The 2005 Stephen Warburton Memorial Lecture

A Neolithic Trackway on Hatfield Moors – a significant discovery

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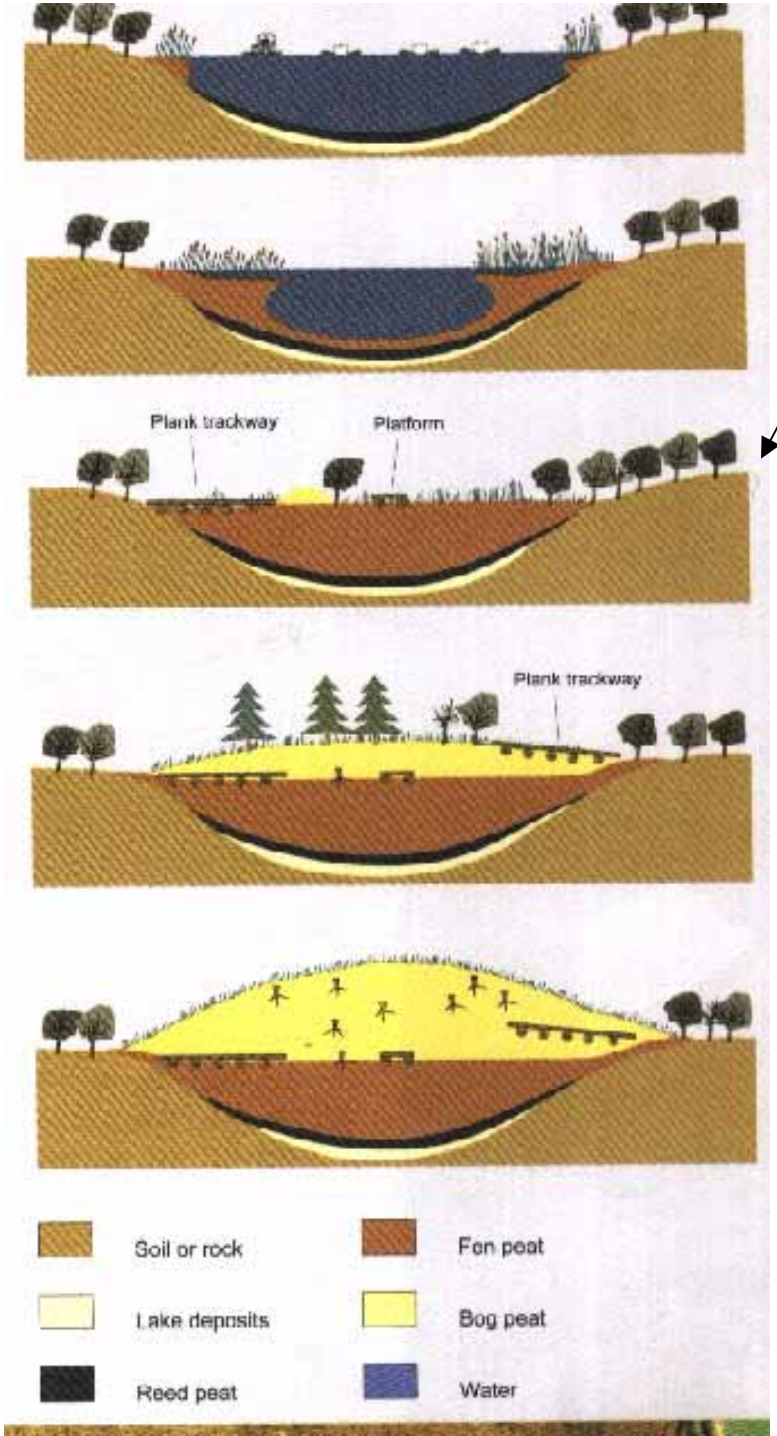
Structure

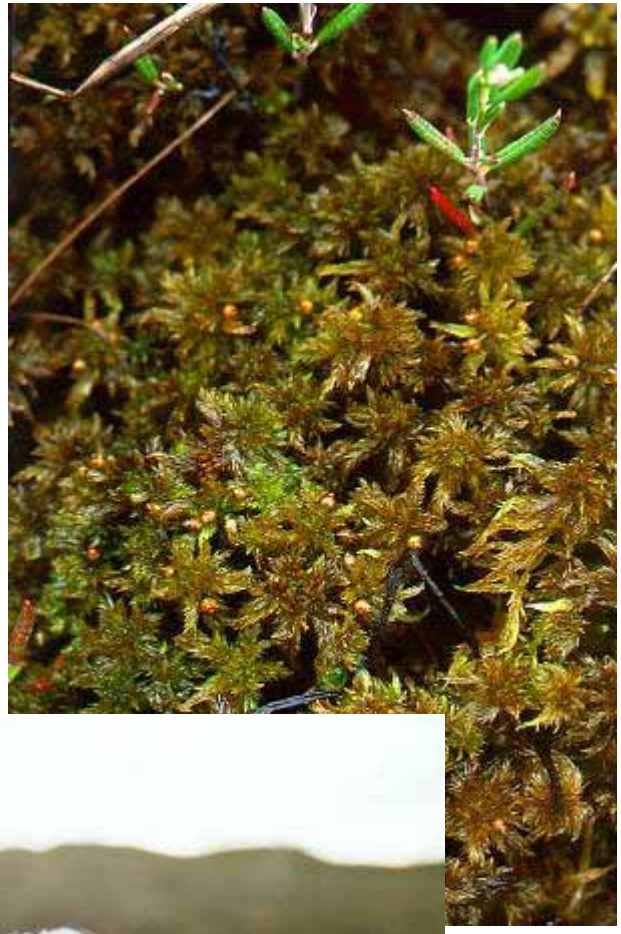
- Background to the archaeology of raised mires and their potential, using Ireland as a case study
- Hatfield Moors
  - How the bog grew
- The Lindholme Trackway
  - Discovery
  - Excavation
  - Results

Background to raised mires and their archaeological and palaeoenvironmental potential

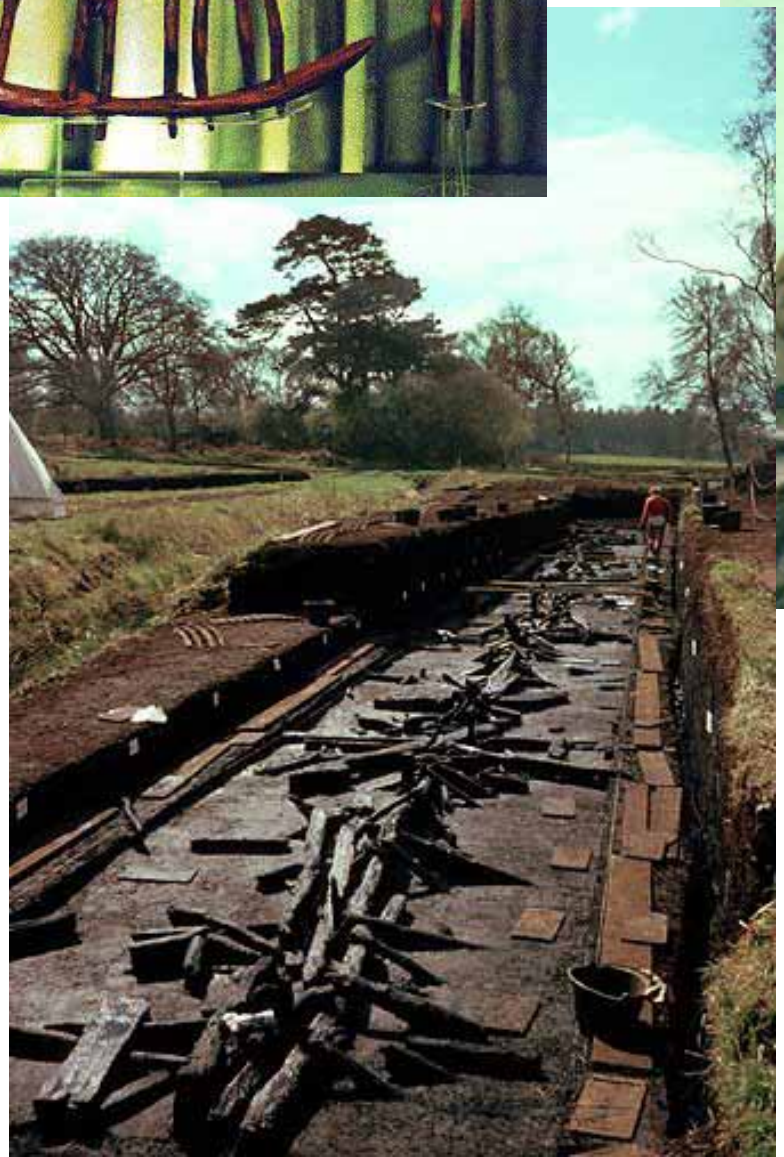
Raised Bog formation…



- Basin infills through hydroseral succession
- Growing surface of peat becomes ‘isolated’ from groundwater…
- ‘Raised mire’ develops…fed solely by rainwater (ombrotrophy)

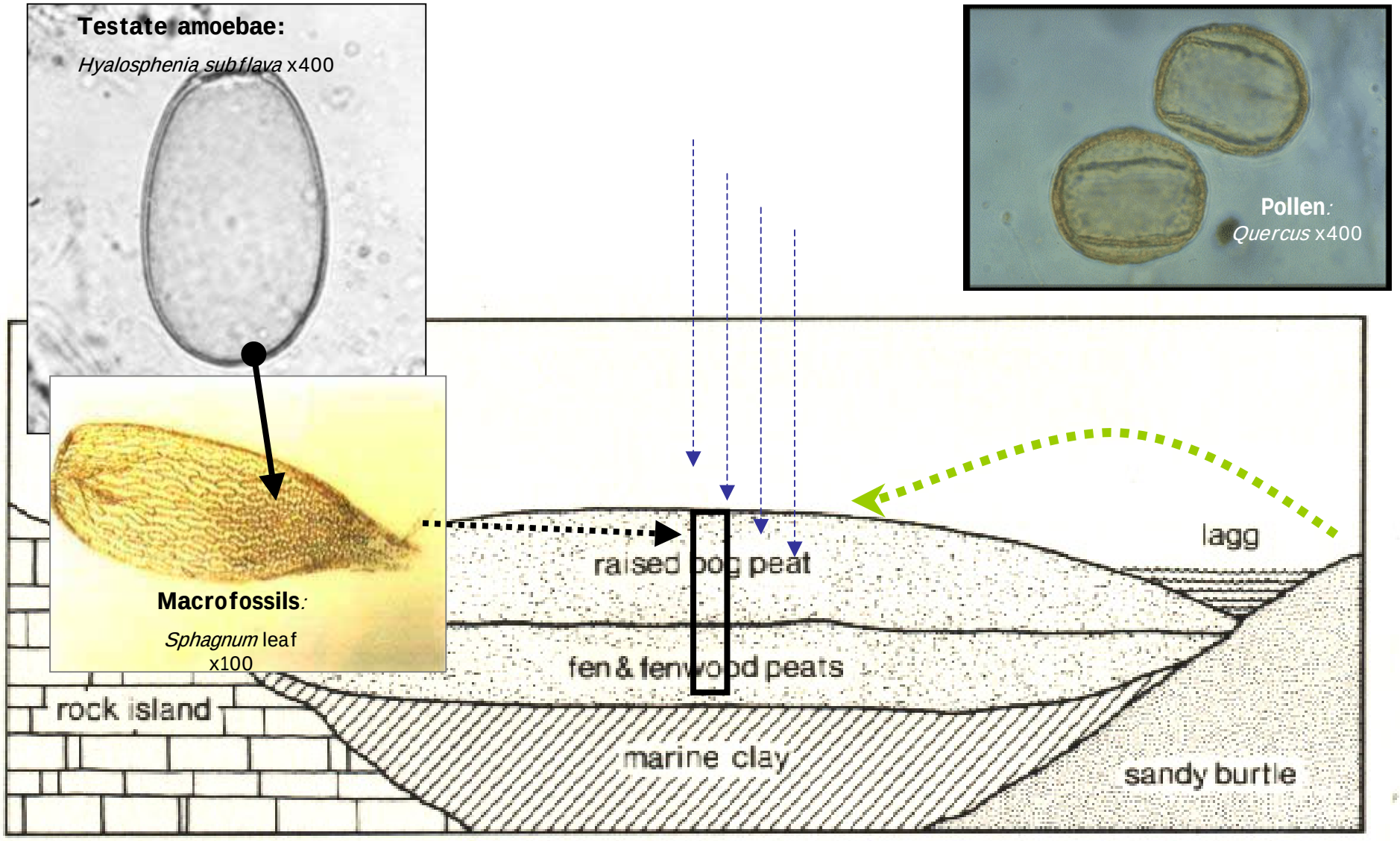


The irony of all this drainage and peat cutting….



Peat cutting can reveal sites that otherwise would remain deeply buried in the peat

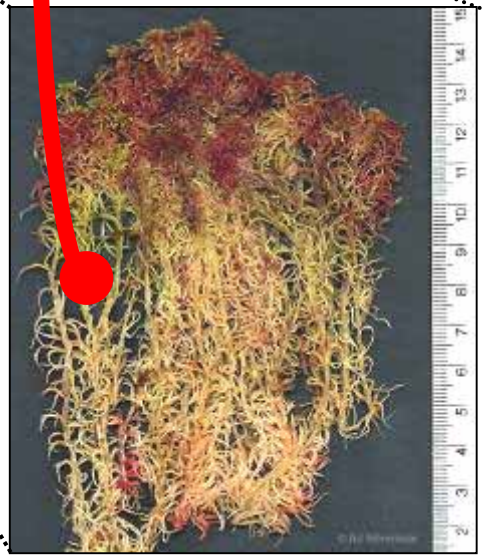
Remarkable preservation!!!

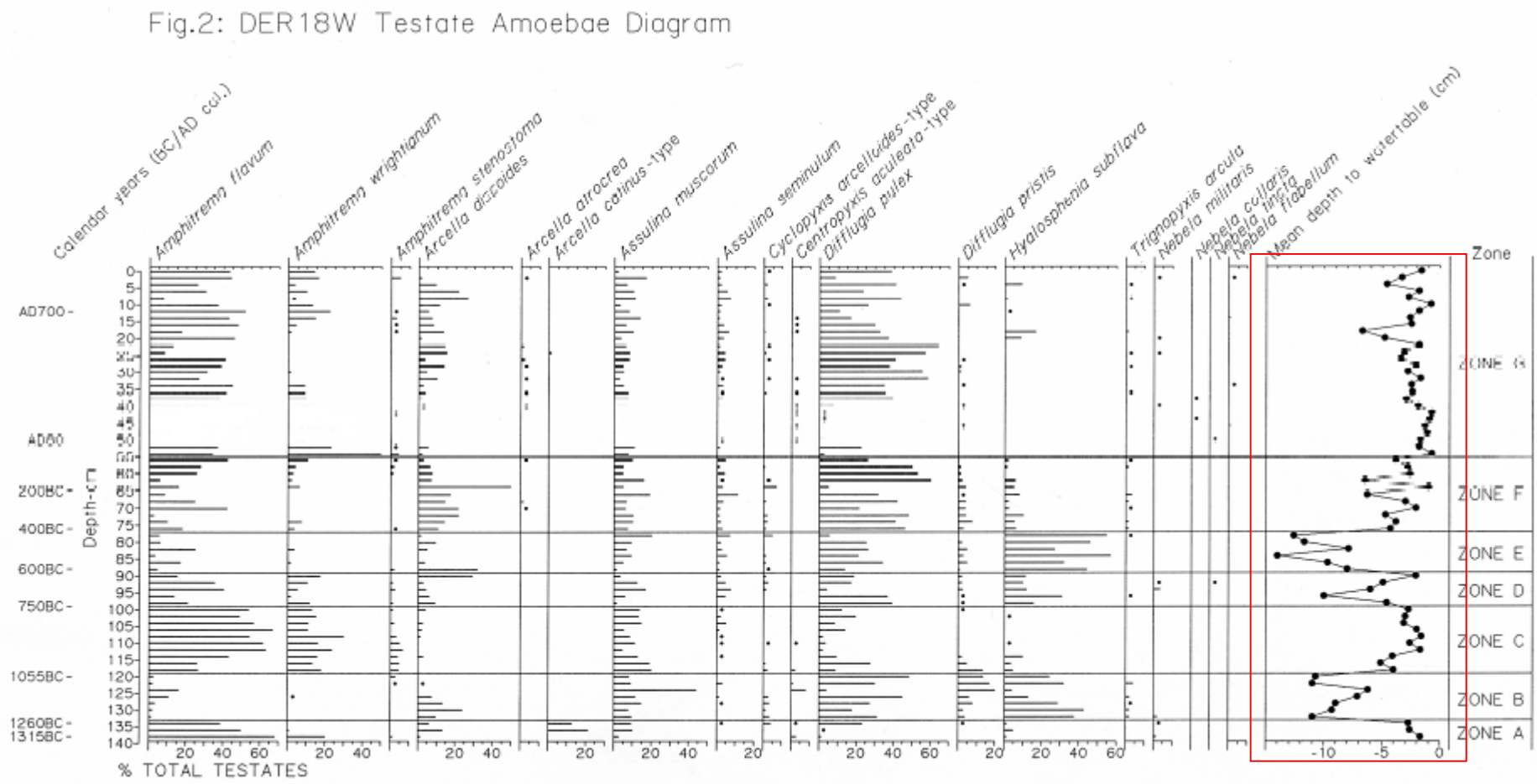


The value of raised mires as palaeoenvironmental archives...

•Pollen/Testates/ Beetles etc. preserved in the accumulating sediment

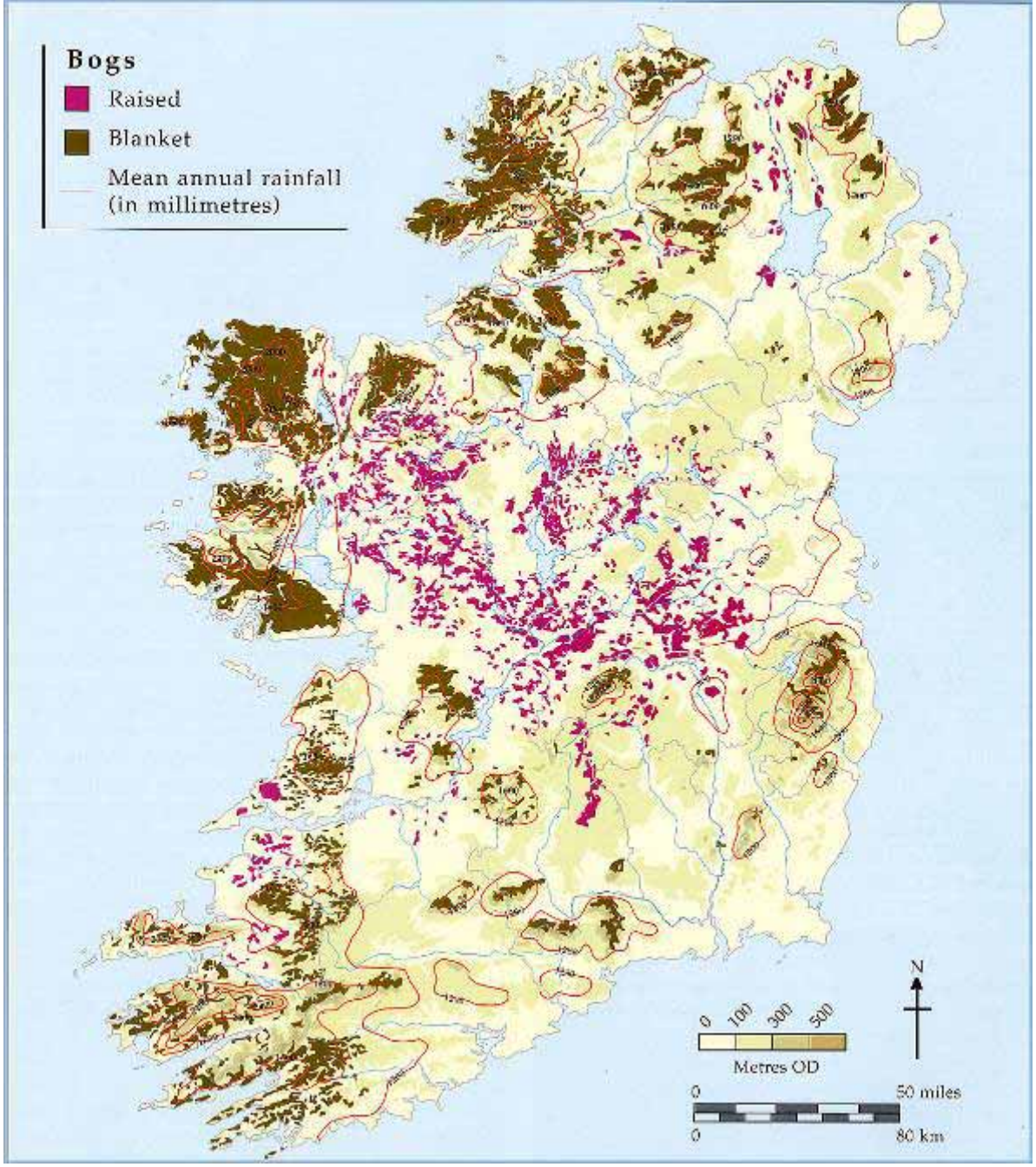
Sphagnum peat



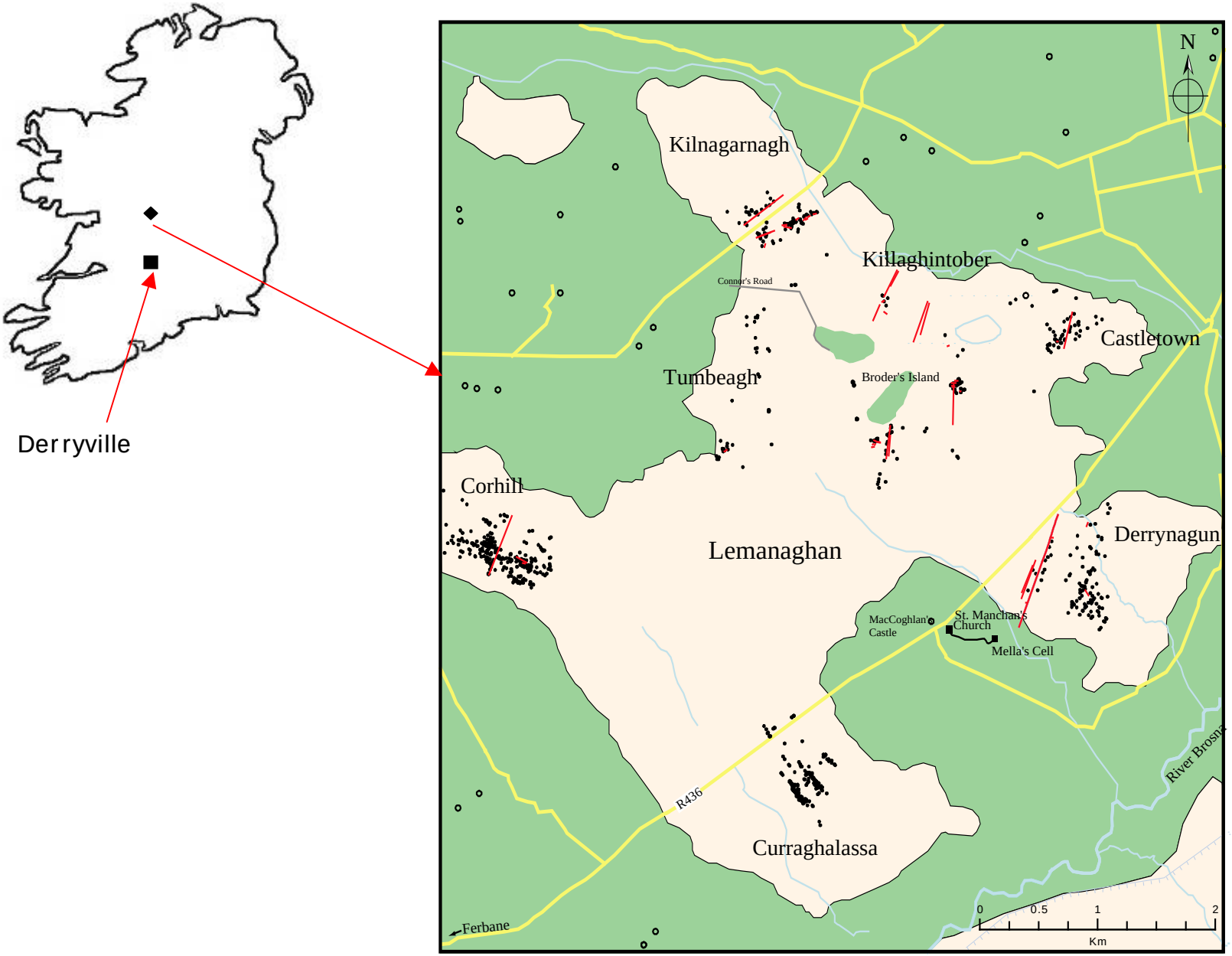


Testate amoebae analyses: reconstructing watertable fluctuations

So… raised mires may preserve both archaeological and palaeoenvironmental material (archaeoenvironmental record)



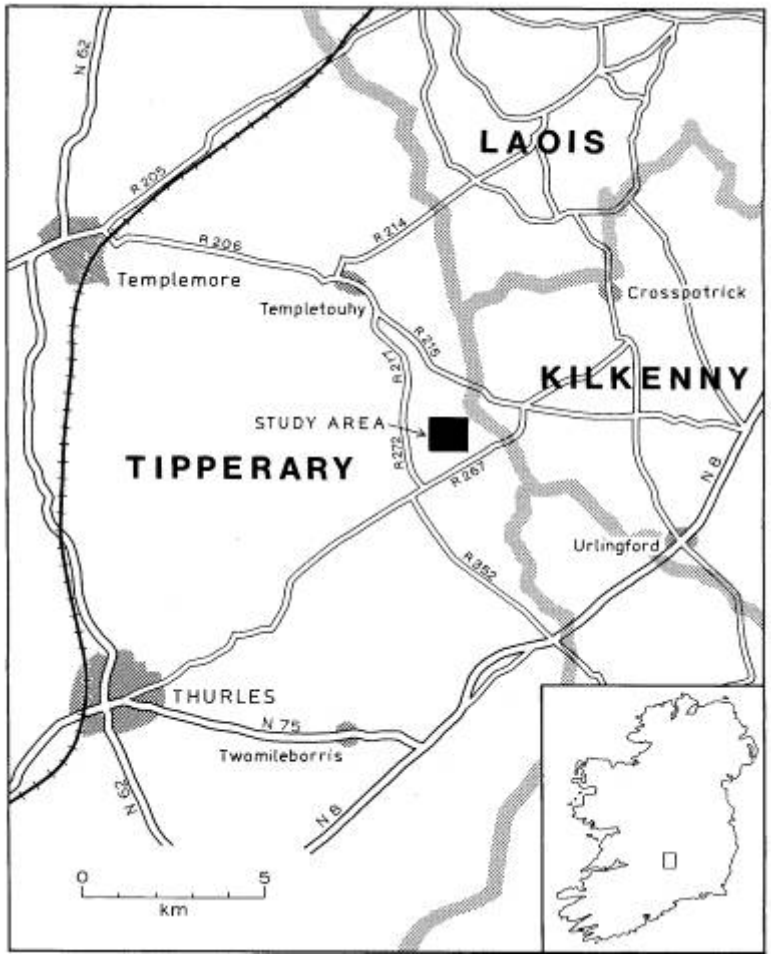
Ireland: lots of bogs…



...and lots of bog archaeology: an example - Lemanaghan Bog Complex, Co. Offaly

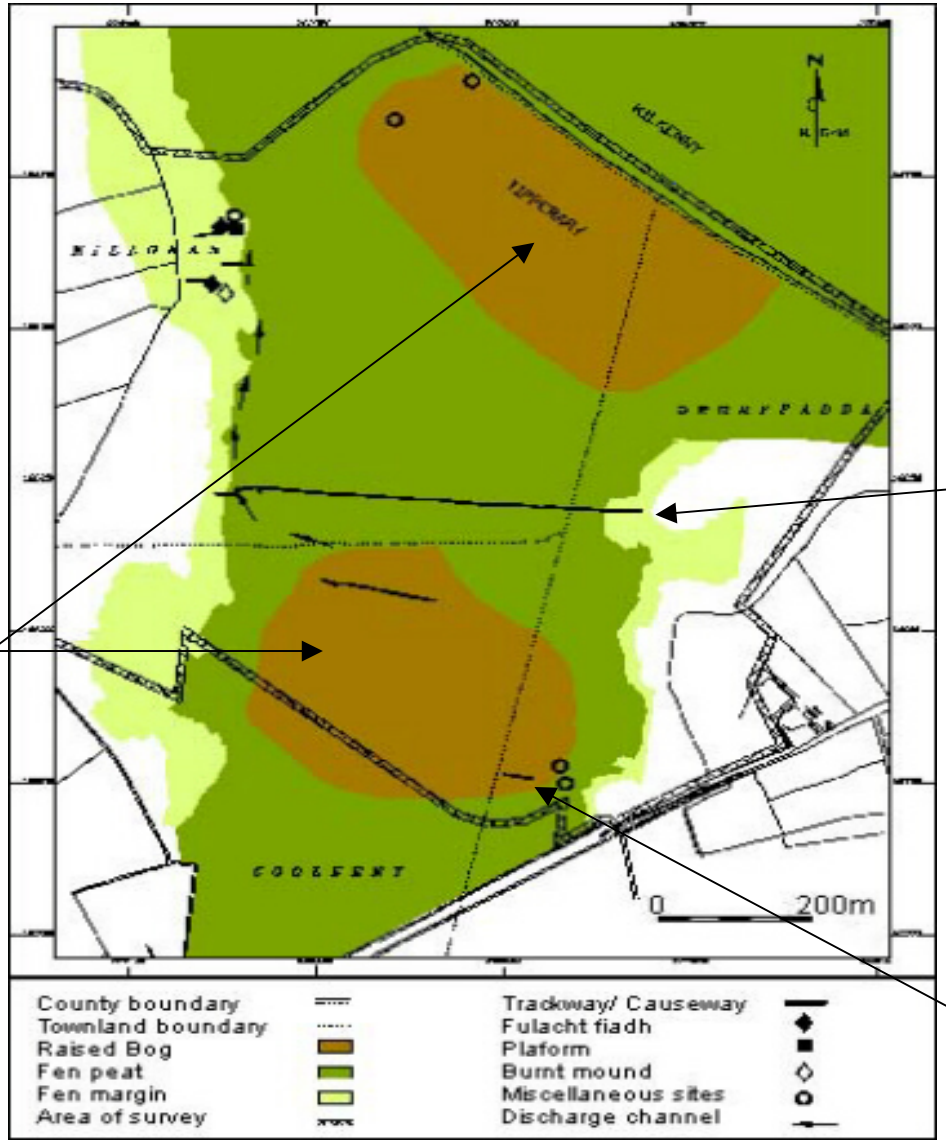
The Lisheen Archaeological Project (1992-1998)

Derryville



The archaeology of Derryville Bog: DER18 (l) and DER23.
Bronze Age trackways

Middle Bronze Age (1700-1400BC) Environment and Archaeology at Derryville

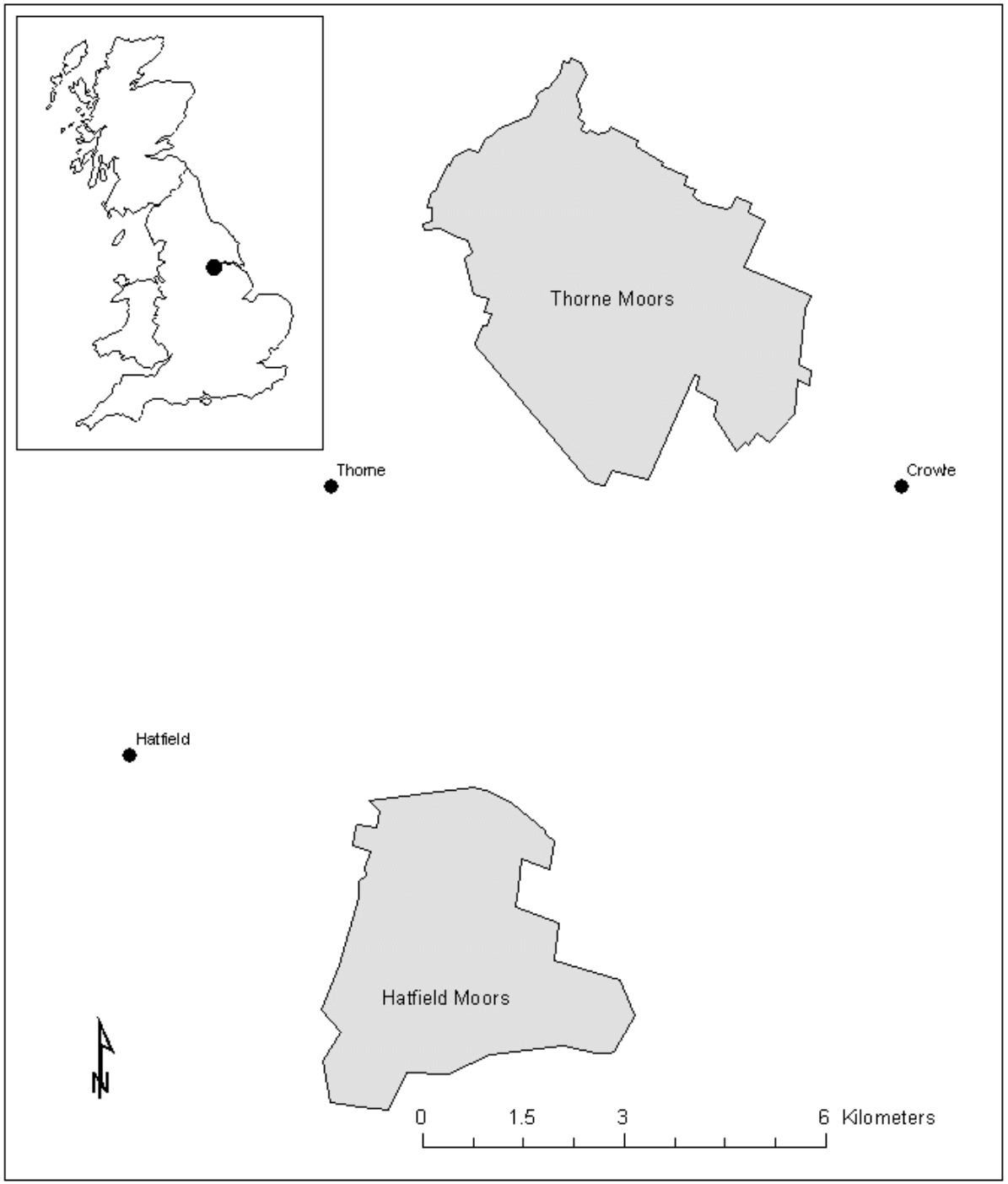


DER18

DER23

Cupola of raised mire growth

Hatfield Moors

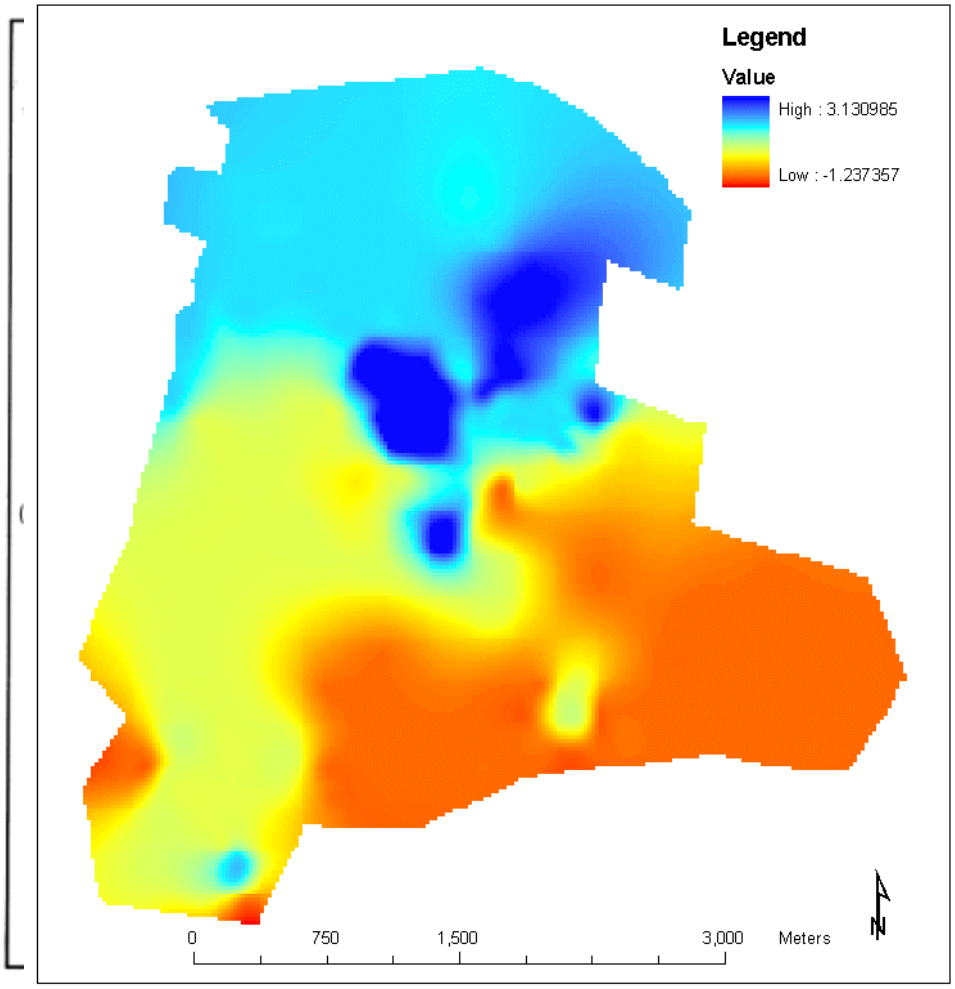

Thorne Moors
Thorne
Crowle
Hatfield
Hatfield Moors
N
0
1.5
3
6 Kilometers

ENGLISH HERITAGE

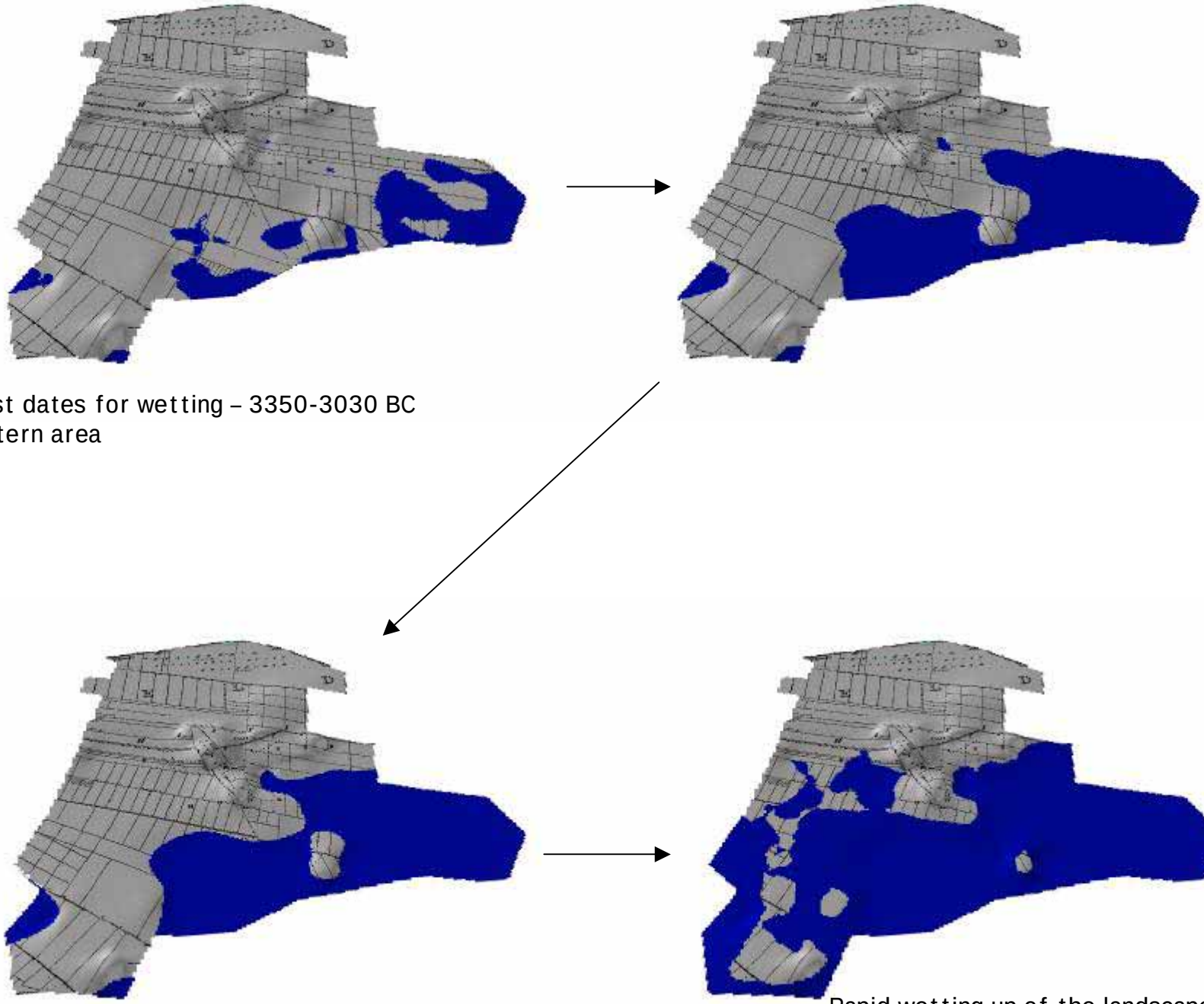
Predictive modelling of archaeological site locations in raised mires: Thorne and Hatfield Moors, east England

ENGLISH NATURE

The trackway excavations

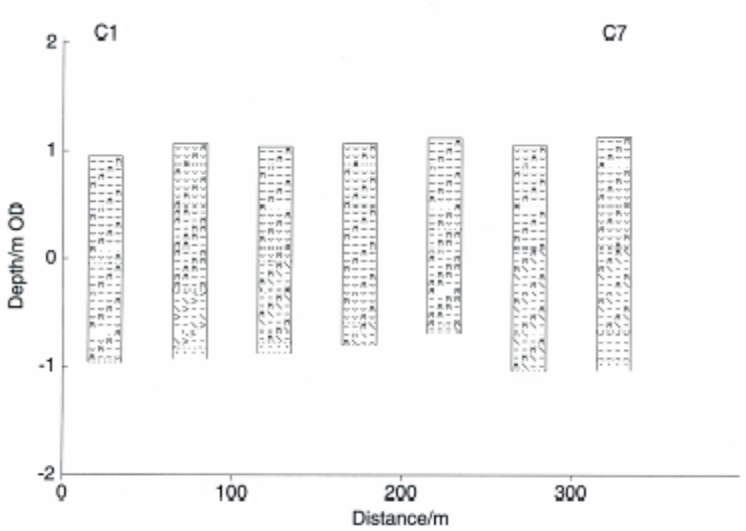


GIS Generated Model of the basal topography of Hatfield Moors

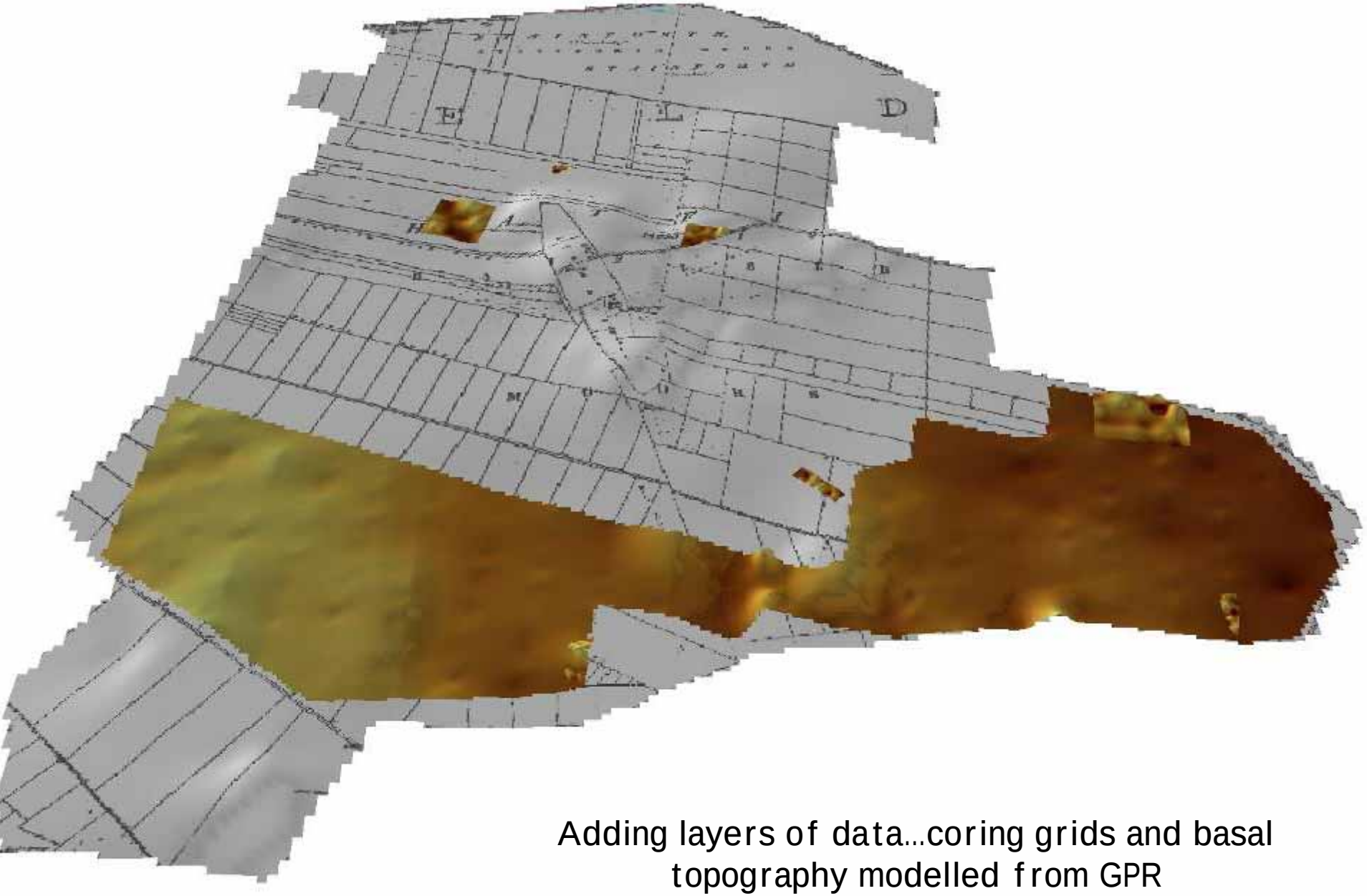


Earliest dates for wetting – 3350-3030 BC
in western area

Rapid wetting up of the landscape due to
relative flatness of sub-surface topography



Building the model…coring on Hatfield Moors



Adding layers of data…coring grids and basal topography modelled from GPR

The Trackway

First section of trackway discovered by Mick Oliver last October

Additional sections of the trackway discovered shortly after during a field visit

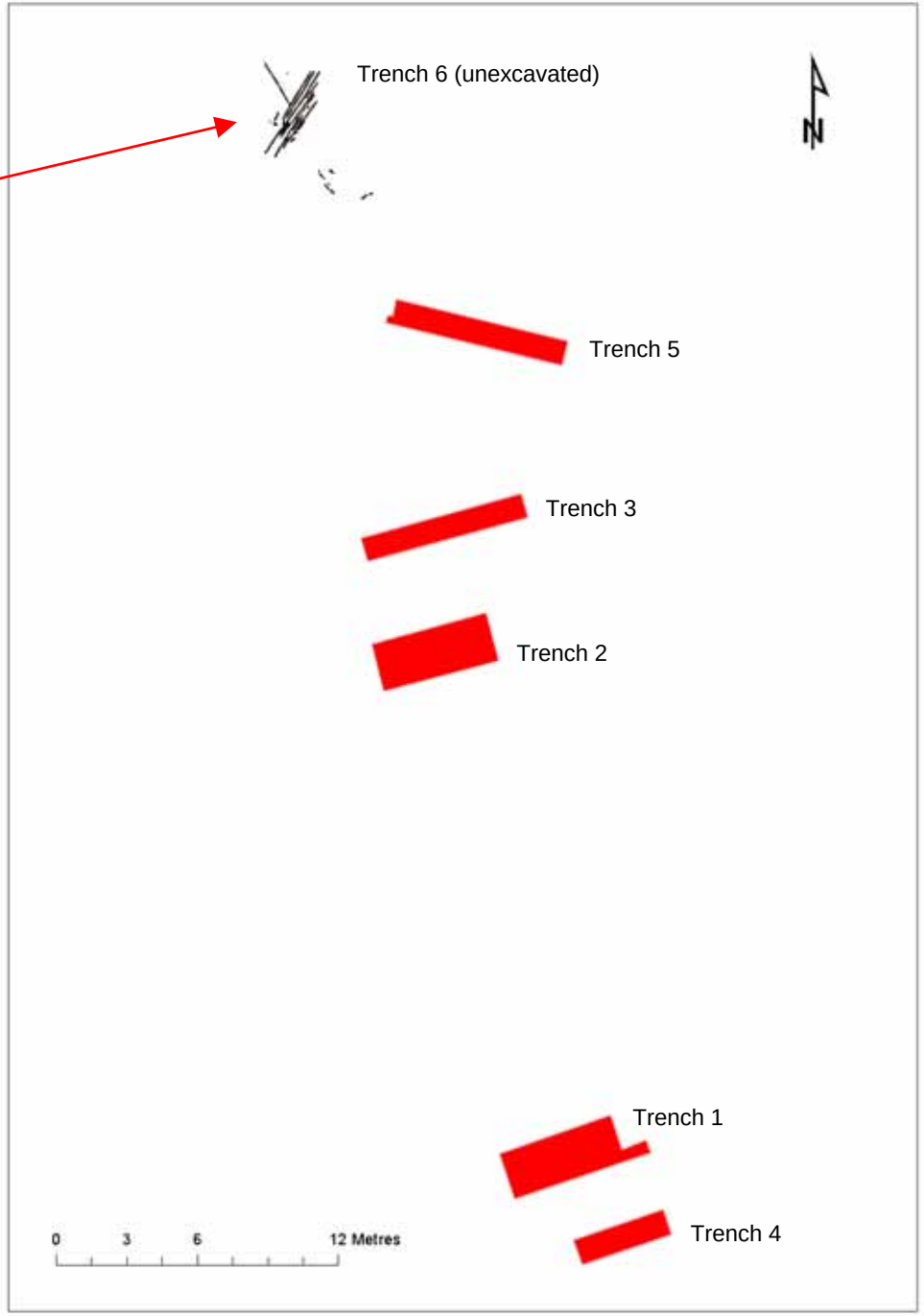
The alignment of the trackway, looking south towards Lindholme Island

Excavation strategy

- The strategy was aimed at providing information that would enable the site's effective future management
  - Assess quality of survival and preservation
  - Assess the potential for continued survival
  - To obtain a date for the site
  - To examine its palaeoenvironmental context
- Effectively get as much information as possible before the site became too wet for study

Trench positions

Section discovered by
Mick Oliver



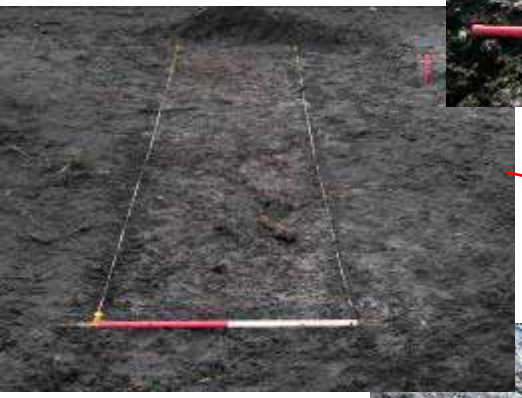
Excavating

Recording

Sampling

Metal detecting

Trench 6 (unexcavated)



Trench 5

Trench 3

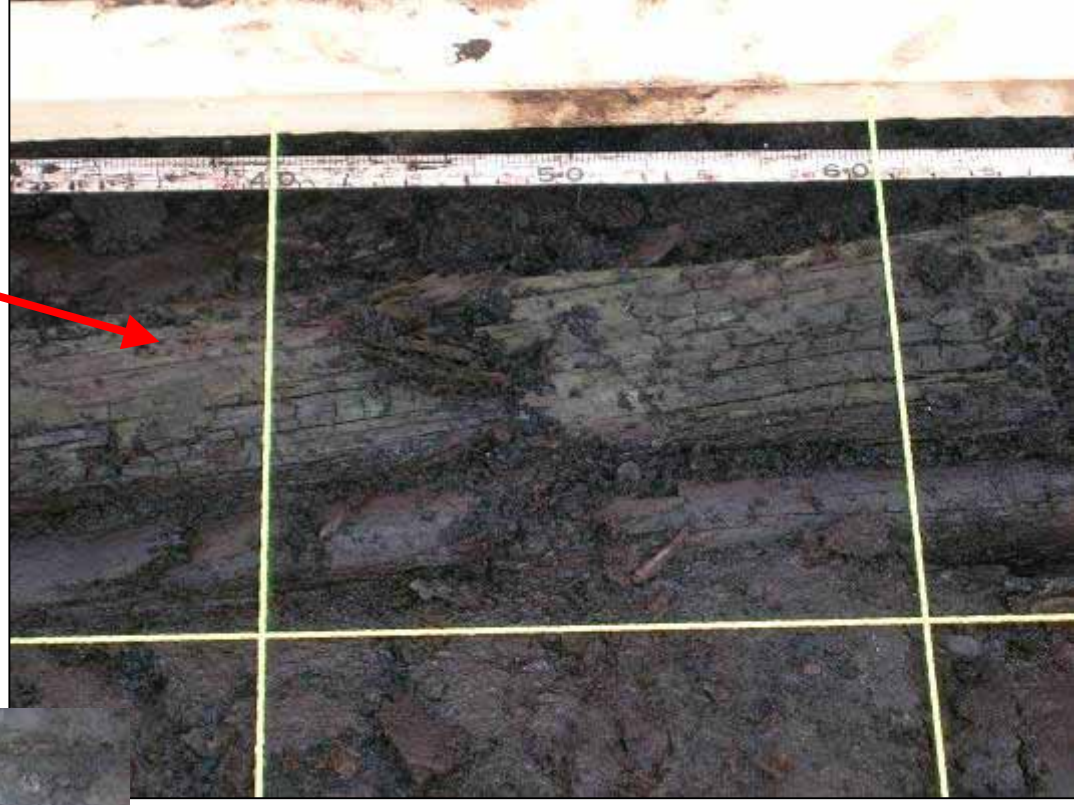
Trench 2

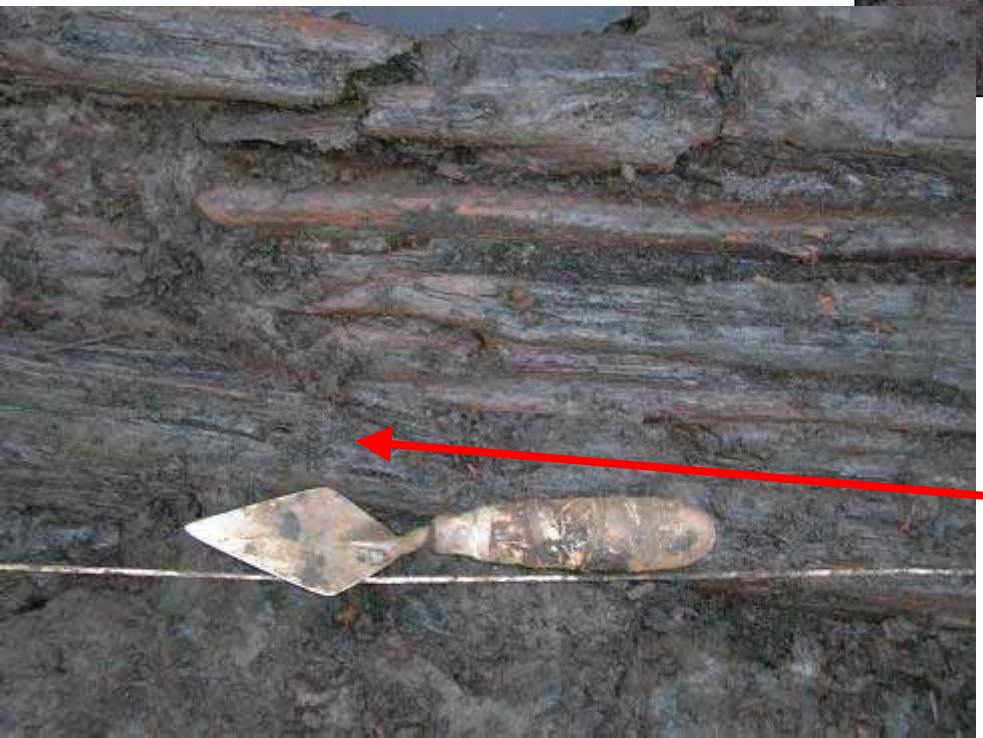
Trench 1

Trench 4

0 3 6 12 Metres

Recent decay





Degradation in antiquity

Drainage

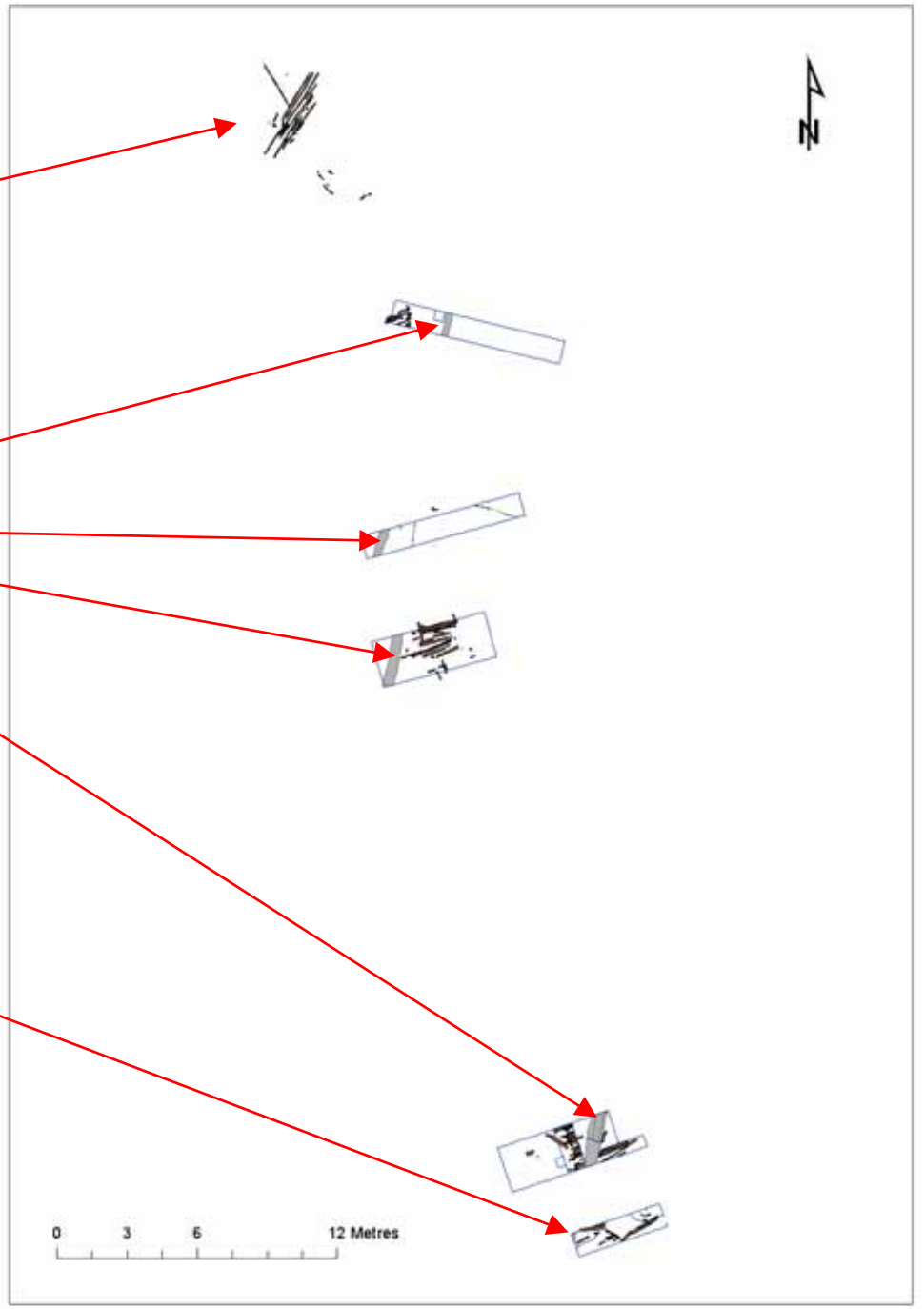
Modern damage

Machinery fire

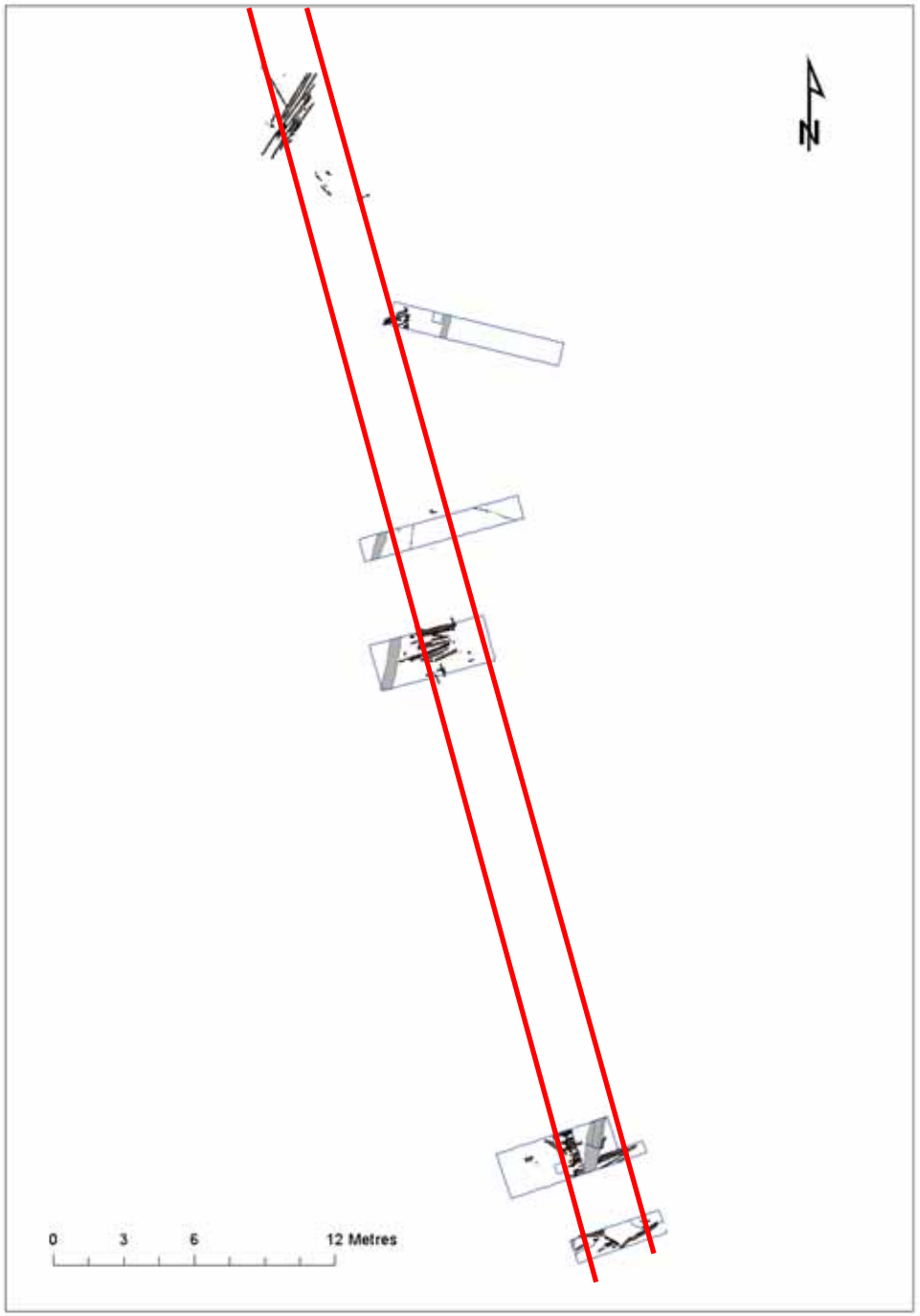
Section discovered by
Mick Oliver

Damage caused by early
drains

Evidence of
machinery fire



Alignment of the trackway



Isabel Douterelo Soler

Nora Bermingham

Will Fletcher

Nicki Whitehouse

Ian Stead

Also, Maisie Taylor, Orni Akeret, Stewart Gardner, John Carrott & Peter Robinson

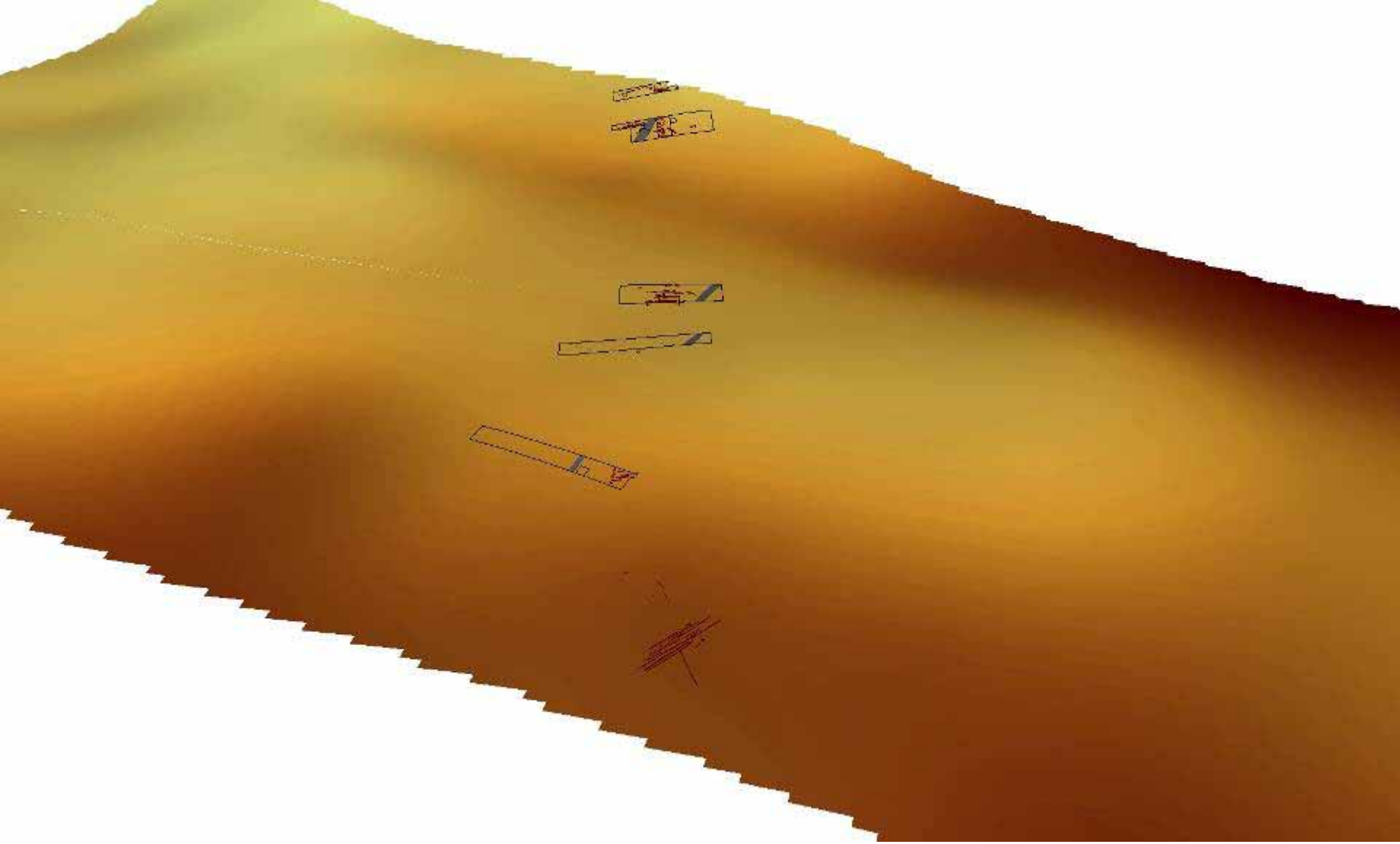
Stats of the trackway

- Width
  - Overall - 3 m wide, 4 m wide in one area
  - Rails positioned 1.9 m – 2.1 m apart
- Length
  - Excavated length of over 50 m, although likely to continue to both the north and the south
- Alignment
  - From Lindholme Island at approximately 345°
- Material
  - Built entirely of pine
- Phasing
  - Single phase – no evidence for any repairs
- Preservation
  - Poorly preserved timbers indicated by visual assessment and confirmed by Isabel's microbiological work
- Context
  - Built on an area of pool muds defined stratigraphically and through Nicki's beetle analyses

Sample	Radiocarbon Age	Calibrated
HAT TRACK 1.8	4160±70 BP	Cal.BC2900-2560 and Cal. BC 2520-2500
HAT TRACK 1.15	4150±70 BP	Cal.BC2900-2550 and Cal.BC2540-2490
HAT TRACK 1:18	4030±60 BP	Cal.BC2860-2810 and Cal.BC2690-2450

First public appearance of the radiocarbon dates!

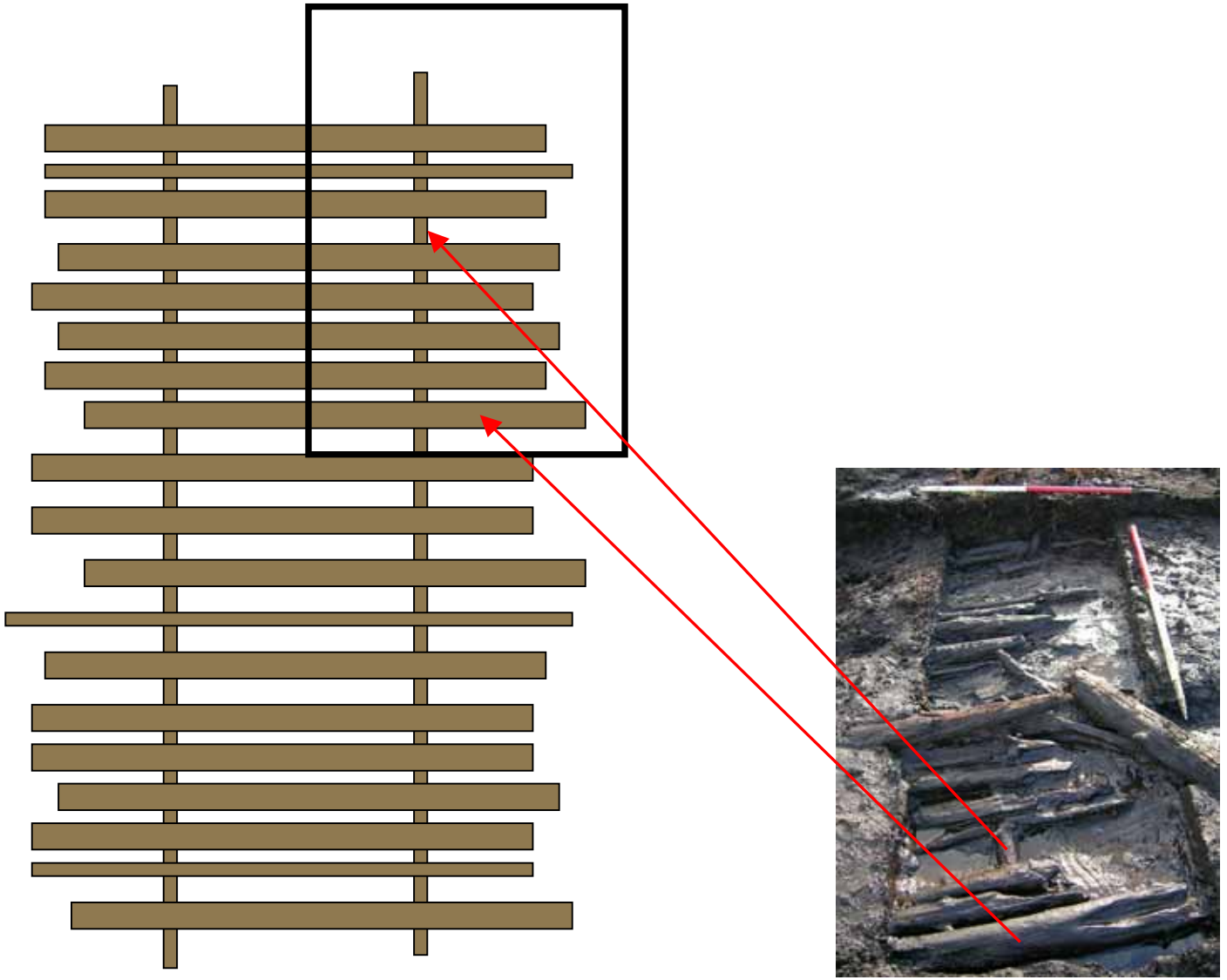
The trackway is Late Neolithic!



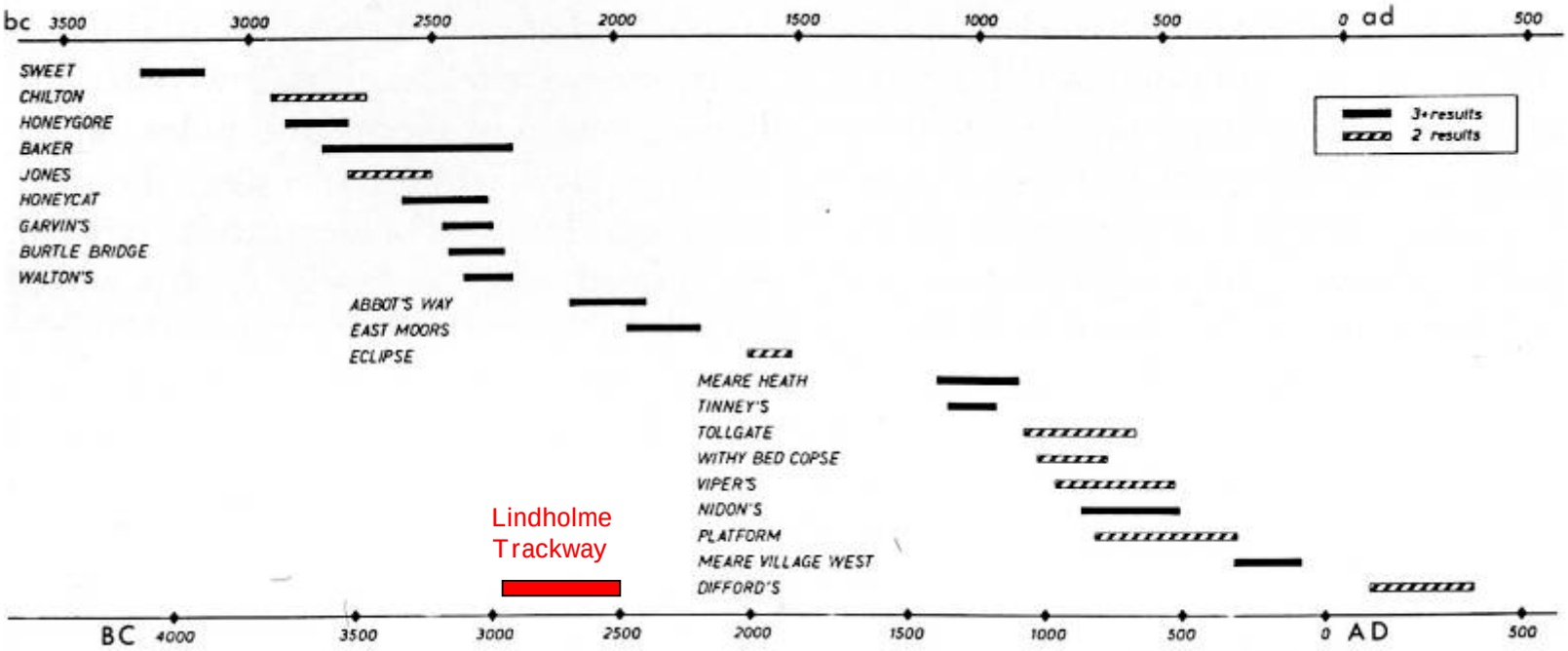
Local sub-peat context

Conclusions, context and significance

The site is a ‘corduroy trackway’



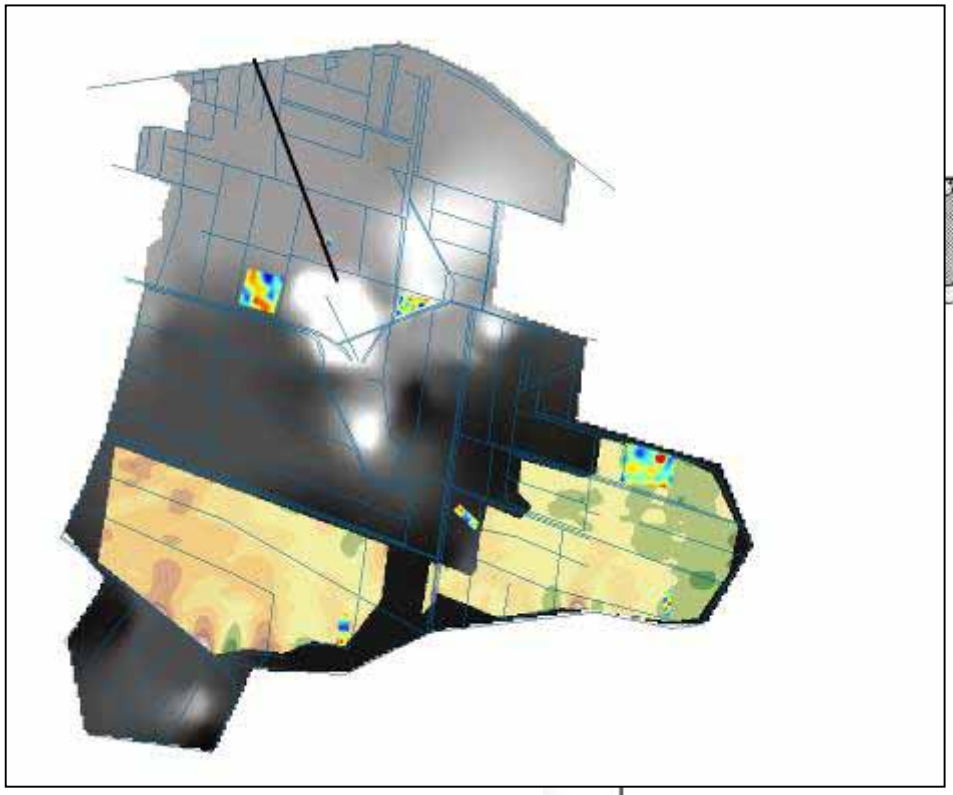
A structural parallel for the Lindholme Trackway…Abbots Way, Somerset Levels

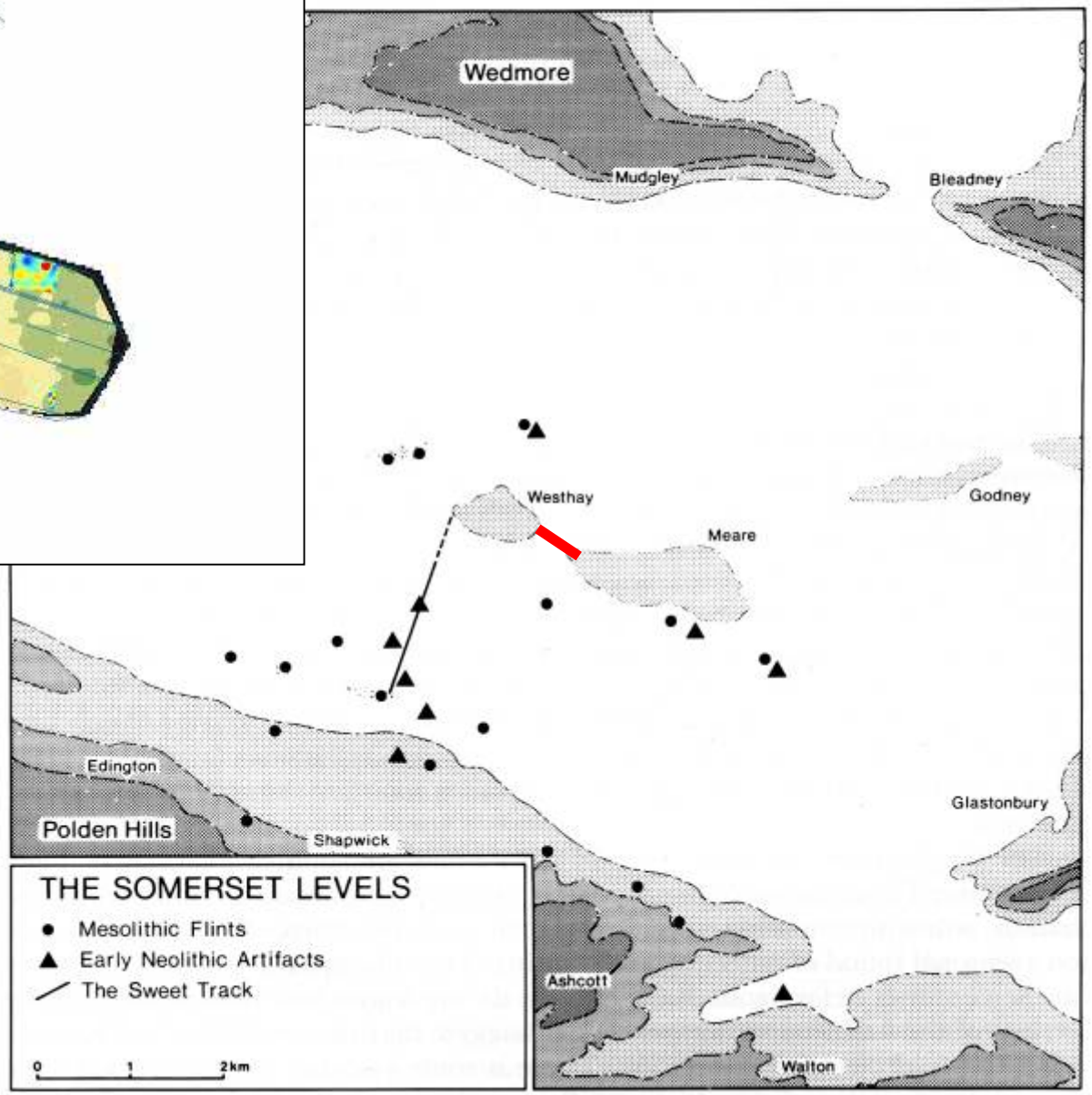

bc 3500
3000
2500
2000
1500
1000
500
0 ad
500
SWEET
CHILTON
HONEYGORE
BAKER
JONES
HONEYCAT
GARVIN'S
BURTLE BRIDGE
WALTON'S
ABBOT'S WAY
EAST MOORS
ECLIPSE
MEARE HEATH
TINNEY'S
TOLLGATE
WITHY BED COPSE
VIPER'S
NIDON'S
PLATFORM
MEARE VILLAGE WEST
DIFFORD'S
3+results
2 results
Lindholme
Trackway
BC 4000
3500
3000
2500
2000
1500
1000
500
0 AD
500

Chronological development of corduroy trackways

- Earlier corduroy trackways (Germany and Holland)
  - Date to approximately 3000 BC
  - These are larger, consistently between 3.5 m and 4 m wide
  - They are simple structures without pegs
- The Lindholme Trackway
  - Dates to approx. 2900-2500 BC
  - Mostly 3 m wide, up to 4 m wide
  - Two possible pegs
- Later corduroy trackways
  - Cloonbony, Ireland – 2630-2470 BC
  - 2.5 m wide (rails at 1.2 m apart)
  - Complex structure pegged at intervals

- Hence, the Lindholme Trackway fits within a trend of narrowing and increased sophistication during the third millennium BC
- Raftery has argued that this shift relates to the growing complexity of wheeled transport at the time




Wedmore
Mudgley
Bleadney
Westhay
Meare
Godney
Edington
Polden Hills
Shapwick
Glastonbury
Ashcott
Walton
THE SOMERSET LEVELS
Mesolithic Flints
Early Neolithic Artifacts
The Sweet Track
0
1
2km

Why was it built?

Summary

- Hatfield begins getting wetter from 3350-3030 BC, almost certainly as a result of increased local wetness due to rising sea level. There is also some evidence for climatic deterioration at this time
- The trackway is therefore constructed in the earliest stages of peat growth and as such is probably a response to the swamping of a local routeway
- Peat continues to grow on Hatfield Moors, becoming ombrotrophic between 1300 and 1000 BC. After this point it is likely that Lindholme Island was extremely difficult to access using available technologies
- The Lindholme Trackway is:
  - The earliest corduroy trackway in Britain and Ireland, with only two other earlier examples known (in Holland and Germany)
  - The only site of its kind to be constructed of pine, which is a reflection of the local availability of this tree
  - Enigmatic in many ways!!!

- This is why we need your help!