

# PEATLAND MANAGEMENT

## Agriculture

### Introduction

Peatlands have been utilised for agriculture for centuries. The reclamation of raw peat soils or cutover peatlands for grassland was the direct result of population pressures in the 19th century, which intensified in the 20th century due to national **Drainage Acts** and agricultural schemes (287). Nowadays, some **339,300 ha of peat soils are under grassland** (NIR, 2023), with negligible areas cultivated for crops (236).

Grasslands on peat soils are diverse across Ireland due to the **type of peat and local management practices** but they are managed for feeding domestic herbivores, mostly through direct grazing with only minimum areas (reclaimed grassland on fen peat in the Midlands) used for forage production (hay or silage).

Improved grasslands (species poor and intensively drained and fertilised) are most widespread in the Midlands. In the west of Ireland and in the uplands, unimproved (“rough”) grassland can be found, which can be deep or shallow drained depending on the slope, and which have retained some bog-type vegetation (with patches of improved grassland) and usually receive organic fertiliser only through animal dung (734).



Variety of grasslands over peat soils depending on drainage, management and location.

### Key Research Findings

- Heavy **grazing pressure** has been implicated in a decline of the condition of blanket bogs (731). This was mostly due to conflicting EU policies that led to an upsurge in sheep numbers in the 1980s and early 1990s.
- Tracking sheep in upland blanket bogs in the west of Ireland showed that flock distribution is typically **uneven** (0 to 160 sheep/ha). Moderately damaged areas and grid squares containing extensive (improved) grazing lawns were consistently selected the most. **Recommendations for stock levels must be site specific** (911).
- Habitats with higher conservation importance and lower carrying capacities (**wet heath and blanket bog**) were most selected in **winter**. Therefore, it is recommended that grazers are removed from areas of semi-natural hill vegetation during this period (910). This could be done using **virtual fencing** (collars, see below).
- Many hill sites in western Ireland lack suitable land for improved grassland or livestock housing. In these cases, selling sheep in winter and buying replacements in spring may be the only viable solution to meet conservation goals but **this should not undermine the financial viability of hill farming, and farmers should be compensated for any additional costs** involved (910).

# Key Research Findings (continued)

## Climate impacts

- Farmed drained peat soils emit **carbon dioxide and nitrous oxide** but this depends on (1) the composition of the vegetation, (2) the drainage status, and (3) the nutrient status of the peat. Nutrient rich peat (fen type) are the highest emitters, while shallow drained nutrient poor farmed peat soils in the west of Ireland are very low emitters unless they are deep drained (water table below 25 cm) (734). Farmers should be supported and compensated to keep these nutrient poor sites wet with low input-output systems (727).
- **Nutrient-rich organic soils** under grasslands (Midlands) produce much **higher greenhouse emissions** and also represent hotspots by emitting more **carbon and ammonia to the water**. Therefore, these soils should be targeted for water table management (increased to a level that does not reduce their yield) as a strategy to mitigate carbon emissions and deliver cleaner water (734).
- Rewetting of farmed peat soils and “**paludiculture**” or “wet agriculture”, which refers to the cultivation of commercial plants or trees under water saturated soil conditions could restore some of the peat soil ecosystem services, including the carbon store and carbon sequestration (1023).

## Water and biodiversity

High Nature Value (NHV) farmland refers to areas where agriculture is the dominant land use and supports high species and habitat diversity or includes species of European conservation concern, or both. The management of **HNV farmland for biodiversity** involves areas of peatlands and has the potential to provide co-benefits for water quality and quantity, such as the regulation of flooding and maintaining base flow, as well as increased biodiversity. However, many of these areas are under threat from abandonment, intensification and land use change (575).



## How can we ensure that agricultural management actions are incorporated into the sustainable management of Irish peatlands?



- In the context of farmed peat soils, the perspective on sustainable resource management varies significantly depending on the scale at which it is viewed (national, regional, farm, field).
- Farmers need to know their peat soil properties (nutrient and water table levels) and their value within the overall catchment.
- Managing the water table and the seasonal grazing can bring about synergetic benefits for climate, water and biodiversity.



This factsheet is part of a series produced by Peat Hub Ireland (PHI). The reference numbers in brackets refer to individual publications in the PHI database which link to the original source of evidence. Use the QR codes to access the database or view research projects associated with the themes. All factsheets in the series are available on the PHI website.

