



An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreachta  
Department of Housing,  
Local Government and Heritage

# Biodiversity & Roads

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TII National Roads Conference Series, Archaeology and Environment  
19 February 2020

# National Parks and Wildlife Service



- Part of DHLGH – and the lead authority in relation to nature conservation
- Responsible for nature conservation policy nationally, for designating protected areas, for implementing legislation, for scientific research and a range of other functions
- NPWS also advises on the implications of proposed plans and projects for nature conservation





# Ecological Assessment Unit



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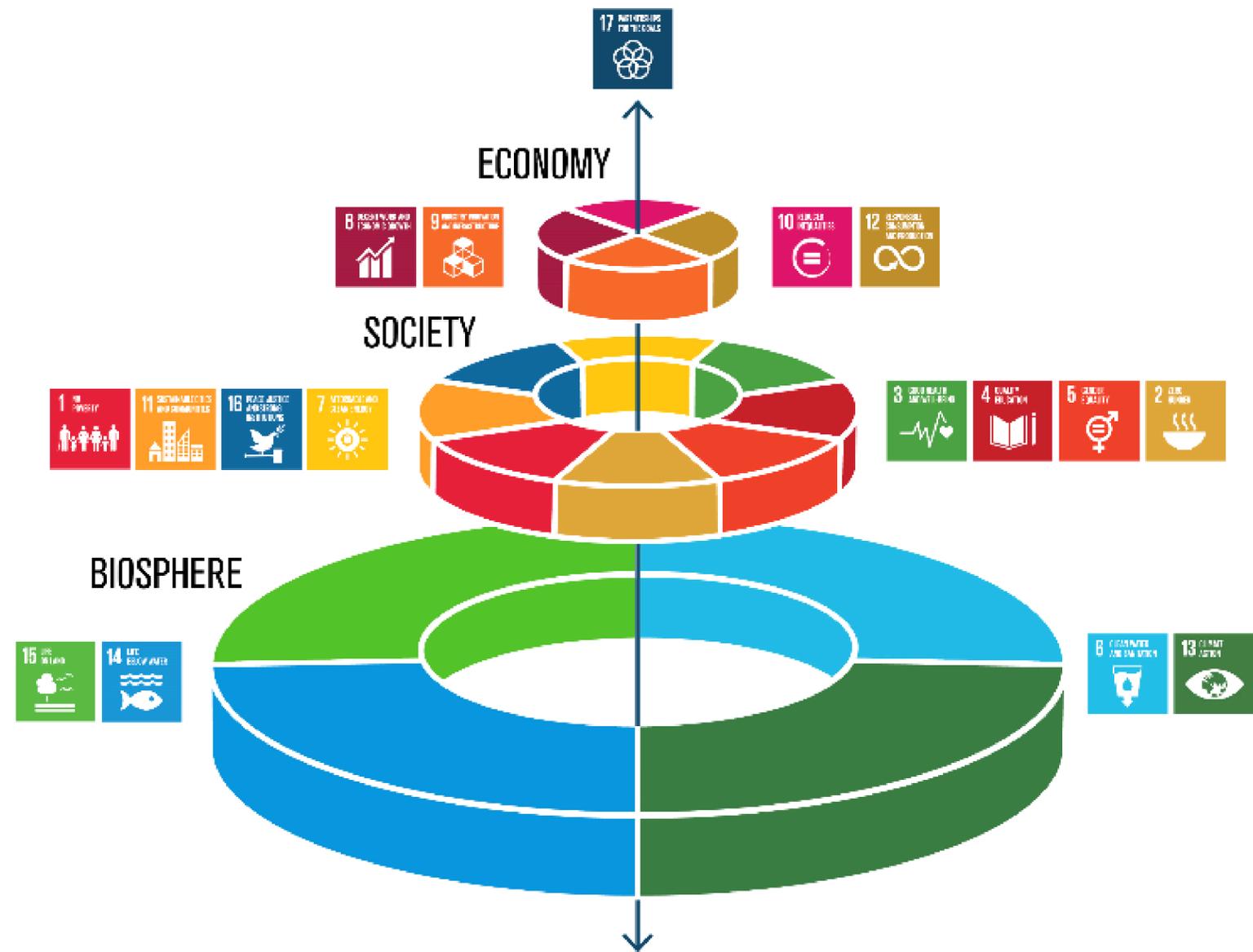
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# Biodiversity?

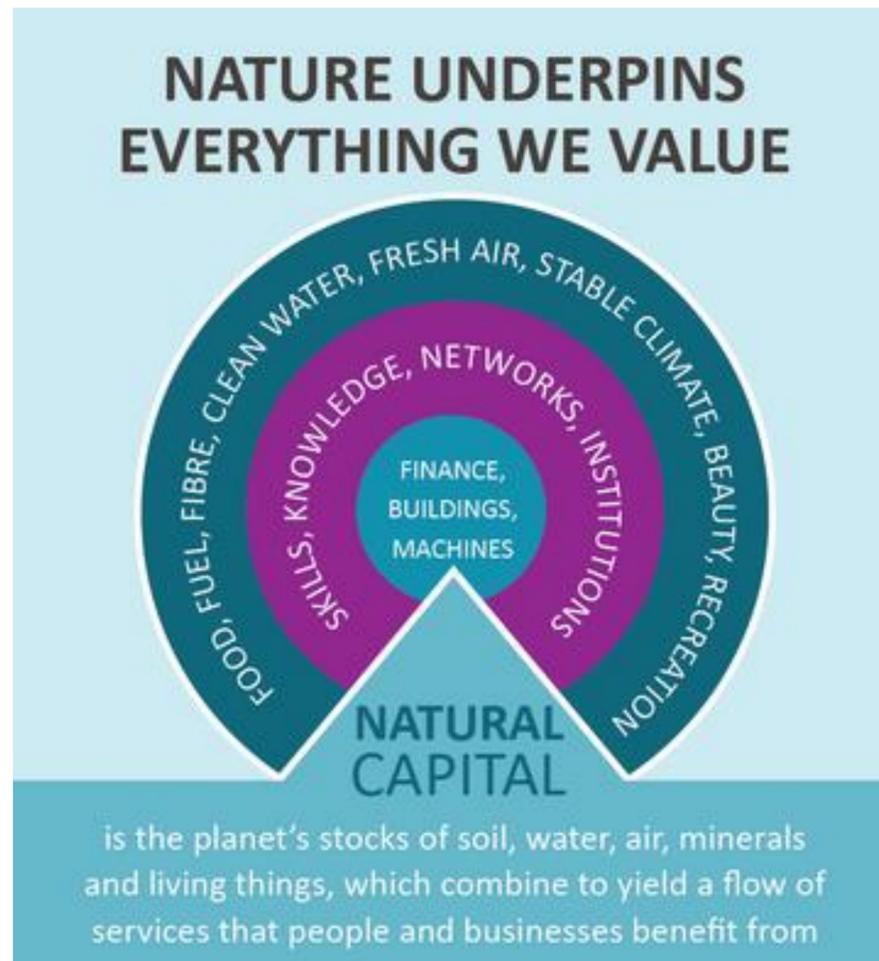




# Biodiversity underpins social and economic development



# Natural Capital & Ecosystem Services



<https://www.naturalcapitalireland.com/>

## MAKE MINE A PINT OF NATURE

Lesser-known ingredients in a pint include mountains, forests, bogs, rivers, oceans and all living things

Rain falls on **bogs** in the **mountains** which purify the **water** mechanically, chemically and biologically. The water flows through the **rocks** deep underground - picking up a unique water chemistry - and into the **rivers**, where it is extracted and processed to make beer.

**Biodiversity** is nature's Research & Development department, and it's been working hard to diversify life at ecosystem, species and genetic levels for 3.6 billion years. This process gives **hops** the **genetic traits** that beer makers exploit when cross-breeding new varieties to taste 'just right'. Biodiversity also makes the **species diversity** of 1500 types of **yeast** different from each other, both taxonomically and in terms of flavour.

**Woodlands** and **wetlands** in the catchment regulate flooding and recycle the **nutrients** that fertilise **soils**. They also sequester carbon, as do the **oceans**, which helps to regulate the **climate**. These systems work together to provide the perfect conditions in which to grow the **barley** that goes into your pint.

Nature is valuable and many of us think it's priceless, but because it's free the economy treats it as worthless.  
**This has to change.**



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# Rapidly changing world

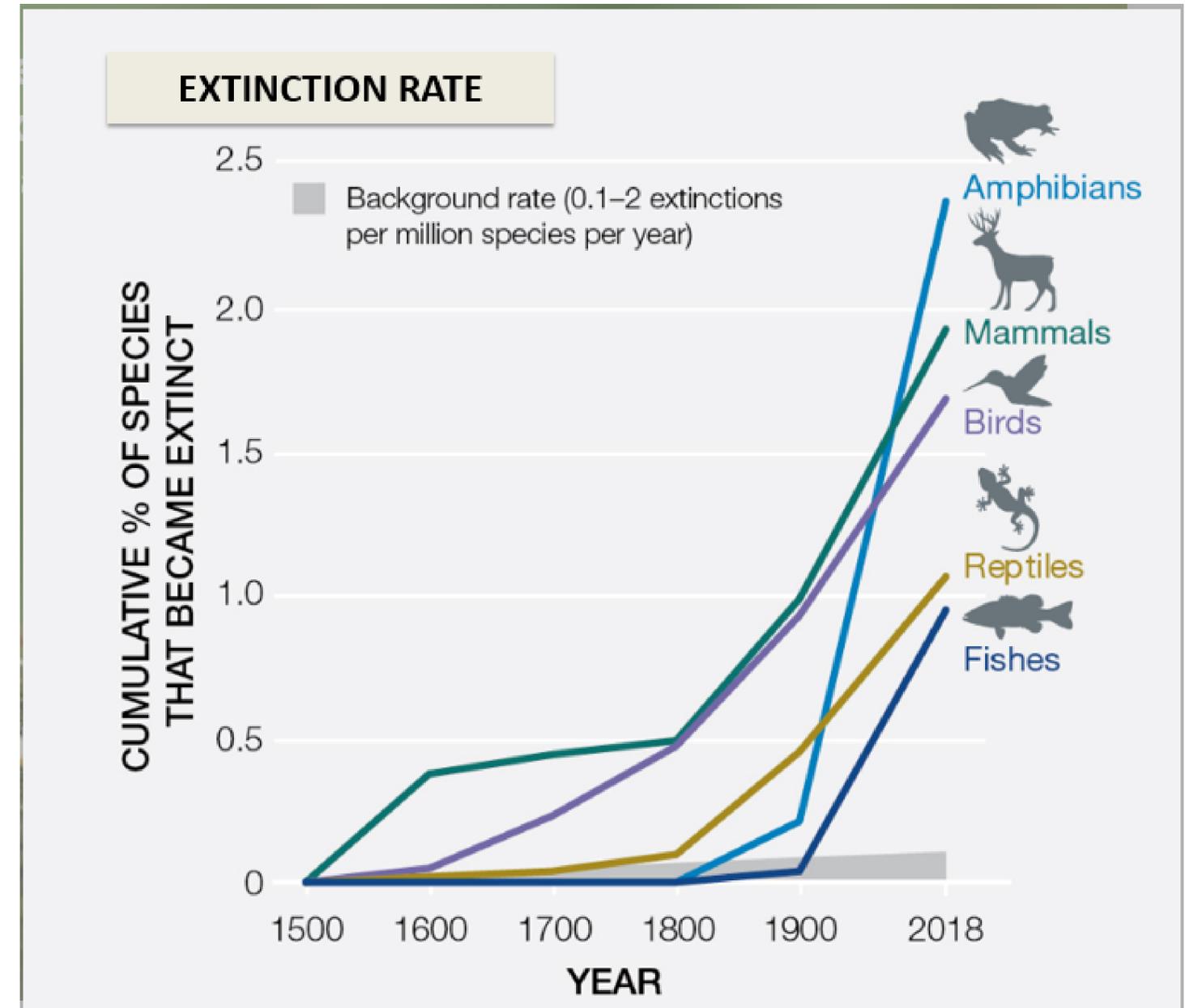
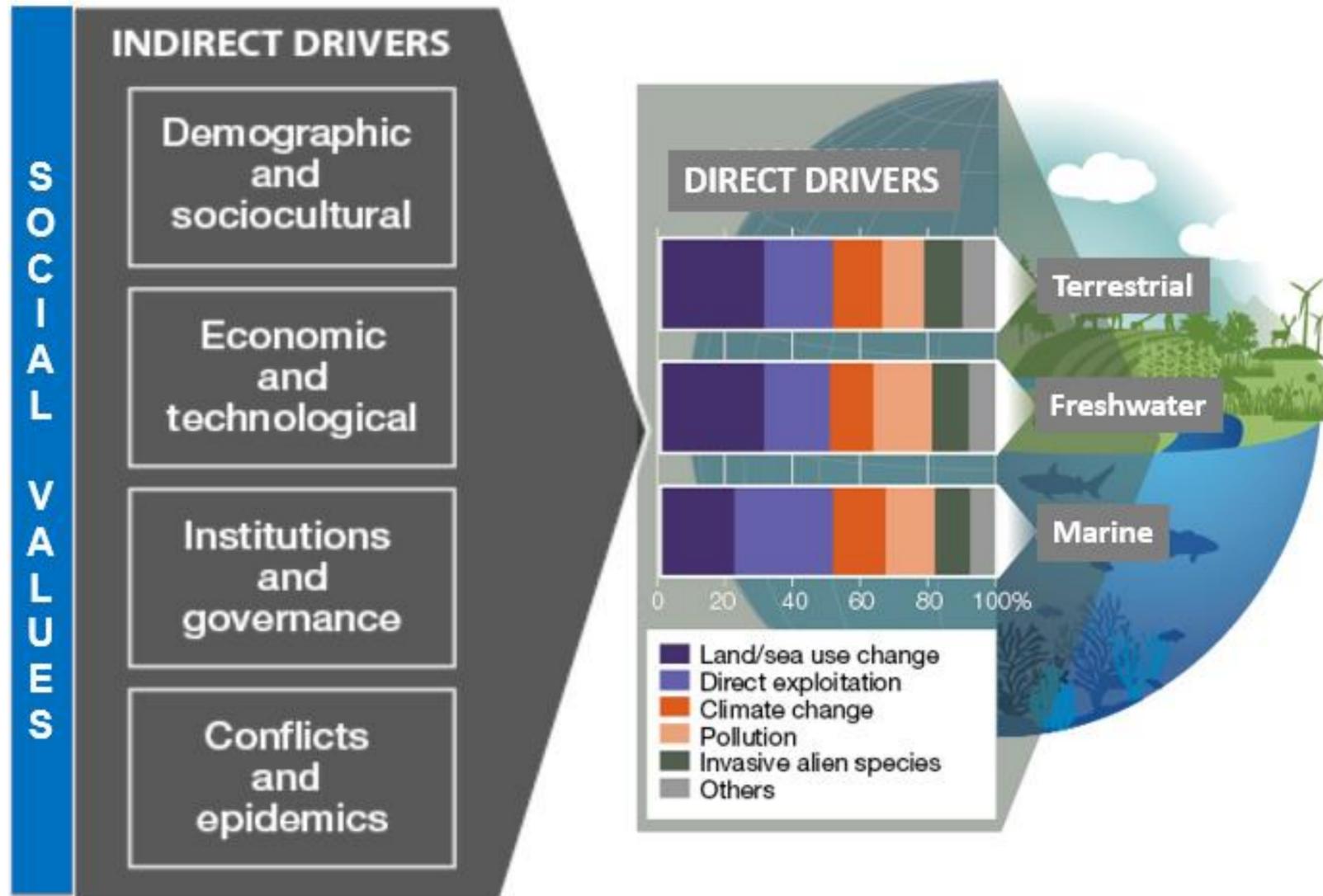




*“..all of life together consists of a membrane around earth so thin that it cannot be seen edgewise from a satellite yet so prodigiously diverse that only a tiny fraction of species have been discovered and named”*

*E.O. Wilson*

# We're losing biodiversity fast





# Key Drivers

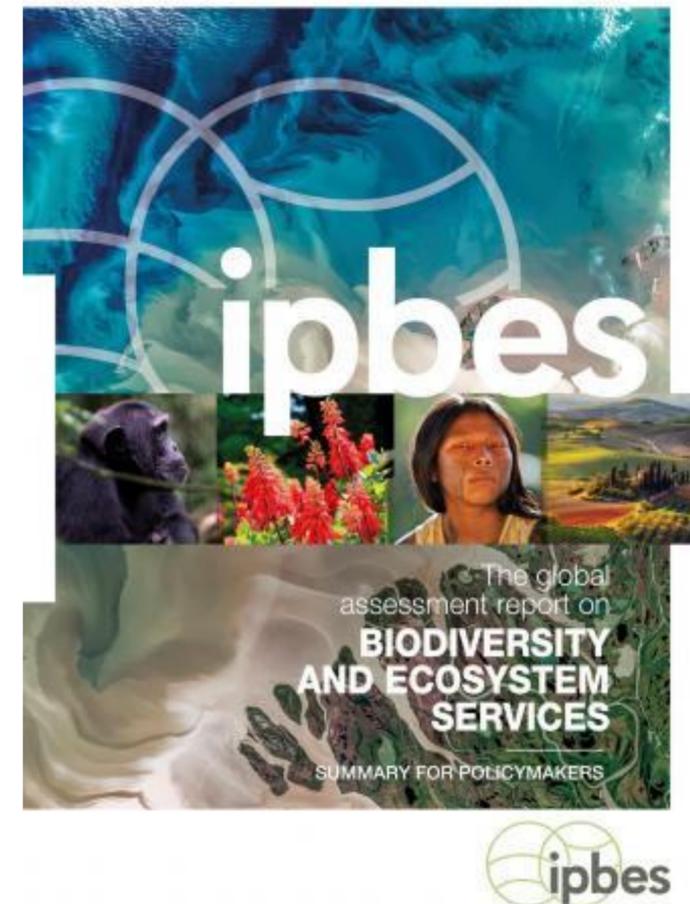
Habitat Loss & Degradation

Invasive Species

Overexploitation

Pollution

Climate Change





BE SURE TO WASH YOUR HANDS AND ALL WILL BE WELL.

COVID 19

RECESSION

CLIMATE CHANGE

BIODIVERSITY COLLAPSE

# The EU Biodiversity Strategy



Protect Nature



Enable Transformative Change



Restore Nature



EU For An Ambitious Global Agenda



# Nature Directives

Cornerstone of European and national biodiversity policy

Habitats Directive – Special Areas of Conservation (SACs)

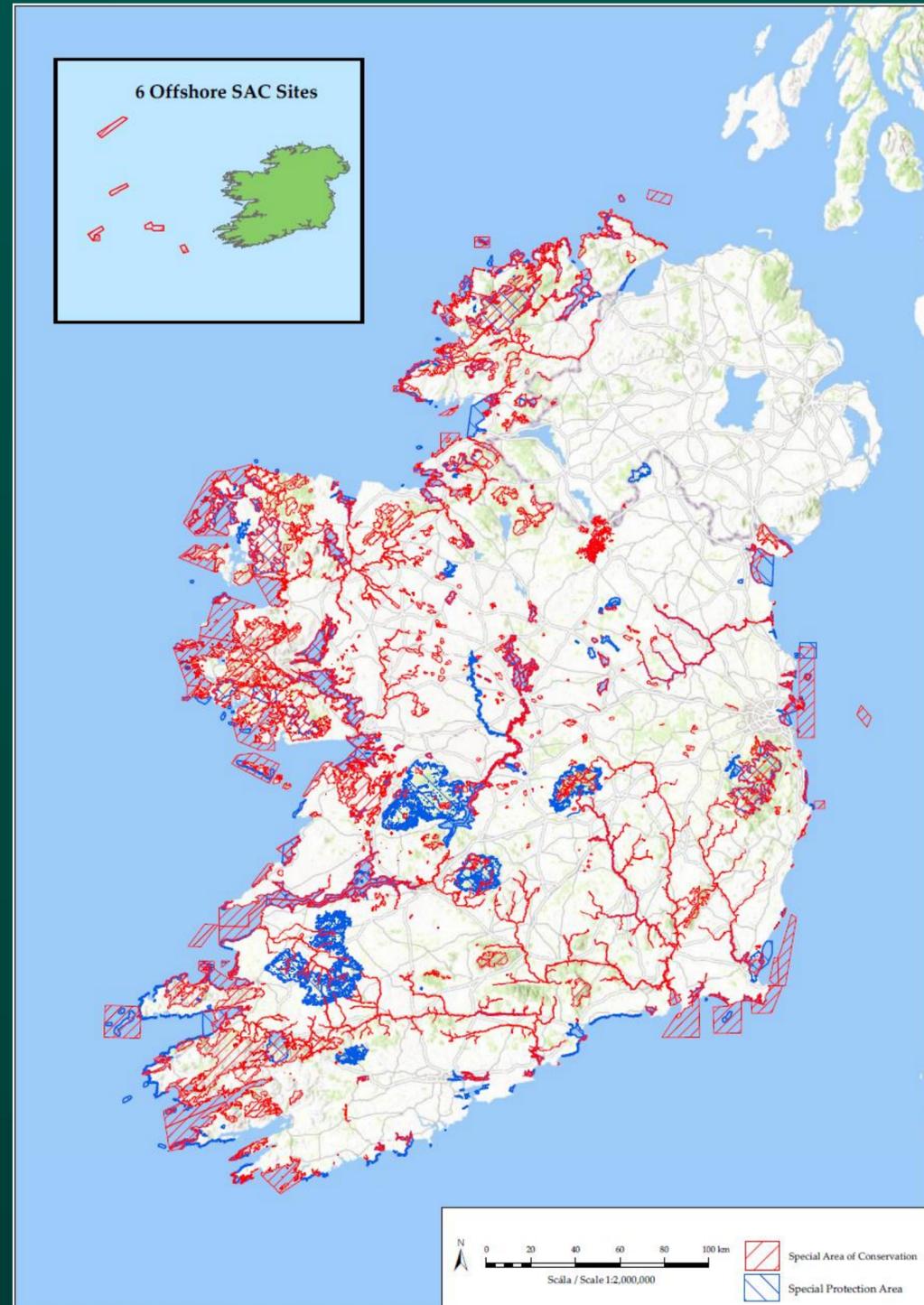
Birds Directive – Special Protection Areas (SPAs)

Natura 2000: A network of sites encompassing rare habitat types and core breeding, resting and feeding areas for rare and threatened species across Europe

Across all 27 EU countries, both on land and at sea

Covers more than 18 % of the EU's land area

# Natura 2000 network in Ireland



- 439 SACs
- 154 SPAs
- 906,000 ha terrestrial area (13%)
- 1,042,000 ha marine area







# Wildlife Legislation

- Wildlife Act 1976
- Wildlife (Amendment) Act, 2000
- Birds Directive (2009/147/EC)
- Habitats Directive (92/43/EEC)
- European Communities (Birds and Natural Habitats) Regulations 2011

# Supporting legislation

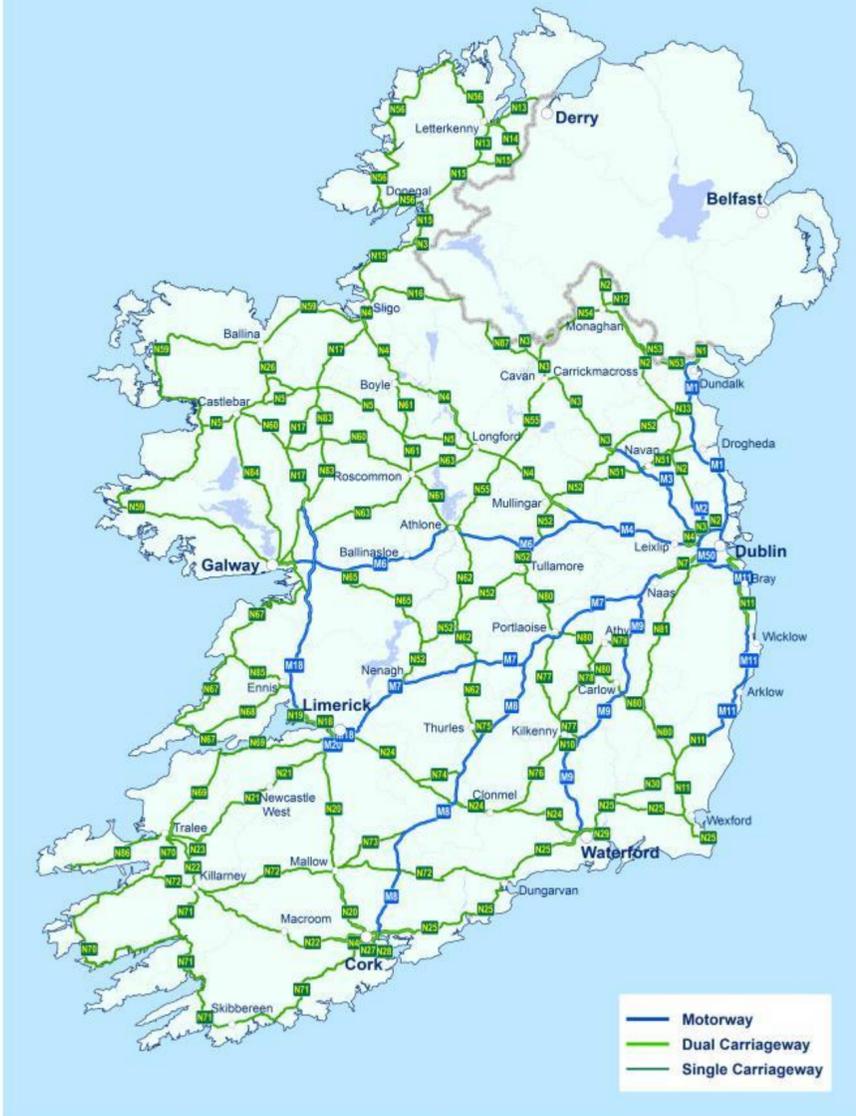


- EIA Directive
- SEA Directive
- Water Framework Directive
- Floods Directive
- Planning and Development Act, 2000









# Impacts of roads on biodiversity



1. Habitat Loss
2. Habitat Alteration
3. Spread of invasive species
4. Landscape fragmentation
5. Mortality: roadkill
6. Pollution: water, air, light, noise
7. Secondary impacts



# Working together to protect and restore biodiversity

- TII Guidance - excellent and a great resource
- Engagement has been very positive and welcome
- Landscaping design
- Barn owl research – evidence-based mitigation



# Opportunities and challenges

## Route selection

- Route selection: avoidance
- Environmental Sensitivity Mapping
- Connectivity is important and needs consideration
- Landscape needs to be permeable for wildlife



# Opportunities and challenges

## Design stage

- Making roads safer for animals
- Underpasses, fencing, overpasses – siting essential
- Protected species inc. Annex IV species (e.g. bats, otter)
- Water management: SuDS;
- Integrating fish and wildlife concerns (IFI & NPWS)
- Lighting design



# Opportunities & challenges

## Construction and operational stage

- Large complex projects create challenges
- Communication: Council, contractor, ecologist (ECoW)
- Vegetation removal
- Maintenance and monitoring



# Conclusions

- Nature underpins economy and society
- Nature's health is our health & wealth
- Working together is the key
- Providing 21<sup>st</sup> century infrastructure and
- Protecting and restoring biodiversity



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# Thank you

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