

Assignment 3: Using a current archaeological research framework (regional or thematic), contextualise and synthesise data and results from an agreed archaeological project

Introduction

Archaeological projects and investigations should never be considered as being independent from the research that precedes them. Regardless of whether a project involves the study of many sites or just one individual, it's crucial to situate the results within the relevant research context by linking them to those of previous projects focussing on the same period and/or geographical region (Miles 2024). Contextualising results in this way facilitates the identification of new patterns or anomalies within compiled datasets, and may also provide support for or even challenge existing inferences. Two research frameworks have been chosen to contextualise and synthesise the data and results of the analysis of an Early Bronze Age (EBA) individual recovered from a cist in Oakslaw near Rock, Northumberland (referred to as the Oakslaw individual). This Beaker burial was investigated as part of an undergraduate dissertation (see supporting documentation; Parker 2022) and used a multi-isotope analysis approach alongside osteological assessment, radiocarbon dating, and trace element analysis to explore the mobility, diet, and life history of the individual (Table 1). Due to the burial's location in Northumberland, the North-East Regional Research Framework (NERRF) has been consulted here to contextualise the findings within the pre-existing state of knowledge of the EBA in this region. Both the original NERRF publication (Petts and Gerrard 2006) and the recent digital update (Frodsham 2019) have been considered together to be able to synthesise the project's data using a holistic and up-to-date understanding of North-East England's archaeological record. Taking a more atypical approach due to the lack of a formal research framework focussing specifically on scientific methods of archaeological investigation, the Beaker People Project (BPP) is also used here to contextualise and synthesise the isotope data from the study of the Oakslaw individual. Whilst not strictly a research framework, this large-scale investigation compiling data from Beaker burials across Britain is a seminal and currently unparalleled publication using multiple lines of scientific investigation to analyse skeletal remains (Parker Pearson *et al.* 2019). As such, the BPP provides a thorough overview of the current scientific understanding of mobility, diet and lifestyle during the Beaker period in Britain which the Oakslaw individual's data can be related and compared to. Ultimately, this essay aims to situate the study of the Oakslaw individual within its wider research context by considering how the analytical findings fit within the existing data and research gaps examined in

NERRF and the BPP, and will synthesise the project's results using these two research frameworks to evaluate its contribution to the overall understanding of the Beaker period in North-East England.

Table 1: A summary of the main techniques used to analyse the Oakslaw individual and the resulting data and interpretations (Parker 2022)

Analytical Method	Result	Interpretation
Radiocarbon dating	2200-2031 cal BC	Confirmation of suspected EBA date originally interpreted from burial typology and presence of Beaker vessel in cist
Osteological assessment	Biological sex estimation: Most sexually dimorphic features of the skull aligned with male/probable male sex, with others being female/indeterminate. The pelvis was not preserved. Bone metric measurements fall within female ranges, but reliability is inhibited by poor preservation of cortex bone. Age-at-death estimation (AOD): Dental wear suggested AOD 17-25y; Dental development suggested AOD 18+ (All third molars erupted); Epiphyseal fusion suggested AOD 18-25 (clavicle partially fused)	Biological sex estimation: Probable male (M?) sex estimation assigned, but individual referred to without gender-specific terminology to reflect mixed expression of sexually dimorphic traits and potential for inaccurate estimation. Age-at-death estimation: Individual estimated to have been 18-25 years old at time of death, which aligns with estimations from earlier assessments
Carbon and Nitrogen Isotope Analysis	Bulk bone: $\delta^{15}\text{N} = 10.93\text{‰}$ $\delta^{13}\text{C} = -22.03\text{‰}$ Incremental dentine: - Right canine mean $\delta^{15}\text{N} = 11.44\text{‰}$ - Right canine mean $\delta^{13}\text{C} = -21.70\text{‰}$ - Right canine mean $\delta^{15}\text{N} = 11.66\text{‰}$ - Right canine mean $\delta^{13}\text{C} = -21.78\text{‰}$	Wholly or predominantly terrestrial C ₃ omnivorous diet with no significant marine resource consumption
Strontium and Oxygen Isotope Analysis	Right canine: $^{87}\text{Sr}/^{86}\text{Sr} = 0.7114$ $\delta^{18}\text{O}_{(\text{phos})}\text{VSMOW} = 17.22\text{‰}$ Third molar: $^{87}\text{Sr}/^{86}\text{Sr} = 0.7106$ $\delta^{18}\text{O}_{(\text{phos})}\text{VSMOW} = 16.70\text{‰}$	Likely local childhood origin in general area surrounding Rock, with potential short-distance mobility within the region suggested by the right molar's strontium isotope ratio being consistent with upland areas within the Cheviots
Peptide Analysis (conducted later independent of initial project)	Negative test result for AMELY specific peptides indicating individual is likely XX	Confirmation of female biological sex based on analysis of sex chromosome-linked enamel-forming proteins

North-East Regional Research Framework

Within the context of the Neolithic and Early Bronze Age resource assessments and research agendas outlined in NERRF, the study of the Oakslaw individual represented a particularly rare and unique opportunity to improve understanding of various aspects of the EBA in Northumberland. Despite this county containing the most evidence of EBA activity and occupation in the region due to upland areas favouring preservation and less urban development, the location and survival of the Oakslaw individual's burial on low-lying agricultural land is unusual for the area (Frodsham 2019). For instance, other EBA burials and mortuary sites have been found in lowland Northumberland as nearby as Howick (Waddington *et al.* 2005), only 6km from this site, but soil preservation conditions are so poor that usually only small fragmentary remains survive, thus establishing the Oakslaw individual's remains as an exceptional example of preservation within an area designated as a research priority for this period (Petts and Gerrard 2006). Because of this uncommon survival, even the most basic findings uncovered from the osteological analysis of this individual, such as age-at-death and biological sex estimation, offer the chance to contribute towards a greater understanding of the demography of the Beaker people in North-East England (Petts and Gerrard 2006). The significance of this burial and its contents is even highlighted in NERRF itself, as writing at the time of its discovery, Frodsham specifically highlights this find within the updated resource assessment as first in a list of new important discoveries in the region (Frodsham 2019). This importance is particularly emphasised by the fact that this project lies within the remit of multiple research agenda priorities outlined in NERRF. One of the most prevalent priorities outlined for all periods, is to take full advantage of available scientific analysis techniques to expand and diversify the amount and type of knowledge recovered from archaeological remains (Petts and Gerrard 2006). The study of the Oakslaw individual certainly achieves this, with the use of radiocarbon dating and multi-isotope analysis alongside more traditional osteological analysis methods allowing vast quantities of data and information relating to chronology, mobility, diet, life history, biological sex, age-at-death, burial rites, stature and more to be discovered (Parker 2022). The produced radiocarbon dates also conform to the priority of applying absolute dating techniques to all recovered skeletal material to further our understanding of regional occupation and burial practice chronologies (Petts and Gerrard 2006; Frodsham 2019). Even the later use of peptide analysis achieved another priority aim of exploring potential reasons for variation in funerary behaviour within this period; with the more conclusive analysis of the individual's biological sex contributing to the body of evidence suggesting burial orientation was influenced by sex (Fowler 2013; Frodsham 2019). This thorough investigation of the Oakslaw individual therefore adheres to the best practice standard suggested in NERRF to

ensure all uncovered human remains are not only fully recovered and recorded, but that as much information is gleaned from them as possible to build a holistic picture of individuals' lives and develop a greater understanding of the region's past populations (Petts and Gerrard 2006; Frodsham 2019). However, it must be acknowledged that this individual's burial is so far an isolated find at Oakslaw. This is in comparison to more complex multi-period sites in the region such as Low Hauxley, where a multi-phase burial cairn was excavated with evidence of Beaker inhumations and cremations and continued use by later food vessel populations (Waddington 2011; Waddington and Bonsall 2016; Frodsham 2019). Thus, whilst the Oakslaw individual's burial represents a noteworthy and uncommon discovery within the context of NERRF, it is not representative of all EBA mortuary behaviour in the region, and the analytical findings must be collated and synthesised with other contemporaneous evidence to cultivate a holistic understanding of the EBA in North-East England.

Synthesising the results of the study of the Oakslaw individual together with pre-existing knowledge collated in NERRF (Figure 1) highlights how this project has contributed to key research areas and priorities whilst also identifying gaps that future studies in the region should aim to combat. Firstly, as there have been few discoveries of well-preserved Beaker burials in lowland Northumberland, the radiocarbon date (2200-2031 cal BC) for this burial supports the priority of developing a greater understanding of the chronology of this period in North-East England (Frodsham 2019) when considered alongside other similar cist burials. At Low Hauxley, the earliest burial recovered dates from around the 24th century cal BC (one of the earliest known Beaker burials in Britain), with depositions of Beaker inhumations and cremations in cists continuing over the following centuries (Frodsham 2019). Viewing these cist burials with others from upland areas of Northumberland where bone preservation is more common, such as Wether Hill and Turf Knowe with early burials dated to 2335-1886 cal BC and around 2165 cal BC, respectively, supports the notion that at both isolated and multiple burial sites Beaker populations within this region were not only choosing to bury their dead in similar ways across time but also across geographical distance from the coast to the hilltops of the Cheviots (Waddington *et al.* 2005; Fowler and Wilkin 2016; Frodsham 2019). Unfortunately, further expanding knowledge of the chronology of burial variation and continuity is restricted by lowland soil conditions, with important sites such as at Howick and Cresswell failing to produce viable samples from secure contexts for absolute dating methods (Waddington *et al.* 2005; Hunter 2017). Thus, as has been shown with the Oakslaw individual, where direct samples are available, securing radiocarbon dates is crucial to fully understanding individual burials, their chronological context, and their temporal relation to other geographically related burials. The study of the Oakslaw individual

also has potential to contribute towards one of the major gaps identified in the archaeological record of North-East England regarding settlement and subsistence (Petts and Gerrard 2006; Frodsham 2019). With the current lack of preserved settlement sites before 1930-1000 cal BC (Lookout Plantation: Passmore and Waddington 2012), it has been suggested that Neolithic and EBA populations in this region were potentially highly mobile with either non-permanent dwelling structures or those made from perishable materials (Frodsham 2019). The application of isotope analysis within this project may support the idea of mobile settlement and subsistence, as the oxygen and strontium isotope ratios measured in the Oakslaw individual's canine are consistent with an upbringing in lowland areas surrounding Rock, whilst values from the later-forming third molar are consistent with upland areas in the Cheviots, therefore suggesting local, short-distance movement throughout life (Parker 2022). This again emphasises the importance of prioritising the application of scientific methods to recovered remains, and how their use can help to expand regional archaeological records with previously invisible evidence. Notably, the Oakslaw individual is likely one of the first Beaker inhumations within the context of the NERRF publications to be investigated in such a multidisciplinary manner, which is further highlighted in the discussion of the BPP project below. Overall, despite this individual burial so far being an isolated find at Oakslaw, the scale and diversity of the information recovered from the study of the remains emphasises the importance of seeking out as much direct and indirect evidence as possible with which to interpret the lives of people in the past, and serves as a valuable example of how to implement the NERRF research priority to employ scientific techniques wherever practical.

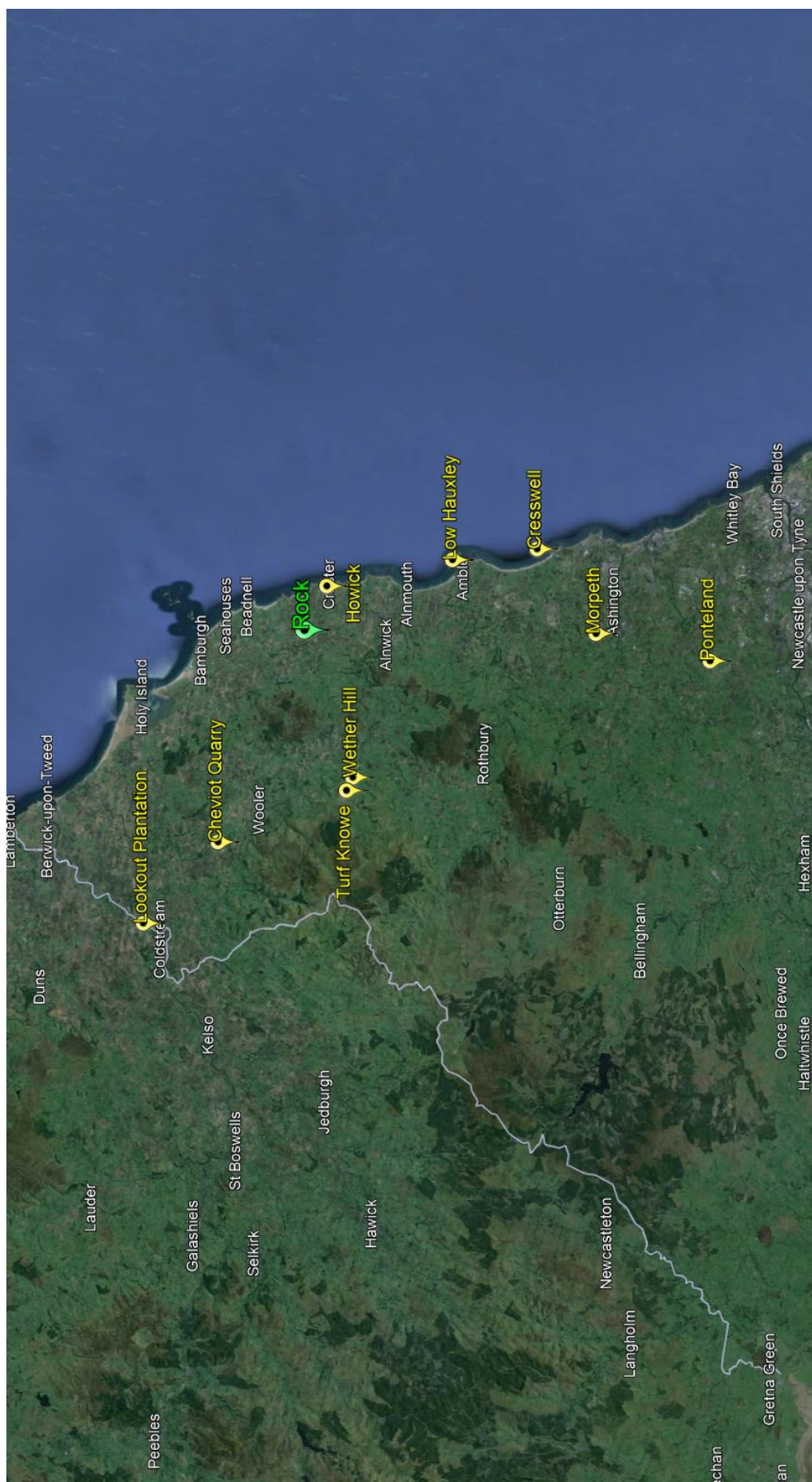


Figure 1: A map of Northumberland showing the location of the Oakslaw individual's burial near Rock (green) and all other sites named in the text (yellow) (Google Earth Pro 2015)

The Beaker People Project

Due to the lack of multidisciplinary analysis-focused projects discussed in NERRF, it is necessary to briefly contextualise and synthesise the Oakslaw individual's isotope data in relation to the BPP to explore the significance of the project's findings. Chiefly, the primary significance of this individual's burial within the BPP is that it would represent the first burial from the North-East within the dataset (Parker Pearson *et al.* 2019). As the strontium and oxygen isotope data suggest a local origin for this individual, a new "North-East England" location group could be created, which could combat the existing large data gap between Yorkshire and South-East Scotland (Figure 2). Whilst this proposed location group should of course not rely on just one individual to represent a whole region, recent unpublished isotope studies of Northumberland Beaker burials found at Ponteland, Morpeth and Cheviot Quarry (Grzybowska 2023) emphasise the potential for future data expansion. Within the current dataset, the Oakslaw individual's interpreted terrestrial C₃-based omnivorous diet with no significant consumption of marine resources aligns with the inferred dietary behaviour for the majority of the analysed Beaker burials, supporting the notion that regionally across Britain there were no major differences in diet during this period (Parker Pearson *et al.* 2016; Jay and Richards 2019). Interestingly, regional differences were observed via dental microwear analysis, indicating that within this consistent diet across Britain, different groups' diets emphasised different terrestrial C₃ foods; with harder diets prevalent in central and southern England, and softer diets commonplace in northern England and Scotland (Parker Pearson *et al.* 2016; Mahoney *et al.* 2019). This highlights another potential research area the Oakslaw individual may be able to contribute to in future, especially as their skeletal analysis revealed full dental arcade preservation (Parker 2022). As previously mentioned, the Oakslaw individual has been interpreted as being local to their burial region with the potential for short-distance mobility between childhood and death at 18-25 years (Parker 2022). This short-distance movement has also been suggested for some Scottish burials, and is distinguishable due to the complex heterogeneous geology underlying Northumberland and much of Scotland (Parker Pearson *et al.* 2016; Montgomery *et al.* 2019). In many cases within the BPP and isotope studies in general, mobility is not possible to discern due to ranges of strontium isotope ratios being shared by many areas of similar geology across Britain and Europe (Montgomery *et al.* 2019), thereby highlighting the unique opportunity the Oakslaw individual's study affords to not only identify movement during life but infer it on a potentially small, local scale. Ultimately, considering how these dietary and mobility interpretations fit within the BPP accentuates how the data and results from the Oakslaw individual's analysis not only have the potential to support and advance regional research projects but national, population-level ones too.

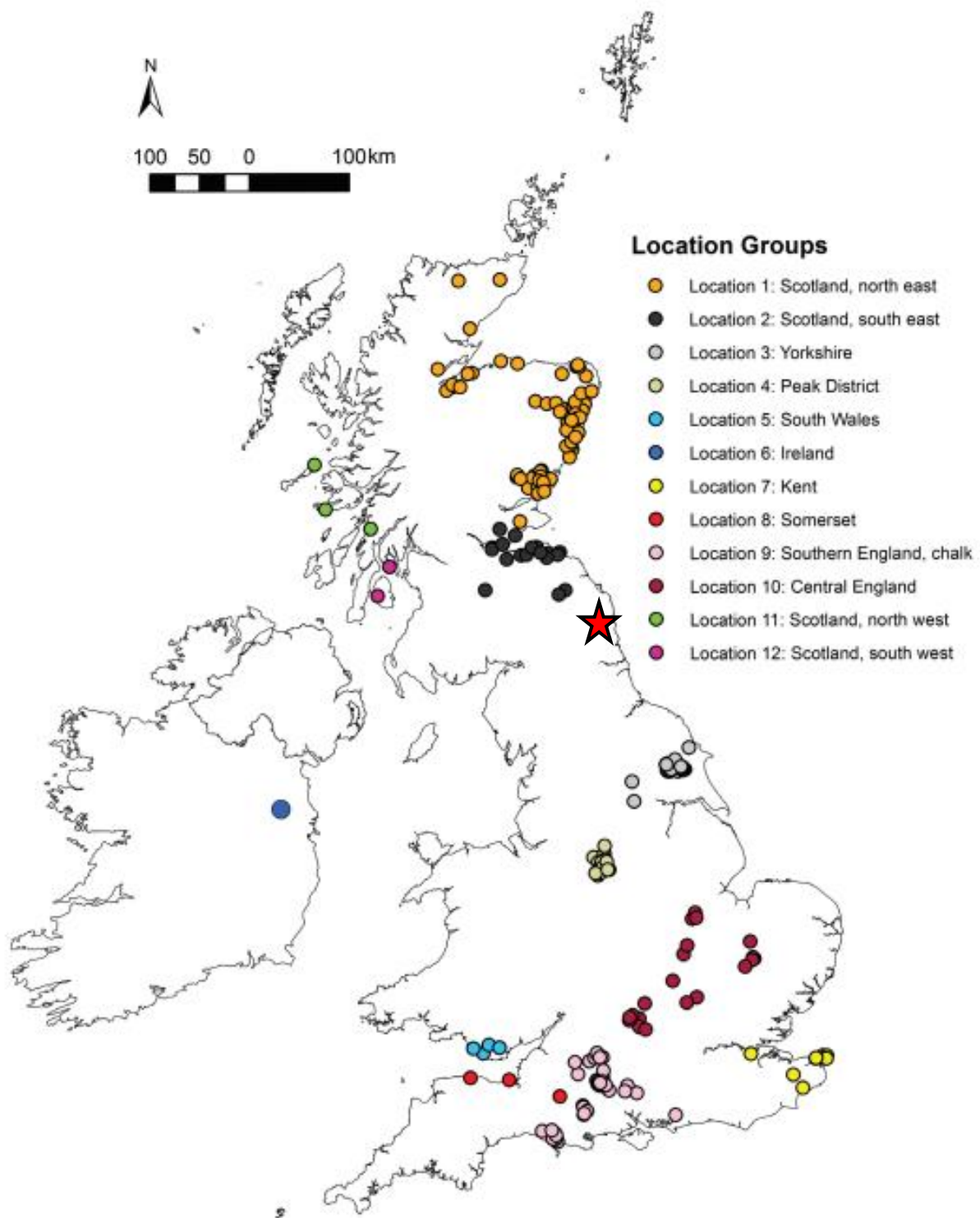


Figure 2: The location of the Oakslaw individual's burial is shown here (red star) in relation to the other burials analysed as part of the BPP. The gap between the Yorkshire and South-East Scotland location groups is clear (Parker Pearson *et al.* 2019: Figure 1.13, pp. 27).

Conclusion

To conclude, by contextualising and synthesising the results from the Oakslaw individual's study using NERRF and the BPP, this essay has examined how this burial can be integrated within its regional and chronological research contexts. Despite being an independent project analysing an isolated find, combining the analytical findings with similar geographically-related sites has demonstrated the diversity of research areas and priorities this single project can support and contribute to, and emphasises the importance of utilising scientific techniques to maximise data recovery from human remains. Situating the results within a large-scale analysis of contemporaneous data also highlighted how the Oakslaw individual can bolster the current understanding of British Beaker populations due to their significance as the first analysed individual from the North-East; their similar diet to others in the dataset; and the ability to identify their possible short-distance mobility. Overall, this essay has benefitted the development of a holistic understanding of the Oakslaw individual, but also underlines the importance of adding new results and data to research framework databases as they are generated to continue to combat gaps and contribute to research priorities.

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