# Environmental Pillar Submission to the Citizens Assembly on Biodiversity Loss

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Environmental Pillar

Edited by Fintan Kelly

Environmental Pillar

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**Recommendations by the Environmental Pillar Submission to the Citizens Assembly on Biodiversity Loss.**

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# Environmental Pillar Submission to the Citizens Assembly on Biodiversity Loss

## Introduction

This is a submission on behalf of the Environmental Pillar in response to the call for submissions to the Citizens Assembly on Biodiversity Loss. The Environmental Pillar is an organisation that works to represent the views of 32 of Ireland's leading environmental NGOs. We work to promote environmental sustainability and the protection of our natural environment. In May 2019, Dáil Eireann declared a climate and biodiversity emergency[1] making Ireland only the second country to do so, after the UK. Since then we have been awaiting an emergency response commensurate with the scale of the crisis we face. While some notable actions have been taken such as the Review of the National Parks and Wildlife Service, we have not seen biodiversity loss given the attention it deserves. Despite a multitude of government commitments, targets and timelines we continue to see the health of the environment deteriorate and even once common species edge towards national extinction. This is all the more frustrating because we know that when conservationists, farmers and communities are given the tools we need we can restore biodiversity. It is our hope that Citizens Assembly can help to focus minds, bringing public attention and political leadership and a renewed determination to halt and reverse biodiversity loss.

In this submission we will outline the scale of the crisis humanity has unleashed on Nature and make some recommendations on how we as a nation can turn the tide of biodiversity loss.

## Evidence for biodiversity loss

### Global Indicators of Biodiversity Loss

Measuring biodiversity, the variety of all living things, is complex, given the sheer diversity of life on earth it is difficult to estimate how many species are currently extant and there is no single measure that can adequately convey all the ways that biodiversity is being lost. That being said, using the available indicators signals unequivocally that we are living through the earth's sixth mass extinction event, the greatest loss of life since the extinction of the dinosaurs[2]. Current extinction rates are estimated to be between hundreds or thousands of times greater than normal rates that prevailed over the last tens of millions of years[3] [4] and are accelerating[5]. Humanity's impact on nature and the climate since the industrial revolution, has been so profound that some scientists propose that we

[1] Environmental Pillar (2019) Declaration of biodiversity and climate emergency warmly welcomed https://environmentalpillar.ie/2019/05/09/declaration-of-biodiversity-and-climate-emergency-warmly-welcomed/

[2] Ceballos, G., Ehrlich, P. R., & Raven, P. H. (2020). Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction. Proceedings of the National Academy of Sciences, 117(24), 13596-13602.

[3] Barnosky, A. D., Matzke, N., Tomiya, S., Wogan, G. O., Swartz, B., Quental, T. B., ... & Ferrer, E. A. (2011). Has the Earth's sixth mass extinction already arrived?. Nature, 471(7336), 51-57.

[4] Pimm, S. L., Jenkins, C. N., Abell, R., Brooks, T. M., Gittleman, J. L., Joppa, L. N., ... & Sexton, J. O. (2014). The biodiversity of species and their rates of extinction, distribution, and protection. science, 344(6187), 1246752.

[5] Ceballos, G., Ehrlich, P. R., Barnosky, A. D., García, A., Pringle, R. M., & Palmer, T. M. (2015). Accelerated modern human–induced species losses: Entering the sixth mass extinction. Science advances, 1(5), e1400253.

are living through a new epoch, the Anthropocene[6]; a period defined by humanity's impact on the planet as opposed to geological processes.

The world's population of 7.6 billion people represent only 0.01% of all living things by weight, yet it has been estimated that humanity has already caused the loss of 83% of all wild mammals and half of all plants[7]. The World Wildlife Funds Living Planet Index (LPI) tracks the abundance of almost 21,000 populations of mammals, birds, fish, reptiles and amphibians around the world. For two decades it has tracked trends in species populations as an indicator of biodiversity loss. The most recent global LPI shows a 68% decrease in population sizes of mammals, birds, amphibians, reptiles and fish between 1970 and 2016[8].

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in their global assessment of biodiversity and ecosystem services[9] reported that 85% of our planet's land surface is significantly altered, 66% of the ocean area is experiencing increasing cumulative impacts, and over 85% of the area of wetlands has been lost. The average abundance of native species in most major terrestrial biomes has fallen by at least 20%. Only around 25% of land is in a natural state with minimal human intervention.

According to the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species[10], humans have driven at least 680 species of vertebrates, the best studied taxonomic group, to extinction since 1500. The destruction of Nature has led to an average of around 25% of species in assessed animal and plant groups being threatened, with around one million species already facing extinction within the coming decades.

## European Indicators of Biodiversity Loss

Within the European Union (EU), Member States are required to report on the conservation status of birds, habitats and other species which are afforded protection under the main laws protecting biodiversity, the Birds and Habitats Directives. The conservation status of these threatened habitats and species provides a good indication of the status of biodiversity within the EU.

Only 15 % of assessed habitats in the EU show a good conservation status, while the majority continue to show poor (45 %) or bad (36 %) status. Of the 81 % of the habitat assessments that show a poor or bad conservation status only 9 % show improving trends and 36 % continue to deteriorate at the EU scale. Grasslands, dunes and bog, mire and fen habitats have the highest proportion of deteriorating trends (each over 50 %)[11].

Around one quarter of species that are protected under the Habitats Directive have a good conservation status at EU level. However, over 60% have a poor or bad status. Of the monitored

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[6] Folke, C., Polasky, S., Rockström, J., Galaz, V., Westley, F., Lamont, M., ... & Walker, B. H. (2021). Our future in the Anthropocene biosphere. Ambio, 50(4), 834-869.

[7] Bar-On, Y. M., Phillips, R., & Milo, R. (2018). The biomass distribution on Earth. Proceedings of the National Academy of Sciences, 115(25), 6506-6511.

[8] WWF (2020) Living Planet Report 2020 - Bending the curve of biodiversity loss. Almond, R.E.A., Grooten M. and Petersen, T. (Eds). WWF, Gland, Switzerland.
file:///F:/Ag%20&%20Land%20Use/Biodiversity/WWF%202020%20Living%20Planet%20Report.pdf

[9] Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany. 56 pages. https://zenodo.org/record/3553579#.YwYFGXbMI2w

[10] IUCN. (2020). The IUCN Red List of Threatened Species. Version 2020-2. https://www.iucnredlist.org

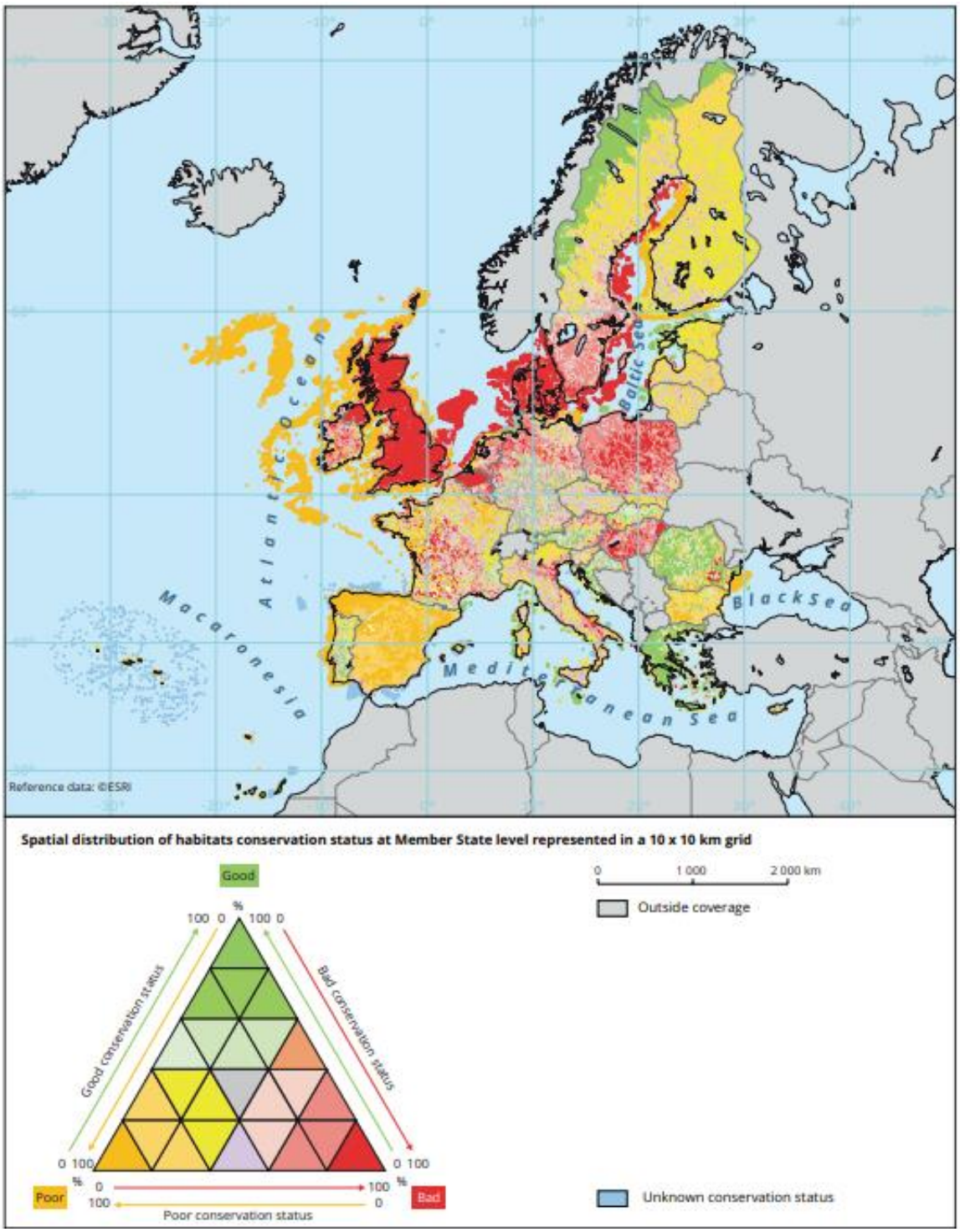
[11] European Environment Agency (2020), State of Nature in the EU - Results from Reporting under the Nature Directives 2013–2018', Technical report No 10/2020, European Environment Agency, Copenhagen.

species groups, fish have the highest proportion of bad conservation status (38 %). Only 6 % of all species assessments show an improving conservation status trend, with one third still deteriorating.

The population status of 463 bird species assessed under the Birds Directive revealed that 39 % have a poor or bad status an increase of 7 % in 6 years. Almost half of all Member States reported decreasing short-term trends for a third of breeding populations. 30 % of breeding birds species have decreasing short-term trends. Almost half of all waterbirds, including seabirds, have poor or bad status and show higher deteriorating trends.

It is estimated that invertebrate species (animals lacking a backbone), make up over 95% of the earth's animal species[12]. The fate of this multitude of living things is therefore strongly indicative of the state of life on earth. In German grassland sites, insect abundance has declined by 78% and biomass by 67% between 2008 and 2017[13]; and across a range of different habitats declines of overall insect biomass of 76% have been observed between 1989 and 2016[14]. European grassland butterflies have declined by 49% (range -71% to -13%) between 1990 and 2017[15].

[12] Fernandez, M. A. (2019). Populations collapses in marine invertebrates due to endocrine disruption: A cause for concern?. Frontiers in Endocrinology, 10, 721.
[13] Seibold, S., Gossner, M. M., Simons, N. K., Blüthgen, N., Müller, J., et al. (2019). Arthropod decline in grasslands and forests is associated with landscape-level drivers. Nature 574:671-674. doi: 10.1038/s41586-019-1684-3.
[14] Cameron, S. A., Lozier, J. D., Strange, J. P., Koch, J. B., Cordes, N., et al. (2011). Patterns of widespread decline in North American bumble bees. Proceedings of the National Academy of Sciences of the United States of America 108:662-667. doi: 10.1073/pnas.1014743108
[15] van Swaay, C. A. M., van Strien, A. J., Aghababyan, K., Åström, S., Botham, M., et al. (2016). The European Butterfly indicator for grassland species 1990-2015. De Vlinderstichting, Wageningen.




**Map 1. Spatial distribution of habitats' conservation status at Member State level represented in a 10km x 10km grid (Source: EEA, 2020)**

## Irish Indicators of Biodiversity Loss

In Ireland the most recent report by the National Parks and Wildlife Service (NPWS) on the status of habitats and species protected under the Habitats Directive show that an abysmal 85% of habitats are in unfavourable (i.e. inadequate or bad) status, with 46% of habitats demonstrating ongoing

declining trends. A situation that has remained largely unchanged since Ireland's initial assessment in 2007[16].

The picture for species protected under the Habitats directive is more positive with 72% assessed as stable or improving. However only 57% of species have a favourable conservation status and 15% are in decline, with freshwater species such as freshwater pearl mussel most at risk; with only a few rivers clean enough to support populations that can produce young. Monitoring of bird species assessed under the Birds Directive, indicates that 19% had increased, but 18% of breeding species and 16% of wintering species were in decline[17]. Monitoring of wintering waterbirds by BirdWatch Ireland, have found that numbers have declined by almost 40% since the mid-1990's[18]. Of the 211 bird species covered within the most recent assessment of Birds of Conservation Concern in Ireland, 54 (26%) were placed on the Red list, 79 (37%) on the Amber list and 78 (37%) on the Green list[19]. A fifth of Irish birds are in long-term decline, the corn bunting became extinct here in the 1990s and there is there is grave concern about species such as Curlew, which was once ubiquitous across the Irish countryside but has undergone a population decrease of 96% and a reduction in range of 78% between 1980 and 2018[20].

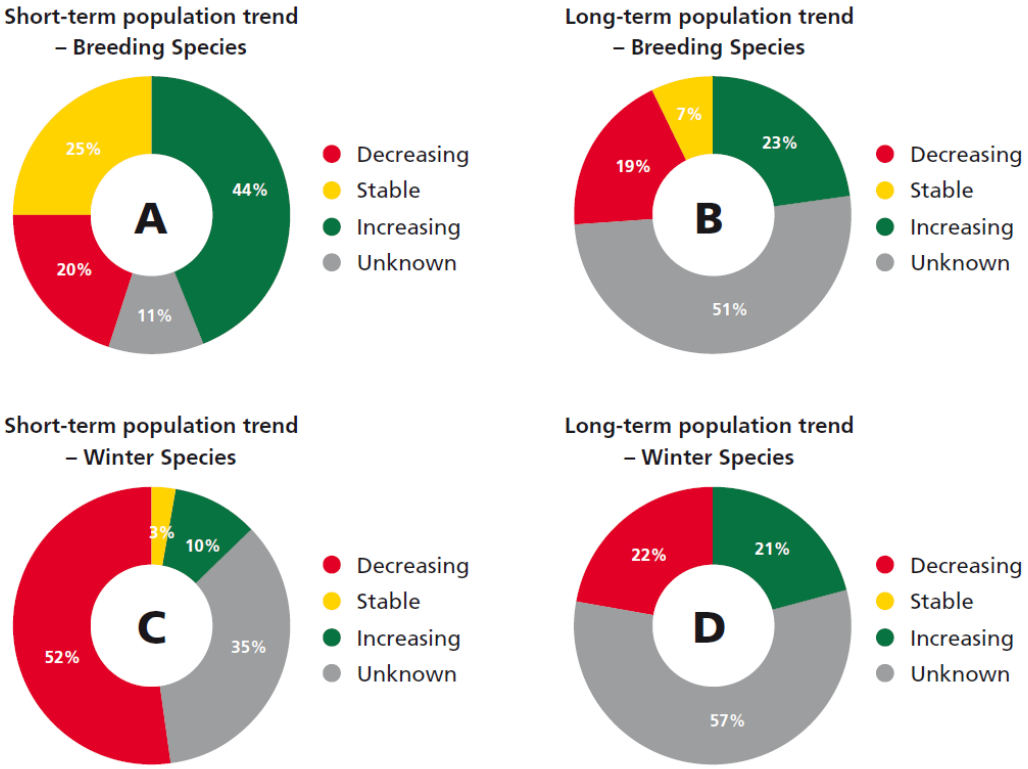



**Figure 1. Trends in Ireland's breeding and wintering bird populations, showing short-term (12 year) and long-term (since the early 1980s) population trends, NPWS (2019) Article 12 Data (Source EPA, 2020)**

[16] NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol1_Summary_Article17.pdf

[17] NPWS, Ireland's Summary Report for the period 2008-2012 under Article 12 of the Birds Directive. 2015, National Parks and Wildlife Service: Dublin.

[18] BirdWatch Ireland (2019) Ireland's Wintering Waterbirds down by 40% in 20 years https://birdwatchireland.ie/irelands-wintering-waterbirds-down-by-40-in-less-than-20-years/

[19] Gilbert G, Stanbury A and Lewis L (2021), Birds of Conservation Concern in Ireland 2020 –2026. Irish Birds 9: 523—544

[20] O'Donoghue, B., Donaghy, A. and Kelly, S.B.A., (2019). National survey of breeding Eurasian curlew, Numenius arquata in the Republic of Ireland, 2015-2017. Wader Study 126(1).

According to the IUCN threatened 'red' species list, a total of 24% of assessed Irish species are classed as threatened (14.8% critically endangered, endangered or vulnerable and 9.2% near threatened), while another 2.7% are classed as regionally extinct. The IUCN assessment suggests that the species groups of most concern, are non-marine molluscs (34%), bees (43%), Amphibia, Reptiles and Freshwater Fish (40%), Butterflies (34%) and Mosses, Liverworts, Hornworts (30%)[21]. One-third of Irish bee species are threatened (30 of 100 species), with 10% critically endangered, 6% critically endangered and 3% already regionally extinct[22].

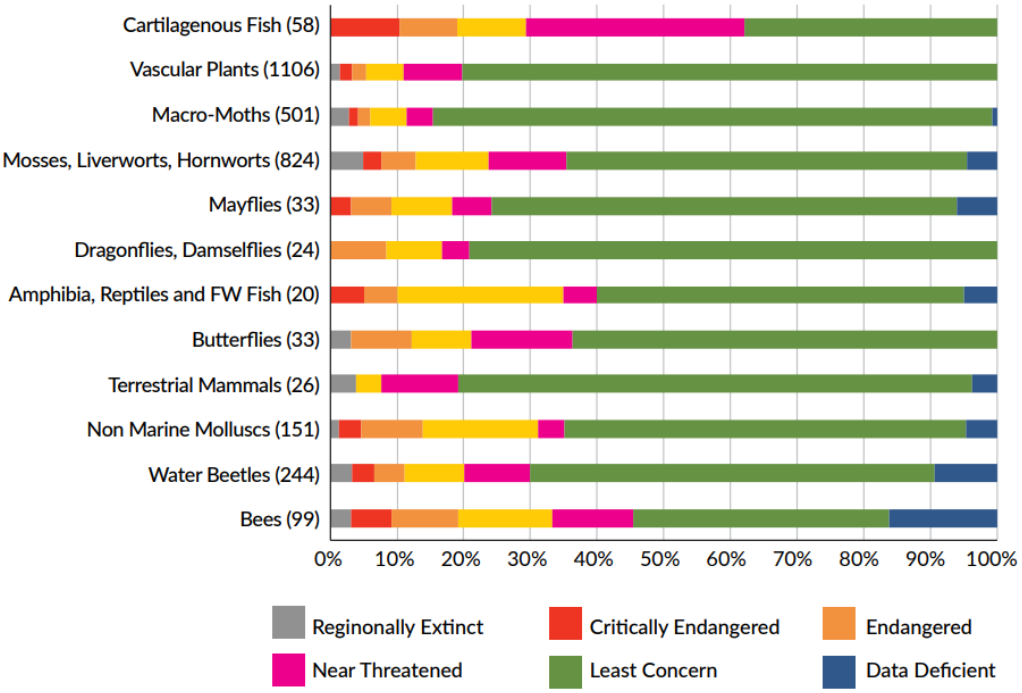



**Figure 2: Proportion of total species assessed under various IUCN Red List threat categories (DCHG, 2019)**

# What are the main drivers of biodiversity loss

## Global drivers of biodiversity loss

In the last 50 years humanity's relationship with nature has been transformed by unprecedented economic growth, increasing human population and increased life expectancy. The human population has doubled, the global economy has expanded four-fold and over 1 billion people have been elevated out of extreme poverty[23] [24]. Globalisation has been accompanied by an explosion in production and consumption[25]. This has been accompanied by dramatic shifts in how we live such urbanisation[26] and how we exploit the land and sea[8] [9]. The improvements in human welfare and the

[21] DCHG (Department of Culture, Heritage and the Gaeltacht), 2019b. Ireland 6th National Report to the Convention on Biological Diversity. Government of Ireland, Dublin.
[22] Fitzpatrick, Ú., Murray, T. E., Byrne, A. W., Paxton, R. J., & Brown, M. J. F. (2006). Regional red list of Irish bees. National Parks and Wildlife Service (Ireland) and Environment and Heritage Service (N. Ireland).
[23] World Bank, 2018, "Poverty and shared prosperity 2018: Piecing together the poverty puzzle".
[24] IPBES, 2019, "Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services".
[25] ibid
[26] UN. (2014). Population facts – Our urbanizing world. No. 2014/3. United Nations Department of Economic and Social Affairs website. United Nations (UN).

growth in the global middle class have alleviated much poverty and suffering[27] however the increasing demand on the planets resources has resulted in humanity's Ecological Footprint increasing to the point where we are now demanding the equivalent of 1.7 planets worth of natural resources[28] [29]. Countries within North America and Europe which have the most unsustainable consumption patterns have an Ecological Footprint per person that is much higher than other world regions[30]; this includes Ireland where our consumption patterns will have to change significantly if we are to respect planetary limits[31]. If we continue to push nature beyond the ability of natural systems to cope, which is increasing the risk of exceeding ecological tipping points with large-scale, irreversible environmental and societal impacts[32] [33]

According to WWF's Living Planet Database[8] the primary drivers of global biodiversity loss are:

1. Changes in land and sea use (including habitat loss and degradation),
2. Species overexploitation,
3. Pollution,
4. Invasive species and disease
5. Climate change.

These findings are broadly supported by the comprehensive assessment of the state of global biodiversity carried out by the IPBES[9] who found that five direct drivers have accounted for more than 90% of nature loss in the past 50 years. As previously discussed these drivers stem from a combination of current production and consumption patterns, population dynamics, trade, technological innovations and governance models.

1. Land- and sea-use change
2. Climate change
3. Natural resource use and exploitation
4. Pollution
5. Invasive alien species

### Land- and sea-use change / eating the planet

Globally, land-use change has the largest relative impact on terrestrial and freshwater ecosystems, while direct exploitation has the largest impact on marine ecosystems. Land-use change is driven primarily by agriculture, forestry and urbanization, all of which are associated with air, water and soil pollution. Both the expansion and intensification of agriculture has increased food production but driven biodiversity loss, pollution and greenhouse gas emissions (IPBES, 2019). Half of all the habitable land on the planet is used for agriculture and livestock[34]. Over one third of the world's land

[27] H. Kharas, 2017, "The unprecedented expansion of the global middle class – an update", The Brookings Institution, https://www.brookings.edu/wp-content/uploads/2017/02/global_20170228_global-middleclass.pdf (link as of 7th Jan 2020).
[28] Global Footprint Network. (2020). Calculating Earth overshoot day 2020: Estimates point to August 22nd. Lin, D., Wambersie, L., Wackernagel, M., and Hanscom, P., editors. Global Footprint Network, Oakland. www.overshootdayorg/2020-calculation> for data see <http://data.footprintnetwork.org.>.
[29] Lin, D., Hanscom, L., Murthy, A., Galli, A., Evans, M., Neill, E., ... & Wackernagel, M. (2018). Ecological footprint accounting for countries: updates and results of the National Footprint Accounts, 2012–2018. Resources, 7(3), 58.
[30] Lin, D., Hanscom, L., Murthy, A., Galli, A., Evans, M., Neill, E., ... & Wackernagel, M. (2018). Ecological footprint accounting for countries: updates and results of the National Footprint Accounts, 2012–2018. Resources, 7(3), 58.
[31] Goldrick-Kelly, P. (2021). Does the Republic of Ireland live within planetary boundaries?
[32] WWF, 2018, "Living planet report – 2018: Aiming higher", https://www.worldwildlife.org/pages/living-planetreport-2018.
[33] T.M. Lenton, and H.T.P. Williams, 2013, "On the origin of planetary-scale tipping points, Trends in Ecology and Evolution, 28, 380–382, doi:10.1016/j.tree.2013.06.001 (link as of 7th Jan 2020.)
[34] H. Ritchie and M. Roser, 2019, "Land use", OurWorldInData.org, https://ourworldindata.org/land-use (link as of 7th Jan 2020).

surface and nearly three-quarters of available freshwater resources are devoted to crop or livestock production (IPBES, 2019). In terms of global mammal biomass wild mammals only make up 4%; while humans account for 34%, and our livestock for 62%[35].

Food production in the form of commercial fisheries is the greatest driver of marine biodiversity loss, negatively impacting on target species, non-target species and habitats. 93% of fish stocks today are fished at or beyond maximum sustainable levels. (IPBES, 2019). Moving forward our collective consumption patterns and how we manage the planet's resources to produce food will need to change if we are going to restore biodiversity. The responsibility of transitioning to sustainable food production lies with every person involved in the food supply chain from "Farm to Fork." Farmers and fishers must be empowered to be part of the solution.

### Climate Change

The world's leading biodiversity and climate experts (IPBES, IPCC) recently co-authored a report on biodiversity and climate change[36]. They agreed that the rapid decline of biodiversity and changes in climate are tightly intertwined: they share underlying direct and indirect drivers (land use change, pollution), they interact, and can have cascading and complex effects that impact people's good quality of life and compromise societal goals. Indirect drivers of climate change and biodiversity decline include key institutional and governance structures in addition to socio-economic and cultural factors which drive consumption and energy use.

There is evidence to indicate climate change is impacting on global biodiversity driving geographic range shifts, altering phenology and migration patterns and the availability of suitable habitat for species and disrupting key ecological interactions in communities. All of these factors have implications for the way ecological communities and ecosystems function, and thus their capacity to deliver nature's contributions to people.

The impact of climate change is projected to intensify in the coming decades adversely impacting genetic variability, species richness and populations, and ecosystems. In turn, loss of biodiversity through deforestation and the loss of peatlands and wetlands will increase emissions from the land use sector. Both climate change and biodiversity loss have the potential to exacerbate each other and conversely biodiversity and climate action offer intertwined solutions to this dual ecological crisis.

## European drivers of biodiversity loss

At an EU level an assessment of the pressures identified by Member States under their reporting on the nature directives (Birds & Habitats Directives), highlights that land use and in particular agriculture is the greatest pressure and threat to biodiversity in Europe[37]. At 21%, agriculture is the greatest pressure for both habitats and species. Almost 50 % of all pressures related to air, water and soil pollution emanate from agriculture. Urbanisation and Forestry activities account for 13%

[35] Bar-On, Y. M., Phillips, R., & Milo, R. (2018). The biomass distribution on Earth. Proceedings of the National Academy of Sciences, 115(25), 6506-6511.

[36] Pörtner, H. O., Scholes, R. J., Agard, J., Archer, E., Arneth, A., Bai, X., ... & Ngo, H. T. (2021). IPBES-IPCC co-sponsored workshop report on biodiversity and climate change; IPBES and IPCC. In IPBES-IPCC co-sponsored workshop report on biodiversity and climate change; IPBES and IPCC.

[37] European Environment Agency (2020), State of Nature in the EU - Results from Reporting under the Nature Directives 2013–2018', Technical report No 10/2020, European Environment Agency, Copenhagen.

and 11% of all reported pressures respectively. Species exploitation, in particular illegal shooting or killing, is the greatest pressure on bird species. Other significant pressures include invasive alien species, modifications to rivers and wetlands (e.g. drainage), while climate change is growing in significance.

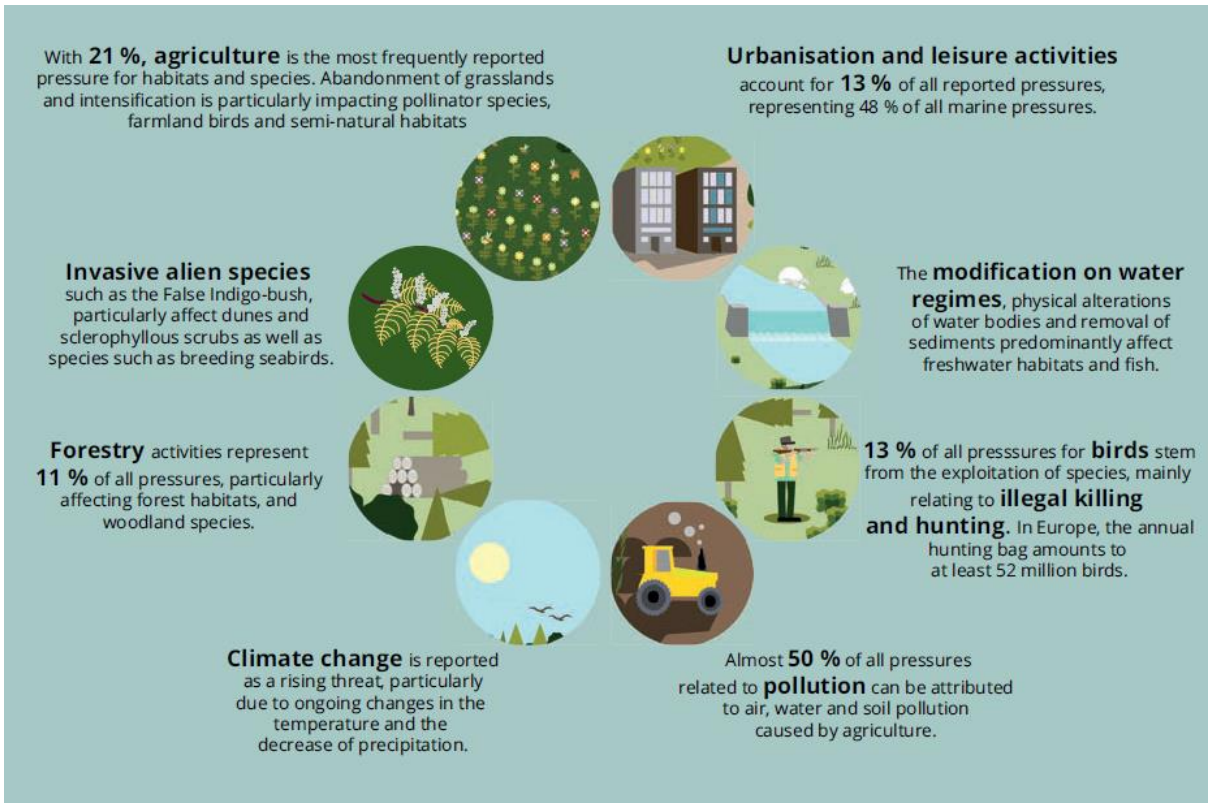



**Figure 3: Summary of EU pressures and responses on Nature (Source EEA, 2020)**

## Irish drivers of biodiversity loss

According to the National Parks and Wildlife Service the main pressures / threats to Ireland's protected habitats are agriculture and other land uses such as extraction of resources (e.g. peat mining), forestry, urbanisation, recreation and invasive species (Fig. 4). Agriculture is by far the greatest threat and pressure impacting on 70% of surveyed habitats (Fig. 4). Agriculture further ranked as a threat/pressure of High importance for 50% of habitats. Of the pressures associated with agriculture, overgrazing is by far the biggest issue identified, impacting on just under 40% of habitats. For context the next biggest pressure is under grazing which is impacting on just over 15% of habitats, demonstrating the complex role that diverse changes in agricultural practices in recent decades have had on biodiversity (Fig. 5). Many threatened habitats and species are dependent on farming for their survival and therefore in many instances it's a case of supporting the right kinds of farming and space for nature on farms rather than no farming.

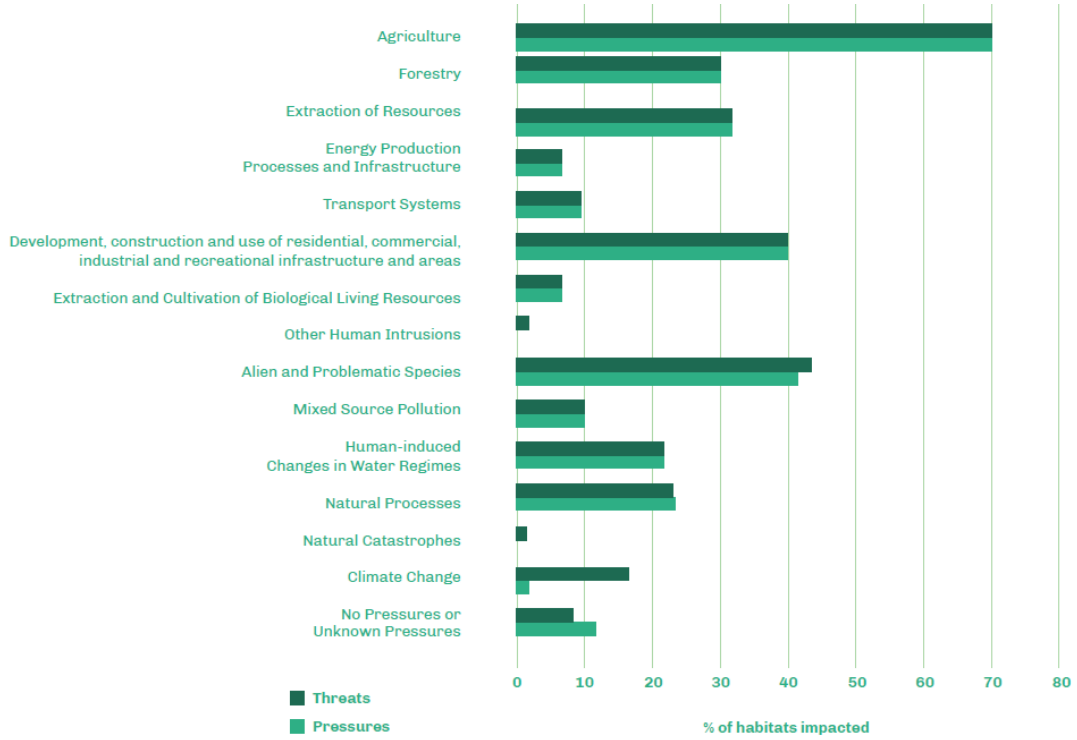



**Figure 4: Percentage of habitats impacted by pressure/threat category (combined Medium and High-importance pressures/threats) (Source NPWS, 2019).**


**Figure 5: Percentage of habitats impacted by agricultural pressures (Medium and High-importance pressures combined) have been adapted from the standardised list (Source NPWS, 2019).**

The important role that sustainable agricultural practices will have to play in restoring Irish biodiversity is further highlighted by the dominance of agriculture as a High Importance pressure / threat category for species (Fig 6) protected under the Habitats Directive.

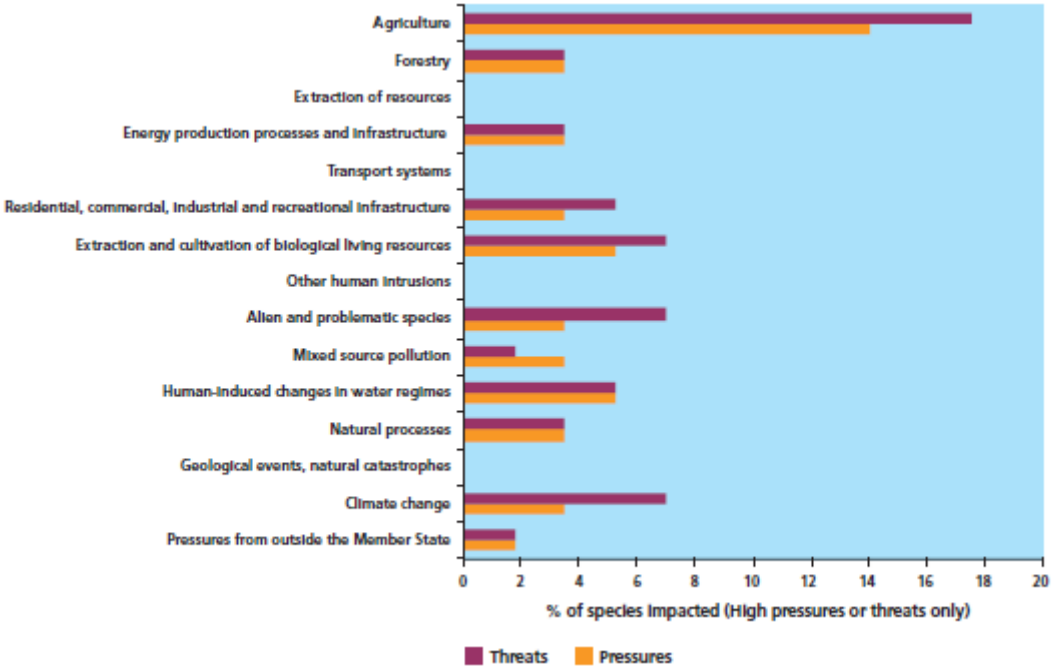



**Figure 6. Percentage of species impacted by High Importance pressure / threat category**

The next most frequent category of pressure on habitats to be recorded by the NPWS (Fig. 4) is "Alien and problematic species" (listed as a pressure in 42% of habitats), closely followed by "Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas", a pressure in 41% of habitats (Fig. 4). Both pressures are reflective of the role that globalisation, trade and economic development are having on our native habitats. The impact of recreation also illustrates the increasing demands we are placing on our remaining wild spaces and even recreational activities can negatively impact on habitats if they aren't managed properly.

Turning to Irelands water environment, agriculture is again by far the most significant pressure[38] [39]. Significant agricultural pressures on our water environment include run-off of nutrients and sediment from agricultural land and farmyards and the contamination of surface waters with pesticides. Drainage of agricultural land has also resulted in damage to the physical integrity of streams and rivers (Hydromorphology) and increased the loss of sediment to larger downstream rivers[38]. Agricultural intensification and in particular the abolition of dairy quota has resulted in a recent marked increase in water pollution from nutrients, particularly in the south and southeast of Ireland[39]. There is an obvious need for continued investment in waste water treatment and improved regulation of forestry and extractive industries. Nature based solutions which use habitats

[38] Environmental Protection Agency (2020) Ireland's Environment An Integrated Assessment 2020.
[39] Environmental Protection Agency (2021) Water Quality in 2020, An Indicators Report.

as buffers to prevent run-off from farmland and forestry offer an opportunity to improve both terrestrial and freshwater biodiversity[40].

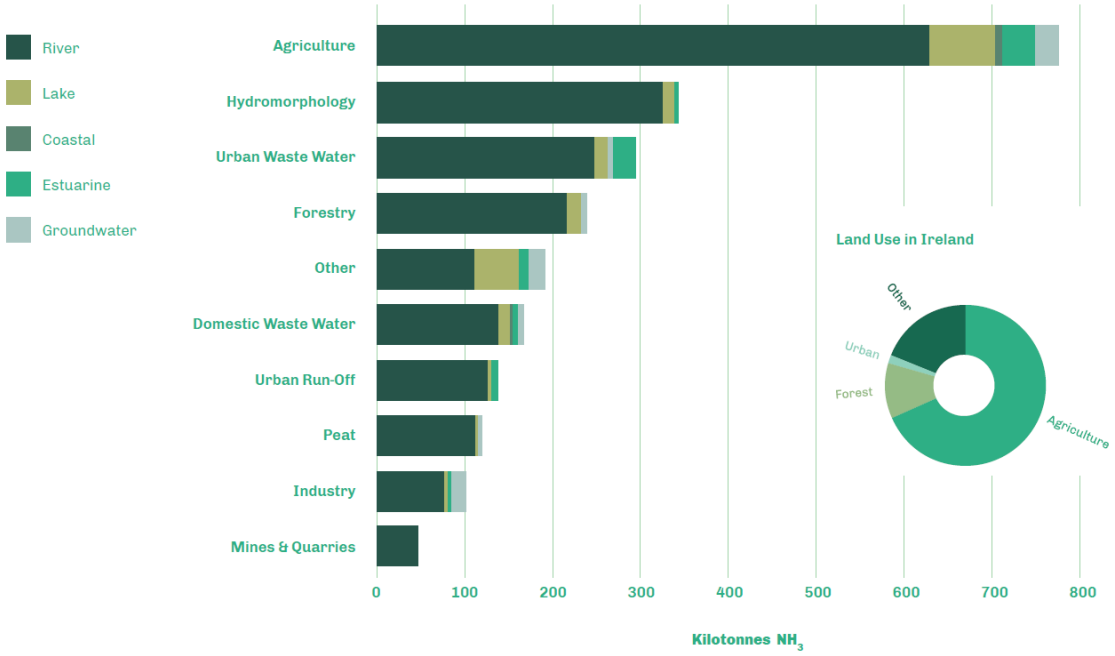


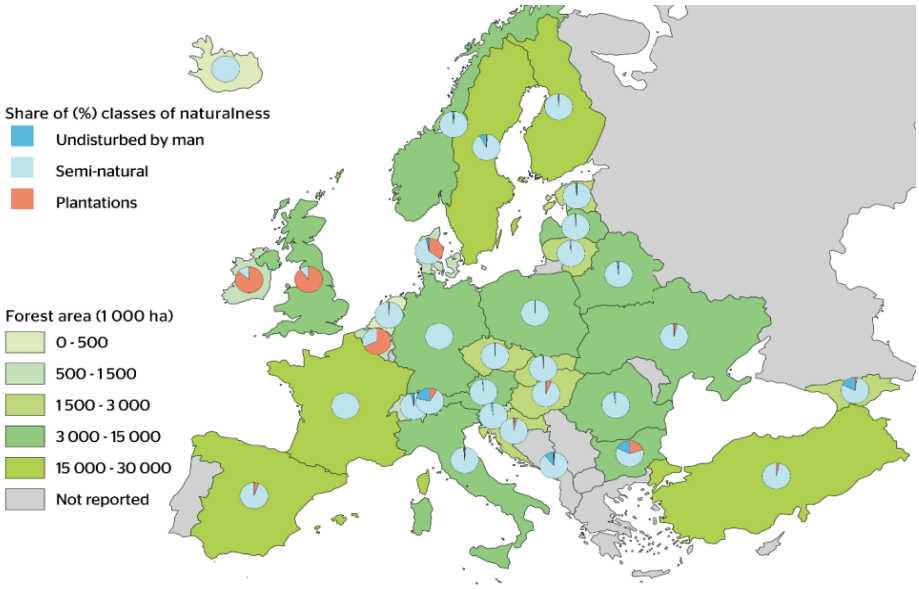

**Figure 7. Significant pressures on Ireland's aquatic environment (Source: EPA, 2020)**

From a global to a national level, land use change and in particular agricultural intensification has reshaped our environment, leaving little space for nature. Here in Ireland, a productivist model of food production – characterised by intensification, concentration, and specialisation – has come to dominate farming[41]. In practice changes in agricultural practices such land drainage, reseeding of grasslands and a move to sileage and the nationwide reduction in mixed farming, have driven the loss or degradation of habitat and a reduction in the diversity and connectivity of habitats at a landscape level[42]. The decline or loss of farmland bird species such as corncrake, yellowhammer and corn bunting, are indicative of these changes while declines in bees, butterflies and other insects mentioned earlier has largely resulted from the effect of the conversion of diverse grassland habitats to monoculture grasslands and the drive on productivity resulting in the loss of hedgerows and scrub[42]. The EU's Common Agricultural Policy (CAP) has supported intensification by subsidising food production over the other services that farmland can provide (such as regulation of soil and water quality, carbon sequestration, support for biodiversity and cultural services). Despite numerous and on-going reforms, the current CAP policy framework has failed to drive sustainability and environmental protection. Since its establishment in 1962, the CAP has driven the intensification of agriculture and has promoted the simplification and specialisation of agricultural ecosystems. This, in turn, has led to profound biodiversity loss, land degradation, including over-grazing, and climate change. Limited funding goes to support climate-friendly and biodiverse farming regions.

Ireland's forestry sector is also highly intensive with plantation forests dominating total forest cover in Ireland. 60% of the national forest estate is made up of non-native conifers, with 44.6% of forestry

[40] DAFM (2018) Woodland for Water: Creating new native woodlands to protect and enhance Ireland's waters
[41] Towards a New Agricultural and Food Policy for Ireland Recommendations for Government A Position Paper from the Environmental Pillar, the Stop Climate Chaos Coalition and the Sustainable Water Network https://www.stopclimatechaos.ie/news/2021/04/27/towards-a-new-agricultural-and-food-policy-for-ire/
[42] DCHG 2019. Ireland's 6th National Report to the Convention on Biological Diversity. Department of Culture, Heritage and the Gaeltacht.

being made up of just one species, Sitka spruce (*Picea sitchensis*)[43] Ireland's unnatural and industrial model of forestry is very unusual in a European context[44] . For example, Ireland has over 85% plantation forest share, one of the highest levels in Europe and the highest share of forest area dominated by introduced tree species (>60%). This is in stark contrast to Europe as a whole where the forest area is dominated by semi-natural forest cover (Fig. 8)[44]. Forestry is reported as having a negative effect on a wide range of species, including fish, molluscs, terrestrial mammals and vascular plants because of the wide sphere of influence of some activities for example through water quality impacts. The habitats which have been most negatively impacted by forestry are peatlands, grasslands, wetlands and coastal habitats[16]. Commercial forestry is also a significant pressure on water quality (Fig. 7) and freshwater biodiversity at a national level and is a critical pressure nationally impacting on ecologically important water bodies[45]. Poor regulation of the sector has resulted in a situation where 450,940 ha of peatlands in Ireland have been inappropriately afforested[46], 60% of which is State owned[47]. These legacy issues include protected sites such as the six Special Protection Areas designated for Hen harrier (a protected bird of prey reliant on open upland and extensive farming habitats), in which forest cover has reached 53%[48]. Forestry has been the main driver of habitat loss within these sites[49] which have seen a 25% breeding population decline between 2005. The population within these protected sites is not self-sustaining[50]. The failure of the State to address these legacy issues or act to protect 'High Nature Value' farmland even within protected areas is a serious ongoing issue and is indicative of the influence industry has over government.




[43] DAFM (2022) Forest Statistics Ireland 2022, Department of Agriculture, Food & the Marine, Johnstown Castle Estate Co. Wexford
[44]Forest Europe (2020): State of Europe's Forests 2020.
[45] Department of Housing, Planning, Community and Local Government (2017) Draft River Basin Management Plan for Ireland (2018-2021), Dublin: Department of Environment, Heritage and Local Government
[46] Duffy, P., Black, K., Fahey, D., Hyde, B., Kehoe, J., Murphy, B., Quirke, B., Ryan, A.M. and Ponzi, J., 2020. Ireland's National Inventory Report 2020. Greenhouse Gas Emissions 1990-2018 Reported to the United Nations Framework Convention on Climate Change. Environmental Protection Agency, Johnstown Castle, Ireland.
[47] NPWS (2015) National Peatlands Strategy
https://www.npws.ie/sites/default/files/publications/pdf/NationalPeatlandsStrategy2015EnglishVers.pdf
[48] Moran, P. & Wilson-Parr, R. (2015) Hen Harrier Special Protection Area (SPA) Habitat Mapping Project 2014. Irish Wildlife Manuals, No. 83. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
[49] Ruddock, M., Mee, A., Lusby, J., Nagle, A., O'Neill, S. & O'Toole, L. (2016). The 2015 National Survey of Breeding Hen Harrier in Ireland. Irish Wildlife Manuals, No. 93. National Parks and Wildlife Service
[50] Hen Harrier Project (2021) HEN PROGRAMME Hen Harrier Monitoring 2021
http://www.henharrierproject.ie/HHP_HH_Monitoring_2021.pdf

**Figure 8. Forest area by classes of naturalness, by country, 2020 (Source: Forest Europe, 2020).**

Peat soils cover 20.6% of the national land area and Ireland supports a high proportion of a number of internationally threatened peatland habitat including Active raised bogs, Active Blanket bogs and Wet Heath and Dry Heath[51]. Industrial-scale cutting of peatlands for electricity generation, household fuel and horticulture has decimated our raised bogs, with domestic cutting having a large impact on the remaining fragments of habitat. Ninety-two percent of raised bog is thought to be degraded, while the area of active (peat-forming) raised bog may be less than 4% [52], while only 28% of the original blanket peatland resource is deemed suitable for conservation (natural peatlands)[51]. These figures themselves are several years old and the situation will have deteriorated further in the interim. The loss of our bogs in combination with the drainage of wetlands and wet meadows has contributed to the collapse of once common farmland birds such as Curlew, Lapwing and Redshank.

Overfishing and poorly regulated commercial fishing activities are the main drives of biodiversity loss in the marine environment. Ireland has played a negative role[53] in the EU's failure to end overfishing by 2020 and end illegal discarding of fish at sea by 2019[54]. In Ireland's Marine environment only around 2 % of our national maritime area is currently designated and protected as part of the Natura 2000 network[55]. Active protection and conservation management even within protected areas has been extremely weak in Ireland. The Marine Institute have carried out a risk assessment on the effects of fisheries on the qualifying interests of Special Areas of Conservation in Irish coastal waters[56]. They found that destructive forms of commercial fishing such as bottom trawling are ongoing in Marine Protected Areas. They found that bottom trawling can have significant negative impacts on seafloor habitats, especially for habitats not subject to natural disturbance. They believe that the scale of the negative impacts varies depending on the frequency of disturbance and the sensitivity of different species to disturbance. The study found that fisheries using bottom trawls or dredges in particular poses a risk to habitats such as maerl, sea grass and biogenic or geogenic reef habitats because these habitats are sensitive to physical disturbance. The view of environmental NGO's would be that the aquaculture sector is also poorly regulated and the expansion of fish farms and shellfish aquaculture is having an increasingly negative impact on our coastal biodiversity. There is considerable evidence that there is a link between salmon farms and the spread of salmon lice to wild Atlantic salmon and sea trout[57] which is negatively impacting on the survival of wild fish[58].

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[51] NPWS (2015) National Peatlands Strategy, National Parks & Wildlife Service 7 Ely Place, Dublin 2, D02 TW98, Ireland https://www.npws.ie/sites/default/files/publications/pdf/NationalPeatlandsStrategy2015EnglishVers.pdf

[52] NPWS, The status of EU protected habitats and species in Ireland. 2008, National Parks and Wildlife Service.

[53] Kelly, F (2020) Common Fisheries Policy 2020 A Discarded Opportunity, Birdwatch Ireland, Kilcoole, Co. Wicklow, Ireland https://birdwatchireland.ie/publications/kelly-2020-common-fisheries-policy-2020-a-discarded-opportunity/

[54] Scientific, Technical and Economic Committee for Fisheries (STECF) – Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-21-01). EUR 28359 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-36155-8, doi:10.2760/26195, JRC124906.

[55] Marine Protected Area Advisory Group (2020). Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group. Report for the Department of Housing, Local Government and Heritage, Ireland.

[56] Marine Institute (2015) Article 6.2 (Habitats Directive) Risk Assessment, The effects of fisheries on Qualifying Interests in Special Areas of Conservation in Irish coastal waters, Marine Institute, Rinville, Oranmore, Co. Galway

[57] Thorstad, E. B., & Finstad, B. (2018). Impacts of salmon lice emanating from salmon farms on wild Atlantic salmon and sea trout.

[58] Shephard, S., & Gargan, P. (2021). Wild Atlantic salmon exposed to sea lice from aquaculture show reduced marine survival and modified response to ocean climate. *ICES Journal of Marine Science*, *78*(1), 368-376.

***"If we were coal miners, we would be up to our knees in dead canaries." - President Michael D. Higgins, National Biodiversity Conference 2019.***


**Figure 9: Ireland's Natural History Museum is sadly full of species that have gone extinct in Ireland. The most recent addition to the list is the Corn Bunting (*Miliaria calandra*); the last recorded breeding took place in the mid to late 1990's in County Mayo. The decline is considered to be mainly due to changes in agricultural practices, such as decline in mixed farming and more intensification of grassland management (Source: Fintan Kelly)**

## What are the threats presented by biodiversity loss?

'Nature' means different things to different people with each of us having our unique perspective on the natural world. For some it is the biosphere encapsulating all the biodiversity and ecosystems, our life support system. For others it is Mother Earth, the concept of which may hold deeply important spiritual and cultural significance. Whatever your perspective both nature and nature's contributions to people are vital for human existence and good quality of life[9]. Nature, through its ecological and evolutionary processes, provides the oxygen we breathe and the fresh water and soils that sustain us. Natural systems control the freshwater cycle, regulate our climate and provide beneficial ecosystem services such as pollination and pest control and reduce the impact of natural hazards[9].

***"Nature plays a critical role in providing food and feed, energy, medicines and genetic resources and a variety of materials fundamental for people's physical well-being and for maintaining culture"* – The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services**

Over 75% of global food crop types rely on animal pollination. Marine and terrestrial ecosystems help to store damaging greenhouse gas emissions, helping to stabilise our climate, locking in 5.6 gigatons of carbon per year (equivalent to 60% of global anthropogenic emissions)[9]. Nature underpins all dimensions of human health and wellbeing underpinning our culture and that of past civilisations, providing us with inspiration and hope. It also supports our physical health by providing medicines and spaces that enhance our physical and mental well-being. Its gifts are as numerous as the multitude of lifeforms it has graced our small blue planet with. Nature benefits all life on earth because in the purest sense it is all life on earth. We ourselves are part of nature yet we continue to threaten the vital gifts and services Nature provides.

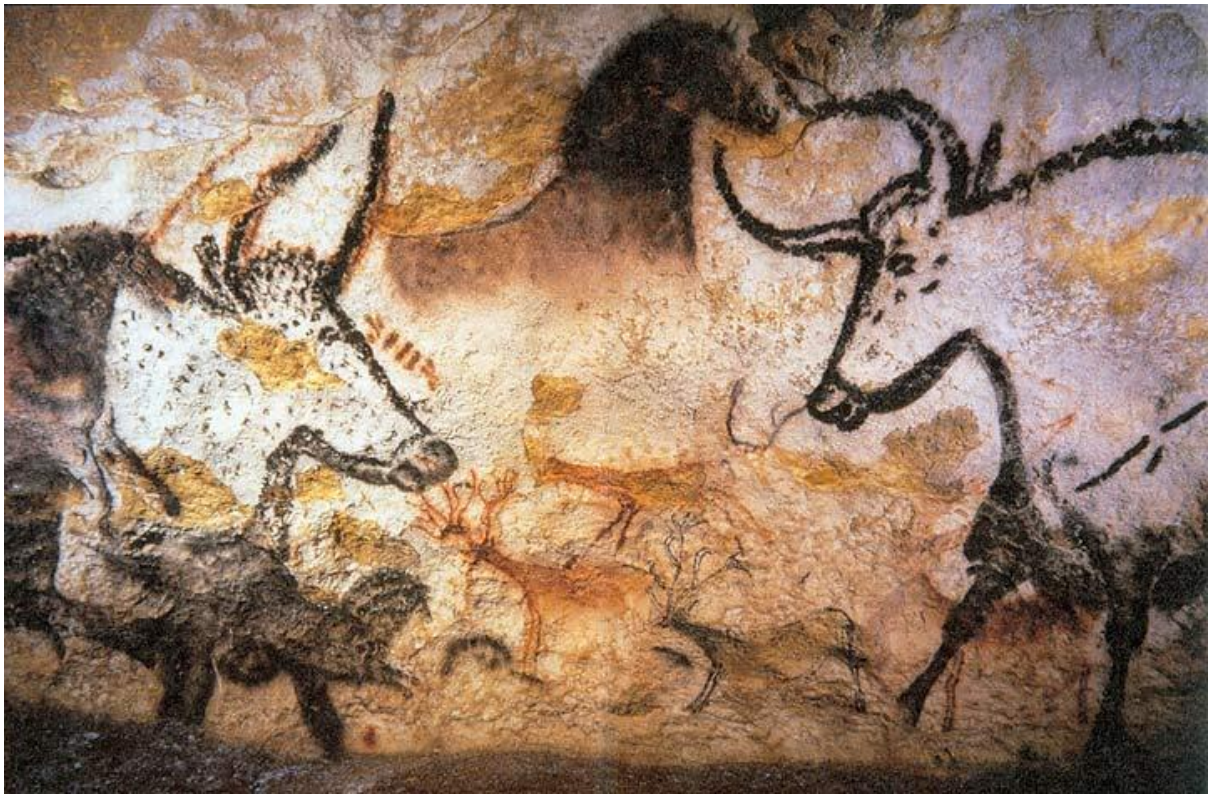

**Figure 10. Cave painting of Aurochs, Horses and Reindeer in Lascaux, France (Source: WikiCommons[59])**

We have a clear moral obligation to protect the other living things that we share this planet with but we also have a rational imperative to halt biodiversity loss as it threatens our economic well-being, and global security[60] [61]. The continued loss of biodiversity is a threat to the UN Sustainable Development Goals, including poverty alleviation and food, water and energy security. The World Economic Forum (WEF) produces an annual report on the Global Risks report. For a number of years, the health of the planet has dominated concerns for the global economy, with environmental risks identified as the five most critical long-term threats to the world as well as the most potentially

[59] https://commons.wikimedia.org/wiki/File:Lascaux_painting.jpg
[60] Fedotova, G. V., Sotnikova, L. F., Orlova, E. R., Baranova, A. F., & Goncharova, A. V. (2021, March). Global problems of biodiversity and food security. In IOP Conference Series: Earth and Environmental Science (Vol. 677, No. 3, p. 032010). IOP Publishing.
[61] Ahmed, N., Khan, T. I., & Augustine, A. (2018). Climate change and environmental degradation: a serious threat to global security. European Journal of Social Sciences Studies.

damaging to people and planet[62]. The five leading critical threats to the world are identified as: Climate action failure, Extreme weather, Biodiversity loss, Natural resource crisis (Fig 11).

***"The pace of change over the past 50 years has been unprecedented in human history, with extraordinary increases in world economic output and life expectancy…However, this remarkable growth and prosperity has come at a heavy cost to the natural systems that underpin life on Earth – and which therefore underpin these economic achievements too."***
***– The World Economic Forum***

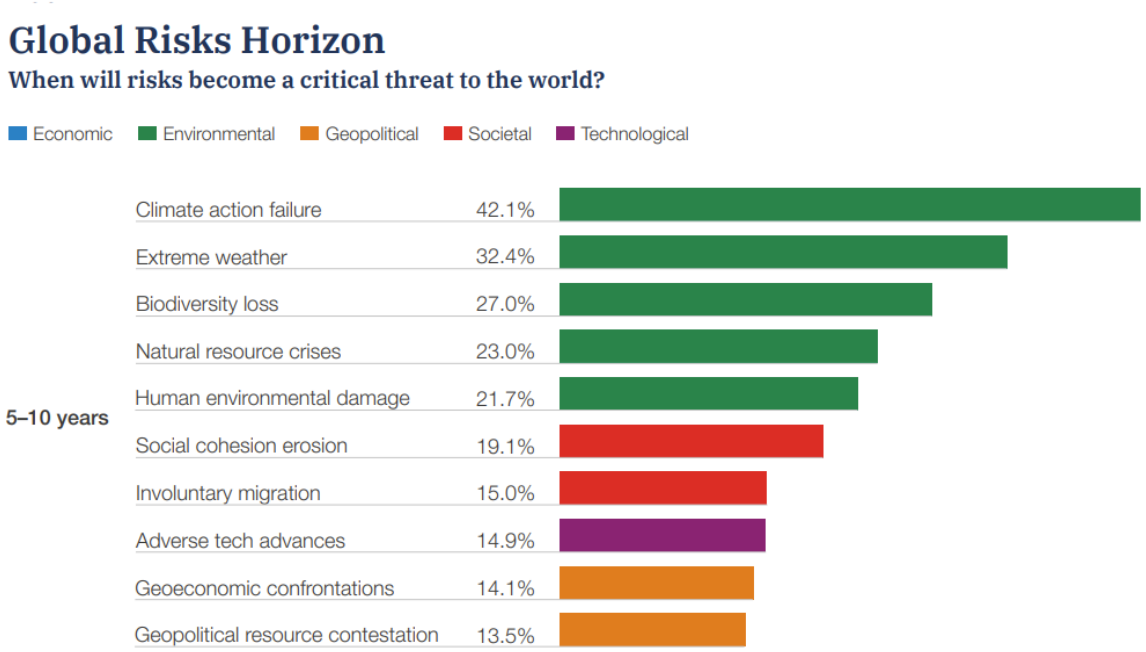


**Figure 11: Global Risks Horizon 5-10 years (Source: WEF, 2022)**

These threats are closely intertwined and could be viewed as different dimensions of the one ecological or environmental crisis. Economists have good cause to be concerned as the environment is foundational to both human societies and the economy. According to WEF[63] $44 trillion of economic value generation – more than half of the world's total GDP – is moderately or highly dependent on nature and its services, leaving the global economy dangerously exposed to the negative impacts of biodiversity loss and climate change. The three largest sectors that are highly dependent on nature generate close to $8 trillion of gross value added (GVA): construction ($4 trillion); agriculture ($2.5 trillion); and food and beverages ($1.4 trillion), roughly equivalent to twice the size of the German economy.

We can already observe the negative impacts of biodiversity loss on societies and economies around the world. For example, global coverage of living coral has declined by half since the 1950s. At least 63% of coral-reef-associated biodiversity has declined with loss of coral extent. This has resulted in

[62] World Economic Forum (2022) The Global Risks Report 2022, 17th Edition
https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2022.pdf
[63] World Economic Forum (2020) Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy
https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf

catches of coral depended fishes to decline by 60%[64]. On land degradation has reduced agricultural productivity in 23% of the area, and between $235 billion and $577 billion[65] in annual global crop output is at risk as a result of pollinator loss. The loss of coastal habitats which provide coastal protection, put at risk 100 million to 300 million people[9].

Ireland's National Risk Assessment 2021-2022[66] identifies climate change and biodiversity loss as major risks and that the integrated nature of these risks makes them challenging to quantify but that the costs of inaction far exceed those of the necessary remedial action – in terms of risks to human health, economic development, infrastructure, and ecosystems, as well as risks to food, water and energy security and population displacement/mass migration. The risk assessment also acknowledges that the interlocking risks of biodiversity loss and climate change are even more significant than previously thought and demand a stronger global response and within a shorter time frame.

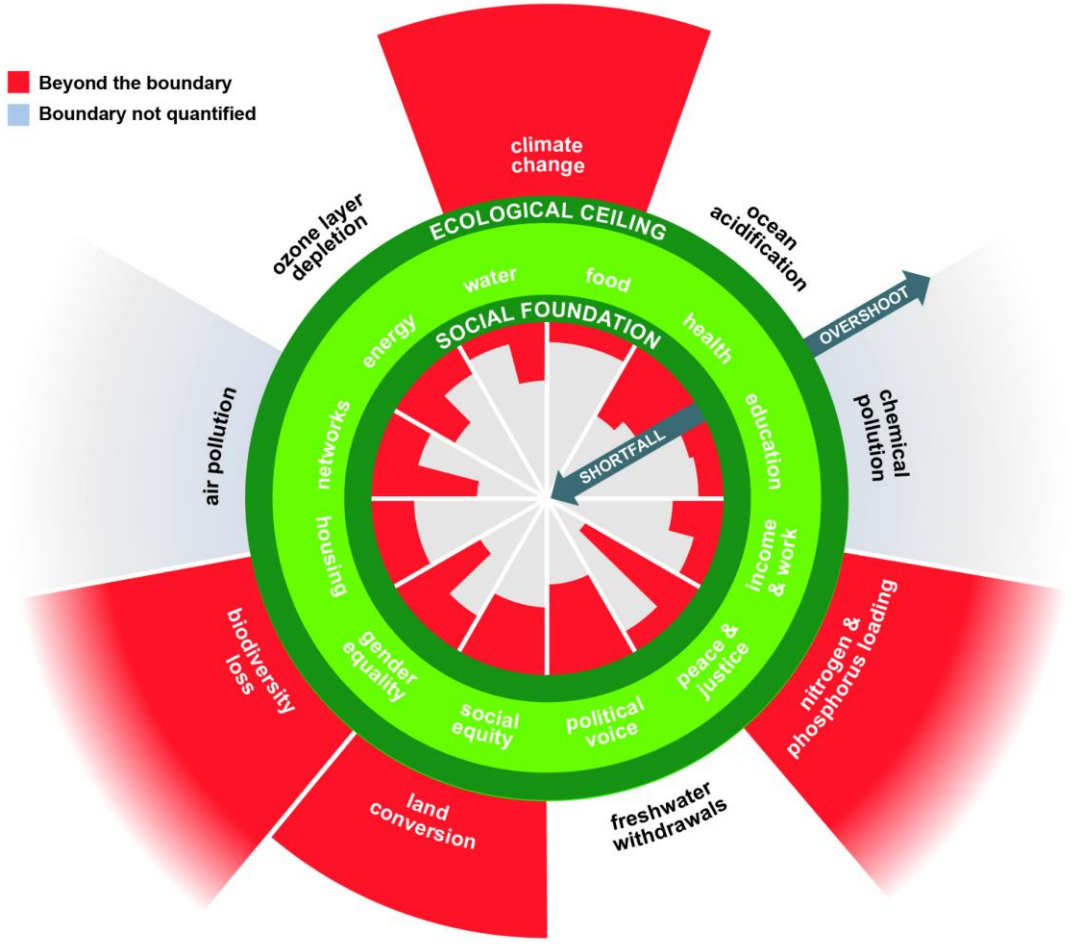


**Figure 12: Ecological economist Kate Raworth's Doughnut of Social and Planetary Boundaries represents a model of an economy which functions within a 'safe space' where physical and social**

[64] Eddy, T. D., Lam, V. W., Reygondeau, G., Cisneros-Montemayor, A. M., Greer, K., Palomares, M. L. D., ... & Cheung, W. W. (2021). Global decline in capacity of coral reefs to provide ecosystem services. One Earth, 4(9), 1278-1285.
[65] Value adjusted to 2015 United States dollars, taking into account inflation only
[66] Government of Ireland (2021) National Risk Assessment, Overview of Strategic Risks https://www.gov.ie/en/policy-information/795550-national-risk-assessment/

**needs are met, but environmental limits are not breached (Source: WikiCommons[67]). Based on 2017 data from the Stockholm Resilience Centre it shows that biodiversity loss is one area where the planet's Ecological Ceiling is being breached.**

## The Case for Action

The economic risks of biodiversity loss and climate change are clear but so too is the business case for biodiversity conservation. The opportunities presented by biodiversity conservation are clearly outlined in the European Commission's Biodiversity Strategy for 2030[68]. According to the Commission the overall benefit/cost ratio of an effective global programme for the conservation of remaining wild nature worldwide is estimated to be at least 100 to 1[69]. The EU has recognised that natural capital investment, including restoration of carbon-rich habitats and climate friendly agriculture, is among the five most important fiscal recovery policies, which offer high economic multipliers and positive climate impact[70]. Within the EU compliance costs of designating, protecting and managing the Natura 200 network of protected areas, cost an estimated €5.8 billion annually across the EU. However, the multiple benefits of the EU's Birds and Habitats Directives are worth, estimated at €200-300 billion per year, significantly exceed identified costs[71].

Conserving exploited marine species for example could increase annual profits of the seafood industry by more than €49 billion, while protecting coastal wetlands could save the insurance industry around €50 billion annually through reducing flood damage losses[72]. The direct economic value of Ireland's ocean economy was estimated to be worth €1.8 billion or approximately 0.9% of GDP in 2016[73]. The economic benefits relative to 2012-14, of rebuilding overfished fish populations in line with EU policy, could provide Ireland with an additional 200,000 tonnes of fish landings annually. This would generate an additional €270 million in earnings potentially supporting 2,200 new jobs[74].

When the capacity of nature to support agriculture, fishing or other ecosystem services is undermined it is usually the rural communities, who are most dependent on nature who suffer the most. An example of this is Ireland's inshore fishing fleet. Of the 1,991 vessels registered in Ireland over 80% are less than 12m in length[75]. These small inshore vessels are totally dependent on landings within Ireland's inshore waters and play an important role in supporting employment in coastal communities which often are marginalised by a range of other negative socio-economic pressures[75]. The collapse of fish populations such as Cod and Herring due to overfishing, which would have traditionally supported important seasonal fisheries for the inshore fleet, has negatively

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[67] https://commons.wikimedia.org/wiki/File:Doughnut-transgressing.jpg

[68] EC, 2020 , Biodiversity Strategy for 2030, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (COM(2020) 380 final) https://eur-lex.europa.eu/resource.html?uri=cellar:a3c806a6-9ab3-11ea-9d2d-01aa75ed71a1.0001.02/DOC_1&format=PDF

[69] Balmford, A., Bruner, A., Cooper, P., Costanza, R., Farber, S., Green, R. E., ... & Turner, R. K. (2002). Economic reasons for conserving wild nature. science, 297(5583), 950-953.

[70] Hepburn et al. (2020), Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?, Smith School Working Paper 20-02.

[71] EC, 2016, 'Fitness check of the EU Nature Legislation (Birds and Habitats Directives)', Commission Staff Working Document (SWD(2016) 472 final)

[72] Barbier, E. B., Burgess, J. C., & Dean, T. J. (2018). How to pay for saving biodiversity. *Science*, *360*(6388), 486-488.

[73] Norton, D., Hynes, S., & Boyd, J. (2018). Valuing Ireland's blue ecosystem services (No. 1154-2021-687).

[74] NEF (2017) A Fair Fishing Deal for Ireland – How to Manage Irish Fisheries in the Public Interest

[75] Marine Institute (2018) Trawl Fishing in Waters Inside 6nm around Ireland, Fisheries Ecosystems Advisory Services Marine Institute https://www.agriculture.gov.ie/media/migration/customerservice/publicconsultation/review6nmzone/2TrawlFishingWatersInside6NMAroundIrl270418.pdf

impacted on employment in the sector, leaving the remaining vessels heavily dependent on a small number of fish shellfish and crustacean species which are now also vulnerable to collapse due to overexploitation. The restoration of our marine ecosystems is therefore not only an environmental imperative but also a socio-economic one[76].

Investing in agri-environmental measures is also an excellent way to deliver public goods in the form of environmental goods and services such as biodiversity, while also providing economic support to farming families with lower incomes. This is illustrated in BirdWatch Ireland's assessment[77] of the Common Agricultural Policy (CAP) beneficiary's database[78], which highlighted the proportion of farmers drawing down payments for measures associated with "Improving the Environment and Countryside" in 2016 on a county-by-county basis (Fig 12 a). When compared to the average payment per county to CAP beneficiaries (under Pillar 1 and/or Pillar 2)(Fig 12 b) it demonstrated a clear national divide between the amount of public funding versus the delivery of public goods. When Fig 12 b is compared to a map of the likely distribution of High Nature Value farmland in Ireland (Fig 12 c) it is clear that Ireland's most biodiverse farmland occurs where CAP payments are lowest (e.g. the West) and the proportion of farmers drawing down payments to improve the environment and countryside (such as agri-environment or ANC payments) is highest (Fig 12 a). This suggests that by targeting investment towards the delivery of biodiversity measures we can deliver public goods to society and financial support to the parts of rural Ireland that need it the most.

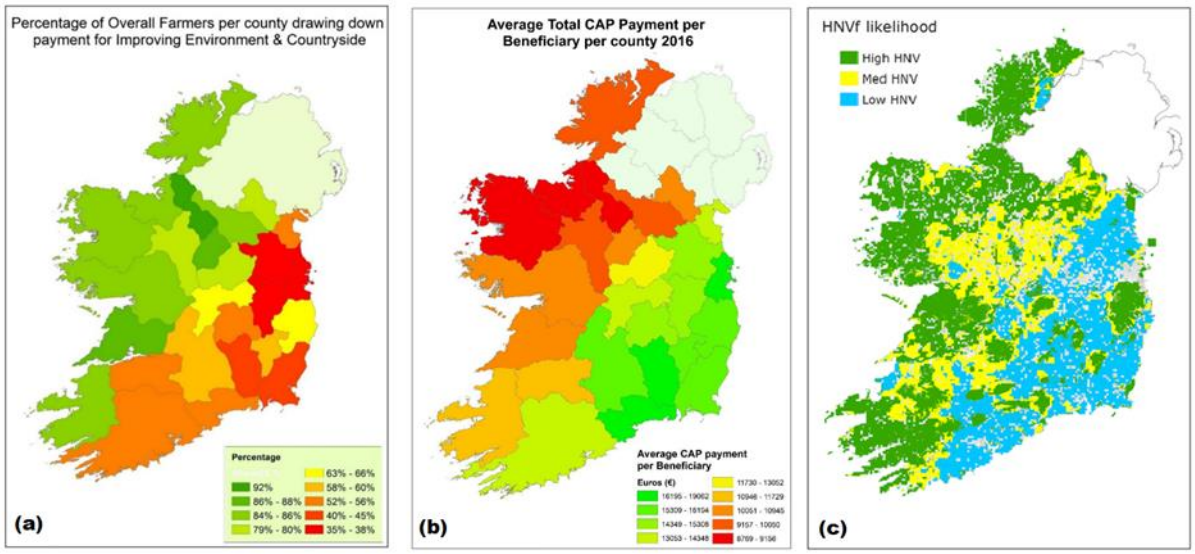


**Fig 12. (a) Number of farmers (as percentage) drawing down payments from CAP in 2016 for Improving Environment and Countryside as a percentage of overall farmer numbers (farmer numbers derived from the CSO farm census 2010); (b) Displays the average total CAP payment**

[76] Kelly et al., (2021) How the EU Fishing Fleet can Become Low Environmental Impact, Low Carbon and Socially Just - Fishing opportunities as an Agent of Change https://our.fish/publications/report-how-the-eu-can-transition-to-low-environmental-impact-low-carbon-socially-just-fishing/

[77] Copleland, A., (2018) The Common Agricultural Policy Post-2020, BirdWatch Ireland Submission to the consultation on the shape of the Common Agricultural Policy post 2020 for the Department of Agriculture, Food and the Marine

[78] Data derived from CAP beneficiaries database https://www.agriculture.gov.ie/agrifoodindustry/euinternationalpolicy/commonagriculturalpolicycap/capbeneficiariesdatabase/; accessed Jan-18

**received by individual beneficiaries in each county of Ireland for 2016; (c) Predicted extent and distribution of high nature value farmland in the Republic of Ireland[79]**

Comparing the average income of common farming enterprises[80] in the West of Ireland and our uplands, to the general max payment and co-operation max payment available through the Agri-Climate Rural Environment Scheme (ACRES)[81] which is available to farmers under the current CAP, further highlights the value of agri-environmental schemes relative to farm income.

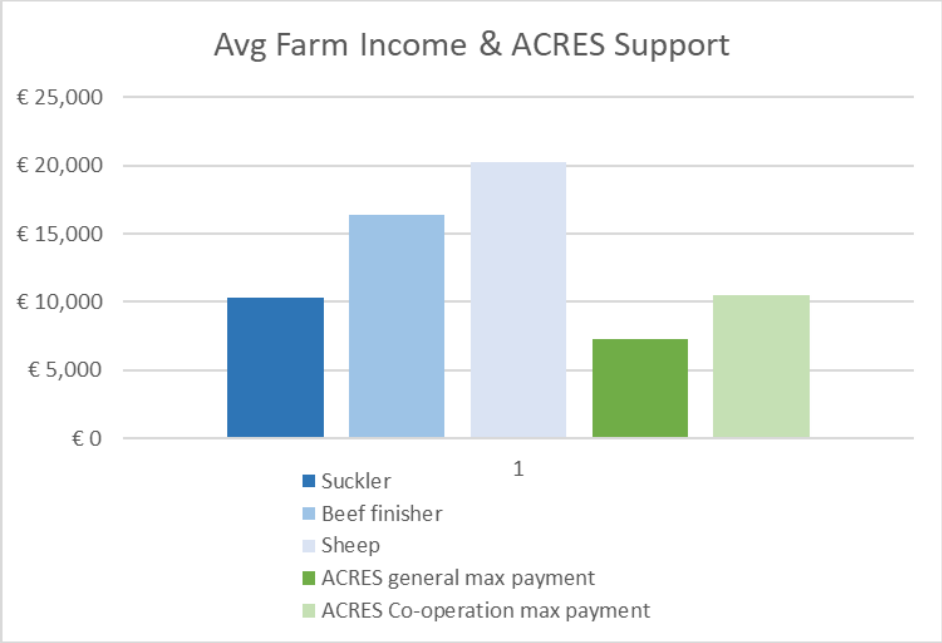


**Figure 13: Comparing the average income of suckler, beef finisher and sheep farmers to the general max payment and co-operation max payment available through the Agri-Climate Rural Environment Scheme (ACRES).**

***"The business case for biodiversity is compelling: the benefits of restoring nature outweigh the costs ten-fold, and the cost of inaction is even higher"* - An Taoiseach Micheál Martin at Ireland's second National Biodiversity Conference 2022[82].**

Despite the overwhelming case for urgent action to halt and reverse biodiversity loss the future outlook for biodiversity is deeply concerning. The predominant economic models internationally remain based on the misguided premise of infinite growth on a finite planet. Maintaining economic growth is currently listed as one of the EU's main objectives in both the Treaty for the European Union and the Treaty for the Functioning of the European Union, and it is systematically included in

[79] Moran, J., Byrne, D., Carlier, J., Dunford, B., Finn, J. A., Ó hUallacháin, D., & Sullivan, C. A. (2021). Management of high nature value farmland in the Republic of Ireland: 25 years evolving toward locally adapted results-orientated solutions and payments. Ecology and Society.

[80] Teagasc National Farm Survey 2021 Preliminary Results https://teagasc.ie/publications/2022/Teagasc-National-Farm-Survey-2021-Preliminary-Results.php

[81] Agriland (2022) https://www.agriland.ie/farming-news/acres-what-do-we-know-so-far-about-the-new-farm-scheme/

[82] Keynote by the Taoiseach Micheál Martin at Ireland's second National Biodiversity Conference Dublin Castle https://www.gov.ie/en/speech/1405e-keynote-by-the-taoiseach-micheal-martin-td-at-irelands-second-national-biodiversity-conference-dublin-castle/

the recommendations of influential international bodies such as the OECD, IMF, and (despite its more labour-oriented perspective) the ILO, as well as Irish regulatory and advisory bodies.

At best, the current emphasis on continual economic growth as a key policy priority leads to confusion, and at worst, it leads to highly risky decision-making. As the European Environmental Agency has stated[83], *"economic growth is closely linked to increases in production, consumption and resource use and has detrimental effects on the natural environment and human health. It is unlikely that a long-lasting, absolute decoupling of economic growth from environmental pressures and impacts can be achieved at the global scale; therefore, societies need to rethink what is meant by growth and progress and their meaning for global sustainability"*.

Growth-focussed economic dynamics in tandem with poor governance internalise profits but externalise the negative impacts of production on nature and society in the form of pollution and environmental degradation. In Europe and elsewhere, incentives underpinning farming, forestry and fisheries have generally favoured expanding economic activity, at the expense of the environment, over conservation or restoration[9]. In Ireland the greatest threat to biodiversity moving forward remains market-driven policies which favour the intensification of models of farming, forestry, fisheries and extractive industries which are already the leading sectoral drivers of biodiversity loss. A key example of this is the Irish governments 10-year strategy for the agri-food sector 'Food Wise 2025' which sets out a roadmap for further growth and intensification of the agricultural sector including an 65% increase in primary production[84]. The implications of this plan and its successor plan were so dire for Ireland's biodiversity, air, water and climate that the Environmental Pillar groups reluctantly withdrew from the Agri-Food 2030 Strategy Committee having concluded "*that the draft Strategy is woefully inadequate to meet the social and environmental challenges we face*[85]." Ireland's current Forestry Programme has a target to increase Ireland's forest cover area from its current level to 18%, requiring an additional 46,000 ha. Given the reluctance of the sector to address either legacy or ongoing impacts on biodiversity the expansion of forestry, particularly across Ireland's High Nature Value farmland, would have a major negative impact on biodiversity[86]. Claims that business as usual afforestation is a win-win for biodiversity and climate are therefore extremely dubious. There is also a growing body of international research which highlights that using overly simplistic targets for land-use change, such as the number of trees planted or annual afforestation rates can be misleading, contributing to policy failure, misuse of carbon offsets and even increased greenhouse gas emissions[87] [88] [89]

[83] https://www.eea.europa.eu/publications/growth-without-economic-growth
[84] DAFM (2020) Food Wise 2025 https://www.gov.ie/en/publication/a6b0d-food-wise-2025/
[85] Environmental Pillar (2021) The Environmental Pillar withdraws from the problematic 2030 Agri-Food Strategy Committee https://environmentalpillar.ie/2021/02/25/the-environmental-pillar-withdraws-from-the-problematic-2030-agri-food-strategy-committee/
[86] Birdwatch Ireland (2019) Greening Irish Forestry - Recommendations for Nature Friendly Forestry https://birdwatchireland.ie/app/uploads/2019/05/BirdWatch-Ireland-2019-Greening-Irish-Forestry.pdf
[87] Brown, I. (2020). Challenges in delivering climate change policy through land use targets for afforestation and peatland restoration. Environmental Science & Policy, 107, 36-45. https://discovery.dundee.ac.uk/ws/files/42352981/ibrown_woodland_peatland_paper_feb2020_author_version.pdf
[88] Matthews, K. B., Wardell-Johnson, D., Miller, D., Fitton, N., Jones, E., Bathgate, S., ... & Perks, M. (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.
[89] Naudts, K., Chen, Y., McGrath, M. J., Ryder, J., Valade, A., Otto, J., & Luyssaert, S. (2016). Europe's forest management did not mitigate climate warming. Science, 351(6273), 597-600.

## Conservation in Action - Action is the antidote to despair

We know from experience that when we are given the tools we can deliver world class conservation projects and turn the tide on biodiversity loss. A prime example of this is the role that Irish locally led result-based agri-environment schemes are playing in shaping conservation across Europe. These schemes are output based systems and are based on the principle of payment for results. Farmers decide how they want to balance environmental productivity and commercial productivity on their farms and the schemes ensure that the public goods that are delivered in the form of Nature are rewarded. This approach is important because it empowers landowners and delivers measurable benefits for nature and value for public investment. One famous example of this is the Burren Programme, which has been working with farmers in the Burren since 2005, to protect their way of life and the natural, built and cultural heritage they support. The collaboration between farmers and conservationists has won the joint 'Best Ever European Life' project in 2017 and has gone on to inspire similar conservation initiatives at home and abroad. To learn more about the Burren Programme and other projects we would recommend reading 'Farming for Nature: Results-Based Agri-Environmental Schemes;' the books offers an overview of locally led results-based agri-environment case-studies, programmes and policies in operation in Ireland[90].

Another great example of Irish conservation in action is BirdWatch Ireland and NPWS's (as partners and key funders) work to conserve and protect Roseate Terns on Rockabill Island, Co. Dublin. Since 1989, BirdWatch Ireland wardens have been carrying out special conservation measures on the island including habitat management and deployment of nest boxes. Rockabill supports 85% of Europe's breeding Roseate Terns. There were 180 pairs in 1989 on Rockabill and since management has been implemented, the population has increased tenfold. This phenomenal growth has led to the emigration of young birds and boosted the recovery of other colonies in Wexford and Northumberland (England)[91] [92]. The project has been nominated for multiple awards at an EU level reflecting its status as arguably the most successful conservation project in Ireland.

[90] Teagasc & NPWS (2020) Farming for Nature: Results-Based Agri-Environmental Schemes https://www.npws.ie/sites/default/files/publications/pdf/ffn-ebook-complete.pdf

[91] Birdwatch Ireland - Rockabill Tern Project https://birdwatchireland.ie/our-work/species-habitat-conservation/marine/rockabill-tern-project/

[92] BirdWatch Irland (2020) Boxing clever: the simple conservation strategy saving threatened Roseate terns https://birdwatchireland.ie/boxing-clever-the-simple-conservation-strategy-saving-threatened-roseate-terns/

**Figure 14: Participants taking part in the Burren Winterage Cattle Drive, the traditional driving of cattle to their winter pastures in the Burren uplands (Source: Fintan Kelly)**

# Recommendations

**In May 2019, Dáil Eireann declared a climate and biodiversity emergency[93] making Ireland only the second country to do so, after the UK. Since then we have been awaiting political leadership and an emergency response commensurate with the scale of the crisis we face. We hope that the Citizens Assembly can help to bring public attention, political pressure and renewed focus to the biodiversity emergency. We would like to present some recommendations which Ireland needs to take to protect and restore biodiversity. We have been advocating for many of these recommendations for years.**

## Overarching Recommendations

### Biodiversity Action needs to be properly resourced

Biodiversity conservation has been woefully under-resourced in Ireland at every level of government. The National Biodiversity Expenditure Review[94] found that over the 6-year period between 2010-2015, Ireland had a total national annual average expenditure of €250 million on biodiversity. This is well short of the minimum 0.3% of GDP recommended annual investment in

[93] Environmental Pillar (2019) Declaration of biodiversity and climate emergency warmly welcomed https://environmentalpillar.ie/2019/05/09/declaration-of-biodiversity-and-climate-emergency-warmly-welcomed/

[94] Morrison, R., & Bullock, C., (2018) A National Biodiversity Expenditure Review for Ireland, University College Dublin.

biodiversity conservation by IUCN for OECD countries. Ireland's average GDP between 2017-2021 was €413 Billion[95] which means on average national expenditure on biodiversity should be increased to at least €1.2 Billion, almost five times current spending. Given the dire state of Nature in Ireland and the need for an urgent response to our national biodiversity and climate emergency we recommend that funding for biodiversity conservation be increased to €1.5 billion per annum up to 2030. This level of response is in line with Ireland's National Risk Assessment[66] which acknowledges that the interlocking risks of biodiversity loss and climate change are even more significant than previously thought and demand a stronger global response and within a shorter time frame.

Fingal County Council, one of the most proactive local authorities when it comes to biodiversity conservation recently admitted that it would not be in a position to achieve two-thirds of its biodiversity targets under the EUs Biodiversity Strategy due to a lack of resources, stating that "*Neither the funding or the extra staff resources can be made available by the council due to demands from other competing priorities such as the provision of housing, roads, sports and community facilities*." As a consequence, it said: "*the council will not be in a position to halt the loss of biodiversity in Fingal by 2030 as envisaged by the EU*[96]."

The Government's recent review of the NPWS[97] found that there has been a chronic under-investment in the NPWS for many years. The NPWS has lacked political champions at high levels, and during the post-2008 economic downturn it, like many other government Departments, suffered substantial decreases in funding. The limited capacity of the NPWS "*constrains its ability to deliver on biodiversity obligations. Many policies and plans fail to meet their targets because of poor implementation and monitoring, partly as a result of a failure to dedicate appropriate resources. Furthermore, although cross-departmental and cross-sectoral plans exist, they were considered to be mired in bureaucracy, poorly coordinated, and hampered by legacy arrangements*." To justify increased financing for biodiversity, the report concluded that Ireland needs to increase recognition of the fundamental economic, social and environmental value of nature conservation

In addition, the review concluded that the NPWS does not have the ability to "*effectively deliver expectations with a business-as usual approach", primarily due to "a lack of capacity - this requires increased investment*." More staff are required to carry out the tasks required to meet obligations. The lack of funding is further exacerbated by the fact that Government funding "*allocations are misaligned to remits*," with the majority of Irish biodiversity funding being allocated to the Department of Agriculture Food and the Marine, whose primary remit is to 'lead and develop the agri-food sector', rather than the conservation of biodiversity. Similarly, the European Maritime and Fisheries Fund (EMFF) is the financial mechanism under which actions should be funded to improve the management of Ireland's marine resources and conservation of our marine habitats and species. The Irish EMFF programme is also administered by the Department of Agriculture Food and the Marine, who have invested heavily in the expansion and intensification of fishing and aquaculture activities, while the conservation and sustainable management of our marine environment has been poorly funded. The States failure to properly fund marine conservation is probably best summed up

[95] https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IE

[96] Irish Times (2022) Strategy to halt biodiversity loss in north Dublin cannot be achieved due to lack of funding, published Mon Jul 18 2022 - 01:42 https://www.irishtimes.com/environment/2022/07/18/strategy-to-halt-biodiversity-loss-in-north-dublin-cannot-be-achieved-due-to-lack-of-funding/

[97] Stout J.C., Ó Cinnéide, M. (2021). Review of the NPWS 2021: Key findings and recommendations. Report to the National Parks and Wildlife Service (NPWS), Department of Housing, Local Government and Heritage (DHLGH), Government of Ireland. https://www.gov.ie/en/publication/fbb81-national-parks-and-wildlife-service-strategic-action-plan-and-review/

by the fact that the plan on how to spend the EMFF monies is called the Seafood Development Programme.

The NPWS review phase was concluded with the adoption of the Strategic Action Plan for the renewal of the National Parks and Wildlife Service (NPWS) 2022 – 2024[98].

**Recommendation:**

- **There is an urgent need to bring funding in line with Ireland's international and national commitments to protect and restore biodiversity. Biodiversity conservation funding should be increased to €1.5 billion per annum up to 2030.**

- **Moving forward both national and EU funding should be allocated in a way that maximises positive impacts on biodiversity conservation and avoids funding activities that drive biodiversity loss.**

- **The recommendations of the Strategic Action Plan for the renewal of the National Parks and Wildlife Service (NPWS) 2022 – 2024, should be fully implemented.**

## A new mandate: Public lands managed in the public interest

Coillte is the largest landowner in the Irish State, managing a landholding of 440,000 ha or 7% of Ireland's land area. It controls the vast majority of the 50.8% of Irish forestry which is in public ownership. Coillte owns 232,500 ha of peatlands making them the largest owner of peatland habitat in Ireland. Tens of thousands of hectares of rare raised bog and blanket bog habitat have been drained and afforested in past decades[99]. Coillte also owns a significant area of approx. 96,000 ha of Special Protection Areas (SPA) and Special Areas of Conservation (SAC), Natural Heritage Areas (NHA) and proposed Natural Heritage Areas (pNHA). According to Coilltes' own assessment, their landholdings support a number of Rare, Threatened or Endangered, which is equivalent to the IUCN conservation status of "*critically endangered, endangered or vulnerable*"[100].

As a public authority and leader in Irish forestry, Coillte has the ability and the responsibility to lead the Irish forestry sector towards a more sustainable model of forestry and land use.
Coillte also has significant expertise when it comes to habitat restoration. Given the amount of internationally and nationally important areas for biodiversity within Coillte landholding and the importance of peatlands, wetlands and forests in Ireland's efforts to tackle climate change, Coillte clearly has the expertise and an obligation to play a leading role in acting on Biodiversity loss and climate change. Coillte reported revenue earned of €422m with an operating profit of €124m in 2021[101].

[98] Government of Ireland (2022) Strategic Action Plan for the renewal of the National Parks and Wildlife Service (NPWS) 2022 – 2024 https://www.gov.ie/en/publication/fbb81-national-parks-and-wildlife-service-strategic-action-plan-and-review/
[99] NPWS (2015) A National Peatlands Strategy 2015. Dublin: National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht.
[100] Coillte (2011) Sustainability Report, Coillte Teoranta http://sustainabilityreport2011.coillte.ie/index.php?id=130
[101] Coillte's Record Financial Performance In 2021 Shaped By Strong Global Demand For Timber And Resultant Strong Pricing https://www.coillte.ie/coilltes-financial-performance-2021/

Bord na Móna owns a landholding of approximately 80,000 ha[102], which would formerly have supported an incredible array of wildlife across a mosaic of raised bog, blanket bog, wetlands, grasslands, woodlands and freshwater habitats. Though much has been lost since Bord Na Mona was established in the 1940s, the potential for rehabilitating both remnant habitats and degraded habitats is frankly incredible. Cutaway bog (post production bogs) areas account for up to 30% of the total Bord na Móna bog area, while areas still in active production which are destined to become cutaway bog account for up to 55% by area. Cutaway bog supports a range of pioneer habitats such as wetlands, species rich grasslands, scrub and emergent bog woodlands; to more complex poor fen and rich fen habitats and established bog woodland. Already these sites support internationally important wintering Whooper Swans and breeding Lapwing and a range of waterfowl[103].

Bog remnants account for 12% of the bog area and largely comprises areas of degraded raised bog, patches of active raised bog (a priority habitat under the Habitats Directive). These remnants support threatened species such as Curlew and Sphagnum pulchrum, Marsh Fritillary butterfly. Drained raised bogs account for <3% of total bog area which have the potential to be restored and have a high conservation value. Some of these bogs still retained active raised bog habitat and all showed good potential for restoration of active and degraded raised bog habitat. Such is the conservation value of these sites that they have already or may be afforded national or EU protection[104]. Bord na Móna has reported a near-trebling in its operating profit, which was €78.9m in 2022[105].

The untapped potential of Coillte and Bord Na Mona's land holding for biodiversity is unprecedented in the history of the Irish State. We have the opportunity to restore public lands at scale for nature, public amenity and sustainable development. This is public land and we the Irish people should have a greater say in how it is utilised. Coillte and Bord Na Mona need new mandates which empower the state to utilise public lands in the public interest. Coillte and Bord Na Mona's legal mandates must be reviewed and brought in line with societal expectations and the stark realities of the biodiversity and climate emergency. The review should be informed by input from the public. The Programme for Government[106] commits to "*Ensure that Coillte's remit supports the delivery of climate change commitments and the protection of biodiversity. We are fully committed to the retention of the commercial forests of Coillte in public ownership*." To deliver on this commitment and to expand it to include Bord Na Mona it will be necessary to amend both public bodies legal mandate to prioritise the delivery of biodiversity conservation and climate change commitments.

**Recommendation:**

- **Coillte and Bord Na Mona's legal mandates must be reviewed and brought in line with societal expectations and the stark realities of the biodiversity and climate emergency.**

[102] Bord Na Mona (2016) Bord Na Mona Biodiversity Action Plan 2016 – 2021 https://www.bordnamona.ie/wp-content/uploads/2021/03/Biodiversity-Action-Plan-2016-2021-1.pdf
[103] ibid
[104] ibid
[105] RTE News (2022) Bord na Móna sees profit jump to €78.9m as renewable investments boost revenue https://www.rte.ie/news/business/2022/0720/1311356-bord-na-mona/#:~:text=Bord%20na%20M%C3%B3na%20has%20reported,%E2%82%AC27.2m%20a%20year%20ago.

[106] Programme for Government: Our Shared Future https://assets.gov.ie/130911/fe93e24e-dfe0-40ff-9934-def2b44b7b52.pdf

**Figure 16. A pair of Common Cranes (*Grus grus*) successfully bred on a Bord na Móna rewetted bog in 2021 for the first time since the species went extinct in Ireland in the 1700s (Source: WikiCommons[107])**

## Amend the Irish Constitution

A 2017 High Court judgment, held that the Irish Constitution implied "*A right to an environment that is consistent with the human dignity and wellbeing of citizens at large*." However, in its landmark "Climate Case Ireland" judgment in 2020, the Supreme Court held that such a right to an environment could not in fact be derived from the Constitution. In finding this, the Chief Justice noted that such a right could instead be "*the subject of debate and democratic approval*".
The Citizens' Assembly on Biodiversity Loss provides an opportunity for debate and democratic approval for the constitutionalising of the right to a healthy environment. To signal Ireland's intention to live in harmony with the natural environment and its intention to discharge its international responsibilities for the environment, Ireland must insert and imbed protection for the environment in its Constitution.

**Recommendation:**

- **We call for amendments to clauses such as Article 10 of the Irish Constitution and the insertion of new clauses to declare protection of the environment as a core and fundamental value to Irish society.**

[107] https://en.wikipedia.org/wiki/Common_crane#/media/File:Common_crane_grus_grus.jpg

## Full implementation of Environmental Law and Policy Commitments

As part of the EU Ireland has among some of the best environmental laws in the world. This is supported by the findings of the EU comprehensive policy evaluation of the Birds and Habitats Directives; which examined the performance of these Nature laws against five criteria: effectiveness, efficiency, relevance, coherence and EU added value. The evaluation showed that the laws were fit for purpose and have already delivered positive benefits for Nature, "*but achievement of their objectives and realisation of their full potential will depend upon substantial improvement in their implementation both in relation to effectiveness and efficiency."* The best laws in the world are no use if they are not implemented.

According to the National Biodiversity Forum[108] "*the biggest transgressor of environmental law in Ireland is the State. Non-compliance is rife at all levels of society, from Government non-compliance with EU laws down to local wildlife crime by individuals*." This is supported by the latest European Commission Environmental Implementation Review (EIR) which summarised the number of active and closed infringements proceedings against Ireland for breaches of EU environmental legislation. As of November 2020, the European Commission had a total of sixteen infringements and four European Court of Justice open cases against Ireland. Between January 2002 and November 2020, the European Commission opened and closed 112 cases against Ireland relating to breaches of EU environmental legislation[38]. These infringements reflect very poorly on the State's attitude to environmental protection. As many of the infringements also relate to air and water pollution this also reflects poorly on the States attitude towards public health and wellbeing.

These infringements can also have significant financial implications for the State. For example, the EU's Court of Justice fined the State €5 million over its failure to comply with EU legislation by failing to carry out an Environmental impact Assessment prior to the construction of the wind farm in Derrybrien, Co Galway. The State is subject to an additional daily fine of €15,000 until the government carries out an Environmental impact Assessment for the project. These significant fines are due to the "*seriousness and duration*" of the failure to carry out an environmental impact assessment on the wind farm in the 11 years since a previous ruling on 3 July 2008, the court said in 2019[109].

**Recommendation:**

- **Ireland must fully implement national and EU environmental laws and ensure that they are properly enforced.**

Through Ireland's national and international commitments there is an existing framework of targets and deadlines to protect and restore biodiversity. These include global commitments such as the Convention on Biological Diversities Aichi Biodiversity Targets, the United Nations Sustainable Development Goals. The EU has legal frameworks, strategies and action plans to protect nature and restore habitats and species but according to the European Commission themselves "*protection has*

[108] National Biodiversity Forum (2021) National Biodiversity Forum Recommendations https://www.biodiversityimpactplan.ie/

[109] ESB to decommission 70-turbine Derrybrien wind farm in Co Galway https://www.thejournal.ie/derrybrien-wind-farm-decommissioned-5713470-Mar2022/

*been incomplete, restoration has been small-scale, and the implementation and enforcement of legislation has been insufficient*."[110] At a National level Ireland has various frameworks, task forces, threat response plans and National Biodiversity Action Plans but the actions they contain are rarely implemented due to a combination of a lack of political will, effective industry lobbying, inadequate resourcing and the prioritisation of environmentally destructive policies.

***"The risks of not delivering on these (biodiversity and climate) commitments are stark and far-reaching"* - Ireland's National Risk Assessment 2021/2022.**

We would significantly improve our relationship with nature in Ireland if we fully implemented our existing commitments and supported ambitious new proposals for nature restoration at an EU level. For example, the EU's Biodiversity Strategy for 2030 contains a range of ambitious actions designed to set Nature on the pathway to recovery across Europe[109]. These include key commitments such as:

1. Legally protect a minimum of 30% of the EU's land area and 30% of the EU's sea area and integrate ecological corridors, as part of a true Trans-European Nature Network.

2. Strictly protect at least a third of the EU's protected areas, including all remaining EU primary and old-growth forests.

3. Effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately.

Earlier this year the European Commission published a draft regulation known as the EU Nature Restoration Law. This new regulation now needs the support of the Irish government and our elected representatives in the European Parliament. It contains a range of ambitious actions such as targets to restore carbon-rich ecosystems such as bogs and forests; restoration targets for threatened habitats and species; targets for pollinators and farmland birds. The scope of the plan goes beyond protected areas and look to protect nature across farmland, forests, in our rivers and seas and even in our cities[111].

**Recommendation:**

- **Fully implement national and international commitments for Nature. In particular the objectives of the EU Biodiversity Strategy for 2030; including the adoption of an ambitious EU Nature Restoration Law.**

- **Improve policy coherence and coordination by ensuring that all relevant government policies are compatible with our commitments to Nature.**

[110] EC, 2020 , Biodiversity Strategy for 2030, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (COM(2020) 380 final) https://eur-lex.europa.eu/resource.html?uri=cellar:a3c806a6-9ab3-11ea-9d2d-01aa75ed71a1.0001.02/DOC_1&format=PDF

[111] EC 2022 REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on nature restoration, Brussels, 22.6.2022 COM(2022) 304 final 2022/0195 (COD) Proposal for a (Text with EEA relevance) {SEC(2022) 256 final} - {SWD(2022) 167 final} - {SWD(2022) 168 final}

- **Policy implementation must be delivered based on an all of government approach. All departments must be coherent, transparent and accountable in how they deliver our policies for Nature.**

## Reorientate economic activity away from expansionism and towards societal and ecological wellbeing and a circular economy

As described in Section 3, expansionist economic policies in agriculture and other economic sectors are a key driver of biodiversity loss. Indeed, numerous studies[112] have shown that economic growth tends to be closely linked with increased resource consumption and emissions, which in turn harm biodiversity.

The drive to constantly expand overall economic production in Ireland and elsewhere has many causes and therefore needs to be addressed in a multifaceted way. The interconnected nature of the economy means that actions taken in one economic sector will inevitably affect the other sectors, for better or worse.

Changes to economic dynamics in Ireland to relieve expansionist pressure will need to be wide-ranging, with an emphasis on 'upstream', systemic measures that have broadly beneficial effects. Such measures include substantial improvements to housing provision, welfare services, and taxation and financial services both in Ireland and at the EU level[113]. These measures would be reinforced by a redefinition of economic progress in EU and international governance. This includes firstly, a conscious reorientation of economic objectives towards achieving a 'wellbeing economy' in which both human and ecological needs can be satisfied, as depicted in the 'safe and just space of humanity space' on the economic doughnut (depicted in Fig X above). As the World Wildlife Fund has stated[114], '*a wellbeing economy monitors and values what truly matters: our health, nature, education, and communities*'.

The new Irish Wellbeing Framework[115] could play an important role in providing more accurate measurements of economic, social and environmental progress, and thus helping Ireland to achieve a wellbeing economy. But the Framework needs considerable improvement. A detailed breakdown of suggested improvements, and ways in which the Framework could be incorporated into policy, can be found in section 7 of the Environmental Pillar's submission on the National Economic Dialogue.

Secondly, the Government must foster a socially equitable transition to a circular economy. A circular economy seeks to keep materials in economic circulation for as long as possible thereby reducing material consumption. In turn, a circular economy thereby helps to reduce pressure on ecosystems and allows space for nature to regenerate (Figure X). In the Irish context, this transition

[112] https://conbio.onlinelibrary.wiley.com/doi/10.1111/conl.12713
[113] These measures are summarised in Feasta's submission to this consultation call and they are explored in more depth in this discussion paper: https://www.feasta.org/2022/04/28/online-discussion-may-18-cross-sectoral-economic-measures-to-support-biodiversity-in-ireland/
[114] https://www.wwf.eu/what_we_do/eu_affairs_governance/towars_an_eu_wellbeing_economy/
[115] https://www.gov.ie/en/campaigns/1fb9b-a-well-being-framework-for-ireland-join-the-conversation/

will involve full implementation of the Whole of Government Circular Economy Strategy, the Waste Action Plan for a Circular Economy, and the now legally ratified Circular Economy Act. More stringent targets are needed in this area, particularly in relation to setting national and sectoral reuse targets that are legally binding. In terms of implementation, increased financial and tax incentives are needed for enterprises active in the circular economy. Social enterprises are a particularly valuable vehicle for implementing circular initiatives while delivering social benefits. Current initiatives such as an Meitheal Rothar[116], Rediscover Fashion[117], Revamp Furniture Longford[118], and members of the Paint Reuse Network[119] all examples of this approach in practice.

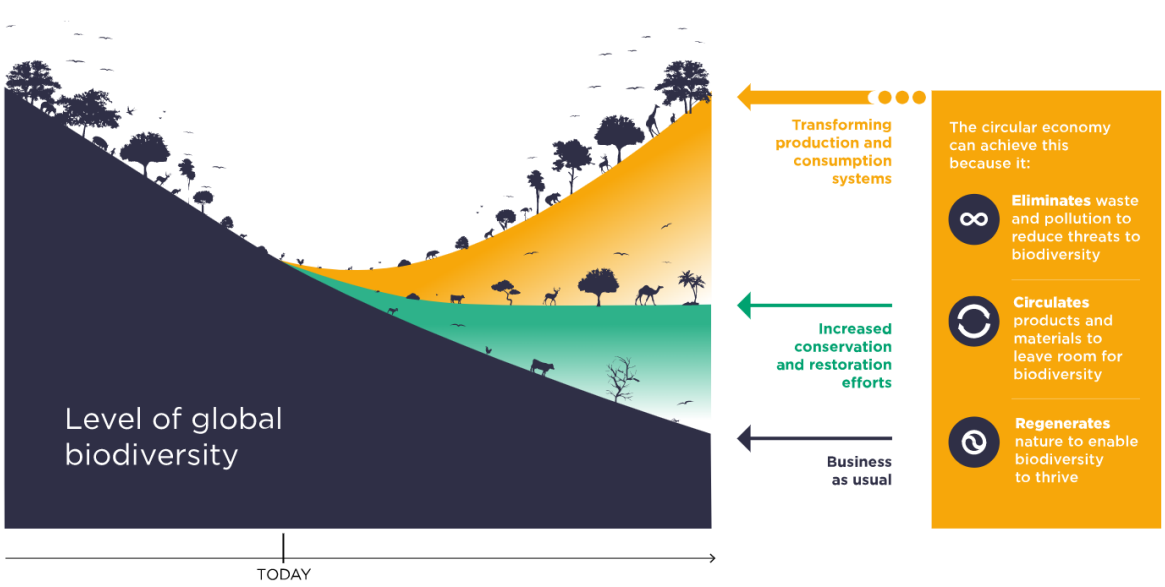


**Figure 17: Potential benefits of a circular economy transition to biodiversity**

**Recommendation:**

- **Cross-sectoral measures to help ease expansionist pressure on the Irish economy are urgently needed, including reforms to taxation, financial services, housing provision, and welfare services.**

- **The Irish government should advocate for a shift in emphasis in EU and international economic policy away from GDP expansion as a goal in itself and towards the goals of societal and ecological wellbeing.**

- **The Irish government should fully implement existing policy initiatives in the area of circular economy, implement specific targets for reuse at national and sectoral level, and support social enterprise approaches for this purpose.**

[116] https://bikeworkshops.ie/
[117] http://www.rediscoverycentre.ie/rediscover-fashion/
[118] https://revamplongford.ie/
[119] https://www.paintreuse.network/

- **The Irish Wellbeing Framework should be modified so that it more accurately measures economic, social and environmental progress in Ireland, and it should be given a strong role in shaping policy, including in the annual budgeting process.**

## Education and Research

One of the greatest threats to biodiversity is apathy, which is exacerbated by a general lack of understanding among the public and decision makers about the scale of biodiversity loss in Ireland. Fisheries scientist Daniel Pauly conceived the concept of 'shifting baseline syndrome' to describe how our perception of what a healthy marine ecosystem is like is shaped by our own observations during our lifetimes[120]. Therefore, as fish populations are overfished and marine ecosystems are degraded each generation lowers the bar of what they believe 'normal' to be. This phenomenon has resulted in many fisheries scientists considering the status of highly degraded marine ecosystems as an appropriate reference point for fisheries management. Shifting baseline syndrome is also at play in our collective perception of what a healthy environment is in Ireland and unless we improve awareness through education our expectations may deteriorate with each passing generation.

**Recommendation:**

- **The Government should encourage greater understanding of ecology and natural history by supporting initiatives that facilitate education and engagement with Nature.**

Conservation management and environmental regulation must be informed by the best available scientific advice, which in turn is determined by the resources available to fund research, data collection and monitoring and the accessibility to that information.

**Recommendation:**

- **The Government should better resource biodiversity research, data collection and monitoring. In particular a greater emphasis needs to be placed on our marine environment where there are serious gaps in our understanding of the distribution of threatened habitats and species.**

- **The Government and relevant departments should do more to encourage the participation of the public in data collection through citizen science initiatives. Data when available should be integrated into appropriate databases to facilitate conservation and made available when appropriate.**

[120] Pauly D. 1995. Anecdotes and the shifting baseline syndrome of fisheries. Trends Ecol Evol 10:430.

## On Land

### Towards a New Agricultural and Food Policy for Ireland

Ireland's leading environmental and civil society coalitions the Environmental Pillar, the Stop Climate Chaos Coalition, and the Sustainable Water Network have set out our policy recommendations for the Government that would deliver much needed change in Irish agriculture policy. Our 'Towards a New Agricultural and Food Policy for Ireland' paper provides a foundation for a deeper discussion on what a new model of agriculture for Ireland could look like – a model that works within the ecological parameters essential to a healthy society, economy and planet.

We recognise that agriculture is by far the most significant pressure on Ireland's nature, water and air, and greenhouse gas emissions. There has been a long-standing failure to align the sector with Ireland's obligations under environmental law. However, we also know that farming is essential to the future of a multitude of our most beloved plants, animals and habitats that are dependent on farming. Agricultural habitats cover approximately half the EU territorial area and an estimated 50% of all species and several habitats of conservation concern in the depend on agricultural management[121] [122]. We believe that the solutions to our biodiversity crisis will be found in empowering farmers and rural communities through capacity building and innovation, and rewarding farmers for the delivery of ecosystem services. We would like to share the relevant recommendations with the citizens' assembly.

**1. Develop a Policy Framework Aligned with Ecological Limits and Environmental Commitments**

The Government must ensure that Ireland's food production is in line with commitments to the Agenda 2030 Sustainable Development Goals, the Paris Agreement, the EU Green Deal and current legal obligations to protect biodiversity and water quality. It must phase out all environmentally harmful subsidies in the agricultural and food sector. This means re-orienting subsidies so that public money is channeled into the delivery of public goods. Public funding should deliver permanent cuts in greenhouse gas emissions and protect and restore water quality and biodiversity. It should also support rural livelihoods and communities. The following sections detail policy recommendations that are crucial to this framework.

**2. Protect and Restore Biodiversity on Farmland**

The Government must commit to ambitious restoration of biodiversity on farmland and at landscape scale. They must also implement the EU target of protecting (at least) 30% of land area for biodiversity by ensuring that, at the very minimum, 10% of agricultural area is under high diversity landscape features by 2030. The State should reward farmers for the public goods HNV farmland provides and ensure the socio-economic viability of rural communities. Scaling up locally adapted and financially attractive results-based agri-environment payment schemes will be important for restoring biodiversity on all farm types. As part of the proposed land use review, the Government should assess the potential for ecological rewilding at farm, catchment and landscape level.

**3. Protect and Restore Peatlands and Woodlands on Farms**

[121] Halada, N., Evans, D., Romão, C., Peterson, J-E. (2011) Which habitats of European importance depend on agricultural practices? Biodiversity and Conservation 20(11), 2365-2378.

[122] Batáry, P., Dicks, LV., Kleijn, D., Sutherland, WJ. (2015) The role of agri-environment schemes in conservation and environmental management. Conservation Biology 29(4), 1006-1016.

We call on the Government to cease the drainage of wetlands and peaty soils, and end all peat extraction. We recommend that targeted, customised supports for the management and rejuvenation of existing carbon stocks be put in place. We also call for the introduction of a suite of agroforestry measures to promote natural regeneration and ecological corridors for nature connectivity.

**4. Ensure that Agriculture Delivers its Fair Contribution of the 51% Reductions in Greenhouse Gas Emissions by 2030 Committed to in the Programme for Government**

We call for a revised roadmap for agri-related emissions reductions and a declining cap on total national reactive nitrogen usage. To rapidly bring down sectoral methane and nitrous oxide emissions, we recommend that regulatory, voluntary and combined measures be implemented to limit and reverse recent dairy expansion. Compensatory measures for farmers should be put in place to incentivise herd reductions.

**5. Urgently Improve Air Quality**

We call for a roadmap that brings Ireland into compliance with binding commitments on ammonia. The roadmap should include implementation and enforcement measures, and funding for farm abatement measures. We also call for efforts by the Government to address barriers to compliance with the NECD, including improved mapping and monitoring.

**6. Halt and Reverse Water Quality Decline**

We call on the Government to conduct risk assessments of all intensive farms (greater than 130 kg livestock manure nitrogen/ha) in sensitive catchment areas. Nitrates derogations should only be granted where it can be demonstrated that no deterioration in the aquatic environment will result. If necessary, sub-catchment areas must be zoned ineligible for certain stocking rates. A national plan to co-ordinate and support on-farm measures to intercept pollution pathways must be implemented.

**7. Support Sustainable Livelihoods and Incentivise Farm Diversification**

We call on the Government to develop a farmer and community-centred Just Transition action plan for the sector that includes diversification options with environmental co-benefits. We recommend support for the scaling up of local and indigenous nature-friendly food production, especially in cereals and pulses for human consumption, fruit and vegetables – a large proportion of which are currently imported at the expense of the indigenous tillage and horticultural sector.

**8. Contribute to Public Health and Sustainable Consumption**

Ireland must ensure that its food production policy promotes global health and environmental protection. National food policy should incentivise and support a greater dietary intake of organic produce and plant-based foods that are sustainably produced.

### 9. Contribute Meaningfully to Food Security and Nutrition

We call for the implementation of clear principles and oversight mechanisms, including mandatory Human Rights and Environmental Due Diligence legislation, to ensure that the commercial links to the global food economy do not undermine Ireland's international development commitments.

### 10. Facilitate Inclusive Dialogue and Participation for an Alternative Model for Agriculture in Ireland

A transition to a sustainable agricultural system will not be possible without ongoing multi-stakeholder dialogue. Drawing on the recommendations presented in this report, the Environmental Pillar, Stop Climate Chaos Coalition, and SWAN are committed to engaging in dialogue and discussion, with all relevant stakeholder groups, where there is genuine commitment to deliver an alternative, fairer model for Irish agriculture.

The world's food and agricultural systems feed more people than ever before, supplying large volumes of key commodities to domestic and international markets. Yet, the intensification of agricultural practices across the world is causing potentially irreversible damage to the planet's living systems – its soils, air, biodiversity and water. Exceeding planetary limits threatens to weaken the very support systems that are crucial to food production and ecosystem health.

## Root and Branch Reform - A new vision for Irish Forestry

Sustainable forest management can benefit climate, biodiversity and water quality while also generating space for recreation and reflection and supporting sustainable employment. However, the opposite also holds true, with poorly planned afforestation resulting in greenhouse gas emissions, biodiversity loss, pollution and negative socio-economic impacts on affected communities. Ireland needs more native woodland and a forestry sector which has high environmental credentials. To enhance Ireland's environment our forestry sector must adopt best practice in sustainable forest management that simply put, delivers **the right tree, in the right places, under the right management.**

**Recommendation:**

**1.** Change the current narrowly focused forestry model and transition to a three-strand forestry strategy, for 1. Timber production, 2 Biodiversity/Ecological services/water protection and long term Carbon storage, and 3. Community Woodland Social/Recreational to ensure a balance of the 3 Pillars of Sustainable Forest Management (SFM), Ecological, Social, and Economic, based on the 1992 Rio Forest Principles for Sustainable Forest Management and subsequent EU Ministerial Conferences on the Protection of Forests treaties for SFM as well as the legally binding UN Convention on Biological Diversity relating to native woodlands and broadleaves to increase biodiversity.

**2.** Move to a close to nature, continuous cover management model with a focus on native broadleaves aspen, birch, oak, cherry, holly, and other valuable high-end broadleaves, including more use of our native conifer, scots pine to grow better quality softwoods, and non-native conifers such as cedar, douglas fir, european larch, promote natural regeneration, ecological corridors for nature connectivity and traditional coppice management of suitable native and other species.

**3.** Phase out the damaging practices of clear felling and chemical dependency, as forest management tools. Include compensation for forestry contractors using the just transition model developed for closure of peat burning power stations and introduce training in small scale close to nature SFM to develop ecologically minded foresters.

**4.** Ensure that wildlife is protected from afforestation and forestry management in line with the requirements of Irish and EU law. Develop tools such as sensitivity mapping and implement species specific guidelines to support ecological assessment of applications for afforestation and felling.

**5.** Reform, Refocus and Repurpose Coillte, the Irish Forestry Board, legislation via the1988 Forestry Act, which is not fit for purpose and repurpose Coillte to deliver the multiple known benefits of a new 21st century Irish forestry model, which creates higher quality timber, meaningful employment and contributes to our Climate and Biodiversity action/mitigation plans, while ensuring that Communities benefit.

**6.** Embrace a broad-based agroforestry model that includes sustainable hedgerow management and conservation with less onerous rules for establishing small groves of native and useful broadleaves/ native conifer. Reward farmers for measured ecosystem, Water, Soil protection, and Carbon sequestration services.

**7.** Assist the development of small scale local Combined Heat and Power (CHP) systems in Public and other buildings utilising locally produced tree thinning's and other sustainably produced biomass/firewood including from farm hedgerows in tandem with the development of a national certified small-scale Sustainable Forest Management standard.

**8.** Introduce Community Woodland legislation to allow public and community co-operatives access to funding and support to buy unproductive Coillte and other public lands to develop long term native community woodlands[123]. A Forestry Commission model for this exists in the UK, developed for Scotland who have approximately 200 Community woodlands some on ex Forestry Commission sites[124].

**9.** Establish a broad multi stakeholder forestry-land-water-soil management use Forum, with cross departmental inputs to oversee all new afforestation and guide the forestry strategy implementation, to ensure Joined up thinking so that new woodlands and forestry plantations are sited in an ecologically sound way, with the right tree in the right place, utilising the existing River Basin management plans combined with existing satellite digital data mapping systems as an overarching framework for planning the siting of trees.

**10.** Ensure that full lifecycle carbon accounting is an integral component of all schemes within the forestry programme and riparian etc woodlands/agroforestry if it is funded under CAP or state eco schemes.

**11.** Ensure that the Government's afforestation strategy is not impacting on Biodiversity by establishing a monitoring system for the Forestry Programme. Ensure that licensing requires site-by-site ecological assessments to ensure that afforestation is not negatively impacting on biodiversity both within or outside protected sites. Develop and implement a 'Forestry Sensitivity Mapping Tool' which will help to inform the future sustainable expansion of forestry in Ireland. This tool will

[123] https://forestryandland.gov.scot/what-we-do/communities/community-asset-transfer-scheme
[124] https://rbg-web2.rbge.org.uk/ethnobotany/ntfp/communitywoods.htm

provide the best available information on the distribution of species and habitats which have known sensitivities to forestry. Adopt a definition of High Nature value farmland and ensure that it is protected in line with EU policy.

These recommendations are taken from the Environmental Pillar's 10 Point Action Plan to fix Forestry in Ireland and Greening Irish Forestry - Recommendations for Nature Friendly Forestry[125].

## Protecting Soil Biodiversity

Soils are essential to life on Earth but are rapidly degrading worldwide due to unsustainable human activities, such as soil erosion, contamination, and the loss of soil organic carbon[126]. In the European Union alone, costs related to soil degradation exceed €50 billion a year[127]. Given the importance of soil health and soil biodiversity the European Commission proposed a directive framework for the protection of soil[128]. The European Soil Framework Directive was the first policy approach of soil protection at the European level. It had an objective to protect soils across Europe and maintain the sustainability of soil functions[129]. The legislative proposal was unfortunately withdrawn due to the opposition of a minority of countries in the European Council. Given the cross-sectoral nature of soil issues and the diversity of environmental and socio-economic pressures and governance conditions across Europe, we believe that the need for an EU Soil Framework Directive is more urgent than ever.

**Recommendation:**

- **Ireland should support the European Commission in the reinitiation of a European Soil Framework Directive to protect soils and soil biodiversity across Europe.**

## At Sea

Fair Seas is a coalition of Ireland's leading environmental non-governmental organisations and networks seeking to protect, conserve and restore Ireland's unique marine environment. They have identified a series of recommendations that would put our marine ecosystems back on the road to recovery.

1. **Designate and manage at least 30% of Irish waters as a Marine Protected Area**

[125] Environmental Pillar (2019) Greening Irish Forestry - Recommendations for Nature Friendly Forestry
[126] Kraamwinkel, C. T., Beaulieu, A., Dias, T., & Howison, R. A. (2021). Planetary limits to soil degradation. Communications Earth & Environment, 2(1), 1-4.
[127] Veerman, C. et al. Caring for soil is caring for life Ensure 75% of soils are healthy by 2030 for food, people, nature and climate Report of the Mission Board for Soil health and food. (2020).
[128] COM(2006) 232 final https://eur-lex.europa.eu/legal content/EN/TXT/PDF/?uri=CELEX:52006PC0232&from=EN
[129] Chen, Y. (2019). Withdrawal of European soil framework directive: reasons and recommendations. Journal of Sustainable Development, 13(1), 1-9.

The Irish Government committed to expanding Ireland's network of Marine Protected Areas (MPAs) in its 2020 Programme for Government, stating '*We will realise our outstanding target of 10% under the Marine Strategy Framework Directive as soon as is practical and aim for 30% of marine protected areas by 2030'*[130].

It is only when designated areas *are* effectively managed for nature and achieving their conservation objectives, that they can positively contribute to reversing biodiversity loss. Unfortunately, the extent and the quality of Ireland's current MPA network is poor, with only 2.1% of Ireland's seas designated, and many sites lacking adequate management[131]. Therefore, it is essential that the Irish Government fulfil previous environmental and biodiversity commitments, and begin the MPA legislative and designation process as soon as possible.

**2. Implement ambitious marine conservation measures to ensure 'Good Environmental Status' of Ireland's seas**

Ireland failed to achieve Good Environmental Status under the Marine Strategy Framework Directive (MSFD) for over half (6 out of 11) of the descriptors assessed in the latest 2020 report[132]. The failing descriptors include 'Biological Diversity' as well as others that are closely linked to biological diversity including 'Commercial fish & shellfish', 'Foodwebs', 'Sea-floor integrity', 'Marine litter' and 'Energy including underwater noise'. The MSFD is an important legislative driver for obtaining '*ecologically diverse, dynamic oceans and seas which are clean, healthy and productive*'. An ambitious suite of marine conservation measures, with adequate resourcing, is needed to ensure Good Environmental Status for all descriptors is achieved.

**3. Invest in restoration programmes to recover our most vulnerable and biodiverse coastal habitats and endangered species**

Establishing priority habitat restoration zones, including a focus on 'blue carbon' habitats which help capture and store away carbon from the atmosphere (e.g., seagrass, saltmarsh, shellfish reefs), will help tackle Ireland's biodiversity, water quality and climate crises. This process should be co-developed alongside the expansion of Ireland's MPA network.

**4. Review and amend the National Marine Planning Framework to ensure planning decisions are considerate of whole ecosystems**

The Sustainable Water Network recently published an assessment[133] of the National Marine Planning Framework (NMPF), and found that its lack of adequate spatial planning or ecosystem-based approach

[130] Ireland's Programme for Government: Our Shared Future. 2020.

[131] Expanding Ireland's Marine Protected Area Network. A report by the Marine Protected Area Advisory Group for the Department of Housing, Local Government and Heritage October 2020.

[132] Marine Strategy Framework Directive. Update to Ireland's Marine Strategy Part 1: Assessment, Determination of Good Environmental Status, and Environmental Targets.

[133] Walsh, C. (2022) 'An Evaluation of Ireland's Marine Spatial Plan – The National Marine Planning Framework'. Sustainable Water Network (SWAN). May 2022.

means the mistakes of poor planning on land risk being repeated at sea. Without an ecosystem-based approach to consenting and regulating activities and developments at sea, it is unlikely the NMPF will contribute positively to the achievement of Good Environmental Status in Irish waters. The NMPF needs to be reviewed and amended to explicitly address these concerns**.**

5. **Implement an ambitious and effective National Biodiversity Action Plan to jumpstart nature's recovery in Ireland**

Fair Seas eagerly anticipates the public consultation on Ireland's new National Biodiversity Action Plan (NBAP). Considering Ireland's seas are over seven times the size of its land mass, much of Ireland's biodiversity occurs in the marine environment. A new, ambitious and comprehensive plan to tackle Ireland's marine biodiversity loss is fundamentally important to the future health of our seas, as well as the survival of nationally and globally important species and habitats which are already rare, vulnerable and threatened in our waters.

6. **Pursue the full implementation of the Common Fisheries Policy to ensure fishing is sustainable, and MPAs are effectively managed**

The rigorous and full implementation of the EU Common Fisheries Policy (CFP) is essential to achieve the sustainable management of all commercially exploited species. Putting an end to overfishing and driving the recovery of fish stocks, the CFP should also contribute to the protection of the marine environment, and in particular to the achievement of Good Environmental Status under the MSFD.

Fisheries management in current and future MPAs (offshore and inshore) is crucial to secure an ecologically coherent and well-managed network of MPAs. Fortunately, the CFP provides the mechanisms for implementing conservation measures within offshore and inshore MPAs, including fisheries management. However, to date these mechanisms are underused and failing. Ireland must pursue and implement all aspects of the CFP to help secure well-managed protected areas, healthy seas, and a strong, sustainable fishing industry.