

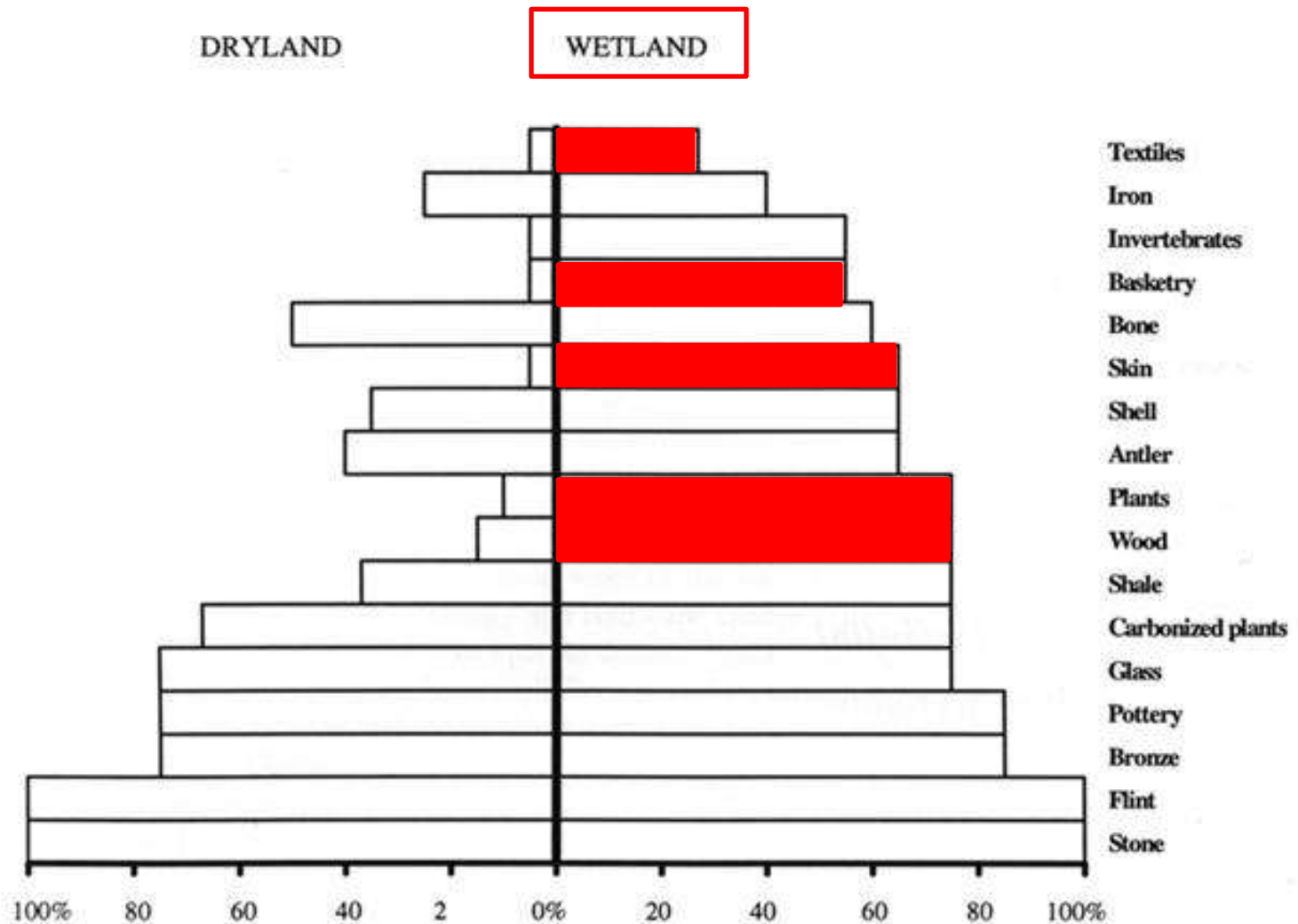
Review #6

Peatlands and the Historic Environment

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Photo: Frank Bradford (Bronze Age socketed axe
discovered during peat cutting, Orkney)



After Coles (1986)



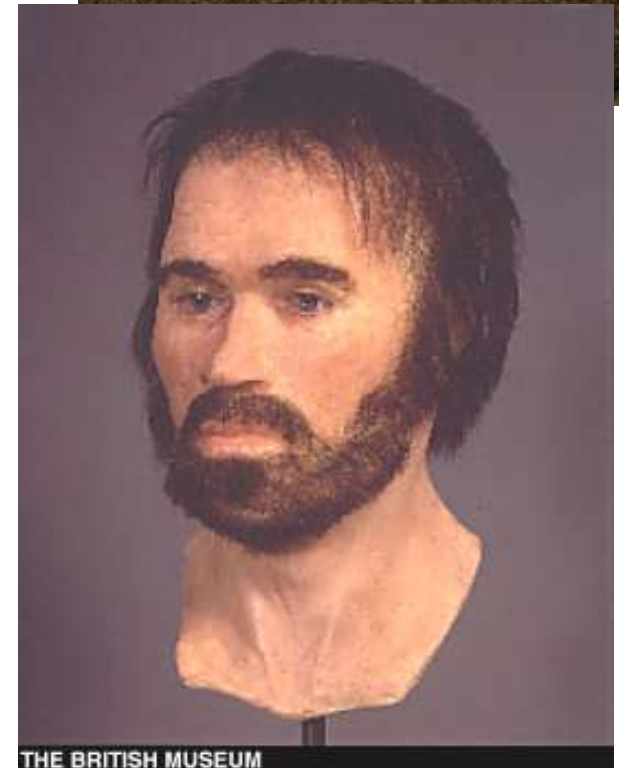
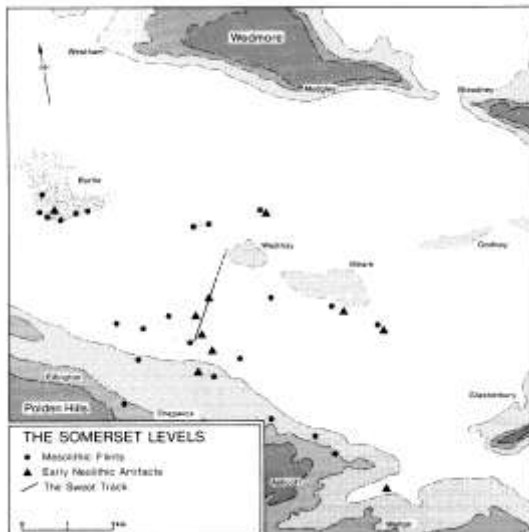
Waun Fignen Felen: Brecon Beacons, Wales

Three ‘contexts’:
Beneath the peat...



Copney Stone Circles, Northern Ireland

Within the peat...



THE BRITISH MUSEUM

Within the peat cont.



Bronze Age cist at White Horse Hill, Dartmoor
(Photo: Ralph Fyfe)



Mesolithic birch bark roll and
antler point (c. 8000BC)
Star Carr, N.Yorks



The Ballaculish Goddess, Loch Leven
Photo: National Museum of Scotland

On the surface:

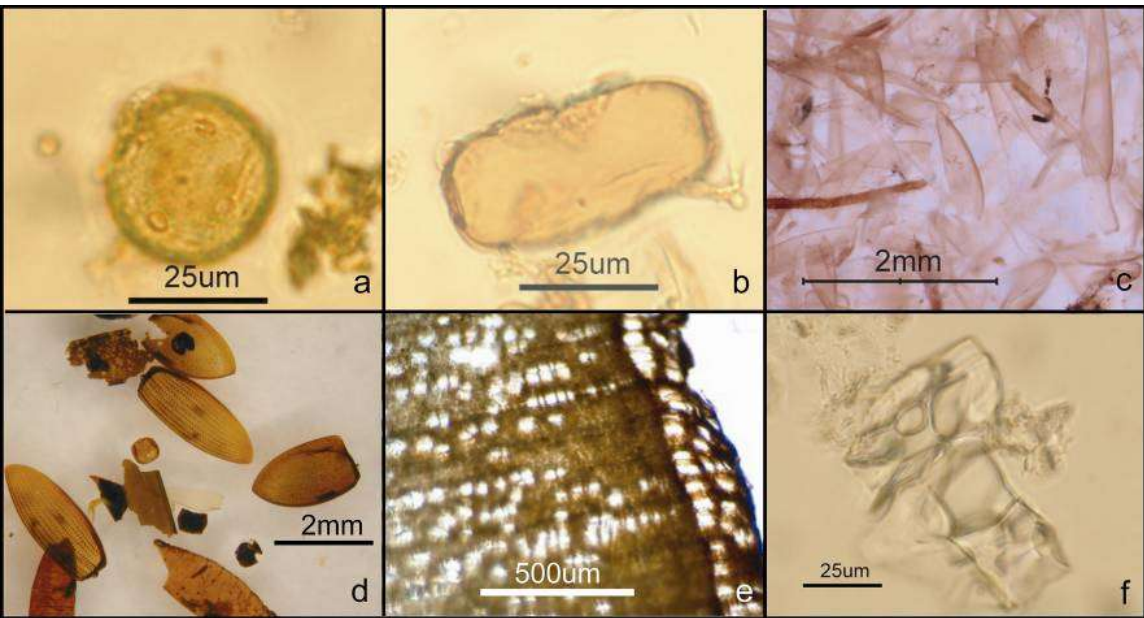


Prehistoric rock art on Fylingdales Moor, North York Moors (Photo OAN)

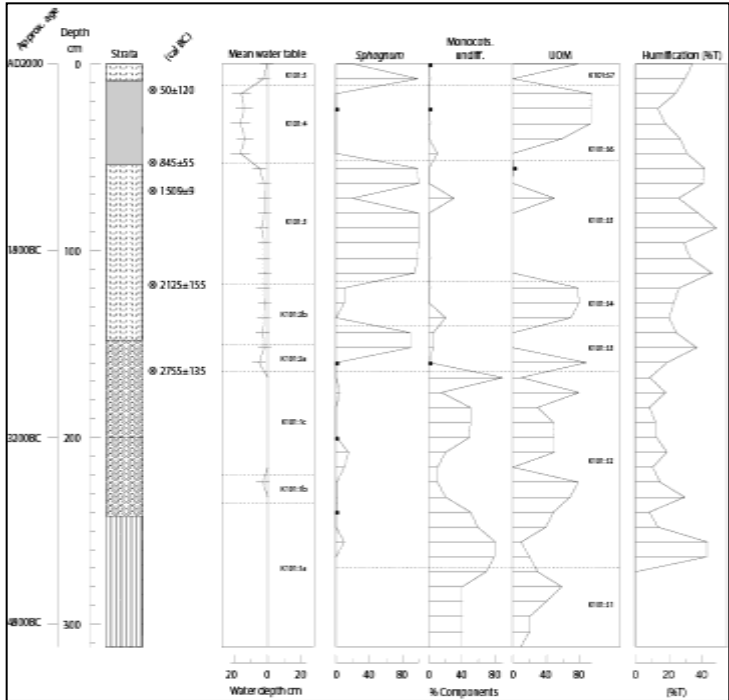


Cutting peat on Gidleigh Common, Dartmoor (photo: Chris Chapman)

Within the peat: the palaeoenvironmental record (archaeoenvironmental resource)



(Photo: G. Plunkett, E. Reilly & I. Stuijts)



Right: Profile through a raised mire and top r. results of multi-proxy analyses of a peat sequence

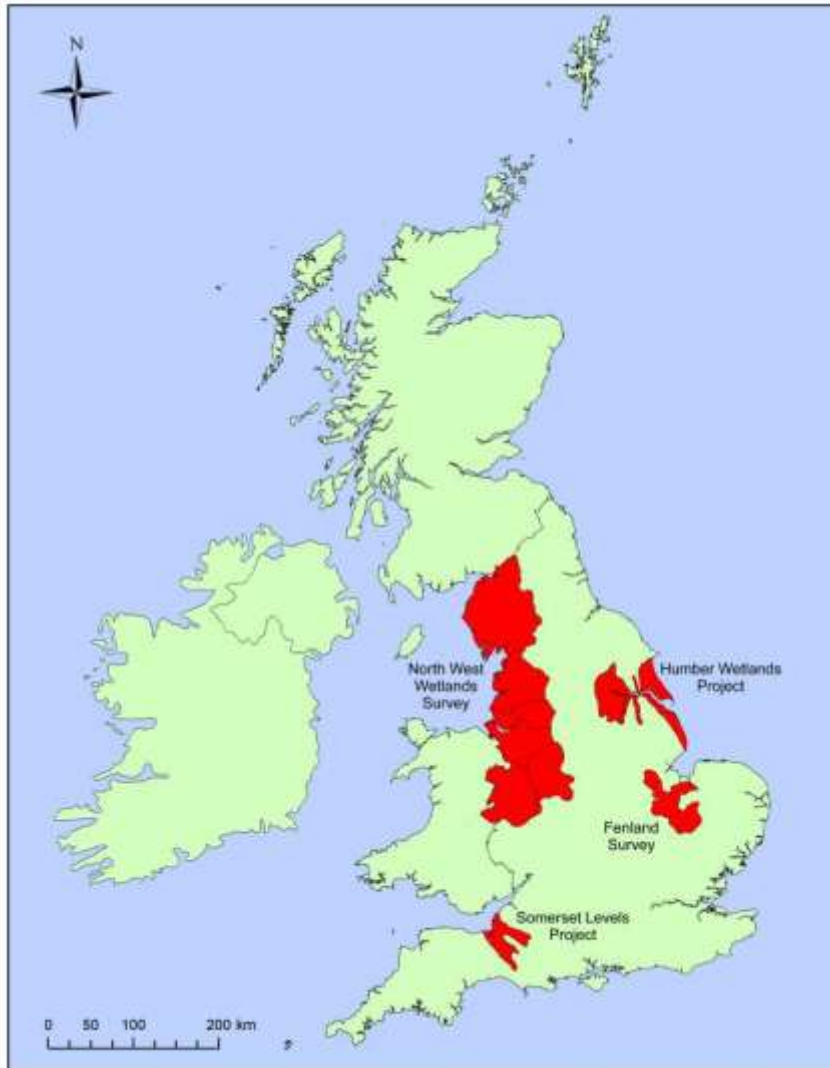
The Palaeoenvironmental Record: A Valuable 'Tool Kit'

- Vegetation change (pollen, macrofossils)
- Peat accumulation rates (radiocarbon dates, tephra, chronological modelling)
- The formation processes of peatlands
- Climate change (testate amoebae, plant macrofossils)
- Human impacts on the environment
- 'Long term ecology'

Explore ways of better incorporating these data...



ENGLISH HERITAGE



- **England:** EH wetland surveys, other HEEP funded projects (e.g. Uplands Peat Project, Predictive Modelling Project) and other research council projects
- **Wales:** The Uplands Archaeology Initiative (RCAHMMW), Funerary and Ritual Project (Evans 2006)
- **Scotland:** SWAD (Clarke *et al.* 2001), SWAP (AOC/Historic Scotland), SPAD (RCAHMS), Flanders Moss (SNH)
- **N. Ireland:** *Peatland archaeology in Northern Ireland: an evaluation* (Plunkett & Foley 2006)
- Palaeoecological research...

Peatland specific archaeological surveys, research and other relevant work

England	Wales	Scotland	N. Ireland
Strategies (wetlands)			
MARS MAREW (2002) Strategy for Wetlands (2002) NHPP	Research Framework (2001) Historic Environment Strategic Direction Statement and Action Plan (2009)	Scottish Archaeological Research Framework (ScARF)	<i>Condition and management survey of the archaeological resource in Northern Ireland. (Gormley et al. 2009)</i>
Sub-regional			
Regional Research Frameworks MARISP HMEW 2002 Upland peat survey peat partnership	None known	None known	None known
'Toolkits'			
Wetland Vision	None Known	None Known	None Known

Research frameworks and strategies in the UK

Some 'Headline' Figures...

Quantifying the resource:

MAREW

- 1.2 monuments per sq. km in lowland peatlands (4200 in England)
 - If Brue Valley (Somerset Levels) used then = over 7000
- 2.2 monuments per sq. km in uplands (1800 in England)

N. Ireland

- Plunkett and Foley (2006): 1002 archaeological sites and min 763 'finds' associated with peatlands
 - NI SMR: 222 sites and monuments associated with peatlands

SWAD

- Database: 365 entries for lowland mires, 2238 for 'peaty soils'

*(In comparison to Republic of Ireland: IAWU – 3462 sites in 45000 ha of raised mire
(7.7 sites sq. km – McDermott 2007))*





The irony of peatland archaeology...

A fragile and finite resource...



Iron Age Oak Posts (felling date spring 75 BC)

Beccles, Waveney Valley, Suffolk



Gaps in Knowledge...

Key Stakeholder Comment:

“We probably have more gaps than we have knowledge.”

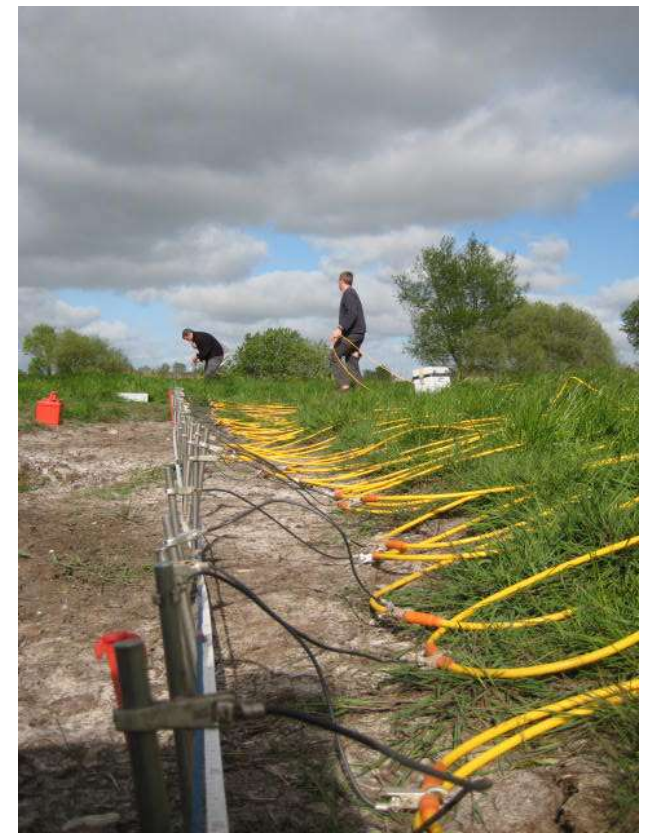
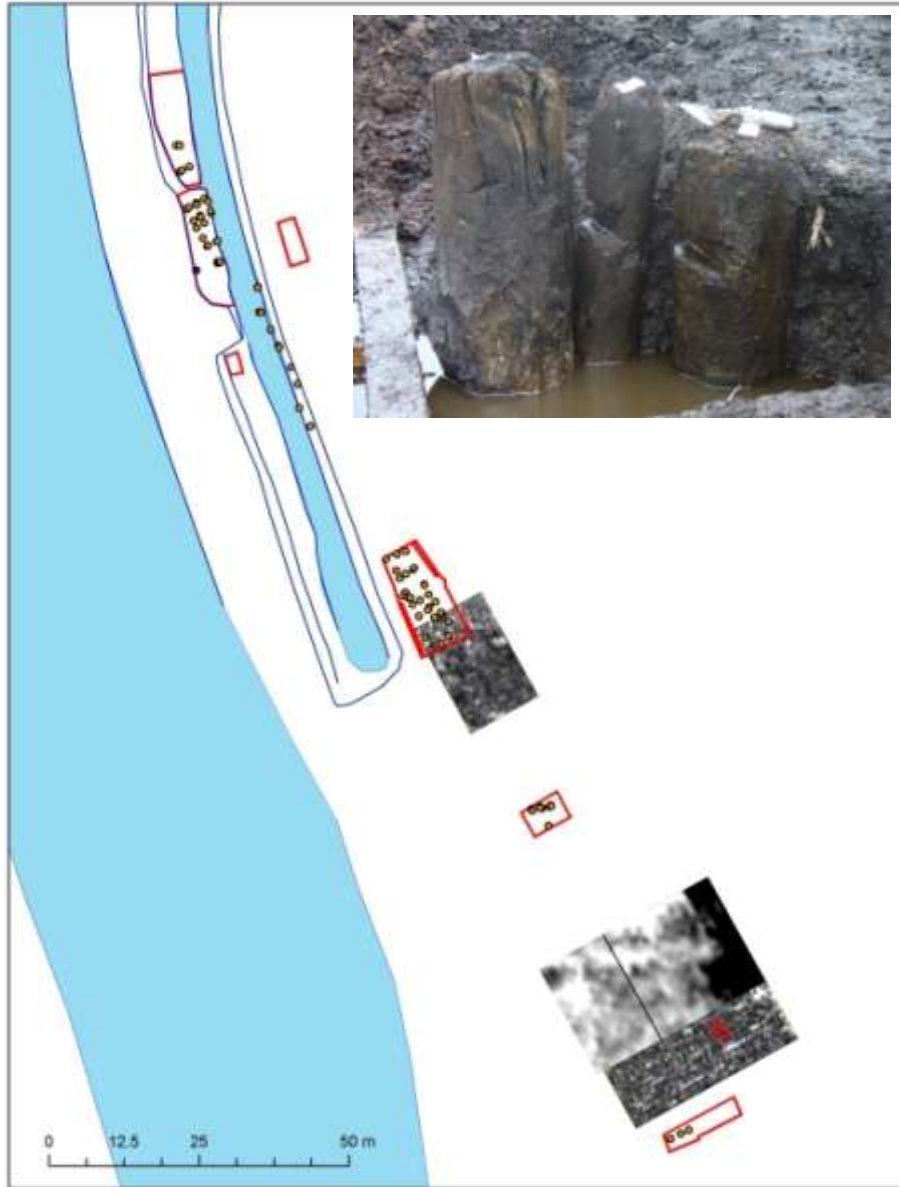


A taster or two...



Assessing (with reasonable confidence) the extent, character and state of preservation of the resource: 'hot spots' and big blanks...

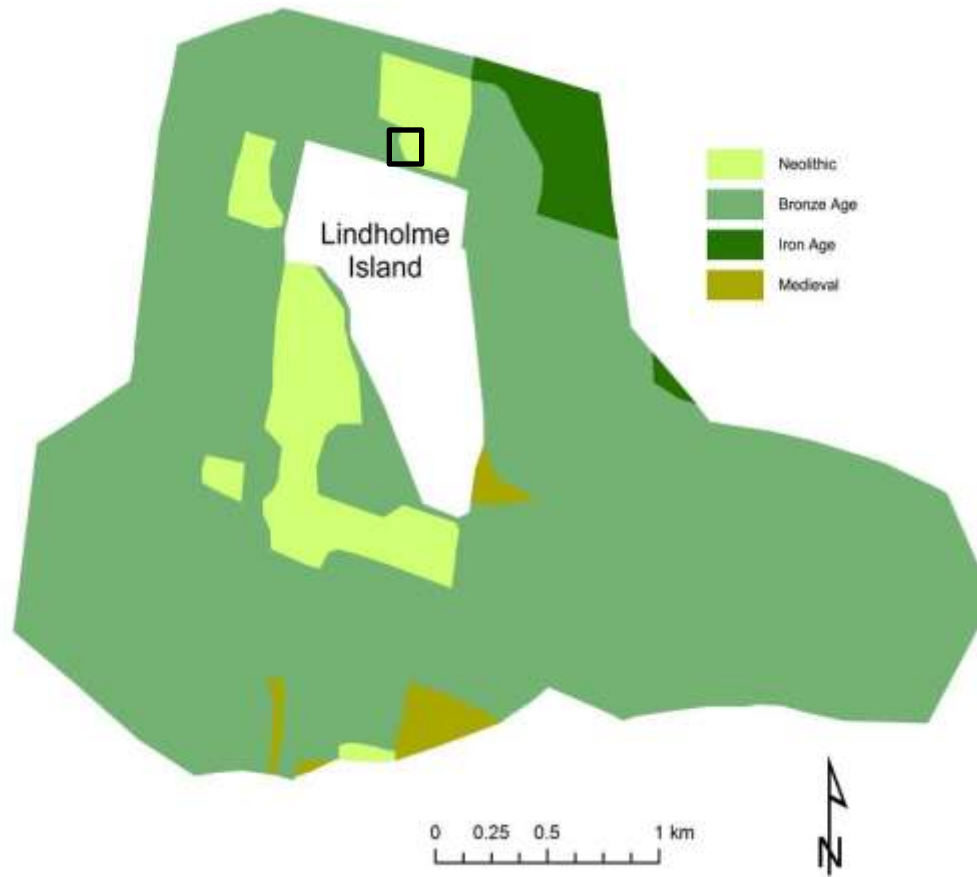
Finding sites in peatlands...



Geophysics...of limited use in most peatland contexts

Understanding spatial and temporal aspects...

Peat cutting/
desiccation...



Above: GIS model of Hatfield Moors showing the estimated date of the top of the surviving peat resource and (top r.) excavation of a Neolithic trackway and platform discovered n. of Lindholme

Direct and Indirect threats...essentially any threat to the ecological functioning of peatlands is also one that threatens the historic environment resource

What is the threat?	Nature of threat	Why is it a threat?
Erosion	Direct	Peat extraction – industrial (horticultural use) & domestic (fuel)
De-watering	Indirect	Water abstraction Drainage Reclamation – for agricultural purposes
Afforestation	Direct/ Indirect	Change in land use Alters soil chemistry Drainage Root damage
Peat cutting	Direct/ Indirect	Removal of resource Drainage
Burning	Direct/ Indirect	Wild fires Controlled fires
Climate change	Direct/ Indirect	Changes in level & distribution of rainfall affecting peat growth & system development
Development	Direct/ Indirect	Wind farms and infrastructural developments
Others	Direct/ Indirect	Foot and vehicle traffic, military activity

Threats...

Key Stakeholder Comment:

“Land reclamation was damaging in the ‘70’s-’80’s. Now mechanical peat cutting for horticulture and some fuel is the worse. Development and dumping are factors. Undesignated areas not subject to government grants where owners can do anything they wish...”

Reliable figures for loss/damage to archaeological sites are in short supply

Somerset Levels (Brunning 2001):

175 sites indentified: 59 partially or totally destroyed over the last century and half (peat extraction responsible for 48 of these)



Harmonies and possible conflicts with other review areas

Review area	Harmonies	Conflicts
1. State of peatlands	Knowledge of the extent and condition of peat Understanding peat depth and properties in 3D	Terminologies and mapping of peat Methodologies for defining condition of peatlands
2. Climate change	Provision of an evidence basis for past change	Disturbance of in-situ peat during restoration
3. Biodiversity	Promotion of functioning, peat building systems Maintenance of high water tables Provision of an evidence basis for past change Removal of scrub and higher vegetation (plantations)	Focus on vegetation and peat surface, not on peat matrix Seasonal lowering of the water table for management Disturbance of peat matrix for habitat creation Disturbance of in-situ peat during peat rehabilitation
4. Restoration	Promotion of functioning, peat building systems Maintenance of high water tables Opportunities for generating understanding of historic environment	Loss of visible, surface, evidence of peatland exploitation Disturbance of in-situ peat during restoration works Disturbance of in-situ peat during rehabilitation
5. Burning	Provision of an evidence basis for past change Increased visibility of heritage assets on surface	Degradation of peat surface
6. Hydrology	Provision of an evidence basis for past change Maintenance of high water tables	Seasonal lowering of the water table for management Disturbance of in-situ peat during restoration works

Public Perception: Hearts and Minds?



Photo: Frank Bradford

