

## **Submission to Joint Committee on Climate Action, Committee for Pre-Legislative Scrutiny of the Climate Action and Low Carbon Development (Amendment) Bill 2020.**

### Executive summary

- We are in the midst of a climate and biodiversity crisis.
- Intact biodiversity leads to healthy, functioning ecosystems, without which climate change will have much worse impacts on agriculture, food security, the economy and people's wellbeing.
- Biodiversity is an inextricable component of the Earth system that regulates climate and which supports life on this planet. If we do not protect and restore biodiversity we will not meet our long term climate goals.
- Active restoration of biodiversity is a nature-based solution that, if done well, reduces emissions of greenhouse gases, enables carbon capture and storage and ensures the resilience to the disruptive effects of climate change of our land- and sea-scapes, and the critical ecosystem services they provide.

### Summary of recommendations

- All policy instruments resulting from this Bill and the Principal Act should comply with, and actively support, the implementation of the National Biodiversity Action Plan.
  - The purposes for which moneys may be paid out of the Climate Action Fund should include (in addition to implementation of nature-based solutions) research on both the implementation of nature-based solutions for climate action and their efficacy in order to inform carbon budgets and the projections of greenhouse gas emissions, storage and sequestration.
  - Appropriate definitions of biodiversity and nature-based solutions be included in the Bill.
1. My expertise lies in ecology, the distribution, abundance and function of natural and human modified ecosystems. I am Professor of Zoology at Trinity College Dublin, a Member of the Royal Irish Academy, Irish Research Council Laureate and Co-Director of Nature+: the Trinity Centre for Biodiversity and Sustainable Nature Based Solutions. I was appointed by the Minister with responsibility for Heritage 2015 to serve as Chair of the National Biodiversity Forum. The Forum provides independent monitoring of progress on implementation of the National Biodiversity Action plan, ensures ongoing input into the development of national strategies to promote biodiversity conservation, works towards sectoral integration of biodiversity planning, improves stakeholder awareness and understanding of biodiversity, promotes North/South cooperation on biodiversity and provides progress reports to the Minister.
  2. I give my scientific opinion on the role of nature-based solutions in carbon reduction and the intersection with biodiversity within the Climate Action and Low Carbon Development (Amendment) Bill 2020.
  3. The first of seven objectives in The National Biodiversity Action Plan<sup>1</sup> is to "Mainstream biodiversity into decision-making across all sectors" so I am very glad to have this

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<sup>1</sup> Department of Culture, Heritage and the Gaeltacht. 2017. National Biodiversity Action Plan 2017-2021. <https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf>

opportunity to present a submission on the importance of biodiversity and nature-based solutions to this committee. It is well recognised that we cannot tackle climate change without a consideration of the contributions of biodiversity to both climate change mitigation and adaptation<sup>2</sup>. It is also well recognised that we are in the midst of a biodiversity crisis that threatens an estimated 1 million species with extinction over the coming decades. This matters for climate change because biodiversity, a component of our natural capital, provides climate regulating services for the planet and provides us with the resilience we need in order for people, our economies and society to withstand the climate change shocks that we are already locked into.

4. Biodiversity is the living element of natural capital which also includes water, atmosphere, rocks and soil that together underpin our survival and wellbeing. Intact biodiversity leads to healthy, functioning ecosystems, without which climate change will have much worse impacts on agriculture, food security, the economy and people's wellbeing<sup>2</sup>.
5. Biodiversity and the deployment of targeted nature-based solutions can provide some of the solutions we need to achieve the global, European and national targets set to keep our planet liveable and maintain our wellbeing. Biodiversity provides solutions for both mitigation of climate change through its climate regulation ecosystem service, as well as the means of adaptation across many sectors to the impacts of climate change. Biodiversity is threatened by some of the same drivers that cause climate change and biodiversity is also under threat from climate change<sup>2</sup>. Biodiversity is an inextricable component of the Earth system that regulates climate and which supports life on this planet. If we do not protect and restore biodiversity we will fail to meet our climate goals.
6. By reducing greenhouse gas emissions, as this Bill aims to do, we will be putting in place important future protection for biodiversity; and by managing some of the shared drivers of biodiversity loss and climate change we will gain some co-benefits for biodiversity. However, there is a risk that deployment of actions to reduce emissions and adapt to climate change may worsen existing drivers of biodiversity loss and introduce new drivers. We need more than passive benefits to biodiversity from climate change action to ensure that we maximise the contribution of biodiversity to climate change mitigation and adaptation. Active protection and restoration of biodiversity is a nature-based solution that, if done well, reduces emissions of greenhouse gases, enables carbon capture and storage and ensures the resilience to the disruptive effects of climate change of our land- and sea-scapes, and the critical ecosystem services they provide.
7. **I recommend** that the integral role of biodiversity in regulating the climate and ensuring long-term resilience to climate change be recognised explicitly in this Bill and that all policy instruments resulting from this Bill and the Principal Act comply with, and actively support, the implementation of the National Biodiversity Action Plan.
8. Biodiversity is only mentioned twice in the current Bill and not at all in the original 2015 Act. Natural systems and ecosystems are mentioned in relation to their role in adaptation and sinks (Principal Act, section 1).
9. **I recommend** that a definition of biodiversity be included in the amendment of section 1 of the Principal Act. The Convention on Biological Diversity (CBD) defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine

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<sup>2</sup> IPBES The global assessment report on biodiversity and ecosystem services. Summary for policymakers. [https://ipbes.net/sites/default/files/2020-02/ipbes\\_global\\_assessment\\_report\\_summary\\_for\\_policymakers\\_en.pdf](https://ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf)

and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.”<sup>3</sup>

10. **I recommend** that the definition of nature-based solutions be included in the amendment of section 1 of the Principal Act. The EU Commission defines nature-based solutions as: “Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.” Nature-based solutions must therefore benefit biodiversity and support the delivery of a range of ecosystem services<sup>4</sup>
11. The first explicit mention of biodiversity in the Bill is to ensure that expertise in biodiversity is present on the Advisory Council which is absolutely necessary and I am glad to see this specified. The second mention of biodiversity is in an amendment to the National Oil Reserves Agency (Amendment) and Provision of Central Treasury Services Act 2020 which provides for that fund to be used to “support projects that seek to increase the removal of greenhouse gases, particularly nature based solutions that enhance biodiversity”. It is useful to have the roles of biodiversity and nature-based solutions explicitly recognised here. However, I have some further recommendations for the wording of this and subsequent sections.
12. **I recommend** that instead of “enhance biodiversity”, which is somewhat vague and open to interpretation, that the national biodiversity strategy should be explicitly referenced. Much work goes into the national strategy and it should be the touchstone for all biodiversity related recommendations across the state’s remit. Implementation of the national strategy is key to achieving our national vision “That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.”
13. Nature-based solutions such as restoration of carbon rich ecosystems including (but not limited to) native forest, saltmarsh, peatlands and semi-natural grasslands can act to remove greenhouse gases from the atmosphere. This function of ecosystems is often referred to as “negative emissions”<sup>5</sup> and there is the capacity to implement research and on-ground projects to maximise the benefits to both the climate and biodiversity from these examples of biodiversity restoration projects. It is excellent to see recognition of the importance of nature based solutions and biodiversity in the National Oil Reserves Agency (Amendment)...Act 2020, however it can be strengthened in the following ways:
14. **I recommend** that every reference to “increase the removal of greenhouse gases” in the National Oil Reserves Agency (Amendment)... Act 2020 include reference to biodiversity & nature-based solutions for consistency between supporting “projects” and supporting “research”. The efficiency and benefits from nature based solutions projects can be increased through targeted research as well as through implementation of existing solutions.
15. **I recommend** that references to preventing the emissions of greenhouse gases in the Bill through amendment of the National Oil Reserves Agency (Amendment) ... Act 2020 also reference biodiversity and nature-based solutions. Land degradation is responsible for an

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<sup>3</sup> Convention on Biological Diversity, UNEP/CBD/94/1.

<sup>4</sup> [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)

<sup>5</sup> McMullin, Jones, McGeever, Price & Rice. (accessed 27/10/2020) Potential for Negative Emissions.

Environmental Protection Agency, Ireland <http://erc.epa.ie/safer/iso19115/displayISO19115.jsp?isoID=3149>

estimated 23% of global greenhouse gas emissions<sup>6</sup>. By putting in place nature-based measures to slow down and stop land degradation processes we can mitigate some of the effects of climate change. For example basic rewetting of degraded peatlands can reduce emissions that we are currently locked into due to previous peat extraction which has disrupted the ability of the peatlands to sequester carbon. Rewetting will also protect the remaining carbon store, preventing future emissions. Research is urgently needed to determine how best to actively manage the hydrology and revegetate rewetted peatlands in order to turn a greenhouse gas source into a greenhouse gas sink.

16. To demonstrate the efficacy of nature-based solutions and get recognised value from their implementation we need to measure and validate impact as well as monitor effectiveness, over short to longer timescales. For example, urgent remediation of degraded peatlands will be needed to prevent emissions that will become part of our carbon balance sheet.
17. **I recommend** that provision be made in the Bill through amendment of the National Oil Reserves Agency (Amendment) ... Act 2020 for support of research into adequate measurement and monitoring of the effectiveness of nature-based solutions which are implemented. These data are critical for setting carbon budgets and projecting future carbon emissions, storage and capture.
18. Nature cannot provide all of the solutions to climate change, but without consideration of nature we will fail to mitigate and adapt to climate change. We absolutely need the reductions in greenhouse gas emissions across the many sectors that this Bill seeks to enable. However, explicit recognition of the role that biodiversity and nature-based solutions can play in mitigating and adapting to climate change will ensure that climate actions we take will be win-win for both climate and biodiversity rather than trading biodiversity off to service climate action. Side-lining biodiversity in efforts to mitigate and adapt to climate change will undermine the systems that give us the long term resilience we need to get through this crisis.

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<sup>6</sup> IPCC, 2019: Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press. [https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM\\_Updated-Jan20.pdf](https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM_Updated-Jan20.pdf)