



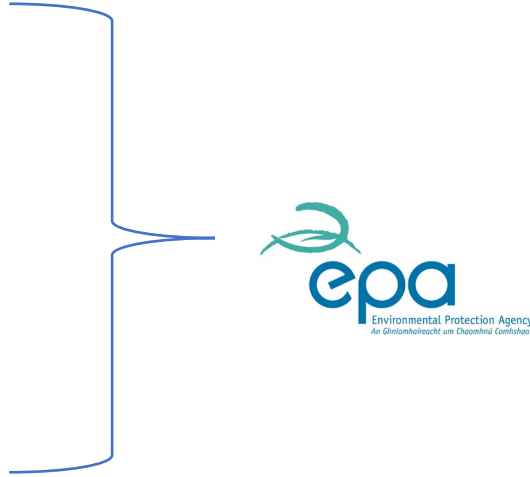
# Advancement in peatland reporting and synergies with peatland protection

LULUCF workshop 18-19 December 2023

- The challenge
  - Current inventory approach and future requirements
- Progress
  - National research & other work

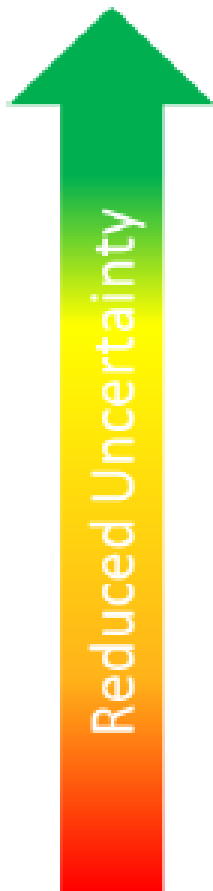
# Responsibility for inventory collation

## Land Use, Land Use Change and Forestry

- Forest Land – DAFM Forest Service/FERS Ltd
  - Cropland
  - Grassland
  - Wetland
  - Settlement
  - Other land
  - Harvested Wood Products - DAFM Forest Service/FERS Ltd
- 
- A blue bracket on the left side of the list groups the categories 'Cropland', 'Grassland', 'Wetland', 'Settlement', and 'Other land'. To the right of this bracket is the EPA logo, which includes the text 'Environmental Protection Agency' and 'An tAonmhóireacht um Chaomhúil Comhshuí'.

# The challenge

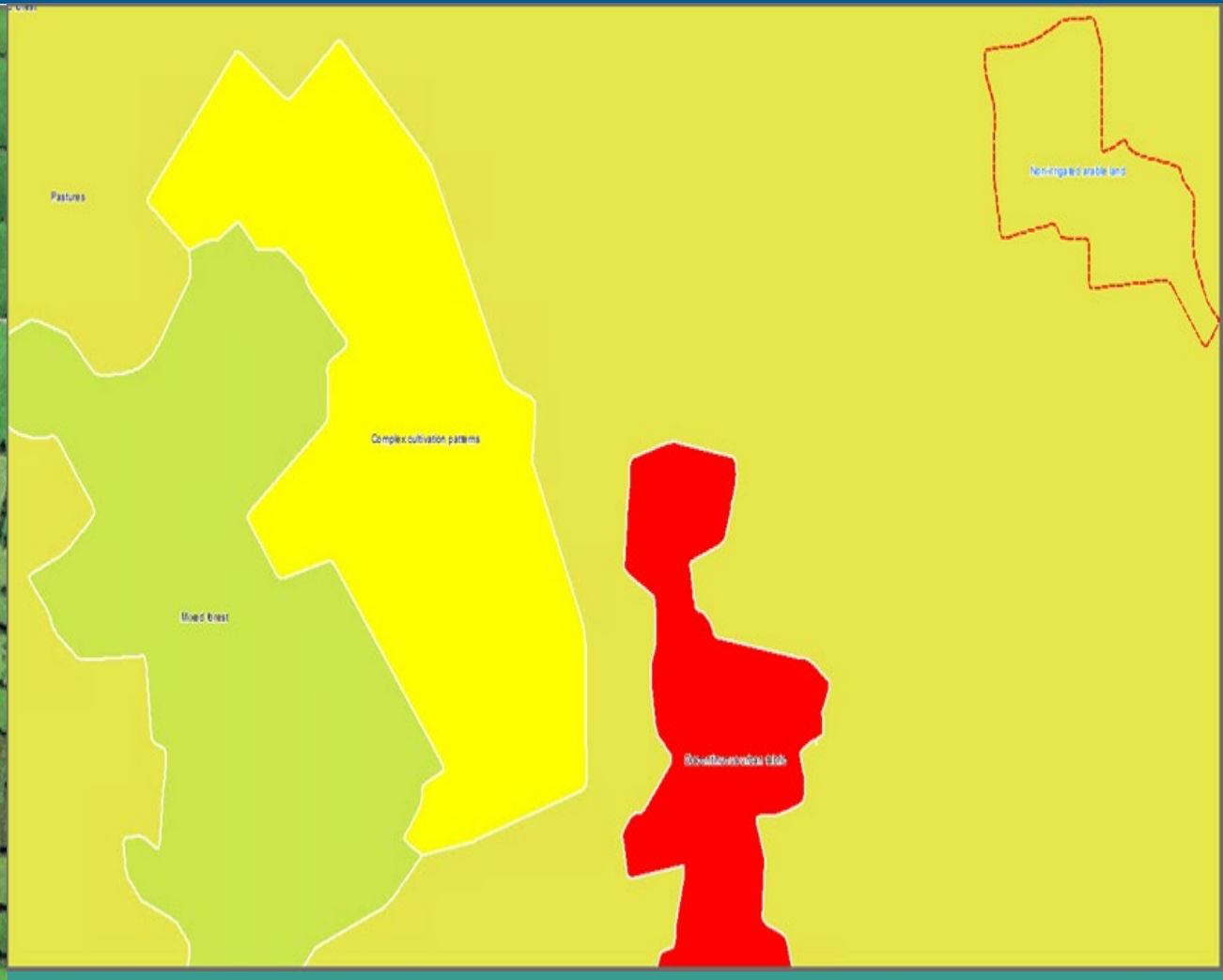
- For LULUCF (excl forestry) largely Tier 1 approach, some use of country specific factors
  - Recent update to emission factor for organic soil based on country specific research
- National area statistics – CORINE, Central Statistics Office, Other government data
- Lack of historical spatial data
- LULUCF Regulation
  - Geographically explicit information
  - Tier 1 except where carbon pool accounts for at least 25% of emissions and removals
  - 2028/2030 submissions – Tier 2/3 methodologies
- National Climate Action Plan
  - National target for LULUCF sector
  - Land Use review – inform policy
  - Plans for water table management of grassland on peat



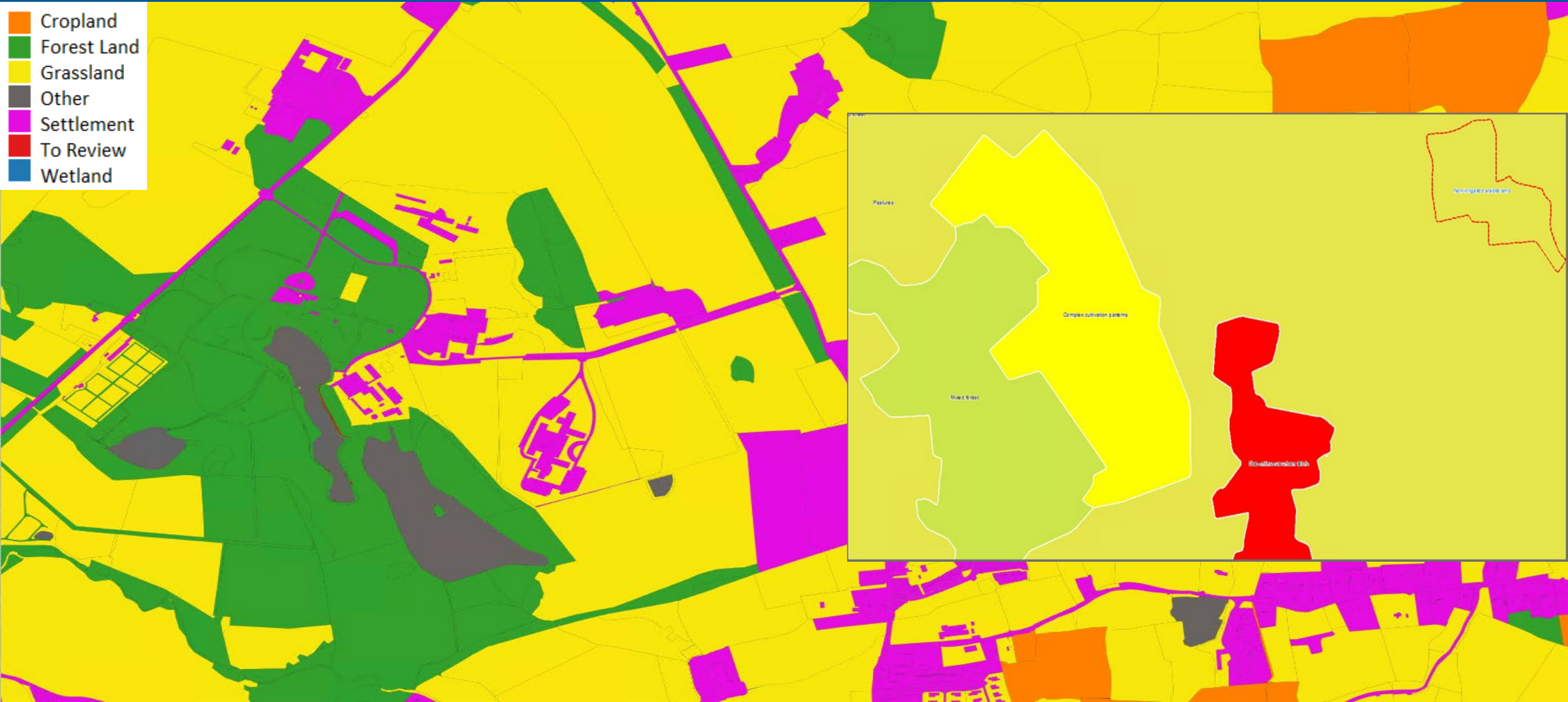
<b>Tier 3</b> High res. data (e.g. model)	Not applicable	Modelled data combined with LUC matrix (not necessarily spatially dis-aggregated)	Geo-information at high-resolution, detailed time series, country-specific disaggregated data based on inventories and/or models
<b>Tier 2</b> Country specific values	National area statistics, combined with country-specific values – typical 1 <sup>st</sup> improvement	Annual LUC stats, combined with country-specific values	Geo-information, time series, country specific values – good coverage, detailed analysis
<b>Tier 1</b> IPCC default values	National area statistics, combined with IPCC default values – basic entry level	Annual (or annualised) LUC stats presented as national matrix – applied using default IPCC values	Geo-information, time series, default values – weak, but better than App 1 and 2
	<b>Approach 1</b> National statistics	<b>Approach 2</b> Land Use Change matrix	<b>Approach 3</b> Geo-tracked



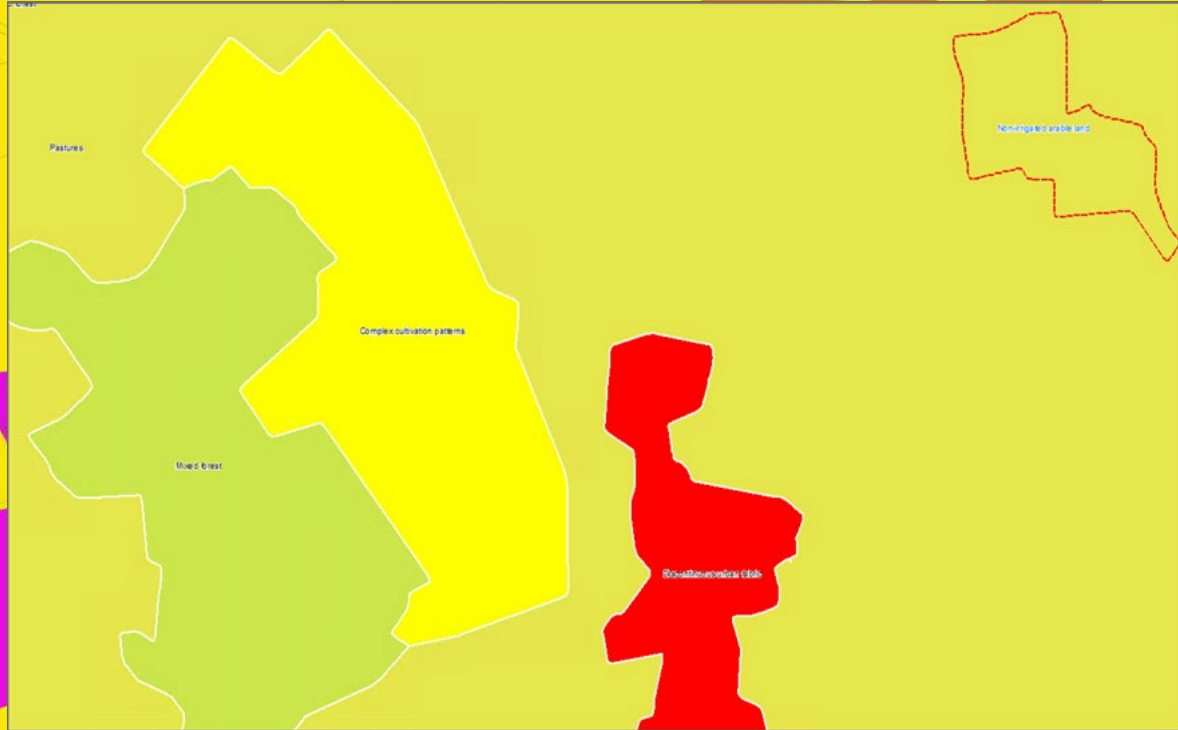
# Importance of mapping - CORINE



# Importance of mapping – Land Use Map



- Cropland
- Forest Land
- Grassland
- Other
- Settlement
- To Review
- Wetland



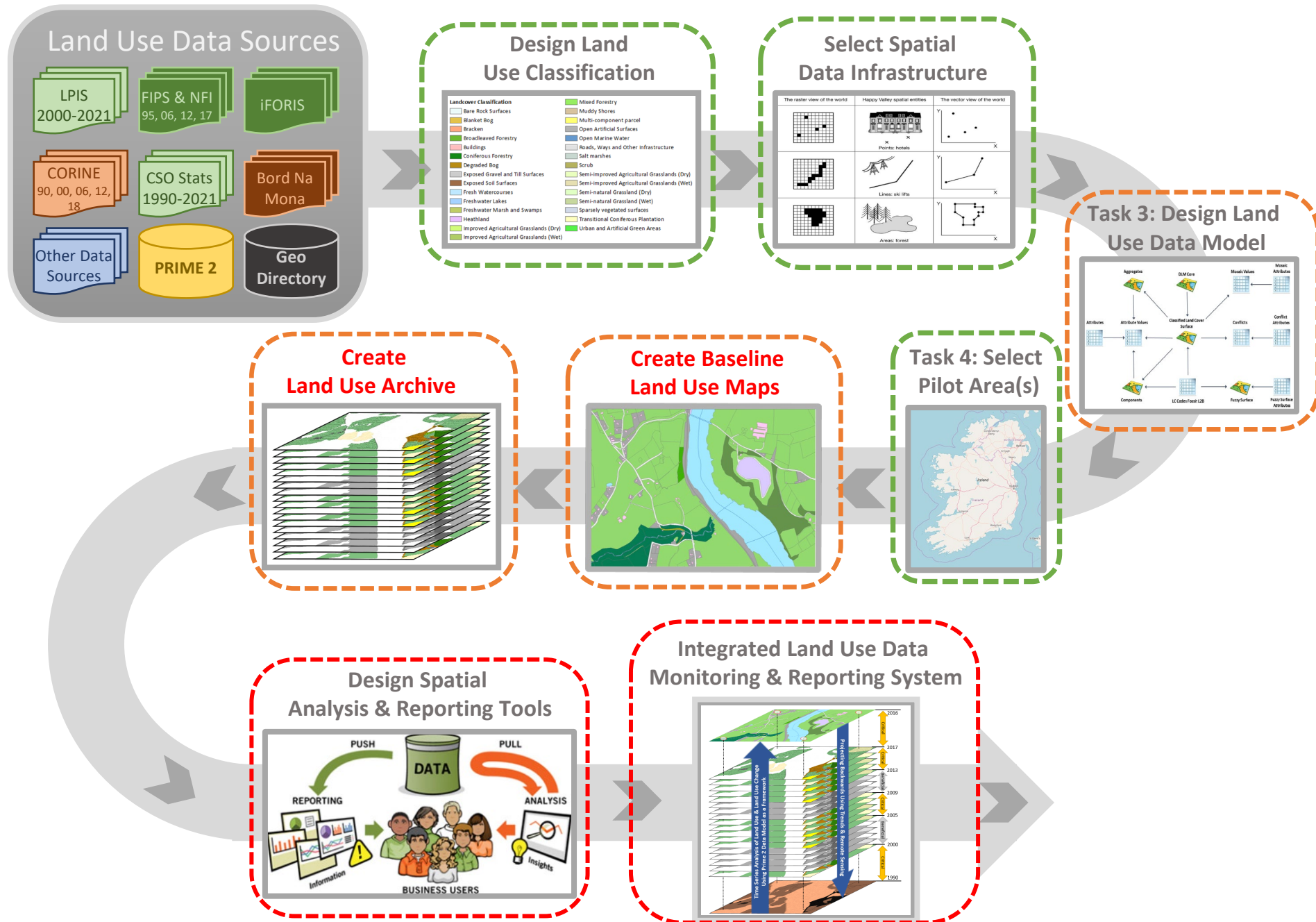
# Importance of mapping – CORINE - Wetlands

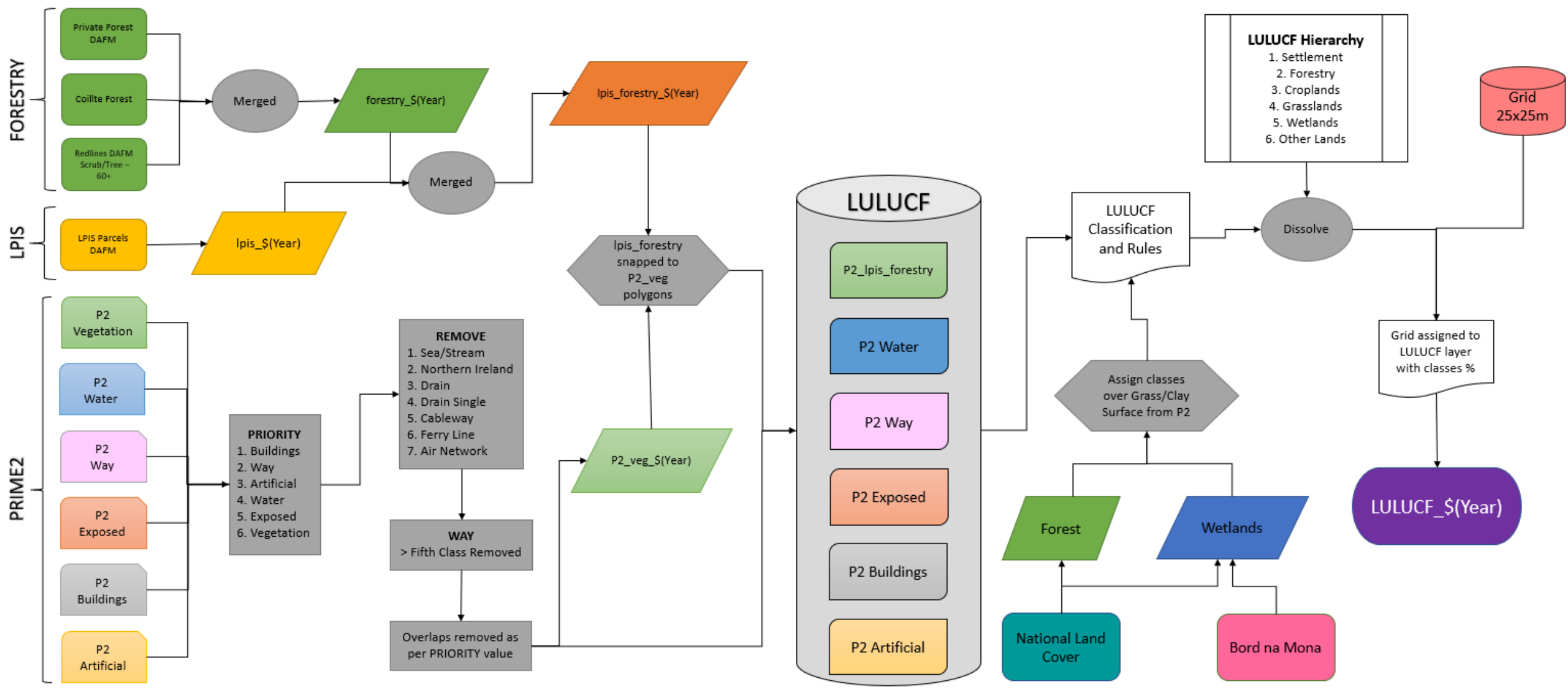


# Importance of mapping – National landcover map



# Roadmap to Designing an Integrated Land Use Data Monitoring & Reporting System

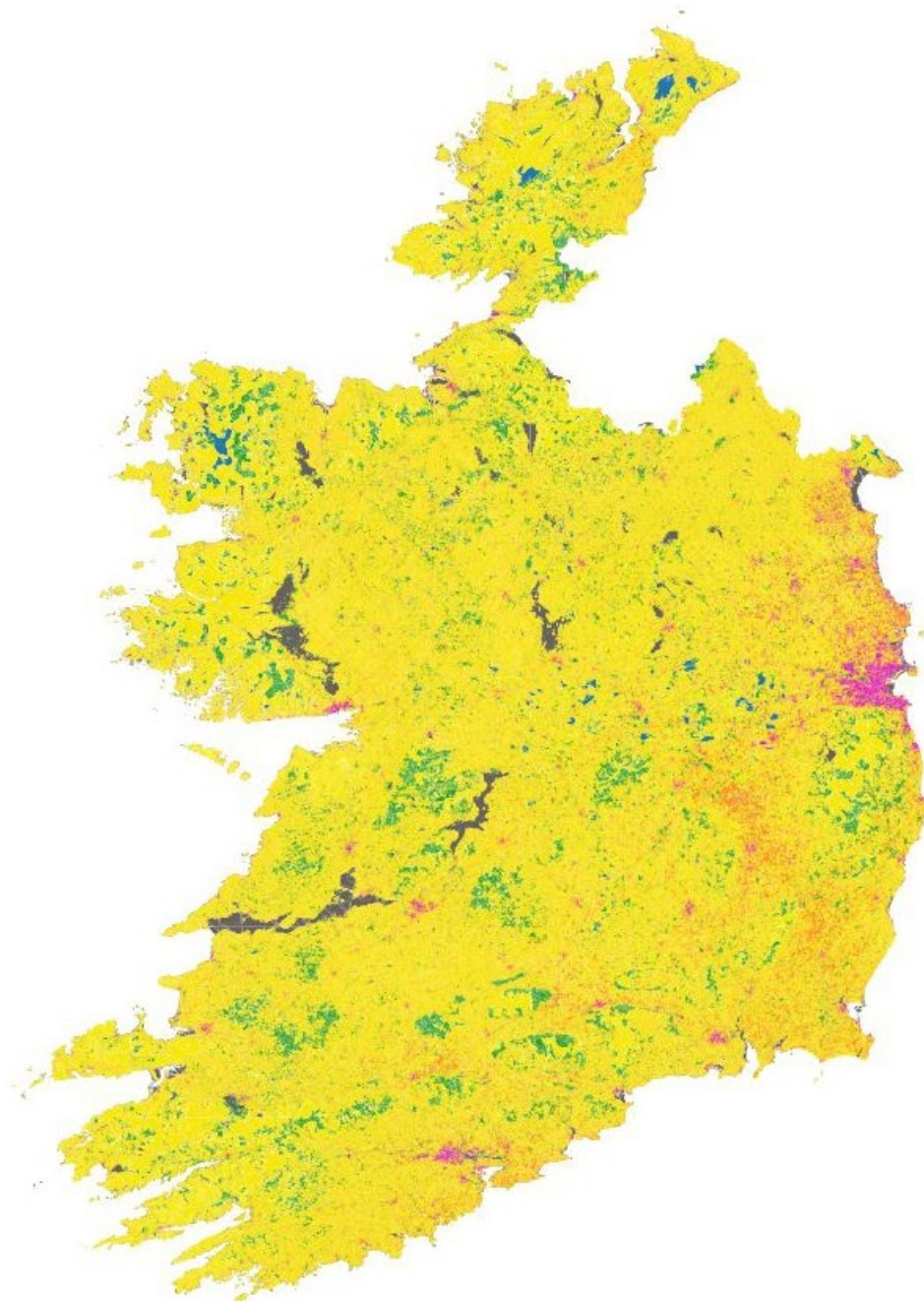




# LULUCF: National Data Integration 2018

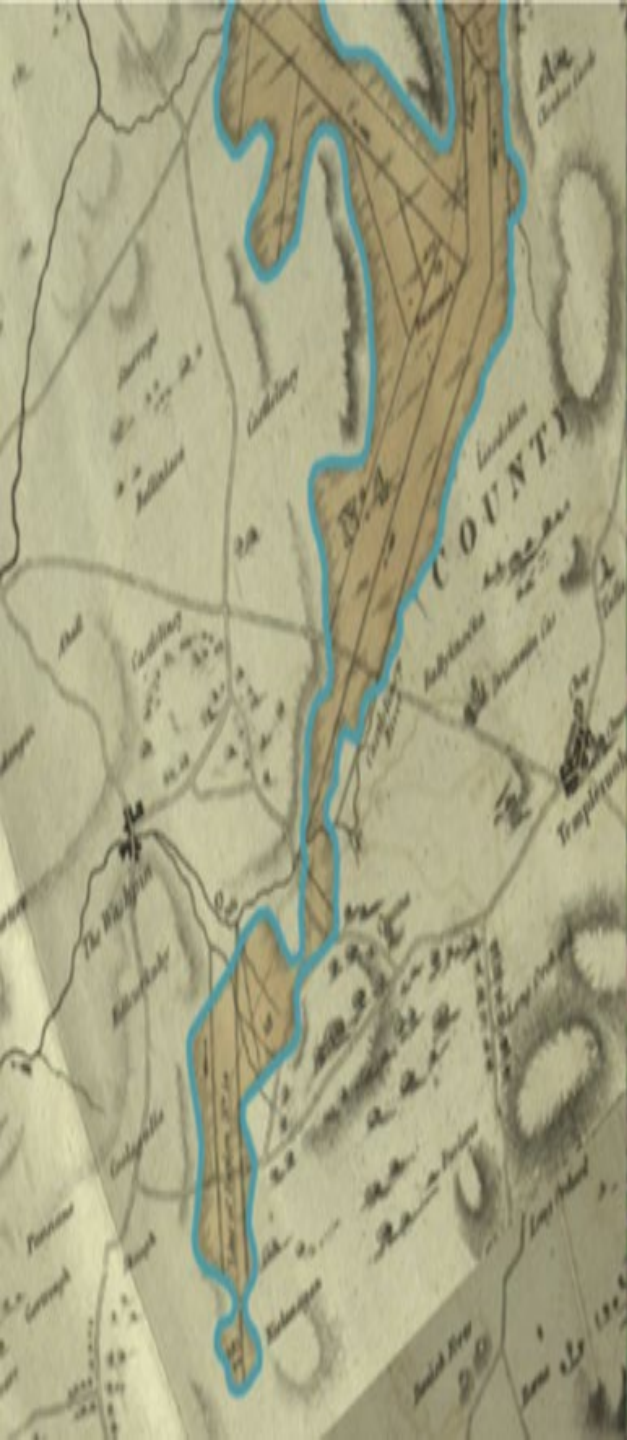
## Level 1

-  Cropland
-  Forestry
-  Grassland
-  Other
-  Settlement
-  To Review
-  Wetland



# Research and other work ongoing

- [National Land Cover Map](#)
- Significant investment in Peatland research – [Research | Environmental Protection Agency \(epa.ie\)](#) and others
- [Aitova et al., 2023](#) A review of greenhouse gas emissions and removals from Irish peatlands
  - Derived country specific emission factors for various peatland land uses and management practices
- [Tuohy et al., 2023](#) Drainage status of grassland peat soils in Ireland: Extent, efficacy and implications for GHG and rewetting efforts
  - Recently unearthed historical information
  - Refined further to plot current status
- [Bord Na Mona](#) – Peatlands Climate Action Scheme (PCAS)
  - Cessation of peat production
  - Peatland decommissioning, rehabilitation and restoration measures on c. 33 k ha in over 80 bogs (2021-2026)
- [RePeat](#) Project
  - Extract and digitise original extent of peatlands from early 1800's maps
- [D-TECT](#): Geospatial drainage status detection mapping of organic rich soils
- [National Agricultural Soil Carbon Observatory \(NASCO\)](#) – Improved measurement, modelling and mapping of carbon uptake and release from agricultural land



0 500 1000 m

# Progress to date



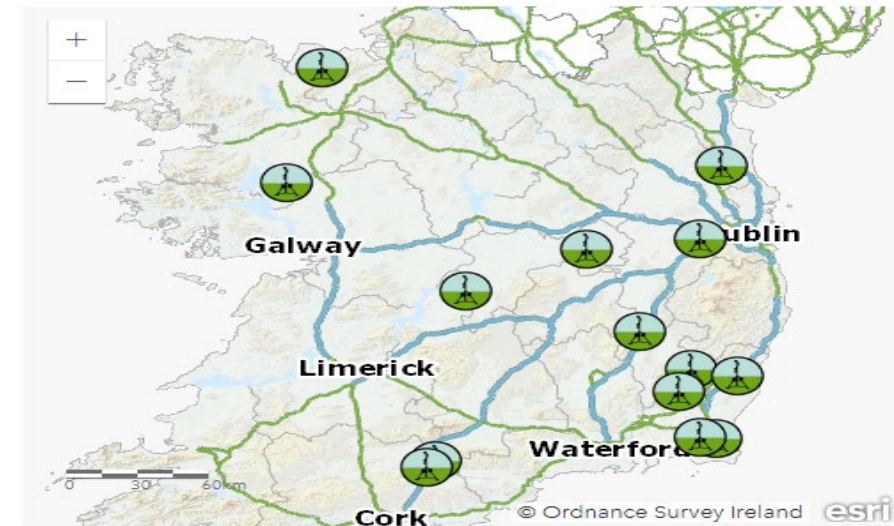
- Integrated Land Use Data Monitoring & Reporting System
  - 2018, 2019, 2020 and 2021 now complete
  - Examination of previous years and testing various proposals and use of EO
- [Aitova et al., 2023](#) and [Tuohy et al., 2023](#) integrated into 2024 annual submission
- [PCAS](#)
  - 2021 to 2026
  - Ongoing discussions in relation to actions and representation in inventory and projections estimates
- [RePEAT](#) project to be completed in 2024, D-TECT project begins in 2024

# Progress to date

- [National Agricultural Soil Carbon Observatory](#)
- 32 Eddy Covariance Flux Towers
  - Agricultural grasslands, mineral soils and peatlands
  - Accurate assessment of C dynamics across climatic conditions, soil types and management practices
  - Better understanding of efficacy of mitigation measures
  - National inventory and emission factor refinement



## Interactive Map



[View Larger Map](#)

# Other work



- [SmartBog](#)
- Assess how management of peatlands has influenced their function
  - Object based image analysis for drain detection and ecological condition – possible use on other land uses e.g. D-TECT project
  - Investigate the use of low cost monitoring sensors – internet of things
- [FLARES 1 & FLARES 2](#)
  - Fire, Land and Atmospheric Remote sensing of EmissionS
  - Systematic approaches to acquisition and collation of a range of data on ag and uncontrolled burning events from satellite datasets
- [NPWS](#)
  - Peatlands strategy “provide a long-term framework within which all of the peatlands within the state can be managed responsibly in order to optimise their social, environmental and economic contribution to the well-being of this and future generations
  - [NPWS - peatland rehabilitation](#)
- [Peatlands and People](#) – EU LIFE (7 yr project 2021-2027) – Connecting Ireland's peatlands, people and policies
  - 9,900 ha - complementary actions over larger area (e.g. PCAS)
  - Three fellowships – one for each ghg

# Conclusions

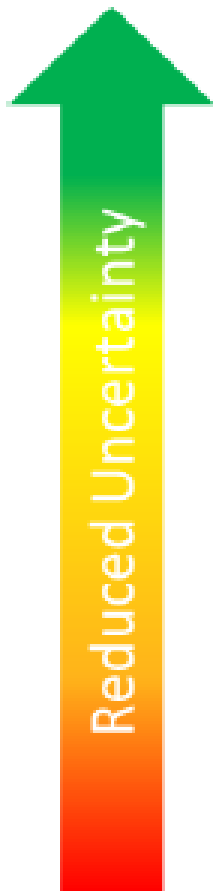


- Significant work ongoing
  - Mapping and research
- Peatland rehabilitation/restoration
  - Multiple benefits
  - Climate, biodiversity
- LULUCF Regulation
  - Geographically explicit information
  - Tier 1 except where carbon pool accounts for at least 25% of emissions and removals
  - 2028/2030 submissions – Tier 2/3 methodologies



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