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The Animal Remains from the Forum and Basilica at *Venta Icenorum* (Caistor): What do they tell us about the use of space at the site over time?

Lauren Ward

Thesis Submitted for MRes

Department of Classics and Archaeology

University of Nottingham

September 2021

Acknowledgments

I would like to thank my supervisors, Dr Holly Miller and Dr Will Bowden, for their incredible support throughout the completion of both my undergraduate dissertation and my postgraduate thesis. I will forever be grateful for the time, effort and expertise they have granted me. I am additionally grateful to Will for allowing me access to the Caistor material, as I am to the volunteers who excavated it.

I would also like to acknowledge the postgraduate community within the Department of Classics and Archaeology at the University of Nottingham for welcoming me so warmly, which I have been so appreciative of, especially in this particularly difficult year.

I also thank my family and my partner for always supporting and encouraging me in everything that I do.

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1. Introduction and Background

The forum-basilica complex at *Venta Icenorum*, modern day Caistor-by-Norwich, was located at the centre of the Roman town (see Figure 1), and was also the centre of its economic activity and administration. Situated in a *civitas* capital, and the major town of northern East Anglia, the forum and associated basilica would have also been this centre for the Iceni territory as a whole, and so likely an area of great importance (Bowden 2020, pp. 15-16). Indeed, civitas centres could apply local customary law or local constitutions, where such things existed, and so the basilica in particular would have been the focal point of this (Mattingly 2006, p. 261).

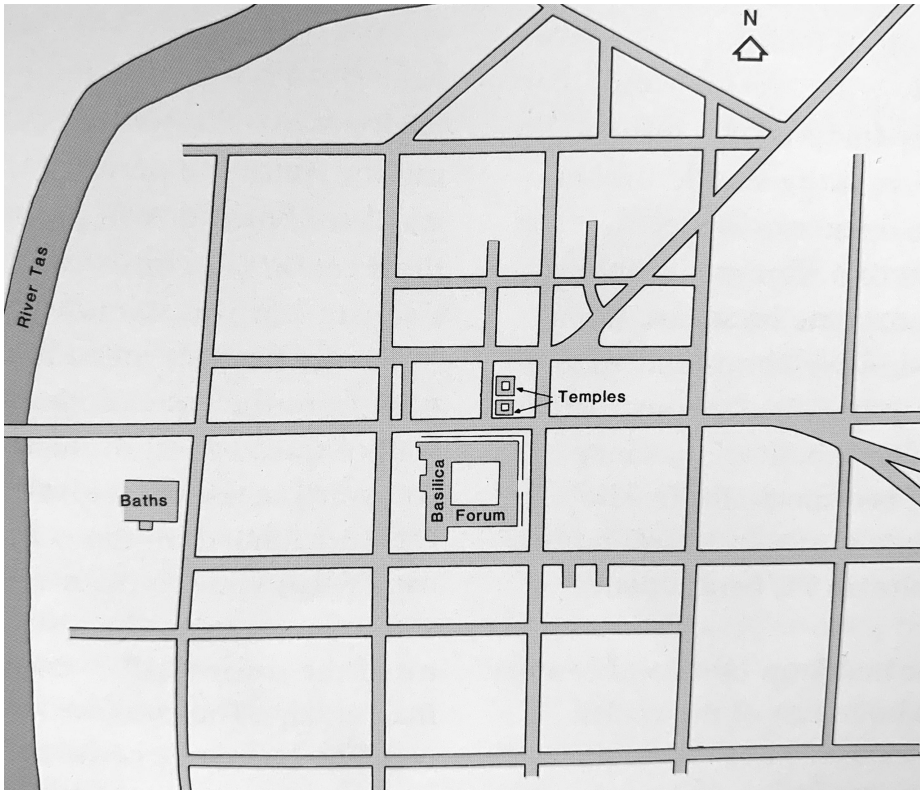


Figure 1: The early street layout of the Roman town at Caistor, showing the forum/basilica complex at the centre (Davies 2001, p. 13)

The importance of this space garners an interest into the specific types of activity taking place within it on a day-to-day basis, as it can perhaps contribute to our understanding of forum-basilica usage within Roman Britain. While some suggestions have already been made regarding other materials recovered from the site (Bowden [forthcoming]), an in depth analysis of the faunal remains had yet to be completed prior to this study. The analysis of faunal assemblages can yield a wide array of information regarding the activity taking place at a site, as will be discussed in this work.

Excavations in both the forum and basilica spaces at Caistor have provided us with the opportunity to compare the finds from each location, in order to determine whether the difference in the use of space was consistent throughout the structure's history. It has also been possible to determine which contexts are likely to represent *in situ,* primary deposits of zooarchaeological material, and which are likely to represent dumped, secondary deposits. This gives us the valuable opportunity to make comparisons between these context types, which can also reveal much information about what was happening inside the forum-basilica complex, as well as what was happening in the surrounding area. This is ultimately in order to develop our understanding of the town's inhabitants' interactions with the structure, and how these may have evolved over time from its construction to the town's abandonment.

1.1. The Forum and Basilica in Roman Britain

As is true at Caistor, the forum-basilica complex usually occupied a central insula of a town in Roman Britain (Wacher 1995, p. 63), representative of their central role. Though varying relatively widely in size, the average forum was an open courtyard surrounded on three sides by a colonnaded portico, with the basilica (a large aisled hall) stretching the full length of the fourth side. The basilica was the chief administrative centre, used for public meetings and assemblies, and as a law court. It likely contained offices for magistrates and for record keeping (Wacher 1995, 42).

The porticoes of the forum often opened on a series of rooms, that Wacher suggests had a variety of possible uses; as offices for the authorities, shrines, and as shop spaces to be let out (Wacher 1995, p. 63). Wacher also suggests that the porticoes and the forum courtyard could also be used for temporary stalls, so perhaps as a market place (p. 63). Though, it is believed that some towns constructed separate market-halls (e.g. Verulamium (Richardson 1944, pp. 81-126) and Cirencester (Wacher 1962, p. 8) for example.

In all, the forum-basilica complex in the towns of Roman Britain was an important central structure, and in some ways, as described by Frere, a physical manifestation of the local government of the newly constituted civitas (Frere 1983, p. 250).

1.2. The Forum and Basilica at Caistor

At Caistor, the basilica was on the west side of the forum, standing at a height of two storeys. It was at a higher level than the courtyard, and so reached via a short flight of steps. Inside, it seems to have contained a suite of offices, with underfloor heating on its northwest corner. The forum itself followed the common basic design described prior (Bowden 2020, p. 22). Overall the forum-basilica complex at Caistor was mostly typical of the time, if not slightly smaller at approximately 30m^2, which Bowden contributes to a potential lack of local interest in civic participation (Bowden 2020, p. 22).

The structure's date of construction and phasing has been debated, as will be discussed, with the most recent and likely date being shortly after 150 CE, in the mid-2nd century. It was probably abandoned, along with the rest of the town, by the early 5th century. This abandonment is considered typical of the majority of Roman towns in this period, the topic of which is highly debated (see Dark 2000).

1.2.1. A History of Excavations

The Caistor forum was excavated first in the 1930s by Atkinson, whose work was compiled into a report by Sheppard Frere in 1971 (Frere 1971). Frere determined a sequence of events for the forum space from the limited recordings and Atkinson's notes. These claimed that there was an initial forum (Forum I) that could 'hardly have been erected before AD 150-160' according to Frere (1971, p. 9). Atkinson argued that this forum was destroyed by fire in the second half of the 2nd century, before being totally rebuilt after a lengthy interval, as determined from the fact that no structural elements of the earlier forum were reused (p. 11). He then claimed that the forum was burnt down again at an unknown date, though Frere notes there was little evidence of this. Whatever the case, the north, south and east ranges of the forum were demolished to their foundations, and the structure was completely rebuilt on a new plan. This Forum II was suggested by Frere to have been built in the period c. 270-290, and although its' exact lifespan is unclear, according to Atkinson's notes it was 'still occupied in the second half of the 4th century', as evidenced by 'abundant though unstratified finds of pottery and coins, etc.' (Frere 1971, p. 13).

However, there are problems with this suggested sequence. It was clear from Atkinson's excavations that Forum I was not the earliest building on the site, as evidenced by the presence of burnt debris from a timber and clay structure, and structural remains and wall-plaster being found beneath the floor level (Frere 1971, p. 9). Interestingly, at Silchester (Fulford and Timby 2000), and possibly also St. Albans (Wacher 1995, p. 223), Lincoln and Exeter (Fulford 1985, p. 58), there has also been found to be a timber predecessor to the stone forum. As Millett notes, these structures are 'difficult to trace beneath monumental stone structures', so such predecessors could be more common than it would seem (Millett 1990, p. 84). Indeed, Millett proposes a widespread occurrence of timber predecessors as a reason for the comparatively late date of the stone construction of known fora in Roman Britain, arguing that the native tradition employed timber and that there are few stone buildings in the first century (p. 84). The difficulty of identifying these structures makes this claim difficult to assess however.

In addition to the un-accounted for timber building, it should also be noted that Bowden suggests that the complexity of the east range is hard to reconcile with only two phases of building at the forum site (Bowden [forthcoming], p. 5). These inconsistencies led to the forum/basilica area being re-excavated in 2011 in an attempt to resolve the issues with this sequence, and answer any unanswered questions about the nature and history of the forum left by the earlier work, with three trenches dug to investigate the site. Trench 6 (13 x 3m) was located across the northern wing of the forum, with Trench 7 (12m x 3m) located across the southern wing. A smaller trench, Trench 8 (5 x 4m), was excavated at the northern end of the basilica. The layout of these trenches within the forum-basilica complex is shown below in Figure 2.

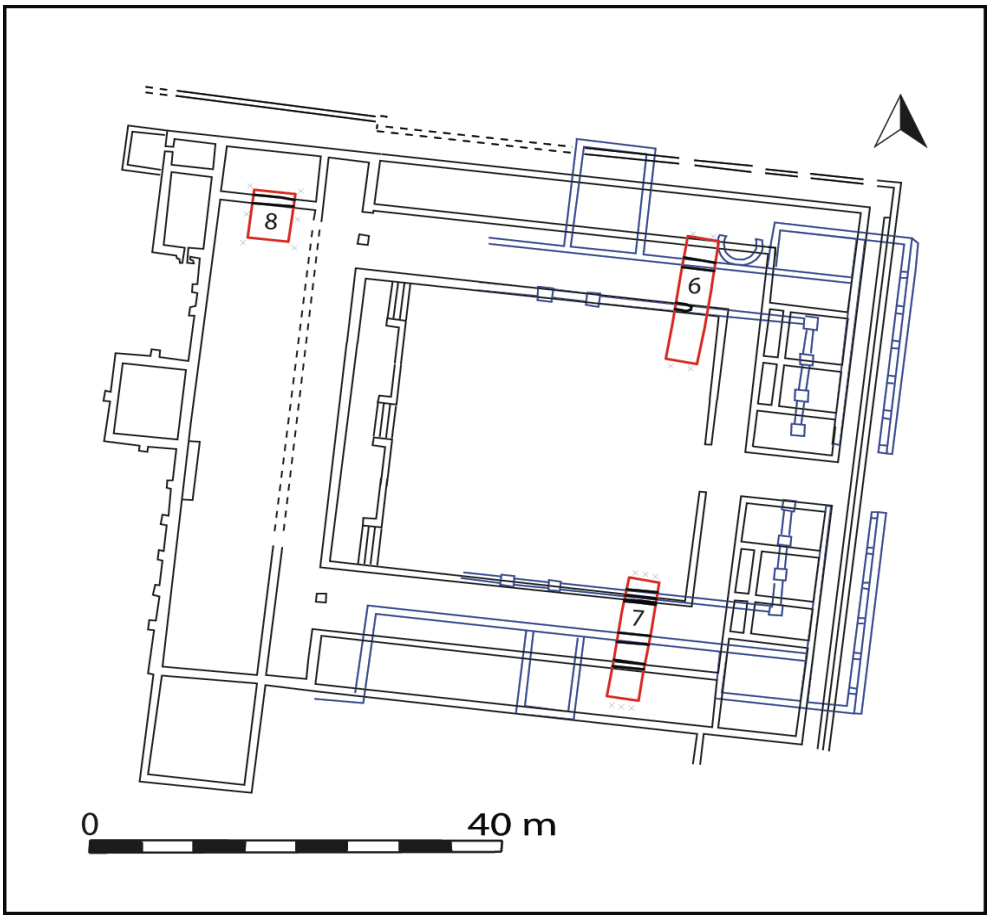


Figure 2: Plan of the forum-basilica structure, with locations of trenches 6, 7 and 8 shown (Bowden).

The information obtained from this excavation has been compiled by Bowden, with contributions by Bates and Percival [forthcoming]. This work proposes an updated interpretation of the site's stratigraphic sequence and history, which will be summarised shortly. Firstly, it is important to consider the issues faced by Bowden et al. during this excavation.

1.2.2. Difficulties with the Excavation

The stratigraphy of the forum and basilica spaces was discovered to have been made unclear by disruptions. These were initially from stone robbing in the Medieval period and then Atkinson's 20th century excavations, which 'even by the standards of the time were of poor quality' (Bowden [forthcoming], p. 2). This has made the sequence of construction and events difficult to determine in the forum space, as well as removed important structural features and made the likelihood of contamination by intrusive material high. This is particularly the case in Trench 6, as will be discussed below in a summary of the history of the forum-basilica complex.

1.2.3. A History of the Forum-Basilica Complex

The following is summarised from Bowden's in depth discussion of the forum-basilica structure (Bowden [forthcoming], pp. 5-35).

Construction of the forum seems to have begun in the early 2nd century when the area was levelled, before a timber and clay structure was erected on it in the early to mid 2nd century period (which may represent the timber and clay predecessor of the forum mentioned prior). This was then demolished at some point in the mid to late 2nd century after a fire caused damage to the structure. Some reconstruction seems to have taken place, however within at least 50 years the forum space seems to have become somewhat abandoned. Indeed, in the period stretching from the 3rd to the 4th century the area seemed to lose its function as a civic space and was instead utilised by the town's inhabitants as a

place for rubbish disposal. It wasn't until the 4th century that the forum space became active again, with major new construction taking place. Bowden later suggests in his 2020 work that the smaller reconstruction of the forum that was built was perhaps intended to function as the headquarters of a state official, along with the original basilica hall, possibly linking to the increased defence of eastern *Britannia* seen in the late Roman period (Bowden 2020, p. 40). There are no surfaces relating to this phase, suggesting the construction was never completed however.

After this construction was abandoned, waste disposal seemed to continue, but now with evidence of more industrial activity, such as slag deposits and debris from smithing hearths, indicating iron working was taking place in the immediate vicinity. This active period only lasted until the early 5th century at the latest however, and the forum space was once again abandoned and inundated with deposits of waste. This was the final phase of collapse and demolition within the forum's life, with seemingly no activity taking place on the site again until the Medieval period, in the form of quarrying of the forum stone.

The basilica follows a slightly different timeline, with levelling occurring at the same early stage as the forum levelling, but any notable construction not taking place until the mid 2nd century, seemingly after the fire that damaged the timber and clay structure evidenced in trenches 6 and 7. Indeed there is no sign of such a timber and clay structure in the basilica trench, but burnt surfaces are present. Also unlike in the forum space, abandonment of the basilica does not seem to occur until somewhere in the late 4th to early 5th century. However, this is not initially a complete abandonment and instead it has been suggested that the area was turned over to more domestic activity, losing its role as a prestige space. The disposal of waste within this space does also occur at this stage, until the eventual collapse of the site in the early 5th century at the latest (but possibly also extending later, given the well-known issues with coin and pottery dates for the very late phases in Romano-British town).

The final phase of activity at the basilica was seemingly the latest phase of Roman occupation at the site of Caistor as a whole, which interestingly gives the structure a much longer lifespan than others similar in Roman Britain, such as those at London and Wroxeter

that were abandoned after AD 300 (Perring 1991; Barker et al. 1997). As with the forum space, there is no evidence of any kind of activity in the period immediately after that, although the basilica does not seem to have been affected by the robbing of the Medieval period. There is certainly no evidence of any Anglo-Saxon or Medieval settlement activity on either the forum or basilica site, with only a few pottery sherds representing the periods that were likely introduced during later excavation, resulting from the manuring of the farmland that now lays above.

1.2.3.1. Industrial Activity

It is of note that trench 8 did not produce any metalworking debris in this or any period. We know that in the late Roman period the basilica in some towns became centres for this industry. Indeed, nine forum-basilica complexes have been found to contain evidence of metalworking, including in the basilica itself, such as at Silchester (Fulford and Timby 2000), Caerwent (Brewer 1990, p. 82) and London (Brigham 1992, p. 91) (Rogers 2011, p. 130). From the evidence we have it would seem that this is not what happened at the Caistor basilica, though the small size of trench 8 may equally be the cause of this, as evidence may simply have been missed. It is possible that this could be the case for the forum space however, as supported by the evidence for iron working mentioned prior.

Regardless of the specific activity, both the forum and basilica underwent a change in use, which is seen at many towns by the fourth century, as shown above. Mattingly regards this as significant, as the complex was so central to public administration in the early empire, and suggests that it was rendered obsolete after the extension of Roman citizenship in AD 212. This brought larger numbers of people under Roman law, which made local courts and customary law insignificant (2006, pp. 336-7). Although in some towns this could also be linked to a decline in population, this is unlikely to be the case at Caistor as *Venta Icenorum* seemed to reach peak occupation in the 4th century.

Indeed, Rogers contests the idea that the movement to metalworking and other industrial activities within public buildings in Roman Britain was part of the general decline

of towns (Rogers 2011, p. 140). They indicate that most of the evidence for iron-working in particular is related to smithing rather than smelting, which is true of Caistor. This suggests that iron objects were being recycled, which demands significant organisation and skill due to the very high temperatures required (p. 142). Such organisation perhaps suggests remaining government control, despite the forum and basilica no longer necessarily being the centre of this, possibly supporting Mattingly's claim (2006, pp. 336-7). Fulford and Timby argue this specifically when discussing the Silchester basilica, pointing to the possibility that it was an imperial *fabrica,* producing weaponry and recycling metal (Fulford and Timby 2000, p. 579). The lack of industrial activity in the Caistor basilica may indicate it was being utilised as the headquarters for the organisation involved here, before it was turned over to domestic activity when this industrial activity came to an end. Either way, this suggests that the forum and basilica were not yet completely derelict spaces during this period.

1.3. The Animal Remains

The zooarchaeological material that takes the focus of this study was recovered during the excavations in 2011 by the University of Nottingham, working in collaboration with the Norfolk Archaeological Trust and the Caistor Roman Project. This material was collected from trenches 6, 7 and 8 in the forum-basilica space, however this work will only discuss the remains from trenches 7 and 8. This is in an attempt to avoid the possible contamination of intrusive material from affecting the results. As has been discussed prior, Trench 6 was the most likely to contain this intrusive material.

This work will therefore compare one forum and one basilica trench assemblage. The *in situ* and dumped deposits within these assemblages will be determined and also compared. It will then be assessed whether the animal remains provide supporting evidence, or otherwise, to the suggested sequence of events presented above.

2. Research Aims

The intention of this research was to examine the zooarchaeological material from the forum and basilica at Caistor, in order to answer the following questions:

- How does the make-up of the Trench 7 forum assemblage differ to that of the Trench 8 basilica assemblage?

- How does the make-up of *in situ* deposits in both trenches differ to dumping deposits?
    - Do the deposits meet the expectations I have of them, and therefore how like is it that their categorisation is accurate?

Something that can be described as *in situ* cannot have been moved from its original place of deposition. In this study an *in situ* deposit is one which has therefore been recovered from this original place of deposition. In contrast, a dumping deposit is one in which the material has been already deposited elsewhere, before being compiled, or 'dumped', into another final place of deposition. With this in mind we can make assumptions about what these different deposits may look like in terms of their make-up (Table 1).

What we could expect from the *in situ* assemblage:	What we could expect from the dumped assemblage:
• Less material • Represents activity occurring internally within the site - so likely to be small amounts of food waste and perhaps small wild animals that died and lay *in situ* • Fewer individual fragments, as less material and less fragmentation due to butchery/disturbance • Lesser extent of weathering and gnawing as material is deposited and likely covered quickly on an active site	• More material • Represents external activity, likely butchery and/or domestic waste - so is mainly main up of consumed species (mostly cattle with sheep/goat and pig secondary in this instance) • More individual fragments, due to the greater amount of material and fragmentation due to butchery/disturbance • Greater extent of weathering and gnawing as material is moved from one location to another, spending more time uncovered and exposed

Table 1: Expectations of the *in situ* and dumped material at Caistor.

- What do the results of these comparisons suggest about the use of space at the Roman site?
    - Is there a difference between the activity that is taking place in the forum and basilica spaces?

- Do the results support or reject the proposed history of the forum-basilica complex?

- Does the latest material from the forum-basilica space (phase 12) reflect the known late Roman assemblage?
    - Do the results support the conclusions of my undergraduate research (Ward 2020) (as discussed on p. 34)?

2.1. *In Situ* or Dumped?

This section will aim to explain how the deposits of animal remains discussed in this study were categorised as either being '*in situ*' or 'dumped', as presented in Table 2. It is important to note that while using the number of the context they were recovered from, it is not the status of the entire context itself that has been determined, but the animal bone assemblage deposited within that context. All context numbers beginning with 7000 belong to Trench 7, while those beginning with 6000 belong to Trench 8.

In Situ	Dumped
6609	6601
6610	6603
6613	6604
6614	6607
6616	6617
6633	7508
6642	7511
6643	7513
6644	7516
7524	7517
7528	7519
7530	7520
7536	7521
7545	7525
7546	7526
7551	7540
7665	7541
7671	7542
7672	7543
7673	7544
7674	7559
7675	7562
7676	7669
7678	
7680	
7682	
7683	
7684	

Table 2: The contexts discussed within this work, categorised as either *in situ* or dumped in regards to the zooarchaeological material deposited within them.

As discussed on p. 16, this study will consider an *in situ* deposit to be one which has been recovered from its original place of deposition. This can be defined as a 'primary' deposit. In contrast, a dumping deposit is one in which the material has been already deposited elsewhere, before being compiled, or 'dumped', into another final place of deposition, making it a 'secondary' deposit.

All information here regarding the description of the contexts and phases was summarised from Bowden (forthcoming). See this work for a complete phase and context breakdown for the entire forum/basilica site

2.1.1. In Situ

2.1.1.1. Trench 7

Phase 0-3

In Trench 7 the early 2nd century and earlier is represented by phase 0-3. By the 2nd century the southern side of the forum area had been levelled and a clay surface had been laid down, which was the earliest levelling at the site (pp. 16-17). Context (7684) represents this clay surface, and therefore it's few inclusions are likely unintentional in nature within the *in situ* surface.

Phase 4a

Contexts (7682) and (7683) are associated with the first structures at the forum site, seeming to appear in the early to mid 2nd century. Overlaying the previously mentioned (7684) context (0-3), (7682) was what is presumed to be the early surface for the forum courtyard, north of wall [7558]. Adjacent to [7558] was also surface (7683), a scorched clay setting for two posts, as suggested by the presence of two circular hollows (p. 17). The zooarchaeological remains within these contexts is likely to be *in situ* as they represent structures and surface at an active site, where small amounts of deposition are likely to occur.

Phase 4b

This phase likely represents the burning of a timber and clay building in the mid 2nd century, which could represent the timber predecessor of the forum postulated by Atkinson and Frere (p. 7).

In the southern part of the trench was a layer of burnt clay (7551), which can be equated to (7678). (7680) is a layer of broken roof tile, but does not seem to be the result of an *it situ* roof collapse as it is well sorted and absent of complete or near complete tiles. These layers can be interpreted as levelling deposits, where the reusable materials were salvaged and the remainder spread out, intended to form a basis for the new construction that is seen in phase 4c (p. 18). While perhaps from 'dumped' contexts, it would seem that the zooarchaeological material within them was not an intentional part of the levelling deposit due to its limited amount. Therefore it is more likely to have been included unintentionally during the levelling process, and hence is *in situ.*

Phase 5-6a

Phase 4c in Trench 7 saw reconstruction after the fire of the mid 2nd century. However, within at least 50 years the forum space became somewhat abandoned, and the casual disposal of waste began there from at least the mid 3rd century onwards.

Contexts (7530, 7545, 7546, 7672, 7673, 7674 and 7675) represent thick sandy silt deposits over the main part of the trench.
The earliest deposit from this phase (7674) contained material dating from the late 2nd to 3rd century, while the rest contained mid 3rd to 4th century material. Bowden proposes that the quantities here suggest casual rubbish disposal rather than the sustained dumping of material (p. 20), hence these contexts' *in situ* status.

At the northern end of the trench, directly above burnt tile layer (7680) (4b), was a tile-rich deposit of orange sand and mortar (7676), above which was another abandonment layer (7665) (p. 20). (7665) notably contained 20 large tesserae, presumably associated with the phase 4c reconstruction (p. 21). This material is therefore also likely to be *in situ,* and hence the animal remains recovered with it are also likely to be.

Phase 6b

The 4th century saw a major new phase of construction at Trench 7, which included an east-west wall [7524] that presumably formed the back wall of a new portico. The cut of the foundation of wall [7524] was packed with compacted crushed chalk (7671) (p. 21). There are no surfaces relating to this phase, suggesting the construction was never completed however (p. 22). With very little zooarchaeological material from these contexts it is again likely that it represents unintentional *in situ* deposition during construction.

Phase 6c

Phase 6c represents the continuation of the deposition that had preceded the new construction at the forum site into the rest of the 4th century. Covering the central parts of the trench were several thick sandy silt deposits, the largest being (7536), which seemed to represent a compact working surface. This context included around 5.6kg of iron slag and debris from smithing hearths, indicating that iron-working was taking place in the immediate vicinity (p. 23). The material deposited here is therefore likely to be *in situ* as part of the working surface.

The lowest deposit from this period (7528) contained large flint flakes that may derive from wall dressings from the new structures (p. 22). The zooarchaeological remains alongside the *in situ* structural material are likely to share its *in situ* nature.

2.1.1.2. Trench 8

Phase 0-3

The lowest laying context containing animal remains from trench 8 was (6644), a thin layer of dark brown sand/silt, possibly representing a buried topsoil horizon. Above this, natural sand seems to have been redeposited in the layers (6643) and (6642), perhaps indicating levelling activity to compensate for the westward slope of the forum area (p. 29). These sand deposits contained a limited ceramic assemblage including a sherd of Sandy Red Ware of 2nd century date and three sherds of Sandy Grey Ware no earlier than the late 1st century. These sherds and the animal remains found in these contexts were therefore

probably unintentionally included during this earliest levelling at the site probably in the 2nd century, and so are likely to be *in situ*.
The phase 0-3 in trench 8 therefore relates to the 2nd century and earlier, containing the earliest evidence of activity in the basilica area.

Phase 4a

Phase 4a represents the laying of surfaces at the site in the 2nd century, prior to the basilica's construction. (6633) was a thin layer of silt that seemed to extend across the trench which contained six sherds of sandy grey ware with possible date range of the 2nd to mid 3rd century and a sherd of Samian dating to AD 100-120 (p. 30). A limited amount of animal remains were also recovered alongside this, suggesting these depositions are all likely to be *in situ*, unintentional deposits.

Phase 4d-6a

This period seems to contain the resurfacing of the basilica interior, with context (6616) being this plaster floor surface, and (6614) being a well-sorted layer of gravel underneath. (p. 31). Small zooarchaeological inclusions within these were likely integrated during the resurfacing process, and so can be considered *in situ.*

Phase 6b

Abandonment in the basilica space does not seem to occur until phase 6b, somewhere in the late 4th/early 5th century. However, this is not a complete abandonment and instead it has been suggested by Bowden that the area was turned over to more domestic activity, losing its role as a prestige space (p. 32).
Context (6613) represents a dump of compacted white mortar in the north east of the trench that may have been some sort of foundation deposit for an unknown structure. (6610) was an ashy layer overlaying this, seeming to result from *in situ* burning from a number of small hearths as the material present does not indicate that the building was in any way destroyed by fire at this time (p. 32). The animal remains recovered from these contexts are therefore likely to also be *in situ*, included during construction and the domestic activity taking place.

Phase 6c-7

This phase represents the latest phase of activity at the basilica, with dumping and eventual collapse at some point in the late 4th to early 5th century. This is also the latest phase of Romano-British occupation at the site of Caistor.

(6609) seems to represent a collapsed wall fragment, as it contains substantial pieces of mortared masonry, as well as broken tile and flint in which coursing was still partially apparent. This seems to indicate that the building itself underwent some collapse or demolition around this time (p.33). The material recovered from this *in situ* collapse is also therefore likely to be *in situ*.

2.1.2. Dumped

2.1.2.1. Trench 7

Phase 6c

Covering the central parts of the trench, along with (7536) mentioned prior, were thick sandy silt deposits (7544) and (7562), containing mortar and flint likely from the construction of the new structures from phase 6b (p. 22). The considerable assemblage of zooarchaeological material from these contexts is therefore likely to have been dumped within the construction debris once the construction was abandoned and the space became disused before being turned over to industrial activity.

Cutting into (7536) was pit [7666], possibly relating to further industrial activity due to its scorched edges. The lowest fill of this pit is given the context number (7669), with inclusions including charcoal, flint and CBM (p. 23). This seems to indicate that the pit was used for the dumping of various types of waste, including animal remains, which were likely to be from outside the forum space if it was presently in use for industrial purposes.

Phase 6d

In Trench 7 phase 6d represents the latest period of deposition and activity in the late 4th to early 5th century.

(7526) represents a large deposit of grey silty sand and building debris (including flint, CBM, mortar and chalk), up to 0.35 m deep, which may derive in part from the demolition, collapse or robbing of the later structures.
A further dump of demolition material (7525), which also contained pottery of the same possible mid 3rd- to 4th-century date range, was separated out in excavation but seems likely to be part of the same deposit (p. 23). The considerable amount of zooarchaeological material recovered from this deposit seems to have been disposed of once the space was abandoned, amid the debris.

Contexts (7540, 7541, 7542 and 7543) are all sandy silt layers containing a mix of mortar, clay, flint and CBM, overlaying (7544). These contexts also seem to represent dumps of waste material from the late 2nd to 4th century, but at the time of the final collapse or demolition of the forum area structures (p. 24).

Phase 12

Phase 12 represents the post-medieval to modern period at the site. Small quantities of post-medieval and early modern pottery was recovered from the plough soil above the trench, but which certainly derive from the spreading of manure and household waste over the above field. Instead the latest activity seems to be from Atkinson's excavations, which explored the southern wing of the forum in 1931, focusing on the structural remains and often therefore removing the relationships between the deposits and the structures (p. 24).

(7512) and (7508) represent hand-dug lower ploughsoil spits. Finds from these contexts were recorded in 3m squares, (7513-7516) and (7508-7511) respectively, to allow spatial separation of finds if required (p. 25).

At the northern end of the trench, Atkinson had dug a trench [7537] to expose walls [7556], [7557], and [7558] during his excavation. The fill of the trench (7519=7559) could clearly be discerned in the sides of the new trench, while its southern limit could clearly be seen cutting the rubble deposit (7526) (p. 24).

A 1.10 m wide cut was discernible in the central part of the trench [7523], and (7520) represents one of its backfill deposits.

Towards the southern end of Trench 7 was a disturbed area, at the west end of phase 4b wall [7539]. Here the wall appeared to have been removed down to the level of its flint cobble footings, which may be Atkinson' work or relate to earlier robbing. A separate fill number (7521) was allocated for the backfill here, which included some mid 3rd to 4th-century pottery) (p. 25). (7517) is another backfill deposit relating to (7521).

None of the material from the phase 12 contexts can be considered to be *in situ* as while the animal remains themselves are likely to originate in the late Roman period, they have been disturbed by Atkinson's excavations (and/or the possible stone robbing) and are deemed 'unstratified'.

2.1.2.2. Trench 8

Phase 4b

The primary phase of the basilica is represented within the mid 2nd century phase 4b, and can be seen in a thick deposit of clay across the entire trench (6615). This is believed to be the result of a single episode of dumping, in order to create a raised platform for the floor of the basilica. This clay was excavated in 5cm spits in this area, and context (6617) represents the uppermost spit. Very limited material of any type was found throughout the entirety of the (6615) clay deposit, except painted wall plaster and occasional CBM. This material is presumed to originate from a structure levelled before the basilica was constructed, which may have belonged to the phase of building which was destroyed by fire in Trench 7 (p. 30).

Phase 6c-7

(6607) represents shell-rich dumped material on top of a rubble deposit, filling pit [6606], and likely represents mixed domestic waste (p. 33).

(6604) was a thick sandy silt deposit across the south of the trench containing frequent lenses of ash. This context also contained a bulk of other materials, including flint, mortar, CBM and 6.8kg of pottery. Ultimately, it would seem likely that the entirety of the 6604 deposit represents more mixed domestic waste in a particularly large quantity (p. 32). These large quantities of domestic waste are therefore likely to be dumped deposits dating to the period just before the final collapse of the structure, when complete abandonment is likely to have finally befallen the basilica site.

Phase 12

As in trench 7 there is no evidence of activity from the post-Roman to the late Medieval period in trench 8. Instead, the most recent activity here was the 1933 excavation by Atkinson.

(6601) represents the topsoil context in this area, with (6603) representing the ploughsoil. Both contexts are therefore likely to be unstratified, and hence contain dumped assemblages.

3. Literature Review

3.1. Animals in Roman Literature

When it comes to the literary sources, the evidence for animals and their relationships with people in Roman Britain is scarce, as it is for many other aspects of Romano-British life. Instead, the overwhelming majority of written evidence comes from the Mediterranean, and from within the late Republic period, where authorities such as Pliny, Columella, Varro and Cato documented a wealth of information regarding animal husbandry (see White 1970).

As is always the case with literary sources however, they are not without their biases. For example, research by Mamoru Ikeguchi (2017) suggests that the literature regarding animal consumption in Roman Italy does not provide an entirely accurate interpretation due to being written 'by and for the élites' (p. 7). This literature provides much more evidence for pork than it does beef or mutton, but Ikeguchi determined from accumulating data from 165 Italian sites that beef was more important, with 60% of all surveyed sites in Northern and Southern Italy being beef-oriented, and an almost equal amount as were pork-orientated in central Italy (36% beef to 34% pork) (p. 33). They argue that pork is considered more important in the literature as it was consumed mostly by the elite class, who wrote and read it, due to its higher price. Contrastingly, the middle and lower classes in villages were consuming more beef, as beef always accounted for more than 65% of the total meat consumption at villages in all regions (p. 36) (Ikeguchi 2017).

Therefore, despite there already being issues regarding the application of this literary information to Roman Britain, there are also potential issues with its reliability in wider application. In addition, the information we do have for Britain is also potentially unreliable, with only short and vague references by writers such as Caesar, Strabo and Tacitus providing us with anything regarding animal husbandry (Albarella 2019, p. 109). For this reason it is undeniable that the zooarchaeological evidence is extremely important to our understanding of the past, including that of Roman Britain.

3.1.1. Trends in the Zooarchaeology of Roman Britain

When it comes to Romano-British zooarchaeology, Mark Maltby is a key figure within the study and has drawn together many zooarchaeological surveys to create a thorough summarisation of the topic (Maltby 2016). It is mainly this work with which I will be determining the general trends in Romano-British zooarchaeology (particularly in major towns, as *Venta Icenorum* is such a settlement) that can subsequently be compared against my own data. This will be mostly focused on the animal's role in the diet as the majority of the material in this study is likely to represent domestic or butchery waste.

It is comfortably concluded that beef was the most important meat in at least later Roman Britain, with domestic cattle (*Bos*) bones forming the highest component of many faunal assemblages (Maltby 2016, p. 792). Although minimum number counts may indicate that domestic sheep (*Ovis*) were the most common animal slaughtered on many sites, Maltby argues that beef was still more important in the average diet due to the comparative carcass weight and size (p. 797). As cattle are larger than the other generally consumed domesticates they produce more meat per animal. This would have helped meet the increased demand for food created by urban populations in particular, as well as the increased military presence in the country. Indeed, King (1999) found that cattle tend to be best represented on military sites and in large towns. These sites also show the most evidence for the consistent treatment of carcasses with cleavers and heavy blades, which leaves distinctive chop marks on the bone. This was possibly performed by specialist butchers with the intention of speeding up carcass processing. Indeed, as Maltby notes, it is general accepted that the methods of specialised butchery of cattle carcasses were in fact derived from military practices (Maltby 2007, p. 70). Such intensive butchery produces extensive accumulations of waste, of which there is evidence of in all the major towns that have received thorough excavations (Maltby 1984; 2007; 2010).

Domestic caprines (sheep/goat) were, in actuality, the most common animal slaughtered on many sites, but their meat was less important than beef due to comparative carcase weight and size. However, they were seemingly more so important on non-villa

rural settlements than on other site types (King 1999), though a relatively high percentage of lamb has also been found in assemblages in the centres of several towns (Grant 2004, p. 378). This points to a possible link between lamb consumption and status, that is also seen with veal. Maltby points out that there is also a link between lamb and temple and foundation deposits, that may therefore have groundings in ritual practice (Maltby 2016, p. 297; see Maltby 2012).

Domestic pig (*Sus*) are generally the third most common animal present in Romano-British assemblages, behind cattle and sheep/goat, with better representation on military sites, major towns and villas than in small towns and other rural settlements however (King 1999). They are also better represented near the centre of towns, near the forum and basilica (Maltby 2010, pp. 264-5), perhaps linking to the meat consumption of those of higher status. Maltby points out that this link is supported by a high percentage of pig remains at high status sites such as Fishbourne (Grant 2004). As has been mentioned before, Ikeguchi (2017) also determined that pork was more commonly consumed by the upper classes in Roman Italy, and so it is not unlikely that this behaviour may have continued into Roman Britain. Even if price played no factor here, it may be that preferences or trends remained the same.

It is also important to consider that pigs have a greater carcase weight than sheep/goat, and as they are smaller in size than cattle this makes them particularly efficient meat producers, and hence useful for settlements where large amounts of meat are consumed. Maltby has speculated that some pigs could have been raised within towns for this reason, though it is unproven (Maltby 1994). It is seen that most pigs in the archaeological record for Roman Britain are killed prior to adulthood (in their second or third years) (Maltby 2016, p. 800), possibly to supply this demand in the urban market. Indeed, the large scale processing mostly associated with cattle in this period can also be associated with pigs in some cases, such as at Nazeingbury, Essex (Huggins 1978).

Wild animal species identified on Romano-British sites include deer, wild boar and hare (*Lepus*), however both are usually only in small numbers. Red (*Cervus elaphus*) and roe deer (*Capreolus capreolus*) rarely provide over 1% of the food mammal counts on urban sites (Maltby 2010, p. 271), and the same is true for hare at all site types. Fallow deer (*Dama*

dama) seem to be restricted to a handful of mainly southern sites in Roman Britain (Sykes 2010), such as Fishbourne Palace, where the herd's establishment links heavily to status and wealth (Sykes et al. 2011). This link can also be seen with deer in general, as well as hare bones, as both appear more frequently on high status sites (Maltby 2016, p. 802).

Wild birds are further examples of wild species that have been discovered on Roman sites, though some occur more frequently. Maltby specifically notes pigeon (Columbidae), woodcock (*Scolopax rusticola*), wading birds (including Gruiformes), partridge (*Perdix perdix*) and black grouse (*Lyrurus tetrix*), that are likely to have been eaten (2016, p. 803). Duck and geese (Anatidae) are also often present on Roman sites, though their domesticated status is unclear (Albarella 2005). The domestic chicken (*Gallus domesticus*) is noted to have become significantly more important during the Roman period, particularly in urban and military assemblages, although they would not have formed a significant part of the diet (Maltby 1997).

Fish remains are also not uncommon on Romano-British sites, however the evidence for them is affected by their smaller size and the inconsistent use of sieving during excavation, which means they can be easily missed. We know that fish consumption was widespread, as we can see in Locker's 2007 work, a comprehensive survey of the marine assemblage evidence. They determined that fish assemblages became more numerous and varied in the Roman period in Britain, reflecting local marine, estuarine and freshwater fisheries. Although eel (*Anguilla anguilla*) was the most common species overall, there were regional patterns for other species, with distribution tending to reflect what was locally available (Locker 2007, pp. 157-8). Although there have been suggestions of a link between high status and marine consumption (Richards and Hodges 1998), isotopic research by Redfern, Hamlin and Athfield (2010) has shown that marine foods remained a small component of the Romano-British diet overall.

Of much less importance as a source of food as the species mentioned prior is the horse (*Equus*). Hence, they rarely form more than 5% of the total cattle and horse assemblage in towns, and there is little evidence that they were exploited frequently for food (Maltby 2010, pp. 269-70). However, this is not to say that they lack importance in

Roman Britain overall, particularly on rural sites where they often form over 10% of the total cattle and horse assemblage in contrast (Maltby 1994). Horses were indeed a valuable means of transport and traction, and were mostly kept alive for as long as they were useful, before being deposited partially or completely much more frequently than cattle.

As is seen with horses, people do not solely have a consumption-based relationship with animals in Roman Britain. Indeed, cats (*Felis*) and dogs (*Canis*) are kept as pets, though cats less commonly so. The relationship between human and dog in the Roman period seems more so complex, with what could be the occurrence of specialist breeding, perhaps to diversify dogs to better suit different roles such as guarding, hunting and companionship (see Bellis 2020).

Dog remains are commonly found complete or as partial skeletons, though they are not the only zooarchaeological evidence for the presence of dogs on a site. The visibility of marks on any bone caused by gnawing will also indicate this presence, as well as suggest that the bone was deposited in a way that it was available to the dog, and hence left uncovered for some time. This can provide further useful information about how zooarchaeological remains or waste was handled or disposed of on a site.

3.2. Past Literature on the Caistor Assemblage

A discussion of the animal bones at Caistor was conducted by Matilda Holmes in 2016, though publication of this is forthcoming. Holmes was responsible for recording the zooarchaeological data for the entire site. Her recording technique included recording the species breakdown for each context, and the number of which elements were burnt, butchered or gnawed. This was suitable for a basic recording of the large assemblage necessitated by Holmes' large-scale work to characterise the zooarchaeological record of the site, and provide data for general comparisons with other Romano-British site assemblages.

Holmes [forthcoming] focuses solely on trenches 2 and 3 for the late 2nd to late 3rd century period, and 2 to 7 for the late 3rd to early 5th century period. Her overall findings are that:

1. Fairly similar proportions of cattle (between 70-74%), sheep/ goat (18-20%), pigs (8-12%) and domestic birds (1-2%) were recorded from all trenches, with the exception of trenches 2 and 3, for the late 3rd to early 5th century period (p. 10).
2. Trenches 2 and 3 consistently had a lower proportion of cattle remains as the greatest proportions of birds and pigs were recovered from these trenches (p.11).
3. Trenches 2, 5 and 6 contained primary butchery waste (p. 10).
4. Trenches 3, 4 and 7 contained high proportions of cattle meat-bearing upper limb bones (p. 10).

In interpretative discussions that covered the provisioning of Caistor with meat and livestock, human-animal relationships, use of space in the town and Caistor zooarchaeology within a wider setting, Holmes concluded that:

1. There was no evidence for particular parts of the town being consistently used for the disposal of butchery waste (p 11).
2. Evidence from trenches 2 and 3 represented disposal of domestic refuse from an affluent household, where domestic birds and pigs had space on the periphery of the town (p. 10).
3. Trenches 3, 4 and 7 may be typical of refuse from households that buy in joints of meat, as opposed to assemblages from trenches 2, 5 and 6, where bones more consistent with primary butchery waste were recovered (i.e. from the head, lower legs and feet) (p. 10).

These findings will be kept in mind as I critically assess the zooarchaeological material from the forum and basilica, represented by material from trenches 7 and 8. Holmes' analysis of Trench 7 is based on a sample of the material as befitting a zooarchaeological assessment, therefore not all of the trench 7 contexts are represented in

her data set. My research will aim to investigate whether Holmes' findings are supported through the analysis of more material, as well as determining the role of the trench 8 assemblage in understanding the forum/basilica space at Caistor. Holmes' wider work will be useful in determining how these data compare to and possibly relates to that from other locations at the site, and in wider discussions of how Caistor can be seen in comparison to other Romano-British sites.

Another previous discussion of the Caistor material that underpins this research is my undergraduate dissertation (Ward 2020), wherein I analysed the topsoil assemblage from across the site, that had not been considered by Holmes. The purpose of this work was to determine whether this assemblage could be considered to be of late Roman origin, as prior to my study it was determined to likely be of post-medieval origin due to its 'unstratified' surface level context. However, the presence of post-medieval activity at the site was not extensive, and hence the concept that the surface level material was actually late Roman was a possibility. Indeed, after examining the material I determined that this was likely to be the case.

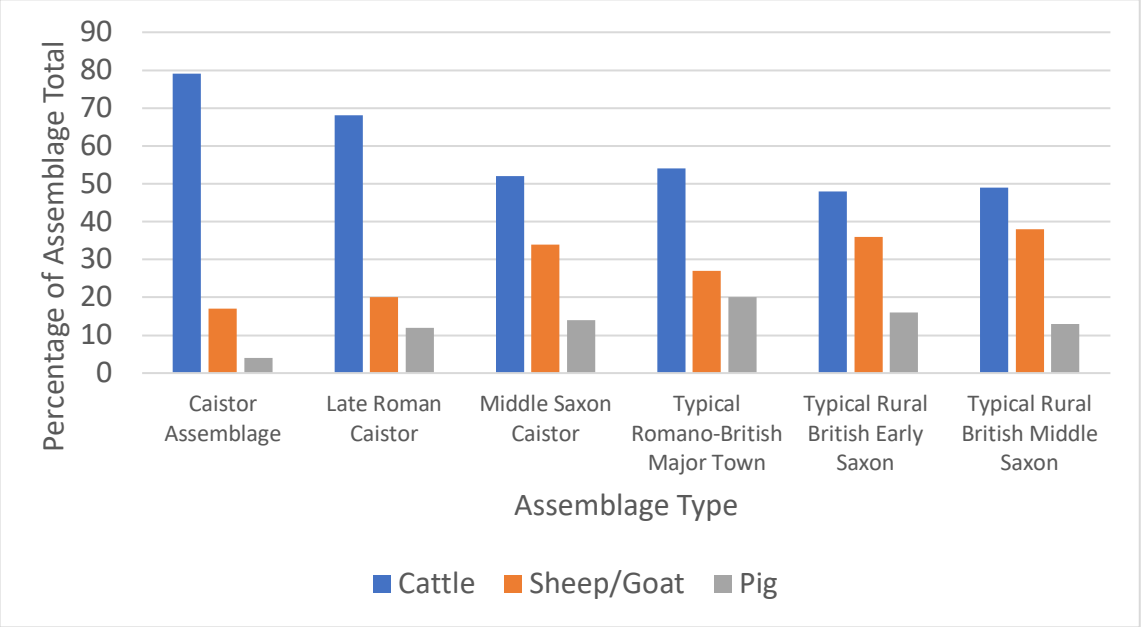


Figure 3: Comparison of the Ward 2020 data with other assemblages, focusing on the percentage of the main taxa (Ward 2020, p. 18).

By making comparisons to zooarchaeological assemblages with known dates, I was able to observe that the Caistor topsoil assemblage was very similar to the known late Roman Caistor assemblage (Holmes [forthcoming]), with a high cattle representation, a lower sheep/goat and pig representation (see Figure 3), and the presence of large (mostly cattle) butchery deposits. It was also most similar to the typical assemblage from Romano-British major towns (data from Maltby 2019, p. 17), which *Venta Icenorum* was. The material was therefore found to be likely useful to the study of the Roman site and Romano-British zooarchaeology, despite being 'unstratified'.

It is of my own personal interest to determine whether the forum-basilica material discussed in this study also supports this conclusion. This may be the case if the latest material from the forum-basilica space (phase 12), which represents this 'unstratified' material, reflects the known late Roman assemblage.

During the data collection for my 2020 study I followed Holmes' recording technique, which included recording the number of identified specimens (NISP) for each context, and the number of elements which were burnt, butchered or gnawed. As the intention of this research is to compare the *in situ* and dumped material in order to conduct an in-depth spatial analysis of activity, more detailed recording is necessary, taking this work beyond what has been investigated previously. The methods used in order to answer the questions that underpin this research are discussed in the following section.

4. Methodology

4.1. Excavation and Processing

The material involved in this study was hand collected, and for this reason it is important to acknowledge the possibility of bias in favour of larger elements and bones from larger species and individuals (Baker and Worley 2019, p. 15).
Colley (2011) indicates that sieving through mesh with a minimum gradient ranging between 0.5 and 2mm is necessary in order to ensure the recovery of bones as small as those of smaller fish, which was not undertaken at Caistor. Therefore, it should be acknowledged that the material collected likely does not represent the entire true Caistor animal bone assemblage as the smallest elements were likely missed, resulting in biased species distributions.
However, this is not to say that valuable information cannot still be obtained from the assemblage, as indeed, all knowledge adds to our picture of the past. In addition, the intention of this study is to determine how the Trench 7 forum material compares to the Trench 8 basilica material, as well as how the *in situ* deposits differ to dumped ones. The lack of small species representation ultimately does not prevent such comparisons from being performed, particularly as urban Roman assemblages are typically almost entirely made up of the large domesticate species (see pp. 29-30). For this reason, while this bias is important to acknowledge, it is not a hindrance to this study.

In all, 4538 individual animal bones fragments were recovered from Trenches 7 and 8 at Caistor, with an almost equal division between the trenches, at 2275 and 2263 respectively. 78% of the zooarchaeological material in Trench 7 was determined to be dumped, with 22% *in situ*. In contrast, Trench 8 possessed 89% dumped material, with only 11% *in situ.* The remainder of this chapter will explore the methods of data collection, recording, and analysis implemented on this zooarchaeological material in order to answer the questions this research set out to answer, as well as justify the use of these methods.

4.2. Identification

Each individual bone or bone fragment of the 4538 piece assemblage was identified by taxon and element, with the aid of the Department of Classics and Archaeology, University of Nottingham reference collection. This was supported by Schmid's *Atlas of Animal Bones* (1972), Halstead and Collins' *Sheffield Animal Bone Tutorial* (1995), and Cohen and Serjeantson's *Manual for the Identification of Bird Bones* (1996).

Identifying which species make up an assemblage can reveal what type of assemblage the material is likely to represent. For example, typical Romano-British zooarchaeological assemblages from urban areas, like *Venta Icenorum*, represent consumption assemblages, as suggested by King in his study of the animal bone data from 50 towns in Roman Britain (King 1999). Indeed, King found an average makeup of 53.5% cattle, 27% sheep/goat and 19.5% pig in these assemblages (p. 178), with the diet at this time therefore briefly summarised as being dominated by cattle, with sheep and pig both taking an important but more secondary position. Domestic fowl, fish and wild species also contributed to the Roman diet in Britain, but in much smaller numbers across all settlement types (Maltby 2016, p. 804) . The presence of species not typically consumed by this culture, namely dog, horse or cat, therefore suggests a different type of assemblage, perhaps representing the burial of a pet or working animal, or, in some cases, ritual deposition (p. 802).

It will therefore be useful to see how each trench and context compares to the Romano-British urban average, to determine what type of assemblages are represented within them and to assess any differences between them. Do they all represent typical consumption waste, or is this less likely to be the case in the *in situ* or dumped material?

In order to account for the fragments that could not be specifically identified for taxon (i.e. ribs), they were placed under the category of 'unidentified', though if possible were sorted under small, medium or large unidentified mammal or bird. Additionally, any fragment that could not be identified for element was again given the category 'unidentified', though 'shaft fragment' was also used for fragments of non-specific long

bones, and 'vertebrae' for fragments of non-specific vertebrae. The levels of unidentified material can indicate whether some contexts have more or less fragmentation. This is due to the fact that the more fragmented an element is the harder it is to positively identify, as it can be missing its key diagnostic features. The importance of identifying fragmentation levels will be discussed later in this chapter.

I considered unidentified small mammals to include all species with a body mass of less than 1kg (e.g. small rodents), as is typical of ecological surveys (Benchimol 2016). Large mammals were then considered to be those the size of an adult cow or horse, as these are the largest species likely to be found on a Romano-British urban site. Everything in between these sizes was categorised as a medium mammal. Small species in particular are useful to record even if unidentified as they can possibly confirm or deny the presence of large element bias within as assemblage.

The body part composition of an assemblage also allows us to determine what kinds of activity was taking place in the surrounding area, such as whether some butchery was distinctively primary or secondary in nature, and whether the material is likely to represent domestic or industrial waste. The presence of elements such as teeth, along with other cranial/mandibular elements, and lower limb bones, can indicate that carcass processing was taking place as they are associated with primary butchery waste (Seetah 2005, pp. 5-6). In contrast, the presence of meat-bearing upper limb bones suggests meat consumption.

4.3. Quantification

The number of identified specimens (NISP) was determined as a method of species quantification. This is a simple count of the number of identifiable bone fragments of each taxon in an assemblage. Problems may arise with this method though, as the species count derived in this way is commonly perceived to be an overestimate for species whose bones are more likely to be fragmented (Marshall and Pilgram 1993, p. 262). This is particularly the case for cattle in this study due to their extensive butchery in the Roman period (see the following section on butchery). For this reason, the minimum number of individuals (MNI)

represented within each context was also calculated, as it can counteract the problems caused by fragmentation. This is the 'minimum number of individuals which are necessary to account for all of the skeletal elements of a particular species found' (Shotwell 1958, p. 272). In order to calculate this, zoning and siding data was therefore also necessary to collect. The zoning method utilised was that developed by Mahoney (2016). If more than 50% of a particular zone was present in the bone fragment that zone would be listed as present.

Research by Marshall and Pilgram led them to conclude however, that MNI values should not be used without first comparing them to NISP. This is due to the fact that MNI may actually be 'a less representative descriptor of relative element frequencies than NISP in highly fragmented assemblages' (1993, p. 267). Indeed, they found that extensive fragmentation probably results in more bias in MNI than in NISP, as some body parts are more difficult to identify than others, and the identification criteria are stricter for MNI than NISP.

With this theory in mind, the NISP and MNI counts will be considered in combination in this work, with the most accurate method of quantification in this case being determined once the results are compared. This is with the intention of gaining the most accurate view of the true assemblage for each trench and context as possible.

4.4. Weight

The weight of the material was recorded in kilograms, with each context bag weighed using a digital scale to determine a total weight of the assemblage for each trench and context type. This was in order to differentiate contexts that seemed to have a higher fragment count due to high levels of fragmentation, and those that truly had larger quantities of animal remains. This is can provide valuable information about the assemblage the material represents, as high levels of fragmentation may indicate poorer condition due to

weathering, gnawing, and more extensive butchery, the importance of all of which will be discussed further below.

It should be considered, though, that weight can be influenced by factors like weathering and burning, and how well preserved the material is (Baker and Worley 2019, p. 45). It is therefore important to look into how extensively the material is affected by these factors so that possible biases can be acknowledged, which will be discussed in the following chapters.

4.5. Morphological Features

4.5.1. Weathering

Each individual bone/fragment was graded for extent of weathering on a scale from 0-5 using categories determined by Lyman (1994, p. 355) which compiles information on weathering stages from Behrensmeyer (1978), Andrews (1990) and Johnson (1985). This scale determines how long it is likely that a bone was exposed to weathering agents, which begins when once soft tissues detach, before it was deposited in the context it was recovered from (Lyman 1994, p. 358). Such agents include saturation, desiccation and temperature changes (Miller 1975, p. 217). Examples of weathering stages 1-3 observed in the forum/basilica assemblage are presented below (Figures 4.1-4-3).

Figure 4.1: Example of weathering stage 1 on a cattle metapodial (from 7536), with cracking parallel to fibre structure.

Figure 4.2: Example of weathering stage 2 on an unidentified large mammal bone fragment (from 6607), with flaking of the outer surface.

Figure 4.3: Example of weathering stage 3 on an unidentified medium mammal long bone shaft fragment (from 6604), with fibrous texture.

With this recording I will determine whether there is a difference in weathering between the trenches, as well between the *in situ* bone assemblage and that which is not. As this helps determine how long the assemblage was uncovered for, this can provide useful information about the activity in the different spaces within the site; in particular, waste disposal. For example, Behrensmeyer (1978) suggests that if bones in an assemblage display all weathering stages and are 'homogeneously mixed in a single deposit' the assemblage probably represents a long-term accumulation of waste, and if only one weathering stage is displayed then the assemblage may represent a short-term single accumulation event (p. 161).

4.5.2. Gnawing

Evidence of gnawing was recorded within this assemblage, with differentiation between carnivore and rodent gnawing. An example from the forum-basilica assemblage is shown below (Figure 5).

Figure 5: Example of carnivore gnawing on a cattle humerus fragment (from 7536) , likely caused by a dog.

Rates of gnawing can indicate how much access these animals had to bones before they were buried (Stallibrass 2000, p. 159). Therefore it can determine whether certain bones were buried quickly after being discarded or not, which may be the difference between industrial butchery waste and general household waste. Comparisons can then be drawn again between the trenches and the context types, to assess whether there are any differences between the types of activity that each assemblage type suggests.

The presence of gnawing is also an indicator that carnivores, such as dogs, and/or rodents were present at the site, even if their physical remains are not found within the

archaeological record. If this is the case for rodents, this may indicate that the large species bias discussed prior has indeed occurred. If however this is the case for dogs, this may indicate that dog remains must have been deposited elsewhere, suggesting the material that is present may represent a consumption assemblage which does not include unconsumed species.

4.5.3. Burning

All bone fragments were examined for evidence of burning, and were categorised as either unburnt, burnt, singed or calcined, based on Johnson's distinguished four burning stages (Johnson 1989, p. 441). Through Johnson's categorisations I have taken 'singed' bone to mean that which has been superficially burnt, often in small patches, while 'burnt' bone is that which is mostly blackened and carbonized. 'Calcined' bone becomes a bluish-white or grey colour, and is plastically deformed with a chalky consistency. Examples of each of the burning stages from the forum/basilica assemblage are shown below in Figure 6.1 and 6.2.

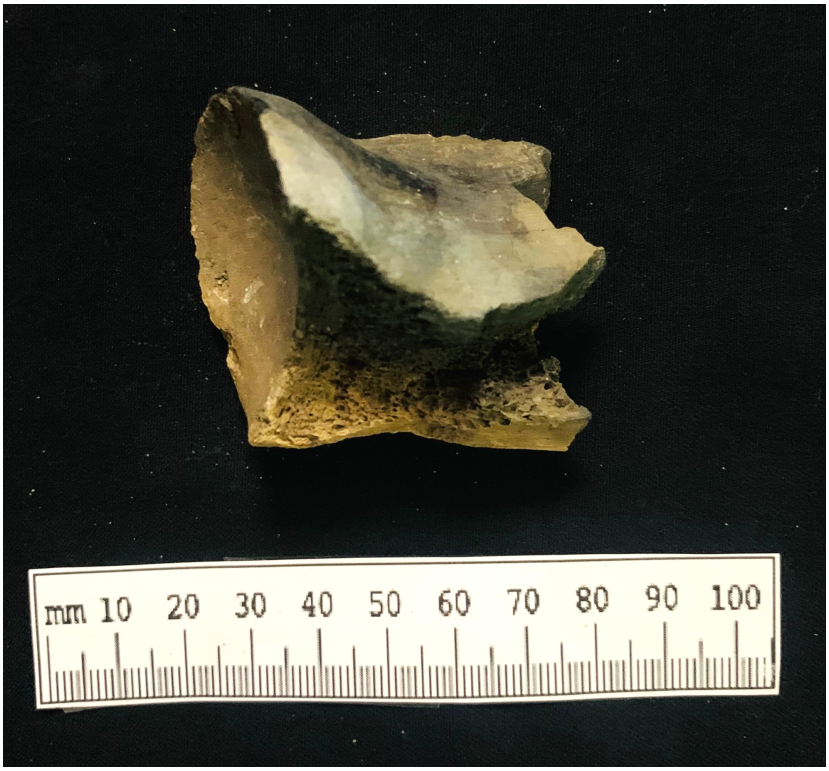


Figure 6.1: Example of bone that is burnt, with calcination beginning on the surface (cattle scapula fragment, from 7528).

Figure 6.2: Example of bone that is singed, with localised superficial burning (cattle first phalanx, from 7543).

Gifford-Gonzalez (1989) present a useful indicator for cooking, as they determined that the distribution of burning damage across the bone may help determine if the bone was burned during cooking or after the flesh had been removed, as the soft tissues protect the covered bone when present (p. 193). We can therefore suggest that in this study 'singed' bone is more likely to be a result of cooking than what is our definition of 'burnt' bone, as the burning is to a lesser extent and in specific locations. Calcination is also unlikely to be the result of cooking, as such an effect on the bone can only be caused by very high temperatures, which research by David (1990) suggests is over 450°C to 500°C (p. 69). For this reason, the data obtained for burnt and calcined bones will be combined, as neither are likely to represent cooking waste, whilst singed bone is.

These indicators can therefore provide us with useful information about the journey of the material from animal to deposit, and whether it was likely processed any further than primary butchery. This again can be the difference between industrial butchery waste and general household waste, and any differences between the trenches and context types in this regard will be important to note in determining what activities were taking place in and around the forum/basilica space.

4.5.4. Butchery

The presence of butchery marks on animal remains is a clear indicator of the specific processing undertaken on them. The purpose of recording these butchery marks is therefore to discuss whether there is a difference in butchery occurrence and techniques between the *in situ* assemblage and that which has been dumped. This can suggest whether butchery was taking place in the forum/basilica space, or elsewhere, across the period, and whether different types of butchery were taking place in separate locations.

Each element was examined for the presence of any type of butchery mark (cut or chop) in order to create a trench and context total butchered percentage, allowing for easy comparison between them. Figures 7.1 and 7.2 present general examples of these butchery marks on ribs from the forum-basilica assemblage.

Figures 7.1: Unidentified large mammal rib fragment (from 7519) possessing evidence of chopping, likely from a cleaver.

Figures 7.2: Unidentified large mammal rib fragment possessing fine knife cut marks (from 7676).

The butchered cattle remains were then further categorised using data from Maltby (2007) to determine specific types of butchery and hence activity. As stated on p. 29, cattle dominate the typical Romano-British animal bone assemblage and diet. Indeed, this is also true at Caistor, as evidenced by Holmes (2016). As also stated on p. 29, specialist butchery was developed to more quickly process cattle carcasses, in particular to more efficiently feed the increased population from urban growth and military occupation. For this reason there is this focus on the butchered cattle remains in particular, as it is the species likely to provide the most information regarding butchery. This is not to say that the information from other species is not valuable, but, given the time restrictions of this masters level research, it was decided that cattle would be the most productive species to study for butchery evidence, as they could provide me with more data in a limited time.

In *Chop and Change*, Maltby presents the most common butchery marks found in assemblages from major Romano-British towns and records their occurrence at such sites (see Maltby 2007, Table 2, p. 61).
Any evidence for these marks have been recorded in the Caistor assemblage, with each given a number for ease of recording. These are as follows:

1. Split upper limb bone (Commonly axial)
2. Split metapodial (Commonly transverse)
3. Blade marks on upper limb bone (or astragalus/pelvis)
4. Chopped mandibular ramus
5. Trimmed scapula/Blade marks on spine
6. Holed scapula
7. Chopped femur caput

Examples of each type of butchery within the forum-basilica assemblage are presented below (Figures 8.1-8.7).

Figure 8.1: Example of type 1, a transversely split upper limb bone (cattle humerus, from 7536).

Figure 8.2: Example of type 2, a transversely split metapodial (cattle metatarsal, from (7536).

Figure 8.3: Example of type 3, blade marks on an upper limb bone (cattle tibia, from 7517).

Figure 8.4: Example of type 4, chopped mandibular ramus (cattle, from 7536).

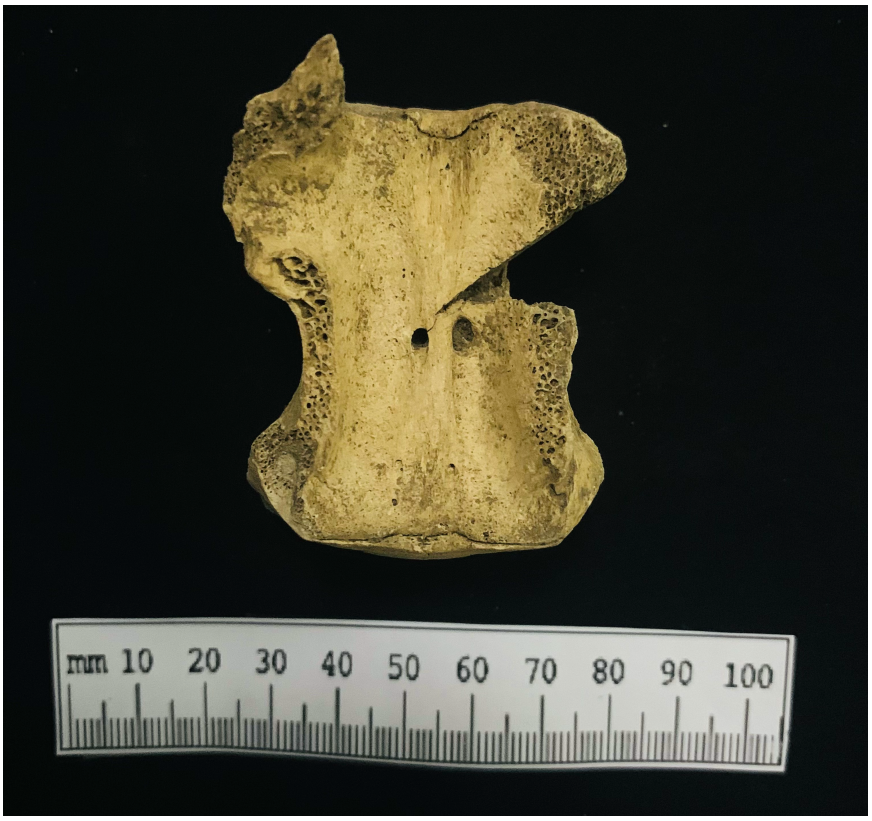


Figure 8.5: Example of type 5, blade marks on spine (unidentified large mammal vertebrae, from 7536).

Figure 8.6: Example of type 6, holed scapula (also trimmed – type 5) (cattle scapula, from 7528).

Figure 8.7: Example of type 7, chopped femur caput (cattle, from 6604).

Collecting this data is intended to provide deeper insight into the specific activities taking place in and around the forum-basilica, specifically regarding specialist processing. While chopped mandibular ramus and femur caput can indicate carcass segmentation, blade marks on upper limb bones and scapulae indicates filleting, where shallow scoops of bone are removed when the tip of a cleaver is used to strip meat from the bone (Maltby 2007, pp. 62-69). This marker is almost entirely absent from Roman rural settlements, as it is Iron Age sites in Britain (Maltby 2007, p. 64), making it a distinctive feature of urban Roman sites. This is also true for axially split upper limb bones, transversely split metapodials and split mandibles, which are particularly noted at Lincoln by Dobney et al. (1996). Such bone splitting is believed to be for marrow extraction, which Dobney has also proposed various possible uses for. These include lamp oil, cosmetics, soaps, medicines, cooking stock and potentially glue (Dobney 2001, p. 40).

Another common butchery marker in Romano-British major town assemblages is the presence of holes in scapulae blades, which are caused by the hanging up of the carcase on a meat-hook, likely for preserving. Indeed, the increase in these scapulae deposits coincides

with increase in salt production (Maltby 2006), and so it is safe to assume that much meat was eaten cured. Maltby points to smoked and cured ham and bacon in particular as likely being commonly traded products throughout the Roman period (Maltby 2016, p. 799).

5. Presenting the Data

5.1. Weight

The assemblage weights were calculated by combining the weight of the material from each context in each trench. The results are presented in Table 3, which are converted into a percentage of the overall 61.8 kg total for each trench in Figure 9 for a simple comparison.

Trench	In Situ	Dumped	Total
Trench 7	9.3 kg	34.3 kg	43.6 kg
Trench 8	0.3 kg	17.9 kg	18.2 kg
		Total:	61.8 kg

Table 3: Total weights of the *in situ* and dumped assemblages in Trenches 7 and 8.

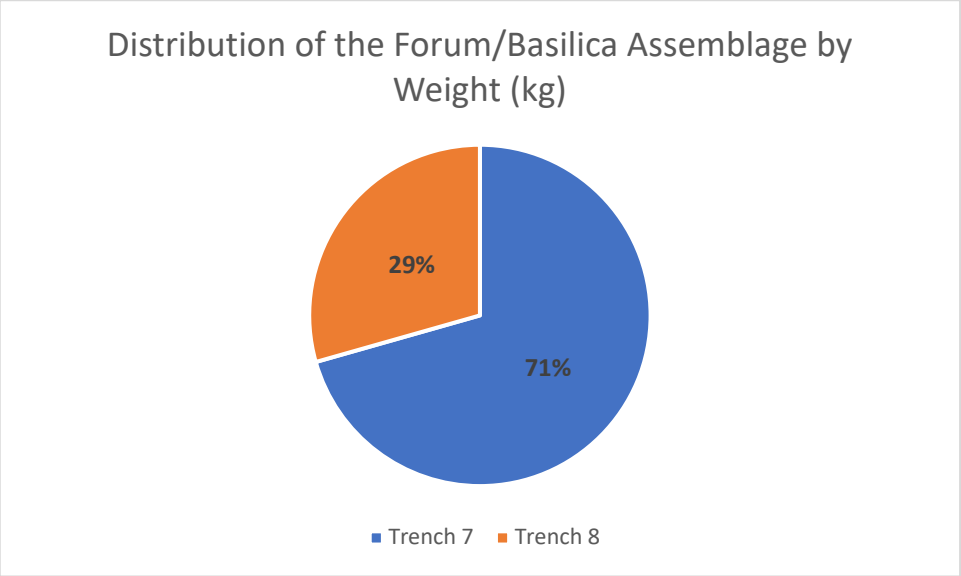


Figure 9: Distribution of the Forum/Basilica assemblage between Trenches 7 and 8 by weight in kilograms.

This data shows a significant difference in the weight of material from Trenches 7 and 8. Although many factors can influence the weight of zooarchaeological material (as discussed on p. 40), this is most likely a reflection on the difference in size between the trenches, as Trench 7 was 12m x 3m, whereas Trench 8 was much smaller at 5m x 4m. Tables 8 and 9 later within this chapter also indicate the minimal impact of burning and weathering across both trenches and context types, meaning are not likely to have a siginificant affect on the weight of the material.

5.2. NISP and MNI

The data for the Number of Identifiable Specimens (NISP) within the assemblage is presented in Table 4. Analysis of the the material resulted in a total NISP of 1007, with 712 from Trench 7 and 295 from Trench 8. This correlates to a 71%/29% percentage makeup for the assemblage, which can be explained by the fact that a greater mass of material comes from Trench 7, as shown above, and indeed the simple fact that Trench 7 was much larger.

Context	Cattle	Sheep/Goat	Pig	Horse	Dog	Domestic Fowl	Red Deer	Fish	TOTAL
Trench 7 In Situ	152	35	31	6	6	8	1	1	240
Trench 7 Dumped	299	70	51	14	24	10	2	2	472
Trench 8 In Situ	17	2	6	1	1	2	1	0	30
Trench 8 Dumped	161	31	33	5	27	7	1	0	265

Table 4: Representation of each species identified through NISP in Trenches 7 and 8 for both the dumped and *in situ* assemblages. Each number represents the totalled NISP for all of the contexts within each category, as each represents a different deposition event.

The Minimum Number of Individuals (MNI) was also identified for the *in situ* and dumped assemblages of Trenches 7 and 8, the result of which is shown in Table 5. Analysis of the the material (as described on p.38) resulted in a total MNI of 194, with 155 from Trench 7 and 39 from Trench 8. This correlates to a 80%/20% percentage makeup for the assemblage, similar to that for the NISP. In order to better compare the data sets, both were converted into percentages for each species in each trench (Figures 10.1 and 10.2).

Context	**Cattle**	**Sheep/Goat**	**Pig**	**Horse**	**Dog**	**Domestic Fowl**	**Red Deer**	**Fish**
Trench 7 In Situ	18	12	9	2	6	5	1	1
Trench 7 Dumped	34	20	13	6	8	4	2	2
Trench 8 In Situ	6	1	2	1	1	1	1	0
Trench 8 Dumped	10	4	5	1	3	2	1	0

Table 5: Representation of each species identified through MNI in Trenches 7 and 8 for both the dumped and *in situ* assemblages. Each number represents the totalled MNI for all of the contexts within each category, as each represents a different deposition event.

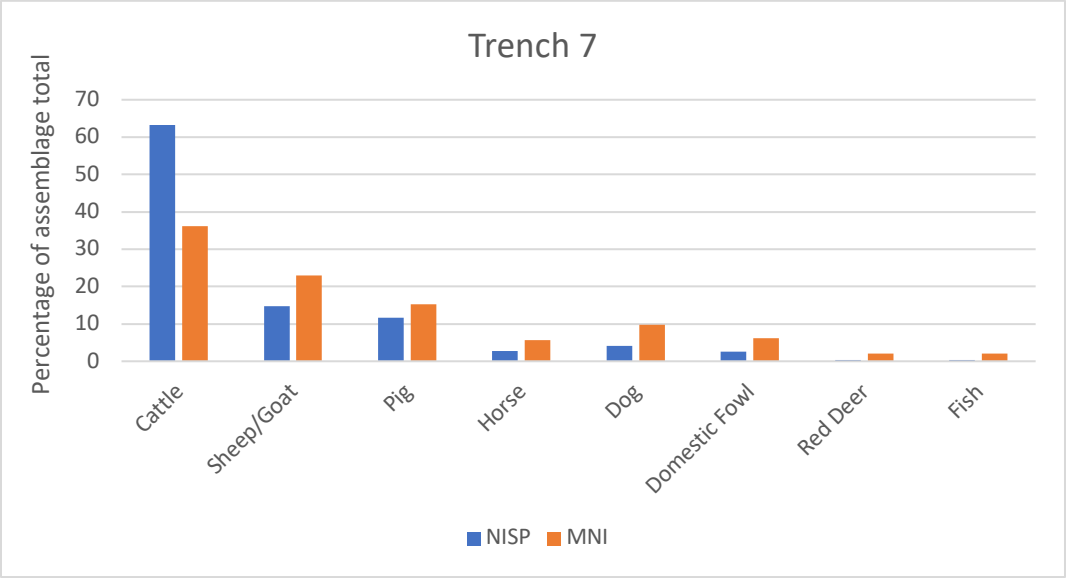


Figure 10.1: Representation of each species identified through NISP and MNI in Trench 7. This figure shows the percentage breakdown of the assemblage based on the minimum number of each species represented within it.

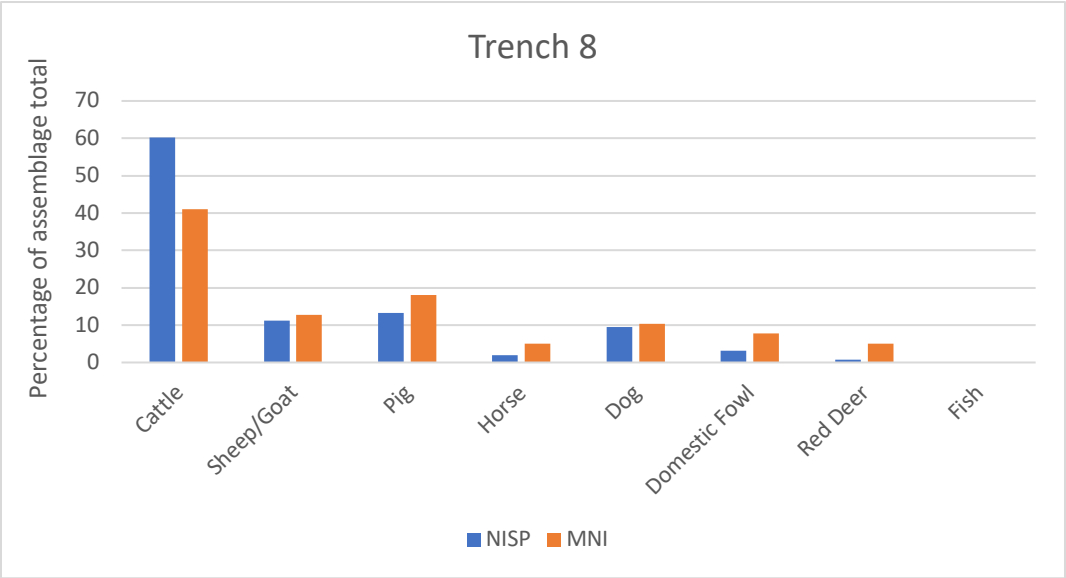


Figure 10.2: Representation of each species identified through NISP and MNI in Trench 8. This figure shows the percentage breakdown of the assemblage based on the minimum number of each species represented within it.

Comparison between the NISP and MNI data reveals similar trends across the trenches and between the datasets, with the three main domesticate species representing the majority of the assemblage and remains from other species also recovered in small numbers. It is likely that the species representation portrayed by the MNI data is a more accurate one however, as, as discussed on p. 38, NISP is likely to be an overestimate for species whose bones are more likely to be fragmented. In this case, the cattle remains are likely to be fragmented, due to the intensive nature of Roman butchery, and it would seem that the NISP data for cattle has been most affected by this. Indeed, Figures 10.1 and 10.2 show that the most significant difference between the MNI and NISP data is that for cattle. Therefore, although the results overall paint a similar picture, the MNI results are likely the most reliable for the Forum/Basilica assemblage.

When comparing the MNI in the *in situ* and dumped assemblages for each trench (Figures 10.3 and 10.4), similar trends are again found. Fewer individuals are found in the *in situ* assemblage, but this is to be expected, as only 16% of the total assemblage comes from '*in situ*' contexts (in both fragment number and weight), with the other 84% coming from the 'dumped' contexts. However, the percentage makeup of the assemblages are similar in both groups.

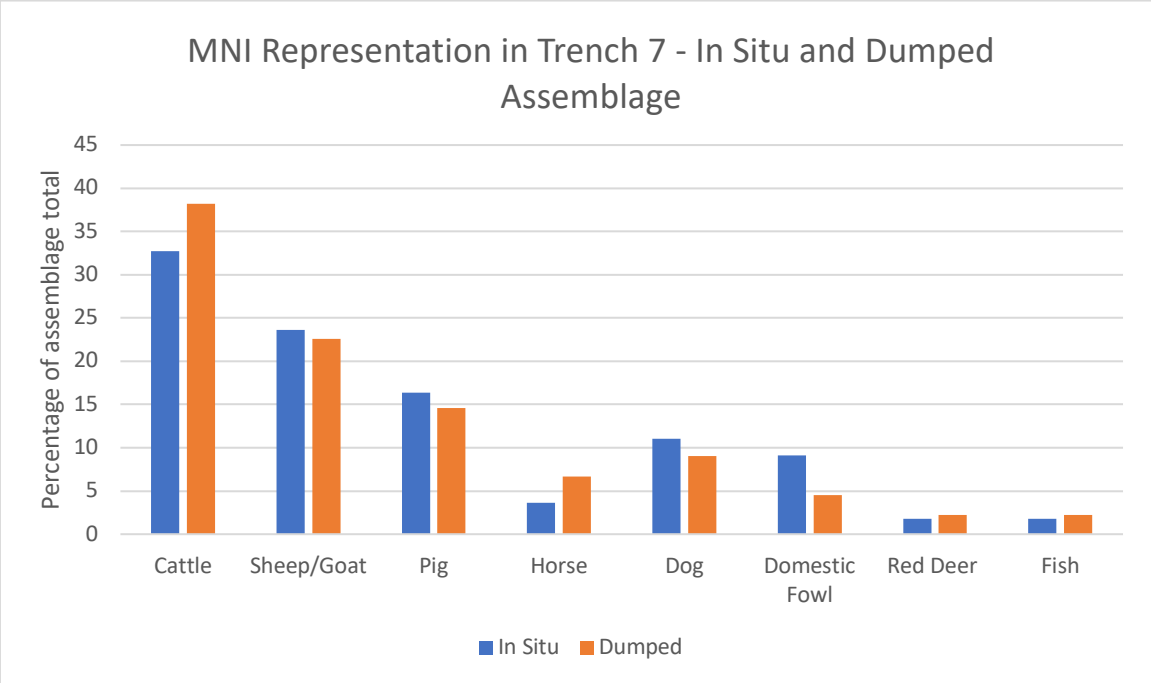


Figure 10.3: Representation of each species identified through MNI in Trench 7, for both the *in situ* and dumped assemblage. This figure shows the percentage breakdown of each assemblage based on the minimum number of each species represented within it.

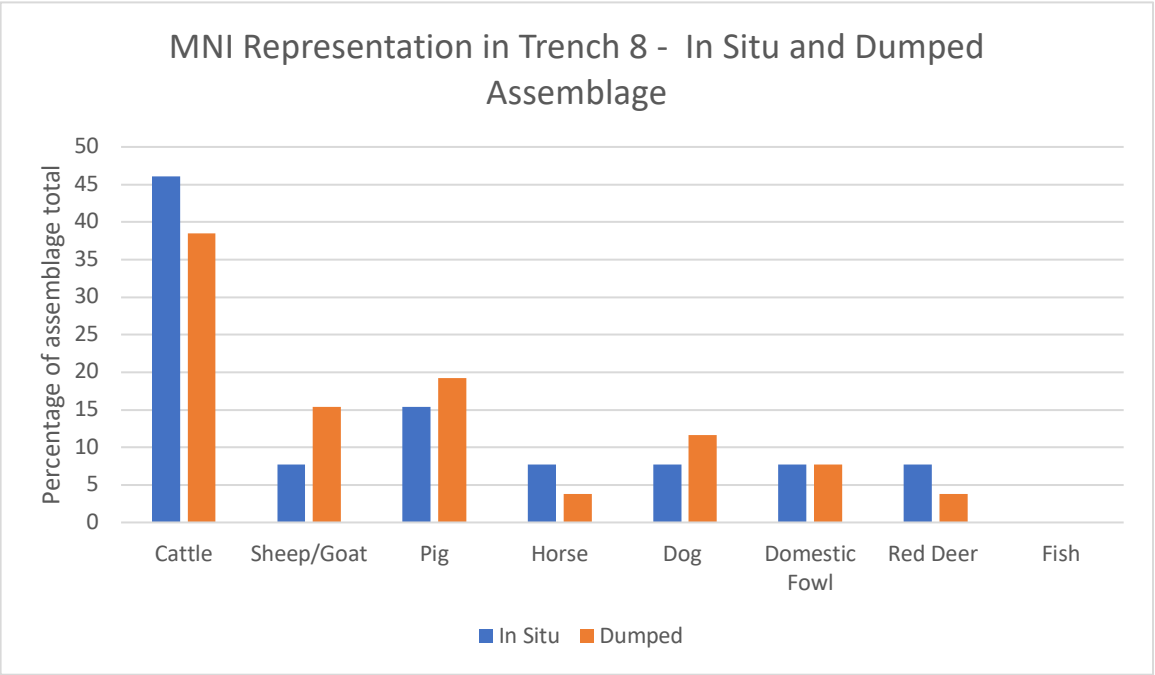


Figure 10.4: Representation of each species identified through MNI in Trench 8, for both the *in situ* and dumped assemblage. This figure shows the percentage breakdown of each assemblage based on the minimum number of each species represented within it.

5.2.1 Phase Comparisons

The MNI data was further examined to determine whether there were any notable differences in species representation by phase. Figures 11.1 and 11.2 show the percentage breakdown of each species based on the minimum number of individuals represented within each phase, for both trenches 7 and 8.

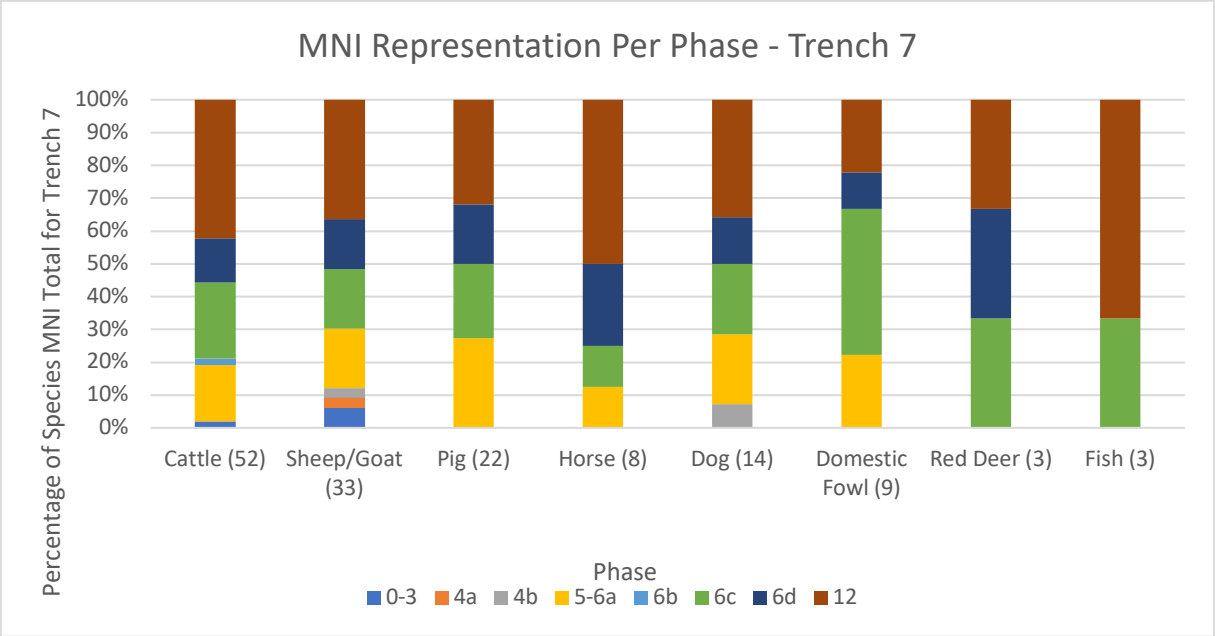


Figure 11.1: Representation of each phase within the total MNI count for each species in Trench 7, for both the *in situ* and dumped assemblage. This figure shows the percentage breakdown of each species based on the minimum number of individuals represented within each phase.

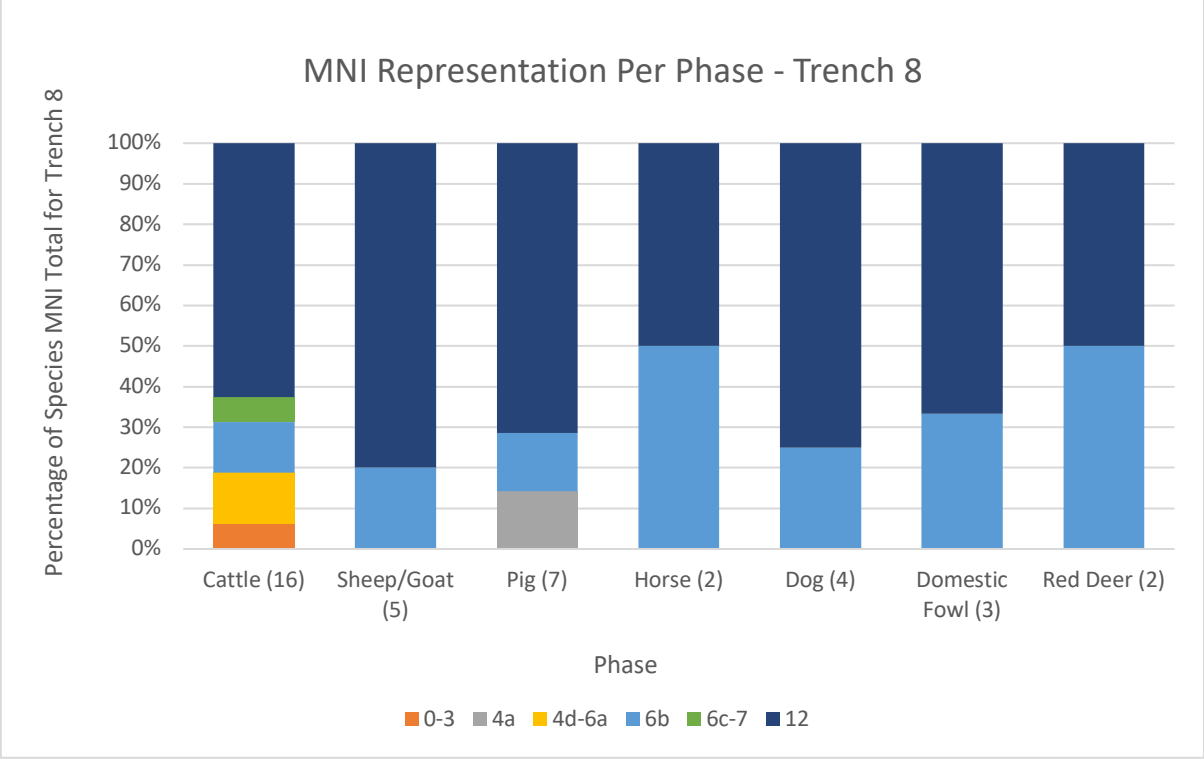


Figure 11.2: Representation of each phase within the total MNI count for each species in Trench 8, for both the *in situ* and dumped assemblage. This figure shows the percentage breakdown of each species based on the minimum number of individuals represented within each phase.

Both figures seem to generally support trends presented in the data displayed prior, in that more species are represented in the later phases and contexts, and more heavily so. Specifically, this is true for phase 5-6a and onwards in trench 7, which is when the casual disposal of waste began in the forum space, and for phase 6b and onwards in trench 8, which is when the basilica space first experienced abandonment and dumping. Additionally, the most abundant species, cattle, is present throughout most phases in both trenches, strengthening the suggestion of its high importance to the Roman society.

5.3. Element Representation

Element representation was calculated by combining the number of fragments of each element present within each asssemblage. This was calculated for each of the three major domesticates (cattle, sheep/goat and pig) (Figures 12.1, 12.2 and 12.3) as they represent the majority of the material (see chapter 5.8. for more on other species). This was also only performed with elements that could be positively identified for each of these species.

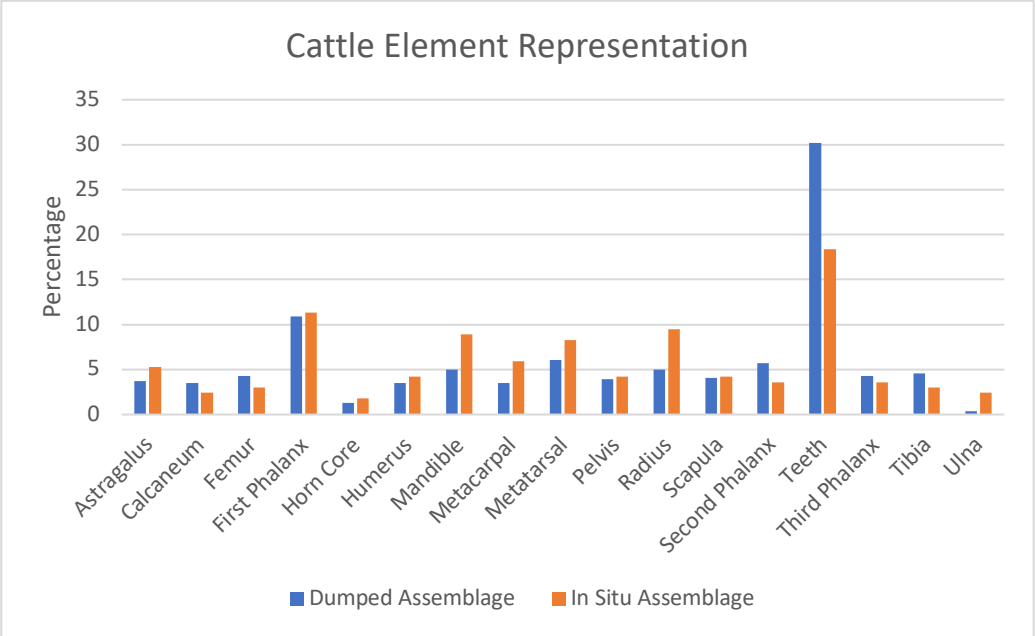


Figure 12.1: Cattle element representation in both the dumped and *in situ* assemblage. These figures show the percent of recovered fragments that could be identified as specific elements, as a percentage of the species total.

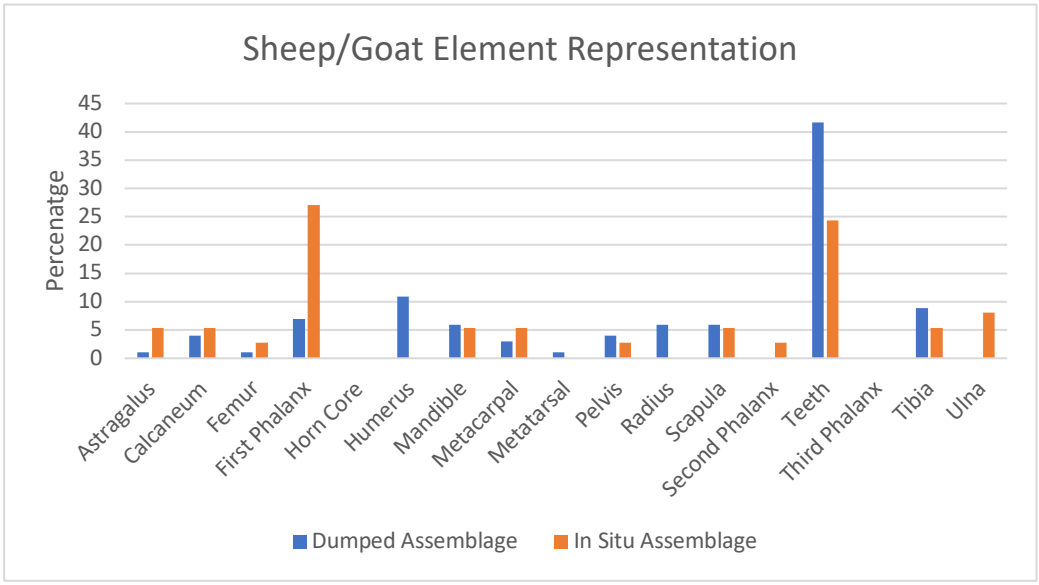


Figure 12.2: Sheep/goat element representation in both the dumped and *in situ* assemblage. These figures show the percent of recovered fragments that could be identified as specific elements, as a percentage of the species total.

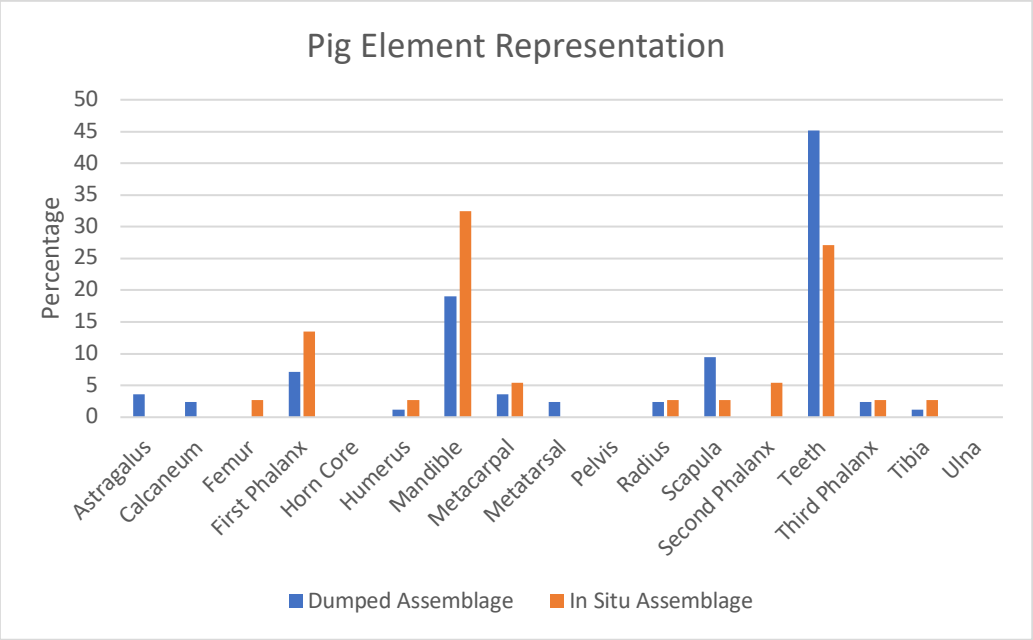


Figure 12.3: Pig element representation in both the dumped and *in situ* assemblage. These figures show the percent of recovered fragments that could be identified as specific elements, as a percentage of the species total.

Figures 13.1, 13.2 and 13.3 represent the further grouping of the recovered elements into categories that allow the representation of different body parts within the assemblage to be better presented. The humerus, radius, tibia, femur, ulna and scapula were categorised as ‘upper limb’ bones, while the astragalus, calcaneum, metapodials, and phalanges were categorised as ‘lower limb’ bones. Any horn cores (though only present for cattle) and mandibles were placed under the ‘cranial/mandibular’ category, leaving ‘teeth’ and ‘pelvis’ to be their own separate categories. Teeth likely make up a disproportionate percentage of the assemblage as each individual animal has many, hence they are separated from the rest of the data.

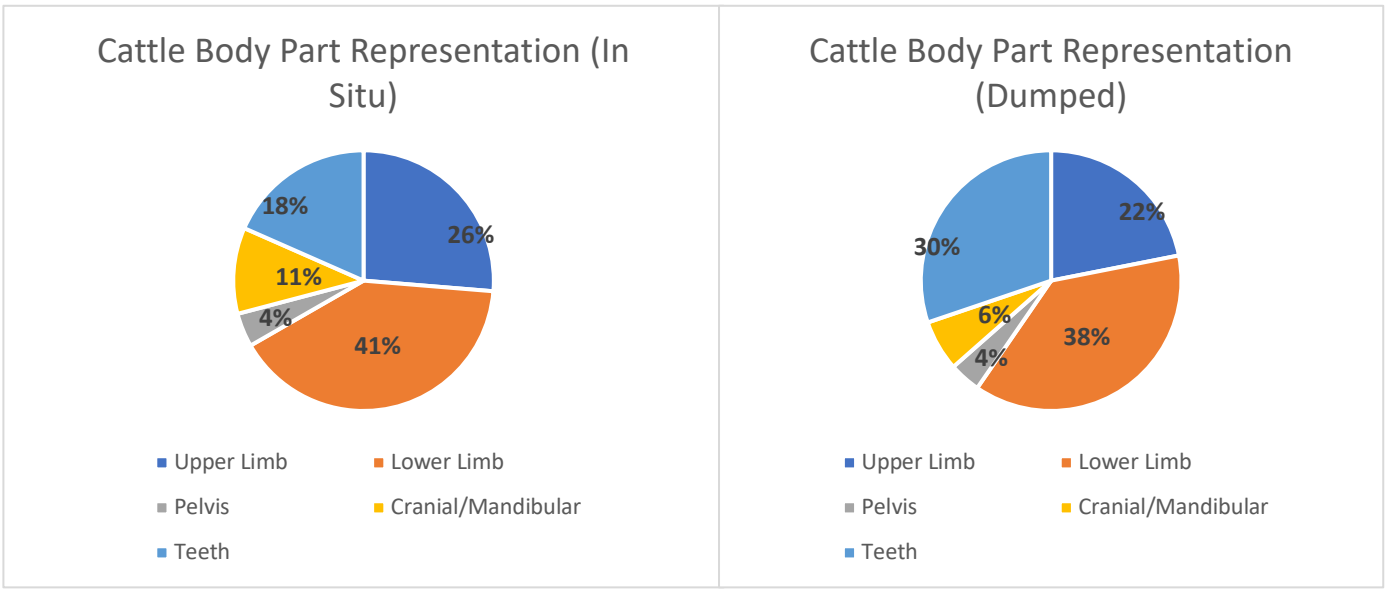


Figure 13.1: Cattle body part representation in both the *in situ* and dumped assemblages. These figures show the percent of recovered fragments that could be identified and categorised into different areas of the body, as a percentage of the species total.

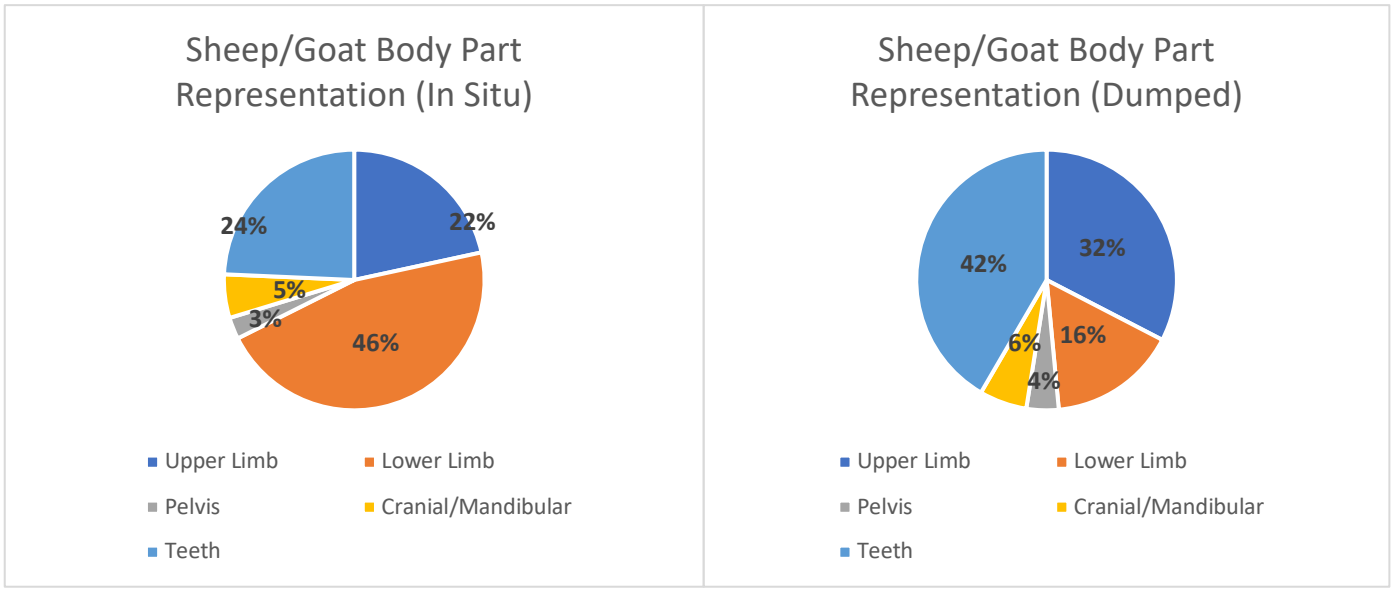


Figure 13.2: Sheep/goat body part representation in both the *in situ* and dumped assemblages. These figures show the percent of recovered fragments that could be identified and categorised into different areas of the body, as a percentage of the species total.

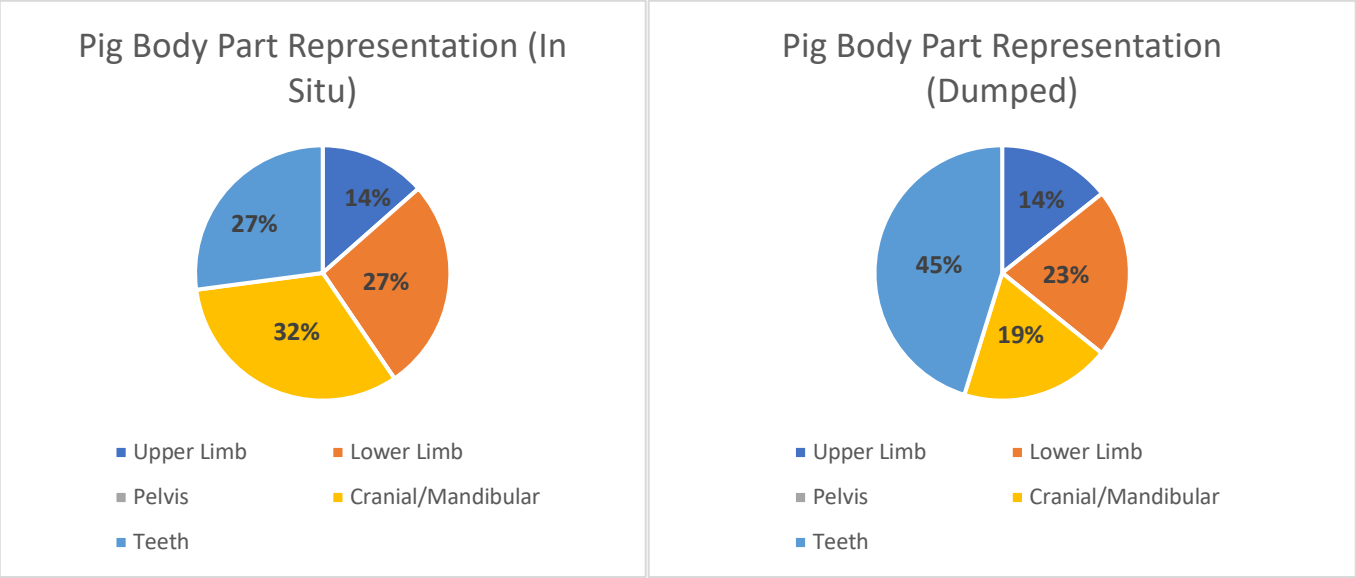


Figure 13.3: Pig body part representation in both the *in situ* and dumped assemblages. These figures show the percent of recovered fragments that could be identified and categorised into different areas of the body, as a percentage of the species total.

Figure 13.1 shows that the *in situ* and dumped assemblages of cattle have a similar body part representation. The biggest difference is the number of teeth, making up a greater percentage in the dumped assemblage (30%) than that *in situ* (18%). This can likely be explained by the fact that more individuals are represented within the dumped assemblage, as can be seen in Table 5.

A greater difference between the *in situ* and dumped material can be observed in the sheep/goat assemblage, as seen in Figure 13.2. Indeed, a much higher percentage of lower limb bones is expressed in the *in situ* material than in the dumped material, at 46% compared to 16%. In contrast, the dumped material contains a higher percentage of teeth (the likely reasoning for such has been explained) and upper limb bones. Specifically, as can be seen in Figure 12.2, there are significantly more first phalanx bones in the *in situ* assemblage, making up 27% compared to 7% of the dumped assemblage, and more humeri in the dumped assemblage, making up 11% compared to 0%.

A clear difference in the material can also be observed in the pig assemblage, as seen in Figure 13.3. Although the levels of upper and lower limb bones are

similar here, there are differences in regards to the cranial/mandibular bones and teeth. Again, there are much more teeth within the dumped material (45% as opposed to 27% *in situ*), as more individuals are represented within the dumped assemblage, as can be seen in Table 5. The difference between the amount of cranial/mandibular elements, with 32% representation in the *in situ* deposit and 19% in the dumped deposit, is perhaps more complex, but will be attempted to be explained within the discussion chapter of this work (p. 86).

5.4. Butchery

9% of the total Forum/Basilica assemblage was found to display butchery marks, with the trench breakdown of the 388 fragments displayed in Figure 14. While significantly different from the almost 50/50 split between the Trench 7 and 8 material fragment count, this is likely due to the fact that Trench 7 was larger and the fact that the Trench 8 assemblage is more fragmented.

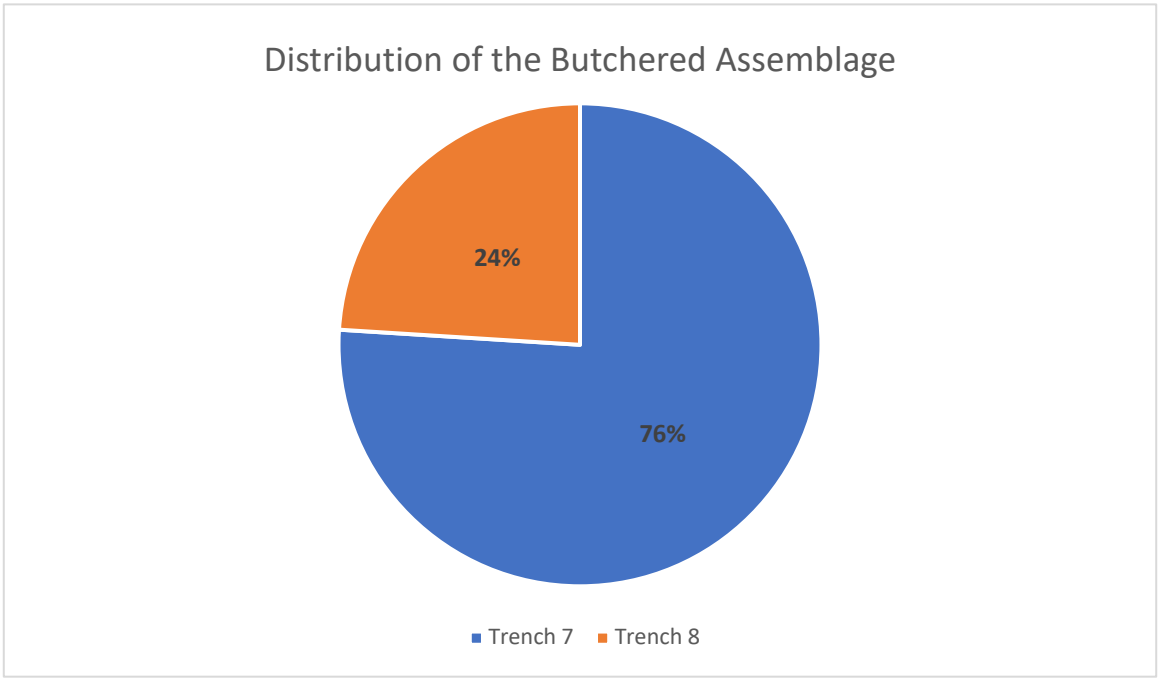


Figure 14: Distribution of the butchered Forum/Basilica assemblage between Trenches 7 and 8.

Indeed, there is a larger amount of 'unidentified' material within the Trench 8 assemblage (see Table 6), which is indicative of this, as extremely fragmented bones can be difficult to identify for both species and element.

Context	Large Mammal	Medium Mammal	Small Mammal	Large Bird	Medium Bird	Small Bird	Total
Trench 7 In Situ	104	32	1	2	0	0	139
Trench 7 Dumped	931	66	7	4	5	0	1013
Trench 8 In Situ	152	11	1	0	1	0	165
Trench 8 Dumped	1352	111	3	0	4	0	1470

Table 6: Unidentified element representation within both the *in situ* and dumped Trench 7 and 8 assemblages. This figure shows the number of individual elements that could be categorised as either an indeterminate large, medium or small mammal or bird, including ribs, shaft fragments and unidentifiable elements.

Figure 15 reveals what percentage of the cattle elements discussed prior (Figure 12.1) possess evidence of butchery. The data within it (Table 7) was calculated by combining butchery present on identified cattle elements, along with that on known unidentified large mammal elements. This is due to the fact that the large mammal material in this assemblage is incredibly likely to be cattle remains, due to the fact that they are butchered and that cattle is shown to heavily outnumber horse representation at the site, as shown in the NISP and MNI data.

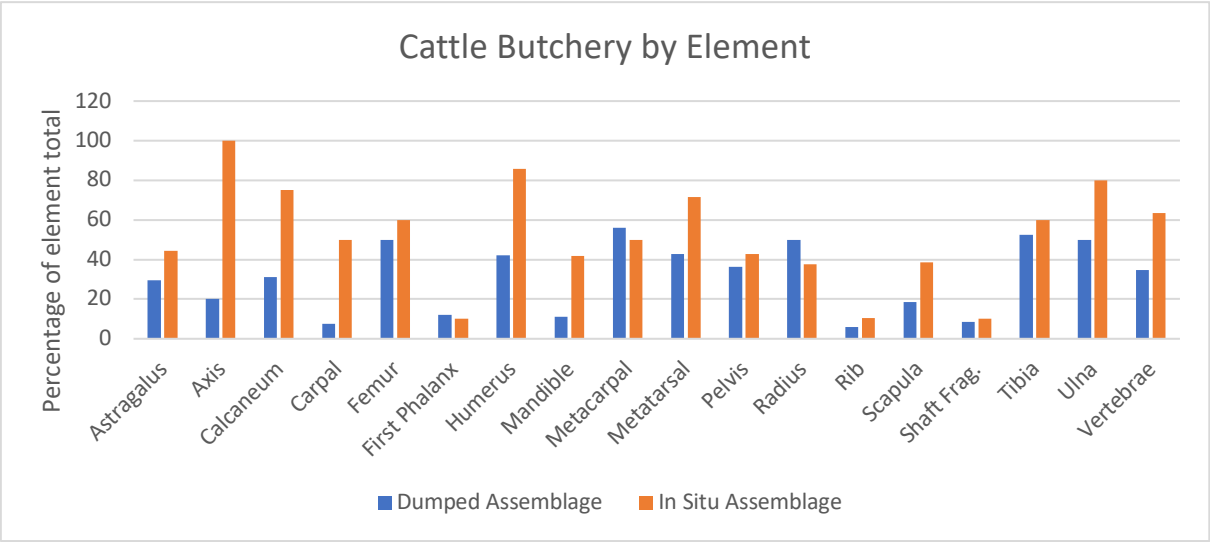


Figure 15: Cattle butchery representation by element in the dumped and *in situ* forum/basilica assemblage. This figure shows the percentage of each element that displays evidence of butchery, including chopping and cut marks.

Element	In Situ Total	In Situ Butchered	Dumped Total	Dumped Butchered
Astragalus	9	4	17	5
Axis	2	2	5	1
Calcaneum	4	3	16	5
Carpal	4	2	13	1
Femur	5	3	26	13
First Phalanx	20	2	50	6
Humerus	7	6	19	8
Mandible	24	10	36	4
Metacarpal	10	5	16	9
Metatarsal	14	10	28	12
Pelvis	7	3	22	8
Radius	16	6	24	12
Rib	318	33	1198	69
Scapula	13	5	48	9
Shaft Frag.	149	15	595	50
Tibia	5	3	21	11
Ulna	5	4	2	1
Vertrebrae	11	7	26	9

Table 7: Cattle butchery representation by element in the dumped and *in situ* forum/basilica assemblage. This figure shows the number of each element present and that which displays evidence of butchery, including chopping and cut marks.

In order to gain a better perspective of any differences between phases, the types of butchery discussed on p. 48 were identified within the assemblage for each *in situ* and dumping phase in each trench, as can be seen in Figures 16.1-16.4.

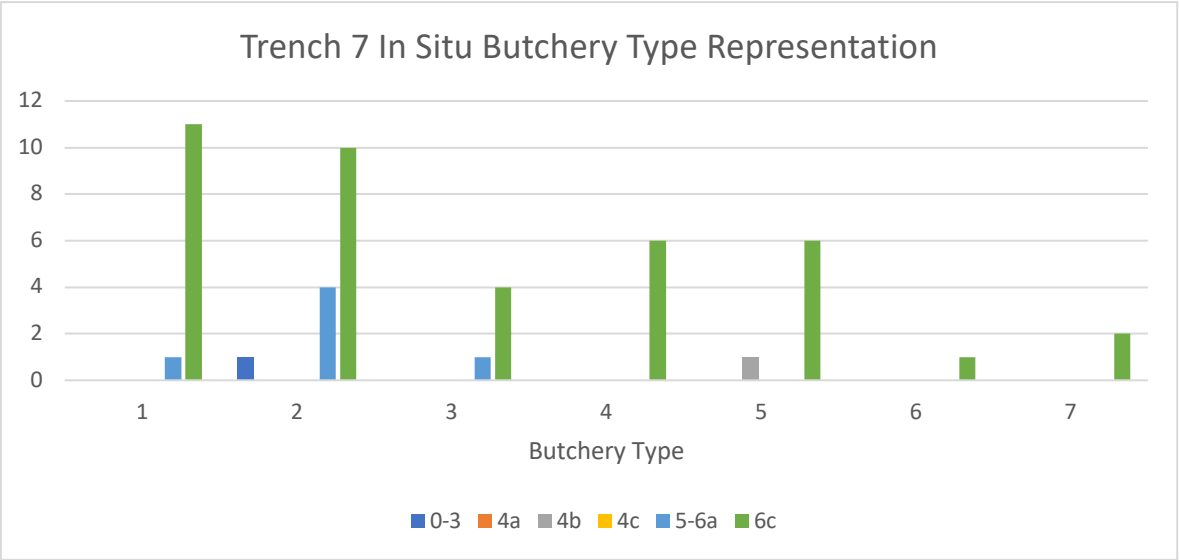


Figure 16.1: Butchery type representation within each phase in the Trench 7 *in situ* material. This figure shows the total number of elements with butchery marks in each phase that represent one of the typical Romano-British cattle butchery types.

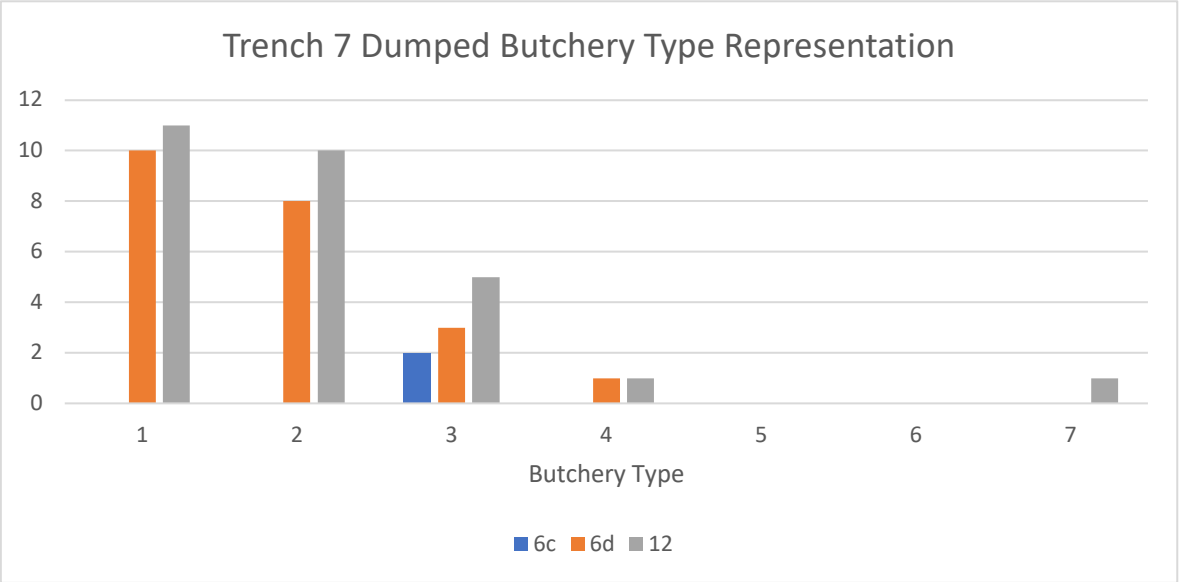


Figure 16.2: Butchery type representation within each phase in the Trench 7 dumped material. This figure shows the total number of elements with butchery marks in each phase that represent one of the typical Romano-British cattle butchery types.

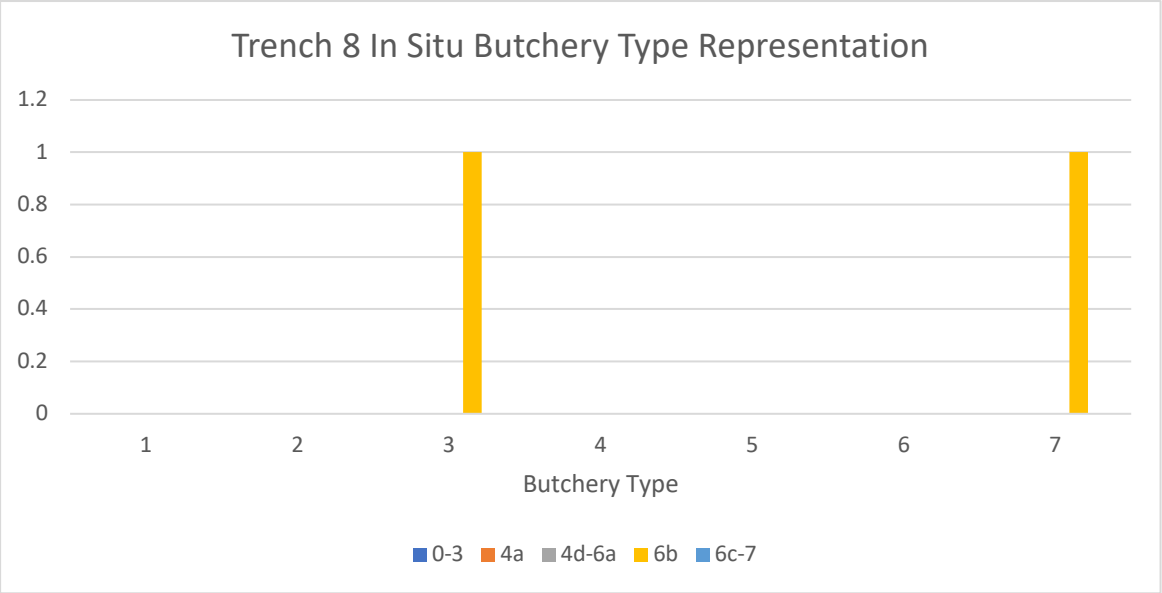


Figure 16.3: Butchery type representation within each phase in the Trench 8 *in situ* material. This figure shows the total number of elements with butchery marks in each phase that represent one of the typical Romano-British cattle butchery types.

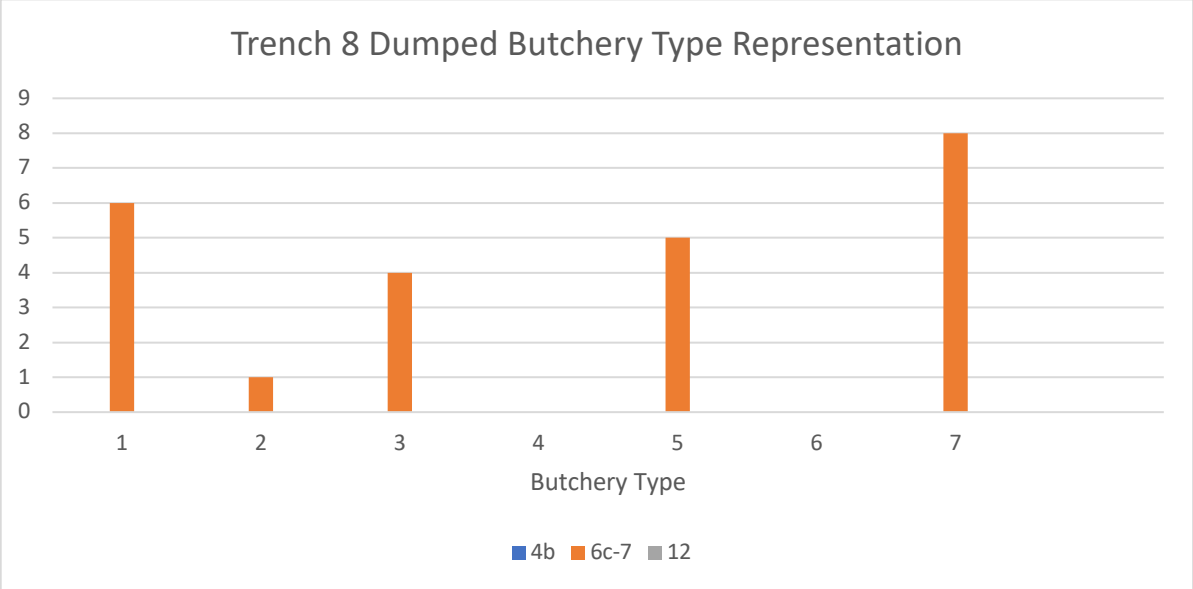


Figure 16.4: Butchery type representation within each phase in the Trench 8 dumped material. This figure shows the total number of elements with butchery marks in each phase that represent one of the typical Romano-British cattle butchery types.

5.5. Burning

As shown in Figures 17.1 and 17.2, both the Trench 7 and Trench 8 *in situ* and dumped assemblages share a similar percentage breakdown for burnt, unburnt and singed material, with the majority of the material being unburnt.

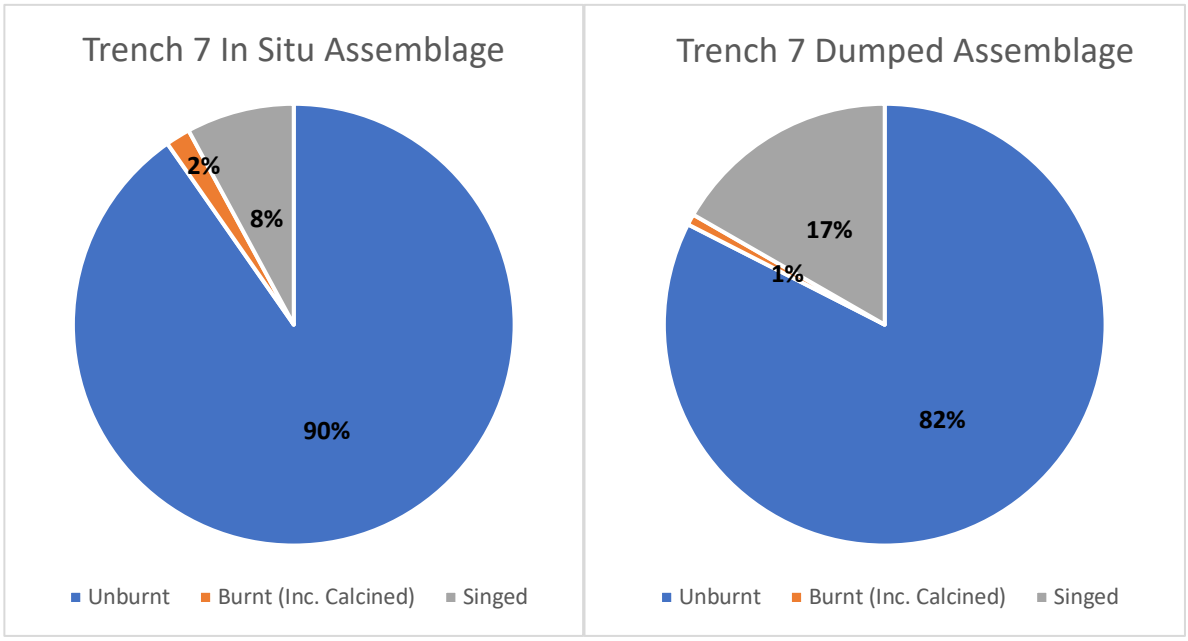


Figure 17.1: Burning and singing representation in Trench 7, in both the dumped and *in situ* assemblages. This figure shows the percentage of recovered fragments that are either unburnt, burnt or singed.

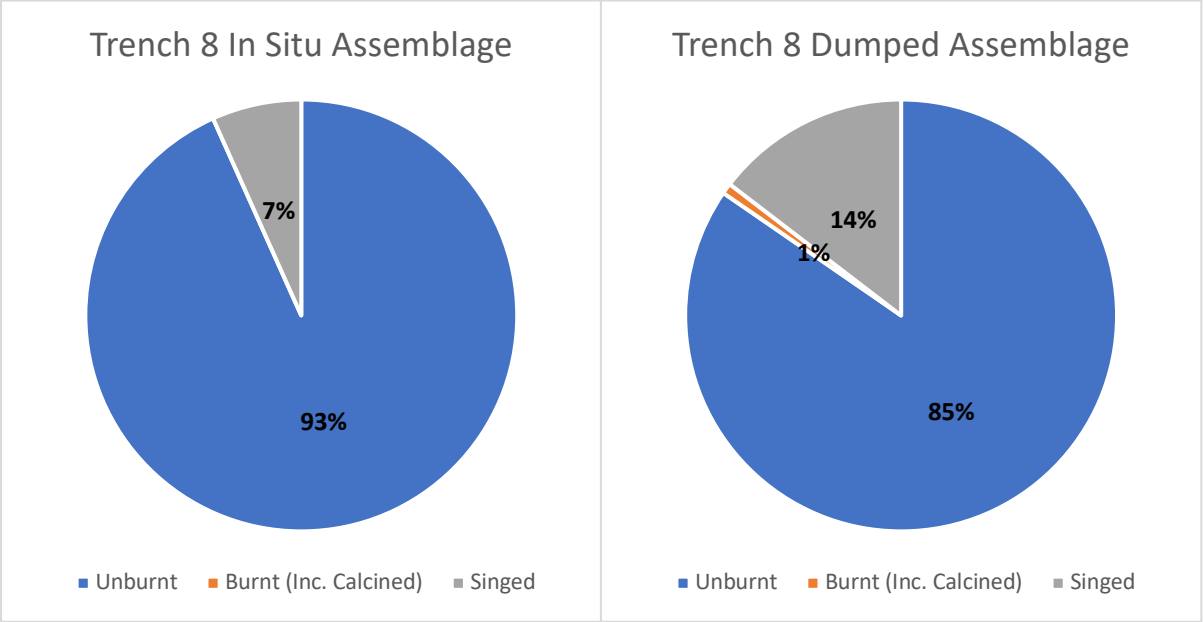


Figure 17.2: Burning and singing representation in Trench 8, in both the dumped and *in situ* assemblages. This figure shows the percentage of recovered fragments that are either unburnt, burnt or singed.

The overall Forum/Basilica assemblage contained 698 burnt or singed fragments, at 15% of the total. The trench and category breakdown for this is shown in Table 8. This data is presented as percentage values in Figures 17.3 and 17.4 to allow for an easier comparison between the phases of the trenches and the *in situ* and dumped material.

Context	Unburnt	Burnt (Inc. Calcined)	Singed
Trench 7 In Situ	742	15	65
Trench 7 Dumped	1589	15	322
Trench 8 In Situ	182	0	13
Trench 8 Dumped	1477	14	254

Table 8: Representation of unburnt, burnt and singed fragments in the dumped and *in situ* forum/basilica assemblage.

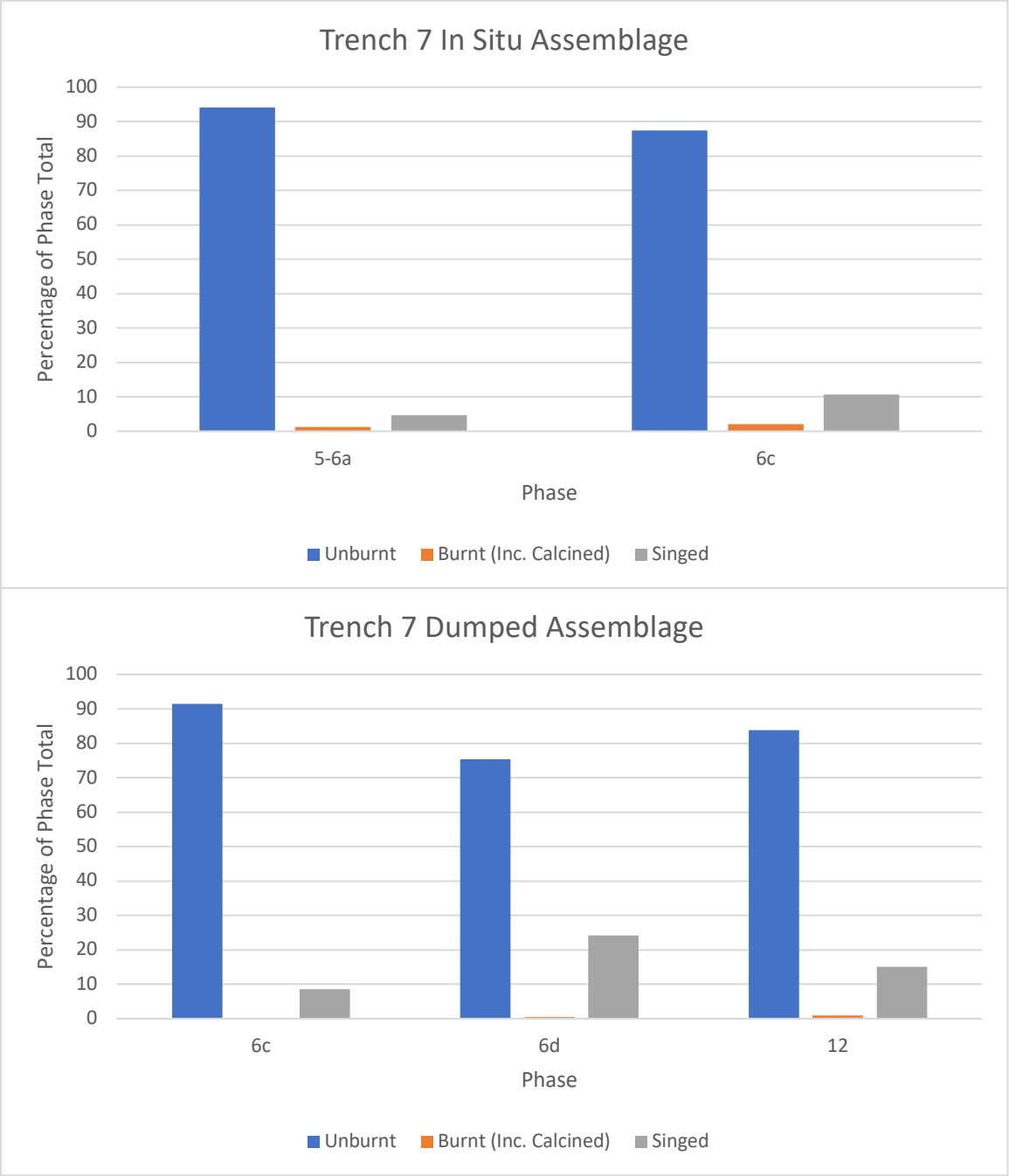


Figure 17.3: Burning and singing representation within the phases of Trench 7, in both the dumped and *in situ* assemblage. This figure shows the percentage of recovered fragments that are either unburnt, burnt or singed.

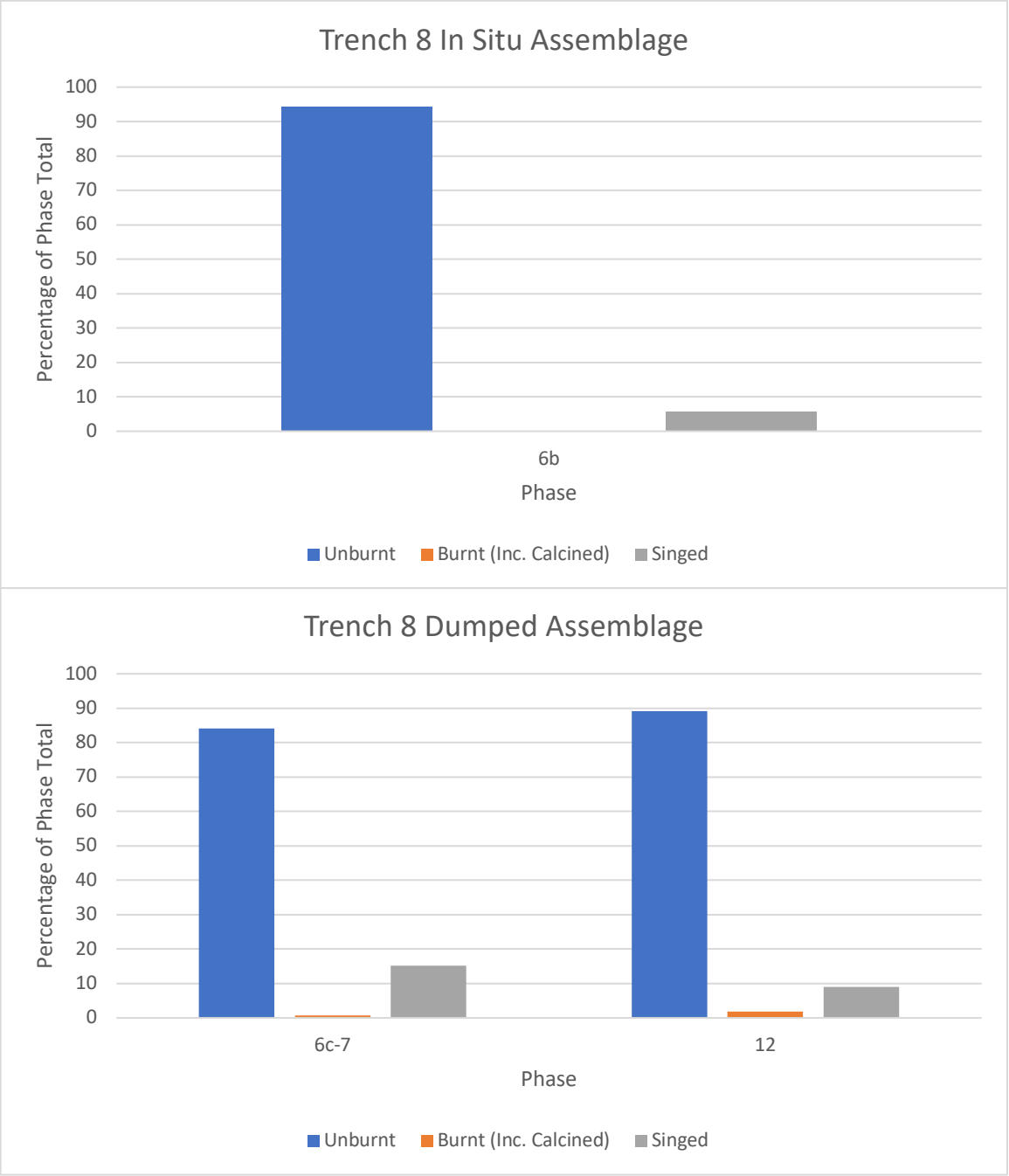
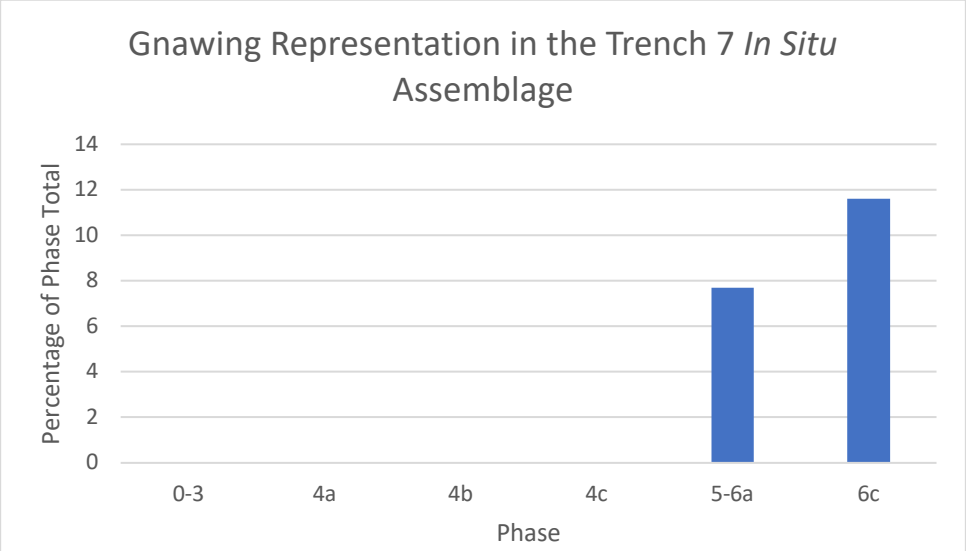
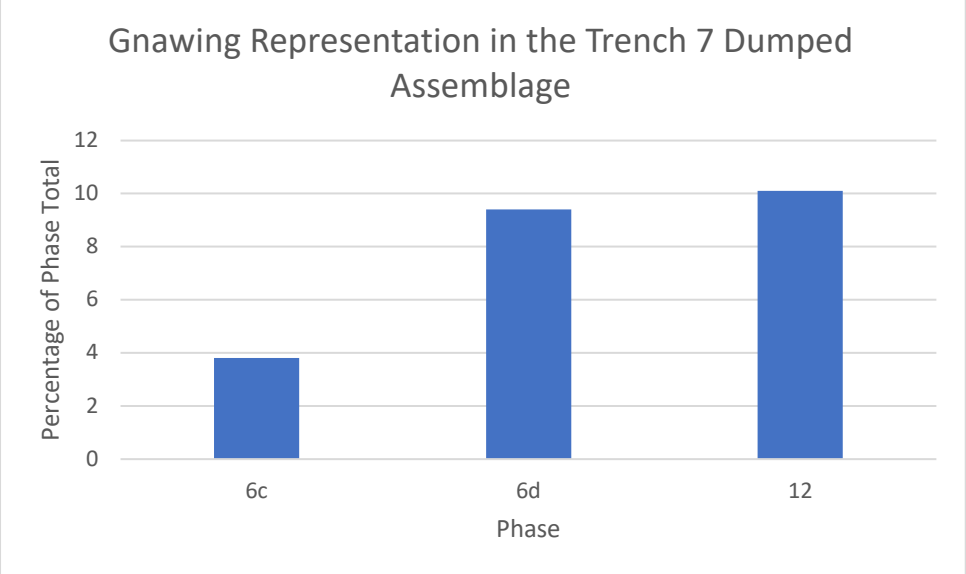


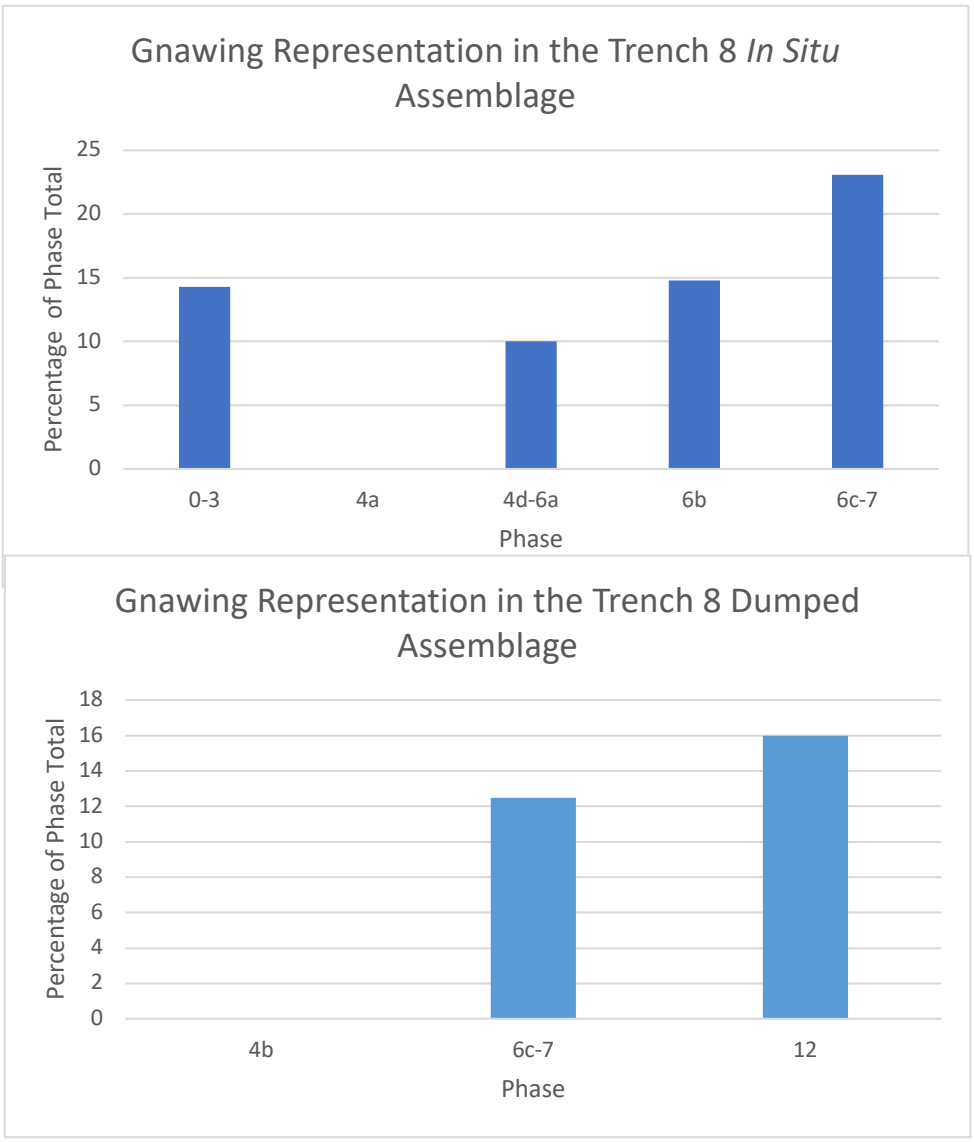
Figure 17.4: Burning and singing representation within the phases of Trench 8, in both the dumped and *in situ* assemblage. This figure shows the percentage of recovered fragments that are either unburnt, burnt or singed within each phase.

5.6. Gnawing

Gnawing was noted on fragments from both trenches, with gnawed material making up 3.2% of the overall Forum/Basilica assemblage at 146 individual examples. This was divided 83/63 between Trench 7 and 8 respectively, making up 3.7% of the Trench 7 assemblage, and 2.8% of the Trench 8 assemblage. The phase breakdown of this for both the dumped and in situ material is displayed in Figures 18.1-18.4.







Figures 18.1-18.4: Gnawing representation in the phases of the *in situ* and dumped assemblages of Trenches 7 and 8. These figures show the percent of recovered fragments that displayed evidence of gnawing of any kind, as a percentage of the phase total.

The gnawed forum/basilica assemblage was found to contain 97% with carnivore gnawing marks (likely from dog) and 3% with rodent gnawing marks. Dogs were clearly present at the site as their remains have been recovered, though the only evidence of rodents is their gnawing. The lack of rodent remains in the assemblage could be indicative of a large element bias when the material was excavated, or perhaps they are present within the 'unidentified' assemblage, as small mammal remains are recorded (see Table 6).

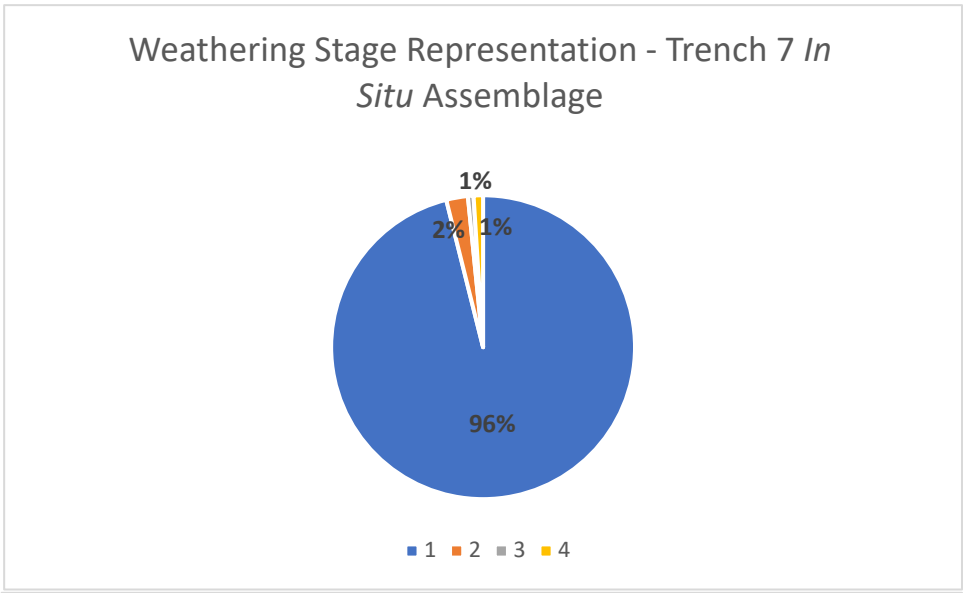
5.7. Weathering

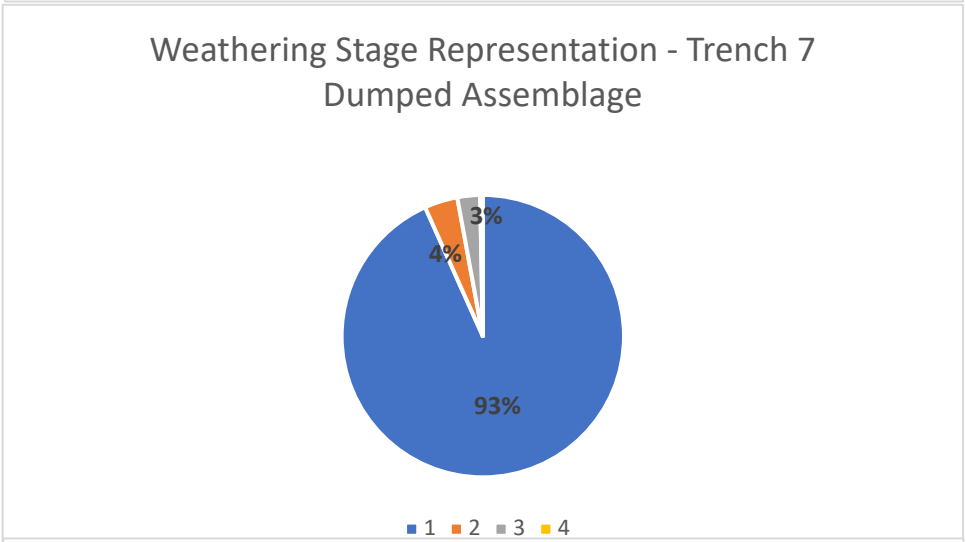
The entire assemblage was categorised based on the extent of weathering of each element, as shown in Table 9. These categories (1-4) are described on p. 48, with 1 being the least and 4 being the most weathered.

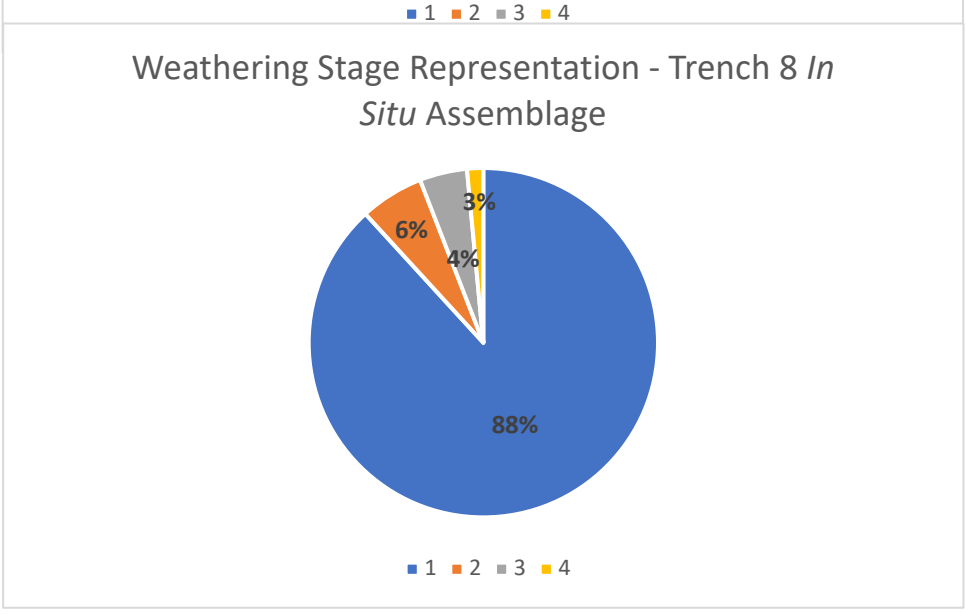
Context	**1**	**2**	**3**	**4**
Trench 7 In Situ	293	7	2	3
Trench 7 Dumped	584	24	16	2
Trench 8 In Situ	60	4	3	1
Trench 8 Dumped	393	46	11	5

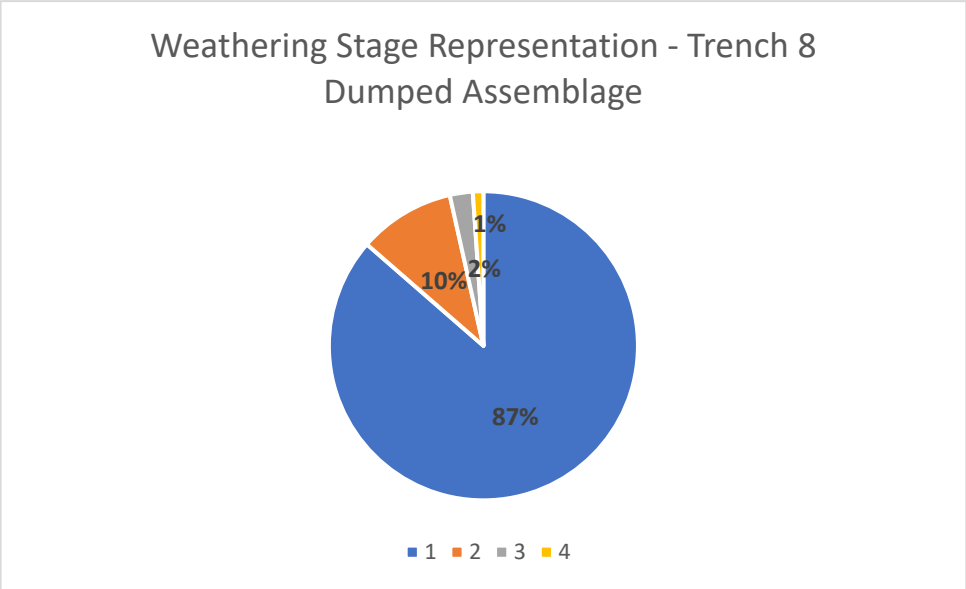
Table 9: Weathering in both the dumped and *in situ* assemblages from Trenches 7 and 8. This figure shows the number of elements that were identified as belonging to each weathering category.

The results of this were converted into percentage totals for each trench and assemblage type, as presented in Figures 19.1-19.4, in order to more easily compare them in a visual format. In can be seen that weathering is more extensive in Trench 8 than Trench 7 as a smaller percentage of the material belongs to category 1. There is however little difference between the *in situ* and dumped material in both cases.


Weathering Stage Representation - Trench 7 *In Situ* Assemblage
1%
2%
1%
96%
1
2
3
4


Weathering Stage Representation - Trench 7 Dumped Assemblage
3%
4%
93%
1
2
3
4


Weathering Stage Representation - Trench 8 *In Situ* Assemblage
3%
6%
4%
88%
1
2
3
4



Figures 19.1-19.4: Weathering stage representation within the phases of the *in situ* and dumped assemblages of Trenches 7 and 8.

5.8. Other Species

Although not the main focus of this work, it is still worth briefly considering any possible points of interest for the other animal species found within this assemblage, namely horse, dog, domestic fowl, red deer and fish.

5.8.1. Horse

All the 26 individual horse bone fragments identified were limb bones or teeth, possibly owing to the fact that they possess the most clear species identifying markers. Other elements may have been determined as unidentified large mammal due to their similarity to cattle bones. The majority of the identified elements were deposited in phase 12 (see chapter 5.2.1), which is likely more indicative of the dumping of large amounts of material than anything else.

Possible butchery marks were identified on some of the horse remains, with chop marks on a tibia fragment (7536), as well as a metatarsal (7517) and metacarpal (7513). Possible cut marks were also identified on a scapula and radius fragment (7536).

5.8.2. Dog

24 of the 58 total bone fragments identified as belonging to a dog were from context 6604 in trench 8. It is possible that these fragments represent 2 individuals, and hence the deposition of some articulated body parts, though not the whole animals as many elements are missing. The deposition of articulated dog remains is certainly not unusual in this period, though the missing elements are likely resultant from the movement of material to be dumped in the forum/basilica space during the later phase this context represents.

5.8.3. Domestic Fowl

27 chicken bones were recovered across both trenches 7 and 8, which were mostly limb bones. This is perhaps indicative of the fact that the larger and denser of the small animal's elements are more likely to survive and to be collected during hand collection.

All were recovered from later contexts (5.2.1), likely owing to the fact that more material was deposited at this time overall.

5.8.4. Red Deer

As with horse, some other red deer elements may have been determined as unidentified large mammal if missing key identification markers, perhaps providing some explanation as to why only 5 red deer bone fragments were identified. This small amount did include a piece of antler possessing evidence of sawing, from context 6610 in trench 8.

5.8.5. Fish

Only 3 fish bones were identified within the assemblage studied, all of which were vertebrae. As acknowledged earlier in chapter 4.1. it is likely that the lack of these remains is due to the hand collection of the material, perhaps also explaining why the larger vertebrae are the only elements recovered. The fact that all 3 were recovered from trench 7 is likely also a coincidence resulting from hand collection. Ultimately, there is not enough fish bone in the assemblage to make worthwhile comparisons between areas and contexts.

6. Discussion

The purpose of this study was to determine the differences, if any, between the Trench 7 forum assemblage and the Trench 8 basilica assemblage, as well as to determine how the make-up of *in situ* deposits may differ to that of the dumping deposits. This was with the intention of being able to make suggestions about the use of space at the Roman site over time.

The following chapter will be a summarisation of these findings from the data presented in the previous chapter.

6.1. NISP and MNI

As discussed on p. 78, the NISP and MNI data reveals similar trends across the trenches, with the MNI data further presenting these trends within both the *in situ* and dumped material. These trends relate to the species representation within the assemblage, and show a majority representation of the three main domesticate species (cattle, sheep/goat and pig), with cattle being the main contributor. This may suggest that the entire assemblage represents consumption waste, whether that is butchery for consumption or domestic waste, as cattle, sheep/goat and pig represent the species most consumed in Roman Britain (see page p. 29). Holmes (2016) concluded from the wider site material that assemblages from most phases form a tight grouping based on c.60-74% cattle, 16-23% sheep/ goat and 8-20% pig based on the NISP data (p. 1), which is also fairly typical of an urban site in Roman Britain (see Table 1). The forum/basilica material mostly follows this trend, with a 63/15/12% divide between the species in Trench 7, and a 60/11/13% divide in Trench 8.

Trends within both the *in situ* and dumped material also reveal very little representation of other species, particularly wild ones. The minimal amounts of horse and dog remains again supports the consumption assemblage suggestion for this material, as these animals were not considered fit for consumption in the traditional Roman ideology

(Harris 1986, 94). While some horse bone fragments were found to possess possible butchery marks, as discussed in chapter 5.8.1., it may be said that this is therefore more likely to be a result of skinning than of butchery for consumption.

Holmes (2016) notes that there is little evidence to suggest that hunting was widespread or routinely undertaken to provision the town, which can explain the lack of wild animal remains here (p. 5). This may link to the status of the town's inhabitants, as hunting was a high status pursuit (Allen 2014, 183).

6.2. Element Representation and Butchery

As shown in Figures 12.1-12.3, most elements are present for all three of the aforementioned main domesticate species, and in both the dumped and *in situ* deposits. This suggests that all three species were brought into the town to be slaughtered and butchered, rather than this being an external activity. It does not seem likely that waste would have been brought into the town to be deposited, making this is a more likely scenario.

As discussed on p. 38, the presence of elements such as teeth, along with other cranial/mandibular elements, and lower limb bones, can indicate that carcass processing was taking place as they are associated with primary butchery waste. In contrast, the presence of meat-bearing upper limb and other bones suggests meat consumption. Figures 12.1-12.3 therefore indicate that a variety of activity was taking place in the surrounding area, regarding the butchery and likely consumption of all three species.

It may seem that butchery was localised within the forum space itself. Indeed, as discussed on pp. 55-6, although the *in situ* and dumped material share similar body part representation of cattle, there is a greater difference within the sheep/goat and pig assemblages. Both of these species have elements associated with primary butchery more present in the *in situ* material than the dumped material, perhaps suggesting the butchery was taking place within the site itself, and that it was domestic waste with more meat-bearing elements that was being dumped during periods of abandonment. Indeed, as

mentioned prior (p. 33), Holmes (2016) notes that they did not find evidence for any particular parts of the town to be consistently used for the disposal of butchery waste (p. 11), so it may be that the *in situ* assemblage represents the *in situ* remains of a butcher's work space.

This may be supported by the butchery mark evidence, as the *in situ* assemblage possesses a proportionally greater extent of butchered cattle remains, as may also be the case with sheep/goat and pig. This is particularly the case for specific elements, namely the axis, calcaneus, carpals and humeri (see Figure 14.1).
These elements represent a variety of body parts, suggesting no particular specialism within the butchery overall. As stated prior, in order to gain a better perspective of whether this was occurring in any particular phases, the types of butchery discussed on p. 48 were identified within the assemblage for each *in situ* and dumping phase in each trench, as can be seen in Figures 16.1-16.4.

Figure 16.1 shows that each type of butchery is represented to some extent within phase 6c in the *in situ* material in Trench 7. This is not the case within the dumped material however, with only a small amount of type 3 present (blade marks on upper limb bones, astragalus or pelvis) (see Figure 15.2). This might again suggest a more domestic focus for the dumped material, and a more industrial butchery focus for the *in situ* material, perhaps indicating that butchery was being performed within the forum space in this period. Interestingly, this may link to the other industrial activity possibly identified from this phase in the forum, iron working, as discussed on p. 14. It could be that as the forum lost its role as a prestige space, it becomes utilised for industrial activity. This may also explain the presence of cattle horn cores, as horns were usually collected for horn-working before the cores were disposed of locally for convenience once processed (Dobney, Jaques and Irving 1996, p. 23). This may suggest the industrial activity of cattle horn-working occurring in the same area.

This theme may seem to change however, as the dumped material in phase 6d contains a large number of type 1 and 2 examples, which continues into the phase 12 material. These are split long bones, which are thought to likely be the result of marrow

extraction. While possible that this could be domestic in nature, it is also possible to be industrial, as discussed on p. 52. This may suggest a change in the material deposited at the site over time. As there is no *in situ* material in Trench 7 later than phase 6c it could be that the domestic and industrial waste begins to be dumped in combination, possibly as butchery activity in the immediate vicinity ceases when the site becomes abandoned and so the waste is brought in from elsewhere to be disposed of along with the domestic waste.

Trench 8 exhibits different trends to Trench 7, with the majority of butchery types represented in the dumped deposits rather than the *in situ* deposits (as shown in Figures 15.3 and 15.4). Only phase 6b in the *in situ* assemblage contains any specific butchery, representing the period that sees a shift to domestic activity within the basilica space, and this is limited at 1 example each of types 3 and 7. This suggests that unlike in the forum space, butchery was not undertaken on the site of the basilica. Instead, it seems that butchered animal waste began to be dumped there within the phase 6c-7 period, as this represents the latest phase of activity at the basilica, with eventual collapse at some point in the late 4th to early 5th century. Therefore the waste may have been dumped there once the space was no longer being utilised for any kind of activity.

6.3. Burning/Singing

Possibly further supporting this is the data presented in Figures 17.1 and 17.2, which shows that a higher percentage of singed material was derived from the dumped deposits. This might suggest that more domestic waste was being dumped in larger quantities than primary butchery waste, supporting the *in situ*/dumping division observed throughout this data analysis. The infrequent burning (or calcination) throughout the material indicates cooking, as cooking meat is unlikely to result in much burnt bone but does lead to singed elements (p. 44).

As can be seen in Figures 17.3 and 17.4, the phase with the highest percentage of singed material from either trench is phase 6d in Trench 7, containing exclusively dumped material. In Trench 7, phase 6d represents the latest period of deposition and activity in the late 4th to early 5th century. As mentioned on page p. 24 the contexts from this phase seem

to represent dumps of waste material at the time of the final collapse or demolition of the forum area structures. It is possible that this material may originate with the now domestic activity in the basilica space around this time, with the inhabitants dumping their waste nearby in the abandoned forum space. This is one possible explanation for the seemingly increased amount of domestic waste at the forum site in this period.

6.4. Gnawing and Weathering

The slight difference between the gnawing data of Trenches 7 and 8, as seen on p. 73, can possibly be explained by the weathering data for the assemblage. Indeed, as shown in Figures 19.1-19.4, Trench 8 displays a greater extent of weathering, with 88% of the *in situ* assemblage and 87% of the dumped assemblage displaying little to no weathering, compared to 96% and 93% respectively in Trench 7. This would suggest that a greater amount of the Trench 8 assemblage was exposed to the elements for a more prolonged period of time than that in Trench 7, and so perhaps additionally accessible by scavenging animals for a longer period – both of which may explain why the Trench 8 assemblage was more fragmented. The little difference between the *in situ* and dumped assemblages in both contexts suggests again that the material represented in both cases is related. To gain a better understanding of this, the phase breakdown for the gnawed assemblage will be examined.

Figures 18.1-18.4 show that the vast majority of the gnawed material in both trenches was derived from later phase contexts, for both the *in situ* and dumped assemblages. Indeed, only 7 of the 146 total gnawed fragments were recovered from contexts earlier than the 4th century. The 4th century onwards represents the time of the site's final abandonment, which could perhaps explain the increased presence of scavenging animals, and also the lack of haste to cover deposited waste materials as it is no longer an active, prestigious public site. However, this is not to say that the site was not still active in other ways, and indeed, the basilica space, represented by Trench 8, remained an area of domestic activity possibly up until the late 5th century (phase 6c-7). As this was the latest phase of Romano-British occupation at the site of Caistor, it could be said that the material

in this trench was dumped and left uncovered for an extended period of time from this point as the inhabitants of the town moved on and were no longer utilising the space, a premise also discussed on the previous page. This may explain the increased extent of weathering and gnawing within the Trench 8 assemblage. This is supported by the fact that the majority of the gnawed Trench 8 assemblage comes from the 6c-7 phase (84%).

6.5. Phase 12 and the Topsoil Assemblage

It was concluded from my undergraduate research (Ward 2020), that the surface level material from Caistor was likely of late Roman origin due to a lack of extensive post-medieval activity at the site. This proposes that the phase 12 material within this study likely belongs to prior phases. Indeed, it could be argued that this seems to be the case, as phase 12 shows strong similarity in many aspects to phase 6d in Trench 7 and 6c-7 in Trench 8, the latest phases of deposition in each trench (see Figures 16.1-16.4, 17.3 and 17.4, and 18.1-18.4).

Though there is certainly the possibility that this material was contaminated during Atkinson's excavations and the Medieval stone robbing that occurred, it would seem that overall this was not to a great enough extent to significantly alter the phase 12 results and their similarity to the known late Roman material. This would seem to support the findings of my prior study (Ward 2020), as the surface level material in the forum/basilica space is also likely to be of late Roman origin, and therefore useful to the study of the Roman site. Its similarity to the phase 6d assemblage in Trench 7 and 6c-7 assemblage in Trench 8 perhaps then strengthens the validity of the conclusions drawn from them.

6.6. Summary

A possible timeline for the events at the forum and basilica is presented below, summarising the inferences made from the data (Figures 20.1 and 20.2).

6.6.1. Trench 7 Forum Timeline

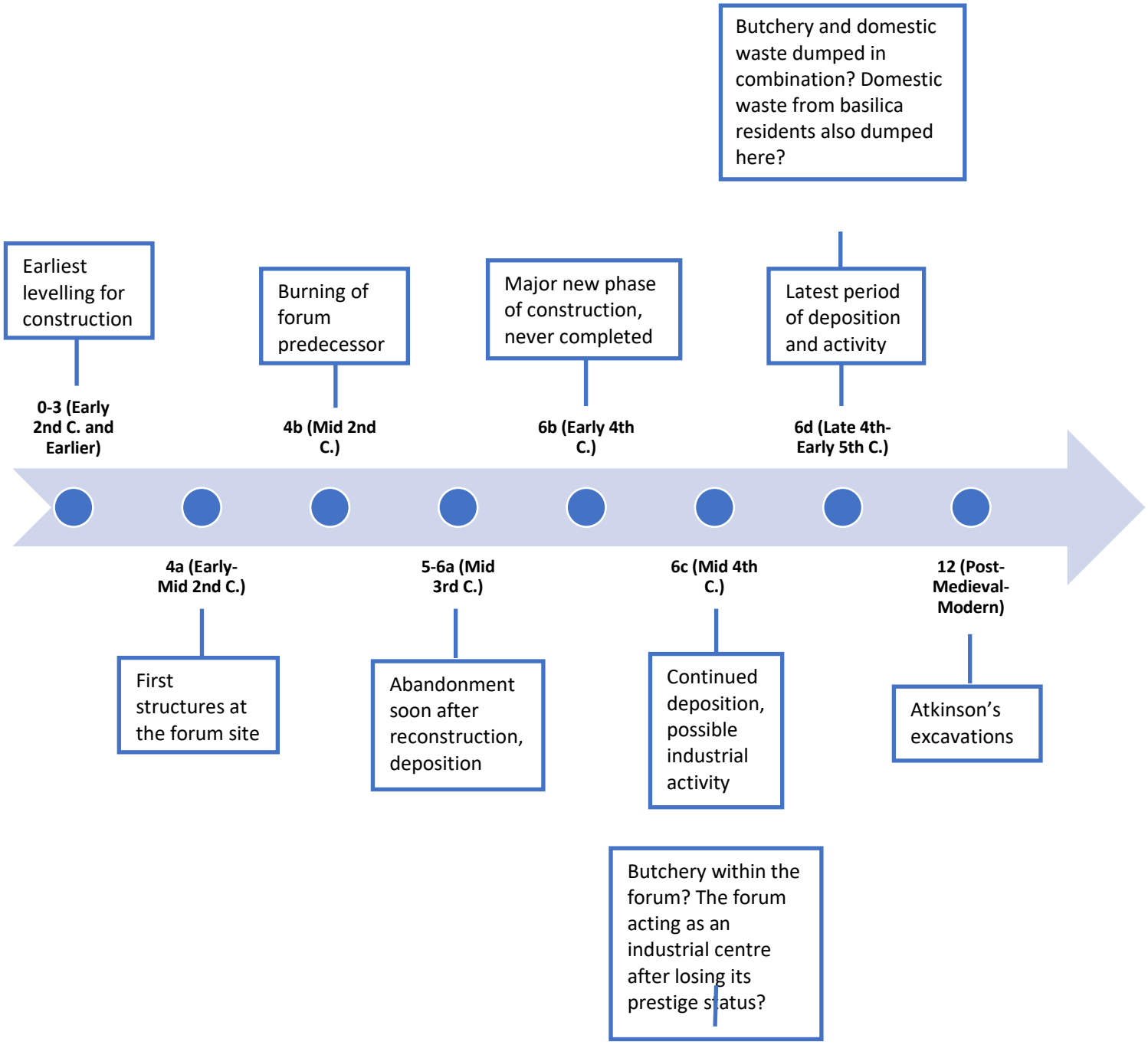


Figure 20.1: Suggested Trench 7 forum timeline.

6.6.2. Trench 8 Timeline

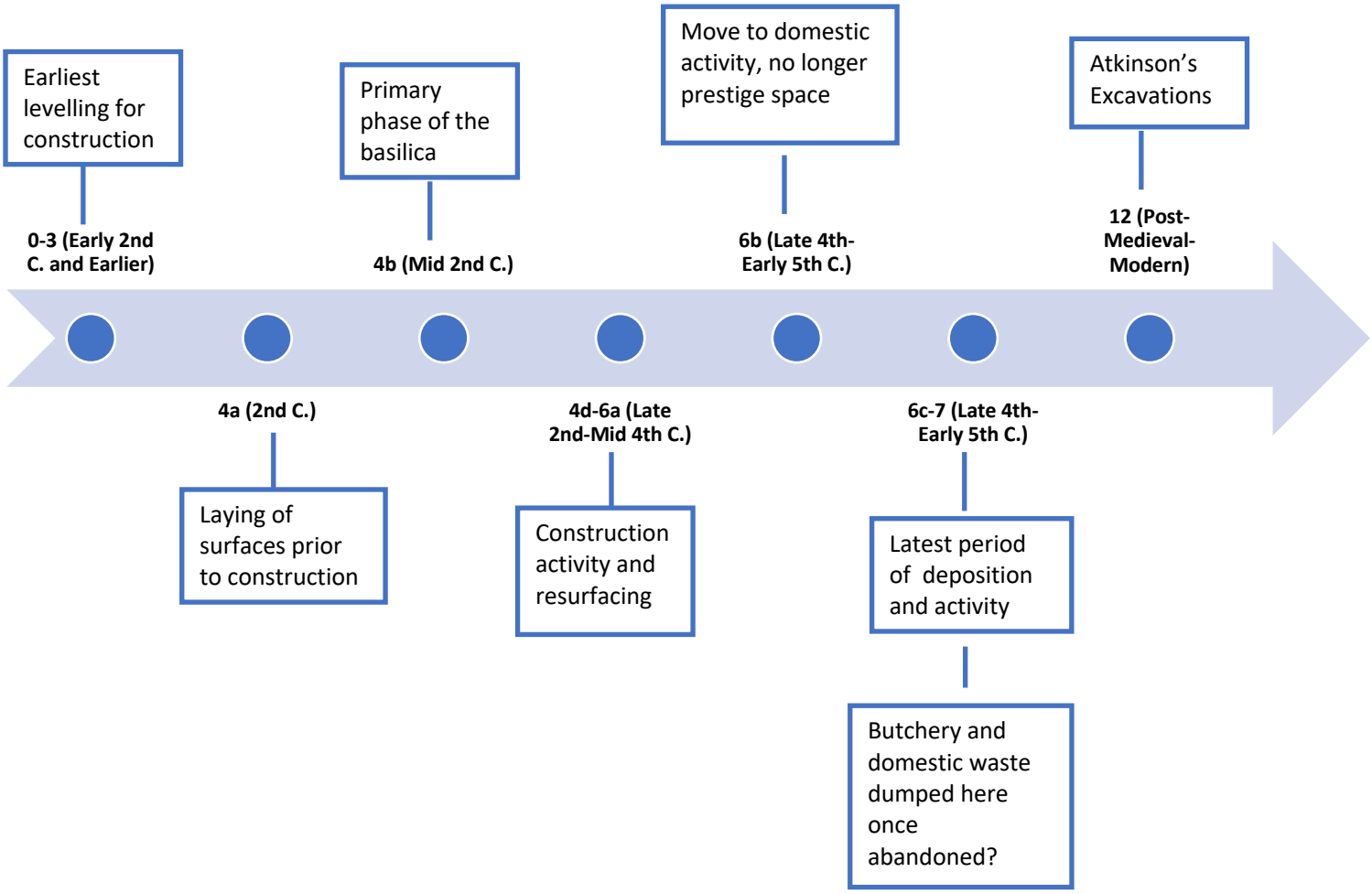


Figure 20.2: Suggested Trench 8 basilica timeline.

6.6.3. Debate

It is important to note that these inferences are based on the assumption that the *in situ* and dumped categorisations are correct. It is possible that this is not the case however, as these findings do not fit the assumptions made about the *in situ* and dumped material in Table 1. Indeed, as can be seen in chapter 2.1, categorising the contexts was not always a simple task, meaning errors were possible. However, it is also possible that the assumptions themselves were incorrect, based on expectations that are not universally accurate.

Indeed, it may be that the *in situ* material doesn't just simply represent activity taking place in the forum/basilica space, as it could also represent material brought inside to be primarily deposited. Although perhaps unlikely to be the case for butchery waste when the space is active, a possible explanation for this could be ritual activity. The presence of a large amount of specific elements may indicate this, and as mentioned prior on p. 63, this is particularly the case for pig mandibles within the *in situ* assemblage, at 32% of the assemblage makeup for that species. Indeed, this may simply indicate pig butchery, with other elements being less present as they are desired for meat consumption. However, pig mandible deposits have been identified at temple sites, such as at Hayling Island, Hampshire (King 2005, p. 339) and Chanctonbury Ring, West Sussex (p. 343), and are assumed to be ritual depositions. This may also explain the slightly higher percentage of burnt/calcined material in the Trench 7 *in situ* assemblage, as they might indicate burnt ritual offerings (Nicolaysen 1994, p. 162), as well as the presence of unbutchered dog and horse remains found amongst the butchered material. Green indicates that the deposition of horse and dog bones may be linked to the notion of the divine hunt, regarded as a metaphor for death and rebirth (Green 1992, p. 65).

Although the forum is not a temple site, it is known that a range of ritual activity of structured deposition, with no particular association with cult buildings, was widespread in Roman Britain, of which is presently best evidenced in nucleated settlements (Fulford 2001, pp. 199-200). The forum courtyard at Silchester was one such location of this activity, with pits containing seemingly ritual deposits, which included animal remains (p. 203). Therefore, it may not be unlikely that the forum at Caistor also experienced ritual depositions. Indeed,

such deposits are known from elsewhere in Caistor, as presented by Holmes (2016, p. 9).

There may also be a link between the metal-working evidence and ritual deposition, as is also suggested to be the case at Silchester by Rogers (2011, p. 147). Rogers indicates that the tiled areas at both ends of the basilica hall, as described by Fulford and Timby (2000, pp. 74-75), may represent a shrine in use at the same time as (and perhaps associated with) the phase of iron working at the site (Rogers 2011, p. 147).

This may explain why assumptions about the assemblage do not represent the actual material, as it could be the case that the assumptions are not comprehensive, rather than the categorisations being incorrect.

6.6.4. Conclusion

The intention of this research, as laid out in chapter 2, was to attempt to answer a number of questions about the Caistor forum-basilica assemblage, with the overall aim of developing our understanding of the town's inhabitants' interaction with the central structure, their use of its space, and how this may have evolved over time from its construction to the town's abandonment. The research was successful, in that it allows me to provide the answers to these questions.

The Trench 7 forum assemblage and the Trench 8 basilica assemblage both seem to represent the consumption waste typical of an urban Roman site in Britain, with consumed animals (cattle, sheep/goat and pig) making up the majority of the material. Trench 7 differs to the Trench 8 basilica assemblage however, in that it seems to represent more butchery waste, with a higher percentage of cattle remains possessing butchery marks, and a larger amount of primary butchery waste elements from sheep/goat and pig. This is particularly within the *in situ* deposits, suggesting the forum space may have been used for butchery. This seems to take place during the phase of industrial activity at the forum, suggesting a change in spatial use at the forum in the mid-4th century, with areas being turned over to industrial practice, which may therefore have included butchery.

The dumped deposits differ in that they likely reflect the dumping of domestic waste during periods of abandonment, with a larger amount of meat bearing elements, many of which are singed (likely from cooking). In contrast, the dumped deposits in Trench 8 reflect more butchery waste, mainly from the late 4th century, indicating butchery moved elsewhere in the town when the forum was abandoned, and the waste disposed of in the now also abandoned basilica. The change in the use of the basilica space was one towards domestic activity rather than industrial, shortly before this abandonment. This change in spatial use is supportive of Bowden's proposed history of the forum-basilica complex, despite not matching my own assumptions about the material. These assumptions do not consider the involvement of butchery in what may have been a new industrial centre in the forum space, nor do they consider any possible ritual connections.

Though perceived to be an aspect of the forum's decline, Rogers suggests that industry within public buildings in the later Roman period could be 'a symbolic representation of the vitality of towns' at this time (Rogers 2011, p. 148), indicating that the town was not decaying in this phase, but still thriving. Ultimately, this research may therefore be useful to our understanding of the forum-basilica space in other Roman towns, as well as the period of transition within the wider town before abandonment.

In order to help further validate, or challenge, the claims made from the Trench 7 and 8 material, it may useful as a future focus of study to also examine the Trench 6 material in the level of detail that was undertaken in this study to see how it compares. Though, as discussed prior, this material was not chosen for the original study due to the likelihood of it being disturbed extensively by Atkinson, it may still prove to be useful if the material demonstrates to not seem much affected by this; if it retains a similar makeup to the Trench 7 assemblage, as both are from the forum space. This may therefore be a productive course of study in broadening our understanding of the Roman site.

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