Farmland Biodiversity:
Ecological policy and practice

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Agriculture and Food Development Authority

Teagasc Biodiversity Research

- Environment, Soils and Land-Use Department

- Agri-Ecology Sub-programme

To maintain and enhance biodiversity in agricultural systems

- Two permanent researchers on biodiversity

- Collaborate with multiple partners

(Research, knowledge transfer, policy and land-owners)

Biodiversity

Decline in biodiversity

Globally

One million species face extinction as a result of human activities

Nationally

Climate and Biodiversity Emergency

Drivers of biodiversity decline

- Land-use change has the largest negative impact on ecosystems
- Exploitation of species
- Climate change
- Pollution
- Alien invasive species

Ecological policy

Ramsar Convention

Bern Convention

Habitats Directive

National Biodiversity Plan

Common Agricultural Policy

- Greening
- Ecological Focus Areas (5%)

Evaluation of policy

Greening/ EFAs

- Greening has led to very limited change in farming practices

- Member States …limit the burden on farmers and themselves… rather than to maximise the environmental benefit

Evaluation of CAP

- Most CAP funding has little positive impact on biodiversity

- EU Framework for wild pollinators had little effect in halting their decline

New policy/ strategy

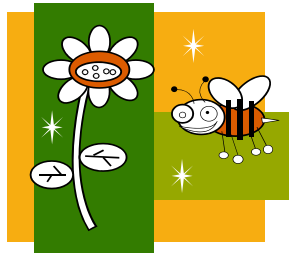
- EU Green Deal

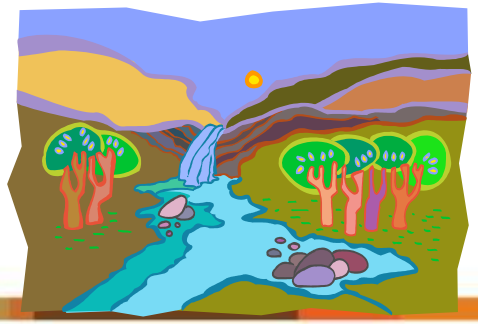
  EU Biodiversity Strategy 2030

  Farm to Fork Strategy

Biodiversity shaped by, and dependent on, agriculture

- Decline in pollinators is reversed.
- Chemical pesticides is reduced by 50%
- 10% of agricultural area is landscape features.





Green Deal– new CAP

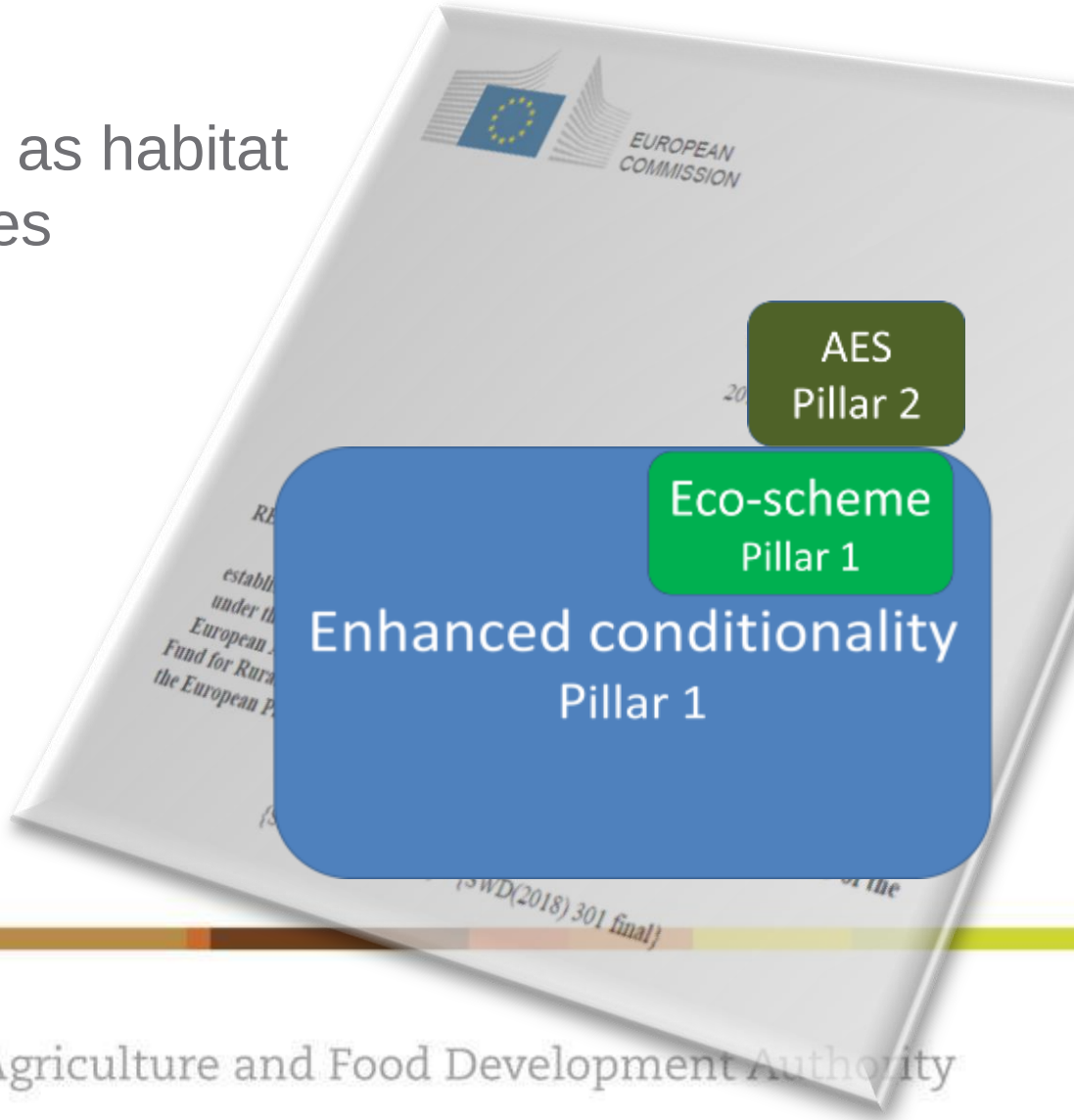
Common Agricultural Policy

Habitat quantity – % of farm as habitat
Habitat quality - Opportunities

AES
Pillar 2

Greening
Pillar 1

Cross Compliance
Pillar 1



Habitat quantity

Challenges for policy-makers

Mapping habitats

Habitat area scenarios

Eligibility of habitats

Ensuring additionality

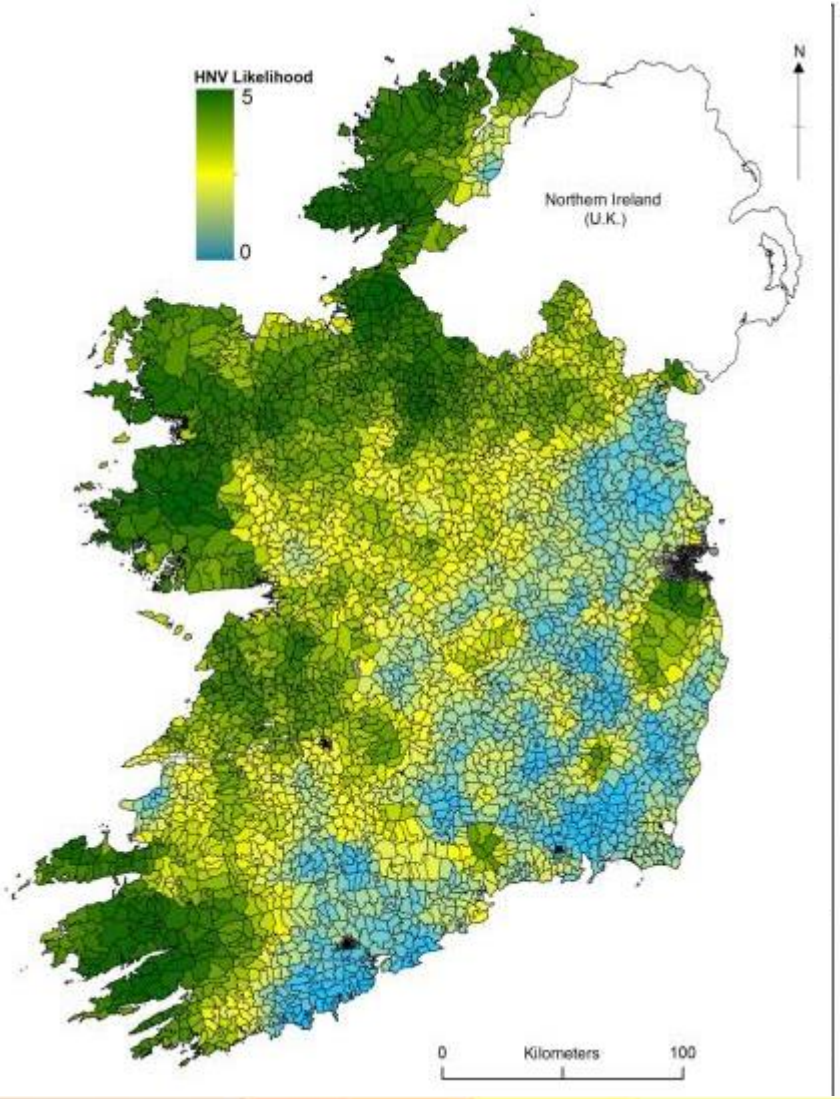
Mapping habitats

No national scale assessment/ inventory

Addressing the habitat mapping challenge

- National/ regional trends
  - IdealHNV (farmland)
    - Utilising multiple indicators
    - Capacity to track change
  - HNVFarmForBio (farmland + forestry)

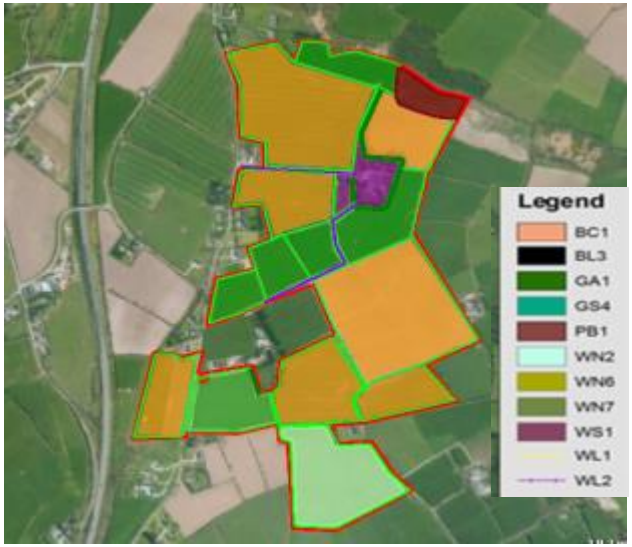
HNV FARMLAND & FORESTRY
FARMFORBIO



Mapping habitats

"*Baseline biodiversity survey on every farm*"

- Farm mapping - ecologists
- Remote mapping to ID habitats
  - Orthophotography
    - EU Smart Agri Hubs + National Farm Survey
  - Machine learning to ID habitats



The value of mapping habitats

"*Baseline biodiversity survey on every farm*"

- Informing and shaping policy

Biodiversity in sustainability benchmarks

- How to include habitats in sustainability assessment?
- How to credit farmers for habitats on their farm?

Habitat area on Irish farms

Current scenario?

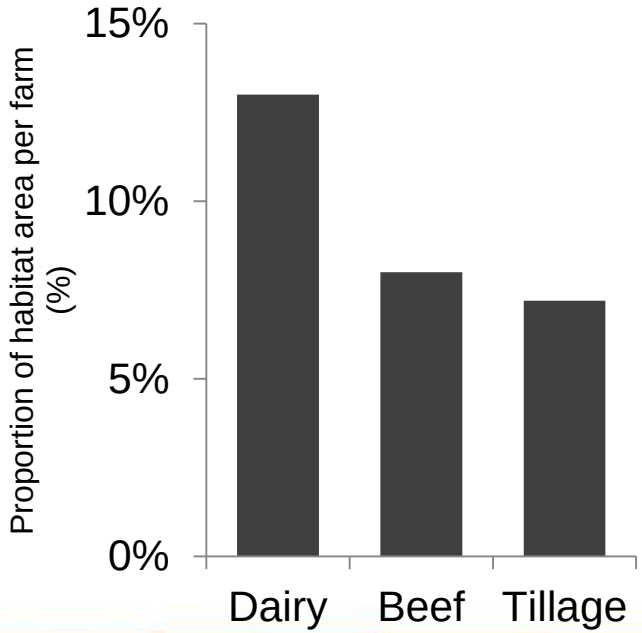
No national scale assessment/ inventory

- Farmland habitats12-14%

  Sullivan et al; Sheridan et al

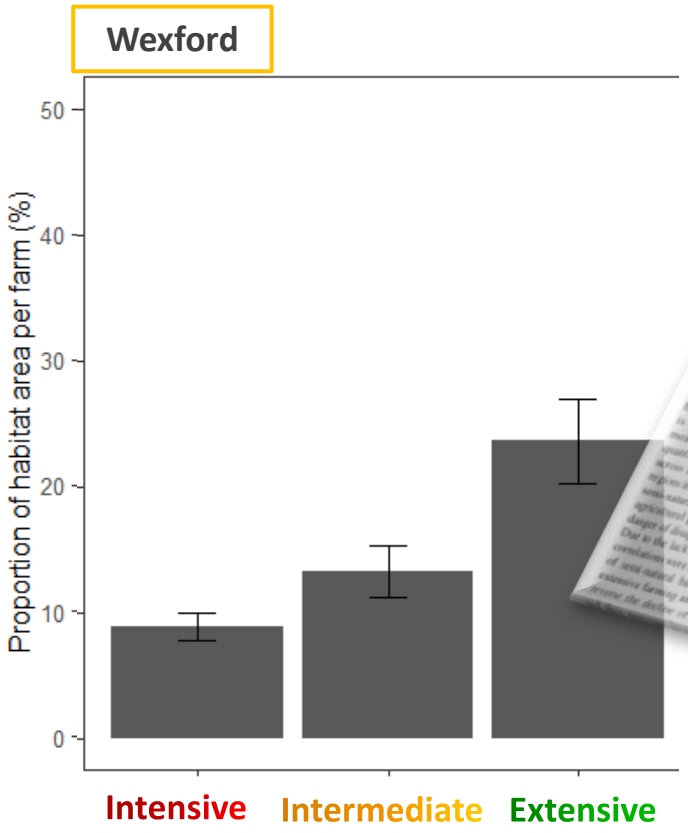
- Farmland habitats (intensive) 6-10%

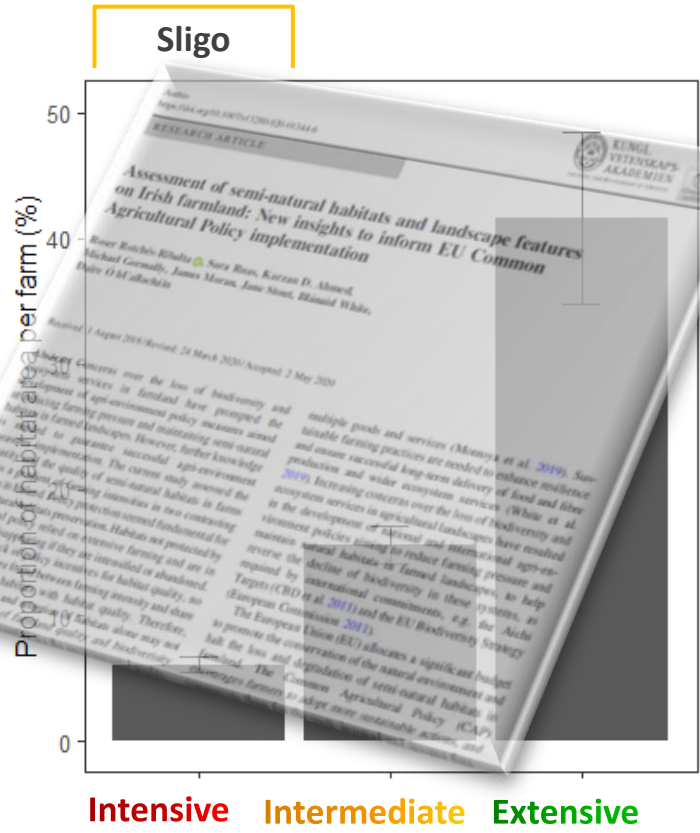
  Larkin et al. 2019



Habitat area on Irish farms

Habitat type	
Semi-natural habitats	Hedgerows
	Treelines
	Drainage ditches
	Semi-natural grasslands
	Wet grasslands
	Stonewalls
	Field copses
	Earth banks
	Grassy margins
	Dense bracken
	Heath
	Peatland
	Woodland
	Scrubland
	Ponds
	Streams





- Differences in the **% of semi-natural habitats** between
  - Farming intensity
  - Region

Habitat area: threshold scenarios

Number of farms		
Intensive (n=19)	**Intermediate** (n=17)	**Extensive** (n=18)

- **Low area**- limit the burden on farmers and policy-makers?
- **10% High diversity** landscape features
- **Reward farms** according to the amount of semi-natural habitats?
  - Baseline conditionality
  - Ecoscheme

Eligibility - High diversity landscape features?

	Habitat type
Food producing	Arable crop
	Improved grassland
	Amenity grassland
	Semi-improved grassland
	Bird cover
	Conifer plantation
Semi-natural habitats	Hedgerow
	Treeline
	Drainage ditch
	Semi-natural grassland
	Wet grassland
	Stonewall
	Field copse
	Earth bank
	Grassy margin
	Dense bracken
	Heath
	Peatland
	Woodland
	Scrubland
	Pond
	Stream
Other	

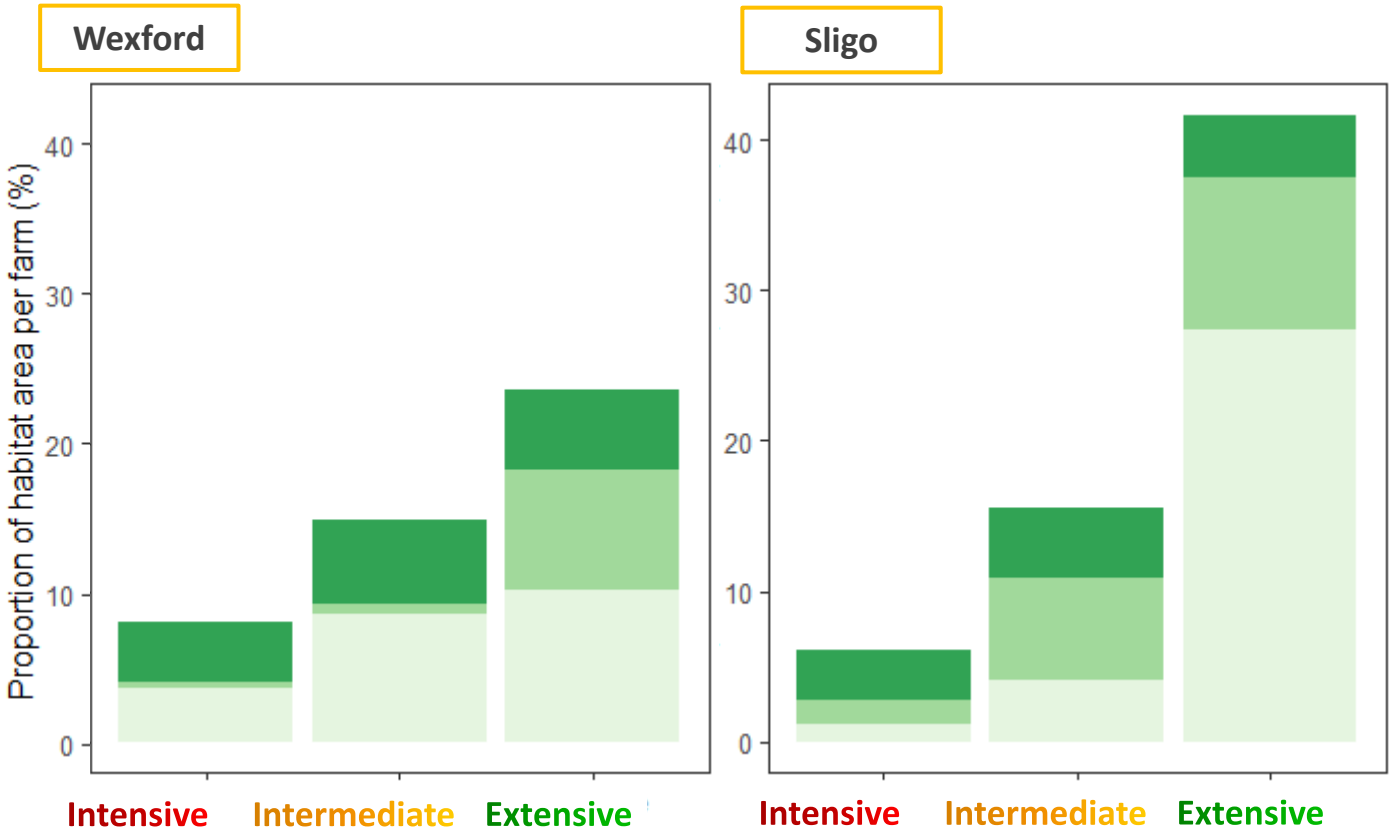
Valued habitats	Protected under the current policy in Ireland
Optional habitats	They are optional to be retained as part of AES or EFA (not mandatory)
Undervalued or ignored habitats	There are no incentives for farmers to retain them

Eligibility - High diversity landscape features?

Valued habitats

Optional habitats

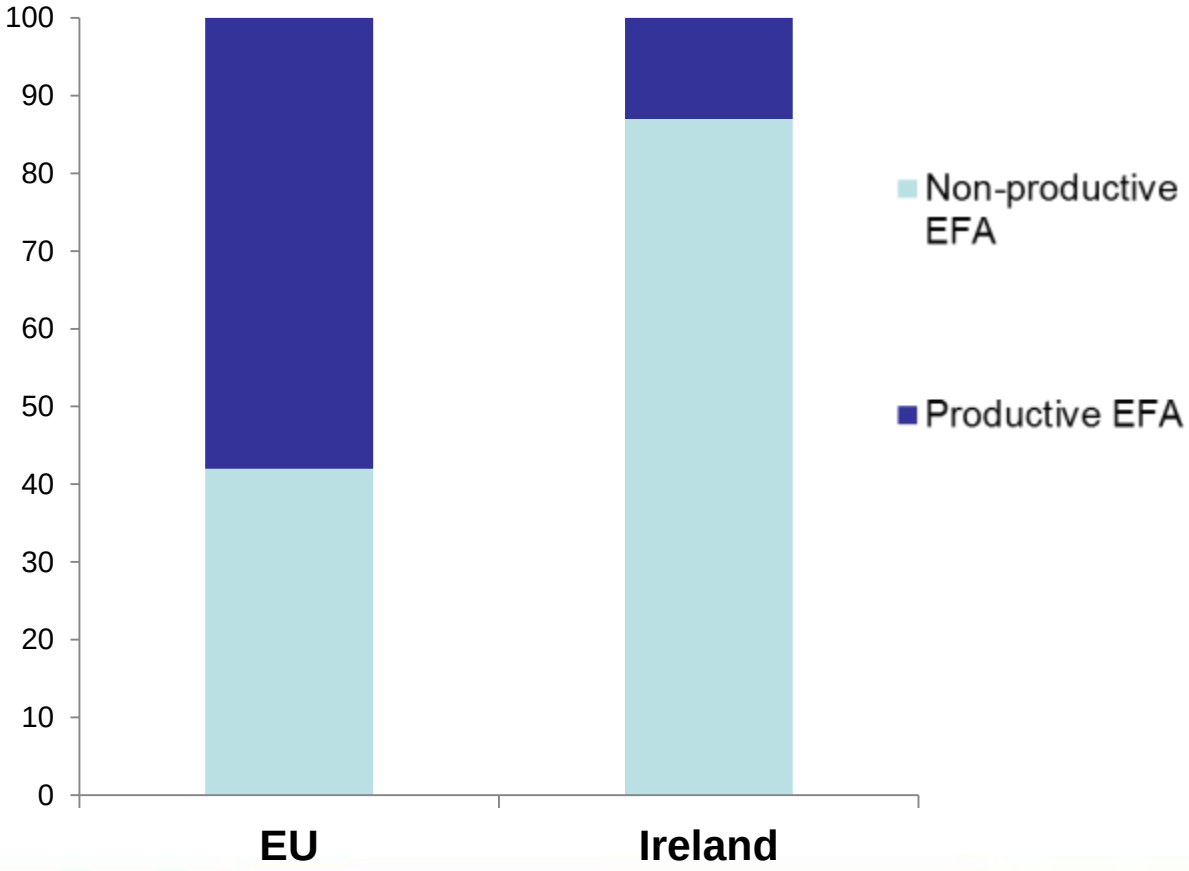
Undervalued or ignored habitats



- **Policy protection** is a driver of habitat quantity
- **Undervalued habitats ….** Future conservation is dependent on policy decisions

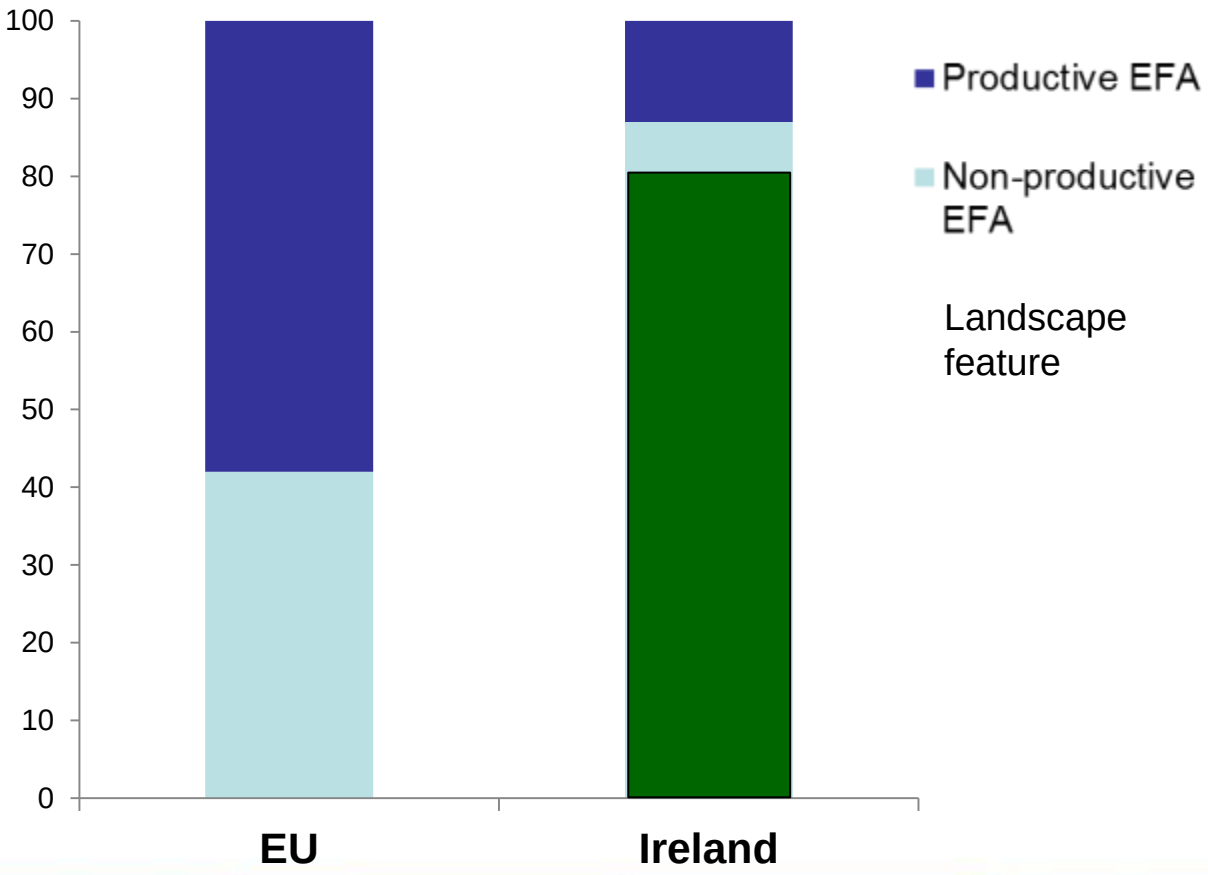
Eligibility

Ecological Focus Areas



Eligibility: Additionality

Ecological Focus Areas



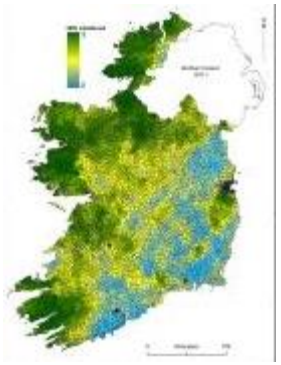
- Rewards high level of biodiversity on Irish arable farms
- Landscape features already protected under Cross Compliance

  Additionality?
- Habitat quality?

Summing up – Habitat quantity

Mapping

- Informs current situation and trends,
- Prepares us for future policy scenarios



	Number of farms		
	Intensive (n=19)	Intermediate (n=17)	Extensive (n=18)
3%	100%	100%	100%
7%	32%	76%	94%
10%	20%	59%	83%
20%	5%	29%	50%

Habitat area

- Incentive to retain habitats
- Reward those with more habitats?

Eligibility

- Policy-makers' decisions influence the landscape and what habitats are retained and protected

Additionality

- Value multiple habitats?
- Ecological value of habitats