



Mapping, monitoring, and protecting Ireland's Ancient Woodlands

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Outline:

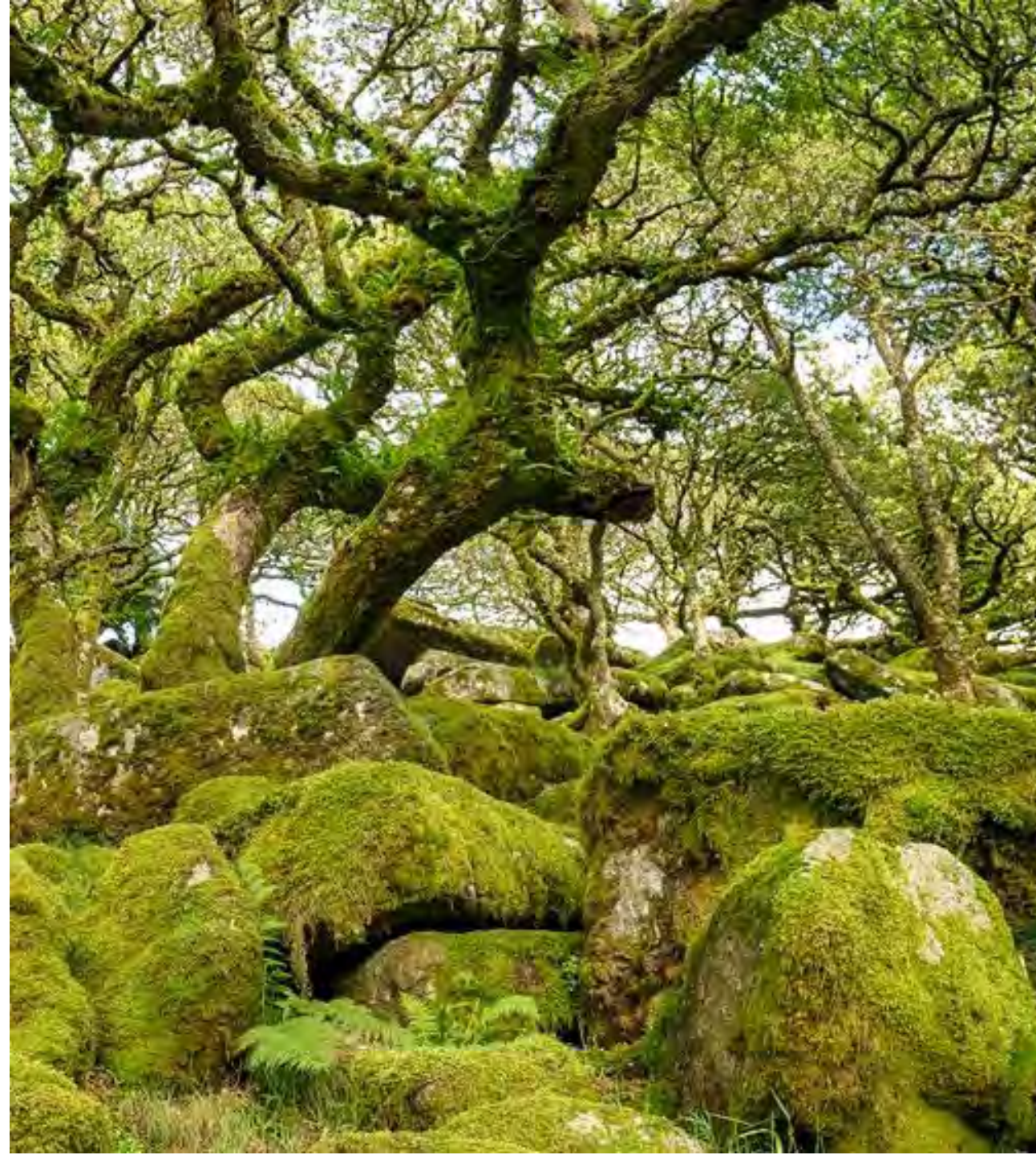
What are **ancient woodlands** and why are they important?

Where are our ancient woodlands?

What condition are they in?

Where ***exactly*** are our ancient woodlands?

What next?



The LEAF project:

Long established and Ancient Forests in Ireland

Aims

- Evaluate conservation status of Ancient & Long-established woodlands
- Use historic OS maps & contemporary aerial imagery to digitise c. 1830s woodland in two case-study counties.
- Use historic text/archival map evidence to evaluate ancientness of c. 1830s woodlands
- Review palaeoecological data relevant to ancient woodlands in Ireland



Dr John Devaney, Dr Helen Shaw, Dr Eamon Darcy, Thomas Leniston, **Maynooth University**, Prof Fraser Mitchell, **Trinity College Dublin**, Dr Jenni Roche, **National Parks and Wildlife Service**



An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage



TRINITY COLLEGE DUBLIN
COLÁISTE NA TRÍONÓIDE



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Ireland's ancient woodlands?

- **Ancient Woodland** - woodland believed to have remained continuously wooded since 1660
- **Long-Established Woodland** - woodland that has remained continuously wooded since the 1st edition OS maps of 1830-44
- No distinction is made between the nature of the stands (semi-natural, mixed or conifer) at different points in history, including the present day.



Down Survey 1650s



1st edition OS map 1830-44



Why are ancient woodlands important?



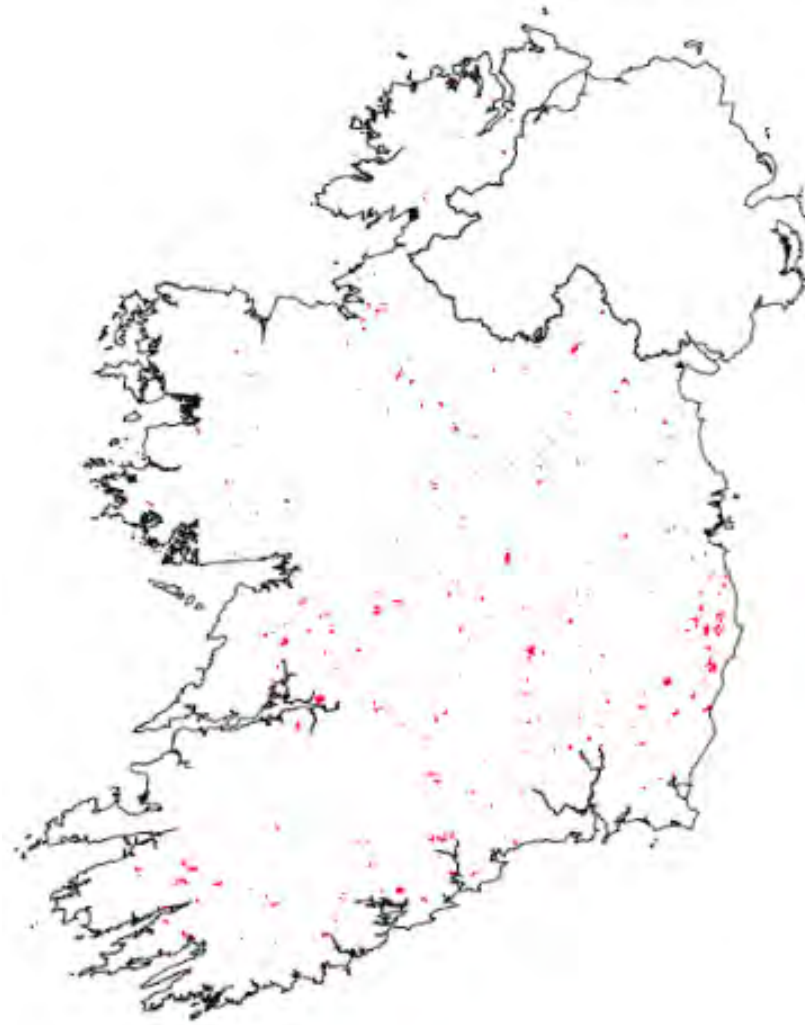
Where are Ireland's ancient woodlands?

A provisional inventory of ancient and long-established woodland in Ireland

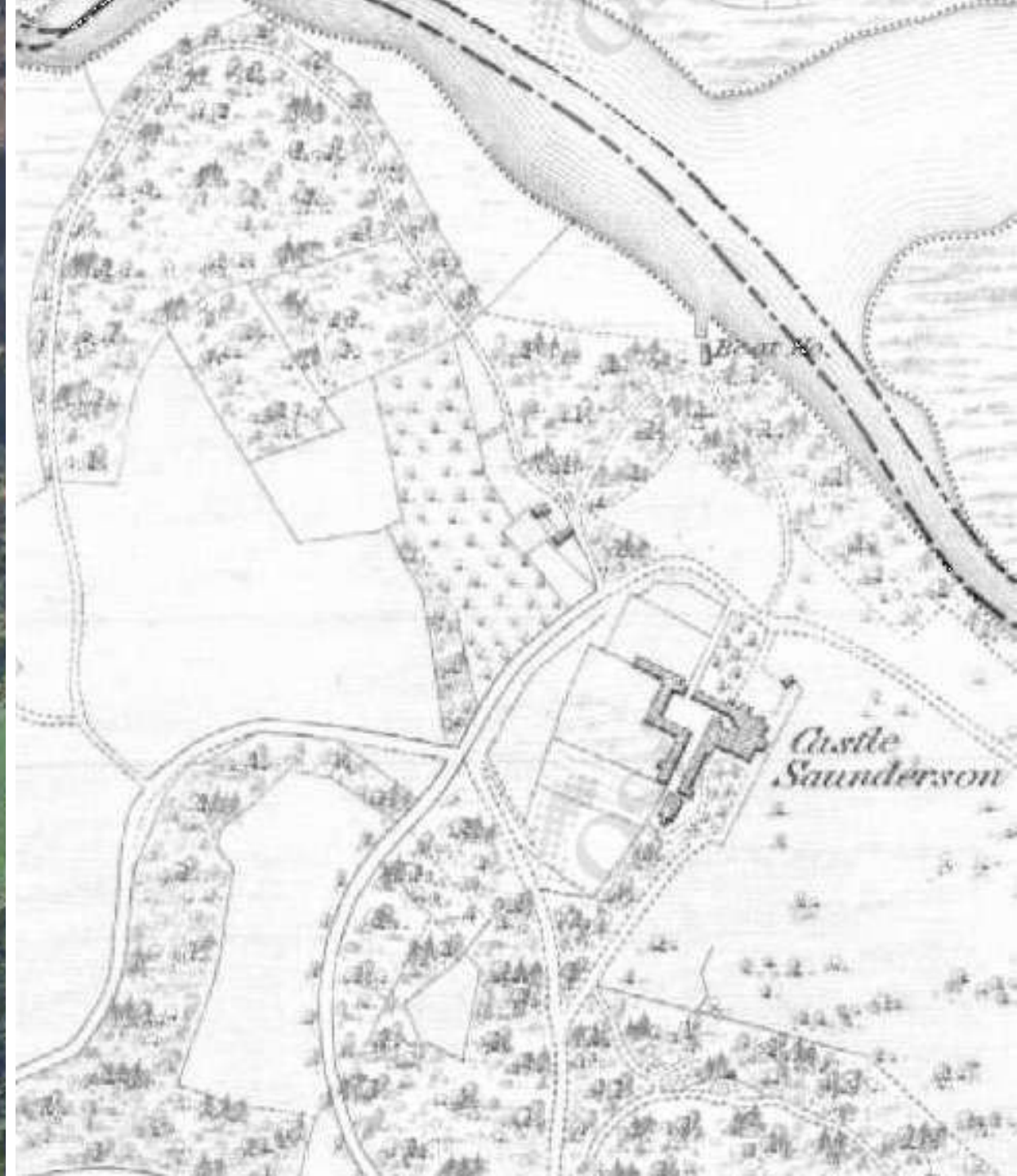


Irish Wildlife Manuals No. 46

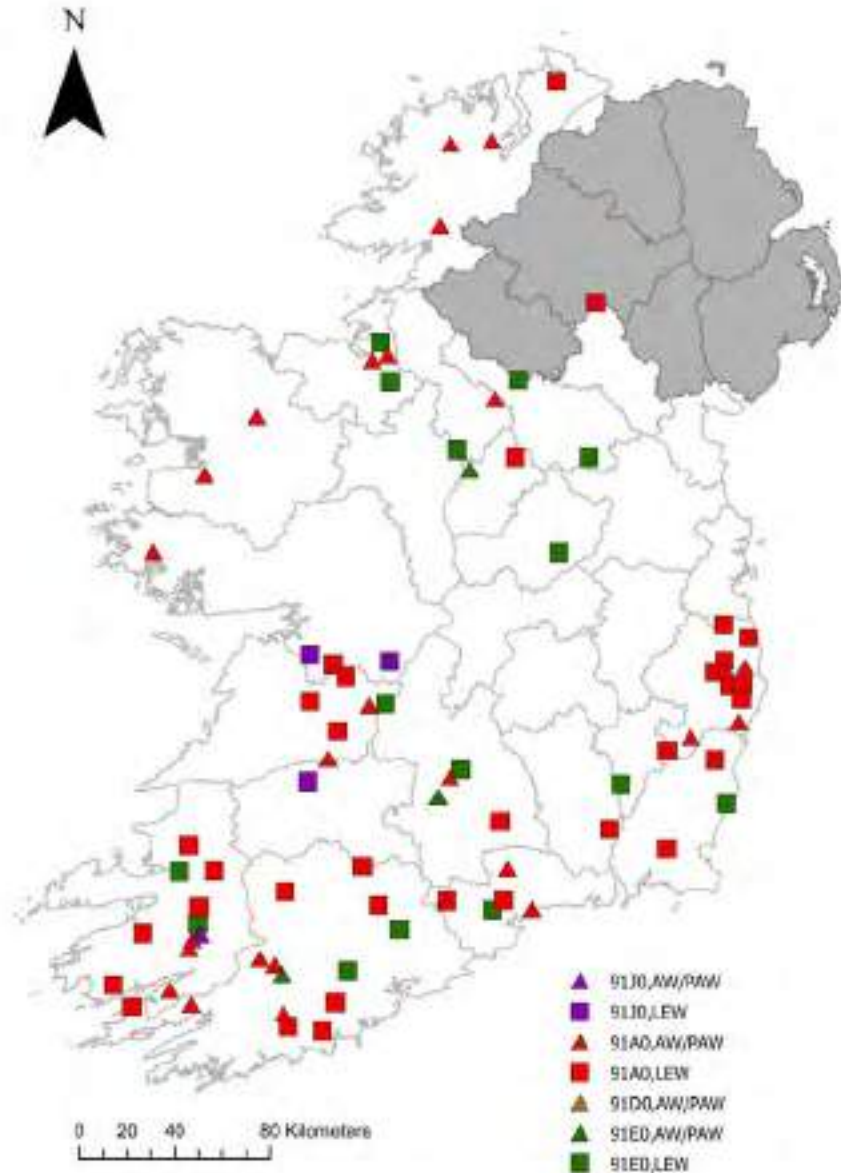
Philip M. Perrin and Orla H. Daly



- ~500 ALEW stands
- Focused on large, semi-natural woodland sites
- Lacking info on small (<5 ha) woodlands and sites now dominated by non-native conifers



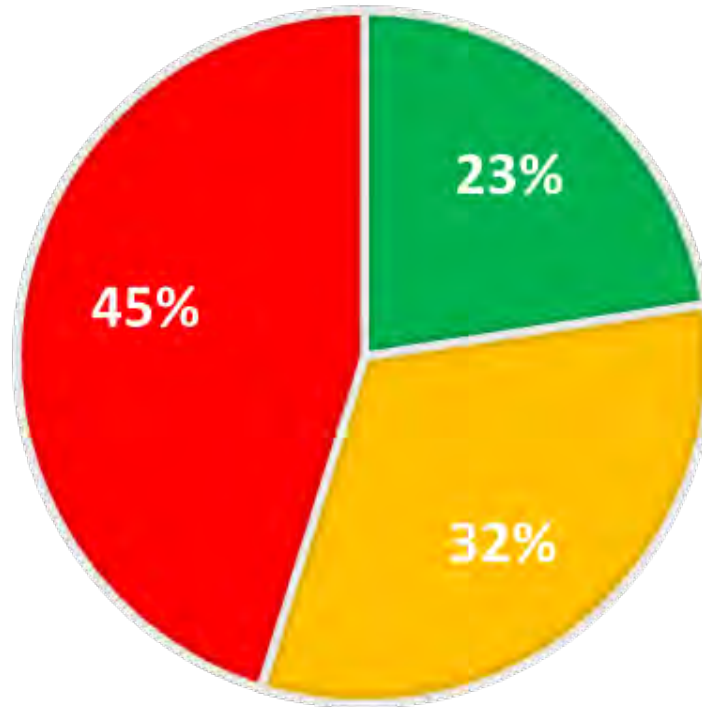
What condition are they in?



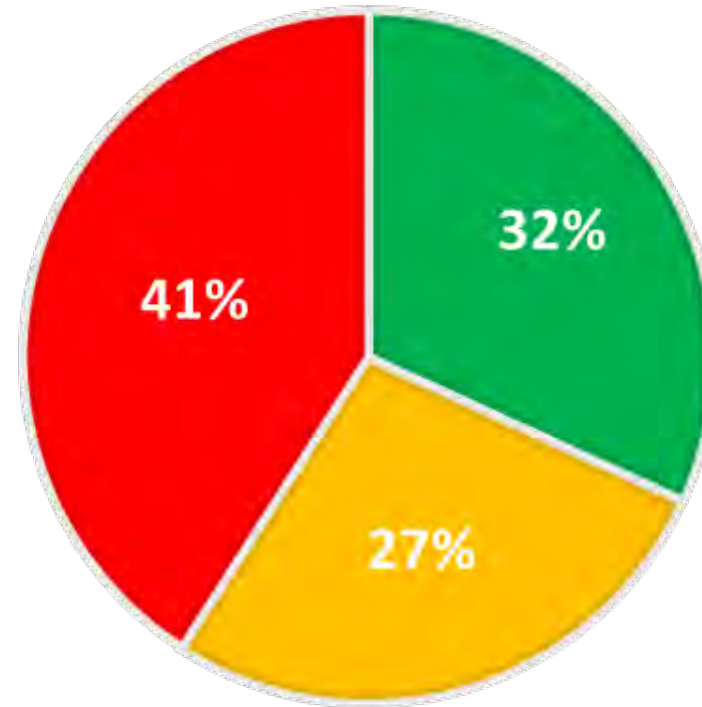
Distribution of ALEWs (after Perrin & Daly, 2010) with Annex I woodland monitoring data **(75 sites)**

What condition are they in?

AW & PAW



LEW



The percentage of ALEWs (after Perrin & Daly, 2010) rated as favourable (green), unfavourable-inadequate (amber), or unfavourable-bad (red) for overall conservation status

What condition are they in?

Derrycunihy Wood – unfavourable bad

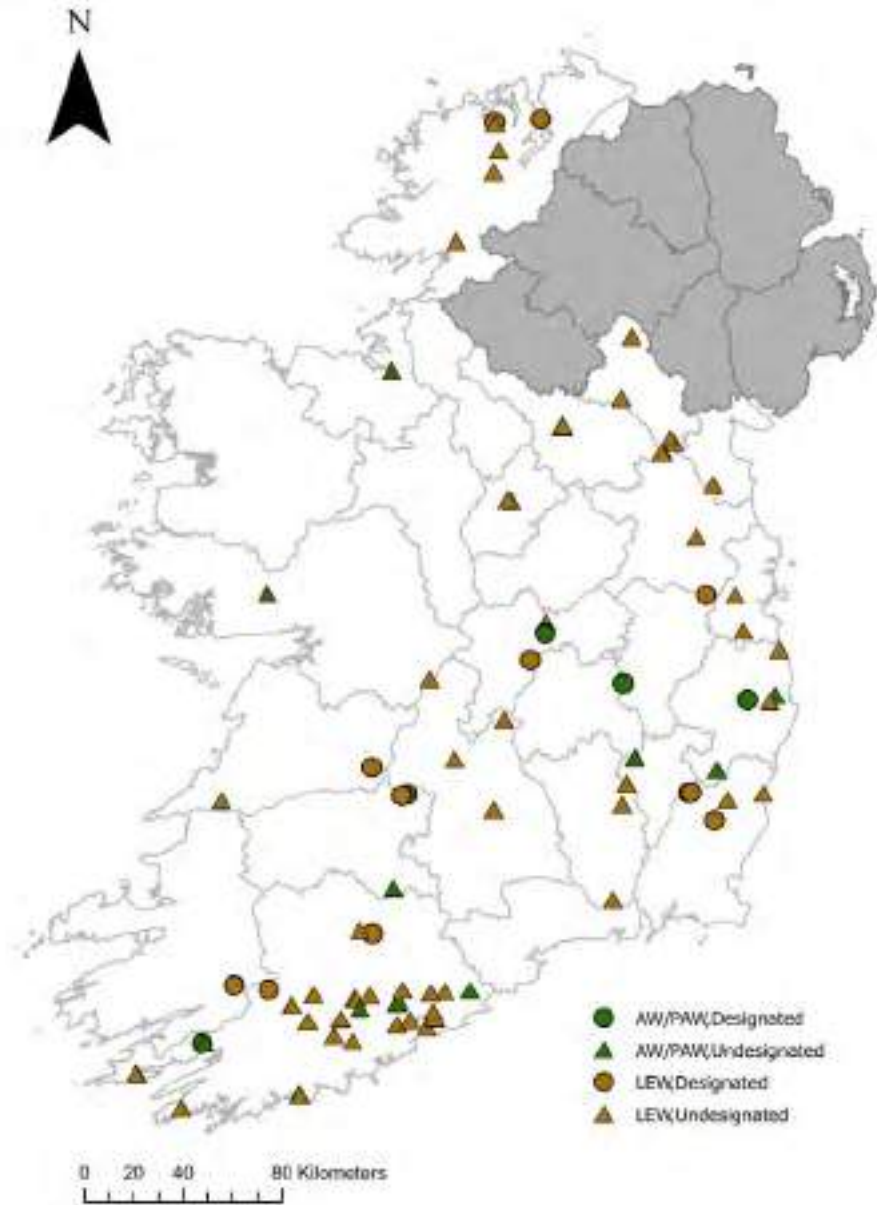


Glengarriff Wood - favourable

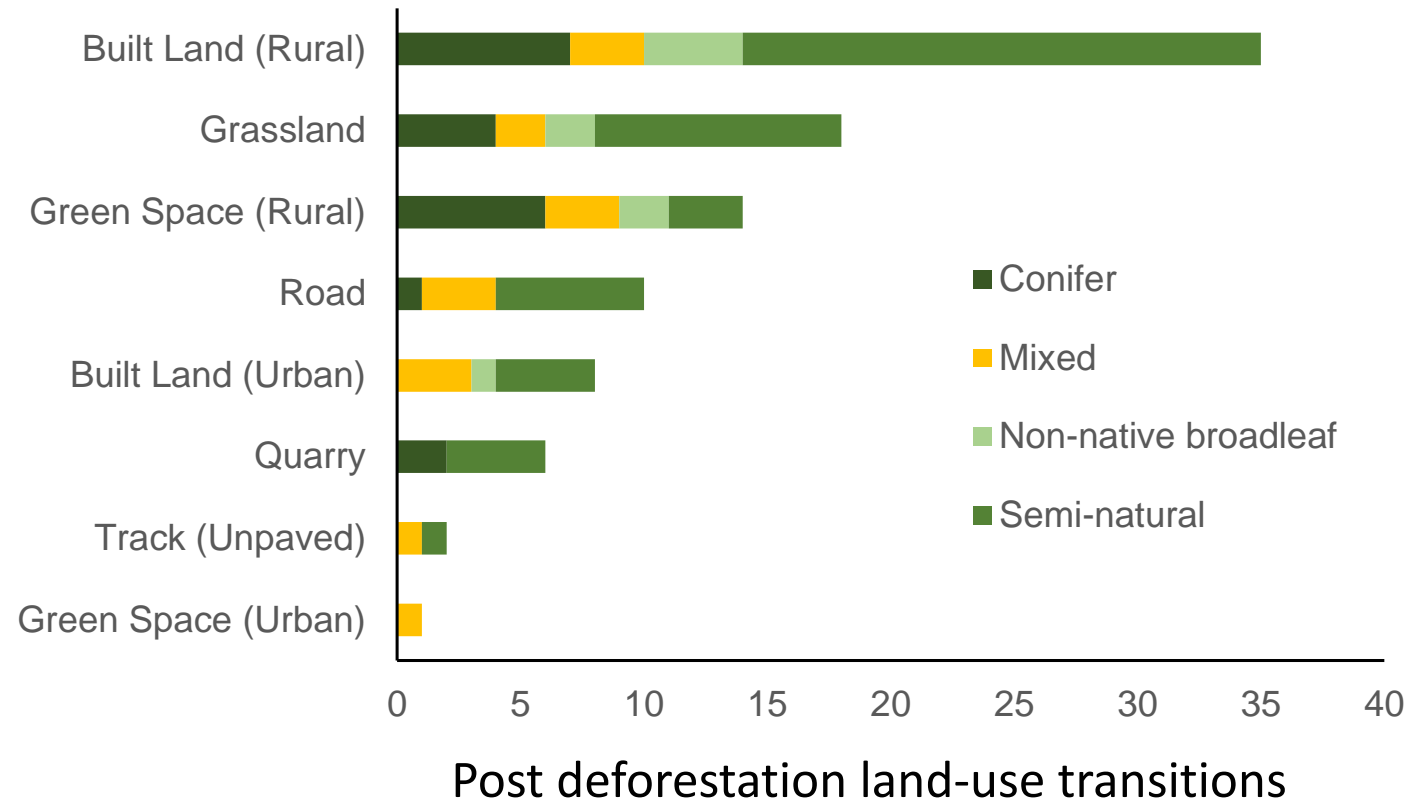


Negative impacts of overgrazing and invasive species

What condition are they in?

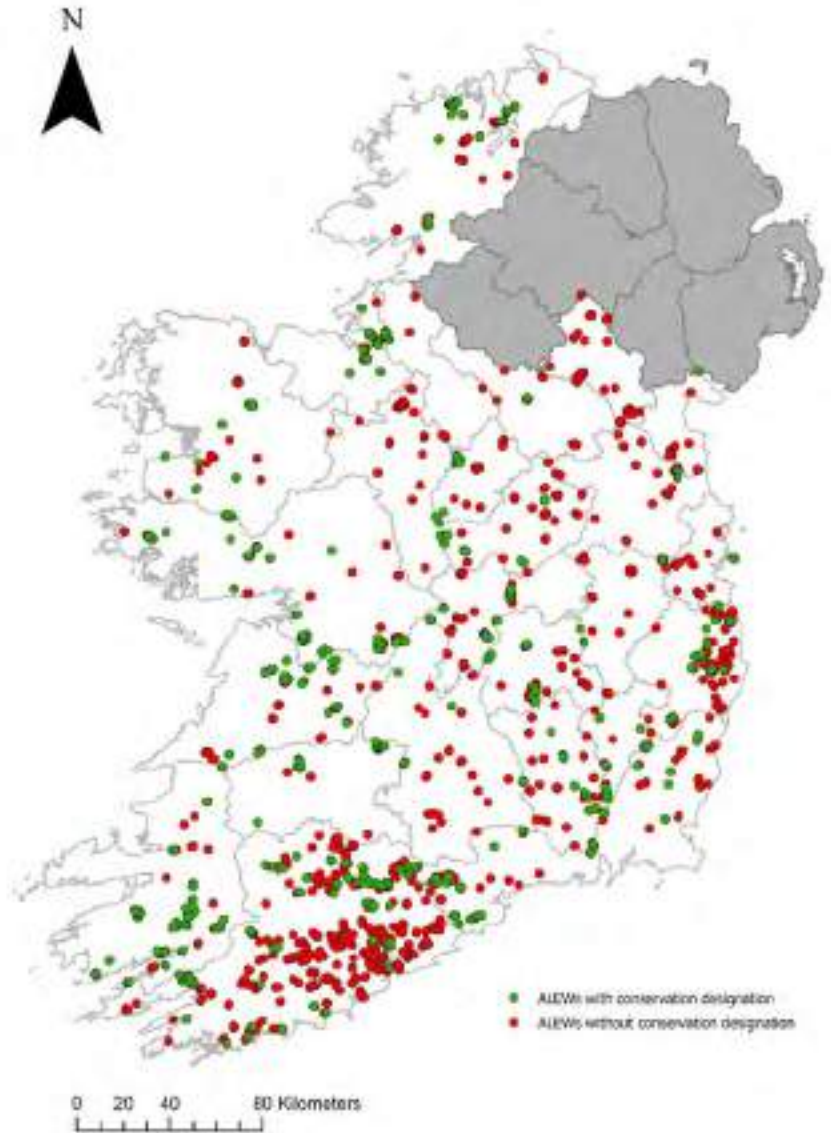


Death by a thousand cuts – the continued deforestation (2000 – 2017) of ancient and long-established woodlands (93 incidences)

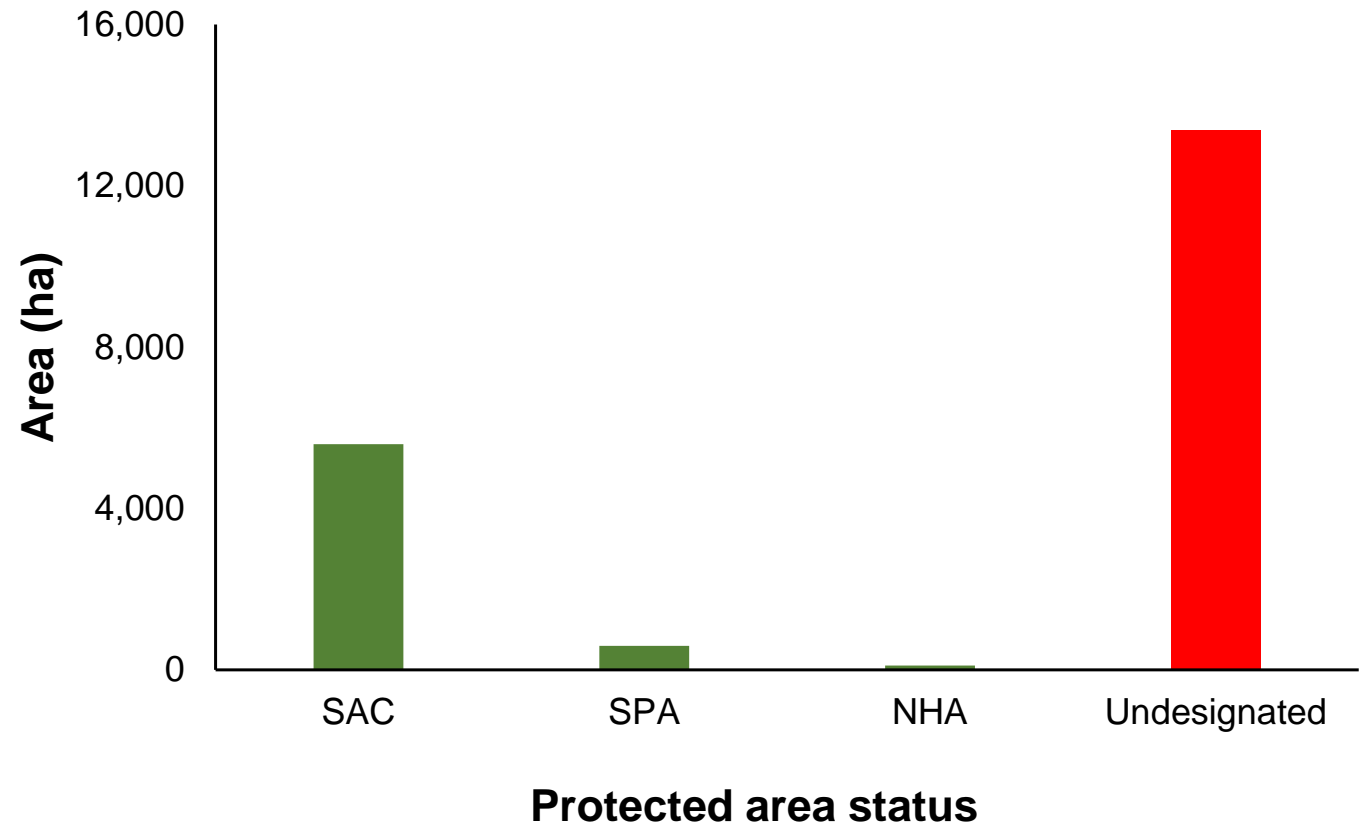




What level of protection are **ALEWs** afforded?



32% of area of ALEW (**Perrin and Daly, 2010**) occur within protected areas



Where ***exactly*** are our ancient woodlands?

Wall-to-wall mapping of c.1830s woodland (>0.1 ha)

Case study counties



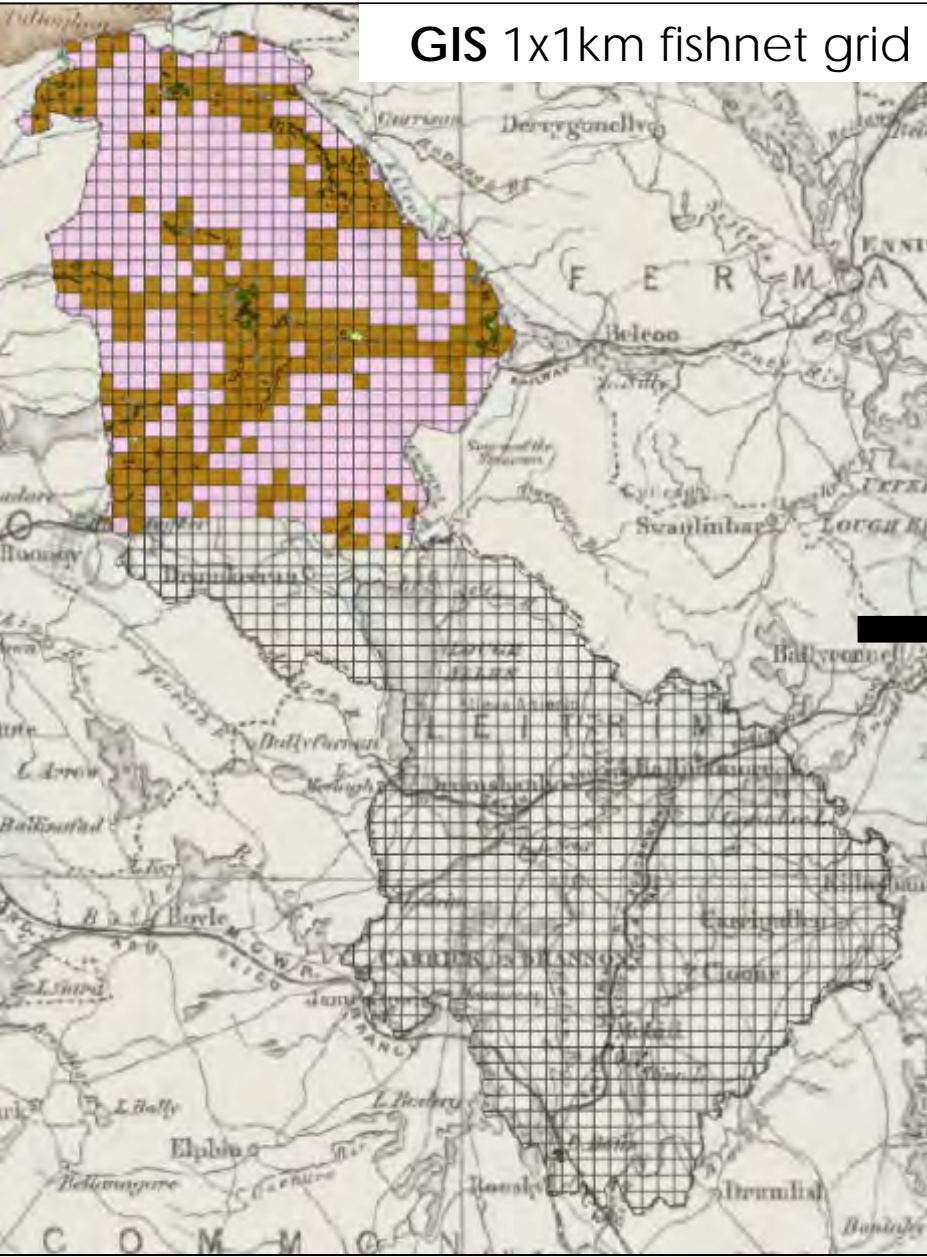
Co. Leitrim



Co. Kilkenny

Methods: wall-to-wall mapping

GIS 1x1km fishnet grid



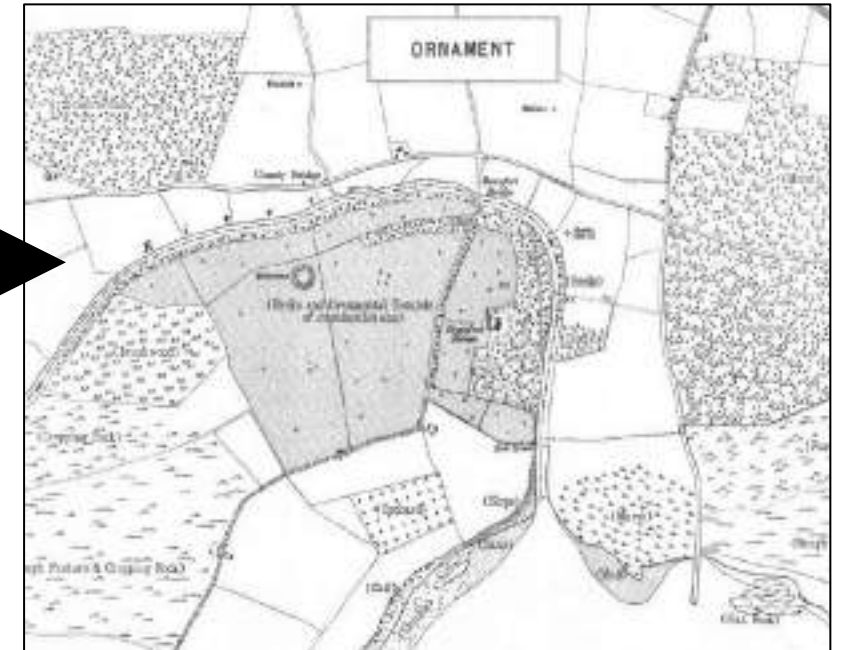
Digitise all c. 1830s woodlands (>0.1 ha) in OS 1st edition maps

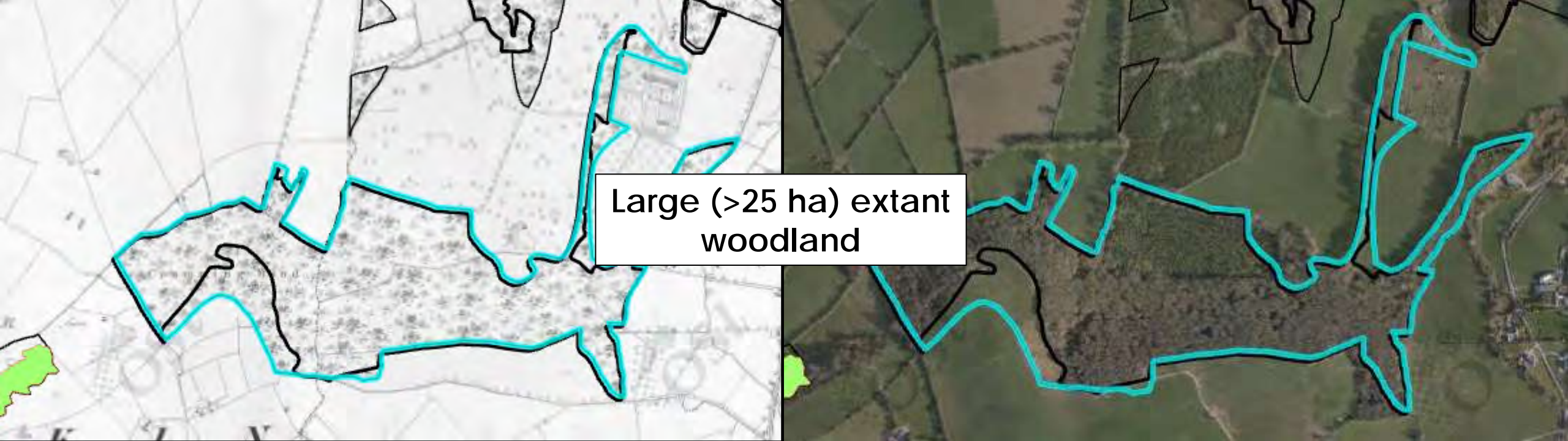


Assign attributes (e.g. forest type based on OS 1st edition (deciduous, mixed, conifer, brushwood)

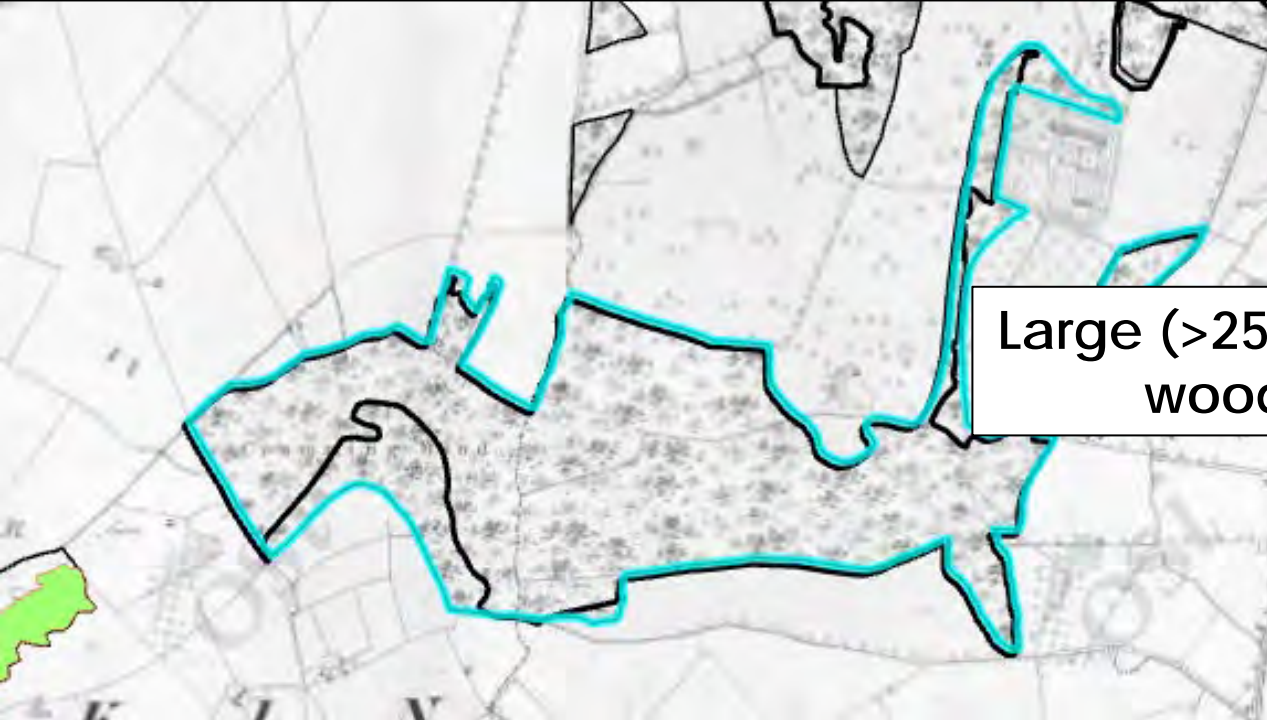
A screenshot of a GIS attribute table, likely from ArcGIS. The table has columns for 'Shape', 'OBJECTID', 'Stand Type', 'Contemporary Cover', and 'Area (ha)'. It lists 13 polygons with their corresponding attributes. The 4th row is highlighted in blue.

Shape	OBJECTID	Stand Type	Contemporary Cover	Area (ha)
Polygon_044	1076	Mixed	Yes	13.43
Polygon_1076	1076	Deciduous	No	40.91
Polygon_1077	1077	Mixed	No	42.02
Polygon_286	286	Mixed	Yes	40.00
Polygon_1553	1553	Deciduous	Part	34.1
Polygon_1200	1200	Deciduous	Thick	21.00
Polygon_5713	5713	Mixed	Yes	34.31
Polygon_903	903	Mixed	Yes	23.75
Polygon_14	14	Mixed	Yes	22.96
Polygon_688	688	Mixed	No	22.28
Polygon_5710	5710	Mixed	Yes	21.05
Polygon_5716	5716	Mixed	No	21.01
Polygon_2322	2322	Mixed	No	20.01





Large (>25 ha) extant
woodland



Large (>25 ha) extant
woodland



Small (0.25 ha) extant
woodland



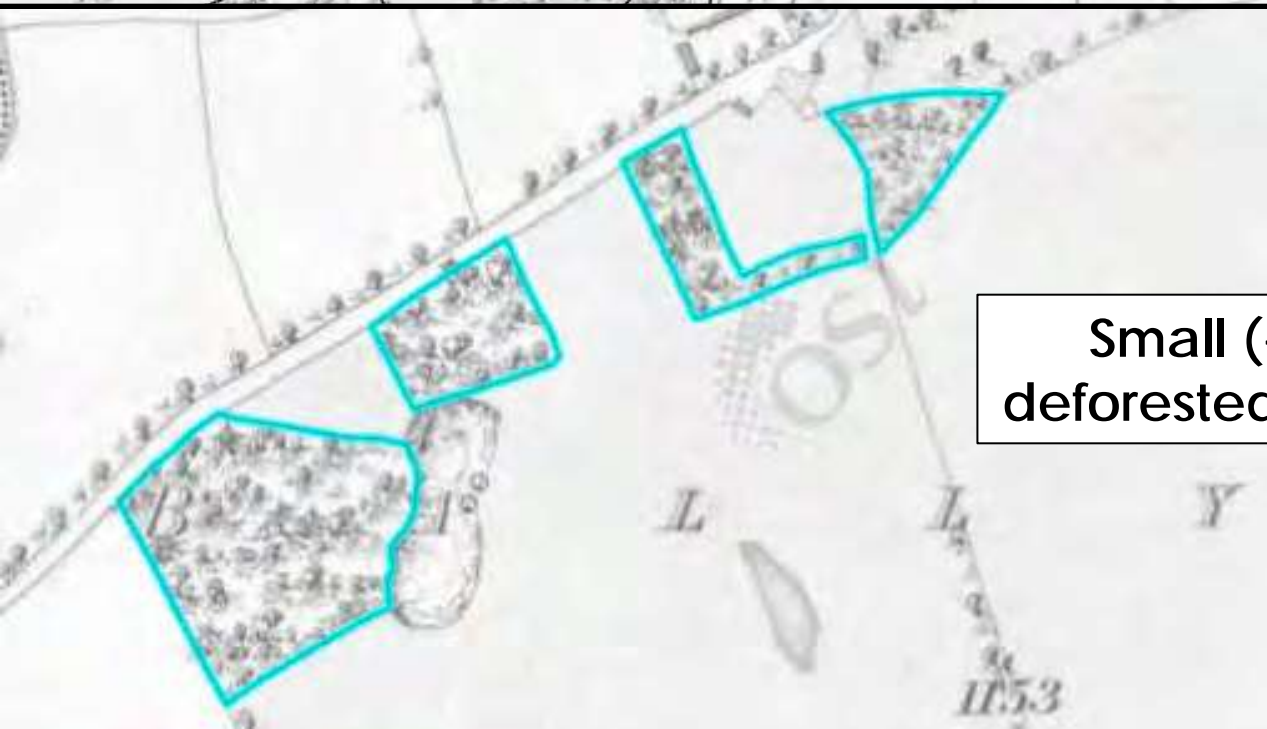


Large (8 ha)
deforested woodland





Large (8 ha)
deforested woodland



Small (<0.5 ha)
deforested woodland



Methods: assigning ancient (1650s) woodland status

Collating 17th & 18th century map and text evidence

The National Library of Ireland, the National Archives, Irish Manuscripts Commission, online map libraries (e.g. TCD Library Digital Collections, UK National Archives, L Brown Map Collection), consultation with historians

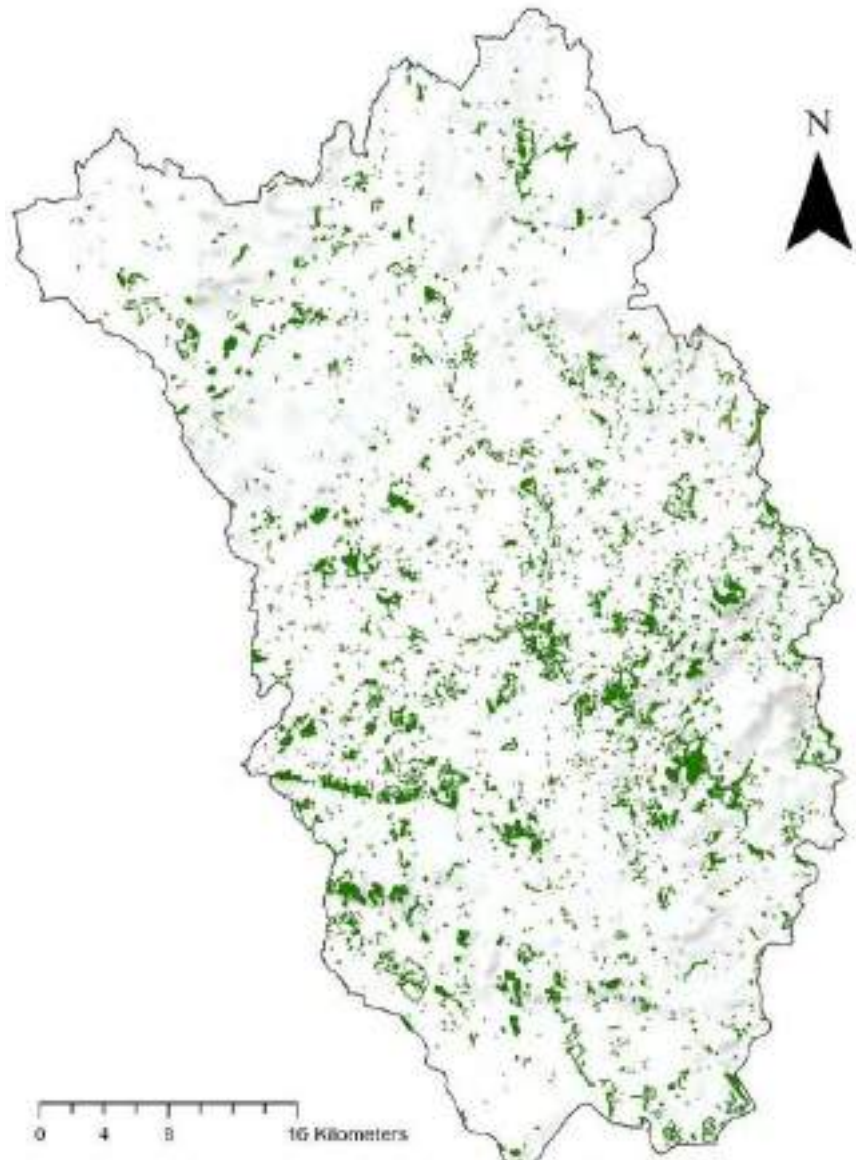
Examples of historic evidence

- Pettys General Map of Ireland
- Brown's Map of Connaught
- Richard Bartlett Maps
- Down Survey Barony, parish maps and "Terriers"
<https://downsurvey.tcd.ie/>
- The estates of Nathaniel Clements, Leitrim
- Map of the Demesne at Kilmurry Estate, Kilkenny



The estates of Nathaniel Clements, Leitrim, 18th century

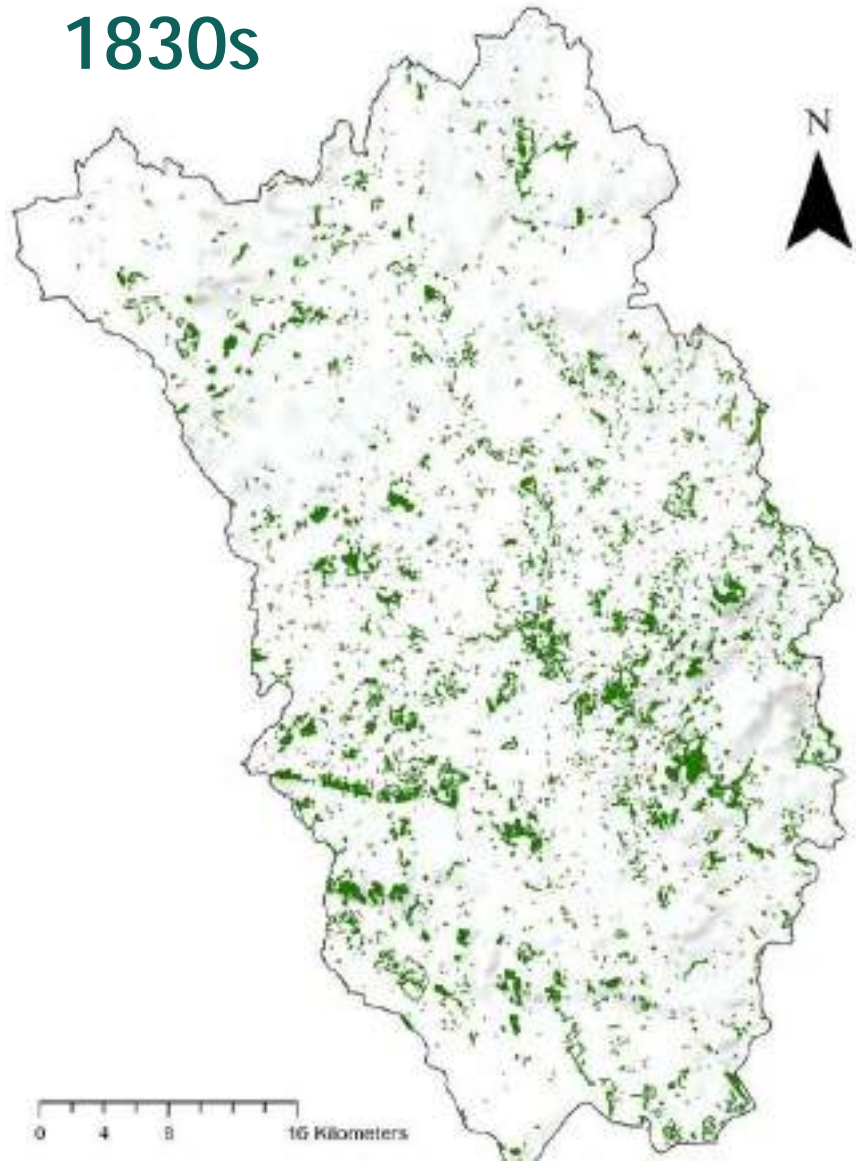
Results: c. 1830s forest cover in Kilkenny



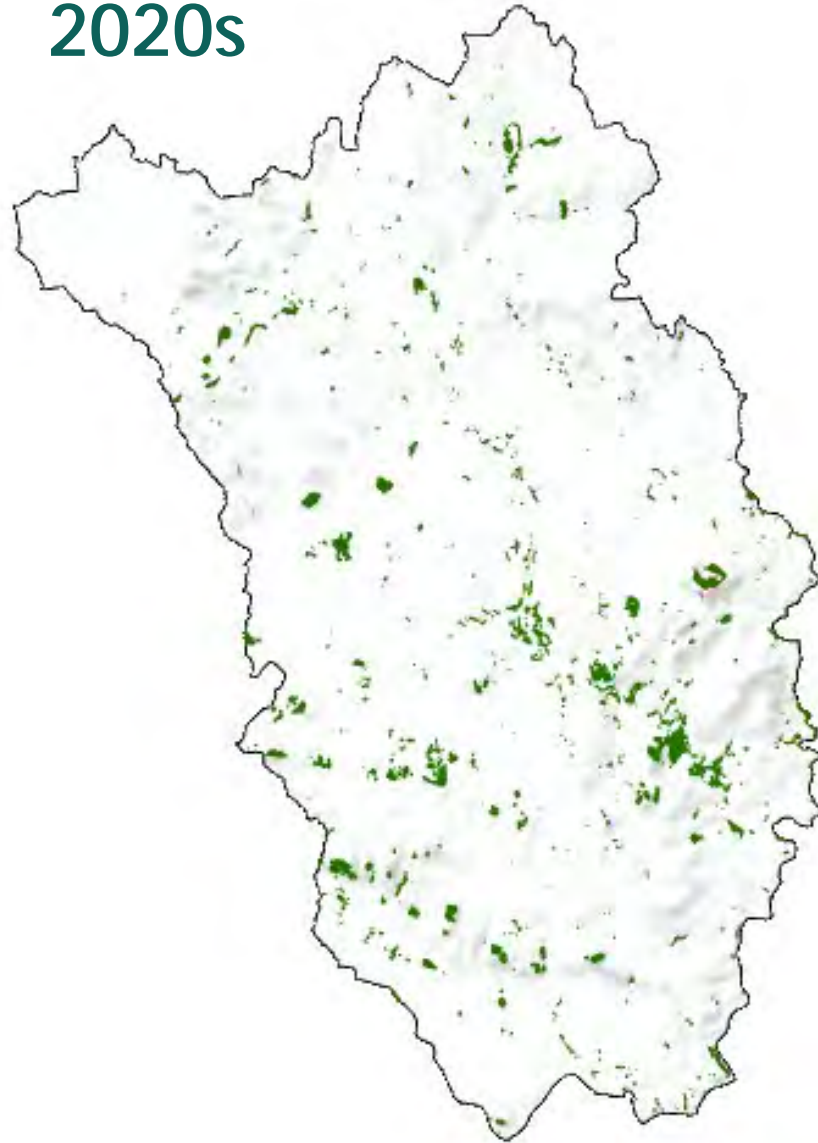
- 5235 woodland polygons digitised from OS 1st edition maps for Kilkenny
- **7,860 ha of woodland in c.1830s (3.8% of county)**
- 3,482 ha remains today (1.7% of county)
- Current forest cover in Kilkenny: 10% (NFI, 2022)

Results: c. 1830s forest cover in Kilkenny

1830s



2020s



Results: Ancient woodland (17th century) in Kilkenny



- 39 ancient and 34 possible ancient woodland sites
- Total area of 857 ha (0.41% of county area)
- 268 ha broadleaf woodland, 326 ha mixed woodland, 263 ha conifer plantation
- **Mean size: 5.9 ha, median size: 1.2 ha**

Next steps....





An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine



An tSeirbhís Páirceanna Náisiúnta
agus Fiadhúlra
National Parks and Wildlife Service



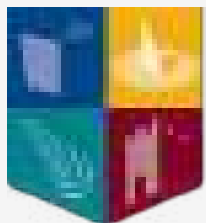
Ancient Woodlands Ireland

Objective: To deliver a national inventory of ancient woodlands in Ireland

Multidisciplinary project - GIS & remote sensing, paleoecology, contemporary ecology, & history to assess changes in woodland cover in Ireland over the last 400 years.

The **Ancient Woodlands Ireland** project will deliver strategic **Forests for Nature** goals, inform policy, and help prioritize sites for nature restoration.

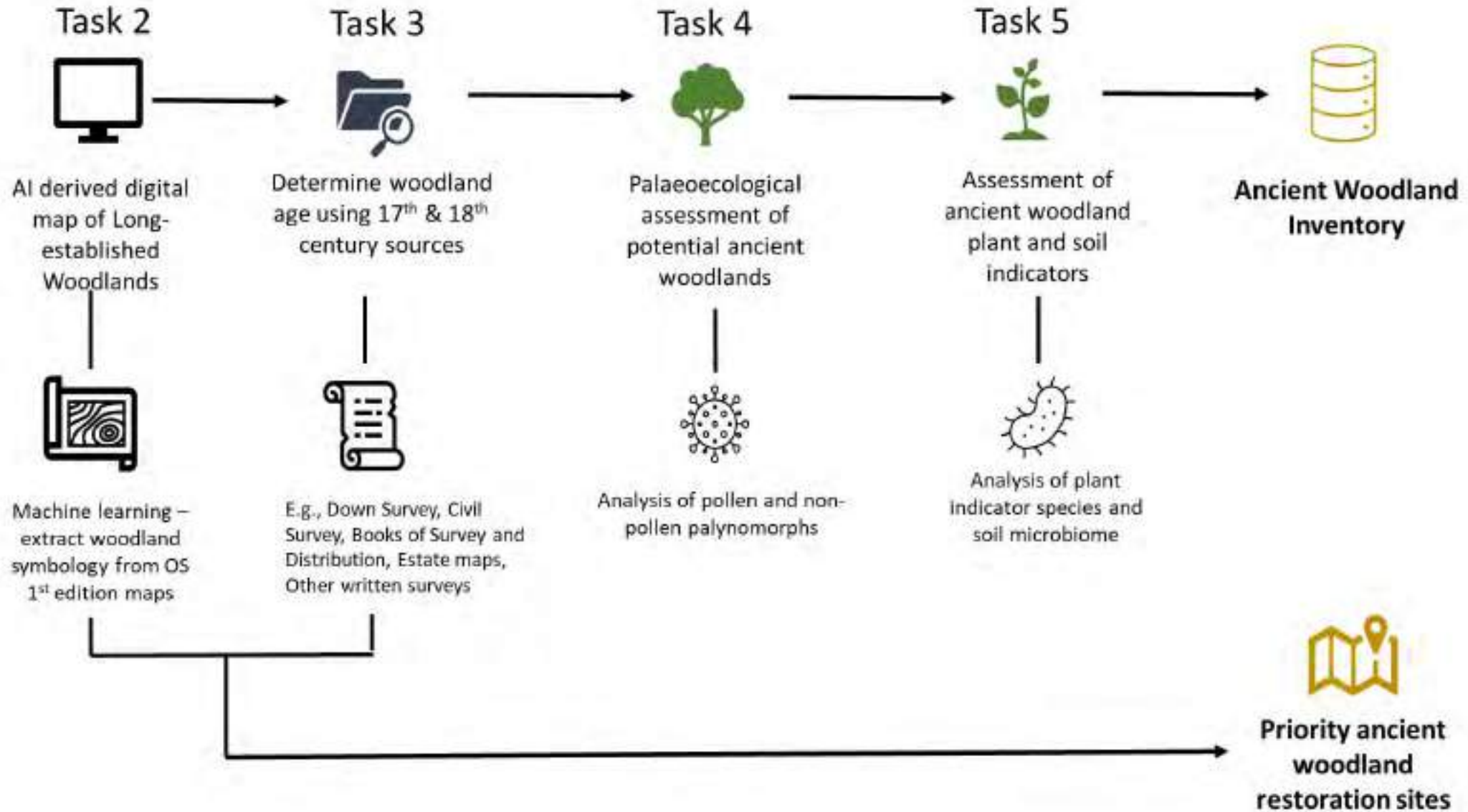
Helen Shaw, Fiona Walsh, Eamon Darcy (MU), Annaleigh Margey (DKIT), Jesko Zimmerman, Stuart Green (Teagasc), Paul Armstrong (Woodland Trust)



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Task 1 Knowledge transfer



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Ancient Woodlands Ireland

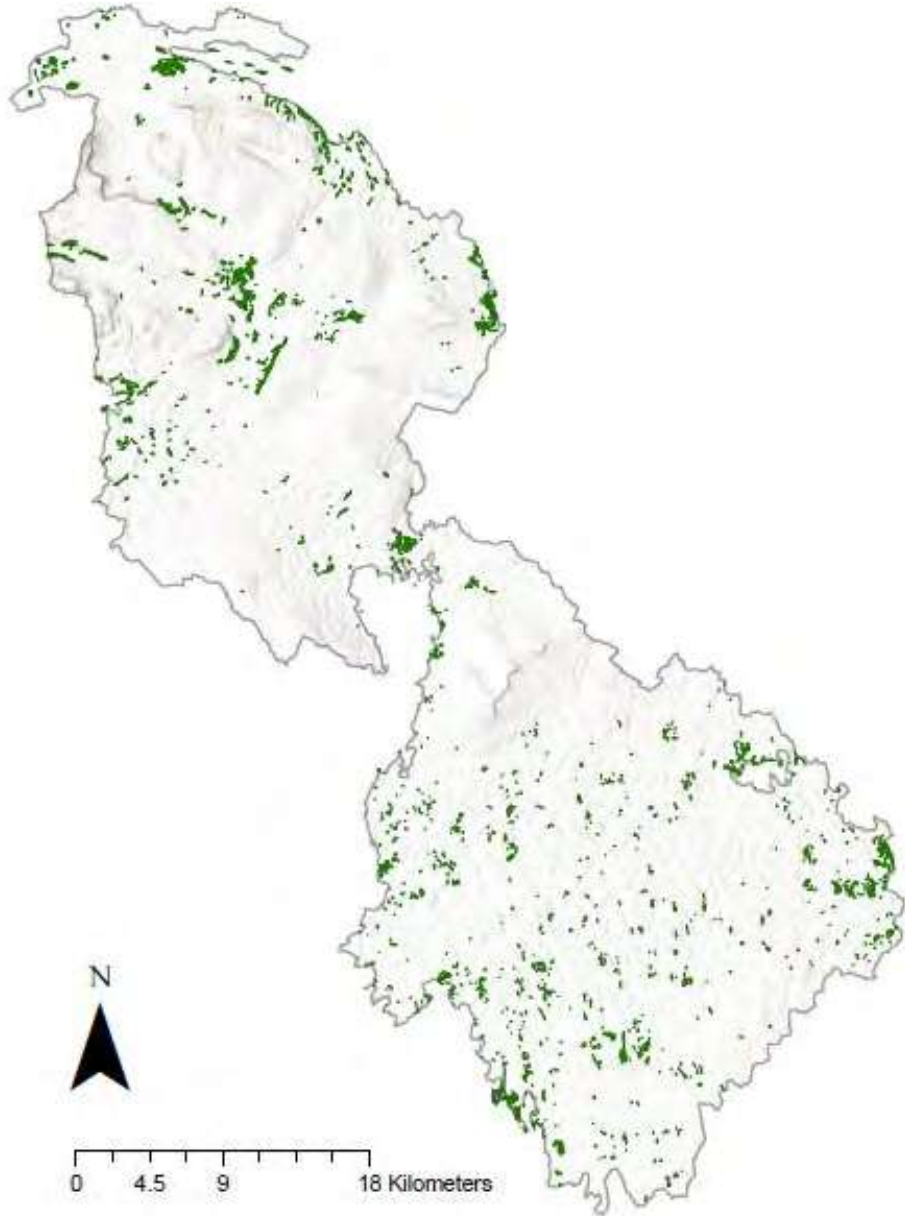
An All-Island Inventory of Ancient and Long-Established
Woodlands for Ireland

Acknowledgements

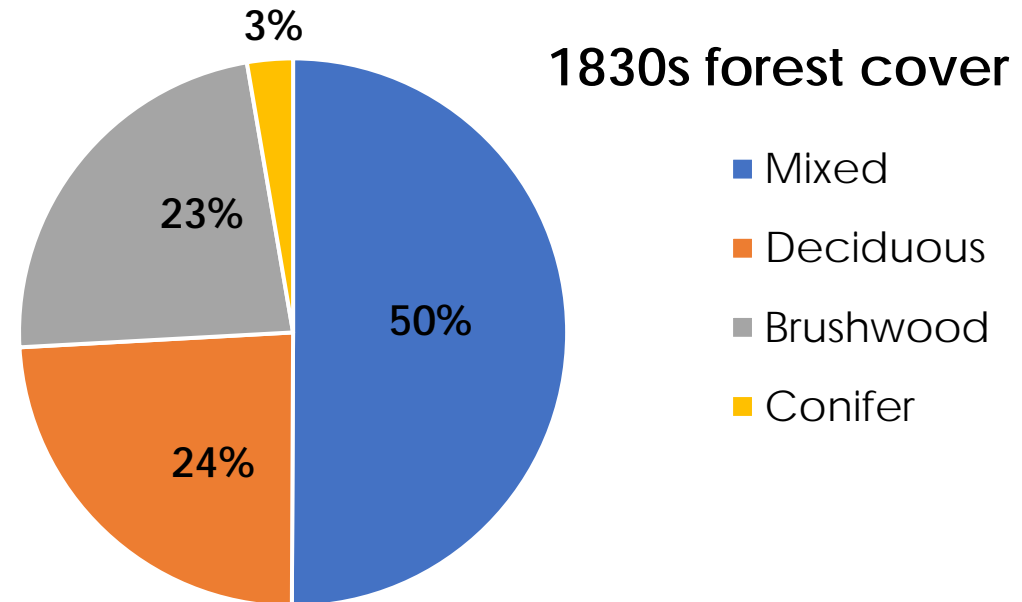
- LEAF project (Long established and Ancient Forests in Ireland) – **funded by National Parks and Wildlife Service**
- **Co-authors:** Dr Helen Shaw, Dr Eamon Darcy, **Thomas Leniston**, Maynooth University, Prof Fraser Mitchell, Trinity College Dublin, Dr Jenni Roche, NPWS
- Mr Paul Ferguson, Dr David Brown and Prof Micheál Ó Siochrú (TCD), Mr Tom Broderick (OSI), Dr Annaleigh Margey (DKIT)
- Perrin, P.M. & Daly, O.H. (2010) A provisional inventory of ancient and long-established woodland in Ireland
- David Smyth, Native Woodland Trust and Citizen Scientists (Ancient Woodlands Project)
- DAFM & NPWS



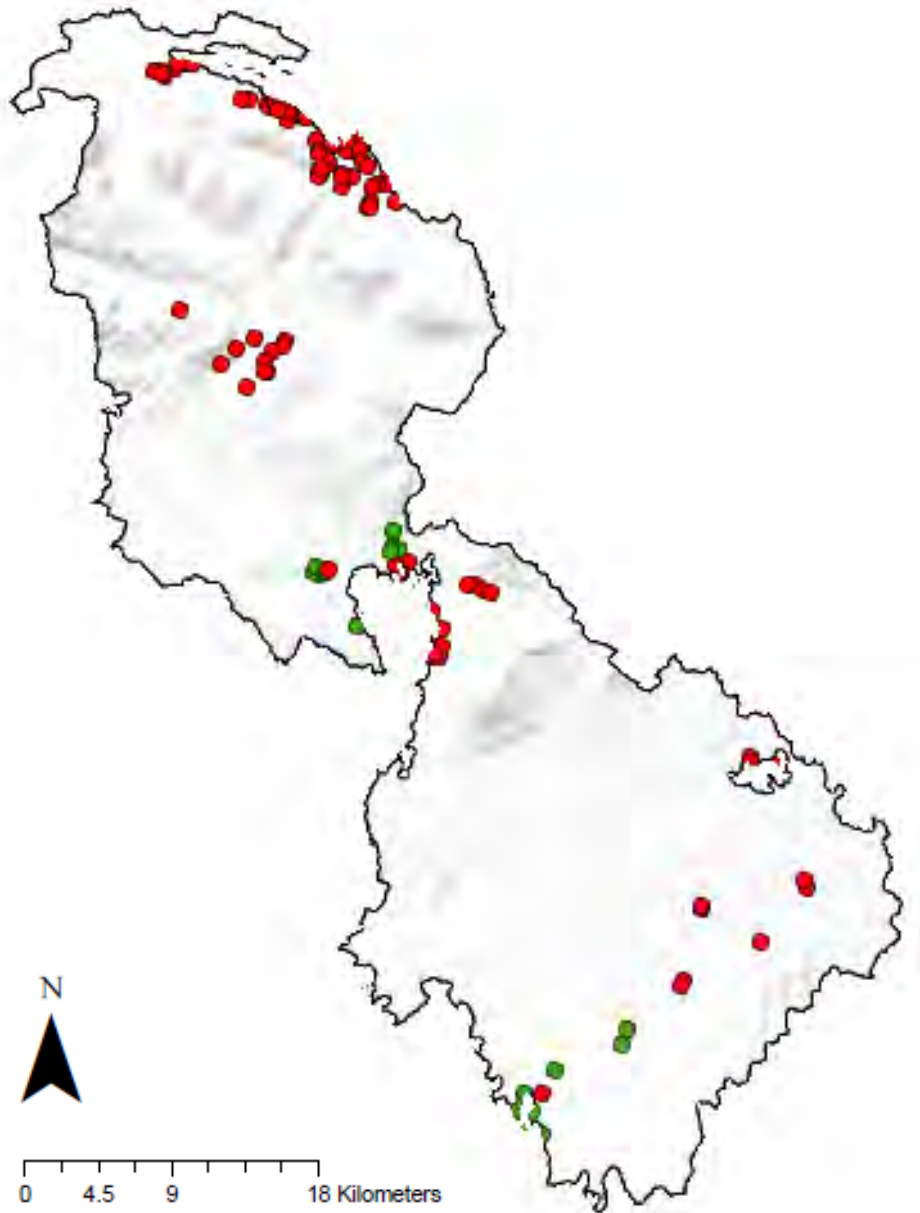
Results: c. 1830s forest cover in Leitrim



- 1498 woodland polygons digitised from OS 1st edition maps
- **2,077 ha of woodland in c.1830s (1.3% of county)**
- 1102 ha remains today (0.7% of county)
- Current forest cover in Leitrim: 19% (NFI, 2023)



Results: Ancient woodlands (17th century) in Leitrim



- 18 ancient and 102 possible ancient woodland sites
- Total area of 266 ha (0.17% of county area)
- 200 ha broadleaf woodland, 37 ha mixed woodland, 26 ha conifer plantation
- **Mean size: 2.34 ha, median size: 0.86 ha**