# Archaeological and palaeoenvironmental investigations of a multi-period wetland site at Newrath, Co. Kilkenny

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NRA National Roads Authority An tÚdarás um Bóithre Náisiúnta | NDP NATIONAL DEVELOPMENT PLAN | Department of Transport An Roinn Iompair | WATERFORD CITY COUNCIL | TRAMORE HOUSE Regional Design Office

**Introduction**

New road developments in southern Ireland are not only improving the infrastructure of the country in terms of road safety and meeting the demands of increasing traffic volume but are also providing a rare opportunity for archaeological and palaeoenvironmental investigations. One such pre-construction archaeological investigation was undertaken by Headland Archaeology in the townland of Newrath, Co. Kilkenny prior to the building of an 18 km bypass around Waterford City. The bypass will form part of the improved N25, which will run from Kilmeaden in Co. Waterford in the west to Slieverue in Co. Kilkenny to the east.

The site is located at NGR 14485/59125 situated immediately east of the existing Newrath road, in the townland of Newrath, Co. Kilkenny (see Figure 1). Today this area is reclaimed wetland, which is used for agricultural pasture and lies at approximately 2m OD. However, in the past the site was heavily influenced by the tidal River Suir, which lies some 0.5km to the southwest. This tidal influence led to the site being inundated during the Iron Age c.1870±35 BP (GU-13996; 60-240 Cal. AD) due to a rise in sea-level, until it was reclaimed in the nineteenth century. Archaeological and palaeoenvironmental studies funded by the National Roads Agency (NRA) as part of the National Development Plan are producing a picture of past activities of people within a wetland landscape.

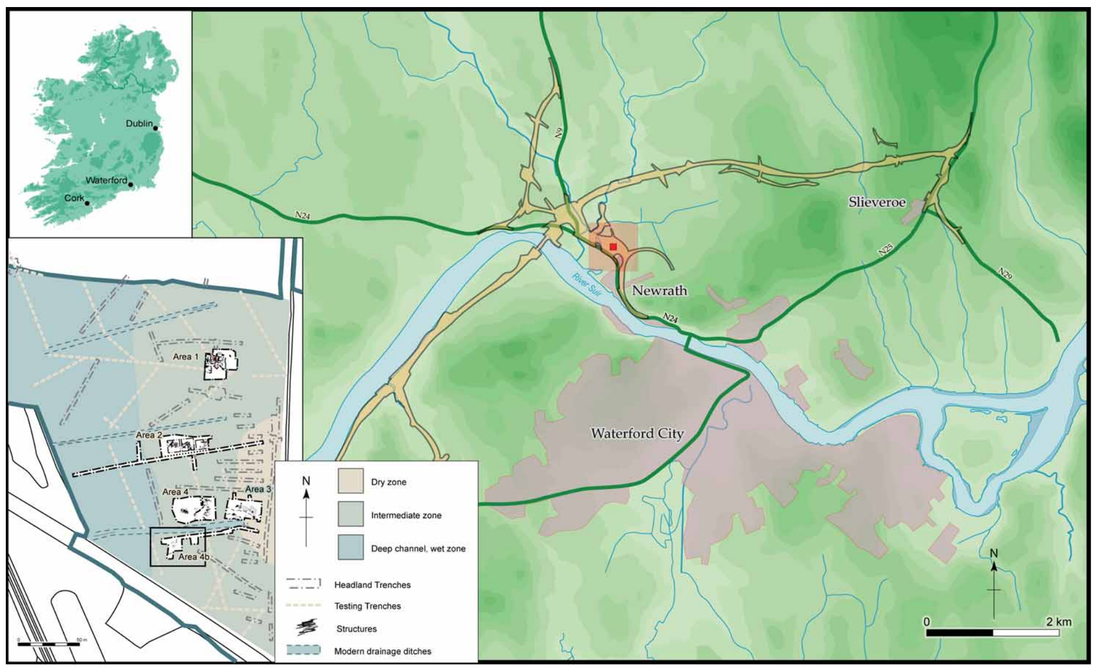


Figure 1 - Location Map, Newrath, Co. Kilkenny

Figure 2 - Excavation of Bronze Age trackway

Figure 3 - Iron Age hurdle

Figure 4 - Recording of wooden structures

**The archaeological evidence**

Preliminary investigations at the site in 2003 revealed several possible archaeological structures including a potential brushwood platform and trackway. As a result of these findings further archaeological investigations were undertaken from June to December 2004. Five separate areas were excavated at Site 34 containing 21 individual structures with evidence for human activity ranging from the Mesolithic to the nineteenth century. There were five main phases of activity: later Mesolithic flint scatters on a dry land surface predating the accumulation of organic peat deposits; Bronze Age trackways and informal brushwood platforms accessing the main river channel from the dryland margin (see Figure 2); Bronze Age burnt mound on the eastern shore of the wetland area; Iron Age hurdles intended to cross tidal creeks for salt marsh grazing (Figure 3); late medieval brushwood structures to aid access across the salt marsh; and a 19th century brick kiln making use of the abundant alluvial clays.

The excavation and recording strategy focused on relating distinct cultural events, like the construction of a trackway, with natural changes in the depositional record, such as the onset of peat formation. Areas were divided into cuttings, with each cutting excavated in spits. Successive phases of superstructure and substructure were exposed, recorded and sampled, with individual worked wood specimens sampled for tool mark analysis, and bulk samples taken for species identification and dating (see Figure 4). Section baulks were left in-situ, and a consistent description of the appearance, composition and boundary distinctness of sediments obtained. Samples suitable for radiocarbon dating purposes were collected from all the main stratigraphic sequences, in addition to monolith samples for more detailed palaeoenvironmental analysis.

**The palaeoenvironmental evidence**

A multi-proxy investigation is being undertaken on two monoliths collected from Area 1 of the site, including: pollen and non-pollen palynomorphs, plant macrofossil, wood identification, foraminifera and diatom analyses. These results have combined to give an insight into the changing landscape of the Newrath area.

The palaeoenvironmental study shows that the landscape was originally dryland woodland with pollen evidence indicating this is likely to have been Quercus dominated. At around 4850±35 BP (GU-13998; 3710-3620 Cal. BC) a change in the hydrology of the area took place, related to rising sea-level causing the area to become wetter and the initialization of peat. This led to the development of carr-woodland on the wetland largely comprised of Alnus with Quercus, Betula, Crataegus and Salix also present. Pollen and plant macrofossil evidence indicates that this woodland would have had a field layer of tall-herb fen communities with Rubus fruticosus also prominent. This period of woodland lasted for a period of around 850 years until c. 3935±35 BP (GU-15498; 2620-2450 Cal. BC).

A change in the local environment then takes place from carr-woodland to a reedswamp environment, shown by falling Alnus pollen and a rise in Poaceae pollen. This change can also be seen in the plant macrofossils (see Figure 5) with a decline in arboreal species and increase in aquatic species such as Ranunculus sceleratus. It is during this period that archaeological evidence for people in the landscape increases with the appearance of trackways and structures indicating a resource-rich environment. Pollen evidence also indicates agricultural activity taking place in this period around 2210±40 BP (GU-15497; 390-180 Cal. BC) with the presence of cereal-type pollen grains. Wood identifications from the structures and trackways indicate the use of trees from the local carr-woodland, mostly being Alnus, for construction rather than the dryland resource (Lyons, 2006; O'Donnell, 2006).

Eventually the whole area was inundated due to rising sea-level (see Figure 6) at approximately 1870±35 BP (GU-13996; 60-240 Cal. AD) with diatom and foraminifera evidence indicating an inter-tidal environment by this time (Dawson, 2006; Haslett, 2007). This increase in sea-level led to the abandonment of the area in the Iron Age, with archaeological evidence showing a possible return to the area in the medieval period. The area remained inter-tidal until it was reclaimed in the 19th century.

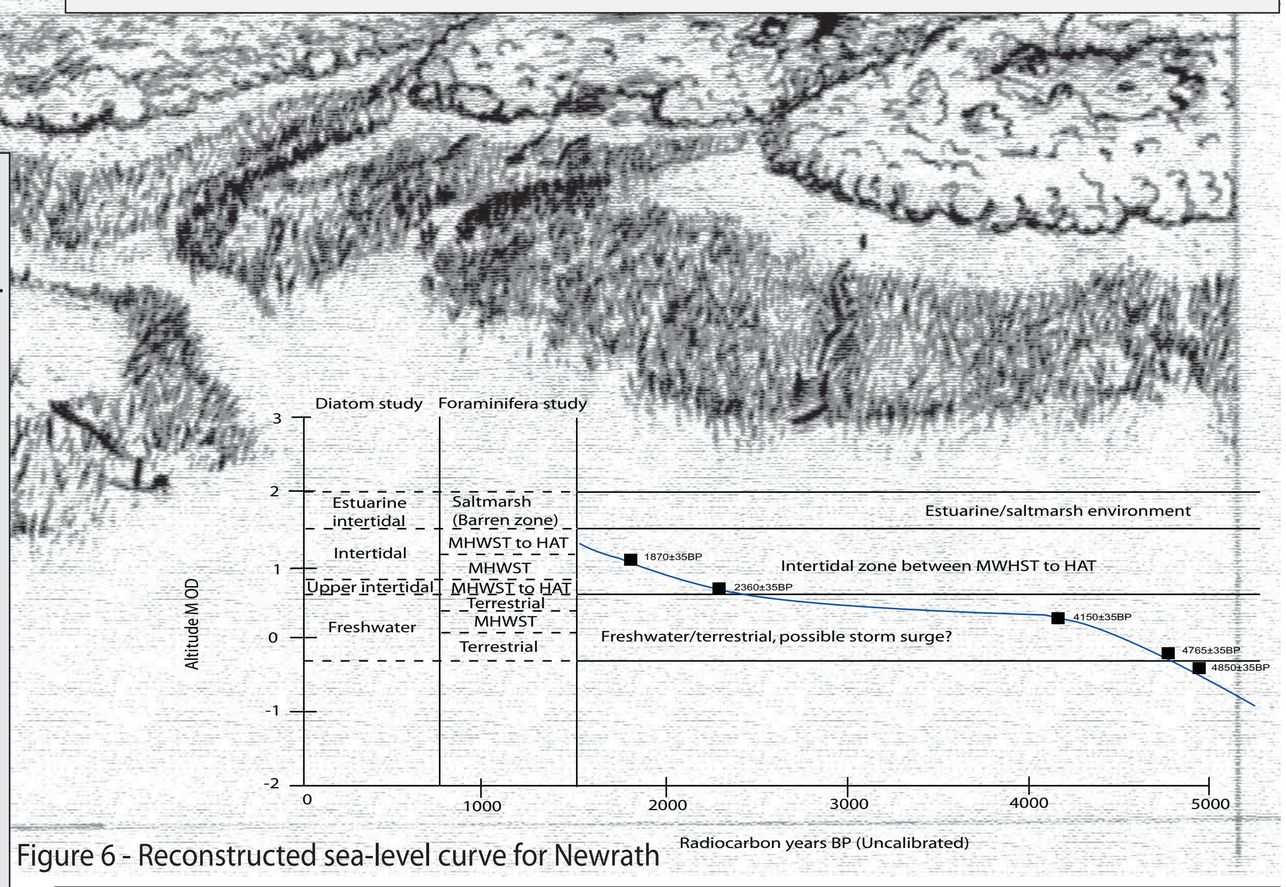


Figure 6 - Reconstructed sea-level curve for Newrath

**People living in a wetland landscape**

Estuarine landscapes have traditionally been conceived as neutral environments ripe for exploitation, with archaeological remains explained in terms of cultural adaptation to a rich wetland resource. These perspectives have been challenged by recent moves to consider the ways that aspects of social identity such as status, kinship, ethnicity or gender, may have influenced and been influenced by living and working in wetlands (Van de Noort and O'Sullivan 2006). If people define their sense of self by what they do, then the movement into estuarine salt marshes and fens would have had a powerful structuring influence. Daily life would have been governed by cultural convention relating to the types of work that could be undertaken by individuals or groups and the specific places it could be done.

Taking this approach at Newrath has enabled us to emphasise the practical, lived experience of people's knowledge of the wetland and to situate this within specific cultural and historical contexts. The structures have provided insights into the choices and decisions that people made to create route ways for short-term access to the wetland. Wood species and tree-ring studies have demonstrated how people have used materials local to the site, and the multi-proxy paleoenvironmental study has allowed us to understand the biographies of these structures in their changing environments. By constructing an onsite history of the human inhabitation of the landscape from the Mesolithic to the present day, and recording the long-term formation processes as the landscape changed over time, we can conceive of Newrath as a dynamic social stage.

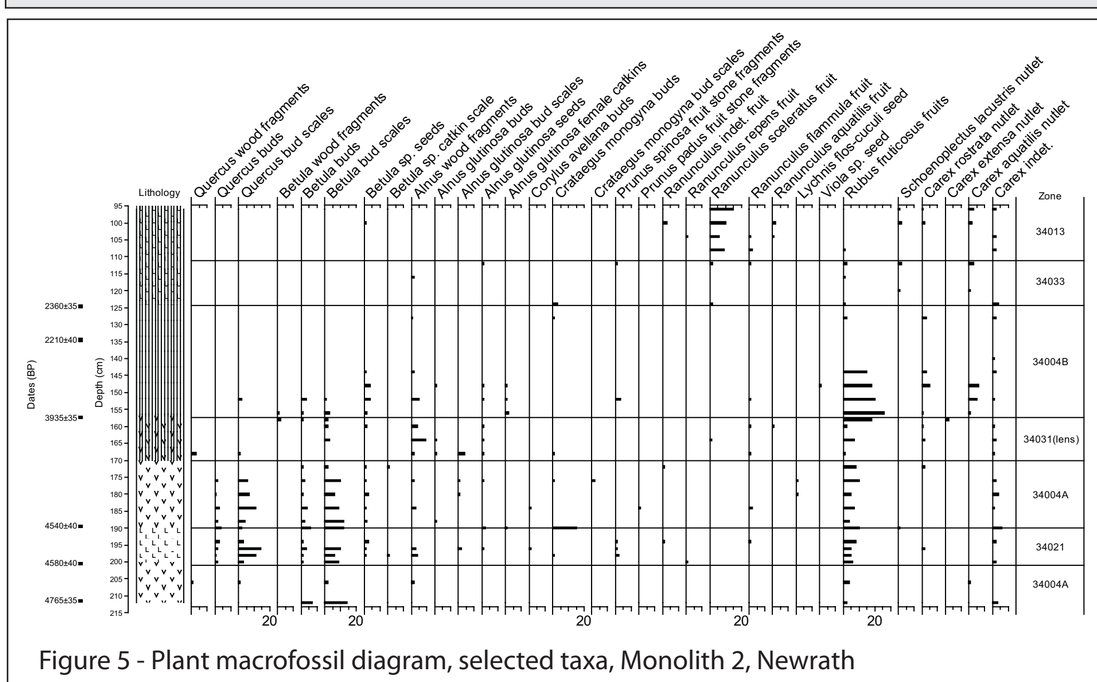


Figure 5 - Plant macrofossil diagram, selected taxa, Monolith 2, Newrath

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