LINK Consultation Response

Scottish Biodiversity Strategy 2022

12 September 2022

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Introduction to Scottish Environment LINK

Scottish Environment LINK is the forum for Scotland's voluntary environment community, with over 40 member bodies representing a broad spectrum of environmental interests with the common goal of contributing to a more environmentally sustainable society.

Its member bodies represent a wide community of environmental interest, sharing the common goal of contributing to a more sustainable society. LINK provides a forum for these organizations, enabling informed debate, assisting co-operation within the voluntary sector, and acting as a strong voice for the environment. Acting at local, national and international levels, LINK aims to ensure that the environmental community participates in the development of policy and legislation affecting Scotland. LINK works mainly through groups of members working together on topics of mutual interest, exploring the issues and developing advocacy to promote sustainable development, respecting environmental limits.

PART 1 – INTRODUCTION

PART 2 - The Evidence of Biodiversity Loss

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?

It has been unequivocally established by peer-reviewed science that we are facing a nature crisis, both globally and here in Scotland. Evidence of this crisis has been gathered over decades. Given the strong evidence base – indeed summarised in this consultation document by the Scottish Government – we are not clear on the need for posing this question. However, we agree with the implicit suggestion that public awareness of the nature crisis here in Scotland must be improved.

The evidence base on pages 7-9 is excellent. It is the best summary of the state of Scotland's nature that we have seen from the Scottish Government. This is hugely encouraging, given the collective efforts over the past few years to develop a shared evidence base. With regards to the condition of native woodlands, the data that reflects the condition of all native woods should be used, not just that for the condition of woods in protected areas. For example, the Native Woodland Survey for Scotland found that more than half of Scotland's native woods are in poor condition for biodiversity, while the more recent National Forest Inventory Woodland Ecological Classification shows that only 3% of Scotland's native woods are in good ecological condition.

We are especially pleased to see reference to the Biodiversity Intactness Index, a tool we feel is incredibly useful for understanding the historical loss of terrestrial biodiversity in Scotland and we would like to see the more detailed summary of the BII, currently set out on page 22, set out upfront in the evidence section in the final SBS document. We would additionally include data on the condition of designated features alongside the information provided on the extent of protected areas.

It is disappointing that more evidence isn't made available for freshwater environments. Freshwater is one of the most monitored ecosystems in Scotland with data available on diatoms, macrophytes, invertebrates and fish through monitoring undertaken by SEPA for Water Framework Directive (WFD) reporting and by fisheries trusts through the National Electrofishing Programme for Scotland (NEPS). For example, 76% of rivers are classified as Good or High for biological quality by SEPA.

Quantification could be helpful - from what areas have we lost the greatest biodiversity and what were the causes (e.g., lowlands more affected than highlands, urban and farmed areas more than forest or uplands with intensive pesticide use, fragmentation of habitats, vulnerable seabed species and biogenic habitats etc), and then target actions accordingly.

In addition to the factors mentioned there are also plant and animal diseases such as ash dieback and avian flu. Individuals which survive these will be under stress and more vulnerable to other stressors. In addition, there are increased risks from water scarcity/drought (as seen across the UK this summer), wildfire and strong winds.

It is also important to recognise the positive action that has taken place in recent decades. There are many examples where there has been a recovery of nature due to managed interventions. The Carrifran Wildwood project of the Borders Forest Trust is one of many. The RSPB Futurescapes project is another which operates at the landscape scale. The recovery documented in the Community Marine Conservation Area in north Lamlash Bay, Isle of Arran, provides an excellent example of what is possible under the sea.

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

Opportunities:

There is now an opportunity for Scotland to turn these losses around and become a world leader in biodiversity recovery, alongside the leadership shown on tackling the climate emergency. Nature and climate are inextricably linked and cannot be meaningfully addressed separately. We need a coherent approach to tackle these challenges in a mutually supportive way.

We need Net Zero and Nature Positive to work in tandem: restoring nature can be a huge part of the climate solution, as restoring habitats like peatlands, native woodlands, coastal habitats, grasslands, and our ocean to a healthy state will help lock up carbon, as well as helping wildlife to thrive. Reaching net zero depends on enhancing the role of nature in removing carbon from the atmosphere. The Intergovernmental Panel on Climate Change's (IPCC) latest climate report highlights that safeguarding and strengthening nature is key to a liveable future.

However, beyond investing in natural solutions to climate change, nature will need other actions to thrive across Scotland, such as tackling some of the big drivers of nature loss like habitat loss, overfishing, chemical and plastic pollution, and invasive non-native species. We must also halt species extinctions and reverse the fortunes of rare and threatened species. They must be the stars

of an ecosystem restoration approach and their unique individual needs must not be lost within landscape-scale actions across land and sea.

It is vital that the Scottish Government delivers a Just Transition to Net Zero and Nature Positive, that invests in the jobs and skills of the future, supports sectors to adapt and makes sure the costs of the transition do not burden those least able to pay. Whilst Just Transition is a concept more closely associated with the climate crisis and the energy sector, it is equally as significant for tackling the nature crisis and supporting rural industries like agriculture, forestry, peat extraction industries such as the production of whisky and fisheries to transition to nature-positive methods.

There are significant opportunities in Scotland for growing and expanding the nature-based sector, creating green jobs and skills and supporting local, resilient economies. The Scottish Biodiversity Strategy must join up effectively with the Scottish Government's work on green jobs and skills, by helping identify key areas for investment in future nature-based skills and training and outlining key actions that will be taken under the strategy. This will help establish what roles will be needed and ensure skills development can be frontloaded now, for successful delivery of the strategy to 2045. This will help avoid a situation where delivery is hampered by lack of skilled contractors, which for example has been the case over the last few years with peatland restoration or the delayed roll-out of regional marine planning. As highlighted throughout this response, there is an urgent need for public engagement to be an intrinsic part of the Scottish Biodiversity Strategy. That engagement and education needs to be carried through from early-years to tertiary/life-long learning.

Increasing the connectivity between semi-natural habitats will permit organisms and/or ecological processes to move and operate across the landscape in the face of climate change, hopefully reducing the number of native species which will be lost to Scotland. However, there will be some, such as those inhabiting our highest mountains, which will inevitably 'run out of road' and be lost. Increasing connectivity in this way has a downside however, in that it may also permit the movement of invasive non-native species - a side-effect which will have to be monitored and addressed by action where necessary.

We welcome the consultation document acknowledging that Scotland's Marine Assessment 2020 "highlighted declines in biogenic habitats and species such as Atlantic salmon" and that "fishing remains a widespread impact on the seabed". The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment also concluded that "in marine systems, fishing has had the most impact on biodiversity (target species, non-target species and habitats) in the past 50 years alongside other significant drivers". Whilst this is of course a challenge (as we will acknowledge below) it also presents an opportunity provided that, with sufficient vision, planning and resources, we can successfully and justly transition to a nature and climate smart maritime economy, with transformation of those sectors such as fishing and aquaculture that have the greatest impact on marine biodiversity of utmost urgency, to reverse the decline of nature at sea. The Blue Economy Vision must therefore also have the recovery of nature at sea at its heart and encourage all future economic use of the coast and ocean surrounding Scotland to be nature and climate smart.

Ultimately, we need to consider how ***all*** of the key drivers of biodiversity loss (habitat degradation, over-exploitation, climate change, pollution and invasive non-native species) are impacting each of Scotland's priority habitats and the most applicable measures for restoration and to increase resilience. **Nature-based solutions, defined according to the IUCN definition, are a useful tool for tackling the twin crises but the present strategy must be directly focussed on the key drivers of biodiversity loss and what steps need to be taken to address the causes.**

Challenges:

We need to act fast if we are to save Scotland's nature. Despite having previous strategies nature has still declined at an unprecedented rate, signalling the need for a significant gear change. This requires the right resources in the right place and at the right time. This requires a strategic national approach to target funding, public and private investment, action and to decide trade-offs in an informed, collaborative way. For example, funding is required to support farming communities and land managers to shift to a strong focus on delivering public benefits around carbon and biodiversity. Policy can set the intention and parameters to direct public and private investment. Investment directed into the provision of public goods (ecosystem services) through funding models for low carbon sustainable land management, agroecology, eco-tourism would support a shift from intensive land management towards nature friendly land management whilst supporting employment and business opportunity.

The scale of the problem makes it hard for people to visualise that a solution is possible, it is hard to show people the change they can make. The big picture solutions are not easy to see but are the more important actions. The language that is used around climate change and biodiversity is complex. We need to explain the crisis in an accessible way. The opportunity is to speak as one voice on climate change and biodiversity with coherent messaging and inspiring stories and case studies.

When discussing peat restoration, peat extraction and the joint nature and climate reasons for halting this are not mentioned in the strategy. Furthermore, the strategy currently fails to highlight the opportunities that could be created in the rural economy by tackling both biodiversity and the climate crises together.

We welcome the consultation document acknowledging that Scotland's Marine Assessment 2020 "highlighted declines in biogenic habitats and species such as Atlantic salmon" and that "fishing remains a widespread impact on the seabed". We have already highlighted that the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment concluded that "in marine systems, fishing has had the most impact on biodiversity (target species, non-target species and habitats) in the past 50 years alongside other significant drivers". The challenge therefore is to transition to a nature and climate smart maritime economy successfully and justly, with transformation of those sectors such as fishing and aquaculture that have the greatest impact on marine biodiversity of utmost urgency, to reverse the decline of nature at sea. The Blue Economy Vision must therefore also have the recovery of nature at sea at its heart and encourage all future economic use of the coast and ocean surrounding Scotland to be nature and climate smart. To do so, it must be integrated with a robust Scottish Biodiversity Strategy and an updated Marine Nature Conservation Strategy.

PART 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.

Is the draft vision clear enough?

While the vision, as drafted, is a good foundation to start from, some changes are needed to create a better collective understanding of what the strategy aims to achieve. We feel the vision has been weakened from previous versions LINK commented on. We suggested including:

- reference to a reversal in biodiversity loss across all our ecosystems
- reference to halting extinctions
- reference to how key sectors of our economy is supporting and acting in harmony with nature

We suggest that it may be useful to include the framing of Nature Positive, to better clarify the ambition in the vision and link this clearly to the two milestones set out later in the consultation document.

Is the draft vision ambitious enough?

In addition to the suggestions above to strengthen the vision, we suggest that the vision should better reflect:

- the scale, pace and transformative nature of the change needed to restore nature

- reference to wider socio-economic benefits that this will deliver to society e.g., a resilient economy

The 2030 milestone to halt nature loss should also be included in the vision. The wording 'by 2030 we will have halted nature loss' should be included.

The Scottish Government has committed to bring forward a Natural Environment Bill in 2023/24, to include nature restoration targets: "*based on an overarching goal of preventing any further extinctions of wildlife and halting declines by 2030 and making significant progress in restoring Scotland's natural environment by 2045…expected to include outcome targets that accommodate species abundance, distribution & extinction risk, and habitat quality and extent. The targets will reflect the challenges of a changing climate."*

We expected a clear link to be made in this SBS to both the forthcoming Bill and CBD post-2020 global biodiversity framework, as highlighted in the Statement of Intent, and for more detail about the promised targets to be included. This critical context is currently absent. We do support the two key milestones that Ministers have defined to deliver the strategy, which match the above commitment to nature restoration targets. We suggest that these should be set out in more detail – either as part of the vision statement, or as an accompanying overarching objectives section. It should be explained that these milestones will be incorporated into a Bill. It is important for there to be clear readthrough between the SBS and the Bill to ensure that this be a comprehensive package and drive real impact.

We suggest that the SBS includes an overall target for area-based restoration measures on 20% of Scotland's land and sea area by 2030, to align with the proposed EU Restoration Law in order to maintain or exceed EU standards.

In order to meet the commitments set out in the Scottish Government's statement of intent on biodiversity, Scotland's upcoming Natural Environment Bill in 2023 must contain ambitious nature recovery targets. With a commitment to binding nature targets in the Natural Environment Bill, the new Scottish Biodiversity Strategy (SBS) also needs to set out how those targets will be met, including through subsequent delivery plans and mainstream biodiversity delivery right across government. The bill must specify that the SBS should include policies and proposals to ensure these new targets will be met. None of this detail is yet included in the Strategy but needs to be for success. At the very least there needs to be a date set to have plans that are clear on the outcome targets, the actions and the resources stated and performance accountable on this being met.

Furthermore, the Natural Environment Bill should require annual reporting against progress towards the targets, achieved through the Biodiversity Strategy and other strategies, frameworks, and policies. We are unlikely to succeed in saving Scotland's nature without a greater sense of urgency and investment.

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

The new Scottish Biodiversity Strategy must offer the mechanism to tackle the climate and nature crises together. To be successful, the strategy must be ambitious, challenging and focused on achieving targeted, measurable results. It must also inspire and engage people across society. To reflect that, we propose that the next strategy is called **Scotland's Nature Emergency Strategy: A Strategy for Recovery.**

PART 4 - How will we know when we have succeeded?

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

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

A habitat-focused approach, working to restore specific ecosystem types via dedicated programmes of action, will allow effort to be targeted to where it is most needed. The strategy outlines broad landscape types and sea types and within these there is a need to identify specific ecosystems for targeted action and restoration. The strategy should highlight Scotland's key ecosystem types, setting out both a 2045 and 2030 vision for each habitat which highlights the need to restore ecological processes and linkages between them, along with the key steps required to get there.

We need the Strategy to include a national programme to restore these wild places with our most important nature sites protected and nurtured, and wider nature networks to be created so nature thrives everywhere. For example, the Scottish Government commitment to peatland conservation and restoration has provided a good model/blueprint that we believe should be rolled out across

other ecosystems and it would be helpful to refer to this in the strategy outcomes. The 10-year commitment to invest £250m on peatland restoration is very welcome. However, it is also clear that more funding will be required, if Scotland is to restore to good health sufficient peatland to meet climate and biodiversity targets. This is because there are around 1.9m hectares of peatland in Scotland and 70% (or 1.4m hectares) are degraded to some degree. £250m will fund the restoration of just 250,000ha but cannot address the scale of the problem.

While the second outcome on nature recovery includes a welcome commitment to natural regeneration of woodlands and increased diversity and connectivity, other nature recovery schemes such as grasslands and wetlands are excluded. The statement must be broadened to recognise the full range of Scotland's nature that has been degraded or is at risk. There is also no measurable ambition in this statement.

We also need a national programme of species recovery targeted at threatened species, alongside a much more effective habitat restoration programme. The profile of species and species recovery is currently too low in the draft strategy, given that species are the building blocks of ecosystems. Furthermore, we need a commitment to monitoring species as an indicator of success in order to support existing monitoring schemes. Not only do we have a moral responsibility to save species, but they are vital for healthy, functioning ecosystems.

Soil is often neglected in strategies, so we welcome its inclusion here and recognition of the major factors damaging soils. However, it is an integral part of most ecosystems and separating it only as a Nature-based Solution in the outcomes does not adequately recognise this.

Farmland practices should be supported, through new agri-payment schemes to deliver public goods such as biodiversity, soil, improved water and air quality, access to nature and other ecosystem services.

In terms of woodland, we would suggest additional outcomes would be helpful:

Scotland’s native woodlands cover 10% of land area, with at least a quarter (>25%) of native woodland in 'good' ecological condition, with all the remaining considered to be in improving ecological condition. All ancient woodlands are in secure condition, meaning their future survival is ensured through adequate management. Ancient Woodland has been protected, restored, and improved to demonstrate the Scottish Government's leadership on meeting UK commitments to the Glasgow Leader's Declaration on Forests and Land Use. Buffer zones are established around Ancient Woodlands to encourage natural colonisation.

We also propose the following addition to the outcomes related to woodlands and forestry: more forestry is under continuous cover forestry management, which aims to develop structurally, visually and biologically diverse forests, in which sustainable production of quality timber is achieved along with the provision of biodiversity and a wide range of ecosystem services.

There is no clarity about the status of the points in the infographics - are these commitments to actions or just general visions, what actions will deliver these? There are no infographics for the other sections outside uplands and lowlands - for consistency infographics should be developed for each section but with clarity around what they are representing. The infographics are useful, but it should be clear what they are and there should be one for each section. Furthermore, infographics for each section would be a useful communication tool in due course. We suggest producing an infographic highlighting the connections between land and ocean health.

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

All the outcomes in this section are vague and need to be accompanied by SMART 2030 and 2045 targets to provide a clear thread and framework that can be implemented via each respective delivery plan. Targets are also key for helping measure progress towards the milestones and vision set out in the strategy. As drafted, it will be difficult to determine progress towards many of the outcomes. The strategy is currently missing any clear outcomes relating to species recovery.

There needs to be a logic chain linking evidence, priorities, actions, outputs, and outcomes. Now, we have the preamble and then the outcomes but with nothing in the middle. We need the middle element to assess whether the strategy is likely to be successful or not: actions, roles and responsibilities, resources, and timeline. These aspects are frequently absent from Government strategies and are fundamental if resources are to be adequately allocated and action is to be taken.

There is nothing about the financial sustainability of the forms of agriculture that will help achieve the biodiversity goals. These will include pasture-fed cattle, regenerative agricultural practices, diverse herbal leys, intercropping and appropriate lowground arable agriculture. The increased price of nitrogen fertiliser should improve the use of natural nitrogen-fixing leguminous crops in rotations and the viability of the types of arable agriculture that use lower amounts of it but larger areas of land will be needed to produce the same amount of grain.

Scotland needs a reduction of deer numbers to levels at which natural processes (such as flowering and fruiting of plants, survival of tree seedlings to allow woodland regeneration, widespread survival of palatable plants currently restricted to ungrazed ledges etc.) are not drastically inhibited. This should be expressed as a clear SMART outcome.

We would like to see the following list of Scotland's key ecosystem types with a 2030 vision in order to restore ecological processes and linkages between them, along with the key steps required to get there.

Furthermore, there must be species centred outcomes, as highlighted in the CBD's draft of the post-2020 global biodiversity framework, to protect threatened species that need species and targeted intervention and won't survive (or arrive) by ecosystem restoration happening around them. Species are one of the three CBD components /pillars of biodiversity. For example, each habitat in this section, and the following ones, should include an equivalent target for species to the CBD draft zero target 4 (July 2021) on species recovery and conservation.

The following key elements need to be collectively worked through into targets for the follow-on delivery plan discussions.

Our suggestions of key elements are:

Mountains, uplands and arctic-alpine habitats

Vision: Our mountains and uplands are refuges for special plants and animals adapted to colder, harsher, conditions in which they thrive.

- Restore upland peatlands
- Re-establish montane scrub - juniper, birch and willows
- Reduce nitrogen deposition/ pollution
- Sustainably manage deer populations by implementing independent Deer Working Group Report recommendations accepted by the Scottish Government in full and soon. Reduce deer numbers to levels which allow natural tree regeneration.

- Manage recreational pressures to prevent damage to fragile mountain top ecosystems
- Implement proposed muirburn licensing scheme for all vegetation burning both for agricultural and sporting purposes.
- Stop the illegal killing of birds of prey; we welcome plans to introduce a Wildlife Management (Grouse) Bill which will implement the recommendations of the Werrity Review. With good enforcement this will drive out bad practices. There can be no place for persecution of our amazing bird of prey species.
- Ensure sufficient resources for NatureScot to administer licensing schemes and for effective enforcement. Legislate for new powers for Scottish SPCA to investigate wildlife crime, building on existing animal welfare powers.

Peatlands

Vision: By 2030 Scotland's peatlands (defined appropriately and not limited to deep peats only) are recovering and are functioning as carbon stores as well as providing vital wildlife habitat.

- End burning on peatlands
- End the extraction and sale of peat for horticulture
- End afforestation on peat
- Reduce nitrogen / chemical deposition onto peatlands
- Tackle re-seeding of non-native tree species onto peatlands from plantations
- Protect and restore blanket bogs and lowland raised bogs
- Reduce damage by deer and livestock through trampling and browsing

Rainforest

Vision: By 2030 Scotland's rainforest is thriving once again.

- Eradicate Rhododendron ponticum strategically, at whole-catchment scale
- Reduce deer densities in the rainforest zone to levels that allow natural regeneration. As a rule of thumb appropriate densities could be around 2 to 3 per km2 within woodlands, although this needs to be determined on a site by site basis.
- Protect/encourage veteran trees and deadwood habitats
- Protect and enhance internationally and nationally important populations of lichens and bryophytes

Caledonian pinewoods

Vision: By 2030 a connected and expanding network of Caledonian pinewoods full of unique species, including ants, twinflower, red squirrels and pine hoverfly for example, tower over our landscape.

- Restore the health and resilience of Caledonian pinewood in our landscape
- Support rare species restoration programmes, e.g. pine hoverfly breeding programme
- Ensure no loss of important populations of key species, e.g. wood ant colonies - translocating nests where needed
- Reduce deer populations to under levels that allow natural regeneration, as a rule of thumb 2 deer per sq. km in key pinewood areas

Ancient woodlands

Vision: By 2030 loss of ancient woodlands has been halted and they are in good ecological condition.

- Sustainably manage deer populations to allow natural regeneration, as a rule of thumb to densities of around 2 per km2

- Recognise that Ancient Woodlands comprise Ancient Semi-Natural Woodland (ASNW) and Plantations on Ancient Woodland Sites (PAWS). We need to protect all AW, improve the condition of ASNW and restore PAWS to ASNW status.
- Ensure no further loss and degradation from inappropriate development
- Eradicate invasive non-native species, at catchment scale, and with appropriate long-term follow up
- Develop and deliver an Ancient Woodland Register to map the location and condition of all ancient woods, and use this data to target incentives for restoring and expanding these habitats
- Protect transition woodland/bog habitats on woodland edges
- Protect ancient trees and standing deadwood, encourage veteranisation of trees if needed
- Improve biosecurity to prevent spread of tree pests and diseases

Grasslands and High Nature Value farmland

Vision: Scotland's species-rich grasslands are valued and restored. Machair, meadows and species-rich pastures are protected and managed for their biodiversity and multiple ecosystem services.

- Develop a comprehensive grassland database for Scotland which builds on the existing UK Countryside Survey - https://countrysidesurvey.org.uk/
- Support species-rich grassland restoration, meadow creation and management in agri-environment schemes
- Support High Nature Value farming.
- Legally protect ancient grasslands
- Protect hedgerows and field margins
- Encourage intercropping
- Reduce pesticide use and ban certain pesticides e.g. neonicotinoids
- Plant the right tree in the right place, avoiding high organic matter and species-rich grassland

Freshwater

Vision: By 2030 free-flowing rivers are common-place and their floodplains are rich in wetland habitats.

- River and floodplain wetland habitat restoration planned strategically through a Nature Network.
- Natural flood management and nature-based solutions to climate change mainstreamed.
- Presumption against any development on flood plains.
- Redundant/unnecessary artificial structures in rivers which block the migration of fish and the movement of gravels and sediments removed.
- Comprehensive assessments of the impact of new structures upon freshwater, beyond just considering the impacts on migratory fish.

- Restore and recreate wetlands, such as reedbeds, ponds, wet meadows and wet woodlands to make a significant contribution to securing biodiversity.

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

Agricultural practices and land use - pesticides, herbicides, insecticides, continuous use of chemical fertilisers (improves productivity but hides environmental problems) on farmed and public green spaces. For example, agricultural practices that are damaging involve intensive agriculture that uses

monocropping, grows high-erosion risk crops such as maize and potatoes on susceptible soils. New technologies in food production, especially intercropping, conservation tillage, manure incorporation to add organic matter and feed soil biology and protein production which will be key to achieving connectivity and increased diversity of ecosystems on land.

Overgrazing by livestock and deer. Chronic grazing pressure and resultant loss of ground cover plants and soil cohesion is of great concern contributing to direct losses of soil through increased compaction and carbon via erosion. Increased use of regenerative grazing practices such as mob grazing will improve soil structure, water infiltration, biodiversity and increase or maintain organic matter levels.

INNS and tree pests and diseases.

Inappropriate planting of trees on peatland/need for strategic planning of climate measures to avoid unintended consequences for biodiversity.

Habitat loss.

What are the key opportunities for this outcome area?

We give two examples of opportunities in this outcome area.
Scotland's rainforest has been recognised as a nature-based solution to the climate emergency and the Scottish Government has stated that the rainforest will be restored and expanded. We want to see the rainforest restored as part of the delivery of the Scottish Biodiversity Strategy. As the best way to deliver this The Woodland Trust, Plantlife, RSPB, WWF are proposing a dedicated Scotland's Rainforest Restoration Fund to secure the future of the rainforest. The cost of restoration has been estimated at £500m. This fund is a targeted, multi-year investment programme aimed at the whole ecosystem restoration of this globally important habitat and follows the model set by the Peatland Restoration Fund (see above). Such funds are not a replacement for the wider Nature Restoration Fund. They are instead part of the £15 - 27 billion investment fund estimated by the Green Finance Institute to restore nature in Scotland. The immediate aims for the restoration of the rainforest are to:

- Clear invasive *Rhododendron ponticum* from 134,000ha of the west coast including the 30,000ha of core rainforest sites, a further 24,000ha cleared in a buffer zone around existing woodland areas, and an additional 80,500 ha of other habitat cleared to ensure catchment scale eradication to prevents re-invasion. This can deliver biodiversity benefits and create local jobs as rhododendron control is labour intensive.
- Develop a sustainable grazing management regime for both wild deer and domestic livestock over a 25,500ha area in this zone to allow the rainforest to regenerate naturally, which will enable it to sequester more carbon and ensure the long-term survival of its biodiversity.
- Expand and connect existing areas of core rainforest to double its area, providing greater resilience to other threats such as ash dieback, nitrogen pollution and climate change.

B-Lines are designed to reconnect our landscapes, enabling pollinators and other wildlife to move freely, and supporting nature's recovery through a network of wildflower insect superhighways, mapped, and delivered through partnerships. The John Muir Pollinator Way was Scotland's first B-Line. Cutting right through the heart of central Scotland. Pollinator habitat patches are being created in partnership with local authorities to benefit not only bees, butterflies, and other pollinating insects, but also contribute to the health and wellbeing of local people. The SBS could support B-Lines projects across the country for example by using Regional Land Use Partnerships to deliver effective pollinator

networks on a regional scale and using B-Lines as a way of prioritising rural payments to landowners across the country.

Light pollution has received very little attention in Scotland, yet in recent years evidence of the impacts of artificial light on species and ecosystems has also grown and consolidated. Two-thirds of invertebrates are partially or wholly nocturnal, and even diurnal species can be impacted by the loss of their night. Scotland has several designated Dark Sky Places, but without a national target to reduce light pollution the problem continues to grow particularly around our large urban areas. Scotland can be a global leader on this issue by legislating against light pollution as a threat to biodiversity. In doing so recognising many benefits such as reduced energy costs and carbon emissions.

There is a real opportunity for Scotland to show leadership in protecting and improving habitats in the face of the climate and nature crisis, particularly through a strong Scottish Biodiversity Strategy with robust delivery plans.

What are the key challenges for this outcome area?

The challenges we see include the following:

Changes to Habitat Directives via the Levelling Up Bill in England are a potential threat to Scotland's ability to restore and protect nature. LINK's August 2022 letter to all four Governments of the UK illustrates the issues.

Preserving jobs in rural areas and ensuring enough people have access to, and the skills needed, to support the conservation and biodiversity work of the future. For example, ensuring that contractors learn the subtleties of wetland or species rich grassland habitat creation, peatland restoration and how to engineer nature-based solutions.

INNS - particularly *Rhododendron x. ponticum* in Scotland's rainforests. This needs a strategy with clear targets and objectives, and new ways of managing such as eradication at catchment scale, rather than at site/landowner boundary level, with legacy and follow up action to prevent re-invasion. Invasive non-native species are a threat and must be factored into new bilateral trade deals, through risk assessments and enhanced biosecurity measures introduced at points of entry. Cross border cooperation on the movement of species is crucial to protecting biodiversity and must be strengthened in the case of any proposed freeports. Freeports would weaken our ecological barrier and pose environmental risks beyond the geographic location of the freeport itself.

Habitat fragmentation and loss of connectivity: this must be reversed and implementing Nature Networks across Scotland and using all policy levers would be an important step forward.

In recent years evidence of the impacts of light pollution on species and ecosystems has grown and consolidated. Two-thirds of invertebrates are partially or wholly nocturnal, and even diurnal species can be impacted by the loss of their night. Scotland has several designated Dark Sky Places, but without a national target to reduce light pollution the problem continues to grow.

Pesticides, herbicides, and fungicides cause huge damage to wildlife and often the indirect consequence of their use is not factored into approval decisions. There must be a full assessment of the environmental risks posed by these 'cides, applying the precautionary principle to safeguard non-target species.

Spread of non-native tree species such as Sitka spruce from plantations into surrounding habitat.

Reducing nitrogen deposition, particularly the growing ammonia deposition problem due to agricultural activities.

Managing recreational pressures to prevent damage to fragile mountain top ecosystems.

Spread of pests and diseases.

Resistance to change/need to deliver solutions with stakeholders on board: there is a need to 'act like it is an emergency' and that level of commitment is not yet in place.

Conflict of interest in the remits of different bodies e.g., tree harvesting, and general conflicts in land uses. One way of alleviating this is by setting nature's recovery—and the achievement of statutory nature and climate targets as statutory purposes for all Scottish Government's environmentally-focussed agencies, including NatureScot, SEPA, Scottish Water, FLS, Scottish Forestry, Marine Scotland, Scottish Canals, Local Authorities, National Parks, etc. Clear rules about overlapping issues and how these are dealt with are needed.

Need for more ecological data and support for on the ground surveying. There are still gaps in temporal and spatial monitoring of protected sites that must be addressed. Environmental NGOs with expert knowledge of complex and hard to identify species must be supported to grow monitoring of these species through research and to share skills and train future generations to recognise and understand complex species and life cycles.

2. Marine Environment

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

The outcomes are vague and need to be accompanied by SMART 2030 and 2045 targets in order to provide a clear thread and framework that can be implemented via each respective delivery plan. Targets are also key for helping measure progress towards the milestones and vision set out in the strategy. As drafted, it will be difficult to determine progress towards many of the outcomes.

What population level and abundance will marine mammals, birds and fish be recovered to? How is "healthy" defined? These targets should already have been met for 2020 ("the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions") to achieve Good Environmental Status according to the Marine Strategy regulations, now shifted to 2024, so it seems counterintuitive for a target 21 years thereafter to appear to be no more ambitious than existing missed commitments. This statement also omits marine reptiles and invertebrates. Leatherback turtles are regular visitors to Scotland's seas to feed and should be included. Whilst many invertebrates are keystone species and ecosystem engineers in the pelagic and benthic habitats mentioned in the next target, inclusion of invertebrates in the first paragraph would also recognise the population-level goal that should also be aimed at for species such as squid, *Nephrops* and scallops, beyond simply their commercial value.

With regards to the sentence on page 19 of the consultation *"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 status of marine mammal populations in UK waters is known only for species which commonly occur around coastal areas (namely harbour porpoise, bottlenose dolphin, minke whale), given the challenges of long-term monitoring for highly

mobile species in offshore waters. The 2013-2018 assessment of cetacean conservation status for UK waters for the EU Habitats Directive found that all cetacean species (Annexes II, IV and V of the Directive) were listed as 'unknown' (JNCC, 2019). As such, it is not possible to know whether populations are stable, in decline, or increasing. The main method for estimating abundance and hence population status for cetaceans is by ship-based transect surveys. Large-scale synoptic surveys (SCANS) have been carried out once per decade but need to be more regular to detect population trends and deduce the possible underlying drivers of any trends observed. In addition, existing long-term species monitoring programmes undertaken by eNGOs must be supported.

In addition, for clear strategic integration, we would recommend an outcome saying that by 2045 Good Environmental Status has already been met for two decades and is already exceeded since ocean recovery is underway.

Scotland's approach to protection should follow the three-pillared approach of the Marine Nature Conservation Strategy, albeit with much strengthened protection, as follows:

Site protection

- at least 10% of Scotland's seas should be *fully* protected (i.e. category 1a under IUCN definitions), in which no extractive, damaging or depositional activity is permitted. These sites should represent habitats and populations in the inshore and offshore area, and also focus on protecting and recovering ecosystem services such as carbon sequestration and storage, coastal protection and protection of critical fish and shellfish habitat. Such IUCN *fully* protected sites are akin, perhaps somewhat confusingly, to the Highly Protected Marine Areas committed to in the Bute House agreement.
- at least 30% of Scotland's seas should be under high levels of protection (at least a third of which is fully protected, as above) - under IUCN definitions. There should therefore be at least a further 20% that conforms with IUCN category 1b, which will allow only small-scale, low-impact, sustainable activities at levels that allow and/or facilitate ecosystem recovery to take place. At present most of Scotland's MPA network is at a lower level of protection and there needs to be a step change in the level of protection in the existing MPA network, such that it is protected from damaging activities.
- at least 20% of Scotland's seas should be managed for active recovery and restoration, to enable populations of now remnant habitats such as seagrass and native oyster beds to return to pre-industrial levels.

Species protection pillar

- Scotland's seabird strategy and marine mammal strategy should be implemented with SMART targets in full to ensure threats are minimised, enabling populations to become self-sustaining and increasing.
- Mechanical harvesting of kelp that removes the holdfast should be banned throughout Scotland's seas.

Wider seas pillar

- Scotland's integrated marine planning and fisheries management framework must have the recovery of ocean nature at the very heart of management and decision-making, ensuring healthy flourishing seas that in turn are supporting resilient, net zero, nature positive coastal communities.
- Deep-sea mining and deep-sea aggregate extraction should be prohibited in the Scottish marine area.

- Protection of critical fish and shellfish habitats throughout Scotland's marine areas is crucial, and therefore the future catching policy, and access to quota, should be linked to spatial management. The inshore area is particularly important for providing critical fish and shellfish habitats, many of which are Priority Marine Features (PMFs), and this should be recognised as a geographical area in which only lower impact activities are allowed.

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

Yes, but they are too broad to comment on meaningfully or to measure practical, sectoral-specific actions that help work toward those milestones. An infographic such as the one produced for the uplands and lowlands is needed to show actions to move "towards a nature rich marine environment". It is difficult to provide much input without at least some detail of outcomes in different sectoral pressure areas. This is in marked contrast with the terrestrial chapter which has clear infographics showing the type of sector-specific action necessary, and we would urge similar for the marine section, to demonstrate a clear understanding and representation of the sectoral action necessary to recover nature at sea.

To tackle the intertwined climate and nature crises, a *de facto* ocean emergency, requires a paradigm shift from just protecting remnant habitats and ecosystems to recovering and restoring ecosystems on a large scale. The 2030 milestones must go further to protect our seas. By 2030:

Scotland's seas are at GES+; ecological decline is halted, marine ecosystems are recovering, and a climate and nature positive fishing plan is in place.

- At least 30% of Scotland's seas must be under high level of protection (IUCN Protected Area category 1b (highly protected) with at least one-third of this (so at least 10% of Scotland's seas) fully protected under a new MPA designation of Highly Protected Marine Area (HPMA) (IUCN Protected Area category 1a (fully protected).
- Contributing to 1, the entire Scottish MPA network must be truly protected from damaging activities following a whole-site management approach.
- To contribute to ecosystem recovery, criteria for HPMAs must include targeted recovery of damaged ecosystems, a minimum size of site and ecologically representative areas inshore and offshore.

Scotland's integrated marine planning and fisheries management framework has the recovery of ocean nature at the very heart of management and decision-making, ensuring healthy flourishing seas that in turn are supporting resilient communities through a net zero, nature positive and circular coastal and marine economy.

Low impact, demonstrably by-catch free, high-value nature and climate positive fisheries, with healthy and resilient stocks, support sustainable fishing opportunities, coastal communities and a growing domestic seafood market.

1. A transformed nature and climate smart fishing industry is operating within environmental limits, facilitating the recovery of seabed nature whilst providing climate and nature positive seafood and supporting coastal communities. This should include spatial management of fishing, particularly a presumption against bottom-towed mobile fishing gear in a significant part of the inshore area, a process starting with the commitment to cap and then reduce inshore effort, protection and recovery of critical fish and shellfish habitat and identification, protection and recovery of blue carbon habitat.

The National Marine Plan and 11 Regional Marine Plans drive the restoration of marine ecosystems throughout Scotland's marine area, ensuring all human activities operate within environmental limits and are robustly monitored.

- Active restoration at scale of complex habitats that support ecosystem services, including critical fish and shellfish habitat and "blue carbon", such as seagrass beds and native oyster beds and the recovery of large whale populations.
- Delivery of HPMAs and MPAs must be integrated with other processes, including improving protection of Priority Marine Features beyond MPAs, a cap on inshore fishing effort and regional marine planning.

Scotland has a waste-free circular economy, where refill/reuse of consumable products is required, where single-use items become redundant.

We would like to see the following list of Scotland's key ecosystem types with a 2030 vision in order to restore ecological processes and linkages between them, along with the key steps required to get there:

Inshore and continental shelf seabed habitats, including seagrass, flame shell, horse mussel, native oyster and maerl beds, fan shell aggregations and kelp forests for example:

Vision: Complex, interconnected seabed habitats support a variety of species throughout their life stages, from spawning and nursery grounds for fish and shellfish, securing refuges and foraging areas for small and large marine species alike.

- Implement LINK's Ocean Recovery Plan in full, including completing and protecting the MPA network and fully protecting at least 10% HPMAs
- Prevent sensitive species bycatch and entanglements
- Transform fisheries management to deliver nature and climate smart fishing
- Simplify the licensing system to enable active restoration of "blue carbon" and other ecosystem-service supporting habitats, such as seagrass and native oyster beds, from a diminished baseline
- Reduce plastic and chemical pollution, including from sewage and sewage related debris
- Enforce a presumption against any mechanical harvesting of any of Scotland's kelp species
- Control non-native invasive species and their spread
- Reduce reliance on chemical control of sea lice and disease in favour of management and technical alternatives in aquaculture
- Shut down poor performing aquaculture sites, that are unable to control diseases and sea lice numbers

Pelagic species and habitat

Vision: Pelagic ecosystems, the foundation of marine food webs, are functioning and connected; migratory routes for fish and mammals are free of anthropogenic hazards.

- Implement LINK's Ocean Recovery Plan In full including fully protecting at least 10% of pelagic habitat in HPMAs
- Ensure all fisheries are climate and nature smart and operating within ecosystem limits
- Prevent sensitive species bycatch and entanglements
- Reduce plastic pollution, and chemical pollution
- Reduce levels of anthropogenic underwater noise to the extent that they do not have negative impacts on marine life

- Avoid negative impacts on non-target species to protect their populations and the marine food web
- Protect the role of oceanic blue carbon (species and habitats) as pathways for long-term carbon storage
- Protect features that drive key oceanic processes, such as fronts, from damaging activities
- Reduce noise levels to the extent that they do not impact or impede the behaviour and migration of cetaceans
- Reduce plastic pollution, and chemical pollution

Deep water marine communities

Vision: Fragile and stable deep-water communities, including cold water coral gardens, sponge fields, seamounts and sediment communities remain undisturbed in perpetuity, allowing recovery from historic damage.

- Implement LINK's Ocean Recovery Plan in full
- Extend the deep-sea access regime for bottom-towed fishing gear from deeper than 800m to 600m
- Implement all outstanding MPA management measures, particularly to protect sea mounts shallower than 800m
- Reduce plastic pollution, and chemical pollution
- Prevent sensitive species bycatch and entanglements
- Reduce noise levels to the extent that they do not impact or impede the behaviour and migration of cetaceans

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

Scotland's Marine Assessment 2020 identified climate change and bottom-towed mobile and pelagic fishing activities as the key pressures facing marine biodiversity, yet fisheries management measures have only been implemented in a handful of designated inshore MPAs and we await the proposed Future Catching Policy for Scotland's fisheries. While the regulatory framework affords consideration of MPAs for licensable activities, including aquaculture and renewable energy developments, existing consents authorised prior to designation are able to continue within MPAs. Other Area-Based Measures, such as fisheries management areas, do not necessarily restrict fishing methods that cause the most damage to seabed habitats. In short, despite covering 37% of Scotland's seas (including Other Area-Based Measures), the majority of the MPA network continues to exist in name only without ecosystem-based spatial fisheries management, or measures to spatially manage other human activities.

As a significant driver of biodiversity loss at sea, transformation of fisheries management is fundamental to achieving the recovery of nature at sea. Scottish Environment LINK responded to the Future Fisheries Management discussion document setting out recommendations in detail. More recently, members of Scottish Environment LINK through the Future Fisheries Alliance developed a response to the Future Catching Policy consultation, to which LINK Marine Group members also signed up, which can be found here. Fundamental to this response, for the intertwined sustainability of future fisheries management and recovery of ocean nature, is this recommendation:

"We believe a comprehensive and transparent review should be undertaken of Scotland's fishing capacity in relation to fishing opportunities. As required under the sustainability objective of the

Fisheries Act fleet capacity must be such that it is economically viable but does not overexploit marine stocks. This is a vital consideration - if the fleet is not capable of operating within environmental limits it will fundamentally undermine the ability to deliver sustainable management.

Overfishing, direct damage e.g., through bottom trawling and dredging, avian flu, too little biomass at upper trophic levels, loss of apex predators, marine INNS, pesticide use in aquaculture, and bycatch and entanglements.

What are the key opportunities for this outcome area?

The Bute House Agreement commitments to designating at least 10% of Scotland's seas as HPMAs by 2026 and completing management of the current MPA network by 2024 must be met if we are to reverse the decline in nature at sea in time. In keeping with the Scottish Government's marine nature conservation strategy and an ecosystem-based approach, integration and coherence with parallel marine policies, including an updated National Marine Plan, regional marine plans and delivering climate and nature smart fisheries through the Future Fisheries Management process is also important. The Scottish Government's forthcoming Blue Economy Action Plan must also include recognition that meeting the Bute House marine conservation commitments, including on MPAs and HPMAs, can contribute to achieving the Blue Economy Vision outcomes, such as on Natural Capital and Climate.

LINK members recognise both the increasing demand for space at sea and the imperative for improved marine conservation measures to underpin ocean recovery. A collaborative approach with all stakeholders is therefore essential to achieving protected area objectives, to ensure that activities are sustainable and operate within environmental limits and to build support among stakeholders and wider society. Successful engagement must include improved stakeholder participation with clear expectations, wider strategy and support mechanisms for affected activities, use of best available science and independent scientific scrutiny of proposals.

Developing truly sustainable maritime sectors, particularly for fishing and aquaculture, is fundamental to the recovery of nature at sea, whilst also providing nature and climate smart economic opportunities**.** Doing so requires the transformation of both sectors. The fishing and aquaculture communities must be engaged in all discussions and support given to move away from unsustainable practices.

Active restoration of "blue carbon" and other ecosystem-service supporting habitats, such as seagrass beds, native oyster beds and saltmarshes.

Large whales such as sperm whales and baleen whales are important components of the carbon and iron cycles which sustain fisheries (Lavery et al., 2014) and contribute towards reductions in atmospheric carbon (Lavery et al., 2010; Pershing et al., 2010). The impacts of whaling in Scottish seas were previously underestimated and have been long-lasting including apparent local species extinction (Ryan et al., 2022). Aiming to recover whale populations by reducing threats from entanglement and habitat degradation (e.g., noise and over-fishing) should feed into blue carbon restoration estimates.

Progressing an ambitious Circular Economy Bill, coupled with robust implementation of the Marine Litter Strategy, could help reduce the prevalence of plastic and chemical pollution reaching waterways and the ocean.

There are some very positive actions being taken in marine ecosystem conservation and restoration, with native oyster (e.g. DEEP, Seawilding and Restoration Forth) and seagrass (e.g. Seawilding and Restoration Forth) restoration projects underway, and the Scottish Entanglement Alliance working to understand and reduce large whale entanglement in Scottish waters. For example, Hebridean Whale and Dolphin trust's monitoring work is an example of the importance of long-term species monitoring in identifying, tracking and tackling pressures in the marine environment.[1] These should continue to be supported as they provide significant opportunities for both biodiversity and community engagement in marine habitat restoration. Some aquaculture companies are putting their farms through the Aquaculture Stewardship Council certification process, which is helpful.

What are the key challenges for this outcome area?

An unsustainable footprint of capture fisheries in Scotland's seas, particularly the use of heavy, bottom-towed fishing gear, currently operating beyond environmental limits.

An unsustainable footprint of aquaculture in Scotland's inshore seas, currently operating beyond environmental limits, with industry ambitions to double the economic value of aquaculture by 2030.

Relatively high rates of entanglement in shellfish creels/pots is leading to a worryingly high mortality of minke and humpback whales. This is demonstrated by ongoing research from the Scottish Entanglement Alliance. Given that UK waters appear to host a mix of recovering western (Stevick et al., 2013) and endangered eastern (Berrow et al., 2021; Wenzel et al., 2020) humpback whales, the relatively high rates of entanglement of this species in Scottish waters (Ryan et al., 2016) is a conservation concern given the uncertain viability of the precariously small eastern population (Palsboll et al., 2017).

Continued plastic and chemical pollution (although progress is being made in the public consciousness of this issue and through initiatives such as the carrier bag charge). Historical and illegal use of now banned organochlorines is having a long-lasting legacy and apparently severe impact on the killer whale population in the Hebrides (aka West Coast Community, WCC). With only two males left in this population, its imminent extinction has been linked to both high PCB burdens and demographic factors. The decline of the WCC killer whales highlights the need to better protect marine mammals from organochlorine and other toxic pollutants in the future (Jepson et al., 2016).

Increasing spread of marine INNS and pests/disease, particularly with warmer seas. Pacific oysters represent a threat of becoming invasive in Scotland if spread from oyster farms or transportation. This has become a significant issue in Southeast England and should be monitored closely.

Increased offshore renewables as we move away from fossil fuels and imported energy. Ensuring projects are delivered in a way that avoids negative biodiversity impacts. However, there are also opportunities here as the seabed around wind turbines becomes, in effect, a no-take zone.[1]

Increasing noise pollution caused by shipping, renewables development and military sonar.

Cumulative impacts of developments and activities which are less well understood.

Impacts on biodiversity beyond Scottish waters in recognition of global ocean processes and connectivity. For example, the use of Antarctic krill feed for farmed salmon, the UK's biggest food export which is almost exclusively Scotland-based, is directly contributing to conservation concerns for whales and "blue carbon" in the Southern Ocean. Although Antarctic krill feed is often MSC

certified and is permitted in feed by ASC standards, there are serious sustainability concerns in this supply chain.

3. Freshwater Environment: Rivers Lochs and Wetlands

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

The outcomes are vague and need to be accompanied by SMART 2030 and 2045 targets to provide a clear thread and framework that can be implemented via each respective delivery plan. Targets are also key for helping measure progress towards the milestones and vision set out in the strategy. As drafted, it will be difficult to determine progress towards many of the outcomes.

The European Biodiversity Strategy has set a target of restoring 25,000 km of rivers to be free flowing. The Scottish Biodiversity Strategy should set a similar goal, ensuring that it is sufficiently ambitious to lead to real change for freshwater biodiversity. Targets should also be set for freshwater species abundance and the extent of pond and wetland habitats.

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

We would like to see the following list of Scotland's key ecosystem types with a 2030 vision to restore ecological processes and linkages between them, along with the key steps required to get there:

Rivers and lochs, ponds and wetlands

Vision: Our rivers are naturally dynamic, a shifting mosaic of small channels, islands and wetlands along the majority of their length. They are devoid of pollution and invasive species. Dippers dive under the water's surface to feast on a wealth of life below.

- Provide Ramsar sites with the same level of legal protection as European sites
- Prevent aquatic pollution such as agricultural runoff, chemicals from buildings and sewage waste
- Remove barriers, restore river channels and natural processes including braiding and floodplain wetting
- Ensure riparian edges have native species, providing dappled shade and cooling to the watercourses
- Reduce soil erosion to reduce silting of water
- Substantial restoration of Scotland's degraded peatlands
- Stop horticultural peat extraction and restore degraded peat bogs
- Manage water abstraction and temperature changes from industry
- Properly assess the impacts of new structures on a wide range of freshwater biodiversity, not just migratory fish
- Eradicate invasive non-native species
- Support community based freshwater invertebrate monitoring s an early alarm system to environmental changes in rivers
- Ensure beavers are restored to all suitable habitats across their range

The aim here should be to restore natural flow processes. Beavers, Salmon recovery and riparian woodland highlighted shouldn't be all that we measure success on. With around half of the world's

population of Freshwater Pearl Mussels, Scotland has an international responsibility for their conservation - we need to be reversing the declines in this, and many other species. We should do more than simply 'accept' freshwater nature-based solutions - we should be actively increasing the use of nature based solutions. Some species won't be able to 'naturally return' and for them there will need to be additional measures such as conservation translocations and ex-situ breeding. There should also be outcomes for the full range of freshwater biodiversity. There is more to freshwater biodiversity than Beavers and Salmon - without invertebrates and plants there would be no freshwater life.

Current monitoring of the freshwater environment focuses on rivers and lochs. We should extend this monitoring to other freshwater bodies such as ponds, marshes, ditches, and streams.

Key elements missing from this section include:

- Connectivity actions within freshwater environments.
- Outcomes relating to diffuse pollution (all issues mentioned should be addressed in outcomes)
- Outcomes to support response to climate change
- Riparian planting targets

- Instream temperature targets

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

The main drivers of biodiversity loss in freshwaters are:

Pollution - despite significant improvements in water quality 1 in 8 rivers in Scotland are only classified as Moderate to Poor for water quality. Invertebrates and fish may be impacted by pollution from point sources such as wastewater treatment works and combined sewer overflows, or from diffuse sources such as run-off from agricultural areas. An increasing area of concern is the impact of novel pollutants such as microplastics, pharmaceutical substances, persistent organic pollutants (known to be carcinogenic or endocrine disruptors) and pesticides. Our current understanding of the impacts of these pollutants is relatively limited but we know that they can have detrimental effects on algae and invertebrates which could have knock-on impacts further up the food chain.

Invasive Non-Native Species - INNS are one of the five principal drivers of biodiversity loss globally, as defined by the UN IPBES Global Assessment, and freshwater habitats are among the most vulnerable to INNS impacts. For example, the Ponto-Caspian invasives are a suite of dozens of freshwater species from numerous taxa that have spread across mainland Europe, devastating freshwater ecosystems. We now have at least 4 species established on the island of Britain – the relevant biogeographical unit for INNS – that are spreading, and the impacts are likely to be severe.

Land use change and Development pressures - Relative to their size and extent, freshwater habitats are of exceptional importance for biodiversity. However, many watercourses are now disconnected from their floodplains, limiting their ability to adapt naturally to changing conditions, and limits the availability of habitats such as ponds, wetlands, reedbeds, wet meadows and wet woodlands, which make a significant contribution to securing biodiversity, healthy functional ecosystems and the provision of ecosystem services, as well as being crucial to the protection and enhancement of

rivers, lakes and other freshwater habitats. Artificial structures in rivers also prevent the movement of gravels and sediments and block the upstream passage of migrating fish.

Climate change - Climate change is recognised as a major driver of change in nature, globally. In Scotland, it is causing widespread changes in the abundance, distribution and ecology of a range of wildlife. Freshwater habitats and species are particularly at risk, because of profound effects of the prevailing conditions of the water environment on interrelationships between ecosystem functioning and prevailing conditions. The impacts of climate change on freshwaters are likely to include increased air and water temperatures and an increased extent and frequency of flooding and droughts.

What are the key opportunities for this outcome area?

The River Basin Management Plan for Scotland, published last year, will address some of the issues in freshwater environments but lacks the ambition that is required to make significant progress in this area. Planning for the next RBMP due in 2027 should begin now so that key actions can be identified and put in place from the start of the plan period. The National Planning Framework is an opportunity to ensure that floodplains, rivers and other freshwater habitats are properly protected from inappropriate development. In particular, the planning process should include more comprehensive assessments of the impacts of instream structures proposed for hydro-schemes and flood prevention works to ensure no detrimental effects to the full range of freshwater biodiversity.

We need to accelerate the implementation of both strategic and specific actions to manage catchments in ways that reduce freshwater pollution, improve water quality and restore natural flow processes as part of efforts to address the nature and climate emergency. These interventions will both support nature's recovery, and help the freshwater environment become more resilient to the impacts of climate change.

The restoration and recreation of wetlands, such as reedbeds, ponds, wet meadows and wet woodlands, will make a significant contribution to securing biodiversity, healthy functional ecosystems and the provision of ecosystem services, as well as being crucial to the protection and enhancement of rivers, lakes and other freshwater habitats. In particular, the ecological and ecosystem services value of floodplains need to be better recognised, and the potential risk to rivers and lakes of failing to undertake improvements to wetlands should be considered as part of the cost-benefit assessment for land-based enhancements.

Measures such as avoiding development on floodplains, arable reversion and implementing measures such as crop rotations will support our adaptation to the effects of climate change, helping to restore the functionality of some floodplains. Other measures such as targeting tree planting in riparian areas will help to shade watercourses and prevent water temperatures from rising.

What are the key challenges for this outcome area?

As the effects of climate change increase it will exacerbate the effects of other drivers, e.g. low flows will concentrate pollutants, higher water temperatures will make freshwater habitats more hospitable for INNS, etc. It is essential that activities undertaken in the freshwater environment are future-proofed to provide resilience to freshwater environments, and to guard against unintended consequences.

Existing work to identify and remove unnecessary/defunct structures, and enforcement to deal with unconsented works, must be stepped up. Preference must be given to schemes which utilise nature based solutions/natural flood management wherever possible; it will not always be possible to adapt to climate change and the pressure to implement hard engineering solutions in order to attempt to do so must be resisted; we must instead think in terms of mitigating the impacts of a changing climate and select solutions which work with nature. Working with natural processes is now more readily considered but there remain questions that concern some stakeholders, such as around long-term maintenance, liabilities and so on, which would benefit from resolution.

As our understanding of such techniques grows, findings must be widely communicated amongst stakeholders, particularly to Local Authorities, to ensure that all involved in Flood Risk Management are able to draw upon techniques that work with natural processes in the widest sense, considering for example not just leaky dams, but measures such as soil health.

4. Coastal Environments

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

The change we need to see is not adequately captured by the level of detail given for all coastal habitats. It needs to be broken down into key constituent habitat types, with appropriate vision and outcomes for each.

Crucially, unlike the terrestrial sections there is no mention whatsoever of sectoral activities that should contribute to the recovery of coastal nature, such as coastal development that avoids damage to and enables the recovery at scale of important areas for nature. There needs to be more detail in this section setting out the 2045 outcomes for sectors that impact coastal biodiversity, including industrial facilities, housing developments, golf course development, other tourism developments and hard coastal defences. It is essential that the Scottish Biodiversity Strategy sets out clear expectations of those coastal sectors and activities that damage nature along the coast and in the intertidal area, and how transforming their activity to provide benefit to coastal nature is a prerequisite for long-term socio-economic sustainability.
LINK has already provided a vision of the key ecosystem types that the Scottish Biodiversity Strategy needs to embed action to restore. For coastal habitat these are as follows:

Estuaries, Saltmarsh and Intertidal habitats

Vision: Where freshwater meets saltwater the perfect conditions are created for snails and beetles and other food sources needed by the birds and other species we see enjoying our estuaries and saltmarsh. The ability of these habitats to provide nature-based solutions to mitigating climate change, ameliorating pollution and preventing floods is maximised.

- Protect Ramsar sites in law as well as SSSIs, SPAs and SACs
- Protect brackish lagoons and pools
- Remove barriers for water movement to maintain salt/freshwater conditions and allow passage of anadromous fish such as salmon and sea trout
- Manage reed beds
- Manage coastal realignment to prevent loss of these habitats

Islands

Vision: Seabird colonies are in good health and are breeding successfully. Endemic island species are thriving, alongside species making our islands their last refuge and home.

- Implement a rolling programme of island restoration (INNS eradication) and biosecurity (INNS pest and disease prevention and protection) for the whole Scottish Archipelago
- Support monitoring and science for endemic island species
- Enhance habitats for refuge species such as Great Yellow Bumblebee
- Protect sand eel populations, and wider prey species and reduce bycatch
- Protect our seabird colonies from marine litter and contaminants
- Management of visitor numbers to minimise disturbance

Coastal dune habitat, beaches, machair and maritime cliff habitat

Vision: Towering sand dunes are buzzing with rare bees and home to endemic species, safe from encroachment from the sea or damage from people. Beach ecosystems are natural and litter-free, with rich strandlines that naturally fertilise succession of coastal habitats. Extensive high nature value crofting systems sustainably supported and valued.

- Protect and manage machair habitats via crofting support and innovation
- Manage successional habitats to maintain ecosystem function
- Stop damaging developments (golf courses) on dune habitats
- Reduce levels of anthropogenic underwater noise to the extent that they do not have negative impacts on marine life
- Implement circular economy interventions to “stop the tap” of plastic and other waste into the sea, that washes up along the coastline
- Maintain, while needed, hand gathering of litter to support natural strand lines

Once this has been established the outcomes must include measures of connectivity, reducing pollution, including plastics, INNS management and protecting coastal habitats from development pressures, particularly where habitat connectivity and ecosystem resilience is threatened.

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

Given that the outcome statements are too generic and need more detail if they are to be effective, the milestones need to be fitted to more appropriate outcomes as above.

The number of migratory coastal birds depends crucially on conditions in their wintering grounds.

Managed realignment will be essential but can be difficult to implement due to social pressures. Robust stakeholder engagement will be needed in these projects.

There should be no more inappropriate development on sensitive or irreplaceable habitats, such as coastal dune systems.

The current highly pathogenic avian influenza outbreak poses challenges to maintaining our breeding seabird populations, which are of international importance and many of which were already in steep decline.

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

Habitat fragmentation.

Pollution, including plastics. For example, during the Marine Conservation Society's 2021 Great British Beach Clean, 1,531 volunteers surveyed 15,575 metres of beach in Scotland, recording on average per 100m: 346 litter items, including 101 small plastic or polystyrene pieces; 10 plastic cotton bud sticks (down 50% from 2020, suggesting that bans on single-use plastic work); and three single-use plastic shopping bags (down from high of 17/100m recorded in 2013, again evidence that circular economy interventions work). On average, 70% of beach litter recorded in Scotland was made of plastic or polystyrene.

INNS/ pests and disease.

Avian flu.

Inappropriate developments on sensitive dune and island areas, including golf courses on protected dune systems.

Sea level rise and storm damage.

What are the key opportunities for this outcome area?

Flood management, species protection, on islands as well as in coastal habitats, and resilient species populations including for example, salmonids, soil management and retention of soil on land, preventing nutrient enrichment, sustainable land management supporting local communities, local economies and local nature, some of it rare and vulnerable to extension, funding ecosystems, including mobile sand dune systems, cleaner seas through the prevention of pollution, including chemical, sewage and plastics.

Implement circular economy measures to reduce the amount of plastic entering the system and ending up on Scotland's coastlines.

What are the key challenges for this outcome area?

Managing the impact of land management, including farming, development to mitigate the negative impacts on coastal habitats, managing INNS effectively and preventing the spread, tackling plastic, chemical and sewage pollution that starts on land and impacts on the coastal and marine environments.

Avian flu, as above, is an ongoing challenge and the recent outbreaks have been particularly severe. We welcome NatureScot's task group being launched to tackle this issue but we need to see clear commitment and resources to monitoring key seabird colonies on a more regular basis as part of the response.

Urban Environments – Towns and Cities

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

There is an underlying assumption that the existing model of living in cities is sustainable. The concept of 20-minute neighbourhoods can be used to bring about positive effects for biodiversity in

urban settings and in rural areas an emphasis on digital connectivity thereby reducing the need to travel.

Blue and green infrastructure should also be maximised in its extent through a mandatory requirement for net biodiversity gain and inclusion of nature in developments.

The change we need to see is not adequately captured by the level of detail given for all urban habitats. It needs to be broken down into key constituent habitats types, with appropriate vision for each.

LINK has already provided a vision of the key ecosystem types that the Scottish Biodiversity Strategy needs to embed action to restore. For urban habitats these are as follows:

Vision: Our cities and towns are full of light but still with refuges of darkness, with green roofs and signs of nature creeping into our urban buzz.

- Maintain open mosaic habitats in urban areas
- Reduce light pollution
- Increase the extent of blue/green infrastructure- green roofs, green bridges, walls, SUDs, rain gardens etc.
- Ban or reduce the use of pesticides and herbicides by local authorities
- Build urban nature networks with urban nature green and blue 'pathways' or 'corridors' that enable species to move freely through urban environments.

The outcomes must also include measures of the impact of urban INNS, light pollution, improved air quality and tackling other pollution in urban areas. Green health outcomes would also be helpful to strengthen the links between healthy biodiversity and healthy people. This could include green prescribing and forest bathing.

Clarity is needed in several respects, as follows:

- There is a need for clarity about how "measurable increases in biodiversity" are to be measured, and what constitutes a "measurable increase".

- "Urban biodiversity" cannot easily be separated from biodiversity in general. It is often the case that species that are found in towns and cities have come from the wider countryside, where urban meets rural. The urban environment cannot be considered in isolation, rather it must be considered alongside wider countryside and areas designated for nature – a holistic approach is needed to ensure nature-positive urban areas.

Recognition of the scope for planning to deliver positive change for biodiversity changes is limited in the Visions and Outcomes draft. Planning is an important delivery mechanism for biodiversity restoration and creation in urban areas but is currently missing. The 'towns and cities' 'ecosystem', for example, places a boundary around planning's realm of influence, when we know that planning influences development across urban and rural landscapes. Moreover, planning, as above, can help coordinate the delivery of nature networks and nature-based solutions , as well as improving delivery via protected areas.

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

Given that the outcome statements are too generic and need more detail if they are to be effective, the milestones need to be fitted to more appropriate outcomes as above.

It is not clear how the term ‘nature-richness’ relates to the requirement to deliver ‘positive effects for biodiversity’ in NPF4 and how this will be measured. We suggest the outcome terms used align with NPF4.

The definition of urban environments should include transport corridors such as those around railway lines, motorways and canals.

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

Inappropriate development and increasing urban sprawl, INNS, light and other pollution.

Light pollution is increasing from a variety of sources, including residences, public infrastructure (such as lighting along motorways), and industrial activity such as energy infrastructure. The rapid switch to LEDs is contributing to the installation of brighter lights, in places increasing pollution and missing an opportunity to reduce light pollution levels.

Urban environments are dynamic and biodiversity loss is not necessarily the most helpful lens for prioritising action across these habitats. Key concerns are around connectivity and habitat restoration.

What are the key opportunities for this outcome area?

Urban environments can offer hugely diverse habitats and niches. In many ways more so than rural environments. Gardens and greenspaces particularly. There are opportunities to enable wide engagement in biodiversity and positive action in areas they control, e.g. gardens, parks and window boxes. Planning Authorities can play a huge role in ensuring that the urban environment takes more than adequate account in providing natural landscapes. This section should include links to the National Planning Policy 4 and the positive shift to nature recovery being at the forefront of planning. While some improvements are needed, as referred to below we are pleased to see a movement towards development that delivers positive effects for biodiversity.

There is a significant opportunity for encouraging local communities to become involved in urban development as is already happening in many places.

Increasing the extent and quality of blue/green infrastructure such as rain gardens, urban trees, Sustainable Urban Drainage Systems, green roofs, green walls.

Increasing the amount and improving the condition of green spaces in urban areas to ameliorate climatic impacts and facilitate improved access to nature.

Increase connectivity of habitats in urban and peri-urban areas.

Recognition of the biodiversity of vacant and derelict land and brownfield sites. Brownfield sites can have a high biodiversity value and provide an important refuge for plants and wildlife.

Maximising the biodiversity value of gardens, particularly for pollinators, by encouraging nature-friendly gardening.

Protect existing urban trees and increase the number of trees and extent of tree canopy cover which provide a very important localised cooling effect as well as great biodiversity benefit close to where people live and work.

Improving blue corridors - opening access to water courses and improving linkages with other water courses.

Improving management and maintenance of existing green spaces. Banning or reducing the use of pesticides and herbicides by local authorities

Retrofitting old developments with biodiverse habitats.

Scotland has the opportunity to become a world leader in efforts to reduce light pollution. Reducing light pollution can help contribute to several different challenges the country faces, and as such can be addressed through different areas of legislation. Guidance alone has so far failed to drive down light pollution levels and any future initiatives must consider existing light levels as well as new installations. Solving light pollution is not about turning off every light. Through better lighting and preventing unnecessary lighting, we can lessen problems while maintaining safety and security. Improving the location, direction, colour, intensity, and duration of light are simple, affordable, and effective ways of reducing the impacts of light pollution. SBS targets should be set to include at a minimum no net increase in light pollution, with an ambition to reduce existing levels.

What are the key challenges for this outcome area?

The key challenge is that urban environments have competing and crowded land uses, both above and below ground as well as high land values. It is important to seek to achieve the 3-30-300 standard for every urban area.

Planning strategies and plans, as for other government strategies, need to be linked directly to the Biodiversity Strategy with clearly demarcated obligations and responsibilities identifying which part of government is delivering, supporting and facilitating efforts to address the biodiversity crisis. There is no mention of NPF4 as a potential delivery mechanism.

Despite a strong rhetoric in NPF4, there are no clear delivery mechanisms to really ensure the transformational change that is required. The wording in NPF4 and the associated NatureScot guidance on Developing with Nature seems largely to still be about encouraging enhancement with no mandatory and specific requirements. The legal status of the Developing with Nature guidance is not clear. Our local authority ecologists and environmental planner members believe that they still do not have enough support to really bring about the evidence-based enhancements and net gain to fruition from this NPF, and that is discouraging.

Without a strong government position and legal enforcement on mandatory biodiversity net gain or other consistent measurable tools that could be implemented across Scotland, the Local Planning Authorities will struggle to implement and enforce biodiversity enhancement measures in Local Development Plans. Without clear high-level support to truly address the biodiversity crisis it will continue to prove difficult to stop challenges from developers.

Reducing the amount of light pollution which is having significant impacts on a variety of taxa in the UK, including bats (through changes to feeding routes), light-sensitive invertebrates, and birds

(through increasing feeding time and visibility to predators). This will also reduce energy use which will have co-benefits in terms of greenhouse gas production and cost of living.

As well as a review of nature based and green infrastructure interventions, we would like to see a compilation of case studies where they are being used and what can be learnt from the implementation. This would give companies and organisations confidence and reassurance that it doesn't need to be difficult or costly to implement nature-based solutions and green infrastructure within development.

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

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

No. We welcome the use of the Biodiversity Intactness Index (BII) as a measure to illustrate the poor resilience of Scotland's ecosystems to ongoing and future changes. The index predicates ongoing loss unless habitat connectivity can be restored. We welcome the focus on this in this section. The key to restoring habitat connectivity and improving Scotland's BII are Nature networks.

The success in implementing and delivering an effective Nature Network is highly dependent on opportunity mapping. These, to be useful, need to be fully accessible to all and therefore using open-source data, be accessible at different scales from hyper. The data provided should include protected areas as these are fundamental to restoring lost biodiversity from these source areas. However, there needs to be guidance around what Nature Networks are and how to implement them.

The Scottish Wildlife Trust published a briefing highlighting why we need to act urgently and decisively to deliver Nature Networks by outlining six priority areas for action if Nature Networks are to be taken forward in an effective and timely manner in Scotland.

For success in achieving the change we want to see, we recommend incorporating the following targets:

2. Effective and area-based restoration measures to be in place on 20% of Scotland's land and sea area by 2030, mirroring the proposed EU restoration law

3. 30% of land and sea effectively protected for nature by 2030

4. 10% of land and sea strictly protected for nature by 2030

Effective and area-based restoration measures are in place on all of Scotland's degraded ecosystems by 2045.

Protected areas, "30 by 30" and National Parks are critical elements that are missing from this section. Delivering the commitment to protect at least 30% and strictly protect 10% of land and sea for nature by 2030 (30 by 30) is a key commitment from the 2020 Statement of Intent on Biodiversity; we expected this to be a cornerstone of the 2045 Biodiversity Strategy. Whilst we understand that detailed plans for delivering 30 by 30 are currently being developed by a co-design process led by NatureScot and will be set out in a separate strategy, we are surprised and concerned at the total lack of mention in this consultation document. It is a key policy mechanism that should be coordinated with all the other mechanisms and actions suggested in this strategy.

In addition, there are more generic actions needed to improve and maintain protected areas across Scotland that must form a key part of Scotland's biodiversity response. The protected area network is a cornerstone of biodiversity conservation in Scotland but this is not at all reflected in the draft strategy.

We are also surprised to see the lack of mention of National Parks – especially with the commitment to designate at least 1 new National Park within this parliamentary term. We believe there is huge potential for Scotland's National Parks to play a much greater role in tackling the nature and climate emergency. Scotland's nature is in trouble and urgently needs our help to recover. National Parks, alongside our protected nature sites, can act as important refuges for wildlife, and should be our best landscapes for nature, climate and people. However, we do not believe that National Parks are currently living up to this potential and consider there must be a full exploration of what changes are needed to empower and support National Parks to do more. The SBS should consider the role of National Parks in delivering nature recovery. We suggest exploring inclusion of outcomes such as:

5. By 2030 at least 30% (or 50%) of land or sea within National Parks is effectively protected for nature, counting towards the 30x30 target

6. By 2045 National Parks are Scotland's best examples of healthy, resilient ecosystems, and there have been measurable increases in species abundance, and extent and condition of priority habitats

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

We welcome the commitments detailed in the Strategy to "Spatially identified Nature Networks which are widespread and embedded in land use planning and management" by 2030 and 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" by 2045.

We very much welcome reference to "An independent body (to be determined) to monitor and report on progress". Coupled with the recognition of "An improved monitoring framework and suite of indicators is in place on biodiversity and ecosystem health" and that "Effective monitoring supports the delivery of the statutory targets". This independent body will need to have 'powers' similar to Environmental Standards Scotland to require action within reasonable time frames. Furthermore, as highlighted previously there is a need for a statutory duty on ministerial departments, executive agencies and public bodies (national and local).

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

This question does not seem relevant for this section.

What are the key opportunities for this outcome area?

Connected habitats through functioning Nature networks, resilient ecosystems able to provide a suite of ecosystem services from flood management to soil conservation, pollination, restored

biodiversity intactness and healthier ecosystems able to survive into the future. The opportunities in this outcome area are the fundamental basis for the success of the biodiversity strategy as a whole.

Other opportunities include those that could be delivered through One planet prosperity, as well as reducing our consumption of natural resources, implementing a circular economy, and including the wellbeing of people and nature. Mainstreaming biodiversity into these policy areas, and vice versa, is a major opportunity to ensure policy across government delivers for biodiversity too.

What are the key challenges for this outcome area?

As drafted this section needs to recognise and reference marine and freshwater commitments. It appears to only consider land. Reducing pollution, including pesticides, herbicides and fungicides, across land and sea is a key challenge, as well as reducing the impacts of INNS/pests and disease across land and sea. Although carbon sequestration is mentioned in this section, it should also link to carbon emissions and climate targets.

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.

To what extent will these outcomes deliver the Vision?

The outcomes don't address all the issues, and not all the issues driving biodiversity loss are mentioned. For success, and to achieve the outcomes in this document, and those that are missing (see above), mainstreaming biodiversity across all policy areas is critical. The issue of scale also needs to be considered: the outcomes are not at a 'Scotland' scale and there are instances where the link between nature and climate is not clearly made.

What might be missing?

Environmental justice is a key area that is not mentioned but offers clear opportunities and challenges to restoring biodiversity for the planet and for communities. Empowering people to act and increasing and enabling access to nature, for all ages and all communities is fundamental to building support for the scale of action that will be required to avert the nature crisis in Scotland. The Scottish Government is committed to incorporating the right to a healthy environment with substantive and procedural elements in the Human Rights (Scotland) Bill. It is imperative that this right is legally enforceable and affordable for the public and NGOs to hold public bodies and polluters to account and go to court to challenge unlawful policies, developments and activities which infringe the substantive right to healthy biodiversity and ecosystems.

(References: Scottish Government (Sept 2021) A Fairer, Greener Scotland: Programme for Government 2021-22, p 49;

National Taskforce for Human Rights Leadership (Mar 2021) Report, Annex D

UN General Assembly, Special Rapporteur on Human Rights and the Environment (2020) Right to a healthy environment: good practices)

Outcomes should be targeted more specifically at an intended audience such as farmers, land managers, estate owners, urban planners, developers and public bodies. With an intended audience in mind of the outcomes it could become easier to effectively implement this strategy, with stakeholders assigned to what they will deliver against.

Tackling pollution, including novel pollutants, herbicides, pesticides and fungicides, light and air pollution will be a key action to restore biodiversity and reconnect species and habitats. Exploitation of natural resources, including water and peat extraction, intensive farming and industrial fishing, is another area that is having a significant impact on Scotland's biodiversity and tackling it will be a key challenge, although getting it right will deliver significant benefits and progress towards the nature targets, as well as climate targets and the National Performance Framework.

As mentioned in our general comments, it is incredibly difficult to meaningfully answer this question without seeing the action plans that will deliver the outcomes so we can assess how realistic these will be, what resources are needed, and whether they are right to deliver the overall aims. Delivery plans should be developed by a broad set of stakeholders and mapped onto this visions and outcomes document.

While there are many commendable aspirations the current outcomes presented in the strategy are lacking considerable detail and clarity. To put it bluntly, this is currently a vision document, and we need to see delivery mechanisms in order to assess its merits as a strategy.

If we are to make meaningful positive changes to biodiversity in Scotland, we need more information on what an increase in biodiversity should look like. More detail on overall biodiversity goals and goals for each "environment" - linked closely with the promised delivery plans - would ensure sufficient meaningful improvements in biodiversity are realised across Scotland.

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

Indicators in the State of Nature report should improve as should indicators under the National Performance Framework. Adopting measures included in the European Biodiversity Strategy would help keep Scotland in pace with Europe.

Scottish Government and delivery partners must utilise much better-integrated biodiversity data by implementing the recommendations of SBIF. We must address the gaps we have highlighted above by building on existing monitoring schemes using indicators that represent a broad range of taxa and variables.

PART 5 – The Conditions for Success

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

Strategic Leadership

Ministerial leadership on this will be fundamental to success. We very much welcome the First Minister's statements on the nature crisis and see full Cabinet leadership as vital.

Governance Structures and Accountability

Successful delivery of the strategy is highly dependent on full integration across policy areas so that policy and legislation is assessed through the lens of nature, as it is beginning to be with climate. Given the short timescale in which success is needed, integration of the biodiversity duty across all government sectors is now urgently needed with appropriate and transparent reporting to enable progress monitoring.

The Biodiversity Duty in the Nature Conservation (Scotland) Act 2004, despite being arguably more strongly worded in Scotland than other UK countries, has failed to secure either mainstreaming or meaningful progress for biodiversity. One option could be to amend the wording of the 2004 Act considerably, reconsidering, perhaps altering, the section "…so far as it is consistent with the proper exercise of those functions", which has become, we suspect, a vehicle for public bodies, not just those with a direct biodiversity role, to under-prioritise furthering the conservation of biodiversity. We recommend that Part 2 'Conservation and enhancement of natural features' should be revisited with a view to adding a requirement for clear targets which will directly link to the Natural Environment Bill. Part 2 (7) and 2A reports should be based on the delivery of the nature recovery targets and actions.

Mainstreaming biodiversity delivery across government will be critical to halting and reversing nature loss. This remains one of the central challenges in terms of governance. Effective integration of the SBS with agriculture, forestry, planning, public engagement and development, for example, will all be critical to success.

We urge careful and collaborative consideration of those governance and mechanisms that have worked; those that have not worked because they are fundamentally inadequate or flawed; and those that have not worked because they have been under-resourced, under-funded or under-prioritised. For example, we believe that the Protected Areas network, whilst neither complete nor in optimal condition, will be a key delivery mechanism. However, it requires better resourcing with more frequent monitoring, active management and clear targets on quality in addition to extent.

Successful delivery of the Strategy is highly dependent on full integration across policy areas so that policy and legislation is assessed through the lens of nature, as it is beginning to be with climate. Given the short timescale in which success is needed, integration of an effective biodiversity duty across all government sectors is now urgently needed with appropriate and transparent reporting to enable progress monitoring. Assessment of delivery against the strategy and forthcoming targets should sit with the Parliament's Rural Affairs and Nature Environment Committee, who should call for evidence to demonstrate progress on a biennial basis and require Ministers and / or the Heads of relevant public bodies and departments to appear before the committee on a regular basis. Environmental Standards Scotland may also have a role, given that the nature emergency is urgent and faster and more effective action to halt the loss of biodiversity and restore it is now urgently needed through better governance mechanisms over the next decade.

Mainstreaming biodiversity delivery is needed for transformative change and progress towards the nature targets. That requires support from wider society. Wider society support is best garnered through the Scottish Government's Open Government commitment. This commitment needs to be more effectively used, to increase transparency and engagement with Scotland's people who should be informing and supporting the delivery of Scotland's Biodiversity Strategy.

Furthermore, there is an urgent need for public engagement to be an intrinsic part of the Scottish Biodiversity Strategy. The Covid pandemic shone a light on the importance and value of nature and greenspaces for our health and wellbeing. Research by NatureScot has shown that 77% of people now get outdoors at least once a week, compared to 63% pre-Covid. This is a positive habit that's fundamental to tackling Scotland's many public health challenges. However, there is a need for more support for citizen science, outdoor learning, public access and volunteering which spans across multiple policy areas in the Scottish Government. For example, ranger services are key. Rangers play a central role in ensuring protected and conserved areas provide benefits to both biodiversity and people, managing not only habitats and species but also the relationship between nature and local communities.

Access to justice is a key enabling factor which is essential in order for the strategy to be successful. It is not mentioned in the strategy. Members of the public and NGOs must be able to access the courts to challenge unlawful activity which contravenes the relevant statutory duties and targets.

LINK strongly recommends the allocation of responsibility for assessing progress against the strategy to an independent body (e.g., Environmental Standards Scotland).

Clarity and explicit logic on where this strategy sits in relation to other Government priorities and strategies is needed. The strategy needs sufficient 'rank' among other strategies, alongside cut-through and mainstreaming, to induce change. As the primary vehicle for delivery towards the Environment Strategy vision and objectives as well as the expected international nature targets, all governance structures with full buy-in will be needed for success.

The strategy fails to mention the Edinburgh Process which offers the best opportunity to ensure wider buy-in and contributions from key stakeholders. Maximising the value of this process will be key to success.

The strategy mentions statutory targets on page 26, however it is not clear whether these are the climate targets or future nature targets in the Natural Environment Bill. Scotland's net zero statutory targets have driven action and biodiversity requires the level of activity. Statutory nature targets are crucial to galvanise, enable and facilitate action across all stakeholders.

The strategy mentions governance but does not identify what type of governance nor what level. We propose the formation of a "Scottish Biodiversity Committee" chaired by Lorna Slater MSP and involving all stakeholders to oversee delivery.

It could be useful to define the levels of governance – for example, national government, local government (including Planning Authorities), company Board level, landowners, community organisations and NGOs – through which reporting and accountability on the biodiversity strategy will flow. We need a realistic prospect of enforcement to make statutory targets effective.

The strategy acknowledges the need to 'ensure policy coherence and effectiveness, and alignment with other relevant strategies'. There needs to be a way to ensure that the outcomes of the biodiversity strategy are embedded into Government policy making. We suggest that not only are 'Biodiversity values' 'mainstreamed into policies, regulations, planning, development processes, and accounting systems, at all levels of government and across all sectors of the economy' but that the outcomes in the biodiversity strategy are continually cross checked with other Government policies, regulations, planning, development processes, and accounting systems. Where conflicting priorities are identified, we recommend that, as a general rule, the biodiversity outcomes prevail.

Funding and Responsible Private Investment
The Biodiversity Strategy's implementation can reinforce and complement the revised Land Rights and Responsibilities Statement.

Restoring nature is not cheap and finance will be required from public, private and charitable sources. Public funding should be used to pump prime activity where needed, to support action in habitats where other funders cannot or do not operate. This should be used to join the dots and facilitate wider investment, economies of scale and value for money.

Incentives that harm biodiversity or prevent progress towards nature restoration must be removed. A nature restoration test should be applied to all public and charitable funding and where projects or schemes fail that test, investment should be withheld.

Private and charitable financing will also be important for success. However, private investment in this emerging market needs a clear vision and direction for development if it is to succeed. There are 4 key elements to this:

- Public incentives need to underpin the delivery of nature restoration as a public good.
- Perverse and conflicting subsidies that harm the environment must be ended.
- Appropriate regulation is needed to ensure emerging environmental markets deliver genuine positive outcomes for nature and climate.
- Key parts of the market infrastructure needs to be supported by the government. This includes, for example, transparent and robust market assurance to ensure against 'greenwashing'.
- Public money should be used to enable and build supply chain confidence through, for example, long term contracts to incentivise contractors to invest in skills and equipment.

Public Engagement and Communications:
We recommend that the Scottish Government completes a full analysis of the stakeholders and plans out how to engage them with the delivery of the strategy. As part of engagement, we would recommend providing a structure for stakeholders to report against the outcomes.

We also recommend reviewing the barriers to engagement – different stakeholders have different resources, knowledge and time available to them and the Scottish Government, for its part in enabling the strategy, should consider how it can reduce barriers to engagement.

We see landowners and businesses that rely on extracting or processing natural resources as particularly important stakeholder groups that the Scottish Government needs to be engaging with.

There is widespread and growing public awareness of the value of nature to people and the planetary need for fully functioning and resilient ecosystems. Building on this awareness, and welcoming and enabling all citizens, through appropriately designed Equality, Diversity and Inclusion mechanisms, to contribute and get involved will be key to success. We need to look at how the importance of nature is addressed and how people are connected with it in a phased approach through nursery, primary, secondary and tertiary phases. This must have clearer recognition of the value of and support for third sector provision for informal learning/STEM and outdoor opportunities that complement the formal education system.

Evidence and Data
It would be helpful to identify as far as possible who will be responsible for the gathering of evidence and its monitoring.

Government research providers and government research funding should adopt the promotion and delivery of problem-solving biodiversity conservation research as a central objective, finding innovative ways to build an evidence base fit to halt and reverse biodiversity losses.

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

Clarity and explicit logic on where this strategy sits in relation to other Government priorities and strategies is needed. The strategy needs sufficient 'rank' among other strategies, alongside cut-through and mainstreaming, to induce change. As the primary vehicle for delivery towards the Environment Strategy vision and objectives as well as the expected international nature targets, all governance structures with full buy-in will be needed for success.

The first strategy Scotland's biodiversity: it's in your hands was published in 2004 with the vision that by 2030 Scotland would be recognised as a world leader in biodiversity conservation with everyone involved and benefitting. A new way forward was adopted in 2013 with 2020 challenge for Scotland's biodiversity. The objectives of the 2004 Strategy were still seen as still valid but a new plan was adopted to achieve the desired outcomes of the European Biodiversity Strategy for 2020 and the UN Aichi targets.

There were three-yearly reports to Parliament on progress but overall the first strategy did not achieve its intended outcomes. There was a long-term decline in Scotland's biodiversity as documented in the State of Nature Report and Scotland now ranks 28th from bottom out of 240 countries in the Biodiversity Intactness Index. To build on these initial strategies and strengthen the next one it will be important to:

- Ensure that the strategy is backed by a detailed implementation plan with a clear timetable and specific and measurable actions so commitments like the National Ecological Network in the 2013 Strategy are openly monitored, progressed and implemented.
- The implementation plans are fully costed so that the scale of investment required is clear and provision can be planned in advance.
- There is policy coherence between the new strategy and other key strategies such as the National Strategy for Economic Transformation and the Infrastructure Investment Plan and the funding identified for biodiversity can be allocated in the Resource Spending Review and Scottish Budgets.

Scotland should learn from the experience of other countries and draw on the many National Biodiversity Strategies and Action Plans that have been developed elsewhere. A good example is that in New Zealand - Scotland's partner in the Wellbeing Economy Governments partnership - where the Biodiversity Strategy 2020 includes:

- Analysis of the problems nature faces including the 5 drivers of biodiversity loss and the key gaps and issues with the current system and management approach.
- Emphasis on the connection between nature and people and Nature-based Solutions to health, economy and wellbeing.
- Input from the public and experts and a 160-page companion report on biodiversity including an overview of the state, trends and pressures and what we learned from the previous strategy.
- Consideration of opportunities to improve the way we work and the challenges we face with the current biodiversity system, recognition that nature is at the heart of the economy and the need to work in partnership, commit to action, create connections and be flexible.

- An implementation framework with 13 objectives, each with measurable and time-bound goals for 2025, 2030 and 2050. The approach is built on collaboration, being flexible and adaptive over time and transparent monitoring.

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?

In August 2022, the UN General Assembly declared access to a clean and healthy environment a universal human right. As noted throughout this response, genuinely addressing the nature and climate emergencies are two sides of the same coin and, together, will work towards every person's right to a healthy environment being respected, protected and fulfilled. People living in Scotland's areas of highest disadvantage are worst affected by pollution and have the least access to greenspaces to connect with nature. Children, older people, disabled people and people with health conditions are hardest hit. The proposals we have outlined will strengthen the six features of the substantive right to a healthy environment: clean air, a safe climate, safe water, healthy and sustainably produced food, non-toxic environments in which to live, work, study and play, and healthy biodiversity and ecosystems.

Increasing public awareness of the strategy and opportunities for public participation in environmental decision-making, as well as improving access to justice on environmental matters will advance the procedural right to a healthy environment. Expanding on our ideas for delivering a Just Transition to Net Zero and Nature Positive by investing in nature-based skills development to deliver the strategy, measures should be prioritised for at-risk and low-income workforces, advancing equality of opportunity and creating green jobs and skills to support local, resilient economies.

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