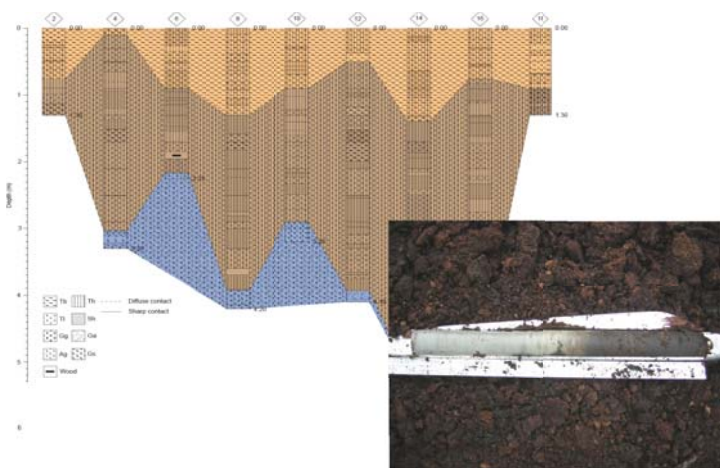


Research and Training in Bord na Móna Peatlands

Archaeological Development Services Ltd (ADS) in conjunction with Royal Holloway University of London, Reading University and Exeter University

1 Archaeological Development Services (ADS) are archaeological consultants to Bord na Móna (BnM) since 1998 during which time over 200 excavations have been carried out in their Industrial Peatlands. Since 2003 ADS have also carried out the Archaeological Survey of Ireland, Peatland Survey on behalf of the DOE HLG. For the past 5 seasons our palaeoenvironmental work has been overseen by Dr. Nick Branch (formerly Royal Holloway University of London), senior lecturer of Palaeoecology at Reading University. This analysis includes peat stratigraphy, pollen cores, plant macrofossil remains, insect remains, peat morphology and has been supplemented by 16 undergraduate dissertations, 2 Masters theses and 2 PH'ds. Katie Denton is currently working on her PH'd on Insect Remain Analysis and Ian Matthews has just completed his PH'd on Tephrochronology which ADS part funded. An account of Ian's work will be published in the near future in a forthcoming issue of the Journal of Environmental Science. ADS and RHUL were awarded INSTAR funding in 2008 to compile a high-resolution chronological and palaeoclimatic framework for six ombrogenous bogs and their associated archaeology in the Midlands of Ireland using tephrochronological and stable isotope research.

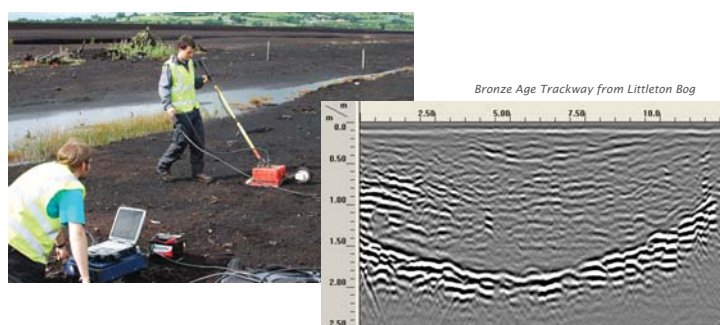


2 Archaeological excavation of prehistoric wooden trackways at Clonad Bog, Co. Offaly and Kinnegad Bog, Co. Meath permitted an opportunity to reconstruct the environmental context of Bronze Age human activities on the wetland surface and adjacent dryland. Methods used peat stratigraphic description, humification analysis, pollen analysis, plant macrofossil and insect analysis to examine relationships between changing bog surface wetness and trackway construction and abandonment, set against a background of late Middle Holocene climate change.



A tephra shard from the OMH-185 (microlite) ash layer (long axis ca. 50µm). This important eruption deposited volcanic ash across Ireland between 755-680BC (2705-2630 cal. yr BP). The eruption has been widely detected in peat sequences in Ireland. When it is identified in association with archaeological structures it can provide a precise chronological marker that can help to chronologically constrain and correlate palaeoenvironmental and archaeological data.

3 Microtephra studies in BnM bogs
Micro-tephrochronology is the study of non-visible distal volcanic ash layers which can be used as isochronous marker horizons to correlate and date sediment sequences. It is a widely used tool in palaeoenvironmental research across northwest Europe, but its potential contributions to chronological and stratigraphic control in archaeological contexts have not yet been fully realised. This in part is due to the unique challenges of archaeological investigations which frequently involve complex stratigraphic sequences and short fragmentary records. Our current research, in seven raised bogs in Ireland, plans to construct comprehensive regional tephrostratigraphic frameworks in order to explore the relationships between human activities and environmental change.



4 Using Ground Penetrating Radar to detect structures within peat bogs
D. S. Howell

Whilst economically important, commercial milling of peatlands can damage buried archaeological structures before they can be investigated. Ground Penetrating Radar (GPR) has the potential to detect such structures before this occurs, and aid in producing more efficient investigation strategies. As part of an MSc project with the University of Reading, numerous known structures of different sizes and composition are being investigated with GPR to determine if they could be detected as part of larger-scale surveys. This is hopefully a first step in developing a large-scale geophysical survey strategy to discover and map buried structures before they are damaged by milling activities.



5 The university students from RHUL, Reading and Exeter Universities are also gaining valuable field work experience in excavation, peat morphology and Palaeoenvironmental sampling under the supervision of ADS and university staff members.