



Archaeology Research Grant Report

Recipient name:	Róisín Nic Cnáimhín
Discipline and subject area:	Archaeology Radiocarbon Dates Scheme
Year awarded:	2022
Title of project:	Animals and the Economy of Medieval Ireland: A Zooarchaeological Analysis of the Faunal Remains from Caherconnell Cashel, Co Clare

Introduction:

This project aims to gain a better understanding of the food economy and farming practices of early (400 – 1100AD) and late (1100 – 1550AD) medieval Ireland. With the Anglo-Normans dominating late medieval archaeology there is a significant gap of knowledge surrounding Gaelic sites of this period, raising questions on whether the arrival of the Anglo-Normans caused socio-political changes in the economy of these settlements. This project involves a zooarchaeological analysis of the animal bone assemblage from Caherconnell stone fort, Co. Clare. The assemblage has a unique level of preservation, and high quality contextual and dating information. This assemblage is exceptionally large and has produced 40,837 recordable bones. Caherconnell is a rural site of high status and Gaelic occupation, dating to early and late medieval Ireland, with agriculture forming the basis of the site economy. This project aims to understand the agricultural economy of Gaelic settlements in medieval Ireland through analysing the Caherconnell assemblage. This project will analyse the agricultural economy of Gaelic sites, to investigate the role of animal husbandry, hunting and fishing, and the status implications of the assemblage. The assemblage dates to early and late medieval Ireland, with a date range of the 10th to 16th century AD, providing a unique opportunity to analyse developments in the agricultural economy during that period. The economic transition between early and late medieval Ireland is yet to be analysed through Gaelic evidence as the later period has relatively few researched settlements of Gaelic occupation. This project is part of a major inter-disciplinary study of Caherconnell, involving a collaboration with N.U.I. Galway with excavations directed by Dr Michelle Comber of the Caherconnell Archaeology Field School.



Figure 1 Bone selected for dating

Please outline the objectives of the project

This project aims to gain a better understanding of the food economy and farming practices of early (400 – 1100AD) and late (1100 – 1550AD) medieval Ireland. This assemblage is exceptionally large, producing 40,837 recordable bones. The project will analyse the agricultural economy of Gaelic sites, to investigate the role of animal husbandry, hunting and fishing, and the status implications of the assemblage. The assemblage dates to early and late medieval Ireland, with a date range of the 10th to 16th century AD, providing an opportunity to analyse developments in the agricultural economy during that period.

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Aim 1: Target phases that have few dates to provide sufficient data for a robust site-based Bayesian Model.

Out of the five phases of activity at Caherconnell Cashel, Phase 5 and Phase 7 are less chronologically defined. By obtaining one date from each phase, they will not only strengthen the existing chronology of the site, but will also aid in the creation of a Bayesian Model for Caherconnell Cashel. The benefit of a Bayesian methodology is that it will provide statistically backed prior density estimates for various events in the span of site activity.

Obtaining additional well sourced samples will allow for the construction of a robust Bayesian Model which in return will generate empirically-based

chronological estimates for specific events occurring at Caherconnell. Both dated bones are unfused phalanges with their unfused epiphyses, indicating that the bones went into the ground soon after the death of the animal and should accurately date the context in question as post-depositional movement is minimal (Hamilton and Krus 2018, 194).



Figure 2 Bone selected for dating

Aim 2: Medieval Dog Breeding Patterns.

A sub-study of the overall research project is to analyse dog breeding patterns throughout medieval Ireland. Biometrical data from medieval dog bones demonstrates a bimodal distribution in the earlier period with two distinct size groups, however these merge by the later period (McCormick and Murray 2017, 206). This suggests a change in breeding patterns between the early and late medieval period, with a strict supervised breeding practice observed in the earlier period and a freely interbreeding population in urban contexts during the later period (ibid.). Through the osteometry of the Caherconnell dog bones, these patterns will be further analysed. As Caherconnell is a rural settlement site with occupation spanning both medieval periods, this data will allow for the comparative analysis between a rural site and existing urban evidence. Dates from the three bones provides an opportunity to test this observation, two from early medieval contexts and one from a later medieval context. From the metrical data, one bone from a small dog, and one from a larger dog have been selected from early medieval contexts. The third bone is from a late medieval context.

Hamilton, W. D. and Krus, A. M. 2018. The Myths and Realities of Bayesian Chronological Modelling Revealed. *American Antiquity*, 83(2), 187–203.

McCormick, F. and Murray, E. 2017. The zooarchaeology of medieval Ireland. In: *The Oxford Handbook of Zooarchaeology*. Oxford University Press. Oxford, 195–213.

Please describe the methodology used in conducting the research

A range of methodologies and data collection methods have been used within this project. After conducting a pilot study, the recording method: *The Animal Bones* (Serjeantson 1996) was chosen based on the nature of the Caherconnell faunal assemblage where the bone has survived in quantity and good condition. It involves a system that records the zones present on each bone. A uniform number of eight zones per bone is used which ensures consistency when calculating the proportion of bone present. The identification of the animal bones (taxon, element, and side) was done using both a reference collection and animal bone atlases, primarily *Atlas of Animal Bones* (Schmid 1972), *Teeth* (Hillson 2005), *Birds* (Serjeantson 2009), and *A Manual for the Identification of Bird bones from Archaeological Sites* (Serjeantson and Cohen 1996). When recording the animal bones, a range of data as well



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as the identification was recorded: measurements (von den Driesch 1976), proximal and distal fusing, the presence of butchery marks, burning, gnawing, pathology, bone working, etc. The ageing and sexing was undertaken during the secondary analysis. Epiphyseal fusion and tooth wear & eruption data was used to age the animals. Depending on the species, specific elements were used to identify the sex of the animal. Methods of quantification used were MNI (minimum number of individuals) and NISP (number of identified specimens).

Driesch, A. von den 1976. A guide to the Measurement of Animal Bones from Archaeological Sites: as developed by the Institut für Palaeoanatomie, Domestikationsforschung und Geschichte der Tiermedizin of the University of Munich. Peabody Museum of Archaeology and Ethnology, Harvard University.

Hillson, S. 2005. Teeth. Second. Cambridge University Press. Cambridge.

Schmid, E. 1972. Atlas of Animal Bones: For Prehistorians, Archaeologists and Quaternary geologists. Knochenatlas. Für Prähistoriker, Archäologen und Quartärgeologen. Elsevier Pub. Co. New York, NY.

Serjeantson, D. 1996. The Animal Bones. In: Needham, S. and Spence, T., eds. Refuse and Disposal at Area 16 East Runnymede. British Museum Press. London, 194–201.

Serjeantson, D. 2009. Birds. Cambridge University Press. Cambridge.

Serjeantson, D. and Cohen, A. 1996. A manual for the identification of bird bones from archaeological sites. Archetype Publications. London.

Please outline the findings of your research and/or milestones achieved.

To date, I have completed the recording stage of the faunal analysis and I am currently undertaking the data analysis portion of my PhD research. This involves reviewing the data I have recorded and applying various methods to extract data in order to address my research questions, objectives, and aims.

Please provide details of the dissemination of the outcomes from this project.

As well as being included within my PhD thesis, the results from this research will be published and presented in various ways. Regarding the research which depends on the acquired radiocarbon dates, I am to publish the results from the study of dog breeding patterns in medieval Ireland as a paper to the Association of Environmental Archaeology journal. I also aim to produce a site-based Bayesian model which will integrate the dates obtained by the excavation director and the five dates discussed above. The results from this model will be incorporated into a discussion of the overall zooarchaeological results from my research project with a primary focus on the transition between early and late medieval activity at Caherconnell. The results of this study will be submitted as a paper to the journal *Medieval Archaeology*. The results from both aims will also be presented in the near future in a Departmental Seminar in March 2023 in the UCC Department of Archaeology.

How did the award enhance your professional development?

The award has both enhanced my professional development and also my PhD projects potential. By undertaking smaller sub-studies within my overall PhD research, it has furthered my skills in a range of areas (e.g. bayesian and



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biometrical studies). Being awarded these radiocarbon dates has ensured a more comprehensive and high-quality approach to both my overall research and these sub-studies.

What plans (if any) do you have to further your proposal/project?

It is possible that this research will not end at the completion of my PhD. Acquiring these dates, which has allowed me to undertake particular sub-studies, has provided the opportunity to further this analysis through the use of other methods such as isotopic analysis. Potential analysis such as this has already been in discussion with the excavation director and other specialists.