



# Biodiversity Measurement on NFS Farms

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# Overview

- **Why Biodiversity?**
- **Why the NFS?**
- **Development Work to date.**
- **Plans for an Indicator in the NFS.**
- **Wider research and the importance of key data sources.**



# Why should we look at biodiversity?

- **Widely acknowledged biodiversity crisis.**
- **Key sustainability metric.**
- **Central objective of the CAP.**
- **Closely linked to climate challenge.**
- **High (policy) demand for this information.**



**There is currently no nationally representative, repeatable and repeated monitoring of farmland biodiversity in the wider countryside (outside of designated areas).**

# Benefits/Impact of a Biodiversity Indicator in the NFS

- Aim to include data on habitats for all NFS/SFS farms.
- Provide a data set of habitat quantity/quality.
- Facilitate combined analysis with other financial, environmental and social data collected for NFS.
- Assess the degree to which nationally available datasets can meet biodiversity monitoring objectives.
- Establish mechanism to track change over time.



# Contributing Activities 1:

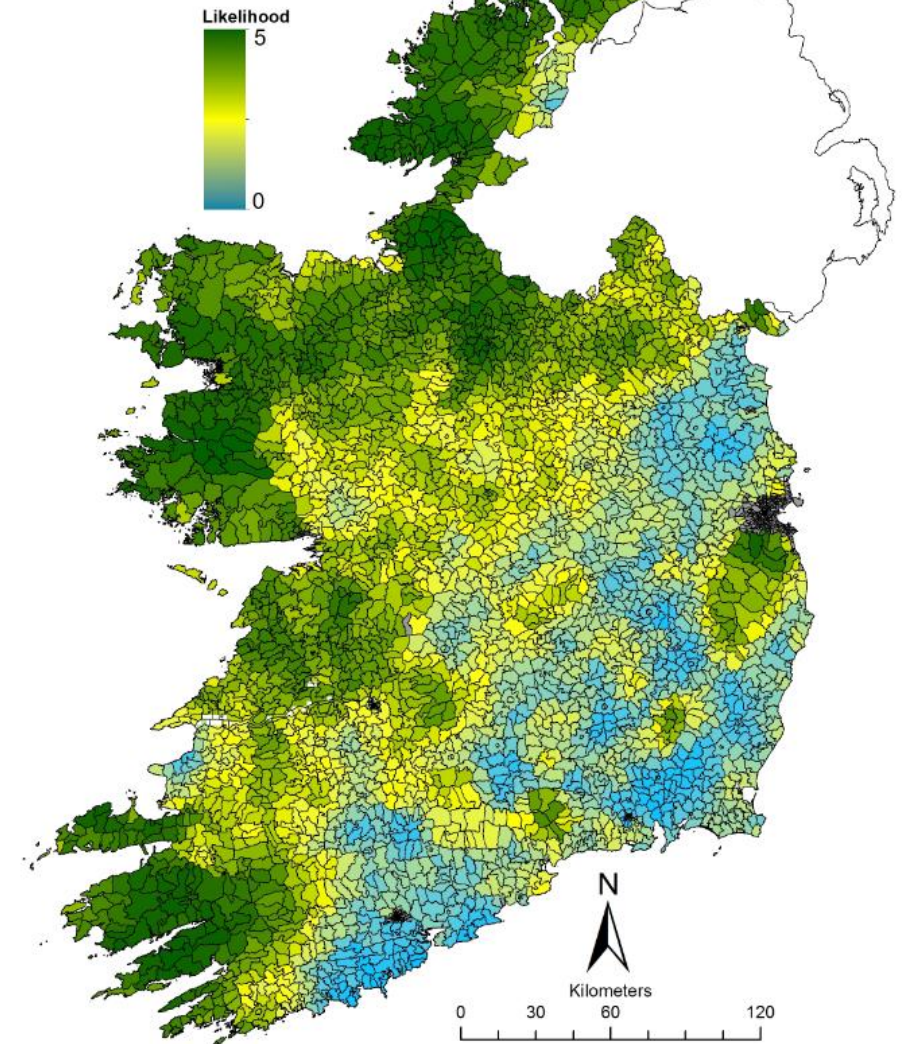


## Identifying the Distribution and Extent of Agricultural Land of High Nature Value

- Different challenges: different solutions
- Habitat restoration in Low Nature Value Areas.
- More focus on improving the quality of existing habitats in higher nature value regions.



High Nature Value Farmland Likelihood Map  
Republic of Ireland



*Matin et al. 2016, 2020*

## Contributing Activities 2:



Farm-scale habitat maps by GIS, farm-scale index, and automated reporting



Farm area dominated by habitats with conservation value = 1 (min)



Farm area dominated by habitats with conservation value = 10 (max)

## Habitat Index Score

- Habitat index for 300 NFS farms based on ecological value of habitat, and proportion of farm area.
- But assessment of aerial imagery by ecologists is prohibitively expensive for scaling up (beyond research projects)...

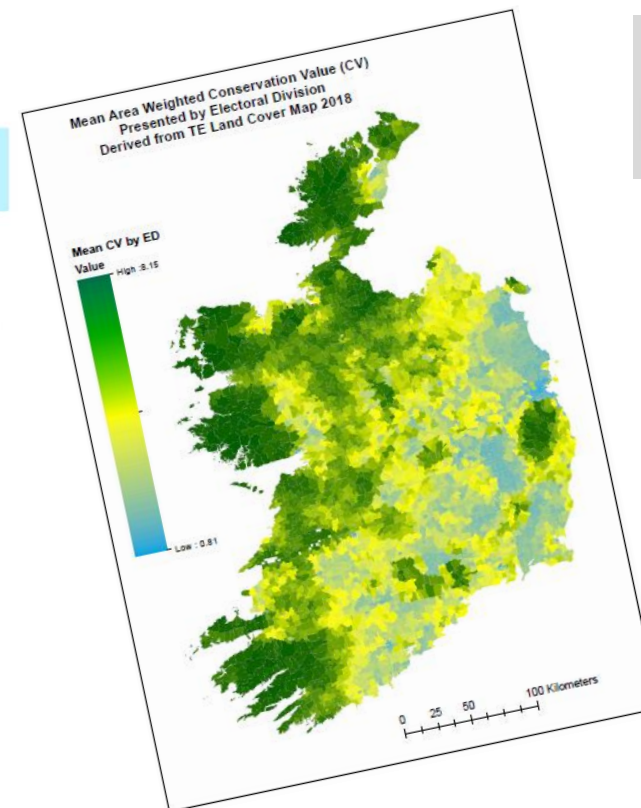
# National Land Cover Map (NLCM)

## Land Cover Level 2 Classes

- Buildings
- Ways
- Other Artificial Surfaces
- Exposed Rock and Sediments
- Coastal Sediments
- Mudflats
- Bare Soil and Disturbed Ground
- Cultivated Land
- Coniferous Forest
- Mixed Forest
- Transitional Forest
- Broadleaved Forest and Woodland
- Scrub
- Hedgerows
- Treelines
- Improved Grassland
- Amenity Grassland
- Dry Grassland
- Wet Grassland
- Salt Marsh
- Sand Dunes
- Swamp
- Fens
- Raised Bog
- Blanket Bog
- Cutover Bog
- Bare Peat
- Bracken
- Dry Heath
- Wet Heath
- Burnt Areas
- Rivers and Streams
- Lakes and Ponds
- Artificial Waterbodies
- Transitional Waterbodies
- Marine Water



- Produced by Tailte Éireann and the EPA.
- Released in March of 2023.
- Mapping reference Year of 2018.
- Aligned with Fossitt Habitat Classification.

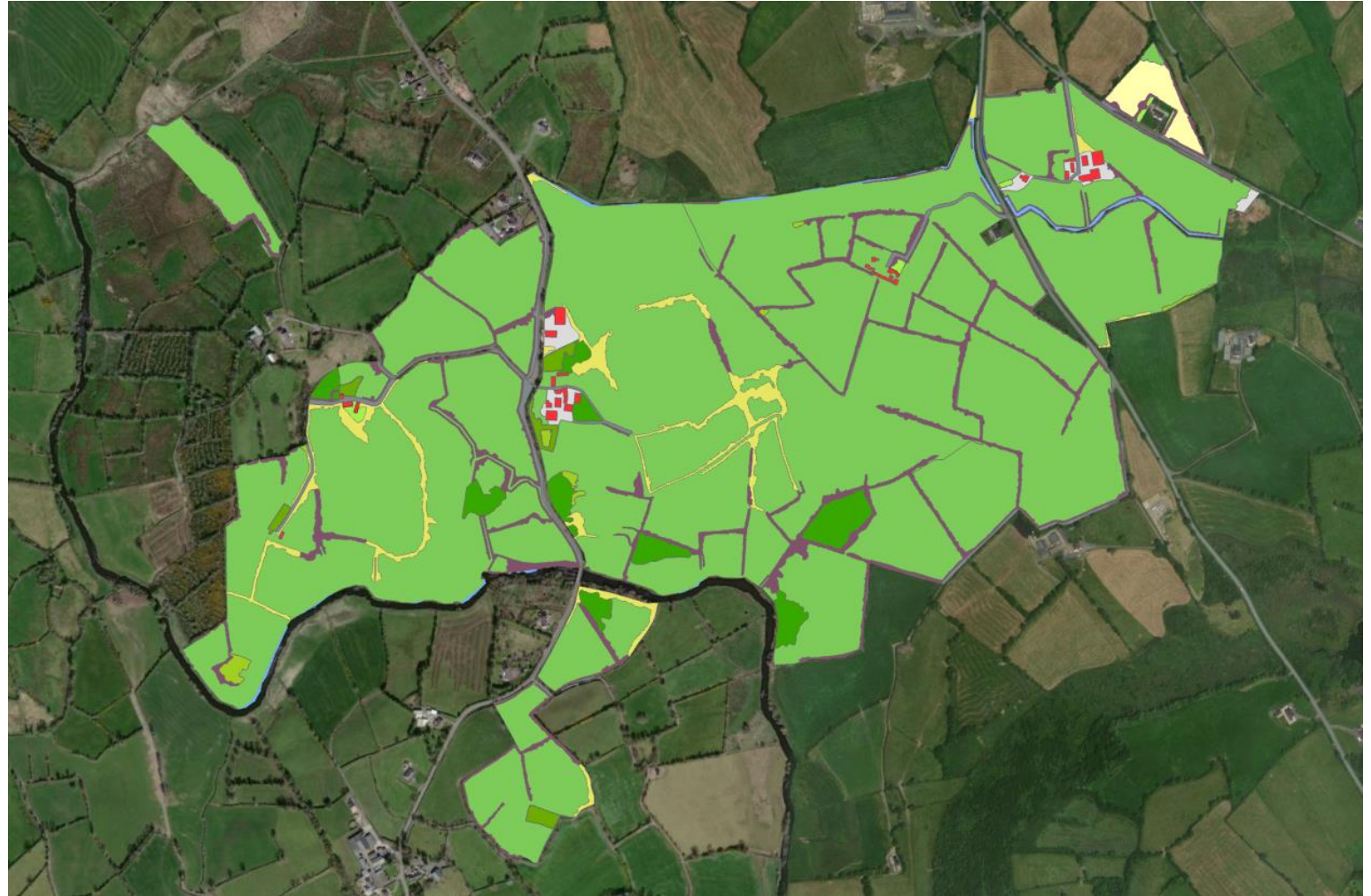


HNV FARMLAND & FORESTRY  
**FARMFORBIO**

Developed 'conservation value' scoring for NLCM classes

## Biodiversity Indicator: Quantity

- The NLCM delineates the landscape at the land parcel scale.
- Opportunity to apply 'conservation value scores' to land covers/habitats at the farm level.
- Farm level scoring is dependent on accurately defining the farm boundaries.





# Biodiversity Indicator: Quality

- Design and implement a targeted field campaign.
- Farm typology maps from the habitat quantity work will assist prioritisation and sampling design.
- Use scorecards for habitat quality assessment.
- Aim to assess the distribution and range of habitat quality across farms and farm categories.
- Survey designed to be repeatable to assess changes over time.



## Related Research

- **Wider assessment of how the NLCM can contribute to biodiversity monitoring.**
- **Digital information on farm boundaries is essential.**
- **Evaluate the sensitivity required to adequately capture the expected level of change in the landscape, at farm and national level.**



# Conclusions

- **Proposed approach provides a mechanism to deliver tracking of habitat quantity and quality.**
- **Clear benefits of linking with the National Farm Survey and Small Farm Survey.**
- **As we develop and implement these surveys, we will review and document the strengths and limitations of the approaches and data sources.**
- **Aim to build a representative, robust and repeatable indicator for farmland biodiversity.**

