CONSULTATION

Response Document

Scotland's Biodiversity Strategy

12 September 2022

Scottish Government

Introduction to CIEEM

The Chartered Institute of Ecology and Environmental Management (CIEEM), as the leading membership organisation supporting professional ecologists and environmental managers in the United Kingdom and Ireland, welcomes the opportunity to comment on this consultation.

CIEEM was established in 1991 and has over 6,000 members drawn from local authorities, government agencies, industry, environmental consultancy, teaching/research, and voluntary environmental organisations. The Chartered Institute has led the way in defining and raising the standards of ecological and environmental management practice with regard to biodiversity protection and enhancement. It promotes knowledge sharing through events and publications, skills development through its comprehensive training and development programme and best practice through the dissemination of technical guidance for the profession and related disciplines.

CIEEM is a member of:

- Scottish Environment Link
- Wildlife and Countryside Link
- Northern Ireland Environment Link
- Wales Environment Link
- Environmental Policy Forum
- IUCN – The World Conservation Union
- Professional Associations Research Network
- Society for the Environment
- United Nations Decade on Biodiversity 2011-2020 Network
- Greener UK
- Irish Forum on Natural Capital (working group member)
- National Biodiversity Forum (Ireland)
- The Environmental Science Association of Ireland

CIEEM has approximately 740 members in Scotland who are drawn from across the private consultancy sector, NGOs, government and SNCOs, local authorities, academia and industry. They are practising ecologists and environmental managers, many of whom regularly provide input to and advice on land management for the benefit of protected species and biodiversity in general.

This response was coordinated by Members of our Scotland Policy Group.

We welcome the opportunity to participate in this consultation and we would be happy to provide further information on this topic. Please contact Jason Reeves (CIEEM Head of Policy) at JasonReeves@cieem.net with any queries.

Consultation Questions

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?

We fully agree we are living through a global sixth mass extinction event, and it is likely accelerating[1]. There is an ever growing body of evidence of this decline which has been recognised in the draft Strategy. Scotland is one of the most nature-depleted countries in the world, coming 212th out of 240 countries and territories in an assessment of how intact its nature remains[2]. The Biodiversity Intactness Index is a very important mechanism for understanding biodiversity changes in Scotland. Since 1970 half of our species in Scotland have declined, with 1 in 9 at risk of national extinction.

The principal global direct drivers of biodiversity loss: habitat degradation; over-exploitation; climate change; pollution and invasive non-native species, have dramatically affected Scotland's ecosystems. As is mentioned in this section, the 1994 baseline for the species abundance was not in itself a high point for biodiversity, but a station on the long decline which worsened with the industrial revolution and accelerated in the post-war era. As long as unsustainable practices are permitted, these declines will continue.

The recognition of the main drivers of biodiversity loss, as set out in the IPBES report is welcome, but it does not seem as though the findings of this report are at the core of the Strategy. There is a lot of recognition of the interlinked nature of the climate emergency and biodiversity crisis (which is welcome as climate change is a growing pressure on biodiversity), however, historically the leading causes of biodiversity loss have been over-abstraction, land use changes and pollution. These will only be exacerbated by climate change if not addressed.

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 and Cairngorms Connect are others which operate at the landscape scale.

The evidence section is comprehensive and a significant improvement on previous Government documents. A clear picture of the current state of Scotland's nature is vital to prioritising actions through the strategy.

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[1] Ceballos G., Ehrlich P. and Raven P. (2020) 'Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction', *PNAS*, 117 (24) 13596-13602 https://doi.org/10.1073/pnas.1922686117

[2] Katia Sanchez-Ortiz, Ricardo E. Gonzalez, Adriana De Palma, Tim Newbold, Samantha L. L. Hill, Jason M. Tylianakis, Luca Börger, Igor Lysenko, Andy Purvis. 'Land-use and related pressures have reduced biotic integrity more on islands than on mainlands, *bioRxiv* 576546; doi: https://doi.org/10.1101/576546 ; see also https://www.rspb.org.uk/globalassets/downloads/about-us/48398rspb-biodivesity-intactness-index-summary-report-v4.pdf

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

The Government must take the opportunity to address the triple, interlinked crises of climate change, nature loss and inequality together. This could be achieved by using the framework of the UN Sustainable Development Goals to which Scotland is a signatory. The National Strategy for Economic Transformation[3] refers to Scotland demonstrating global leadership in delivering a just transition to a net zero, nature-positive economy and re-building natural capital.

There has been clear language around the climate crisis in terms of net zero. In contrast, there are complexities around the messaging surrounding the biodiversity crisis, a lack of clear leadership from government and clear solutions. Scotland has ambitious climate targets but there are not yet equivalent targets in place for nature.

The opportunities lie in making climate adaptations that encourage biodiversity. Restoring peatlands so they are carbon sinks rather than sources, increasing native woodland cover and maintaining or increasing the extent of other carbon-sequestering ecosystems such as seagrass beds and semi-natural grasslands will permit natural systems to sequester more carbon as well as restoring nature in cases where land use change and degradation of habitats has led to their decline. The latest Intergovernmental Panel on Climate Change's (IPCC) report[4] highlights that safeguarding and strengthening nature is key to a liveable future. The Dasgupta review[5] highlights that "Our economies, livelihoods and well-being all depend on our most precious asset: Nature'' and that "*large-scale and widespread investment in Nature-based Solutions would help us to address biodiversity loss and significantly contribute to climate change mitigation".*

A key challenge is to avoid actions that appear to tackle climate change but harm biodiversity and may even adversely affect progress to net zero. This might include planting inappropriate species for carbon sequestration, building wind farms on deep peat sites and planting high soil carbon pasture soils. Habitat creation and restoration must be planned and implemented by professionals with the expertise and understanding of the relevant species, habitats and ecosystems. It must also be planned in consultation with local communities and stakeholders, and consideration given to its place in the wider landscape.

Increasing the connectivity between semi-natural habitats will permit organisms to move 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

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[3] https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation

[4] IPCC, 2022: *Summary for Policymakers*. In: *Climate Change 2022: Mitigation of Climate Change*. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001.

[5] Dasgupta, P. (2021), The Economics of Biodiversity: The Dasgupta Review. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf

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.

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 (IUCN definition[6]) 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.**

The Edinburgh Declaration on biodiversity is a key milestone in the formal recognition of contributions by subnational governments (including cities and local authorities) to the achievement of global biodiversity goals and targets. It should be central in this Biodiversity Strategy and yet there is no mention of the Edinburgh Process.

Freshwater habitats will be a key issue for Scotland in tackling both biodiversity loss and climate change. Scotland's rivers and lochs contain 90% of the UK's surface freshwater[7]. However this key ecosystem is largely absent from the strategy as presented. There is currently no inclusion of standing waters, wetlands (such as fens, flushes reedbeds, mires, bog etc.), important tributaries and streams, and freshwater species other than salmon (including invertebrates, plants and other fish).

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.

Questions:

Is the draft vision clear enough?

No

We welcome the clear recognition from the Scottish Government that we not only need to halt biodiversity decline, but reverse the long-term damage we have done to ecosystems. An ambitious, holistic Biodiversity Strategy that is adopted across all Government Directorates and related public bodies will be essential to achieving this goal.

Having a clear vision to reverse biodiversity loss by 2045 would be a positive step forward, and brings biodiversity to the forefront as 'Net Zero' has done for climate change. However, the vision does not currently make clear the depth of change which will be necessary in order to achieve it by

[6] https://www.iucn.org/our-work/nature-based-solutions

[7] https://www.environment.gov.scot/media/1172/water.pdf

2045. The Biodiversity Strategy should be a home for a balanced approach to the restoration of ecosystem functioning to restore biodiversity and meet the suite of Sustainable Development Goals.

The Strategy is currently missing an overarching section that sets wider goals, for example species targets. The statutory nature restoration targets in the forthcoming Natural Environment Bill are crucial to setting the strategy on a statutory footing. These targets must be SMART (specific, measurable, achievable, realistic and time-bound), and must be ambitious. They should also align with the Post-2020 Global Biodiversity Framework to be agreed at COP15.

We have welcomed being a part of the development of the latest Biodiversity Strategy, both through this consultation and through expert working groups. However, we are disappointed with the Strategy as it stands. Without the accompanying delivery plans it is very difficult to comment on this vision and outcomes document in a meaningful way. It is not the outcomes that will deliver the vision, but the clear and measurable actions that have yet to be set out.

More information is needed on how the delivery plans will map onto this Strategy document to ensure they are joined up and will indeed lead to the outcomes listed. We are pleased to see other strategies that are relevant listed and will be considered alongside the Biodiversity Strategy, however the document is missing clear links to the Land Use Strategy, National Planning Framework 4, the Infrastructure Investment Plan and proposals under the Land Reform Bill. NatureScot's document *Building a Plant Biodiversity Strategy for Scotland*[8] should also be clearly referenced and considered in the final version.

To fulfil the final sentence of the Vision "*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*", there will need to be a major revolution in the education system and the training systems for everyone engaged in any form of land or water management. Continuing support for biodiversity learning through Eco-schools and other projects for young people from pre-school to secondary school is essential. The Curriculum for Excellence provides a good framework for including locally relevant education on biodiversity. All politicians and citizens will need enough ecological knowledge to realise that economic systems are entirely dependent on ecological systems for their ability to function. We will also need proper resourcing of ecologists and environmental managers, and changes in the education system to encourage more into the sector. Improving the connection of people with nature is essential so we welcome this inclusion.

A clear and measurable vision is needed for Scotland's key ecosystems; one as clear and measurable as the net zero target for climate. Clarification of the term 'substantially' is also needed. What does "substantially restored and regenerated mean" especially as species will be adapting and new species will arrive as a result of climate change. Similarly, the terms "richly diverse" and "thriving" need clarification. We are also not sure why insects have been separated from animals.

The description of Scotland's natural environment should also focus on the uniqueness and importance of the nation's biodiversity - this is referenced in various tourism campaigns. For example, the Scottish Marine Tourism Strategy recognises the need not to adversely affect wildlife as the presence of marine mammals is one reason why the Scottish west coast is such a popular destination for recreational boaters.

[8] https://www.nature.scot/doc/building-plant-biodiversity-strategy-scotland

Clarification of how 'regeneration' relates to 'restoration' in the context of the UN Decade of Ecosystem Restoration would be beneficial.

We welcome the inclusion of resilience and adaptation to climate change.

Is the draft vision ambitious enough?

Yes, but we would also like to see the commitment to halt and reverse biodiversity loss by 2030 brought through to the vision statement, as 2045 is still a long way off and does not convey the urgency of action.

The Scottish Government has committed to bring forward a Natural Environment Bill in 2023/2024 to include nature restoration targets. These targets are critical and we would like to see reference to these in this strategy and included in the upcoming delivery plans.

There should be alignment to the proposed EU Restoration Law which will require Member States to develop national plans to restore at least 20% of EU land and sea by 2030. This will ensure that Scotland will maintain or exceed EU standards as laid out in the Continuity Bill.

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

2045 will not constitute an end point for action and the title should recognise this. Whatever happens, the process of restorative management of our natural resources will have to be ongoing. It should also convey society's reliance on healthy functioning ecosystems and biodiversity as highlighted in the Dasgupta Review[9].

We agree that selecting a good title is important and feel that it should make a link between biodiversity and the future of ourselves, our children and our grandchildren. We have not been able to agree on a single title but offer the following:

- Restoring biodiversity for our future
- Protecting our future
- Protecting Scotland's nature for our future
- The health of biodiversity is our future
- Bringing back biodiversity

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

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

Questions:

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

[9] Dasgupta, P. (2021), The Economics of Biodiversity: The Dasgupta Review. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf

Partly. We appreciate the separation into land type instead of priority habitats/ecosystems makes the document accessible to wider audiences, but as currently presented, they neither map onto international obligations for priority habitats nor easily facilitate a commitment to an ecosystem or species recovery program which would work at a national level. The strategy should highlight Scotland's key ecosystem types, setting out a 2030 and 2045 vision and targets for each habitat e.g. Caledonian pinewoods, Atlantic rainforest, Ancient woodlands, Peatlands, Rainforest, Grasslands.

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.

Planting trees on organic soils in Scotland releases carbon from the soil yet there is inadequate recognition of this and protection of these open areas with the drive to reach tree planting targets[10] [11]. Tree planting can only mitigate a fraction of our climate emissions[12].

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

The second outcome on nature recovery includes a welcome commitment to natural regeneration of woodlands and increased diversity and connectivity, but other nature recovery schemes such as peatlands, 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 need a national programme of species recovery. Although restoring habitats often benefits species recovery, specific targeting of measures to aid species recovery is crucial. The CBD's draft of the post-2020 global biodiversity framework highlighted the need for species-centred outcomes. Also, people feel more affinity to get behind species so really important in engaging and empowering the public.

Are the 2030 milestones ambitious enough?

The outcomes given are not defined enough at present. For example "high ecosystem health" in reference to peatlands is not a clear goal. There needs to be clear SMART targets for 2030 and 2045 with clear strategies for annual reporting against progress towards the targets. A priority is sustainable management of deer populations by implementing the independent Deer Working Group Report recommendations accepted by the Scottish Government in full and within a specified time period. For example for Atlantic woodlands, a target would be to reduce deer densities to levels that allow natural tree regeneration (densities of 2 to 3 per km2 within woodlands, although this needs to be determined on a site by site basis).

Are we missing any key elements?

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[10] Friggins, N.L. *et al.* (2020). Tree planting in organic soils does not result in net carbon sequestration on decadal timescales. *Global Change Biology*, 26, 5178-5188. https://doi.org/10.1111/gcb.15229

[11] Matthews, K.B. *et al.* (2020). Not seeing the carbon for the trees? Why area-based targets for establishing new woodlands can limit or underplay their climate change mitigation benefits. *Land Use Policy,* 97, 104690. https:/doi.org/10.1016/j.landusepol.2020.104690

[12] Baggio-Compagnucci, A., *et al.* (2022). Barking up the wrong tree? Can forest expansion help meet climate goals? *Environmental Science and Policy*, 136, 237-249. https://doi.org/10.1016.j.envsci.2022.05.011

Key omissions include species rich grassland, heathland, machair etc. which are important for carbon sequestration[13] and biodiversity. Currently the Strategy focuses on woodlands and peatlands only without recognising the full suite of unique and important habitats across Scotland.

Valuable lessons can be drawn from Scotland's commitment to peatland restoration and the scale and funding that is required. However, while investing significant funding for peatland restoration peatland extraction and sale of peat for horticulture is ongoing as well as burning of peatlands.

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 and appropriate lowground arable agriculture. The increased price of nitrogen fertiliser should improve 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. Deer populations should be sustainably managed by implementing the Deer Working Group Report recommendations that were approved by the Scottish Government. To allow natural regeneration in Caledonian pinewoods, there is a widely accepted level of 2 deer per sq km, although site based considerations need to be taken into account.

Urgent action is needed to address the sheer numbers of gamebirds such as pheasants that are released in the Scottish countryside and their significant ecological impact[14] especially in the light of avian flu.

It is essential that reforms set out in the *Land Reform and Net Zero Nation* consultation, and forthcoming Land Reform Bill, align with the Biodiversity Strategy and the two documents are linked. Similarly, other land use strategies and changes should be linked up, for example the Forestry Strategy. To avoid unintended consequences for biodiversity and communities, investment in natural capital, for example through offsetting, must be planned and implemented by biodiversity professionals that hold the expertise and understanding of the relevant species, habitats and ecosystems. It must also be planned in consultation with local communities and stakeholders, and consideration given to its place in the wider landscape.

A seemingly major omission is any specific outcome for the condition and importance of designated areas such as SSSIs, SPAs, SACs and MPAs. While creation and restoration of ecosystems is needed outside of these sites, such protected areas will form the backbone of Nature Networks and should be the best examples of Scotland's habitats. The Strategy must clearly set out how the commitments to protecting 30% of land and sea for nature by 2030 will fit with the plan and what the requirements for inclusion in the target are.

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

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[13] https://cieem.net/resource/carbon-and-ecosystems-restoration-and-creation-to-capture-carbon/

[14] Mason, L.R., Bicknell, J.E., Smart, J. & Peach, W.J. (2020) The impacts of non-native gamebird release in the UK: an updated evidence review. RSPB Research Report No. 66. RSPB Centre for Conservation Science, UK.

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/carbon via erosion.

Habitat loss.

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.

Nitrogen deposition/pollution.

Agricultural practices that are not aligned with nature-positive outcomes.

Extraction of peat for composts.

Inappropriate burning that does not follow the Muirburn Code leading to loss of Sphagnum and subsequent peat desiccation, shrinkage and erosion.

Climate change – impacts of changes in rainfall and temperature as a consequence of climate change are complex.

What are the key opportunities for this outcome area?

Uplands

Ensuring that the ecosystem function, particularly the delicate natural water based system, is not compromised by inappropriately planned activities such as tree planting, wind farms and other developments.

Halting peatland extraction for horticulture is not mentioned but is needed to prevent further degradation of peatlands leading to release of carbon and damage to ecosystems.

Reducing deer densities is essential in many places and Deer Working Group recommendations should be implemented. Sheep have been removed from considerable areas of upland due to financial pressures. Encouragement should be given to farmers to adopt more sustainable forms of sheep production with higher lambing percentages.

Damaging practices such as repeated muir burning, particularly on vulnerable soils, should be actively discouraged due to the multiple disbenefits they bring (e.g., carbon release, biodiversity loss, increased run-off, and associated flood risk). In any case, burning should adhere to NatureScot's Muirburn Code, which states that "burning should not take place on peatland, except as part of a habitat restoration plan approved by NatureScot," recognising the ecosystem services it provides. In the light of this summer's conditions consideration should be given to how dry heaths and upland pastures can be managed to reduce the risk of wildfire.

Managing recreational pressures to prevent damage to fragile upland and mountain ecosystems but also highlighting the value of these unique upland and Alpine habitats to users. Scotland has unique

species that we have international obligations for including many lichens and bryophytes, especially in montane and Atlantic oakwoods.

Woodlands and Forestry

Reducing deer densities to a level where tree regeneration is not impacted and thereby allowing natural regeneration of woodland.

Increase native woodland area and condition by encouraging regeneration and increase connectivity.

Given the lifespan of many trees, it will be important to consider planting provenances that will be better adapted to future climates.

Eradication of *Rhododendron ponticum* at whole catchment/regional scales to allow tree regeneration and restoration of native ground flora in Atlantic oakwoods.

Tackle re-seeding of non-native tree species such as Sitka spruce onto peatlands and naturally regenerating woodland sites.

Improving biosecurity to prevent spread of tree pests and diseases

Farmland

Support high nature value farming. Although agri-environment schemes can deliver environmental benefits the potential for their measures is far greater than has been realised. For example, research has shown that there has been limited impacts of the schemes on farmland birds[15]. Grant schemes must be reformed to ensure they are based on clear expectations and contractual agreements which are to be agreed before funding is provided. A well resourced system of monitoring and enforcement of conditions through surveillance is crucial. Penalties such as requiring pay-back of funds when conditions are broken should also be considered.

Increase and improve the condition of hedgerows which have a high biodiversity value and play a valuable role in connectivity.

Support measures for agroforestry and pasture-based farming which has the potential to mitigate climate change through increased carbon sequestration in vegetation and soils whilst increasing biodiversity and the opportunity to connect woodland fragments.

Recognise the value of unimproved and species-rich grassland and support protection and restoration.

Coordination between funding streams and policy for the various landscape elements.

Working with local community groups.

[15] Daskalova, G.N. *et al*. (2019). Population responses of farmland bird species to agri-environment schemes and land management options in North-eastern Scotland. *Journal of Applied Ecology*, 56, 640-650.

Supporting community partnerships delivering real value and high quality stakeholder engagement e.g. Glen Affric and South of Scotland Golden Eagle Conservation Project.

What are the key challenges for this outcome area?

Financial vulnerability of the types of agriculture and forestry that best enhance wildlife. Land values being driven by high costs of housing.

Changes to Habitat Directives via Levelling Up Bill in England and the potential weakening of criteria[16]. This is a potential threat to Scotland's ability to protect and restore nature, particularly in cross-border areas.

Preserving and creating green jobs in rural areas.

INNS - particularly *Rhododendron x. ponticum* in Atlantic rainforests.

Habitat fragmentation.

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

Reducing nitrogen deposition.

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

Spread of tree pests and diseases

Resistance to change/need to deliver solutions with stakeholders on board.

Conflict of interest in 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 in particular the achievement of statutory nature and climate targets as statutory purposes for all of 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.

2. Marine Environment

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

Yes, but they are too broad to comment on meaningfully. The second point also does not really set a level of ambition as we do not know what is meant by "more resilient" and "increased benefits".

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".

[16] https://cieem.net/resource/nature-recovery-green-paper-response/

There needs to be more emphasis given to recovery and restoration in addition and protection in these marine outcome statements. We must look holistically at the pressures on the marine environment, including cumulative impacts of activities to develop a strategic, ecosystem approach.

This must lead to an overall reduction of key pressures on the marine environment and include all potentially harmful activities.

Are the 2030 milestones ambitious enough?

Yes but as before, it is difficult to provide much input without at least some detail of outcomes in different pressure areas.

Are we missing any key elements?

While the taxa listed can act as indicators, it is important that the outcomes include invertebrates and plants. These will be crucial to support ecosystem functioning. Fundamentally, more data is needed on species relationships with each other and their environments, and how cumulative pressures can be reduced.

Addressing evidence gaps in the marine environment should be a 2030 milestone.

Marine Protected Areas (MPA) need to be protected from damaging developments such as intensive aquaculture, bottom trawling etc.

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

Overfishing[17], 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, bycatch and entanglements, offshore wind, oil and gas.

What are the key opportunities for this outcome area?

Protecting the MPA network to ensure they are actually delivering for nature and fully protecting at least 10% Highly Protected Marine Areas. Scotland's approach to protection should follow the three-pillared approach of the Marine Conservation Strategy with strengthened protection - at least 10% of Scotland's seas should be fully protected (category 1a under IUCN definitions), at least 30% should be under high levels of protection (a third of which is fully protected) and at least 20% should be actively managed for active recovery and restoration (seagrass and native oyster beds). Scotland's seabird and marine mammal strategy should be implemented in full to ensure populations become self-sustaining and increasing.

Developing truly sustainable fishing and aquaculture industries**.** This might involve the creation of further no-take zones and the re-imposition of bans on trawling and dredging within the 6-nautical mile limit so only small local boats are allowed within that. The fishing community 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, native oyster beds and saltmarshes, although it's important that these activities take a

[17] Colin Moffat, John Baxter, Barbara Berx, Kirsty Bosley, Philip Boulcott, Martyn Cox, Lyndsay Cruickshank, Katie Gillham, Venetia Haynes, Ashley Roberts, David Vaughan & Lynda Webster (Eds.). (2021). Scotland's Marine Assessment 2020: Headlines and next steps. Scottish Government.https://marine.gov.scot/sma/sites/default/files/hns_00_full_version.pdf

'nature-first' approach to avoid unintended impacts on biodiversity. Simplifying the licensing system will enable this on a greater scale.

There are some very positive actions being taken in marine ecosystem conservation and restoration, with large-scale seagrass restoration[18] and mapping projects getting underway, and reported increases in cetacean sightings[19]. 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.

Progressing an ambitious Circular Economy Bill to reduce plastic pollution reaching marine environments, alongside robust implementation of the Marine Litter Strategy. Reducing pollution from sewage and reduced chemical input from the control of sea lice with investment in new alternatives in aquaculture. Although there are controls in aquaculture, strict enforcement needs expansion.

Marine renewables should be developed in a manner that minimises impacts on species and habitats. A recent review[20] compiles important evidence and knowledge on bird disturbance and proposes protected buffer zones, these should be adopted alongside methodologies shown to decrease collision risk and other impacts. Noise pollution impacts on cetaceans behaviour and migration should be avoided and reduced.

What are the key challenges for this outcome area?

Continued plastic pollution (although progress is being made in the public consciousness of this issue and through initiatives such as the plastic bag charge).

Increasing spread of marine INNS, 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 South East 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 round wind turbines becomes, in effect, a no-take zone.

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

With the ambitious targets for offshore renewable energy (50 GW of offshore wind power by 2050), the marine landscape will need to change considerably. It is crucial that consideration is made of overall and cumulative impacts at a broader scale rather than at an individual application level, for example where a cluster of wind turbines gets developed over time. However, understanding of impacts on marine life especially in conjunction with climate change is limited. Therefore, recently announced funding of the Ecological Consequences of Offshore Wind research programme

[18] https://www.projectseagrass.org/; https://www.seawilding.org/; https://nativeoysternetwork.org/portfolio/deep/

[19] https://hwdt.org/news/2018/2/27/record-numbers-of-common-dolphin-sightings-off-scotlands-west-coast

[20] Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283. https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance

(ECOWind)[21] is critically important to increase understanding of the Impacts of Offshore Wind Farms will cover all aspects of the food chain from plankton productivity to prey availability for predators.

3. Freshwater Environment: Rivers Lochs and Wetlands

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

No. The outcome statements do not provide a measurable level of ambition. By 2045 we should see that the ecological status of all catchments has been improved to favourable condition.

As previously mentioned, this section lacks sufficient recognition of standing waters, wetlands (such as fens, flushes reedbeds, mires, bog etc.), important tributaries and streams, and freshwater species other than salmon (including invertebrates, plants and other fish).

The Strategy focuses heavily on the Water Framework Directive and River Basin Management Plans (RBMP) which were not designed for biodiversity conservation (although we acknowledge ecological aspects are assessed for their status). The strategy refers only to assessments of water quality, flows and barriers to fish migrations but does not include aquatic macrophytes and invertebrates which form the basis of freshwater systems. RBMP monitoring also relies on a single point measurement regardless of complexity or size of the water body and does not cover small streams and headwaters.

We must take this opportunity presented by the strategy to deliver a programme of actions and monitoring for biodiversity conservation and restoration (that demonstrates the conservation status, population levels or health of these species) if we are to see a step change in the health of aquatic ecosystems. The RBMP monitoring programme is currently not fit for this purpose.

Are the 2030 milestones ambitious enough?

No - see comments below.

Are we missing any key elements?

The outcomes given do not reference key taxa including amphibians and invertebrates, instead focusing narrowly on salmon recovery. This should be broadened to include a variety of indicator species from major taxonomic groups.

All forms of freshwater bodies should be part of the outcomes and monitoring process. Current monitoring focuses on rivers and lochs. We must recognise the value of ponds, marshes, bogs , fens and tributaries for biodiversity and carbon sequestration and monitor these accordingly. It is also important to recognise the opportunities posed by Sustainable Urban Drainage Schemes (SUDS).

Connectivity actions within freshwater environments other than wetlands which are recognised in the milestones.

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

[21] https://ecowind.uk

Habitat degradation in upper catchments due to loss of riparian woodland, overgrazing, peatland erosion.

INNS including giant hogweed, signal crayfish, zebra mussel etc. Only certain INNS cause a water body to be classified as moderate, for example signal crayfish; but it does not necessarily mean that they are 'free from INNS. This also does not recognise the risk of INNS spreading to new watercourses. Progress will inevitably slip unless systematic effort is sustained by all partners working in this area. Monitoring of the outcomes in this strategy must recognise the impact of INNS on ecosystem function and present an accurate picture of the ecosystem condition.

Diffuse pollution from agriculture, storm overflows, development etc. One in eight rivers in Scotland are only classified as Moderate to Poor for water quality. Further monitoring is needed to assess the impacts of microplastics.

Changes to the physical regime of watercourses through diversions, channelling, dams and other hydromorphological structures that reduce flows, change sediment transfer and provide barriers to fish migration and connectivity.

What are the key opportunities for this outcome area?

Widespread investment for landscape scale restoration of wetlands. Catchment-scale approaches promoted for climate change adaptation e.g. tree planting, re-meandering and natural river courses, restoration of flood plains. 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 as well as targets for the extent of pond and wetland habitats to reverse the decline in these.

Widespread planting of trees along stream and river banks to ameliorate the impacts of higher temperatures which impacts many protected species such as freshwater pearl mussel and salmon, and to support natural flood management.

Creating and maintenance of riparian buffer zones, and making these a minimum of 15 metres wide along watercourses, 30m in key areas to control pollution, sediment and nutrient runoff.

Introducing strong nitrate control and nutrient exclusion zones at the catchment scale.

Targeted action to control and manage INNS at the landscape scale including riparian and wetland plants on and adjacent to water courses, and invertebrates such as signal crayfish and zebra mussel, etc. Valuable lessons can be learnt from long-term control work already conducted in Scotland e.g. by the Tweed Forum[22].

Tighter control of sewage and other pollution discharges. Immediate action is needed by Scottish Water to cut discharges of untreated sewage.

Introducing agri-environment schemes that favour wetland biodiversity measures that are long-term, large scale across catchments and sustainable.

[22] https://tweedforum.org/our-work/projects/tweed-invasives-project/

NPF4 is a key opportunity to ensure that freshwater habitats and floodplains in particular are not subject to inappropriate development and its effects on the wider catchment.

What are the key challenges for this outcome area?

Funding cuts to biodiversity partnerships and NGOs which threatens long-term partnership delivery of catchment scale work.

Existing infrastructure e.g. hydro dams with no fish ladders presenting barriers to salmonid migration. Prioritising removal of man-made barriers to fish migration where prime habitat or a larger area of good habitat is present upstream is a practical stance. However, man-made barriers are only one issue affecting fish migration. Low flows and associated increased water temperature as a result of climate change are increasingly having a detrimental effect on fish migration and wider aquatic biodiversity. A catchment wide approach is needed. There is a limited number of specialists experienced in this type of work, leading to over-reliance on the same specialists to deliver improvements to physically modified rivers, fish barriers and hydro-power easement schemes. Increasing resources in this area will be needed.

Pressures on water abstractions from the agriculture industry, along with water for hydro power generation can also add pressures at the bottom of an already water-stressed catchment.

Continued support and upscaling of INNS control work to ensure that control efforts are not wasted when restricted to the length of funding bids.

As the effects of climate change (low water flows, high temperature) increase, it will exacerbate other existing threats e.g. low flows will concentrate pollutants and higher temperatures will increase pressure on sensitive species such as Freshwater pearl mussels.

4. Coastal Environments

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

Replace ‘more widely’ with ‘universally’.

There is little reference to sectoral activities that damage nature in coastal areas which should be given clear expectations for how transforming their activity to provide benefit to coastal nature is a prerequisite for long-term socio-economic sustainability. The outcome statements are too generic and more detail with targets and milestones is needed.

Ramsar sites should be protected in law as well as SSIs, SPAs and SACs.

Are the 2030 milestones ambitious enough?

No, as with 2045, these are too generic. Given the importance of Scotland’s seabird colonies internationally and how important the Scottish coastline is for biodiversity there could be much greater recognition and ambition.

Are we missing any key elements?

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 the golf course examples we have seen.

The current bird flu outbreak poses challenges to maintaining our breeding seabird populations.

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

Disturbance of breeding birds.

Avian flu.

Inappropriate developments on sensitive dune and island areas and habitat fragmentation.

Sea level rise and increased storm frequency and intensity.

Diffuse pollution impacting seagrass beds.

Pollution including plastic pollution.

INNS.

Climate change impacts such as warming sea temperatures leading to impacts on breeding, phenology and species distribution including increased INNS.

What are the key opportunities for this outcome area?

Clear recognition of the importance of the coastal environment in its own right for biodiversity and also as a first defence against sea level rise and storm damage. Many coastal environments have been overlooked in their importance and as a result have become fragmented and impacted. Management including buffer zones could be incorporated more into agri-environment schemes.

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

Taking lessons learned from nutrient neutrality in England to reduce the impacts of nutrient pollution on protected sites.

Continued and scaled up support of INNS eradication on Scottish islands.

Protection and management of machair habitats via support for crofters.

Protecting Ramsar sites in law as well as SSIs, SPAs and SACs.

Manage successional habitats such as sand dunes and estuarine environments to maintain and increase diversity and ecosystem function.

What are the key challenges for this outcome area?

Recognition of the risks from and consequences of sea level rise, including storm surges.

Inappropriate development and cumulative impacts.

Bird 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.

5. Urban Environments – Towns and Cities

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

No

There is an underlying assumption that the existing model of living in cities is sustainable. The concept of 20-minute neighbourhoods and nature-positive planning 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 benefits and inclusion of nature in developments. There needs to be clarity on what a "measurable increase is and how "measurable increases in biodiversity are to be measured". Currently this does not set any clear level of ambition.

Our urban areas should support resilient and biodiverse nature networks with corridors that enable species to move freely through urban environments. The urban environment also cannot be considered in isolation but as part of the wider countryside – a holistic approach is needed to ensure nature-positive urban areas and functioning nature networks. Additionally, goals to ensure nature-based solutions provide the basis for healthy and resilient communities and nature-richness is a feature of all developments, and prominent in school, health, neighbourhood and community spaces, should also apply to rural areas.

Are the 2030 milestones ambitious enough?

Yes

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 (see challenges section for more detail). We suggest the outcome terms used align with NPF4.

Enhancements of biodiversity and green/blue infrastructure measures must focus on creating areas of high value habitat to provide an environment where wildlife can recover and should contribute to strategic biodiversity objectives at both a local level, and as part of a national nature network.

Are we missing any key elements?

The definition of urban environments should include transport corridors such as those around railway lines, motorways and canals. To make places more inclusive, diverse, vibrant, resilient and empowering we should ensure equitable access to greenspace (both in terms of amount and quality), sustainable transport routes and blue-green infrastructure. Greenspaces should be connected and provide a green 'highway' to all areas of the town or city. Connectivity between places via sustainable transport options, active travel choices and affordable access to public transport are key alongside decarbonisation of the transport system. Design of new transport infrastructure can be a valuable opportunity to incorporate blue and green infrastructure and nature rich habitats. Network Rail has been incorporating the principles of biodiversity net gain[23] and is looking to achieve biodiversity net gain by 2035 across the entire network[24].

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[23] CIRIA, CIEEM and IEMA (2019) Biodiversity net gain. Good practice principles for development Case studies, case studies 6-10. Available at: https://cieem.net/resource/biodiversity-net-gain-case-studies/

[24] Network Rail (2020) Biodiversity Action Plan. Available at: https://www.networkrail.co.uk/wp-content/uploads/2020/12/Network-Rail-Biodiversity-Action-Plan.pdf

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

Inappropriate development and increasing urban sprawl.

INNS.

Light and other pollution.

What are the key opportunities for this outcome area?

This section should include links to the National Planning Framework (NPF4), 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, 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

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

Protect existing urban trees and increase the number of trees which provide a very important localised cooling effect as well as great biodiversity benefit.

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

Improving management and maintenance of existing green spaces.

Retrofitting old developments with biodiverse habitats.

What are the key challenges for this outcome area?

Despite a strong rhetoric in the draft 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)[25]. This will also reduce energy use which will have co-benefits in terms of greenhouse gas production and cost of living.

Improving air quality - Air pollution has been deemed the largest environmental risk to public health in the UK with 40,000 premature deaths each year attributable to exposure to outdoor air pollution, affecting people with underlying health conditions and those from deprived communities the most[26]. Air pollution also has a significant impact on ecosystems, for example through nitrogen deposition and acidity. In urban areas, hedgerows, shrubs, trees, rain-gardens, and green spaces in general play an important role in both carbon capture and mitigating air pollution. Utilising nature-based solutions for managing issues such as air quality in urban centres should be the norm.

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.

A recent CIEEM survey of Local Planning Authority capacity in Scotland[27] sheds light on significant gaps to deliver effective ecological work in planning and the ambitions for positive effects for biodiversity in NPF4. Twenty two per cent of respondents said they have no current ecological resource or expertise available and one third said there had been cutbacks to ecological provision within their LPA (either staffing or resources) over the past 5 years, with many others citing that cutbacks had happened prior to this. Two thirds of respondents rated lack of enforcement staff to ensure compliance as a high or very high risk to their LPA's ability to implement the forthcoming NPF4 and Positive Effects for Biodiversity. These gaps must be addressed to ensure there is sufficient ecological expertise and capacity to deliver NPF and the Biodiversity Strategy ambitions.

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[25] https://www.unep.org/news-and-stories/story/global-light-pollution-affecting-ecosystems-what-can-we-do#:~:text=%22Light%20pollution%20can%20disrupt%20critical,and%20their%20chances%20of%20survival. https://www.unep.org/news-and-stories/story/global-light-pollution-affecting-ecosystems-what-can-we-do

[26] Royal College of Physicians (2018). Reducing air pollution in the UK: Progress report 2018. [online] Available at: https://www.rcplondon.ac.uk/news/reducing-air-pollution-uk-progress-report-2018

[27] https://cieem.net/survey-of-scottish-local-planning-authority-capacityhighlights-risk-to-delivery-of-npf4/

Similarly, cuts to nature restoration projects and Biodiversity Partnership funding have been made over recent years, particularly as Nature Scot are balancing cuts to their government fundings. Support is needed for these projects and NatureScot to fulfil all of its functions.

6. 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 are pleased to see resilience and connectivity highlighted and the emphasis on building nature networks. There needs to be recognition that to achieve the goals habitats will need to move in response to climate change.

There is no mention of how this will apply to the marine and freshwater environment in the outcomes despite the section being for land and sea. This should be rectified with the proposals we have set out in relevant sections.

We welcome the use of the Biodiversity Intactness Index.

The success of delivering these objectives will depend on having coherent strategic plans at both a national and local level, which includes opportunity maps for delivering biodiversity projects.

All degraded ecosystems should be under effective and area-based restoration measures by 2045.

Are the 2030 milestones ambitious enough?

We would like to see detailed targets relating to protection and restoration as laid out in previous sections and following the proposed EU Restoration Law. This should include the target to protect 30% of land and sea by 2030 (30x30) and a goal for 10% of land and sea to be strictly protected for nature by 2030.

Are we missing any key elements?

There is no mention of how this will apply to the marine and freshwater environment in the outcomes despite the section being for land and sea.

There is no mention of national parks or the role of protected areas. LNCS are hugely important yet their level of protection is weak. National Parks could act as a back bone of a national nature network but they are ot currently fulfilling this potential. A review of how they can be supported to do so should take place. The protected area network is a cornerstone of biodiversity conservation in Scotland and targets to bring all sites into favourable condition should be included here.

Although 30x30 strategies are being developed separately by a co-design process led by NatureScot there needs to be clear links laid out here and we are surprised that they are not included.

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

Habitat fragmentation, simplification and loss of three-dimensional structure.

INNS.

Habitat loss.

What are the key opportunities for this outcome area?

The opportunities in this outcome area are fundamental to the success of the biodiversity strategy.

Innovative funding mechanisms can be used to encourage private investment, including payments for carbon offsetting, habitat restoration, ecosystem services.

Local spatial strategies to identify how priority habitats for the area will be protected and restored. Regional Land Use Partnerships have an important role in this. Opportunity mapping is key with data free and accessible for all.

Allowing movement of species in response to climate change leading to their conservation.

Increasing habitat connectivity and ecosystem resilience.

Mainstreaming biodiversity across all policy areas and government departments is critical.

What are the key challenges for this outcome area?

Creating connectivity without facilitating the spread of INNS.

Reducing widespread pollution issues.

A culmination of challenges outlined previously and the key drivers of biodiversity loss.

To what extent will these outcomes deliver the Vision?

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.

We strongly support the statement that "*our role in tackling the climate and nature crises will rely on transformative economic and social change. Reversing biodiversity loss cannot be achieved through traditional conservation measures alone – these must be accompanied by a more fundamental, society-wide shift to sustainable consumption and production*."

What might be missing?

The outcomes will only deliver the vision if they are embedded across national policies and incorporated within local guidance and strategies. Likewise, the vision and outcomes need to be framed and targeted at particular sectors and audiences e.g. developers, planners, farmers, foresters etc. so it is clear what the strategy means for them.

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

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.

Transparent monitoring and reporting across sectors and sharing of knowledge so we can learn what works and what does not.

Long-term monitoring has been subject to cuts due to funding shortages and this needs to be rectified, otherwise we will not know if we have delivered the Vision or continued to allow unseen declines in the health of our ecosystems and species populations.

PART 5 – The Conditions for Success

Questions:

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

We are pleased to see that the draft Strategy reflects on what went wrong in delivering previous iterations, in particular, failings in governance, accountability and how a lack of measures have undermined previous ambitions. Recognising these issues is a great step; we now need to ensure that changes are made to address previous issues.

We recommend inclusion of empowering local groups to take 'ownership' of their environment under 'Public Engagement and Communications'. A system of local land management forums could enable much more meaningful citizen input into local land-use decision-making.

If the Biodiversity Strategy is to be successful, it will need to be implemented and integrated across (and receive buy-in from) all government departments which will need to work much more closely together in the development of policies and projects. Likewise, the Biodiversity Strategy needs to be embedded and integrated across agricultural, forestry, planning and infrastructure policies.

Statutory targets will be crucial to ensure action across all departments and stakeholders.

We welcome commitment to improving the monitoring framework and indicators in this section.

The Protected Area network will be a key delivery mechanism, however it requires improved management and protection and a review of connectivity and buffer zones in surrounding habitats especially for small isolated nature reserves.

Increasing access to nature for all and empowering citizen science and action is fundamental to build support for the Biodiversity Strategy. Many individuals and community groups do fantastic work for nature however this is often not recognized. Support for these individuals and groups via Biodiversity Partnerships and Regional Land Use Partnerships is really important. Outdoor learning in school which has improved significantly in early years and primary is sorely lacking in secondary schools and the relevance of subjects could be improved to tackle key issues. This is currently being reviewed by the Scottish Government Commission for the review of land based learning[28], which CIEEM is contributing to. Awareness of Green Jobs and increased understanding around routes to entry, pathways and options for study will be really important so that we have the skills and personnel needed to deliver on the Biodiversity Strategy[29].

The Edinburgh Process is not referenced which is an omission as it offers the opportunity to secure buy in from stakeholders.

A full review of what processes have worked and those that have not been successful is recommended to identify where additional resourcing or a change of approach is needed.

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[28] https://www.gov.scot/groups/commission-for-the-land-based-learning-review/

[29] https://cieem.net/i-am/current-projects/green-jobs-for-nature/

We support recommendations from Scottish Environment Link that the allocation of responsibility for assessing progress against the strategy to an independent body (e.g. Environmental Standards Scotland), and that incentives that harm biodiversity or prevent progress towards nature restoration must be removed.

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

Glasgow City Region Climate Adaptation Strategy[30], published last year includes goals around nature based solutions and associated enabling action plans across a wide range of sectors. There is also the opportunity to learn from National Biodiversity Strategies and Action Plans implemented in other countries[31]. A good example is New Zealand where the Biodiversity Strategy 2020[32] includes measurable and time-bound goals for 2025, 2030 and 2050.

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

Can you provide any evidence which informed your conclusions?

Improving biodiversity and the environment generally across the board (both in urban areas where most people live - but also in the rural areas where the urban population take their recreation) would begin to address some of the current issues of environmental injustice.

There are many opportunities in this Strategy for community engagement. This should be done in a way that follows best practice for reaching under-represented groups and ensuring all voices are heard.

It is vital that the Scottish Government delivers a Just Transition to Net Zero and a Nature Positive economy, 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. Just Transition is crucial to support rural industries like agriculture, forestry and fisheries to transition to nature-positive and carbon negative methods.

There are significant opportunities in Scotland for growing and expanding the nature-based sector. Creating equal access for all for upskilling and retraining in green jobs is essential for successful delivery of the strategy to 2045.

CIEEM is launching a campaign and new Green Jobs website to make careers geared towards restoring and replenishing our natural environment more visible and achievable for all those thinking about their future work. We are also working closely with Defra as part of the Green Jobs Delivery Group to support the delivery of up to 480,000 skilled green jobs by 2030 and help ensure the UK has the skilled workforce it needs to build clean industries.

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[30] Climate Ready Clyde (2021) Glasgow City Region Climate Adaptation Strategy and Action Plan 2020–2030: Choosing to flourish in our future climate. http://climatereadyclyde.org.uk/gcr-adaptation-strategy-and-action-plan/

[31] https://www.cbd.int/nbsap/

[32] https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-2020.pdf