# IAP Statement (2021) 'Climate change and biodiversity-interlinkages and policy options' – Relevance to Ireland

Briefing Paper 1 / 2021

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**As a member of the InterAcademy Partnership (IAP), the Royal Irish Academy welcomes this latest statement *Climate change and biodiversity – interlinkages and policy options*. The IAP is a network of more than 140 national, regional and global member academies working together to support the vital role of science in seeking evidence-based solutions to the world's most challenging problems. The IAP harnesses the expertise of the world's leading scientific minds to advance sound policies, improve public health, promote excellence in science education, and achieve other critical developmental goals. Statements are endorsed by the majority of IAP members.**

Biodiversity change and climate change are undermining the planet's life support systems. There are fundamental links between biodiversity and climate components of the Earth's systems, meaning that biodiversity change affects climate and climate change affects biodiversity. Together climate and biodiversity provide for critical ecosystem services that are under threat worldwide.

The 2021 IAP Statement emphasizes the interlinkages between biodiversity and climate change and puts forward five key policy recommendations for jointly addressing the climate and biodiversity crises. The statement outlines how measures that benefit biodiversity have the potential to support climate action, and how some aspects of climate action can promote biodiversity. It also discusses instances where addressing climate change can undermine efforts to improve biodiversity. The IAP Statement is developed to provoke discussion and inform and guide policy makers.

This Briefing Paper by Prof Yvonne Buckley MRIA discusses the latest IAP Statement and its relevance to Ireland.

# The Author

## *Professor Yvonne Buckley MRIA, Trinity College Dublin*

Professor Buckley is the Vice President for Biodiversity & Climate Action at Trinity College Dublin and is actively involved in research on global change and biodiversity. She is particularly interested in understanding fundamental drivers of animal and plant population performance in a rapidly changing world. She uses these discoveries to provide practical solutions in the areas of biodiversity conservation, invasive species management and habitat restoration. She has authored key papers on the interlinkages between climate and ecology. She has been a member of the Royal Irish Academy since 2019 and was Chair of the National Biodiversity Forum from 2015-2021. She is Co-Director of Nature+: Trinity Centre for Biodiversity and Sustainable Nature-based Solutions.

- Yvonne Buckley graduated with an Honours Degree in Biology from Oxford University, UK in 1997.
- She completed a PhD in Biological Sciences at Imperial College London, UK in 2002.
- She was appointed as a lecturer in biological sciences at The University of Queensland, Australia in 2004 where she remains an Honorary Professor.
- In 2014 she was appointed as Chair of Zoology at Trinity College Dublin.
- In 2022 she takes up the position as the first Vice President for Biodiversity and Climate Action at Trinity College Dublin.

The 2021 IAP Statement Climate change and biodiversity: interlinkages and policy options brings together scientific evidence on the interlinkages between climate and biodiversity and the evidence base for policy responses. It complements the work of the recent IPBES-IPCC co-sponsored workshop report on biodiversity and climate change (https://ipbes.net/events/launch-ipbes-ipcc-co-sponsored-workshop-report-biodiversity-and-climate-change ).

# Where are we at?

Climate, biodiversity, and human activity are interconnected. We are experiencing rapid global climate change and biodiversity change – which includes both extinctions and redistributions of species – due to human activity. Changes in biodiversity and climate have profound consequences for people and the ecosystems on which we depend.

Biodiversity provides ecosystem services and numerous resources for human well-being. For example, wetlands provide water purification, flood mitigation, sediment retention and recreational opportunities, as well as habitat for many species. If biodiversity is not protected, the ability of nature to provide these services is reduced.

Ecosystems affect the climate in several ways, and the biodiversity in ecosystems secures climate-regulating functions, such as water cycling and removing carbon dioxide from the atmosphere.

Aspects of climate change, such as rising temperatures, changing rainfall and snowfall patterns and extreme weather events, have a range of impacts on biodiversity. However, the diversity of life within ecosystems makes them more resilient to climate change and other disturbances.

The rapid pace of climate change in the 21$^{st}$ century, with a temperature rise in excess of 3°C possible within this century (UNEP and UNEP DTU Partnership, 2020), could mean that many species fail to adapt or migrate at sufficient speed. Some plant and animal species may become extinct (Román-Palacios and Wiens, 2020) and certain populations will decline while others will increase, affecting species interactions such as predation, competition, and the spread of diseases.

International and national governments are now waking up to the fact that climate and biodiversity are linked and that we must be address climate change and biodiversity decline in tandem. The IAP statement provides a framework for acting on climate change while simultaneously supporting and improving biodiversity.

# Key policy recommendations and principles for action

The IAP statement outlines key recommendations for a coordinated response to climate change and biodiversity decline. Some policy measures are beneficial in both areas, helping to mitigate and adapt to climate change as well as to conserve and restore biodiversity.

## *Policy recommendations*

- Build a sustainable food system with climate- and biodiversity-friendly agricultural practices, responsible food trade, and equitable food distribution.
- Reduce rates of natural ecosystem loss and degradation, protect, restore and expand natural ecosystems, and increase landscape connectivity.
- Ensure that expansion of renewable energy systems has positive biodiversity benefits built into its design.
- Recognise, respect and safeguard the rights and livelihoods of local and traditional users of ecosystems when implementing biodiversity and climate change actions.
- Discourage ecosystem-based approaches to climate mitigation that have negative outcomes for biodiversity, such as tree planting in inappropriate ecosystems, monocultures, and unsustainable energy crops.

## *Principles underpinning biodiversity and climate action*

The IAP statement also highlights key principles underpinning biodiversity and climate action. Adhering to these principles will increase the likelihood of success of climate and biodiversity action.

- Transformation. Mitigation at the scale needed to keep the rise in global temperatures to 1.5°C, or to reverse global biodiversity decline, requires a transformative change in the way our societies consume and produce resources.
- Collaboration. Governments alone cannot achieve the transformations needed – coordinated climate and biodiversity actions from multiple stakeholders, including the private sector and civil society, are essential.
- Integration. Greater understanding of the biodiversity-climate relationship should help to end the separation between the national and international policy frameworks that currently address climate change and biodiversity decline.

- Additionality. Where Nature-based Solutions (NbS) are implemented to help mitigate climate change, they should not delay or lower any ambition to reduce carbon dioxide emissions from fossil fuels or reduce energy use through more energy efficient technologies.

- Best practice. The success or failure of NbS and of other responses to climate change and biodiversity issues is dependent on the adoption of best practice. Nature-based Solutions and other interventions should be evidence-based and tailored to the location.

- Equity. The diversity of environmental and climate policies, from protected areas to payments for ecosystem services, should acknowledge the different dimensions of equity to ensure a sustainable and equitable future that leaves no one behind.

While some degree of climate change and biodiversity loss are unfortunately now inevitable, we can still limit the profound consequences for people and the ecosystems on which we depend. By better integrating climate and biodiversity policies at international and national levels, the full potential of biodiversity to support climate action could be leveraged, while at the same time helping to reverse the ongoing decline in biodiversity (InterAcademy Partnership, 2021).

# Implications for Ireland

Ireland has made significant progress towards the development of a coordinated policy response to climate change and biodiversity loss.

In May 2019 the Dáil declared a climate and biodiversity emergency and in 2021 has incorporated biodiversity considerations into the Climate Action and Low Carbon Development (Amendment) Bill. Ireland has also made international commitments to increase the protection of species and their natural habitats, and The National Biodiversity Action Plan (2017-2021 – currently being renewed) sets out actions across seven objectives (*National Biodiversity Action Plan*, 2017). Furthermore, The Biodiversity Climate Change Adaptation Plan (Department of Culture, Heritage and the Gaeltacht, 2019) recognises the need to put in place actions to protect biodiversity from climate change as well as considering biodiversity as an adaptation tool for other sectors, with the potential for multiple co-benefits including water regulation and purification and carbon sequestration.

While coordinated climate and biodiversity policy responses are necessary and welcome, it is action and impact that matters www.biodiversityimpact.ie. Biodiversity is under serious pressure in Ireland and current conservation measures are insufficient. Agriculture, as the dominant land-use in Ireland, is the leading driver of biodiversity loss, followed by infrastructural development and alien and problematic species.

Ireland should lead by example by not only recognizing the interwoven nature of climate and biodiversity, but also by employing innovative strategies such as shifting towards sustainable agricultural practices, halting subsidies that damage biodiversity, promoting a circular economy with

health ecosystems at its core, and implementing sustainable nature-based solutions to climate change mitigation and adaptation.

# References

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# Further information

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