiversity regeneration from low reaches to highest altitudes to sustain biodiversity richness currently absent in many upland areas.

Towards a nature-rich landscape in the uplands

1. Controlling grazing and fewer deer mean trees, woodland understorey and other vegetation can come back which reduces soil erosion and water flows down the hill
2. Mosaics of habitats instead of a landscape dominated by heather and grass will support more insects, mammals, birds and other animals, plants, fungi and lichens
3. Creating natural open woodlands and scrub at higher elevations brings climate benefits, and a natural and scenic diversity that is currently missing
4. Expansion of deciduous and native trees and other woodland plants support more wildlife, reduce flooding risk and store carbon
5. Healthy peatlands hold vast amount of carbon, support unique plant species, absorb rain water and reduce greenhouse gas emissions



6. Silvopasture such as wood pasture is good for biodiversity, provides shelter to livestock, improves animal welfare and farm productivity
7. A nature-rich landscape can offer diverse livelihood opportunities and support a greater number of people
8. Reintroduced species such as beavers will enhance the range of benefits to people, in terms of water quality and smoothing water flows
9. Riparian woodlands shade and nourish the river helping fish and other aquatic wildlife be more protected from rising temperatures
10. A wilder river that has reclaimed its floodplain supports more wildlife, enhances landscape beauty, and reduces flooding downstream

Questions:

Do the 2045 outcome statements adequately capture the change we need to see?

Are the 2030 milestones ambitious enough? Are we missing any key elements?

What are the key drivers of biodiversity loss in this outcome area?

What are the key opportunities for this outcome area?

What are the key challenges for this outcome area?

2. Marine Environment

The Issues

Scotland's seas are highly dynamic, supporting a diverse range of habitats and species. They are of significant cultural and socio-economic importance, especially to local coastal and island communities, and support an array of marine industries. If managed sustainably, Scotland's seas can continue to provide food (through fishing and aquaculture) and renewable energy. Protecting and improving biodiversity is key to sustainable use of our seas.

Scotland's Marine Assessment 2020 (SMA 2020) concludes that overall, progress has been made. For example, Scotland's Marine Protected Area (MPA) network is now made up of 232 sites covering 37% of Scotland's seas, with progress in the implementation of MPA management measures. SMA 2020 also highlights the increasing impacts of climate change and ocean acidification, and that disturbance of the seabed by bottom-contact towed fishing gear remains a significant pressure. The 'no loss in extent' target for subtidal biogenic habitats[7] has not been met. The last 30 years have also seen significant changes in the plankton community with potential implications for marine food webs, including commercial fish species.

The abundance of some offshore whales, dolphins and porpoise has remained stable, whilst the abundance and distribution of coastal bottlenose dolphins on the East coast has increased. The grey seal population has increased but the harbour seal population continues to decline in the North Coast and Orkney Islands marine regions. Seabird numbers have been largely stable since 2011 but at a reduced level compared to the 1986 baseline. Species show markedly different trends with the most significant decreases in surface-feeding birds. Overall, Scotland's wintering waterbirds continue to increase in

[7] Underwater habitats created by plants and animals themselves (e.g. mussel beds) and which in turn provide habitat for other plants and animals.

abundance, although species exhibit different trends with some changing their range in response to environmental change.

Marine Environment Proposed Outcomes

By 2045 we expect that:

- Populations of marine mammals, marine birds and fish are healthy, have recovered, and have increased resilience to the impacts of climate change;
- The health of water-column and seabed habitats has been enhanced so that they are more resilient (including to climate change), supporting wider ecosystem function and providing increased benefits to society.

Which means that by 2030 we need to have:

- Populations of marine mammals, marine birds and fish are improving - reflecting prevailing environmental conditions and not significantly affected by human activities;
- The status of water-column and seabed habitats is improving - managed to avoid significant impacts from human activities to support their recovery and provide benefits to society.

Questions:

Do the 2045 outcome statements adequately capture the change we need to see?

Are the 2030 milestones ambitious enough? Are we missing any key elements?

What are the key drivers of biodiversity loss in this outcome area?

What are the key opportunities for this outcome area?

What are the key challenges for this outcome area?

3. Freshwater Environment: Rivers Lochs and Wetlands

The Issues

Scotland's rivers, lochs, and wetlands are important national assets. They supply drinking water, support fisheries and aquatic biodiversity, generate hydropower, mitigate flood risk, store carbon (wetlands), offer an essential resource for business and agriculture and serve recreation and exercise that promotes health and wellbeing.

The Scottish Environmental Protection Agency's (SEPA) monitoring shows that overall 64% of our rivers and lochs are in good or better than good condition in 2020. This is an improvement of 3 percentage points in overall condition since 2015. It is based upon assessment of water quality, flows and levels, physical condition and barriers to fish migration.

Despite the progress we've made, the remaining 36% of rivers and lochs are not in good condition, including the status of Scotland's iconic Wild salmon which can be impacted by a range of activity in both freshwater and marine environments. A range of pressures continue to have an impact on the condition of the water environment, and many of these are being addressed through Scotland's third River Basin Management Plan (2021-2027) and, for Wild salmon, through the Wild Salmon Strategy. This plan aims to achieve 81% of the water environment being in a good or better condition by 2027, and 90% in the long-term once natural conditions have recovered. The issues which continue to need tackling include increasing water scarcity and abstraction, increasing flood risk increasing water temperatures, rural diffuse pollution, wastewater, man-made barriers to fish migration, physical modifications to rivers, and the potential spread of non-native invasive species.

29% of freshwater features are categorised as 'unfavourable' or 'unfavourable recovering' due to management. Riparian woodlands have declined in coverage and condition. Poorly vegetated upper catchments and canalised river systems make downstream flash flooding events worse. The extent of wetlands and land available for temporal wetlands and habitat available for dependent species has declined.

Invasive Non-Native Species (INNS) have considerable impacts on freshwater ecosystems and these are intensifying.

Diffuse pollution has been reduced in Scotland, particularly since the 1990s, but still represents a significant risk to freshwaters.

Freshwater Environment Proposed Outcomes

By 2045 we expect that:

- The extent of restored catchments and improvements in ecological status of rivers, lochs and wetlands has increased;
- Extent, condition, connectivity and resilience of wetland, including floodplain wetlands, and pond habitats are significantly improved and increased;
- Freshwater species return naturally to areas in which they have been absent; their populations and supporting habitats are robust and resilient to extreme events.

Which means that by 2030 we need to have

- Catchment, river, lochs and floodplain restoration routinely accepted and used as a nature-based solution to climate impacts;
- Beavers, salmon recovery and riparian woodland evident as growing ecological components of restored rivers and wetlands.

Questions:

Do the 2045 outcome statements adequately capture the change we need to see?

Are the 2030 milestones ambitious enough? Are we missing any key elements?

What are the key drivers of biodiversity loss in this outcome area?

What are the key opportunities for this outcome area?

What are the key challenges for this outcome area?

4. Coastal Environments

The Issues

Scotland's coastal habitats are experiencing pressure from climate change. The acceleration in the rise of sea levels and larger and more frequent storm-surges are causing erosion and reducing the connectivity of some beach, dune and machair habitats. These factors have led to changes in species composition.

Saltmarshes and some dune systems play an important role in increasing the resilience of coastlines to these pressures by reducing and absorbing wave energy and providing a buffer for sensitive inland habitats. However, these may be adversely affected by higher seasonal rainfall, increasing variation in groundwater, and freshwater run-off.

Scotland's estuaries are vital for water birds such as waders, ducks and geese. They provide safe feeding and roosting areas, enabling many thousands of water birds to use them as places to winter and refuel on their way to other destinations. Climate change is resulting in shifts in populations of some of our water birds, but coastal areas in Scotland remain internationally important.

Coastal Environment – Proposed Outcomes

By 2045 we expect that

- Coastal ecosystems and adaptive management more widely adopted to allow naturally functioning coastlines in response to a changing climate;
- Abundance and demography of coastal bird species indicate healthy populations that have recovered in line with changing conditions.

Which means that by 2030 we need to have

- Coastal ecosystems, including lagoons and estuaries, managed for biodiversity and the dynamic processes underpinning this;
- Management is tailored to nature-based solutions to climate impacts, notably sea level rise and coastal erosion;
- Machair and saltmarshes managed extensively for biodiversity richness and to respond dynamically to climate change impacts.

Questions:

Do the 2045 outcome statements adequately capture the change we need to see?

Are the 2030 milestones ambitious enough? Are we missing any key elements?

What are the key drivers of biodiversity loss in this outcome area?

What are the key opportunities for this outcome area?

What are the key challenges for this outcome area?

5. Urban Environments – Towns and Cities

The Issues

Urbanisation continues to steadily impact on lowland biodiversity, especially through expansion of housing and associated developments, and associated habitat fragmentation and loss. Well-designed green and blue infrastructure incorporated into new and older schemes, however, can benefit biodiversity. Local processes require strengthened approaches to position biodiversity more centrally in designing the urban fabric.

Urban Landscapes Proposed Outcomes

By 2045 we expect that:

- All towns and cities will comprise established nature-rich environments, with measurable increases in urban biodiversity;
- Multi-functional urban nature-based solutions provide the basis for healthy and resilient communities (enabling people and biodiversity to adapt to our changing climate by cooling the urban environment and managing extreme rainfall events);
- Blue and green infrastructure is designed and managed to have high biodiversity value.

Which means that by 2030 we need to have:

- Nature-rich networks with growing biodiversity richness comprising a range of habitats are integrated into the urban fabric, and ecologically coherent;
- Nature-richness is a feature of all developments, and prominent in school, health, neighbourhood and community spaces;
- Opportunities to retrofit green and blue infrastructure that includes measures to enhance biodiversity are identified.

Questions:

Do the 2045 outcome statements adequately capture the change we need to see?

Are the 2030 milestones ambitious enough? Are we missing any key elements?

What are the key drivers of biodiversity loss in this outcome area?

What are the key opportunities for this outcome area?

What are the key challenges for this outcome area?

6. Across our Land and at Sea – Overall Health, Resilience and Connectivity

The Issues

Climate change poses a significant threat to ecosystem health and resilience. That resilience is further threatened by the historic reduction in Scotland's biodiversity resulting from centuries of human activity. The Biodiversity Intactness Indicator ranks Scotland and the UK poorly. Scotland's biodiversity intactness has been assessed as 56%: it has retained just over half of its historic land-based biodiversity, with slightly more biodiversity intact compared to other parts of the UK. The report ranks the countries and territories assessed from 240 (most biodiversity intact) to 1 (least biodiversity intact). The UK as a whole, and Scotland separately rank in the bottom 25% of nations and territories for biodiversity intactness.

Making progress on the overall health and resilience of Scotland's landscapes and marine environments will depend on delivering the outcomes above which cumulatively and in combination (due to the key inter-linkage between them) will improve our overall ecosystem, connectivity and resilience.

Across our Land and at Sea – Proposed Outcomes

By 2045 we expect that:

- On land, Nature Networks at landscape scale demonstrate widespread increasing resilience and health of species and habitats, and increases in carbon sequestered across ecosystems;
- Ecosystems are diverse, healthy, resilient and deliver a wide range of ecosystem services.

Which means that by 2030 we need to have:

- Spatially identified Nature Networks which are widespread and embedded in land use planning and management;
- Increases in the diversity of ecosystems which therefore deliver stronger functioning, ecosystem health, resilience and ecosystem services.

Questions:

Do the 2045 outcome statements adequately capture the change we need to see?

Are the 2030 milestones ambitious enough? Are we missing any key elements?

What are the key drivers of biodiversity loss in this outcome area?

What are the key opportunities for this outcome area?

What are the key challenges for this outcome area?

Achieving the strategy vision and halting biodiversity loss by 2030 and substantially restoring it by 2045 will depend on progress across all of these outcomes. Critically, due to the complex relationships between ecosystems, land types and marine environments we will need to see progress in all areas – falling short on one outcome will undermine the overall goal.

Questions:

To what extent will these outcomes deliver the Vision?

What might be missing?

What evidence and information should we use to assess whether we have delivered the Vision?

5. The Conditions for Success

The new Scottish Biodiversity Strategy aims to establish a shared vision for biodiversity and a set of outcomes which will deliver that vision. It will provide a framework for ensuring alignment of key policies (for example between biodiversity, climate change and land use). It aims to drive coordinated action across key sectors.

A key part of the success of this strategy will be based on ensuring we correctly identify:

- factors which have limited the success of previous strategies; and
- an appropriate governance framework to ensure accountability for delivering the strategy.

In this way, we will give ourselves the best chance of delivering on our vision.

The Issues

Scotland published its first Biodiversity Strategy in 2004. However, the evidence tells us that, despite some isolated highlights, Scotland, in common with the rest of the UK and the world, has not done enough since 2004 to prevent the decline in biodiversity.

It is clear on reviewing the 2004 strategy that our vision for the future, analysis of the problem and priorities for action have not greatly changed in the last 15 years, nor have we developed fundamentally different or new means of addressing the problem. What we have come to understand is that key shortcomings relating to governance and accountability structures and mechanisms for mainstreaming biodiversity into all areas of policy, including economic policy making, have undermined our ambitions. As highlighted in the Environment Strategy, our role in tackling the climate and nature crises will rely on transformative economic and social change. Reversing biodiversity loss cannot be achieved through traditional conservation measures alone – these must be accompanied by a more fundamental, society-wide shift to sustainable consumption and production.

It is clear that progress in delivering the outcomes highlighted above will depend on key 'conditions for success' being in place. These include:

- High Level **Strategic Leadership;**

- **Governance** arrangements which:
  - ensure policy coherence and effectiveness, and **alignment** with other relevant strategies; and
  - are **inclusive** and engage and empower local and regional institutions;

- Sufficient public and private responsible **investment** to deliver the desired outcomes;

- A participatory and inclusive **'whole-of-society'** approach that engages:
  - a wide range of delivery partners including especially local authorities and non-governmental organisations (NGOs);
  - local communities and communities of interest;
  - business, including especially land-based businesses;
  - the scientific community, academia; and

  - other stakeholders; and

- **Evidence** supported by up-to-date information, particularly monitoring, to support the development of delivery policies and assess their effectiveness.

Proposed Outcomes

Strategic Leadership

- Ministerial leadership of a high-level strategic forum will facilitate agreement around priorities, the content of delivery plans and troubleshoot issues;

- Agreed priorities and outcomes contribute to coordinated messaging which helps achieve widespread public understanding and acceptance.

Governance Structures and Accountability

- Inclusive, coordinated governance structures result in consensus on priorities, and buy-in among key decision makers;

- Biodiversity values are mainstreamed into policies, regulations, planning, development processes, and accounting systems, at all levels of government and across all sectors of the economy;

- A delivery model based on line of sight between governance of strategic outcomes and actions to deliver them, incorporating ‘live’ feedback on their impact;

- The fitness for purpose of the legislative framework is regularly reviewed in order to ensure it is able to deliver the strategy’s outcomes;

- Statutory targets drive action across all areas of economy and society;

- An independent body (to be determined) to monitor and report on progress.

Funding and Responsible Private Investment

- Public investment leverages and works alongside increasing levels of responsible private investment in a values-led high integrity natural capital market;

- Businesses assess and report on their dependencies and impacts on biodiversity, and eliminate negative impacts;

- Just Transition principles are embedded to ensure that incentives to nature recovery and regeneration align with socio-economic and community priorities.

Public Engagement and Communications

- Achieve widespread consensus on strategic outcomes by ensuring the links between biodiversity loss, climate change, and land and sea use are clearly established in the public imagination;

- Regular and high quality outdoor learning in – and about – nature from 3-18 years has a key role to play in increasing climate-nature literacy, positive behaviours and an update in the career pathways that will be needed to deliver a nature rich Scotland;

- Consumers have the information about alternatives they need to reduce the impacts of consumption on biodiversity through their choices;

- Citizen science supports the breadth and depth of our evidence / knowledge infrastructure;

- Local communities and communities of interest – representing a fully diverse range of groups – develop projects which regenerate biodiversity. Volunteering supports delivery of many of the projects at land and sea.

Evidence and Data

- An improved monitoring framework and suite of indicators is in place on biodiversity and ecosystem health;

- Effective monitoring supports the delivery of the statutory targets;

- Harness technological innovation to enable different ways of assessing our biodiversity and support individuals to contribute;

- Funding and other interventions are based on evidence of what works in conservation.

Questions:

Have we captured the key enabling factors which are essential in order for our strategy to be successful?

Are there good examples of enabling conditions in other strategies we could learn from?

Questions:

Can you set out how you think any of the proposals set out in the consultation might help to eliminate discrimination, advance equality of opportunity and foster good relations?

Can you provide any evidence which informed your conclusions?

Responding to this Consultation

We are inviting responses to this consultation by 08/09/2022.

Please respond to this consultation using the Scottish Government's consultation hub, Citizen Space (http://consult.gov.scot). Access and respond to this consultation online at https://consult.gov.scot/environment-forestry/scottish-biodiversity-strategy-2022. You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the closing date of 08/09/2022.

If you are unable to respond using our consultation hub, please complete the Respondent Information Form to:

Biodiversity Team
Scottish Government
3H South
Victoria Quay
Edinburgh,
EH6 6QQ

Handling your response

If you respond using the consultation hub, you will be directed to the About You page before submitting your response. Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to published. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form included in this document.

To find out how we handle your personal data, please see our privacy policy: https://www.gov.scot/privacy/

Next steps in the process

Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at http://consult.gov.scot. If you use the consultation hub to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so. An analysis report will also be made available.

Comments and complaints

If you have any comments about how this consultation exercise has been conducted, please send them to the contact address above or at Biodiversity@gov.scot.

Scottish Government consultation process

Consultation is an essential part of the policymaking process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: http://consult.gov.scot. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.

Scottish Government
Riaghaltas na h-Alba
gov.scot

Consultation on the Scottish Biodiversity Strategy

Respondent Information Form

Please Note this form **must** be completed and returned with your response.

To find out how we handle your personal data, please see our privacy policy: https://www.gov.scot/privacy/

Are you responding as an individual or an organisation?

☐ Individual

☐ Organisation

Full name or organisation's name

Phone number

Address

Postcode

Email

The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

☐ Publish response with name

☐ Publish response only (without name)

☐ Do not publish response

Information for organisations:

The option 'Publish response only (without name)' is available for individual respondents only. If this option is selected, the organisation name will still be published.

If you choose the option 'Do not publish response', your organisation name may still be listed as having responded to the consultation in, for example, the analysis report.

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

☐ Yes

☐ No

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Any enquiries regarding this publication should be sent to us at

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