

# Climate Change and Biodiversity in Ireland

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**NATURAL  
CAPITAL  
IRELAND**





ipcc

INTERGOVERNMENTAL PANEL ON climate change

# Climate Change 2022

## Impacts, Adaptation and Vulnerability

Summary for Policymakers



WGII

Working Group II contribution to the  
Sixth Assessment Report of the  
Intergovernmental Panel on Climate Change



**Exceeding 1.5 degrees warming for a number of decades will cause “*irreversible effects on biodiversity and ecosystems*”**





Flooding Co. Clare, 2020 (Carlow Weather)



Fires, Killarney National Park, 2021 (Irish Examiner)



2018 drought (Agriland)



Storm Barra, Tramore, 2021 (Noel Browne, Irish Times)



## The Status of EU Protected Habitats and Species in Ireland

### HABITAT ASSESSMENTS

Volume 2  
2019



## The Status of EU Protected Habitats and Species in Ireland

### SPECIES ASSESSMENTS

Volume 3  
2019



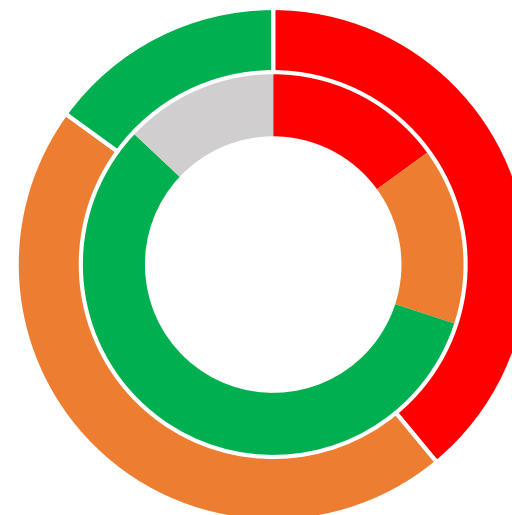
### SPECIES

15% Bad

15% Inadequate

57% Favourable

13% unknown



bad      inadequate  
favourable      unknown

### HABITATS

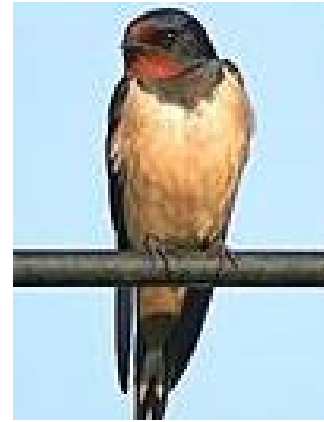
39% Bad

46% Inadequate

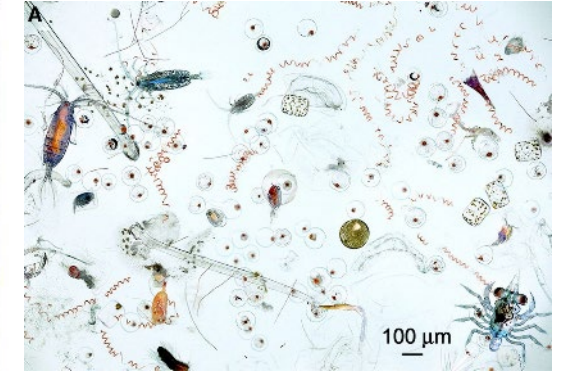
15% Favourable



## Phenology

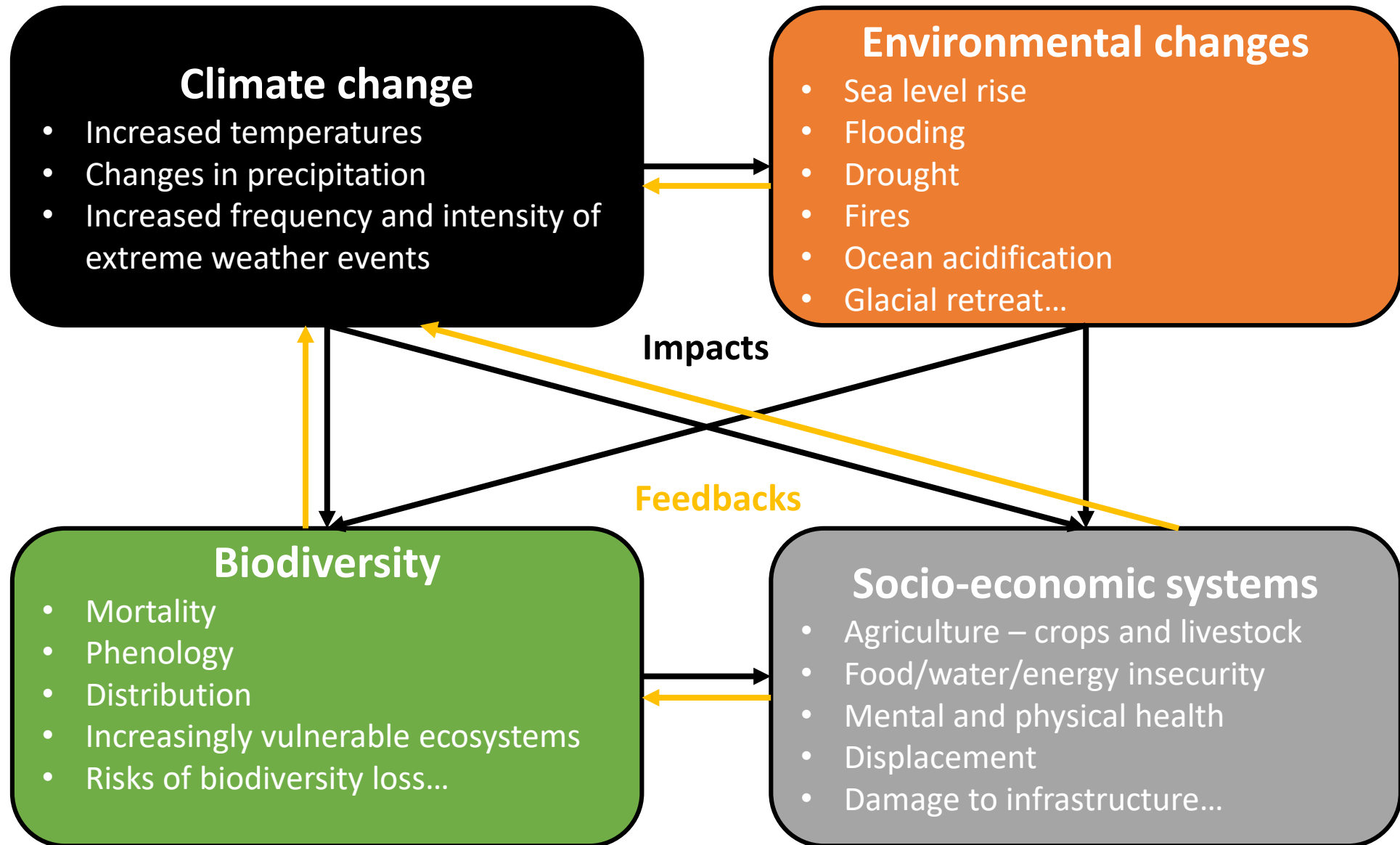


## Distribution



## Ecosystem structure







# Nature Improves Resilience to Climate Change

To learn more,  
visit [www.nwf.org/  
naturalsolutions](http://www.nwf.org/naturalsolutions)



- **CORAL REEFS** can reduce 97% of incoming wave energy, which helps reduce erosion and storm-surges.
- 1 acre of **WETLANDS** stores 1-1.5 million gallons of floodwater.

- Protecting undeveloped **FLOODPLAINS** would cost < \$160 billion, but prevent nearly \$400 billion in damages.

- Ecological **FOREST** management can protect drinking water supplies and mitigate wildfire risk.
- Over 1/2 of the nation's water supply comes from **FORESTS**.

- **URBAN AND COMMUNITY TREES** reduce over 7% of residential energy use. Urban trees and green spaces absorb stormwater and provide habitat for wildlife.

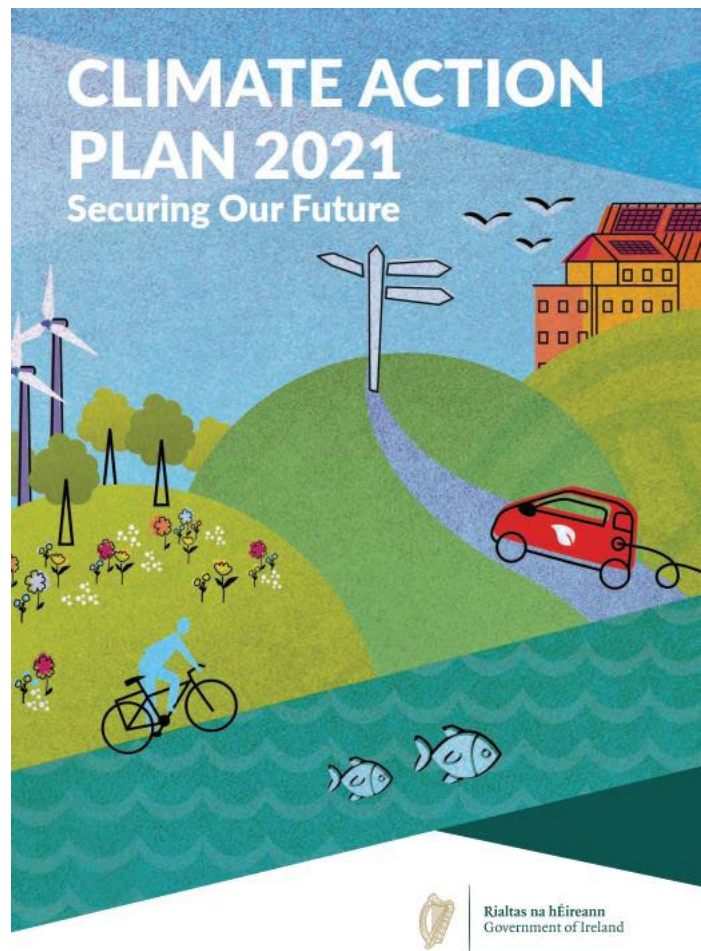


Coastal Ecosystems

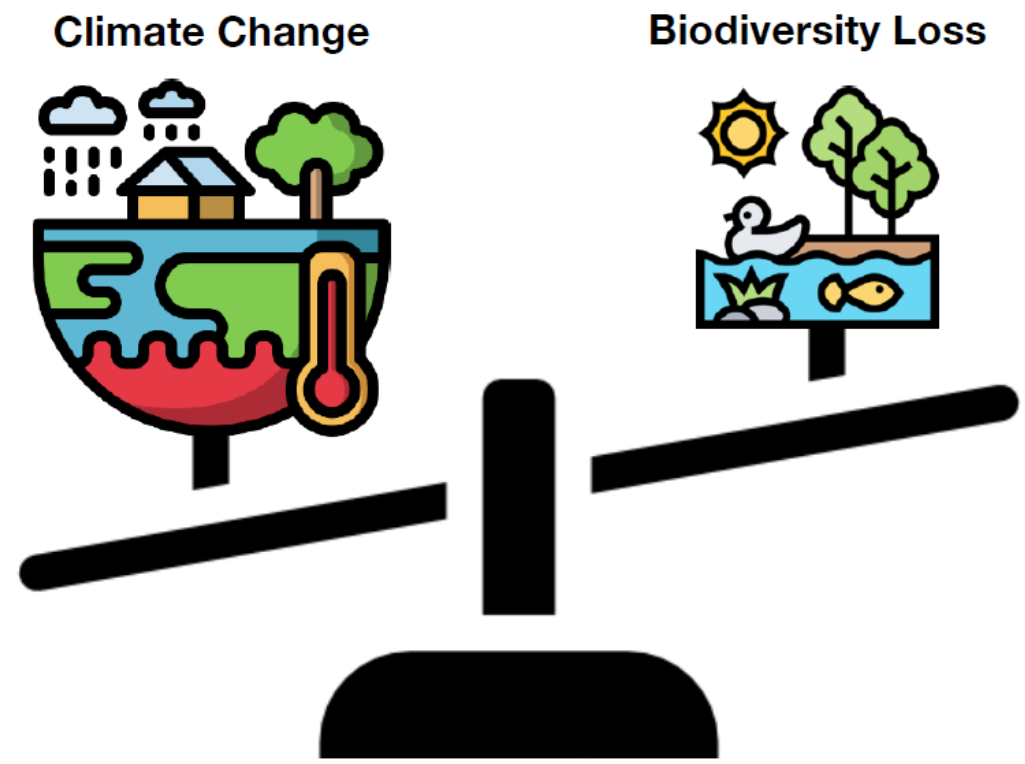
Floodplains

Forests

Urban Forests



# Win-win?

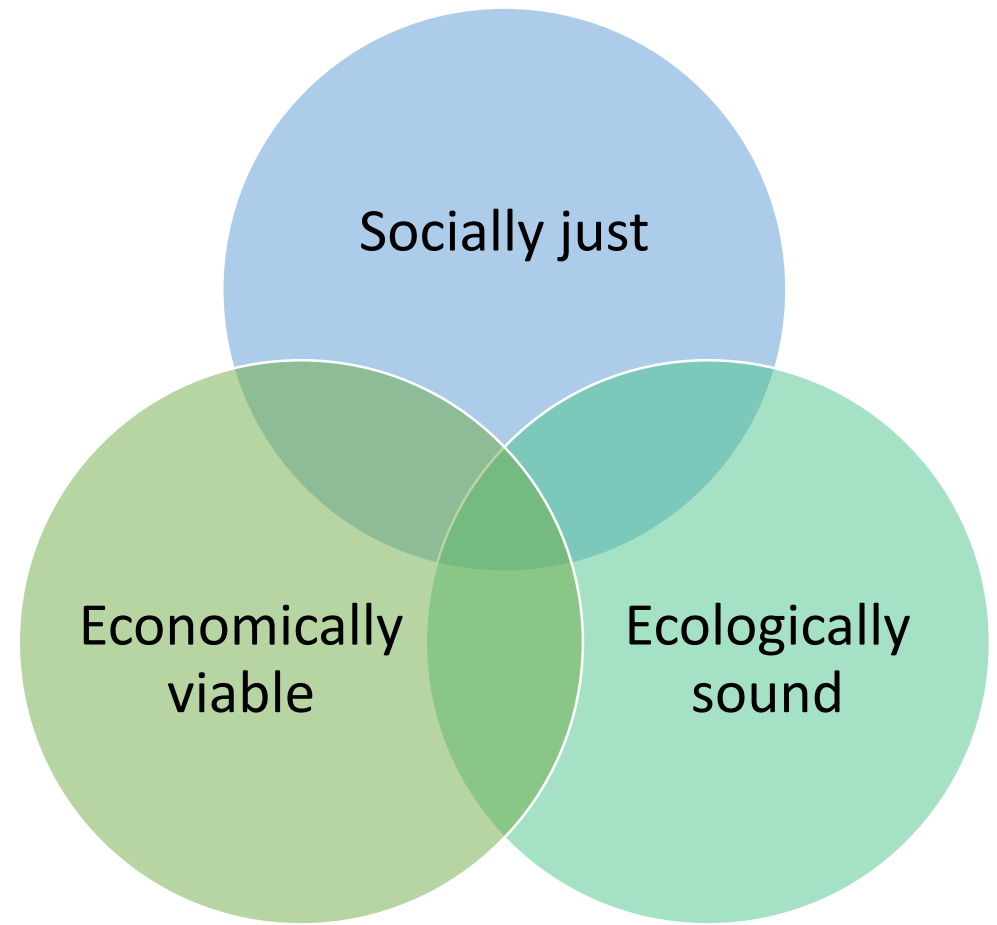






# Forestry

## Win-win?



FOREST: Reimagining relations with nature



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# Agriculture

e.g. Multi-species swards

More species – more protein/minerals for grazers; more resilience to drought/flooding

Different rooting depths – better soil structure

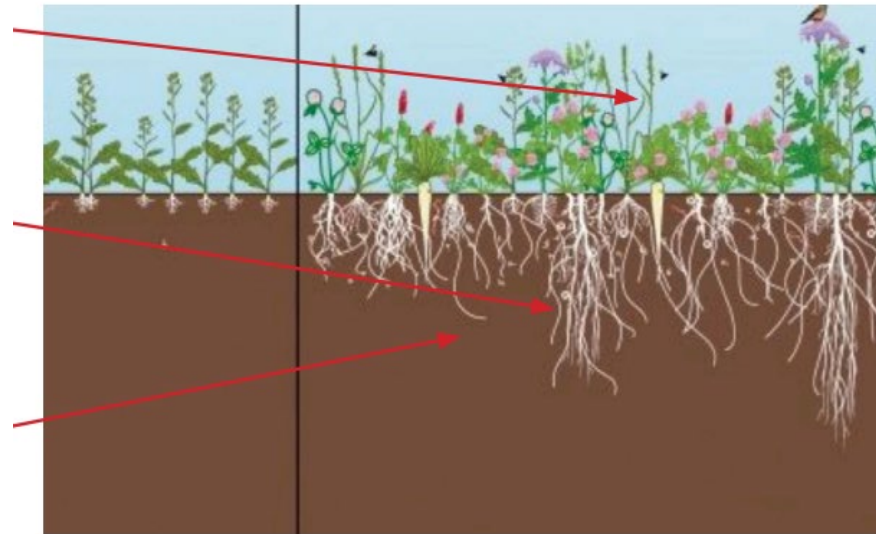
Fungal associations – better resource use

Legumes – N-fixing bacteria

Diversity of decomposers – more resources and biocontrol

More species – sequester and store more carbon

## Win-win?



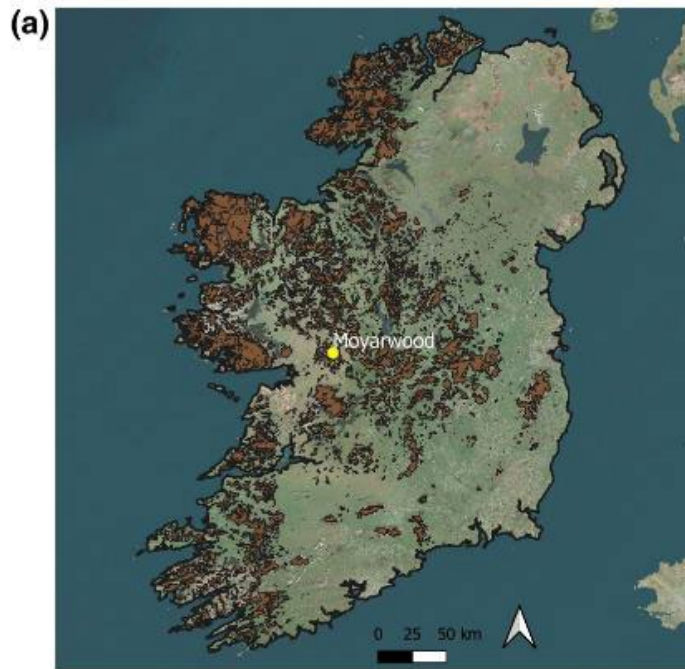
<https://businesswales.gov.wales/farmingconnect/>







# Restoration of peatlands



## Win-win?

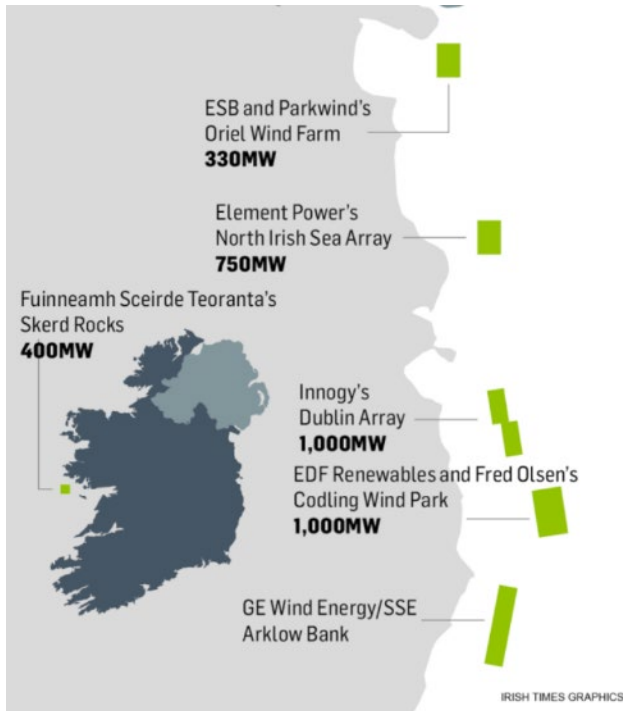
Rewetting – “modelling projects that ... the site will have a warming effect on the climate until 2085 but will then have a strong cooling impact.”  
Wilson et al. 2022



# Offshore wind

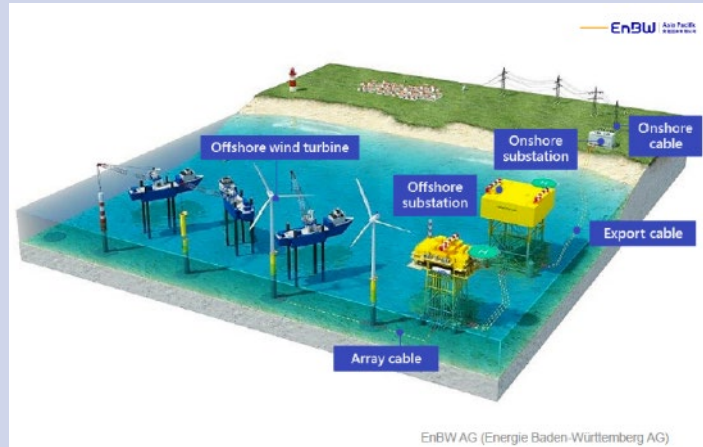
## Win-win?

Approved ~280 wind turbines =  
~**0.0095% of the Irish Sea**



### Negatives

- Destruction/alteration of seabed during construction
- Onshore infrastructure could disturb sensitive habitats
- Collision mortality for seabirds



### Potential positives

- Co-location with Marine Protected Areas



Photo credit: Royal Belgian Institute of Natural Sciences, Alain Norro.





# Onshore wind

## Win-win?

### Negatives

- Inappropriate siting can damage integrity of ecosystems
- Habitat loss and fragmentation
- Displacement of species
- Impact injuries/mortalities
- Blades not recyclable



### Potential positives

- Restoration and rehabilitation of surrounding areas
- Co-location with areas already intensively used





# Solar

## Negatives

- Habitat loss, degradation and fragmentation
- Impacts on microclimates
- Water pollution
- Herbicides to control plant growth



## Potential positives

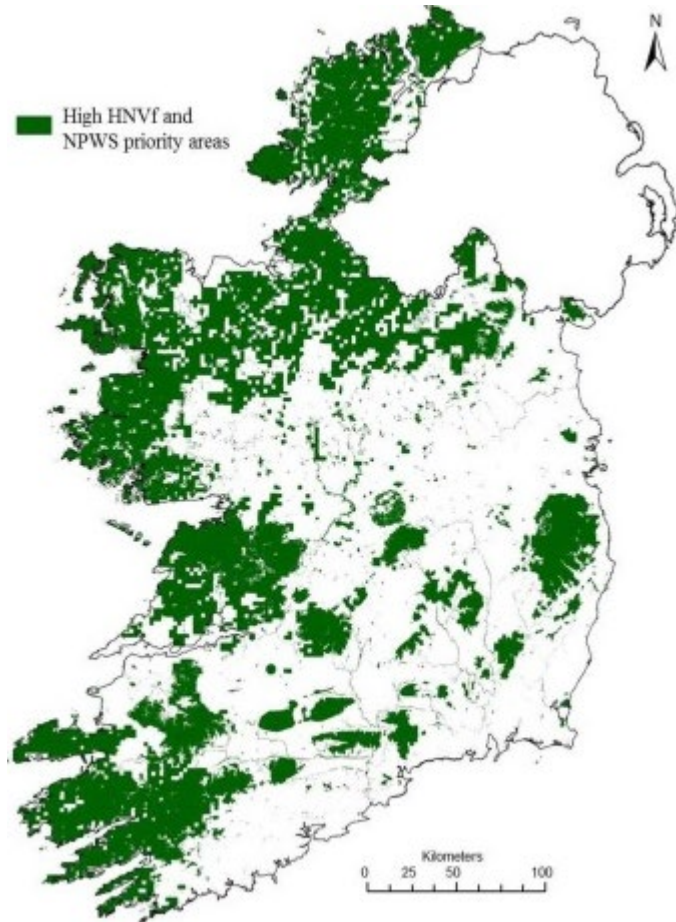
- Create functional space under panels
- Deploy extensively in built environment







# Bioenergy



## Negatives

- Land-use intensive – similar impacts on biodiversity as conventional arable and silage (simple landscapes)
- Incompatible with livestock farming, and so likely threat to high-nature value farmland (complex landscapes)

## Potential positives

- May generate further pressure to develop innovative methods for sustainable agriculture
- Possible to incorporate biodiversity landscape features into bioenergy land uses

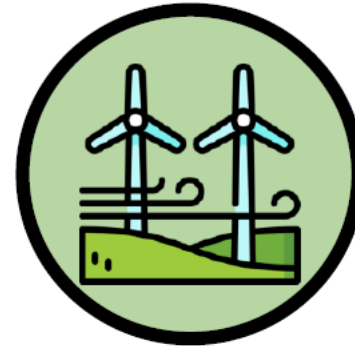
**International evidence suggests that bioenergy has potential to be poorly implemented**

Win-win?

# Synergies for climate and biodiversity



Increase offshore wind capacity



Restore and rehabilitate areas surrounding turbines



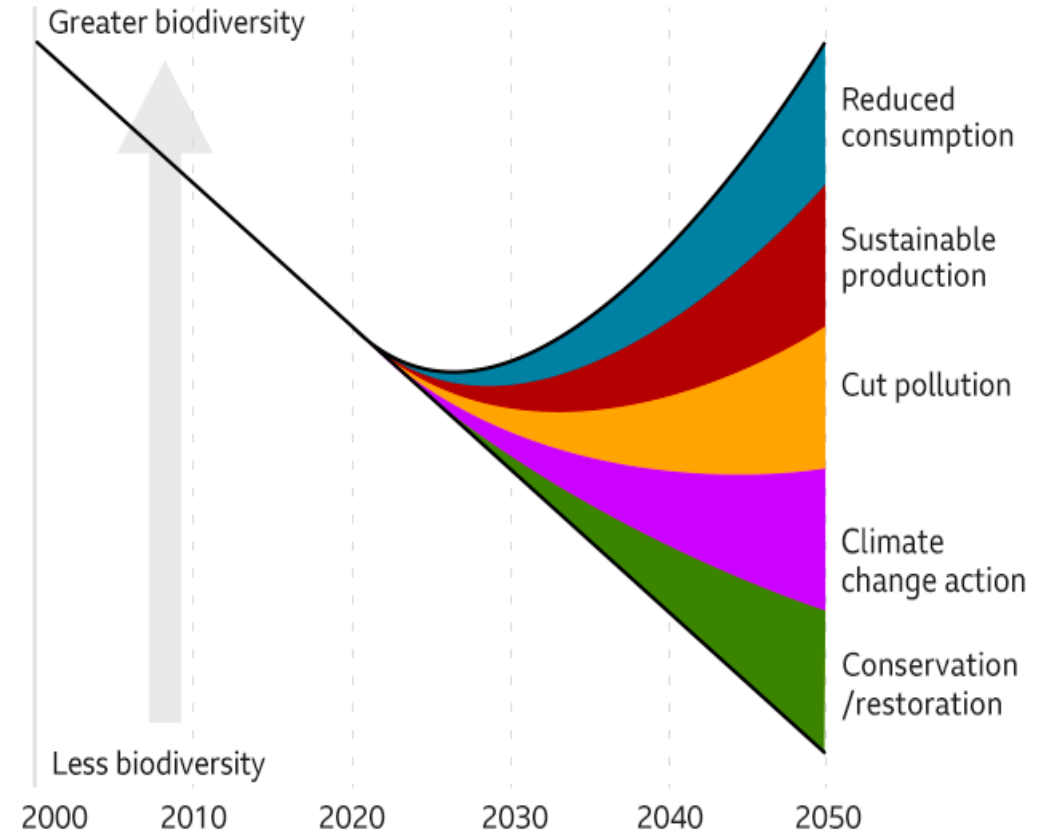
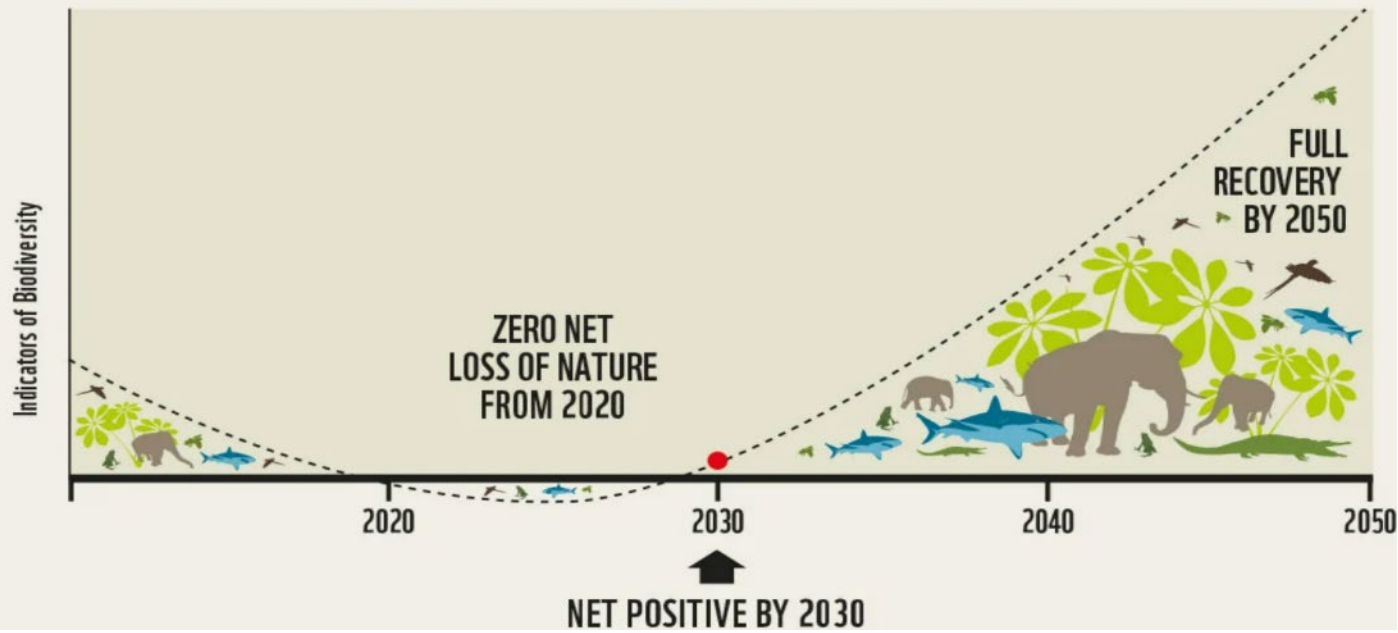
Integrate solar into the built environment



Encourage the use of biodiversity landscape features



# Global Goal for Nature: Nature Positive by 2030



Source: UN/Convention on Biological Diversity

BBC

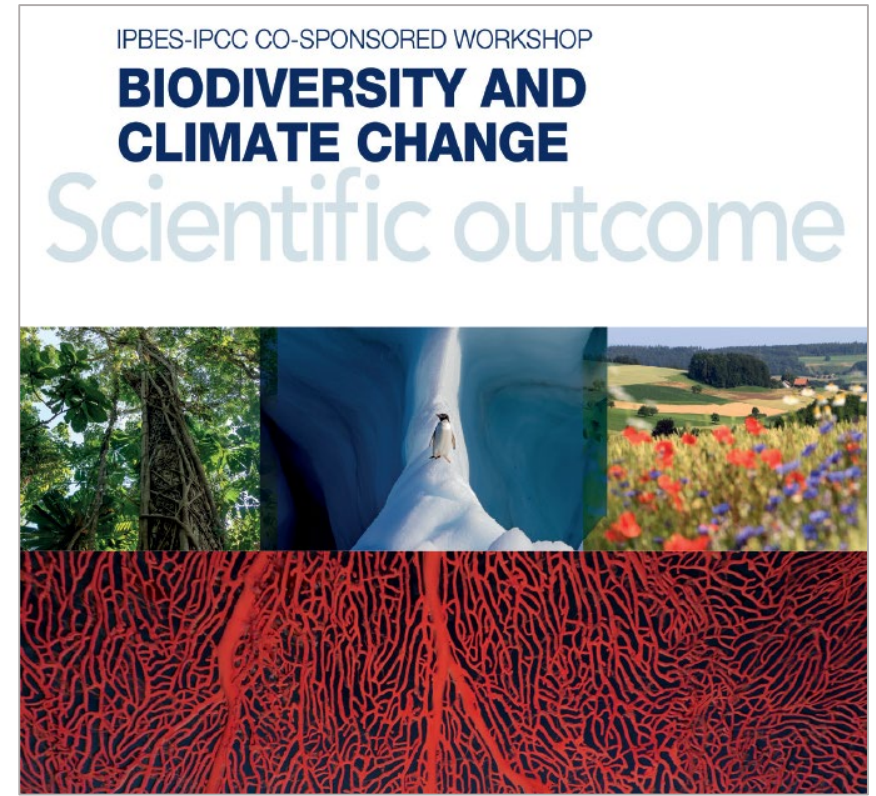
# Take homes

- Biodiversity loss and climate change interlinked in complex ways
- Already in crisis – urgent issues to tackle
- Potential win-wins but no one-size fits all answer...



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“A new conservation paradigm would address the simultaneous objectives of a **habitable climate, self-sustaining biodiversity, and a good quality of life for all**”

Pörtner et al. 2021