Y2 M20 – Peat Condition Mapping

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C3-1 Land Use Transformation

End of Year 2 meeting, March 27, 2024

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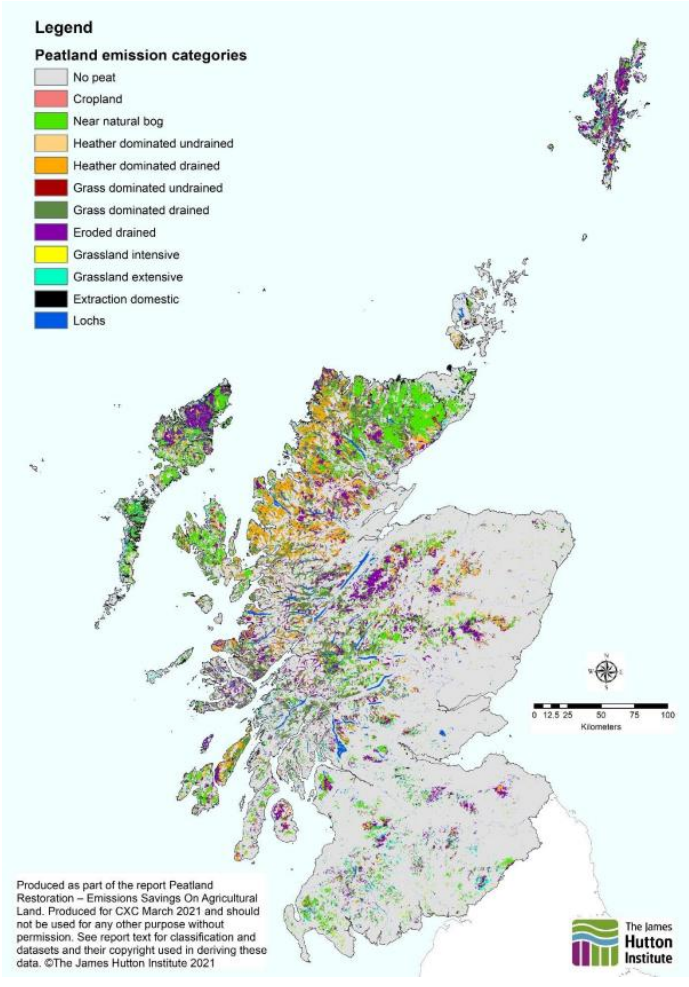
What was the goal

- Updating the existing condition mapping of Scotland's peat
  - Better peat extent
  - Higher spatial resolution
  - Better accuracy/quality



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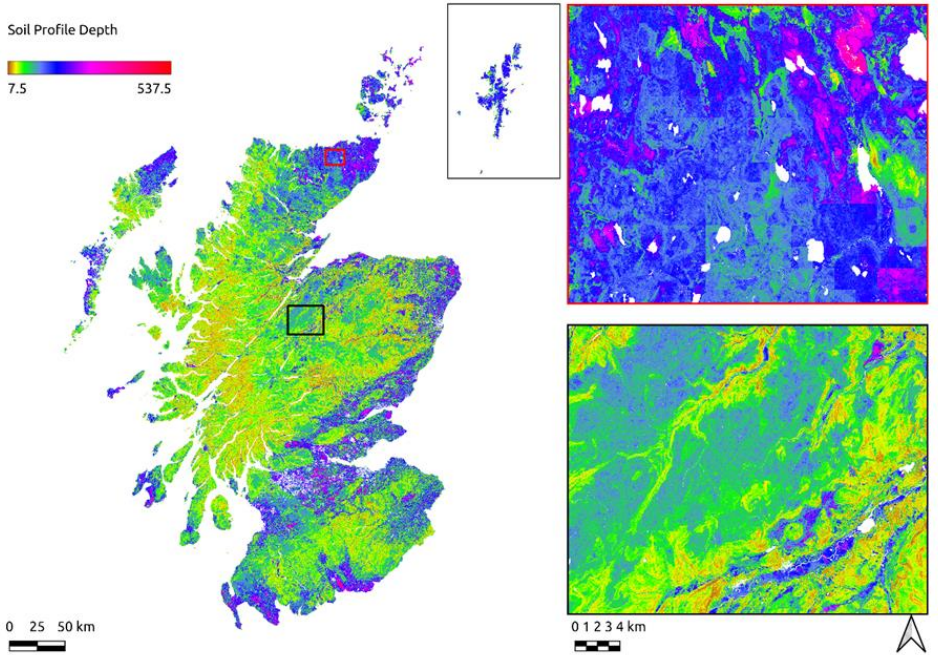
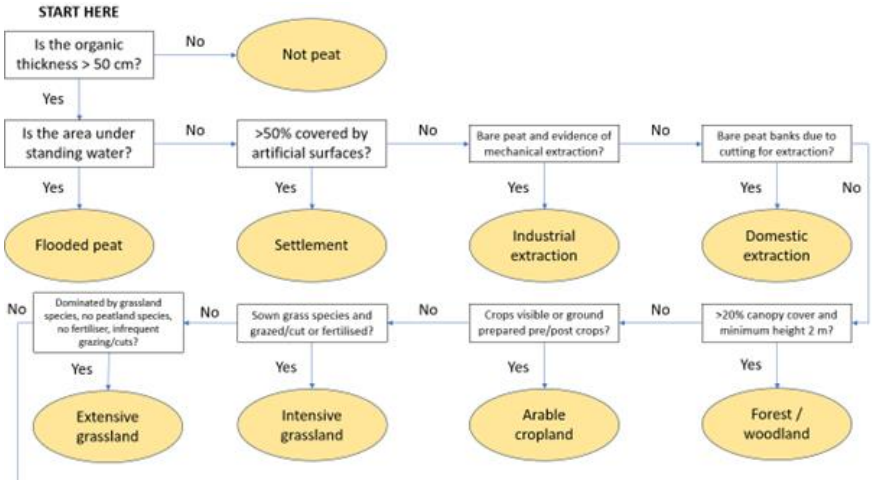
Peat Depth Mapping

- Peat depth mapping was carried out using samples from the Scottish Soils Database
- National maps of
  - C concentration
  - Bulk density
  - Depth of soil profile
- From this peat extent can be derived
  - High carbon non-peats can be assessed



Peat condition flow diagram

- Rule based pipeline
  - Existing GIS layers
  - Modelled peat depth
  - Modelled drainage and erosion
- Existing layers reclassified to conform to existing condition classes



Datasets Used

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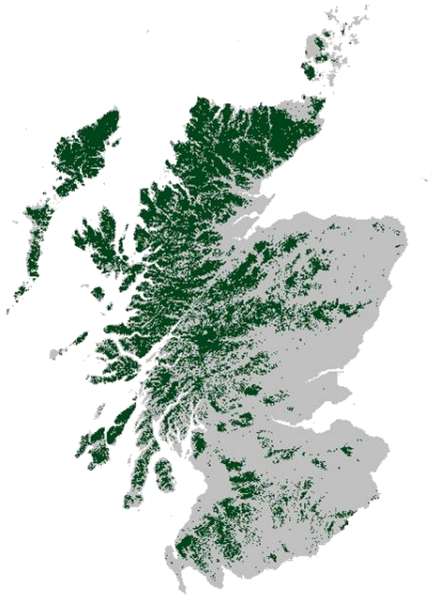
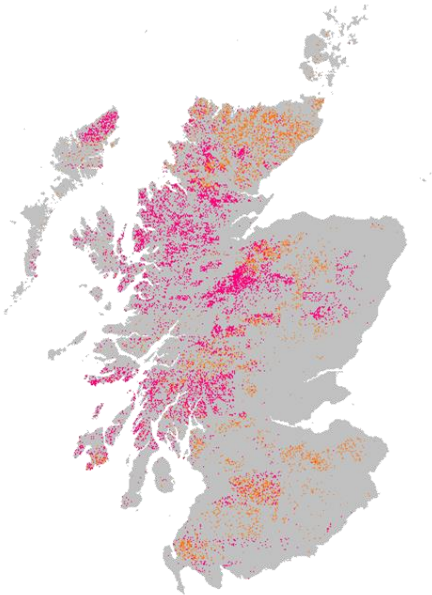
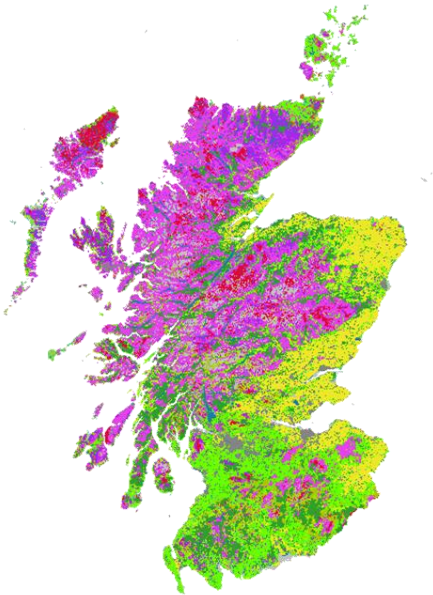
Peat Extent (modelled)



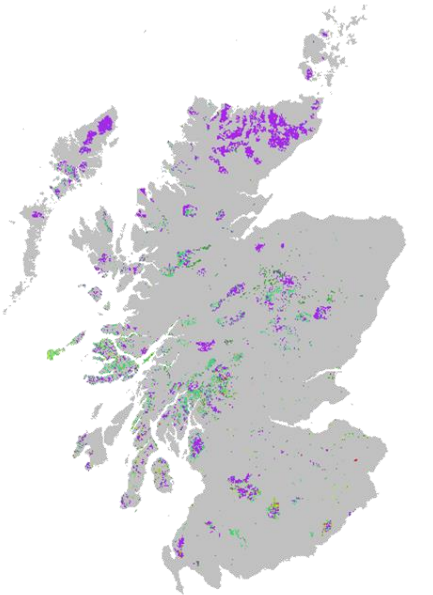
Peat Drainage/Erosion (modelled)



LCS88 (reclassified)

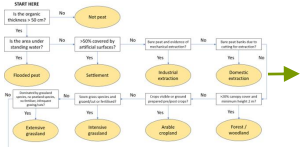


NVC (reclassified)

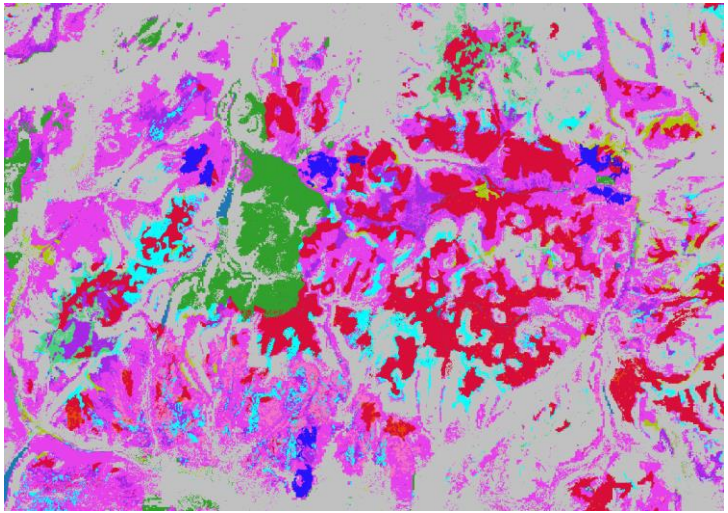


Logical flow for dataset integration

- Use of flow diagram
- Progression through condition classes
- Datasets considered in terms of evidence for/against classes



11. Do LCM, LCS88, IACS, NVC or NFI indicate Heather dominated?
    a. YES: if currently marked 'unknown' then mark as 'possibly heather dominated'.
        i. Does the Drainage or LCS88 datasets indicate drainage?
            1. YES: mark as 'possibly heather dominated drained' and continue.
            2. NO: mark as 'possibly heather dominated undrained' and continue.
    b. NO: move on.



Heather Dominated

Drained
3.32 t/CO2e/ha

Undrained
2.51 t/CO2e/ha

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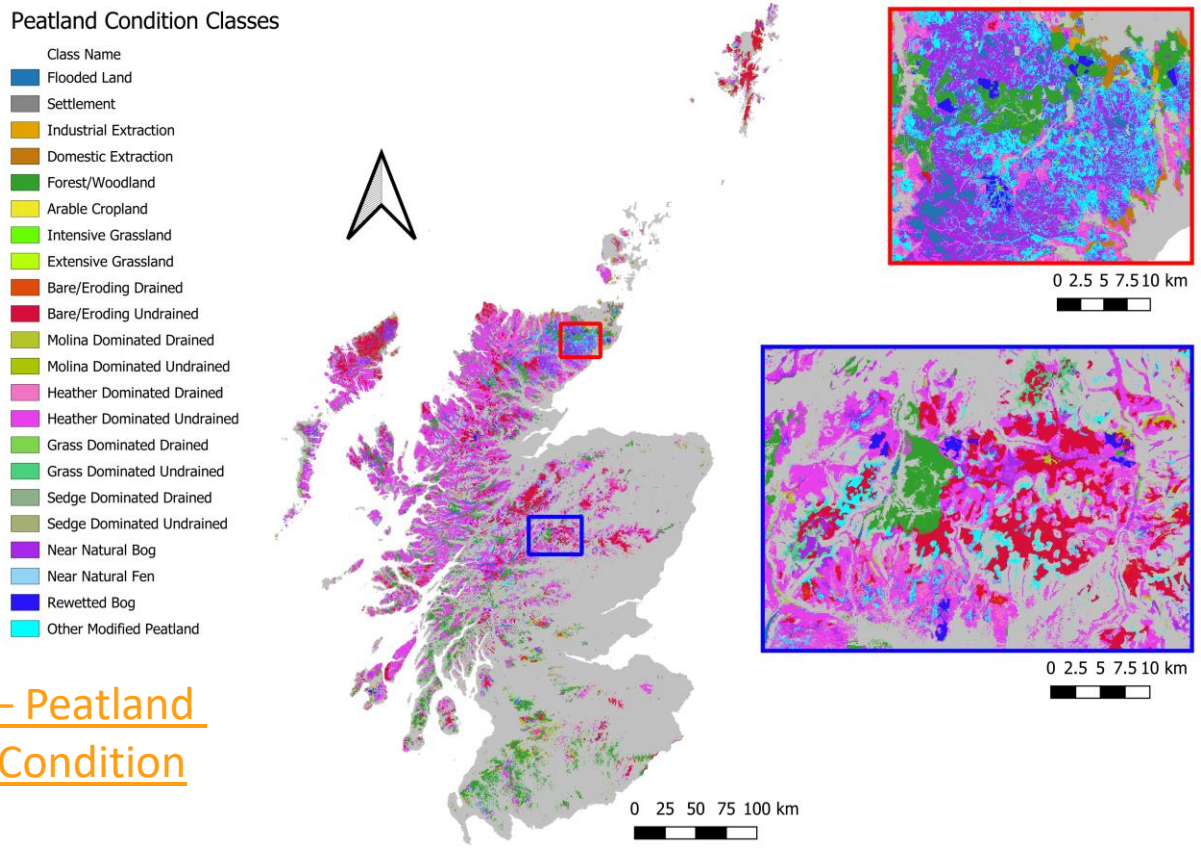
Condition Map



[Story Map – Peatland Extent and Condition]

Relevance

- Targeting peatland restoration (Peatland Action)
  - Not a substitute for site-based analysis
- Monitoring condition/rewetting
  - Measuring success
- More widely in planning activities (e.g., muirburn, forestry)
- UK GHG Inventory estimates
- Prioritisation of activities
  - Existing framework applied to NI

Degraded bog

Restoration in progress

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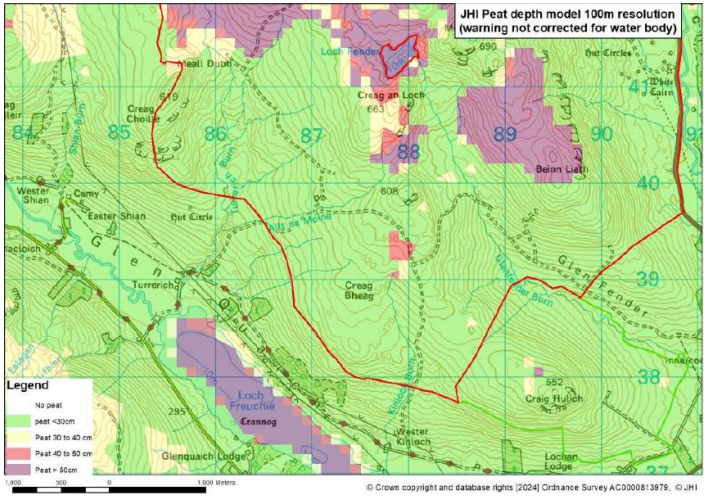
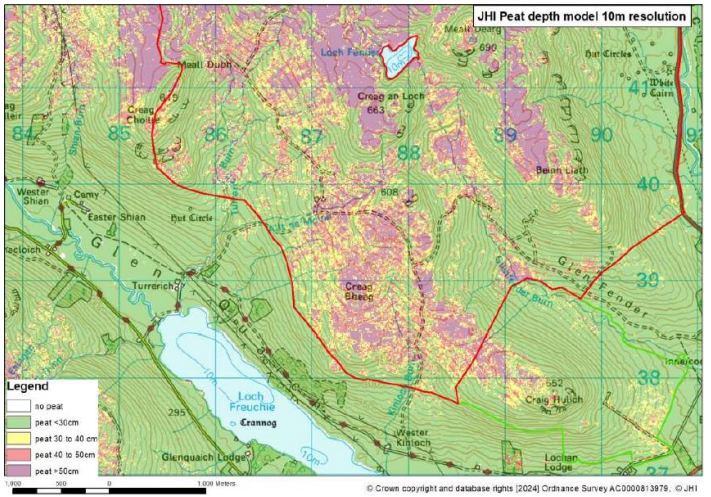
What's next?

- Improving peat depth and extent mapping
- Incorporating additional datasets to mitigate uncertainties in condition mapping
- Linkages to other SRP projects:
  - D3-2 CentrePeat
    - Vegetation biodiversity
    - Water table depth
    - Emission estimation
    - Degradation mapping
  - D5-2 Natural Capital
    - Fire Risk
    - Resilience of existing “good condition” peatlands
- Harmonisation with Nature England PeatMap
  - Drainage, dams, vegetation, condition





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Thanks to

Ciaran Robb
Matt Aitkenhead
Margaret McKeen
Malcolm Coull
Doug Wardell-Johnston
Dave Miller
Keith Matthews

A summary of this work is also available as an ArcGIS storymap:

M20, Peatland extent and condition:
https://storymaps.arcgis.com/stories/701f6f2b14dc4f17ab4c7c6ff014299a