

# The Condition of Peatlands In Northern Ireland

**Bobbie Hamill**  
Habitat Survey Team  
NIEA  
DAERA  
22<sup>nd</sup> November 2024

*Sustainability at the heart of a living, working, active landscape valued by everyone.*

# Presentation Summary

- Historical utilisation of peatlands
- Summary of NI peatlands
- Pressures and Threats
- The need for peatland protection, Peatland ASSIs
- How do we assess their condition?
- 22 years of data – What does it show?



---

*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Historical use of peatlands

- People lived in the uplands
- Drained the lowlands for agriculture – post famine
- Cut and burnt for turf



*Sustainability at the heart of a living, working, active landscape valued by everyone.*

# 1900 Industrial Peat cutting

## The Old High Station at Aghalum on the Garron Plateau

Operational for around 1900 to 1906, peat was commercially cut by hundreds of men and transported by pulley system down into Carnlough for the manufacture of sulphate of ammonia and converted into a nitrogen-rich fertilizer.

The industrial scale cutting of turf at Peatlands Park also took place around the turn of the last century



*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Post War Pressures



*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Mechanical Peat Extraction



*Sustainability at the heart of a living, working, active landscape valued by everyone.*

# The Extent of Peatlands in Northern Ireland



**Peat soils** approx. 242,622 ha / 18%  
NI land area

**Peatland habitats** approx. 168,000 ha  
12% NI land area  
( Cruickshank and Tomlinson, 1988)

## Three main peatland types

Blanket bog - c140,000ha

Raised bog – c 25,000

Lowland fen - c3,000ha

**Only 14%** are in a near natural state  
and this affects their carbon stores,  
biodiversity and wider ecosystem  
service provision

*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Why are Peatlands so Important?

Rich in biodiversity – Food and shelter for special species

- Plants
- Animals
- Birds
- Invertebrates



*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Why are Peatlands so Important?

- Food Production
- Historic, cultural and environmental encyclopaedia
- Education and research



Fossil beetle remains associated with Old Croghan Man bog body

*Sustainability at the heart of a living, working, active landscape valued by everyone.*

# Why are Peatlands so Important?

## Water quality and flood hazard regulation Carbon capture and storage

- Store water – reducing flood risk
- Provides clean drinking water with over 70% of drinking water coming from peatland dominated uplands
- Estimated that peat soils store over 50% of carbon in NI



*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Recreation! and sense of place



*Sustainability at the heart of a living, working, active landscape valued by everyone.*

# Peatland pressures and threats



**Peat-cutting** for fuel, industry and horticulture

**Climate change**



**Afforestation**

**Nutrient enrichment**  
(air and water)



**Drainage**

**Development**  
e.g. for windfarms



**Burning or flailing**



**Agriculture** e.g.  
reclamation, overgrazing  
or undergrazing

*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Burning and Flailing



*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# *Sphagnum* moss degradation



*Sustainability at the heart of a living, working, active landscape valued by everyone.*

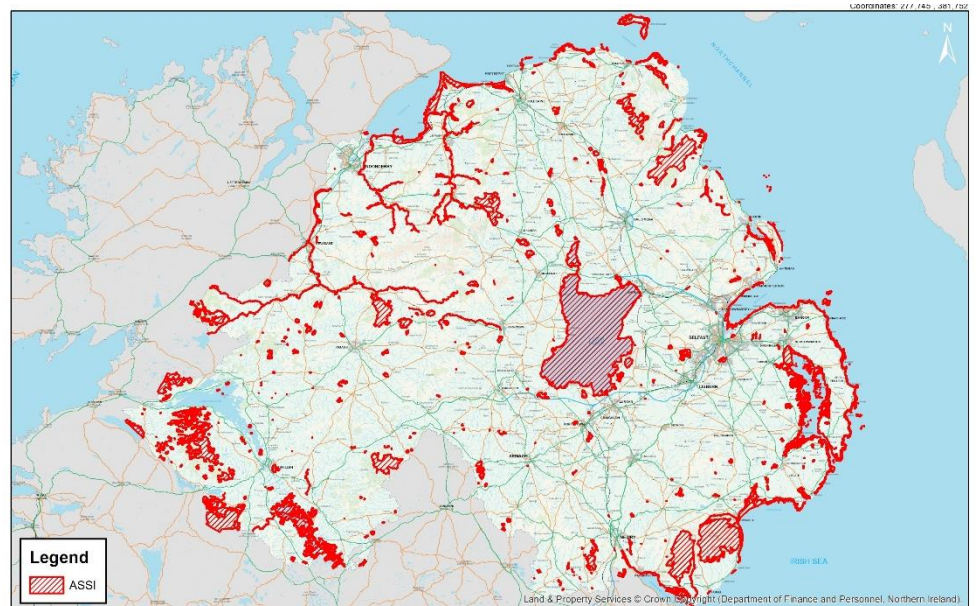


# Protection of Northern Ireland's Peatlands

## Area of Special Scientific Interest (ASSI)

“...that an area of land is of special interest by reason of any of its flora, fauna, or geological, physiographical or other features....”

- Habitat, species or earth science interests (or a combination)
- Large or small - single field or a mountain range
- Currently 394 ASSIs covering c 9% of lands in NI



*Sustainability at the heart of a living, working, active landscape valued by everyone.*

# ASSI/SAC Selection

For habitats and species, based on set criteria:

- **Conservation Significance**

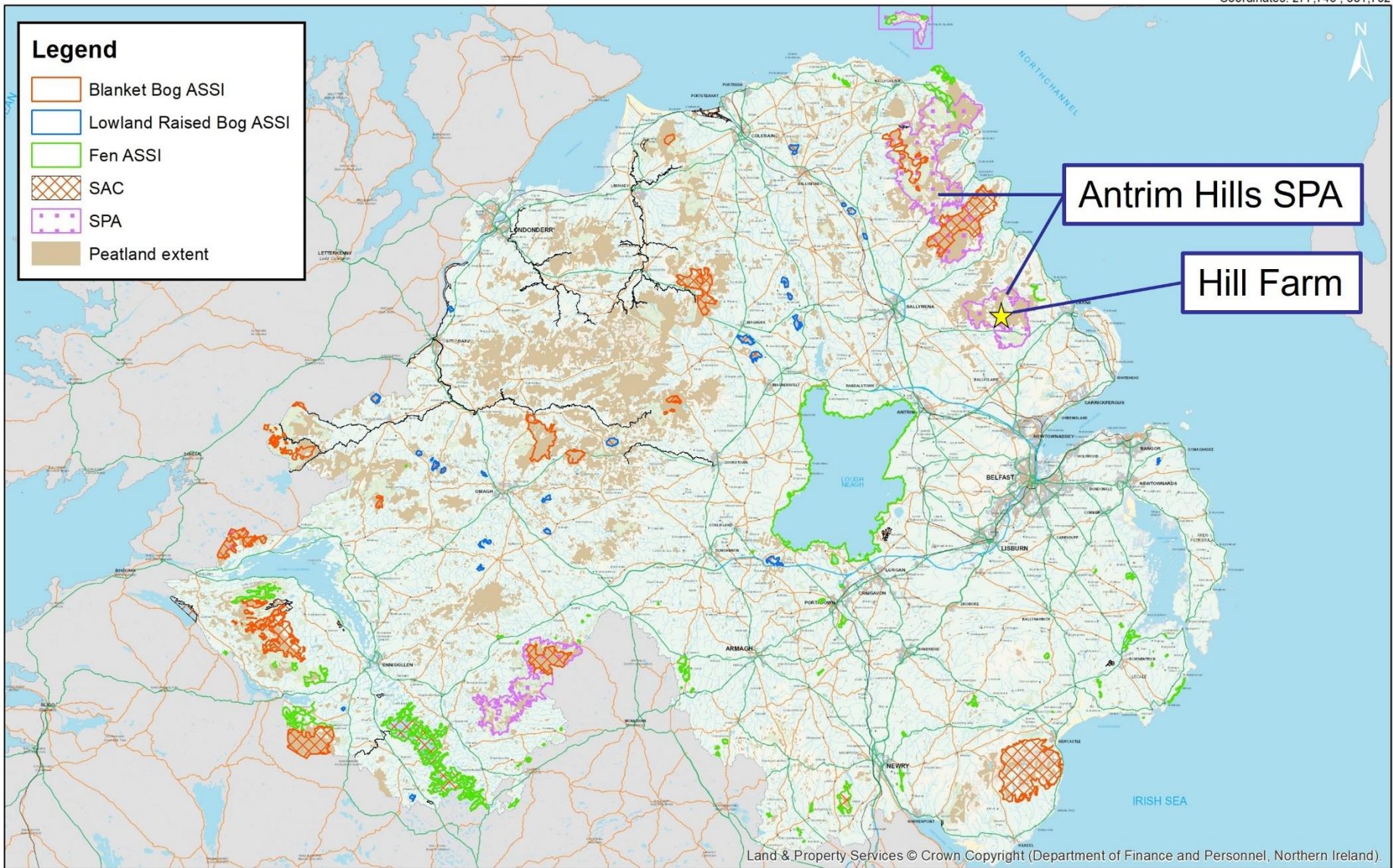
- Size
- Diversity
- Naturalness
- Rarity
- Geographical/Ecological coverage
- Fragility/Threat



---

*Sustainability at the heart of a living, working, active landscape valued by everyone.*





# Protected Peatland sites in Northern Ireland

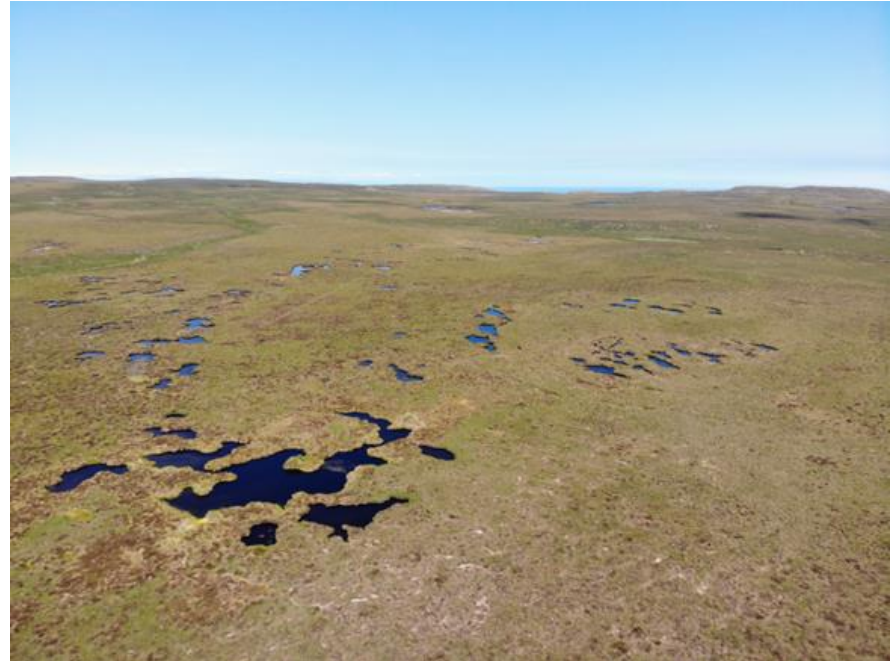
1:820,000  
0.5 Kilometres

Reproduced with the permission of Land & Property Services under delegated authority from the Keeper of Public Records. © Crown copyright and database right MOUS77.2 (2023). Unauthorised reproduction infringes © Crown copyright and may lead to prosecution or civil proceedings.

Map Created: 21 March 2023

# What makes a healthy bog?

- Health = Condition
- It should be wet, supporting a naturally functioning Peatland Habitat
- Rich in Biodiversity
- Provide a diverse range of Ecosystem Services for us



History, Food, Wood, Clean Water, Flood Mitigation, Recreation, Carbon Storage – Climate Regulation

*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Assessing Blanket Bog health - Site Monitoring

- **Why monitor?**
  - **To assess it's condition**
  - **Reporting**
  - **Measuring a number of attributes against set targets to assess condition**
  - **Advising management and restoration**
  - **Assessing effectiveness of management**





# Designated Site Monitoring

- **UK-wide approach**
- **Condition Assessment/Common Standards Monitoring**
- **Six-year cycle – all sites covered once every 6 years**
- **Rapid, but repeatable**
- **Based on features, attributes and targets**
- **Favourable/unfavourable condition?**

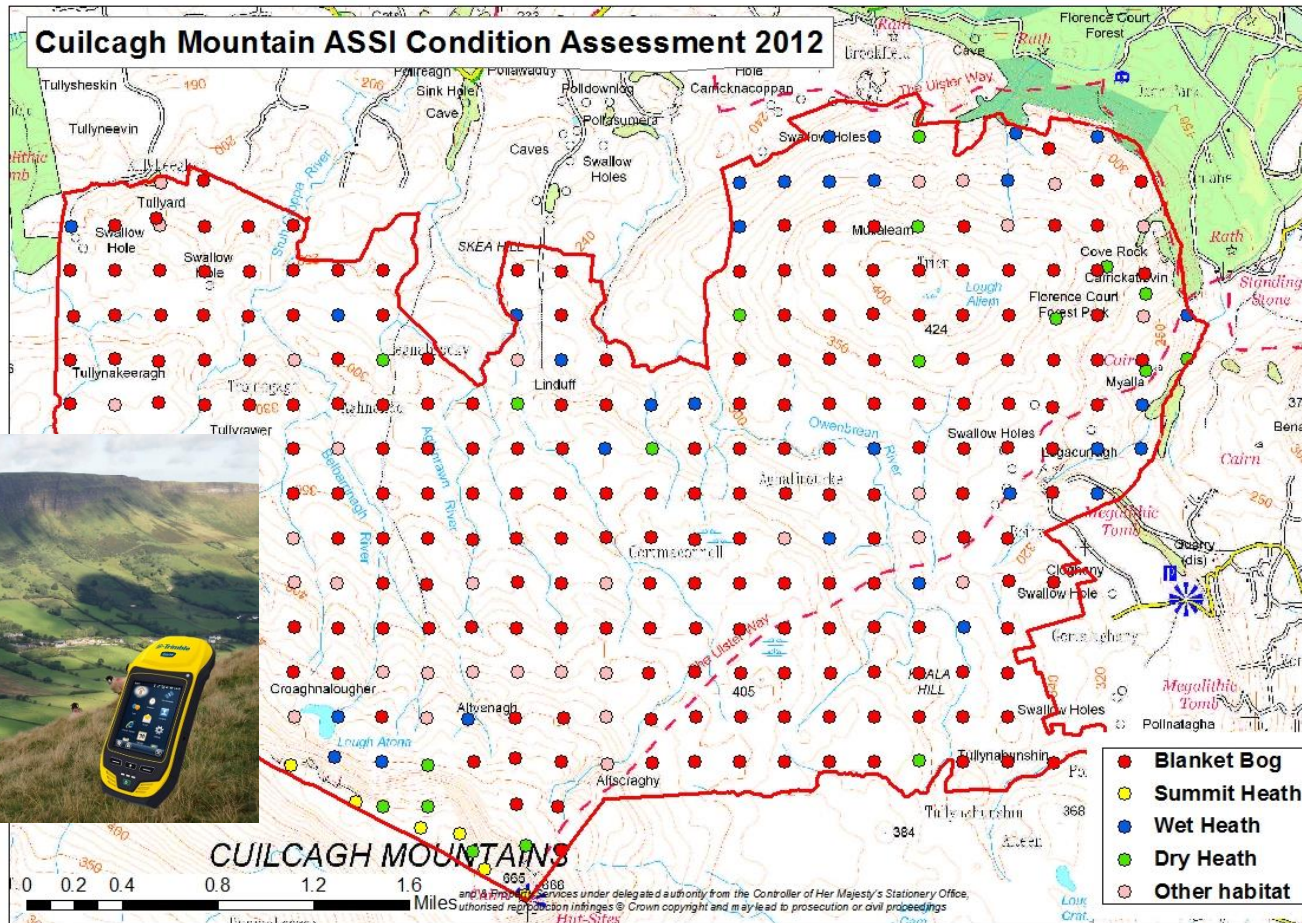


# Favourable Condition for Peatland Habitats

- **Features:**
  - Blanket Bog, Lakes, Fens
  - Birds such as Hen Harrier
  - Rock Exposures
- **Attributes:**
  - Extent
  - Structure - vegetation height and diversity
  - Species Composition – positive /negative indicators
- Favourable condition defined by setting targets for each attribute –
- If attributes do not meet specified targets feature is in unfavourable condition.



# Methods - Systematic Sampling



*Sustainability at the heart of a living, working, active landscape valued by everyone.*



# Condition Assessment of Blanket Bog and other Habitats

- Stand in the south west corner
  - 2 x 2 m plot
  - Record the attributes on the data dictionary
  - Both positive and negative
  - Take at least two photographs
- Assess Favourable condition based on attributes recorded



# Blanket Bog Attributes and Targets



- **Cover of *Sphagnum* across blanket bog**

- Target 25% cover over 66% of samples

- **Dwarf-shrub cover**

- Heathers, Bilberry, Crowberry, etc.
- Target generally 33% or higher

- **Bare Peat**

- < 5% cover across all samples

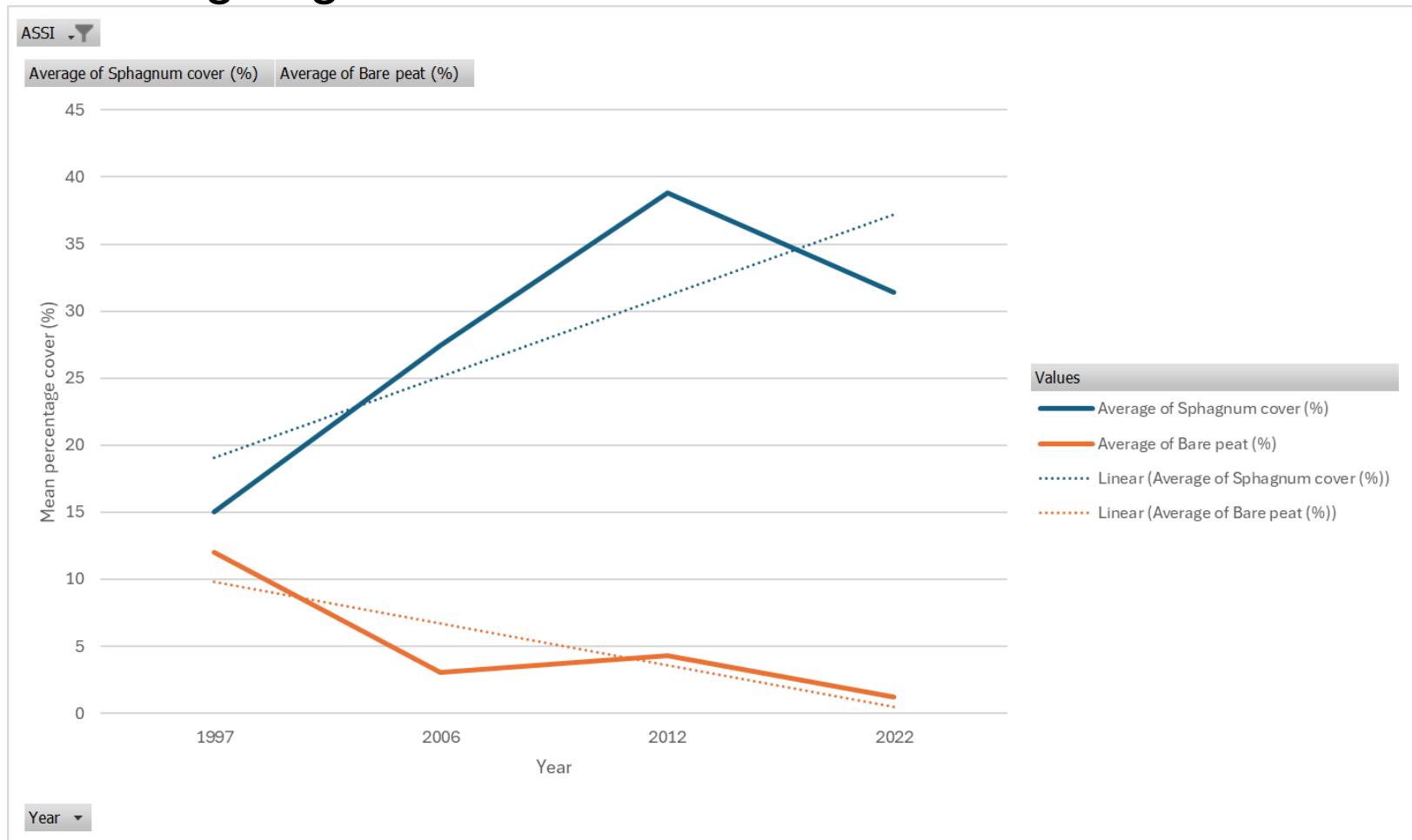


*Sustainability at the heart of a living, working, active landscape valued by everyone.*



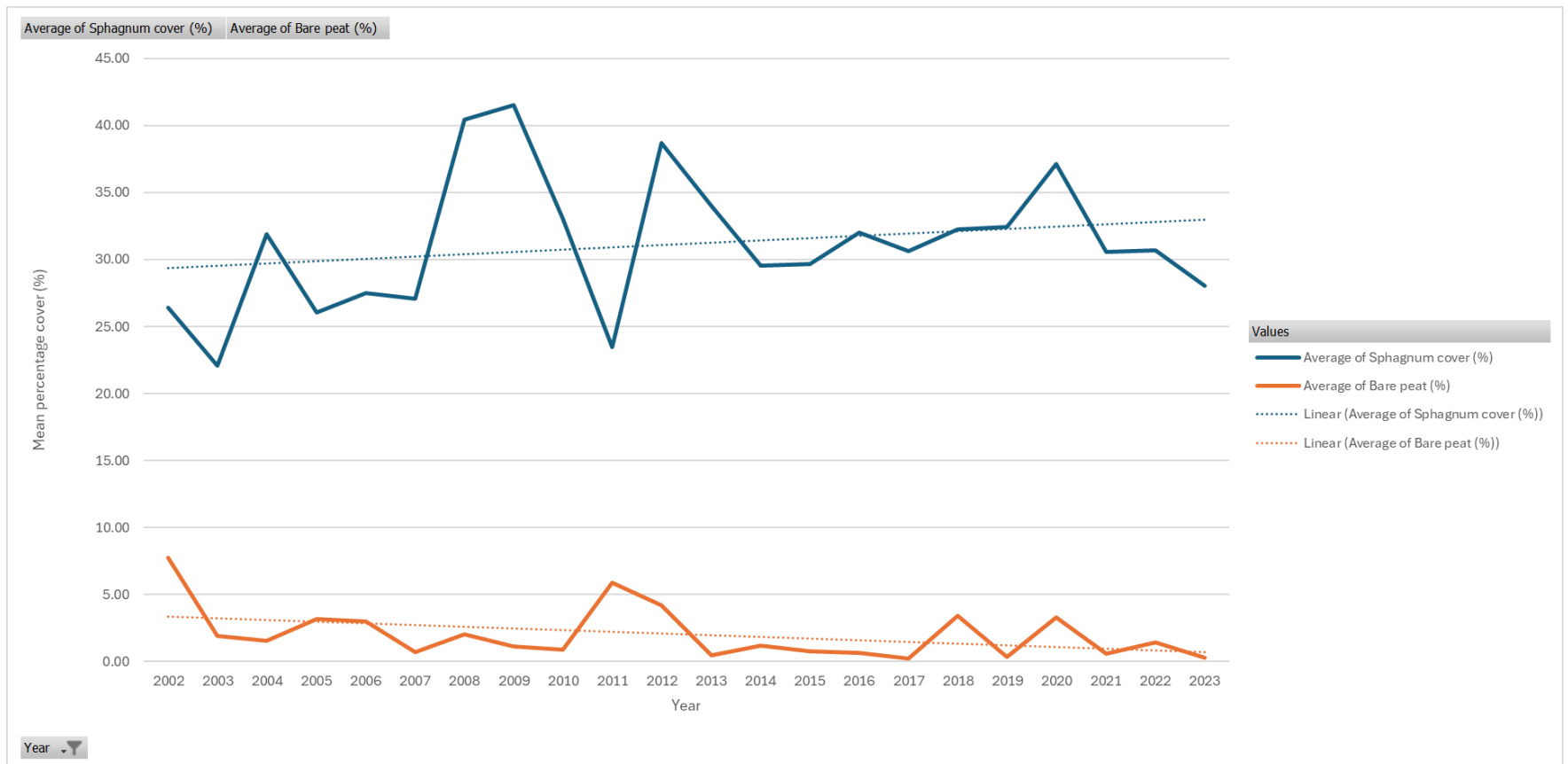
# Over the years...

- Cuilcagh Mountain ASSI
- Data going back to 1997



# Over the years...

- All 36 ASSIs with blanket bog
- Over 2100 unique CA plots monitored





# Conclusions

- Northern Ireland has a large Peatland Resource, but over 85% is highly man-modified and under significant threat
- Peatlands are very important for biodiversity and the wider ecosystem services they provide for us, but only 10% protected
- Data collected over the last 22 years indicates improvement in blanket bog condition within ASSIs
- The utilisation of peatlands is ever changing – driven by current human need. Climate regulation is that current need

---

*Sustainability at the heart of a living, working, active landscape valued by everyone.*



**Thank you**

