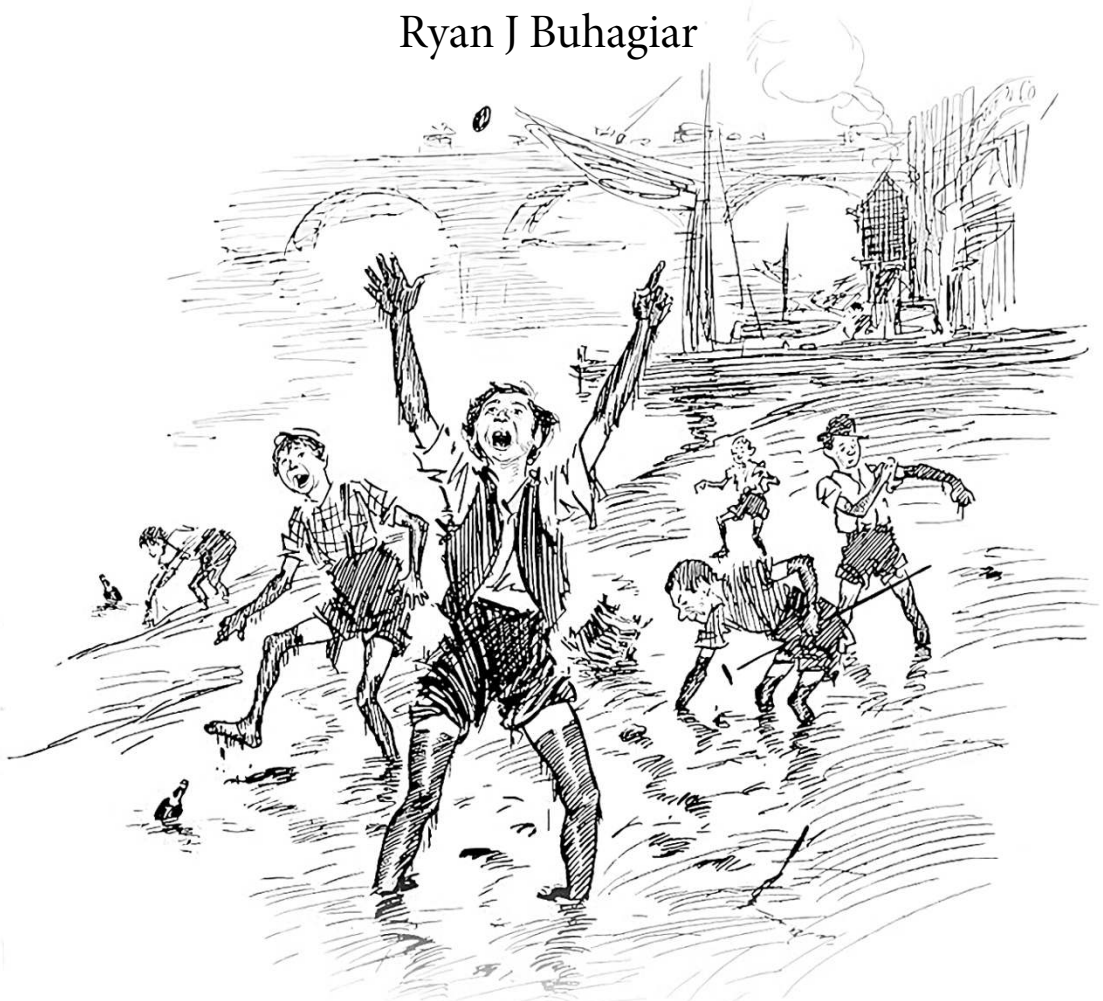
Credibility in the Creek

A STUDY AT STURTBRAE, ADELAIDE, EVALUATING MUDLARKING AS A METHOD IN PUBLIC ARCHAEOLOGY

by

Ryan J Buhagiar



A thesis submitted for the partial fulfilment of the
Master of Archaeology and Heritage Management

at the

College of Humanities, Arts and Social Sciences,
Flinders University

July 2022

Cover image: 'Mudlarks' (1896), in the public domain, from Phil May's *Guttersnipes: 50 Original Sketches in Pen & Ink*. London: Leadenhall Press.

Contents

Abstract

Mudlarking, an activity most often carried out by 'amateur archaeologists' and artefact collectors, involves the collection of cultural material from both tidal and intermittent waterways—environments where dynamic natural and cultural forces first act to displace, disperse and conceal objects, then ultimately make them visible again and fortuitously available to the mudlark. This thesis aims to assess the archaeological value of historical archaeological material collected from a Warri Parri/Sturt River tributary running through the 180-year-old Sturtbrae property in Adelaide's southern suburbs. In doing so, it compares artefacts collected using mudlarking methods to those collected using common, costly and destructive archaeological excavation methods from similar historic homesteads in South Australia, New South Wales, Queensland and Victoria.

The thesis aims to elevate what Carman and Sørenson (2009:20) label the 'distinctive trope of publication in the field', an individual case study, into a critical discussion of historical archaeology and the potential therein to better involve members of the non-professional community. With mudlarking at Sturtbrae resulting in the retrieval of artefacts that corroborate and complement the available historical documentary record, this thesis reflects upon ways that historical archaeology can better engage communities, looking toward discourse on public archaeology to maximise a community's contribution and connection to the discipline. It recognises that community heritage is neither static nor neutral. Instead, it is fluid and political, and can be revised and reconstructed whenever communities are provided power. Through programs like the UK Portable Antiquities Scheme, mudlarking can act as 'citizen archaeology' through which non-professionals can collect artefacts already removed from original depositional contexts and at risk of being lost entirely. These people, then, can contribute to archaeological datasets and to making more inclusive historical and archaeological narratives of the past.

Declaration

I certify that this thesis does not include without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge it does not contain any material previously published or written by another person except where due reference is made.

Ryan J Buhagiar
22 July 2022

Acknowledgements

Sturtbrae Kaurna yartangka yuwanthi. Sturtbrae stands on Kaurna land. I acknowledge the Kaurna people as the Traditional Owners of Tarntanya (Adelaide) and Warri Parri (the Sturt River) where this research is focused and conducted, and pay my respects to Kaurna Elders past and present. *Ngai yarta-nungku yaku, ngai kunturrkinthi taakanthi ngaityu wardli. Ngai pudlunthi naa-itya, ngai wangkanthi warra Kaurna meyurna, miipudlunthi ngaityu kuinyuntapinthi.* While I am not originally from this Country, I am proud to call it my home and I say so in the language of the Kaurna people as a mark of my respect.

This thesis pays tribute to the memory of the City of Mitcham Council's community historian, Maggy Ragless, and Queensland archaeologist, Linda Terry, both who dedicated their final years to the study and sharing of history, heritage and humanity in often overlooked places. Their work has proven invaluable to my research, and the City of Mitcham's Maggy Ragless Memorial Grant has provided financial support toward its completion and subsequent public dissemination.

For their guidance during various stages of this thesis: my supervisor, Professor Heather Burke, for consistently pushing for more (critical analysis) using less (words); Jack Kanya Buckskin for recommending Kaurna *warra* (language); Chantal Wight for suggesting conservation and photography methods; Dr Diana Fusco and Associate Professor Trevor Worthy for making sense of some baffling bones; and Tash Lowe for getting muddy with me.

I thank my parents and the rest of my family in Melbourne for their quiet faith in all I do; my friends there, especially Irene and Jemma; Adrian, for keeping Sturtbrae in good nick and for letting me explore it; my favourite housemates at Sturtbrae; and finally, my partner, Daniel, for his enduring support—more valuable than any mudlark's prize—through it all.

List of Figures

List of Tables

List of Appendices

Chapter 1:

Introduction

In Australia, there may be truth behind Smith and Waterton's (2009:11) assertion that the 'yoking together of community and heritage has been far less effective than … hoped'. Despite the efforts of archaeologists and heritage professionals, Australia's heritage laws, policies and selection criteria are considered contradictory by professionals and overwhelmingly complex and exclusionary by the wider community (see Petrie 2005). To some, like Wallis (2020:288), gone are the days when archaeologists like the late John Mulvaney emphasised meaningful engagement with the public, seeing and securing archaeological work in its wider social context (Golson 1986:11). The academic and grey literature made and embraced by heritage practitioners remains particularly exclusive, with access generally requiring a subscription to academic databases, paid membership in archaeological or historical societies and a thorough understanding of the often esoteric language used by archaeologists (Gibbs and Colley 2012:95; Little 2002:15). Without legislative frameworks or economic incentive to engage the public, many archaeologists are left 'without a public' (Steele et al. 2007:77; see also De Leiuen and Arthure 2016), a predicament made worse by shifts in archaeology fuelled by debate on 'the relationship between the public, the past, and archaeological practice' (Grima 2016:50).

Further indicting the sector's public outreach is that it is not only children who mistake archaeology for palaeontology (see Owen and Steele 2005:66), but even educated adults, many of whom subscribe to pseudoarchaeology and archaeology as 'treasure hunting' (Balme and Wilson 2004; Campbell 2016:185–186; Gately and Benjamin 2018). In 2005, archaeology undergraduates at a Sydney university—some of whom are presumably now professionals working in the field—admitted that palaeontology and classical archaeology inspired their studies, barely acknowledging the archaeology of Indigenous Australia and entirely neglecting Australian historical archaeology (Colley 2005). Even twelve years later, Ancient Greece, Rome and Egypt were still the nominated motivation behind tertiary study in archaeology in NSW (Zarmati 2017:8). This is despite a recognised history of historical archaeology in Australia dating back to the 1960s (see Connah 1993; Ireland 2002; Jack 1996; Murray and Allen 1986). That the issue persists is testament to the necessity of exploring alternative methods for 'doing' historical archaeology in ways that better inform and involve the wider community.

The question of 'why?' dogs historical archaeologists. 'What is the point, many people ask, in conducting archaeological inquiries when there are such huge quantities of historical records?' queries Graham Connah (1993:3). He and others (e.g. Russell 2016) provide some justification, noting the limits of records that tell of things being done, but not how, and of a documentary record written by and for social elites—usually wealthy white men. A crucial aim of historical archaeology in the post-processual era, then, is to pair diverse sources of information with material culture to move beyond reproducing what Lawrence and Davies (2011:177) call 'historical orthodoxies' and 'explore the omissions and contradictions of the historical record' (Russell 2016:53–54). Doing so can shift the emphasis in our understandings of the past, 'allow[ing] us the "inside" view denied us by historical accounts' (Karskens and MacKay 1999:111; Schrire 1995). But for historical archaeology 'to survive in a democracy' and remain relevant to the multicultural and multivocal communities Australia comprises, Richard Mackay and Grace Karskens (1999:112) assert that it 'must gain public support'.

'Public archaeology', or an archaeological theory and praxis designed with communities as participants and often primary stakeholders, has been proposed as a solution. Emerging in the 1970s from postmodern and post-processual inquiry in the UK and US, it has since converged and grown both in scale and significance, becoming what Richardson and Almansa-Sánchez (2015:195–196) call a 'socially responsible, reflexive and self-aware archaeology'. Although difficult to define,

public archaeology aims to do more than treat the nonprofessional public as a passive audience. It recognises that archaeology is, by its very nature, rooted in place, necessitating exploration of the relationships between archaeological material, heritage professionals and communities. In practice, it generally involves interaction at various stages of everyday archaeological practice: from initial survey to excavation and from artefact collection and cataloguing to site interpretation (Gould 2016:6; Guttormsen and Hedeager 2015; Perry 2018). Practitioners of public archaeology assert that these methods provide archaeologists with the 'opportunity to effectively practice public engagement and to have a meaningful dialog about how to preserve the archaeological record' (Miller 2020:162).

According to Almansa Sánchez (2016:146), public archaeology is also a 'critical theory of archaeology' through which the discipline is open to transformation, where 'imagination is the limit'. With Richardson, Almansa Sánchez (2015:202) also noted that it is 'not only a matter of working with communities or providing educational opportunities… It is about the management and construction of knowledge and the concept of heritage'. This links with Laurajane Smith's (2006; 2012) conceptualisation of the 'Authorized Heritage Discourse' (AHD), or the dominant and officially sanctioned discourse surrounding heritage. The AHD defines how 'heritage' is selectively deployed and managed by the dominant social, religious, political or ethnic groups in society to reinforce their position and, in turn, how it is experienced by the community. To wrest authority away from professionals and provide communities with the power to contribute to the historical or archaeological narratives with which they are associated, then, public archaeology allows the discipline to become more democratic and inclusive, providing opportunities for the nonprofessional community to actively contribute to archaeological practice and for the integration of otherwise inconspicuous narratives and perspectives of the past.

There are other advantages to civic engagement, not least gaining an 'active, informed public supportive of archaeology' and 'an invaluable source of political, volunteer and economic backing' (McManamon 2002:40). Those involved may also redeem several social and psychological benefits, including an improved sense of community, place and identity, as well as demonstrable boosts to mental health, self-esteem and overall wellbeing (Bennett 2022; Dobat et al. 2022; Parry 2019; Sayer 2015).

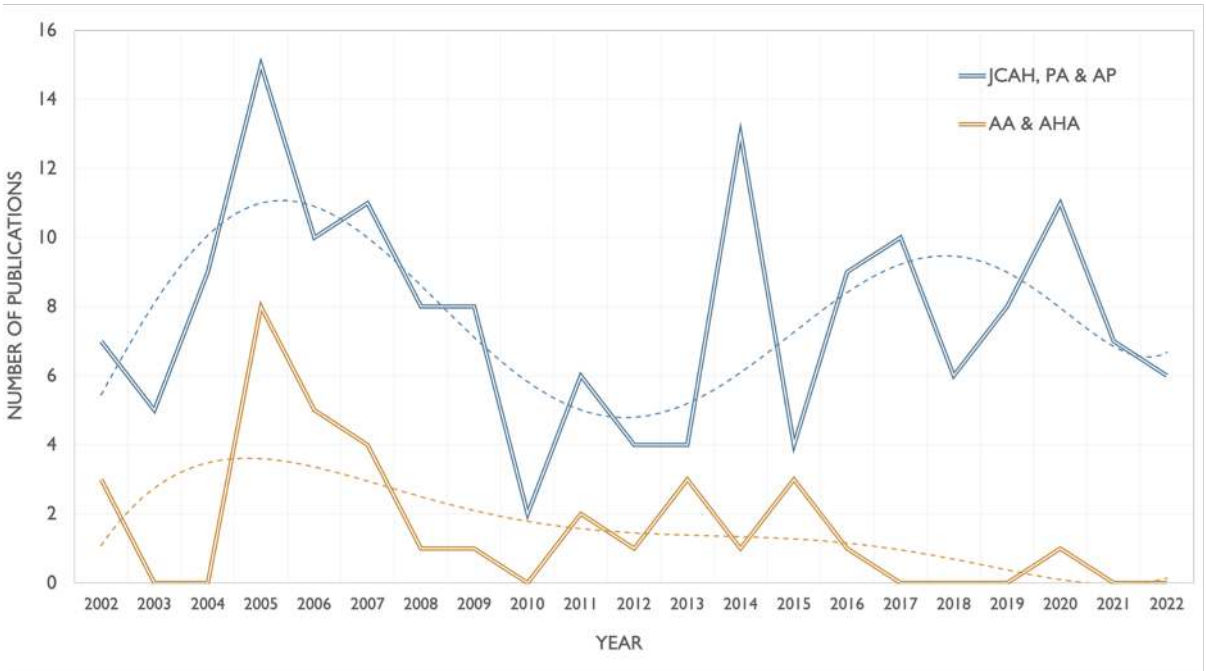


Figure 1.1: The frequency by year of "Australia" appearing in the *Journal of Community Archaeology and Heritage* (JCAH), *Public Archaeology* (PA) and *AP Arqueología Pública* (orange), and of "public archaeology" in *Australian Archaeology* (AA) and *Australasian Historical Archaeology* (AHA) (blue).

'Public archaeology' features less prominently in Australian archaeological literature than elsewhere, with Australian archaeologists appearing more hesitant to involve the wider community in their projects, potentially inhibited by costs, concerns about the integrity of artefacts and the retention of archaeological value (Brooks et al. 2009:37) or even a fear of criticism (Barkman-Astles 2019:180). Surveying peak Australian academic journals—*Australian Archaeology* and *Australasian Historical Archaeology*—as well as popular international journals centred on public archaeology—the *Journal of Community Archaeology and Heritage*, *Public Archaeology* and *AP Arqueología Pública*—suggests interest in public archaeology in Australia peaked in 2005, then flatlined and heightened between 2014 and 2020 before waning once more. Only 15 references to "Australia" were recorded among the hundreds of abstracts published since 2002. Figure 1.1 shows that of 163 papers to reference the country in any search field since 2002, 24 were published in the last two years, but in the two local archaeological journals, the phrase "public archaeology" was included only once in the same period.

'Community archaeology' is a term better acknowledged in Australia but tends to be confined to the practices and methods through which Indigenous communities work with non-Indigenous archaeologists while retaining authority over projects and traditional knowledge (Greer et al. 2002; Pollard et al. 2020; Smith et al. 2018a:16). There is often conflation between the terms, but Aboriginal archaeologists engaged in 'community archaeology' nonetheless see merit in 'public archaeology'. Julie Ah Quee (in Pollard et al. 2020:34), for example, describes public archaeology as 'open[ing] up a project to all interested stakeholders, community groups and people across the whole spectrum of a community', in line with practitioners who define it as 'archaeology by the people, for the people and about the people' (Reid 2008:21), where 'community' means more than just the archaeological community, but any group of people with 'shared interests, a shared social system or network and a shared locale' (Agbe-Davies 2010:379).

Among many to encourage the marrying of historical and public archaeologies, Barbara Little (2007:22) notes that 'historical archaeology's goals should always reach beyond professional research goals towards the needs of the many participants and publics who use and value it', recognising that 'there is no single public and no single past'. With that, this thesis proposes public archaeology methodologies for Australian historical archaeology, focussing on the methods of a particular group of people already actively engaged with history, cultural heritage and archaeology: the artefact collectors with whom archaeology has had a notably fraught relationship. It concentrates on mudlarks, the people who search for cultural material in the shallow sediments of waterways associated with historical activity, most commonly but not exclusively the tidal Thames. Although their non-invasive, non-destructive methods can be considered a muddier counterpart to the professional's field survey and grab sampling, some archaeologists are reluctant to appraise mudlarked artefacts, by their nature displaced from any original depositional context (cf. Barford 2020). Others, like Talmage and Chesler (1977:2), advise that 'for archaeology to explore the full dimensions of past human experience, we must develop and nurture the clear vision to see our data wherever they exist'. British heritage institutions, like the Portable Antiquities Scheme, adhere to such an ethos, and by regulating mudlarking allow the participation of the interested, non-professional public in contributing to a shared understanding of the past.

Focusing on the historic, once semi-rural and now suburban Sturtbrae property occupied since 1848, this research aims to explore the extent to which mudlarking can prove an effective method in public archaeological practice—effective not only in the sense that it reveals new insight about

the historical past, but also in that it can lend itself to better, broader community engagement with archaeology. This thesis examines the following research questions:

1. Considering post-depositional site formation and taphonomic processes, how effectively and accurately can mudlarked material be used to understand and interpret a site and its history?
2. To what extent does mudlarked material correspond with available documentary evidence that already affords us a particular historical narrative? Does it further that narrative, reveal more information or challenge it?
3. Do some categories of mudlarked material demonstrate more interpretative potential than others?

If mudlarking is to be considered an effective tool in public archaeology, its results should ideally conform to those of other archaeological projects and assemblages from similar colonial, semi-rural sites (e.g. Allison 2003, 2014; Allison and Cremin 2006; Allison and Esposito 2020; Brooks et al. 2009; Brooks et al. 2011; Colley 2006; Hayes 2007; Murray et al. 2019; Prossor et al. 2012; Smith 2001a; Terry 2013; Terry and Prangnell 2009; Weaver 2003).

Overall, this thesis recognises its responsibility—that it is archaeologists who 'stand at the threshold between the present and the past, privileged to explore and interpret the physical remains of so many things lost, abandoned and forgotten, as the basis for re-imagining past individuals, families and communities' according to (Lawrence and Davies 2011:15). Examining objects 'lost, abandoned and forgotten' at Sturtbrae, this becomes a study of place, process and potentially new ways of doing historical archaeology in Australia. It may actualise archaeologists' need for public support, building a 'capacity to persuade others of its relevance, as well as capacity to do quality archaeology' (Murray 2002:11). At a time when cultural heritage institutions face increased political pressure and decreased funding (Wallis 2020), it is fortunate there is local community interest in projects like this, with the City of Mitcham financially supporting this thesis and with a survey in the adjacent City of Marion recording support for the conservation of community cultural heritage, volunteers for involvement in heritage projects and even advocacy for future archaeological intervention in the area (Arthure 2012:33–34).

Chapter Outline

Responding to the above research questions requires inductive rather than deductive reasoning (Bairstow 1984:3), the synthesis of literature within and outside the archaeological discipline and the inclusion of perspectives from European, North American and Australian historical archaeology, as well as an understanding of history as a documentary record, taphonomy and aspects of geomorphology. The literature review is therefore in two parts (Chapters 2 and 3).

Chapter 2

Chapter 2 introduces mudlarking, its origin in the tidal Thames and its revival today as a hobby among 'amateur archaeologists' exploring riverbeds, streams and other waterways worldwide. This chapter evaluates how artefacts collected by the mudlark can contribute to our understanding of the past despite their disturbed nature. This chapter considers mudlarking as part of a diverse and growing area of practice in public archaeology, which, although relatively novel in Australia, remains elsewhere an experimental and evolving area of archaeological research aiming to encourage more diverse audiences to engage with archaeology as 'citizen scientists', recording and retrieving objects for study from already disturbed contexts (Griffiths et al. 2015; Rivera-Collazo et al. 2020).

Chapter 3

This introduces the site under study, one of Adelaide's and the City of Mitcham's oldest surviving homesteads, now at least 170 years old: Sturtbrae. Outlined here is the property's history from Indigenous Kaurna land to a pastoral property on the periphery of South Australia's growing capital city, and then to a residential, suburban property no less alluring to the archaeologist. Tying together both literature review chapters, this chapter notes the geomorphological and taphonomic processes that rework, relocate and reveal an array of artefacts along the property's waterway. This chapter underscores the significance of the project, since Sturtbrae is the poorly studied peer of other historic pastoral sites that have sustained archaeological research, barely mentioned even in archaeological studies of its general vicinity (see Piddock et al. 2005). Considering Sturtbrae and these other sites as households is key because, according to Wilk and Rathje (1982:618), households provide 'the most common social component of subsistence, the smallest and most abundant activity group' which makes them 'one of the most fundamental units of archaeological analysis' (Lawrence 1999:121).

Chapter 4

Detailed here are the materials and methods used in the study, discussing how mudlarking practices introduced in Chapter 2 have been adapted for use at Sturtbrae. Although based on various guidelines, these methods are in practice largely experimental. This chapter also outlines the analyses used to understand the mudlarked assemblage, primarily based on comparative historical archaeology and zooarchaeology and tying together analyses of artefact material types with the historical documentary record.

Chapter 5

An overview of the results, outlined in this chapter are the artefacts found in the course of mudlarking at Sturtbrae, with significant finds provided due detail.

Chapter 6

This chapter discusses the project's results, relating the artefacts collected to assemblages from comparative historical archaeological sites and retrieved through more traditional archaeological methods. What does the assemblage tell us about Sturtbrae? What does the assemblage tell us about mudlarking as a method?

Conclusion

The final section is both summary and conclusion, acknowledging the effectiveness of mudlarking at Sturtbrae and providing recommendations for mudlarking as a fruitful future exercise in public archaeology along Adelaide's waterways and others like it.

Chapter 2:

Together in the Thames

As the River Thames retreats twice each day, people flock to its intertidal zones, doing as others have done over the last several centuries. They comb through muddy stretches of exposed riverbank on either side of the river, around its bridges, wharves and public monuments. They sift through the 'debris of ages past for treasures' (Crampton 2019:iv), hoping to chance upon medieval badges and figurines, Roman jewellery and weapons and Neolithic stone tools, but more often finding pottery sherds, clay pipe stems, coins, pins, thimbles, buttons and animal bones (Paschke 2012). These people are London's 'mudlarks', today usually hobbyists, history buffs and amateur archaeologists, sometimes guided by professional counterparts, but usually working alone. While other detectorists and treasure-hunters tend toward more commercial motives and destructive methods, the mudlark has a more careful approach and appreciation of archaeology, history and heritage (Sandling 2016). Before applying their practices as a research method at Sturtbrae, mudlarks and their context must first be properly examined. This chapter looks at the tidal Thames and its mudlarks to establish a framework within which to understand the principles and practices of mudlarking, as well as its connection to professional archaeology and the contributions it can make to greater understanding.

The mudlark

The history of London, as with many cities, is intimately linked to and indeed reliant on its resident river, the Thames. The city was founded upon its banks and Londoners relied upon its water first for transport, recreation, food and waste disposal, and later for international trade and communication (Hardy 1984:250–251). England's longest, most significant river and the second-longest in the United Kingdom, the Thames is 346 km long, with its Tideway intertidal zone making up the final and most populous 95 km stretch from Teddington Lock toward the North Sea. One of the most variable rivers in Europe, the Thames is less than half a metre high at its lowest tide, some 4.6–6.7 metres below high tide, at which point it becomes London's largest open-air archaeological site (Bailey et al. 2020:193; Maiklem 2020:3).

According to the advocate and journalist Henry Mayhew (1851), the original mudlarks were scavengers from the poorest districts east and south of London: often boys aged between six and twelve, either orphaned or neglected; older, jobless women raising families alone; or others equally desperate or impoverished (Green 1985:118). They were considered among the 'most deplorable' of the 'poor creatures' who eked a living from the muddy waters of the tidal Thames, second to the 'sewer hunters' and 'dredgermen'—the former risking disease, drowning and attack by rodents in their search for scrap metal and fallen coins, and the latter who netted refuse but were known, on occasion, to rob the dead whose bodies drifted down the river (Mayhew 1865b:165–166).

Whether in the Thames or rifling through mud elsewhere, today's mudlarks are more likely to be hobbyists than helpless and more likely to hunt for historical and archaeological artefacts than the coal, rope and scrap metal that interested their forebears. The Thames remains the most popular find-spot, but some mudlark the mudflats of other rivers across the United Kingdom, like Scotland's River Forth and those in continental Europe and the Americas. As Ruig (1997:68) observed of all collectors, their methods and strategies resemble those of archaeologists: including 'preliminary research, predictive modelling, identification of potential sites, site reconnaissance, survey, test excavation, full excavation, interpretation and dating of the cultural materials found'. Mudlarks re-enact the grab sampling of professional archaeologists (see Peregrine 2019:3), looking for objects embedded in rivers and their tributary creeks and streams, where tides and water flow expose, to some degree, the remnants of nearby sites known to have once supported communities, individuals or cultural activities.

While mudlarking appears less popular in Australia than elsewhere, it is not unknown. ABC News reported on one NSW mudlark, Graham Boyd, and his many shelves of nineteenth century bottles and clay pipes found in the Wallamba River, where they were thrown from farmhouses, mills and wharves that once entertained paddle steamer traffic (Siossian 2020). A community of mudlarks like Boyd exists on social media platforms like Instagram, Reddit and YouTube—a testimony to mudlarking's persistent popularity. Popular accounts on YouTube have tens of thousands of subscribers each and their videos receive hundreds of thousands of views—see, for example, *Northern Mudlarks*, Nicola White, *Si-Finds* and *The Aussie Mudlark*. On Instagram, people share their finds, often 'tagging' other mudlarks and relevant authorities to whom archaeological artefacts will be shown (Figure 2.1). While many, like Boyd, manage their finds in private collections, others pass their finds onto historical societies, archaeology advisory services and heritage institutions for use as educational tools (Downes and Griffiths 2016:4).

Figure 2.1: Posts from some of Instagram's mudlarks (from left to right) @emilyfrancesbarrett, @gypsy_by_the_beach and @mudlark_ldn. (Screenshots by the author: 14/12/2021)

Modern mudlarking in the UK owes its revision to a shift in British archaeology and cultural heritage laws since the 1970s. The beginning of this decade saw British archaeology face a conundrum to which the mudlark has since been inexplicably tied: metal detectorists. While the technology brought new potential to discover previously unknown archaeological sites and cultural material (Becker 2009:33–34), archaeologists' concerns of damage and exploitation by amateur collectors were quickly realised. By the early 1980s, metal detectors were more affordable, and the hobby reached its peak, with more than 300,000 detectorists taking to the fields, rivers and beaches of England and Wales in search of gold, silver and other metallic artefacts, digging up and destroying archaeological sites, with some sites visited by 30 to 40 detectorists in a single night

(Thomas 2009:155). The centuries-old common law, Treasure Trove, proved ineffective in protecting national heritage against detectorists '[taking] their machines anywhere they chose … and keep[ing] what they found' (Bland 2005:259). The law only protected material considered Crown property: gold and silver objects deliberately buried for later recovery. After reporting their finds to coroners and then museums for acquisition, responsible detectorists would be compensated at full market value (Bland 2004:273). Others found the international antiquities market more lucrative. In their pursuit of coin hoards to sell, 'nighthawks' typically lay waste to other objects of antiquarian, archaeological or historical significance not protected by Treasure Trove (Figure 2.2).

Figure removed due to copyright restriction

Despite initial attempts at cooperation (Green and Gregory 1978:161), having some 6% of their 1980–1995 excavations raided by detectorists compelled British archaeologists to campaign to restrict or ban the use of metal detectors (Oxford Archaeology 2009:16; Thomas 2011:43). In response, detectorists asserted their claim to British history, one allegedly denied to them by their 'enemy'—the exclusionary professional archaeologists acting as 'closed-shop professionals, card-carriers and guild-members' (Fletcher 1996:35). Archaeologists in turn condemned detectorists for their 'desire to possess objects' (Elia 1997:97). For archaeologists involved in the Stop Taking Out Past (STOP) campaign, collecting led to the 'transferal of ownership of objects representing a collective human past to a single person', and so artefact collectors were disparaged for having 'no

obligation to share the objects with other stakeholders and, worse, the right to sell them for profit' (Pitblado 2014:386). The eventual government response was to first protect sites of significant cultural value, with the *Ancient Monuments Act 1979* (UK) criminalising the search for and collection of artefacts near 'scheduled ancient monuments' including, for example, the Tower of London, Stonehenge and remnant sections of the London Wall.

After almost two decades of dispute and deliberation, the introduction of the *Treasure Act 1996* (UK) and Portable Antiquities Scheme (PAS) in England, Wales and Northern Ireland[1] effectively brokered an accord between professional archaeologists and amateur artefact collectors while protecting the nation's heritage. Coming into effect in 1997, the Treasure Act greatly expanded the scope of Treasure Trove, requiring the reporting within 14 days of objects at least 300 years old with >10% precious metal content, or any prehistoric base-metal objects. Failure to act otherwise results in a £5,000 fine or up to three months' imprisonment. Museum staff, coroners and archaeologists acting as finds liaison officers (FLO) record and assess objects, after which they may be returned to the finder or acquired by a museum with compensation paid to both the finder and landowner (Bland 2005:261–262). The PAS complements the Treasure Act by encouraging the voluntary reporting of all objects, not just those considered treasure. The PAS Database (PASD) is integral to the scheme, allowing any artefact finder, once registered, to record the details of their find, in turn working 'to arrest the loss of contextual information upon the collection of artefacts not considered treasure' that may nonetheless possess historical significance or archaeological information (Fincham 2008:356–357).

While some question the extent to which the reforms have impeded the illegal trade in British antiquities (see Barford 2020; Gill 2010; Wilson and Harrison 2013), there appears to be consensus that the PAS has been successful in minimising damage to the historic environment (Bland 2013:70–71; Grove 2013:253–254), and in stimulating discussion and appreciation of history and heritage among people of 'all ages and from all backgrounds, especially those who have, traditionally, felt excluded from the heritage sector' (Paynton 2008:203). Recently, although isolating people from one another, COVID-19 has attracted many toward artefact collecting in the UK, with the PAS reporting a surge in records by fieldwalkers, gardeners and mudlarks compared to previous years (Lewis 2021).

[1] The *Treasure Act 1996* (UK) applies across England, Wales and Northern Ireland. Scotland, where metal detectorists are less prolific and destructive, still relies upon Treasure Trove common law (Saville 2002).

It should be noted that, while the PAS refers to artefact collectors in the broadest sense, the mudlark ought to be considered in isolation, since their finds rarely derive from undisturbed archaeological contexts. Due to the geomorphological processes defining waterways, the artefacts retrieved by mudlarks are almost always found removed from original depositional contexts. These finds nonetheless retain potential to contribute to an understanding of the past, with several studies pointing toward the research viability of artefacts collected from disturbed contexts or lacking any recorded provenance (see, for example, Roper 1976:374; Schacht 2008:139). On this topic, the renowned classical archaeologist, John Boardman (2012:113), is blunt: 'to claim that an object without context is worthless is pure nonsense'. Talmage et al. (1977:2) agree, declaring it 'unacceptable to decide… that small, surface, or disturbed sites should be given little or no consideration'. Putting their shared notion into practice are archaeological projects on modern rubbish dumps and landfill sites where material from multiple contexts, sites and dates mingle (Rathje 1984; 2002; Rathje and Murphy 1992).

Mudlarking likewise deserves distance from other, more destructive methods of artefact collection despite commentary to the contrary (see, for example, Barford 2020). By avoiding active excavations and significant archaeological sites, mudlarks set themselves apart from the British nighthawk[2] (Thomas 2013), American pothunter (Armour 1969), Italian *tombarolo* ('tomb robber') (Rose-Greenland 2014:571), Peruvian *huaquero* ('artefact looter') (Bankes 1995), Australian bottle hunter (Wade 1985) and other 'treasure hunters' removing artefacts from in situ contexts to sell locally or on the antiquities market (Altaweel 2021; Elia 1997:88–91). Of these 'archaeological vandals' (Wildesen 1982:51), the US pothunter is perhaps most egregious, picking apart Native American sites for vessels, points and other artefacts for sale (Nickerson 1963:556), sometimes bulldozing entire sites and desecrating human remains in their search for funerary objects (Mihesuah 1996:233; Pitblado 2014:387).

Collectors in Australia once acted similarly. In reviewing the impact of the historical theft of stone artefacts from archaeological sites in Victoria, Lever (2016:48), estimates the removal of millions of artefacts from their original contexts—a colossal figure corroborated by recollections of 'tonnes' and 'truckloads' of Aboriginal cultural material being collected per excavation, entirely denuding some sites and drastically distorting others (Mulvaney 1990:149–150). A preference toward rare, unfamiliar or large artefacts, like grinding stones and axes, has also degraded what can be interpreted today. The loss of grinding stones deprives archaeologists and Aboriginal communities

[2] Detectorists and fieldwalkers who raid recently found archaeological sites at night

some of the strongest suggestions for seasonal or semi-permanent camps and women's labour (Lever 2016:49; Pardoe et al. 2019). However, by virtue of their preoccupation with the suite of objects revealed and dispersed by the flow of water and usually bound by rules to dig no deeper than 7.5 cm, the British mudlark is decidedly less invasive and destructive than the metal detectorists the PAS was intended to regulate.

The collection of artefacts by mudlarks therefore need not be the full-blown 'ethical crisis' that some suspect (Renfrew 2000:9). Confronted with the damage, disturbance and deterioration that inevitably affects all but the most protected sites, Pitblado suggests that professional archaeologists' mission to conserve archaeological material means they have an 'ethical imperative' to reach out to well-meaning, ethical and responsible artefact collectors, whom Pitblado (2014:396) considers 'an archaeologist's allies'. Others in the field echo this assertion, some seeing amateur collectors as an opportunity for the profession to better engage the public than simply 'ticking a few boxes' through public relations and adding a few interpretative signs to sites (Smith and Waterton 2009:11–12). Some even claim that not engaging such groups is to commit 'an ethical breach' in archaeology (Gould 2016:7), and that the future of archaeology 'must factor in the potential for archaeological work—broadly defined—to be undertaken by non-archaeologists, without archaeological supervision' (Holtorf 2015:217–218).

The PAS in practice

By bridging the divide between public and professional, the PAS offers mutual benefits to both the artefact finder and the heritage professional. The efforts of the former are acknowledged, recorded and occasionally rewarded, while time- and resource-poor archaeologists have others locate, provide and appropriately record cultural material for study, as well as share their knowledge of local sites and history (Paynton 2008:204). A framework like the PAS is also said to encourage 'prosocial collecting behaviours' (Polites 2022:16), where the motivation to collect archaeological material can be corralled into ways that benefit research, public institutions and society at large. Such a scheme may have support in Australia, where a survey of heritage professionals—including consultant archaeologists, academics, government employees, traditional owners and others—found broad support for the recording of all archaeological material regardless of significance, with detractors concerned about practicality and the availability of resources, apparently unaware of the PAS and its successes in the UK (Beckett and McDermott 2016:73–74). Moreover, the PASD

provides a snapshot of historical activity patterns and modern factors involved in artefact collection (Robbins 2013:69). PASD reports have led to the identification of new archaeological sites and contribute to an ever-expanding artefact catalogue available to researchers, professionals and the public (Fincham 2008:358). Within five years of the introduction of the PAS, artefact reporting increased by an average of 180% across England and Wales (Burnett and Webley 2020:229), and at the moment of writing, there are 1,596,466 objects within 1,028,600 records, the data supporting 879 completed and continuing research projects.

The PAS lays the foundation for the responsible mudlark, providing a framework and set of rules through which those interested in history and heritage can find cultural material in ethical, responsible cooperation with authorities, landowners and specialists in heritage, archaeology or collections. In the UK, any collector must first obtain permission prior to searching for objects on private property or in public spaces. Mudlarking from Teddington to the Thames Barrier, for example, requires a permit from the Port of London Authority (PLA), the body in charge of all activities along the Tidal Thames. In return, mudlarks must abide by conditions specific to the river. They must not dig or scrape deeper than 7.5 cm, must not enter the foreshore near 'scheduled ancient monuments' and must report any finds of archaeological significance to the PAS Finds Liaison Officer (FLO) at the Museum of London (see *Appendix 1*). Instructive guides and recording sheets are provided to maintain systemic data, with six-digit coordinates recommended, of which four digits become public. More advanced permits allowing digging down to 1.2 m were available to members of the Thames Mudlark Society but are no longer issued to preserve the environment and the sustainability of the deeper archaeological record (Maiklem 2020:28; Port of London Authority 2021).

Members of the public can also mudlark along the Thames without permits as part of guided tours and programs, such as Thames and Field and the Thames Discovery Programme (TDP) (Cohen et al. 2012; Watson 2019). The latter is a long-running, model community project integrating the professional archaeology community, associated institutions and authorities with the broader public. Having evolved over its 13 years, the TDP is now hosted by the Museum of London Archaeology and includes the public in a Foreshore Recording and Observation Group (FROG) (Cohen 2011). Similar volunteer models operate across the cultural and heritage sector in the UK and Australia—mostly in museums and art galleries—where professionals gain free community advocates, insight into consumers of heritage and the benefits of volunteer labour (McManamon 2002:40–41). These volunteer models work well in the coordination of public archaeological projects in the UK where, according to Read (2011:23–

24), 'once you take labour and machinery out of the business plan, the sums are surprisingly small'. Although there are, of course, credible questions about exploiting their labour, volunteers are nonetheless rewarded with tangible access to cultural material, social and cultural capital, and a sense of personal and social fulfilment (Graham 2004:27; Holmes 2007:227–228; Tripp 2011:30).

Because of the accessibility, transparency and adaptability inherent in the TDP, there exists the potential for the democratisation of collective cultural heritage and the possibility of an archaeology that is not only civic-minded but also community-driven, not top-down but beginning from below (see Belford 2011; Brighton 2011; Faulkner 2000; Fredheim 2018; Hall 2000). Each stage of its research is open or accessible to the public, while each month in the TDP calendar offers multiple activities where the practice of amateur archaeology can be organised based on community priorities, allowing archaeologists to perceive themselves as 'part of' rather than simply 'serving' communities (Grima 2016:55), and allowing communities to directly contribute to the coordination of 'authentic' heritage projects, challenging the AHD (Belford 2011:52–53). Such a model corresponds to Sarah E. Miller's (2020:154–156) criteria for the highest, 'apex' level community engagement, where communities make independent contributions to archaeology, working in collaboration with archaeologists to record or preserve collective heritage. It likewise demonstrates a greater degree of public participation, as per Little and Shackel's (2014:84) engagement pyramid (Figure 2.3).

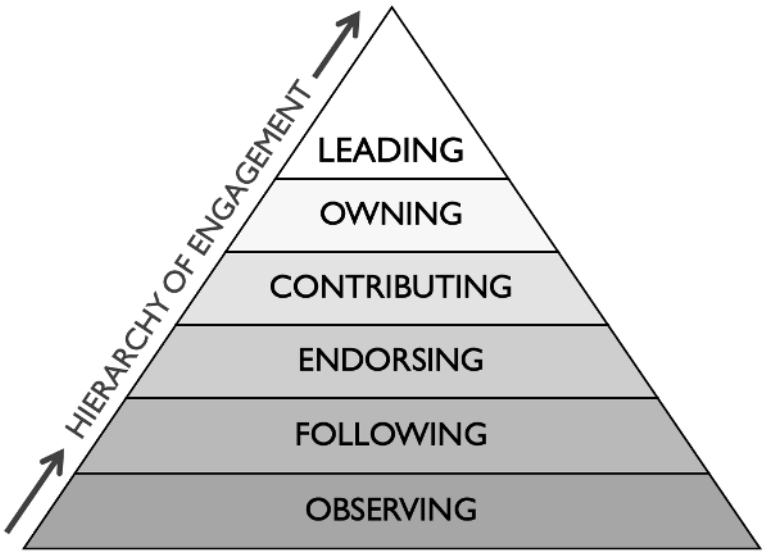


Figure 2.3: Engagement pyramid
(after Rosenblatt 2010 in Little and Shackel 2014:84, reproduced with the permission of Taylor and Francis Group, LLC)

Australia is yet to see public archaeological programs with the same schedule or level of community engagement and accessibility, public involvement or industry-wide support as the TDP, although several programs have certainly come close. Some of the highest-profile archaeological projects in the country have been open to public participation, including Little Lon and the Commonwealth Block in Melbourne (Murray et al. 2019) and the 'Big Digs' at Cumberland and Gloucester Streets at The Rocks in Sydney (Karskens 1999). The Port Arthur Public Archaeology Program also involved archaeology students and members of the public—including children—in the excavation of dedicated 'public archaeology' trenches, each trench worked by a small number of volunteers supervised by two professional archaeologists (Steele et al. 2007:82). Other projects often involve prohibitive fees and are usually run through universities via field schools (Cosgrove et al. 2013; Heath-Stout and Hannigan 2020; Smith et al. 2021), or through private organisations like the Everick Foundation and the Uncovered Past Institute (Guoth and Macgregor 2019). In other cases, public involvement is confined to guided site tours or appeals for comment—often when projects are already underway or completed (Greer et al. 2002:277–278). This has all occurred alongside a general academic and professional shift in terminology and attention, from 'participation' to the more comprehensive and energetic 'community engagement' (Ross et al. 2016:124).

Among other factors, the proliferation of 'Friends of…' community history and heritage groups and the enduring popularity of archaeological television programs, such as the recently revived Time Team, can be used to measure enthusiasm for greater involvement in archaeology and, as such, the viability of public archaeological projects. Public archaeology aims to incorporate these already-interested parties, but also breakthrough to others, particularly descendent communities and underrepresented minority groups, so that they can contribute to the production of archaeological knowledge too (Agbe-Davies 2010; San Miguel and House 2019:234). This is especially helpful when professional archaeology appears to struggle to represent the cultural diversity of a nation with a long, rich history of immigration, where almost a quarter of the Australian population was born overseas and half have at least one parent born overseas (Awaworyi Churchill et al. 2019). While surveys acknowledge gender, age, Indigeneity and professionals born in Australia (Mate and Ulm 2016; 2021; Ulm et al. 2013), they overlook ethnicity, sexuality and other social characteristics that appear in several international surveys (Heath-Stout 2020; Klembara 2021). This seems a misstep when heritage registers have at last come to appreciate Australia's diverse, multicultural history (see Dellios 2019; Dellios and Henrich 2020).

In developing a modest public archaeological project in Kent, England, Reid (2011:21) chose the following criteria: the project should explore a popular but neglected aspect of an area's history and involve 'as many people as possible', but be short-term and simple enough to 'not require levels of skill unlikely to be possessed by volunteers'. The ideal project should not trespass upon active professional archaeological sites, which, although seemingly limiting, provided an advantage, with Reid (2011:24) recalling that the 'detail bulldozed away by developer-employed [archaeological] contractors is usually of great interest to locals'. To secure the funding necessary for public archaeological projects like Reid's, Gould (2016:18), an expert on archaeology and cultural economics, advises that practitioners will 'benefit greatly from a commitment to articulate the goals of community projects and evaluate the results following rigorous methodologies'—as seen in later chapters of this thesis.

Another valuable element to consider when putting public archaeology into practice, particularly considering today's often inhibitive economic and academic environment (Wallis 2020) and the lack in Australia of a project-subsidising scheme like the UK's Heritage Lottery Fund, is to keep expenses as low as possible. Where traditional funding streams seem scarce and while volunteer labour is convenient, crowdsourcing and crowdfunding models overseas have proven to be effective and reliable alternative funding sources for small-scale, community-oriented projects (Roued-Cunliffe 2017:111). Members of the public worked in concert with heritage organisations to contribute to the MicroPasts public archaeology project in London, for instance, with individuals donating between £1 and £1,000, reaching up to 65% of minimum funding goals (Bonacchi et al. 2015). With enough time, sufficient funding and cooperation between archaeologists, heritage organisations and the public, Paynton (2008:211) proclaims that 'we will finally make the way that both professionals and amateurs approach archaeology more democratic, more inclusive and more relevant to more people'.

Summary

This chapter has traced mudlarking from its origin amongst London's most desperate to a current hobby, then explored how mudlarks differ from other artefact collectors with decidedly more destructive conduct. Though institutional support for mudlarking exists in the UK, historical archaeology can occur anywhere with historical (and older) context, which is certainly the case for Australia's inter-tidal zones and riparian systems. Whether directed by professionals or otherwise,

public archaeology can occur in the same contexts if there is sufficient community interest and financial support. Before evaluating how mudlarking can act as a public archaeological method and contribute to historical archaeology in Australian waterways, this research must first confront the history and cultural material of its study area, Sturtbrae.

Chapter 3:

A Site on the Sturt

Draining into the Patawalonga River coincidentally called the 'River Thames' by Adelaide's first surveyors, Light, Finnis & Co., is one of Adelaide or Tarntanya's main waterways: the Sturt River. Its name in Kaurna *warra* ('language') is Warri Parri, the 'windy river' (Amery and Williams 2002:260; Teichelmann and Schürmann 1840:75). Along one of its tributaries, 10.3 km southwest of the city centre, rests one of Adelaide's oldest surviving homes: Sturtbrae, until 1923 named Windsor Farm. This creek and its surrounding area were sure to interest its traditional owners, the Kaurna *meyunna* ('people'), while the property is noted for being the home of some of South Australia's significant pioneering families. The following chapter outlines the site's history in relation to its Kaurna and European inhabitants, its archaeological significance and cultural heritage values. It follows the trajectory of the property through a course common in the Adelaide foothills: from Kaurna *yerta* (Country) to European invasion, from agricultural and pastoral land to market garden and back again, then to residential suburbia. This chapter concludes with an assessment of the archaeological material expected from the site and a discussion of the natural and cultural processes that have presumably affected it. As such, it considers the overall cultural, historical, archaeological and geomorphological contexts that are tied to the artefacts introduced in later chapters.

Figure 3.1: The study location in relation to South Australia, nearby suburbs and streets in southern Adelaide.

***Parri Kaurna yartangka*—'A river on Kaurna Country'**

Although undoubtedly shaped by the more than 180 years of European clearing and exploitation of the land, water still surges through Sturtbrae's creek when it rains heavily, and ponds of water remain long after the rains have passed. The earliest documentary evidence, made by European missionaries like Teichelmann (1841), Meyer (1843) and later Taplin (1879), tells us that Kaurna yerta reached from Crystal Brook to Cape Jervis, extending across the Adelaide Plains and into the Hills, bound by the Mount Lofty Ranges to the east. Fish, crustaceans and shellfish were commonly eaten during summer as evidenced by shell middens, some dating to 7,650±140 BP (Czerwinski 2002:38–40), while the Kaurna diet also included small animals and large game (David et al. 2021; Field et al. 2013:86). They apparently favoured coastal sites in warmer months, spending summer and autumn there before returning to the cooler, wooded valleys when coastal lagoons had dried and waterholes remained, following tracks used for generations, passing waterways, ceremonial sites and places with seasonal food resources (Smith et al. 2018b:1–2). Streams like this are usually fed by springs said to have been perennial prior to European diversion, feeding the River Red Gums ('*karra*') (*E. camaldulensis*) that lined its banks, providing seeds ('*kanggulya*') and bark for making shelter, canoes and shields ('*murlapaka*') (Clarke 2012:159–160).

Although no definitive Aboriginal artefacts are known to have been found at Sturtbrae, the property rests within walking distance of neighbourhood parks and reserves where both archaeological evidence and historical observations tell of how the land was likely used prior to European colonisation. At nearby Watiparinga ('plenty of water') in Eden Hills, for instance, there are culturally modified river red gums where coolamons ('*yoko*') had been excised (Ragless 2006:261). Downstream from Sturtbrae's creek are the Warriparinga ('windy place by a creek') Wetlands in Bedford Park, significant to the Kaurna community due to their relationship with the Munaitjerlo (Dreaming) Ancestor, Tjilbruke (Amery and Power 2019:50). Opposite Warriparinga, early nineteenth century agricultural ground disturbance exposed over 150 quartz, quartzite and glass artefacts, including tula adzes, choppers, cores, millstones and scrapers, as well as knapped bottle glass artefacts, suggesting both long-term and post-contact Kaurna occupation of the site (Edwards 1964:186–187; Harrison 2005:21–22).

Breaking ground

It was not long after arriving in Adelaide in 1836 that European settlers made haste in their destruction of the ecosystems tended by Kaurna people and, despite official policies and the intention of the Letters Patent otherwise, the destruction of Kaurna ways of life. Europeans, unable and unwilling to grasp local Indigenous knowledge, imposed their own knowledge of the northwestern European landscape—their ways of claiming, clearing, categorising and capitalising from the land (Konishi 2019:292; Piddock et al. 2009:68). William Henry Shephard, the son of a London lawyer, arrived in Adelaide in 1836 aboard the *Tam O'Shanter*, and was the first to settle on Sections 34 and 2202 of the Hundred of Adelaide by the Sturt River in the Adelaide foothills, some 11 km south of the Adelaide city centre. He made a remarkable entry into the new Adelaide establishment, licensing the Adelaide Tavern on Town Acre 252 in Franklin Street, above which the first Theatre Royal, Adelaide's pioneer playhouse, sat 400 people (Butterss 2015:346), an immense figure considering the city's population was barely over 4000 at the time. Here, Shephard hosted Governor Hindmarsh, the Philanthropic Society's Ball, Portbury's Fortnightly Ball (Figure 3.2), the first anniversary of the 'Sale of Town Lands', an orchestra and even a coronial inquest (*Southern Australian* 22 September 1838:3). In 1839, Shephard sold the tavern—later demolished to become Rosetta Terrace, then a Greek Orthodox church—becoming one of Adelaide's first butchers, and the first to slaughter bullocks from Tasmania (Vox 1943:27). As with many among Adelaide's establishment (Marsden 1986:89), Shephard moved his family to a property purchased by his brother-in-law Thomas Maslin, straddling the River Sturt. This estate, 'Windsor Farm', was in an area yet to have a consistent toponym; through the nineteenth and twentieth century, the property was variably located 'at the Sturt', 'on the Sturt', 'Sturt', 'Sturt Hills', 'Sturt River District', 'Darlington' and 'South Road Estate' before Bellevue Heights was proclaimed a suburb in 1953.

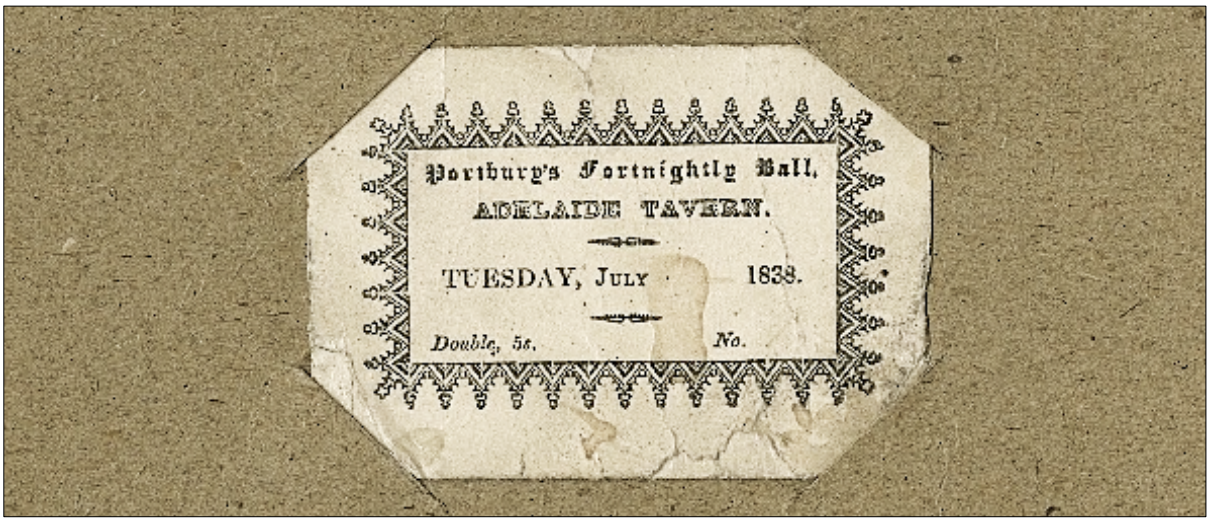


Figure 3.2: A ticket to Portbury's Fortnightly Ball at Shephard's Adelaide Tavern (via SLSA)

Shephard cleared the property of its native woodland, providing a view of arriving mailboats from atop the hill that bears his family name, encountering 'at first…some trouble with the natives [sic], mainly through their own curiosity' (Gunton 1983:109). The paucity of accounts about conflict with Aboriginal people during the early years of European 'settlement' in Australian capital cities suggests this casual recollection almost certainly conceals a darker truth (Foster 2009:68.5–68.7). Jeanette Hope (1992:3–4) suggests such conflict was inevitable, since the sites chosen for European settlement were 'often exactly where Aboriginal sites would be expected', with Aboriginal and non-Aboriginal people sharing an impression of what 'makes a good place in the landscape… near the river, but above flood-level'. Fitting these criteria was Shephard's estate and its southern Adelaide surrounds—locations where the carving and clearing of land quickly gave way to the introduction of British buildings, gardens and conventions that reminded setters of home, and part of a 'colonising project' turning stolen Aboriginal land into non-Indigenous property (Holmes 1999:152).

A single-roomed, shingle-roofed cottage was built at Windsor Farm for the Shephard family by 1844, with an underground dairy excavated into a slope rising away from the creek. After William Henry Sr died of 'consumption' in 1848, his wife Ann took title of the property, adding four rooms, a stable, an underground water tank and Section 33 in 1860, Section 34 by 1864, then Section 35 in 1878 (*The South Australian Advertiser* 23 March 1860:279; Weidenhofer 1995:29–32). Testament to Colonel Light's requirement that the new colony have abundant 'stone, timber or brick, earth and lime' (Burgess 1907:77), building materials were sourced locally. Slate for splitting into roof shingles was quarried from the southern Mount Lofty Ranges near Willunga, sandstone sourced upstream of the creek in today's Blackwood and Bellevue Heights, and a brickmaker nearby (Mills 1982). Today's Shepherds Hill Road is named—albeit misspelled—in tribute to Ann and her sons, William Thomas and William Henry Jr, who continued the dairy and their father's business before turning to wheelwrighting, coachbuilding and local politics in the District Council of Mitcham, the first local government area in SA after the City of Adelaide (Ragless 2006:271; Ragless and Schumann 2003:47–48).

In 1888, George Perrin bought the house from William Thomas Shephard, who, within two years buried his wife, Elizabeth Ann, and two of their eight children (*Evening Journal* 20 April 1880:2). With money made in the 1870s–1880s boom years and from striking gold in Onkaparinga (*Express and Telegraph* 30 September 1870), Perrin extended the house to its current form as a gift to his daughter, Mary Ann, upon her 1887 wedding to George Walker. Their additions to the front of the house were

in keeping with opulent Late Victorian design and an attention to detail befitting Adelaide's Anglophile gentility (Donovan 1984:38). Two sitting rooms were made with 12-foot ceilings, highly decorative plaster mouldings, painted ceiling roses and cast-iron fireplaces and the hallway decorated with intricate, seven-coloured tessellated tiles and ornate leadlight windows (Donovan 1984:39–40). The exterior façade (Figure 3.4), featuring rock-faced, snecked sandstone walls bordered with rule-jointed red brick quoins, is the quintessence of Adelaide's late-Victorian architecture (Cooper 2019:948; Smith and Smith 2009:46). The newly renovated home hosted several meetings of the local Bible Christian Circuit (*Southern Australian Register* 6 October 1894; *Advertiser* 8 October 1897), suggesting its part in the Methodist revivalism that swept Adelaide toward the end of the nineteenth century (Walker 1969:331).

Probably brought on by an 1890s depression, a sale of 40 dairy cattle and related tools in 1892 suggests a move toward market gardening, a popular enterprise in the Adelaide Hills at the time (*Evening Journal* 10 February 1892:4; Piddock et al. 2009:72–75), and one in which the Walkers were moderately successful. George Walker, for example, won digging contests and prizes for blooming pot plants at the Sturt, Marion and Darlington Annual Show in 1920 (*Daily Herald* 27 October 1920:1) as well as awards for various fruit and vegetables in 1919 and 1922 (*Daily Herald* 17 October 1919:8; *The Register* 17 October 1922:4). Some of the terracing and exotic plants that remain on the property presumably date to this period and were probably sourced from nearby nurseries such as Edwin Ashby's Wittunga Nursery in Blackwood, Hackett's Nursery in Marryatville or Giles's Grove Hill and Newman's Model Nurseries. The latter Adelaide Hills nurseries stocked several the surviving species at Sturtbrae, including Norfolk pine (*Araucaria heterophylla*), Aleppo pine (*Pinus halepensis*), English oak (*Quercus robur*), arum lilies (*Zantedeschia aethiopica*) and wych elms (*Ulmus glabra*) (Piddock 2006).

In 1923, the now 250-acre property was sold to William G. J. Mills, well-known Merino breeder, President of the Country Party in South Australia and member of the state's Legislative Council. Under his stewardship until his 1933 death, the newly renamed Sturtbrae became a notable fine-woolled Merino stud with a flock of more than 300 sheep and prizewinning rams, as well as a six-foot dog-proof fence to protect them, complemented by barns and lean-tos to house and shear them (Mills 1973:75; 1982). Several rooms were added to the side of the house, including a billiards room, and a partial second floor, while the acreage was populated with an almond orchard and vineyard typical of the Mitcham area at the time (Marsden 1986:92). The front drawing room likely hosted a range of political

affairs—not only was Mr Mills part of the Country Party as it merged with the Liberal Federation in 1932, but Mrs Lizzie M. Mills acted as president and secretary of the Country Party's women's branch and was affiliated with a range of women's associations (*Mail* 28 September 1929: 19). After their father's death in 1933 and unable to sell due to the Great Depression, sisters May and Margret Mills purchased the property, continued the stud and cared for their mother till her passing in 1961, months shy of 100 years old, all while continuing their careers—May as a teacher and unionist and Margret as a nurse matron at the nearby Bedford Park Sanitorium (Keane 2005:65). As an octogenarian May acknowledged, 'the activities at Sturtbrae in the forty years from Father's Death until the present day, would make a story in itself, for it would tell how two women brought Sturtbrae out of the Depression' (Mills 1973:78). Buildings on the property still bear marks made by Mills family members. May and Margret, for example, scratched their initials into the front façade's grout, while their father signed his name in repairs of the barn—all three marking their place and presence on the property (Clarke et al. 2010:77).

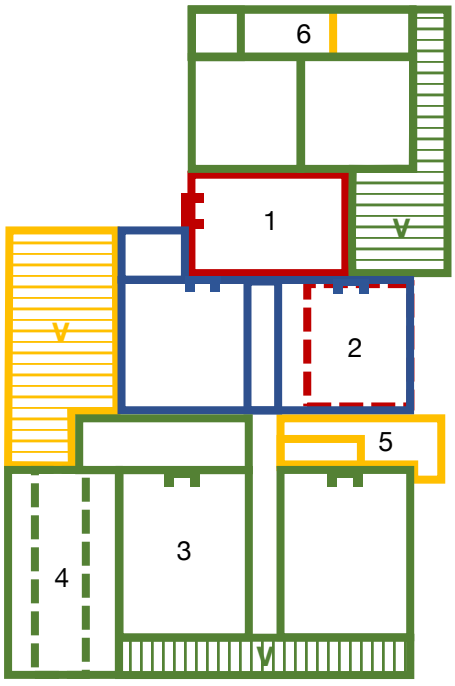


Figure 3.3: The sequence of building at Windsor Farm (1844–1923) renamed Sturtbrae (1923–present).

Mortar sampling would likely attest to this sequence, while further investigation could reveal the building materials of the original one-roomed dwelling (in red).

Red–First home built by William Henry Shephard Sr. c.1844
Blue–Extensions made by Ann Shephard and sons c.1864
Green– Walker and Mills additions made between 1884–1923
Yellow–Contemporary additions or alterations 1988–2002
'V'–Verandah

Notes
1. The nucleus of the house—the original one-roomed cottage
2. Underground dairy/cellar beneath 1864 rooms
3. Walker family addition–a drawing room
4. Mills family addition–billiards room with second storey
5. Apponyi addition–bathroom replacing Mills conservatory
6. Original scullery annexed into rooms and laundry c.2005

As with many other nineteenth and twentieth century pastoral households, there were staff at hand. The Mills sisters had, for instance, a Mr Pitman and a Mr and Mrs Barrett in their employ, as well as seasonal workers (Mills 1969; 1982; *Coromandel* 1 February 1947:2), making it imperative to look beyond the Mills family to understand Sturtbrae at the time. As Piddock (1992:20) cautions, the behaviour of additional adults at a site 'may not be indicative of [their] employers'—a notice against associating all the property's history with the landowning family and a reminder that ideologies and identities are far more complex than can be inferred from one assemblage of artefacts, all with uncertain ownership. While it is unknown whether Aboriginal people also worked at Sturtbrae, they were employed at similar South Australian pastoral and agricultural sites and, as such, a possibility exists for insights into cross-cultural interactions during the twentieth century (Clarke and Paterson 2003; Harrison 2004; Paterson 2005).

May Mills (1982) also discussed the United States military commandeering Sturtbrae in 'a bad year for almonds' during World War II, with troops camped by trees near her home and helping themselves to her orchard. Literature about military activities in Adelaide's southern perimeter is scarce, but anecdotal evidence and archaeological surveys suggest the installation of barbed wire fences, trenches and machine gun emplacements along the nearby slopes of Sturt Gorge during the war (see Smith et al. 2005:60–61; Wimmer 2014). These were possibly part of training exercises carried out by the 127th Infantry Regiment, 32nd Division, stationed at Woodside in 1942 (*The Chronicle* 16 August 1945:28).

A suburban shift

Subdivisions between 1955 and 1982 led to the formation of the suburb of Bellevue Heights and the culverting of Warri Parri tributaries, with Sturtbrae's creek channelled beneath Flinders University and the Flinders Medical Centre. Retiring from the Merino stud, May Mills's final subdivision ended over 130 years of farming on the property. Although bequeathed to Flinders University upon her death in 1984, the university sold the property to sculptor Silvio Apponyi three years later, funding on-campus child-care and the May Mills Scholarship for Women. Although the property was subdivided again after Apponyi sold it to the current owner in 2002, the original home and barn remain intact, with the stables adapted to a flat and a bathroom replacing a conservatory between the Shephard and Perrin-

Figure removed due to copyright restriction

Walker additions (Figure 3.3 and right in Figure 3.4). The ability to add to, alter or adapt the house's structure in this way has likely led to the property's conservation, sparing it from the demolition or ruin faced by similarly aged homesteads.

The 'dwelling' at Sturtbrae—the house itself—was nominated as a State Heritage Place in 1982 and listed in 1985, after which it was afforded protection against 'demolition, removal, conversion, alteration or painting … that could materially affect [its] heritage value' (*Planning, Development and Infrastructure Act 2016* [SA]). According to the South Australian Heritage Register, Sturtbrae's cultural heritage value primarily rests on the ways it illustrates the histories of its various owners and their links with the broader development of Adelaide between 1836 and 1883. One preliminary survey decried distinctions in roofing materials between different construction phases as 'tacky' (Rowney and McDougall 1982). A subsequent survey records that the distinction between phases, corresponding to the various household cycles, is a valuable tool to interpret the property's history, with each addition a testimony to the area's growing prosperity and industry (Weidenhofer 1995:32).

c.1974

Figure removed due to copyright restriction.

2021

Figure removed due to copyright restriction.

Figure 3.5: An aerial view of Bellevue Heights c.1974 and today. Shepherds Hill Road cuts diagonally across the view, dividing Eden Hills from Bellevue Heights, with Sturtbrae located centre left. (1974 view from Mills 1973 and 2021 view via SARIG.)

Figure 3.6: A dramatis personae of Sturtbrae's history: (top, L–R): Thomas Maslin, original landowner; William Henry Shephard Sr, William Henry Shephard Jr, George Perrin, father of Mary Ann Walker; (bottom, L–R) William G J Mills MLC; Lizzie Martha Mills; May Mills OBE; Silvio Apponyi; Adrian van den Bok, current owner. (All via SLSA or provided by subject)

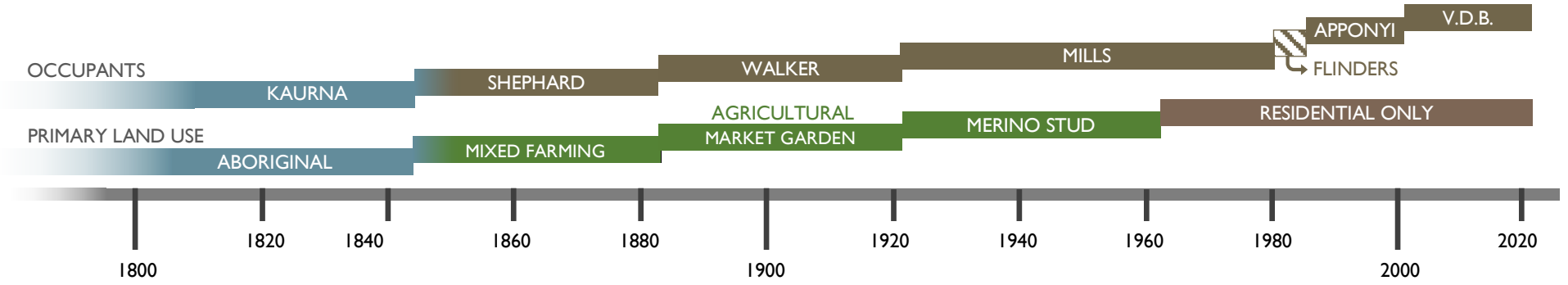


Figure 3.7: A timeline of primary land use and occupancy at Sturtbrae to the current van den Bok (VDB) owners

Archaeology at Sturtbrae: The material May Mills missed

Describing what may have been the first archaeological artefact recorded at the site, May Mills (1982) spoke of finding bullock cues from the time Adelaide's colonists made their first road to Blackwood along what is now Highland Drive, Bellevue Heights. Although unrecorded, it is entirely plausible—especially considering their interaction with Kaurna people—that the Shephards had come across Indigenous cultural material when clearing and cultivating their property. These artefacts would presumably be like others found along Warri Parri. Of more consequence to the current project is the cultural material discarded by Sturtbrae's many European inhabitants, particularly the material that has made its way into the creek over time. While artefacts here are expected to be as mundane, private and domestic as those found in similar archaeological contexts in Australia (e.g. Brown 2012; Terry 2013), they can provide information about the occupants of the site and their activities, and in turn, access to issues that are large-scale and wide-ranging (Lawrence and Davies 2011:279; Piddock 1992:37). The total number of artefacts is irrelevant at disturbed sites where mudlarking and fieldwalking take place; Colin Haselgrove (2007:13) suggests treating 'the sample as a meaningful population in its own right' instead.

Although direct comparison between sites is difficult and uncommon (Prossor et al. 2012:822), two interstate homesteads provide useful parallels for the historical archaeological material likely associated with Sturtbrae. These sites are Caboonbah, a southeastern Queensland homestead on the traditional land of the Garumga clan of the Dalla/Jinibara, nested within a Brisbane River meander 64 km northwest from Brisbane; and OKH in western NSW, five kilometres southwest of Menindee and 100 kilometres southeast of Broken Hill in Barkindji/Paakindji Country (Figure 3.8). Both homesteads, as well as the pastoral properties and activities of which they were once part, have led to comprehensive archaeological analyses—Caboonbah, largely through the work of the late Linda Terry (2013; 2014; Terry and Prangnell 2009), and OKH by Penelope Allison (1998; 2003; 2014; Allison and Cremin 2006; Allison and Esposito 2020)—both firmly within the realm of household or domestic archaeology and material culture studies, aiming to reconstruct the social identities of the people inhabiting these places. Like Sturtbrae, both Caboonbah and OKH have played host to middle-class farming families, fluctuating fortunes and pastoral and political activities of note in their respective regions, and both were purposely established alongside waterways. Where Caboonbah faces the Brisbane River and its tributaries in virtually every direction, OKH lies alongside the Menindee Lakes and the Baaka/Darling River, north of an ephemeral billabong once part of the river's bend. All three were standing and listed and protected as part of their respective state heritage registers at one point in time but no longer.

Although the history of each homestead was shaped in part by local peculiarities, the overall historical trajectories and archaeological records of OKH and Caboonbah provide a guide to middle-class life on the outskirts of nineteenth–early twentieth century population centres, and the material culture related to preserving notions of gentility and grace in an otherwise formidable landscape. OKH was initially built around 1878 for the Hughes family and surrounded by smaller, more rudimentary accommodation for the estate's many workers as they raised sheep and cattle, but was made redundant by new buildings by 1955, changed hands several times, was partially demolished in the 1960s and then subsequently abandoned. Today, its ruins form part of a heritage trail in the Kinchega National Park (Allison and Esposito 2020:2–3; Peter Freeman Pty Ltd 2002:20). Caboonbah was built for the British-South African aristocrat Henry Plantagenet Somerset in 1889–1890, after which the property was used to raise cattle and thoroughbred horses while the Somerset family, much like Sturtbrae's resident

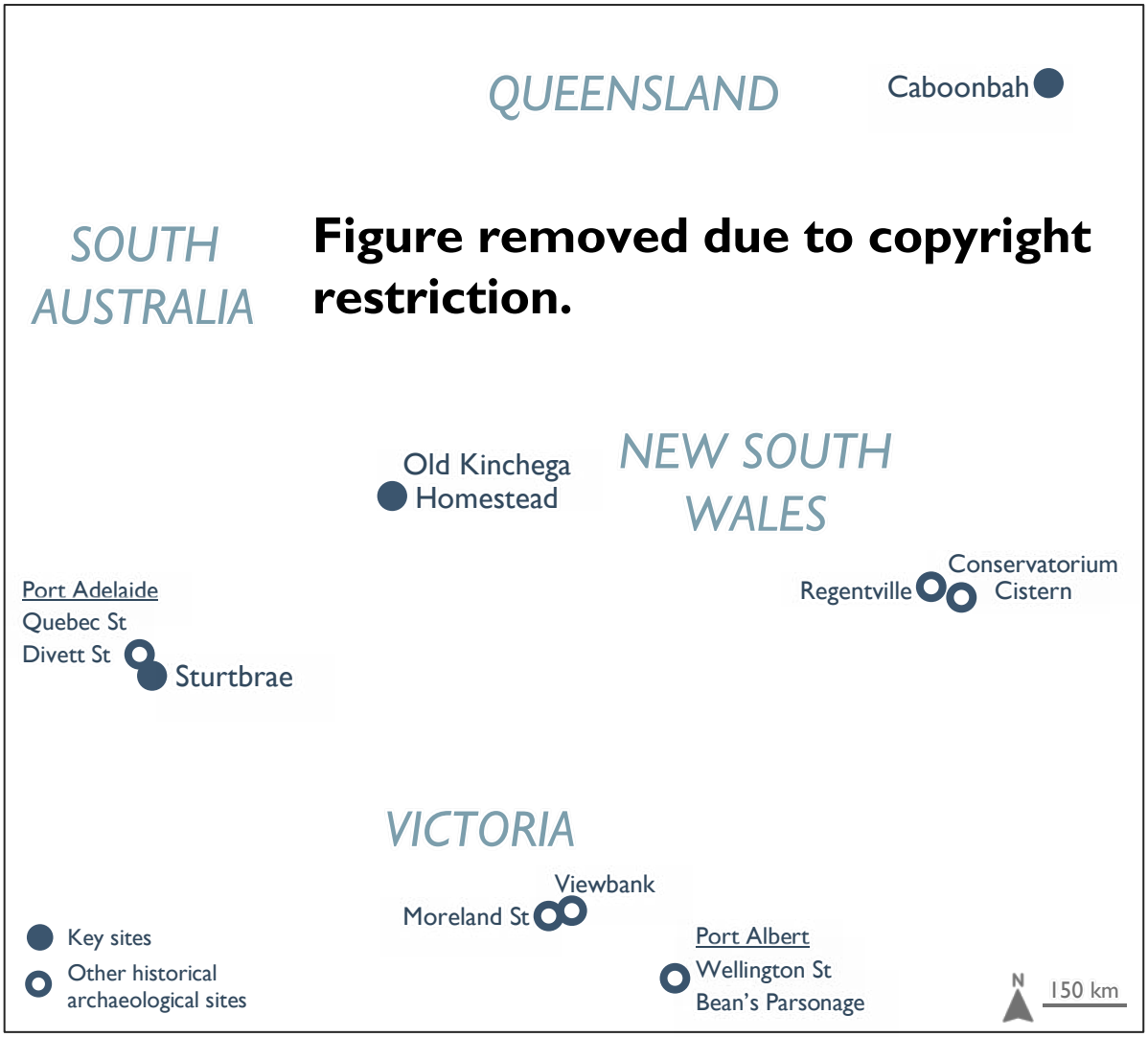


Figure 3.8: Sturtbrae and comparable homesteads, mapped along waterways

families, demonstrated a form of genteel altruism through involvement in local politics and Protestant churches (Terry 2013:575–576). With the deaths of the senior Somersets, Caboonbah was sold and served as a guest house between 1935–1962, then a private residence, then was purchased by the Brisbane Valley Historical Society who restored and opened it to the public in 1989. Listed in Queensland's heritage inventory in 1996, the homestead was destroyed by fire in 2009, bulldozed and removed from heritage listing.

In 2006 and 2009 at Caboonbah and between 1996 and 2010 at OKH, archaeological research involved a series of surface surveys and 1 m x 1 m excavations centred on areas identified as historic rubbish dumps or refuse deposits and, at least at OKH, the original footprint of the building. Unlike investigating underfloor deposits (see Winter et al. 2021), the footprint of a building is most accessible when the building is no longer standing, as archaeologists have found at other semi-rural households to which Sturtbrae may be loosely compared. These include the 1841–1860s Bean's Parsonage along the Tarra River in Gippsland (Brooks et al. 2011) and the 1839–1920 Viewbank homestead at the junction of the Yarra and Plenty Rivers near Heidelberg (Hayes 2007; 2011; 2014; Smith 2001a) (Figure 3.8), both in Victoria and contributing to Australian historical archaeological literature (Allison and Esposito 2020). At all the above sites, as in this research, archaeological methods were used in tandem with archival research and remnant oral histories. The methods involved at these sites were more conventional and invasive than those used in this research, however, with the deepest excavation—down to 85 cm at Caboonbah (Terry 2013:577–578)—signalling the archaeologists' preference for buried, undisturbed deposits with greater contextual information.

Based upon the assemblages at the above households and what is already known about Sturtbrae, it is apparent that, just as their respective occupants modelled their homes on those of British contemporaries, they also purchased, used and discarded objects that likewise mirrored Anglophile attitudes acclimated to the Antipodes. Transfer-printed earthenware in a range of patterns and colours, for example, was common in Britain and its colonies during the first decades of settlement, providing an abundance of contextual information useful to archaeological research (Lawrence 2003:25–26). Indeed, transferware and other ceramics overshadow other artefactual material in the analyses of the homesteads mentioned above. In comparing OKH to other sites, Allison and Esposito (2020:109) considered 'relative numbers and types of tableware and teaware sets and types of decoration as likely indicators of social distinction', where a greater proportion of sherds from

higher quality (e.g. porcelain and bone china) matching sets served to highlight standards of living and social status, or at least aspirations to such. A greater proportion of large serving dishes compared to bowls, and more saucers than teacups are considered similarly, suggesting a wide range of social events and 'respectable' dining habits befitting those enjoying elevated social status even in semi-rural districts at considerable distance from capital cities (Allison and Esposito 2020:118). Ceramic artefacts recovered from the Sturtbrae creek have the same potential to indicate consumption patterns as they relate to status (Lawrence et al. 2009) and may prove a valuable companion to documentary information about the lifecycles of Sturtbrae's several households and the individuals within them (see Prossor et al. 2012). Other potential objects, like the clay tobacco pipes that had receded in popularity by the early twentieth century, were affordable, fragile, easily identifiable and able to survive deposition in various environments, affording them a reputation as the ideal nineteenth century artefact (Stuart and Gojak 1999).

Like those made of ceramic, glass artefacts are frequently diagnostic and dateable and mostly resist decay, heightening the probability of glass artefacts appearing in historical archaeological contexts and within the Sturtbrae creek assemblage (Bellendorf et al. 2010; Lawrence and Davies 2011:279). Cautious use of ceramic and glass artefacts is necessary, however, when establishing chronologies since the lifecycle of these objects can sometimes be extensive. Objects being transported, reused, repurposed or handed down through generations may prolong their lifespan, so manufacturing dates should not, as such, be used by themselves to infer an artefact's actual use-date nor its date of deposition but merely a terminus post quem (Adams 2003:41; Miller et al. 2000).

Organic material, like most wood and textile, is more likely to have decayed or dispersed, but bones are also potential finds that offer interpretative value (Landon 2005), and while overlooked at OKH in favour of ceramics, were analysed at Caboonbah and Viewbank. Butchery marks and taphonomic features are particularly revealing, with desiccated or weathered bone, for example, indicating a lengthy period spent on the ground surface, and subsequent water transport tending to round a bone's edges, ridges and crests (Schiffer 1987:185–188). In other colonial contexts, archaeologists have found ceramic artefacts to be more reliable indicators of status than faunal remains (Schmitt and Zeier 1993), although the value of various cuts and types of edible meat evident in an assemblage nonetheless suggests income levels and, in turn, a general socioeconomic position (Briggs 2000:40; English 1991; Lyman 1987:58; Weaver 2003).

Although likely heavily corroded, metal objects may also be found in Sturtbrae's creek and deposited via the various activities that have defined the property, from the Shephard's wheel or coachbuilding business to the dairy and sheep farming taken up by almost all the homestead's historic families. Fences were likely to have been made of iron, with the metal replacing shepherds and most wooden and stone fences in South Australia by the 1860s and barbed post-and-rail-and-wire fences becoming commonplace by the early twentieth century (Pickard 2007:146–147; 2010:44–45). Metal, however, plays a less prominent role in historical archaeological analyses of European households in Australia and is included in neither the Viewbank nor OKH analyses, likely due to the material providing fewer signatures of social status and more suggestions of general industrial or economic activity and culture-contact (e.g. Smith 2001b:28). Contemporary rubbish will inevitably be found in Sturtbrae's creek too. While garbage disposal, waste management and attitudes toward the environment have improved over the last century, the persistence of littering sustains the likelihood that some objects were and are still deliberately thrown into waterways (e.g. Carpenter and Wolverton 2017; Madhani et al. 2009).

Site formation processes

Unlike research at the above sites, this research relies on retrieving objects from creekbeds rather than more traditional forms of archaeological survey or excavation, and at a site more complex, dynamic and disturbed than most. As with any other site—large or small, pristine or disturbed—the interaction of cultural and natural phenomena during and after the deposition of material should be delineated to best appreciate the creek as an archaeological site and the material within as artefacts from which to extract potentially significant archaeological information (Stein 2001:48; Talmage and Chesler 1977:4–5).

Two problems further complicate the interpretation of material in Sturtbrae's creek (Brown 1997:190): 'first, the only means of dating for most objects is typology, and second, it is difficult to know where, how and why these objects ended up in the river'. As another Brown (2012:103–104) found of objects unearthed in his suburban Sydney backyard, the most straightforward conclusion may be that the material in Sturtbrae's creek was deliberately discarded there, or simply lost and never retrieved. Schiffer (1987:47–49) refers to such behaviour as cultural deposition, whereby objects are lost, discarded after reaching the end of their 'use life', buried as part of rituals, or

become 'de facto refuse' when a site is abandoned (e.g. Allison 2003; Terry 2013). Never abandoned and continuing as a residence, accidental or intentional discard of objects is most likely at Sturtbrae. Considering that the entirety of contemporary Bellevue Heights was Sturtbrae prior to the Mills subdivisions, one can assume objects found anywhere on the property were deposited by the home's many inhabitants and, over time, have collected and dispersed (Figures 3.9–3.11).

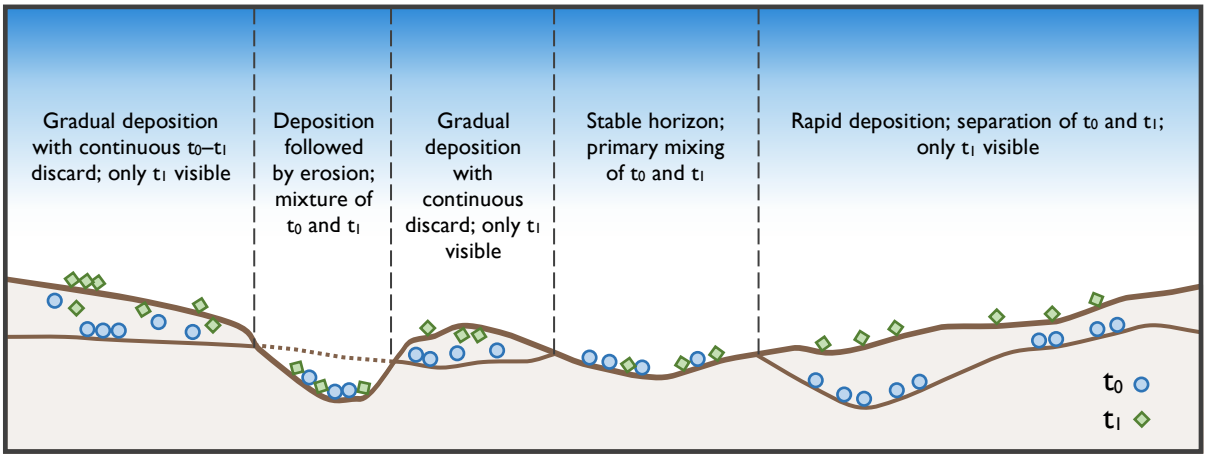


Figure 3.9: Simple cumulative discard on a complex landscape (adapted from Foley 1981, fig. 6.7)

Historical waste management makes this prospect more likely, since it was not until the 1880s that sewerage was separated from waterways in Adelaide and another 70 years until household cesspits and refuse deposits fell out of favour (Nicholls 2002:156). Such waste was till then regularly deposited into thousands of cesspits or latrines across Adelaide in the early twentieth century or, for residents in the City of Adelaide, sent to Parklands landfills. Mitcham residents had their waste incinerated, eaten by pigs or thrown into creeks running through what is now Centennial Park Cemetery, Pasadena (Anson 1993). Waterways like these were considered little more than convenient drains and the dumping, spilling and clearing of rubbish on land has come to define the urban archaeological record.

Schiffer (1987) describes other cultural formation processes or behaviours that occur, including:

- Reuse (pp.27–39), including recycling, repurposing, and the gift or sale of objects between individuals or families.

Figure removed due to copyright restriction.

Figure 3.10: A cycle of cultural disturbance (adapted from LeeDecker 1994:355)

- Reclamation (pp.99–105), whereby objects are removed from depositional contexts and salvaged or reincorporated into use, often by artefact collectors like bottle hunters and mudlarks, but also by a site's new occupants who find objects or material.
- Cultural disturbance at or below the surface (pp.121–131), through agricultural activities like ploughing, trampling by people or animals, and construction activities like earthmoving. Other examples include the formation and filling of cesspits, wells, cellars and privies or other refuse deposits (see Everett 1994; LeeDecker 1994:352–353) (Figure 3.10 and 2.11). These processes were once thought to disturb archaeological sites beyond useful archaeological study but are now seen as excellent repositories of cultural material (Brooks et al. 2009:39).

It would be an error, though, to assume that the archaeological assemblage in question was shaped only by cultural forces. As Edgeworth (2011:15) noted, sites by 'rivers are neither natural nor cultural, but rather entanglements of both'. Aspects of geoarchaeology and geomorphology make clear that dynamic natural geological processes influence the deposition and distribution of artefacts, working in tandem with cultural processes to reshape archaeological sites (Mandel et al. 2017). Riverine or riparian sites are, as such, subject to the full suite of related but distinct processes

of dispersal and deposition that affect the spatial and temporal diversity, density and distribution of archaeological material.

Tying together the work of Schiffer (1978), Foley (1981) and their adherents, each of the following can bury, move, expose or damage artefacts:

- Alluvial processes related to the deposition of sediment and artefacts by water that exceeds normal boundaries or banks, affecting dispersal from waterways into floodplains and vice versa. Sediment accumulated on floodplains is a critical component of geoarchaeological research due to its role in shaping the course of rivers and, in turn, sites of human occupation (Brown 1997:188–189), as well as in burying and preserving archaeological sites (Balista et al. 1990; Ferring 1986:259; Guccione 2008). Alluvial processes are implicated in mudlarking: both Greater London and the Adelaide Plains sit on floodplains and Adelaide endures major floods every 20–25 years, with catastrophic floods occurring in 1918 and 1937 (Piddock et al. 2009:72). Artefacts distributed by alluvial processes may be found in alluvium—loose, often poorly sorted sediment deposited or carried by the same processes.

Figure removed due to copyright restriction.

Figure 3.11: Characteristics of an urban archaeological site via Shilston and Fletcher (1996:11)

- Fluvial processes may coincide with alluvial processes but are events that occur explicitly within the normal course of rivers, creeks and streams with regularly flowing water, most often recognised as activity occurring at the riverbed (Brown 2002).
- Colluvial processes related to deposition of sediment and associated artefacts down a slope—becoming hill-wash—with gravity the primary cause and rainfall, erosion and anthropogenic activity like deforestation and agriculture as catalysts (Boardman 2003; Wilkinson 2005:171–172). The loamy clay soil that characterises Sturtbrae's geology is largely represented by colluvial sediments (SARIG). Colluvial processes may be expedited by seismic activity (He et al. 2010:483–484), such as the 1897 Beachport, 1902 Warooka and 1954 Darlington earthquakes in South Australia. The third of these, with a magnitude of 5.6, had its epicentre just two kilometres southwest of Sturtbrae.

Other natural post-depositional processes may also be at play, the most pertinent being types of pedoturbation or soil mixing: faunalturbation (disturbance caused by animal movement) and floralturbation (caused by plant growth and decay) (Wood and Johnson 1978:318). Sturtbrae's creek is affected by both faunalturbation, mostly by subsurface insects and surface-foraging birds like the Pacific black duck (*Anas superciliosa*), and more intensely by floralturbation caused by large trees that have grown, fallen and been uprooted along the creek's bank. Emphasising Edgeworth's notion of rivers as 'entanglements' of both natural and cultural forces, Maiklem (2020:5) provides an example where 700,000 artefacts were found after construction drained Amsterdam's Amstel River in 2003. The rate of fluvial activity in Sturtbrae's creek was correspondingly impacted by early culverting, the construction of the Adelaide–Melbourne railway through nearby Eden Hills in the 1880s, a 1923–1925 diversion for the Mills family to plant fodder (Mills 1973:75) and the erection of the Sturt Gorge Dam in 1965 (Ragless 2006:262). All the above site formation processes have worked together to break an array of historical artefacts from various depositional contexts over time, only to later reveal those artefacts where the mudlark may chance upon them. The subsequent chapter outlines how mudlarking was conducted at Sturtbrae.

Chapter 4:

A Mudlark's Methods

All archaeology is destructive to some degree, with US historical archaeologist David Armour (1969:4), for instance, likening an archaeologist to a 'historian who, as he studies the manuscript archives, tears up each page as he reads it'. Mudlarking too, cannot be recreated, with artefacts deposited, resurfacing, observed and collected only a finite number of times, but it is decidedly less invasive or destructive, requiring no digging into stratigraphic contexts or dismantling otherwise static assemblages. As such, mudlarking methods can present a novel way of doing archaeology—one that avoids the destruction of stratigraphic context and is affordable, inclusive and accessible to the amateur archaeologist. Methods here have been selected for their ability to be replicated by the amateur artefact collector and are, in effect, an amalgam of typical mudlarking activities and recommendations from Australian and British heritage professionals. To follow best practice, they are based principally on Burke et al. (2017), Birmingham and Murray (1987), Brooks (2005:19–25), Reid's criteria for public archaeological projects (2011) and the Portable Antiquities Scheme's recording guides (2019).

Prior permissions

Prior to undertaking this project, the necessary permissions were granted from Sturtbrae's current landowner Adrian van den Bok, and a permit granted from the SA Heritage Council, Department of Environment and Water, pursuant to Section 27 of the *Heritage Places Act 1993* (SA).

Site recording

Site location

The project took place along a stretch of the Warri Parri/Sturt River tributary within the contemporary boundaries of the Sturtbrae property in Bellevue Heights, South Australia, south of what were once stables, now a residential unit (see Figures 4.1 and 4.2). Current occupants had observed the appearance and dispersal of historical material, although the use of a Minelab Go-Find-22 metal detector revealed no related buried refuse pits or disposal features, although these may nonetheless remain at Sturtbrae. The study site was contextualised using the approach used to record heritage places and objects in both South Australia and Victoria, with maps showing:

a) the broad regional location (Figure 3.5),

b) the localised context in relation to at least three permanent features (Figures 3.1 and 3.5),

c) the extent and boundaries of the place (i.e. Sturtbrae) (Figure 4.1), and

d) the place component (i.e. the mudlarking site at Sturtbrae) (Figure 4.2).

SA Water plots the creek location inaccurately, so alternative maps such as a 1/100-year flood map were used to create more representative maps using Microsoft Word rather than ArcGIS. iPhone geolocation was used instead of handheld GIS or GPS devices, providing UTM (WGS84) coordinates 278939.3 E 6122104.1 N (54H), equivalent to N -35° 1' 10.434 E 138° 34' 37.6788. and an elevation of 82.6 m above sea level at the lowest portion of the creekbed.

Study area

A standard baseline offset approach was used to map the creek, creekbed and obstacles affecting waterflow and, as such, the displacement and deposition of cultural material. The closest, straightest and most permanent available measurement from which to base measurements was the former stables, which proved favourable since the structure is one of only four pre–1923 structures at Sturtbrae visible in historic maps and publicly accessible aerial imagery (i.e. Google Maps, SARIG). Five-metre-long tape measures were used to map distance along the creek's south and north margins, providing an illustration of the creek's meander south of the building. The location of large trees and other obstacles obstructing the flow of water and material were marked. The study

area began slightly southwest of the building where material had been found and where the base of a small waterfall restricts the upstream movement of material. Mapping ended at a small, recently constructed and obstructive concrete dam a metre northwest of the stable footprint, from where water flows downstream into a large concrete pipe, under Flinders University's Sturt Campus and into the stormwater system. In total, the stretch of the creek defined as the study area was 20 m long.

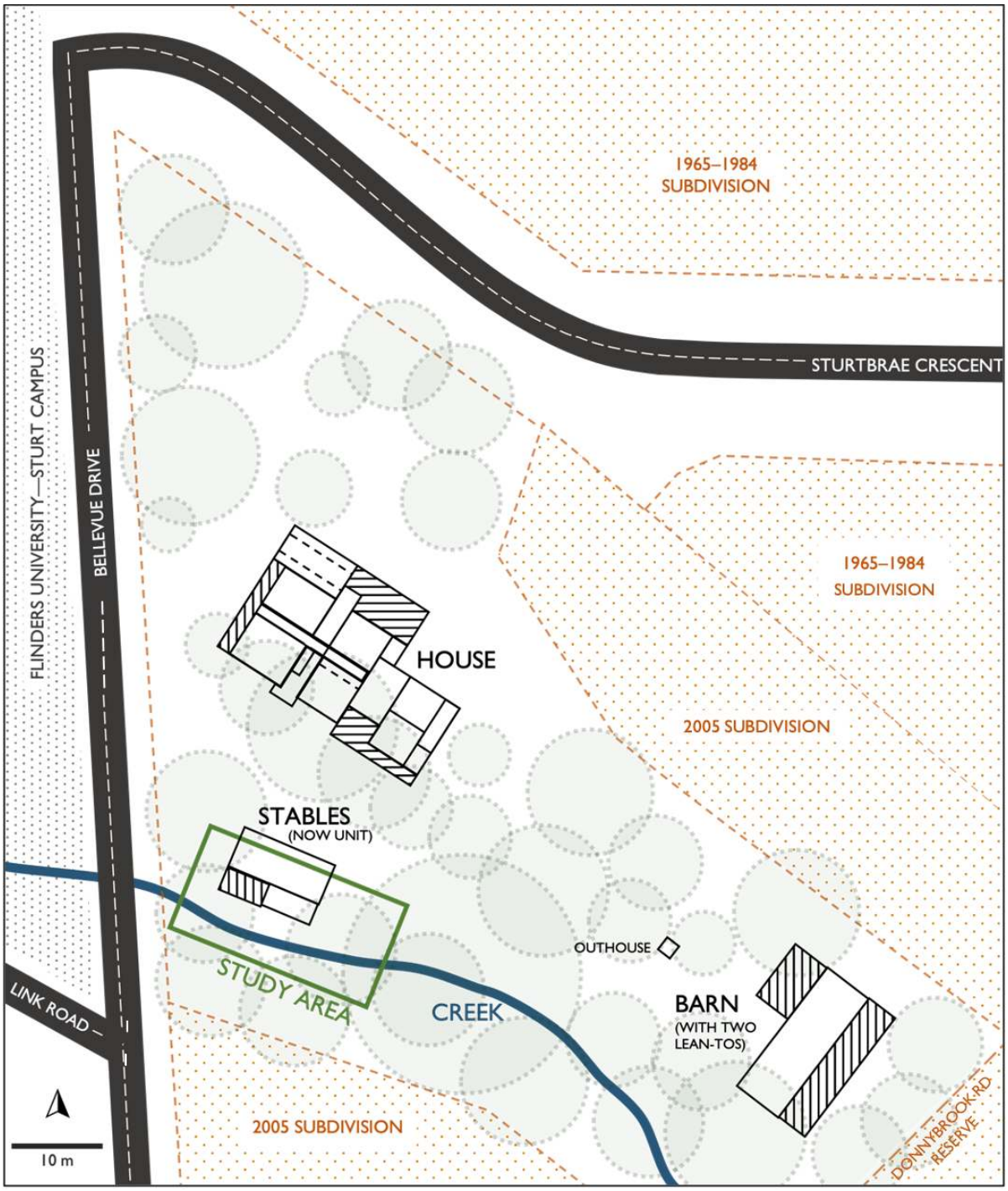


Figure 4.1: Sturtbrae and the study area

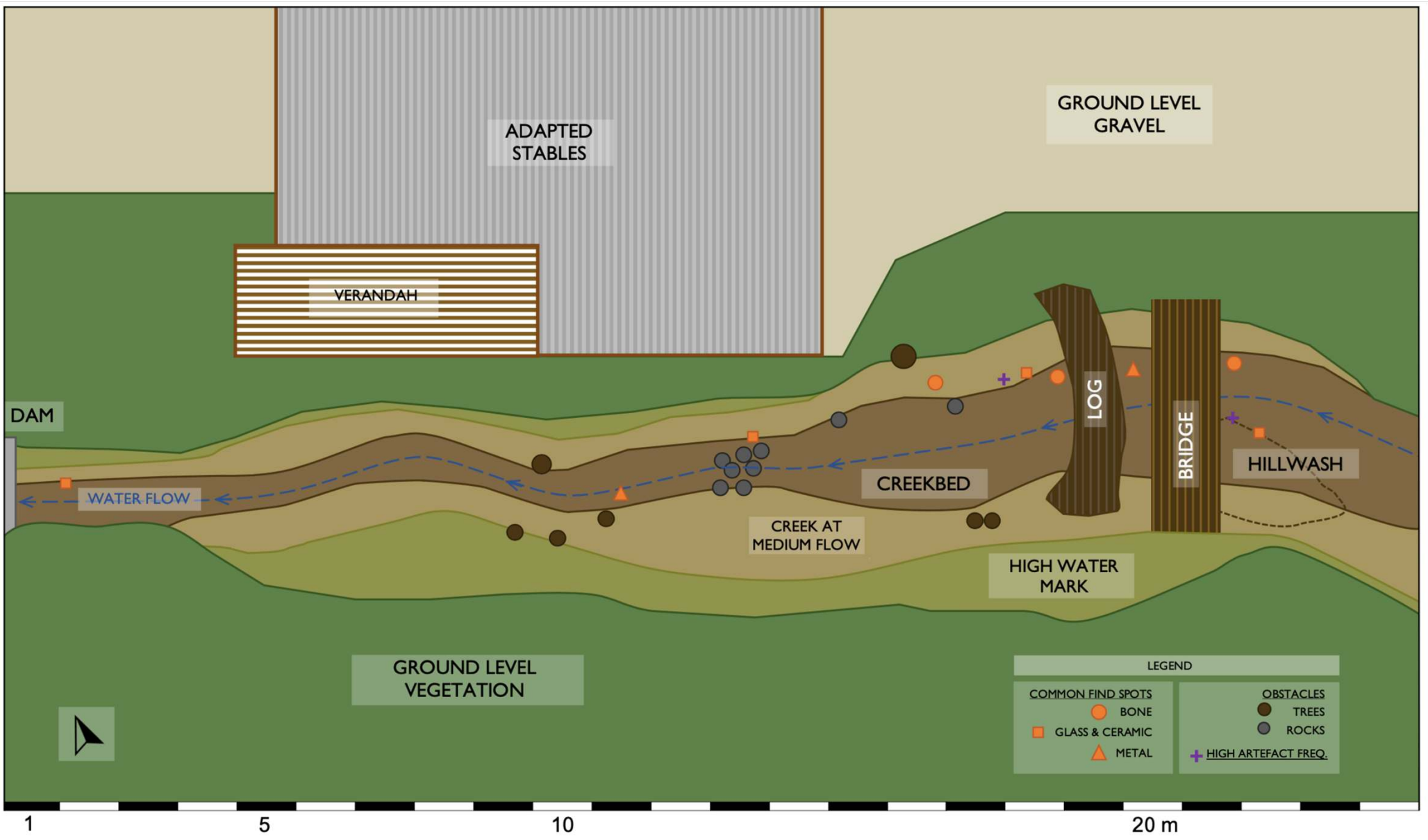


Figure 4.2: The study area where the Warri Parri/Sturt River tributary exits Sturtbrae

Artefact collection

Mudlarking

Mudlarking transpired when the weather and water level of the creek were optimal, when

a) conditions were safe, i.e. the creek was not flowing;

b) there were consecutive days of no rain and so less water in the creek; and

c) objects along the creekbed were easily observed and able to be collected.

Although along the middle of a creekbed rather than an open field, mudlarking at Sturtbrae corresponded to the fieldwalking transects familiar to archaeologists, involving pacing the length of the study area and careful observation while carrying an assortment of tools (Figure 4.3). Among the tools used to record the site and objects in situ were a scale card, measuring tape, camera and sample recording form (*Appendix 2*) attached to a clipboard, with a trowel, brush and bucket used in the collection of cultural material for later analysis in expectation of some objects washing downstream. Five episodes of mudlarking were thus conducted over four months when weather and water levels permitted, as follows:

- 10/8/2021 for two hours, with overcast skies, a maximum of 20°C and a fully dry creekbed;
- 11/9/2021 for two hours, with cool weather (maximum 18°C) and overcast skies after more than a week of warm, dry weather and consequently no water in the creek, creating ideal conditions for mudlarking;
- 3/10/2021 for one hour, with cool weather (maximum 20°C) and clear skies after two days without rain, with up to 30 cm of water remaining stagnant in the creek (especially in eastern areas of the creek study area) and consequently poor visibility of objects along the creekbed;
- 12/10/2021 for two hours, with warm weather (maximum 23°C), overcast skies and a creekbed left mostly dry after eleven days without rain;
- 11/11/2021 for 1.5 hours, with cold weather (maximum 15°C) and clear skies. After five days without rain, the creek was mostly dry but up to 12 cm of water remained in deeper sections of the creek. Heavy rain followed.

Objects were collected at or just below the surface of the creek—no deeper than 7.5 cm as per PLA guidelines (*Appendix 1*), which meant objects were partly or sometimes entirely visible on the creekbed—and labelled with the site name (STB01) and date. Mudlarking continued over one to three hours until all such objects were collected prior to storage, bagging and sorting. Some areas proved to be catchments for types of artefacts (see Figure 4.2).

Figure 4.3: The author mudlarking, bucket and trowel in hand
(Photograph by author with self-timer, 3/10/2021)

Figure 4.4: The top portion of a glass bottle visible on the surface of the study area
(Photograph by author, 12/10/2021)

Figure 4.5: Three bottle fragments visible in the mud along the creekbed within the study area (Photograph by author, 12/10/2021)

Figure 4.6: A bone fragment eroded into view on the side of the creekbed
(Photograph by author, 11/11/2021)

Figure 4.7: A paratrooper toy lodged in debris in the study area
(Photograph by author, 11/11/2021)

Artefact processing, cataloguing and analysis

Artefacts were divided into five material categories: ceramic, glass, metal, fauna and a 'miscellaneous other', which eventually comprised charcoal and plastic objects. General and specific functions as well as general and specific forms that could be ascribed to artefacts across the range of materials were necessary. General and specific functions and forms are outlined below (Table 4.1).

Table 4.1: Artefact catalogue categories

General function	Specific function	General form	Specific form
Eating and drinking	Preparing food	Cookware	Cooking dish, pan, pot
	Serving and consuming food (i.e., tableware)	Plate, bowl, cutlery	Dinner plate, nappy bowl
	Serving and consuming tea (i.e., teaware)	—	Teacup, saucer, mug
	Serving and consuming (other)	—	Water pitcher
	Storing food and drink	Bottle, container, cover	Salad oil bottle, jar, tin, lid
Personal	Health and hygiene	Bottle, toilet utensil	Perfume bottle, medicine bottle, syringe, toothbrush
	Clothing and accessories	Textile, fastener	Lace, buttons, hook and eye fastener
	Recreation	Children's toy	Figurine, marble, dice
House and home	Utility	Cleaning supply, fixture, communications equipment	Telegraph insulator, lock, tile, polish bottle
	Decorating	—	Decorative glass,
	Gardening	—	Plant pot
Tools and equipment	Writing and drawing	Writing instrument, ink-related	Pen nib, pencil, ink bottle
	Sewing	—	Needle, spool, pin, thimble
	Industry	Work tools, equipment	Fencing wire, nails, fid
	Transport	Horse accessory, car part	Headlight, horseshoe, wheel
	Weapons and ammunition	Weapon, ammunition	Gun barrel, bullet, shotgun cartridge
Organic material	Animal remains	Bone, shell	Species/specific bone, oyster shell, mussel shell
	Floral	—	Charcoal
Indeterminate	—	—	—

To catalogue, compile and compare objects across material categories, the less commonly used Minimum Number of Artefacts (MNA) and Minimum Number of Fragments (MNF) were employed in place of material-specific counts such as Minimum Number of Vessels (MNV) for ceramic and glass artefacts or Number of Identified Specimens (NISP), Minimum Number of Individuals (MNI) or Minimum Number of Elements (MNE) for faunal remains. These terms were used sparingly to discuss individual material categories but avoided while discussing the overall catalogue and assemblage. MNF proved effective in counting all conjoining pieces belonging to the same object (e.g. a glass or ceramic vessel or bone element), while MNA either referred to the total object comprised of one or more conjoining fragments, or a sum of undiagnostic charcoal or metal fragments. These counts were based on Hayes (2007, 2011, 2014) and Hiscock's (1985, 2002) quantification of artefact assemblages.

Length, width, thickness, weight and completeness were recorded for all objects in each material category, with dimensions measured in millimetres (mm) using digital callipers or, for the largest metal objects, a tape measure (see *Appendix 2*). Length was measured as the maximum measurement along the largest side, width as the maximum along the perpendicular axis and thickness as the depth from front to back. Electronic lab scales were used to measure weight in grams (g) to two decimal places. ID numbers included the site (STB01) and artefact type (the first letter of each category, e.g. 'G' for glass artefacts) and number (e.g. 01) identifiers so, for example, the third metal artefact was labelled STB01/M03. Microsoft Excel was used to form an artefact spreadsheet (*Appendix 5*) into which all objects were catalogued with diagnostic information.

Glass

Glass artefacts were described according to their horizontal and vertical planes, where available, and measured according to length (measured from top to bottom as per the original vessel), width, glass thickness, weight, completeness, base diameter, kickup depth and bore diameter where available. Information was recorded relating to glass colour, embossing, element, manufacturing process, the presence of pontil marks or modification, finish and closure types, inferred use and estimated date of manufacture. Hayes's functional classifications (2014:36) were applied in relation to general and specific functions, whereby glass bottles are most appropriately described as 'Eating and drinking → Storing food and drink' rather than 'Eating and drinking → Serving and consuming' or 'Personal → Recreation', since, even if glass bottles were manufactured to contain alcoholic beverages, one cannot assume that alcohol was always used recreationally or that bottles always held alcohol or were not refilled or reused for another purpose.

For both glass and ceramic objects

The frequency and proportion of distinct types, wares or forms were compared, where applicable, to the following assemblages and derived from published research. Data therein were selected, extrapolated and adapted to appropriately compare site assemblages with standardised data. Where data could not be adapted, the site was not compared to Sturtbrae.

Table 4.2: Comparative sites including glass and ceramic

#	Site	Study
1	Sturtbrae, SA	–
2	Old Kinchega Homestead, NSW	Allison & Esposito 2020
3	Caboonbah, QLD	Terry 2009, 2013
4	Viewbank, VIC	Hayes 2007
5	Bean's Parsonage, VIC	Brooks et al. 2011
6	Wellington St, VIC	Prossor et al. 2012
7	Quebec St, Port Adelaide, SA	Briggs 2006

Ceramic

Ceramic rims and bases were measured for diameter and arc length using an A3 rim diameter chart (*Appendix 3*) and all fragments measured for wall thickness. Technological ware type, paste colour, manufacturing process, surface and glaze type (over or under) were recorded. As Briggs (2006:54–55) notes, decoration (i.e. transfer, appliqué relief, moulded or gilt edging) and pattern were among the important measures used in the nineteenth century to differentiate ceramics and so each detail was recorded. If decorated, the colour, application method, motif, trademark and decorative flaws were recorded. The inferred use, function, form and date of manufacture were recorded for all artefacts where possible, loosely based on Hayes's (2014:24–35) cataloguing of ceramic artefacts from Viewbank, and a general and specific function was afforded to each artefact. For instance, 'Eating and drinking' included the functions 'Serving and consuming food' or 'Serving or consuming tea', before division by form, for example, into bowl or dinner plate. Forms, ware types, decoration and other terminology related to ceramic artefacts are based on Brooks (2005:26–55) and Miller (1980). Hayes' (2014:34) definition of a matching set involving two or more vessels with an identical pattern is adopted here.

Metal

Metal artefacts were measured according to length (measured as the longest dimension), width, thickness, weight and completeness. Length of twisted wire fragments were measured as if square. Metal type and manufacturing process were recorded where identifiable. Composite objects were catalogued according to the dominant material, e.g. a ceramic and metal c.1925 telegraph insulator (STB01/M001) was recorded as 'metal' according to its primary metal fitting.

Faunal remains

Faunal remains were described with diagnostic information such as the animal species and skeletal element if applicable, based on Fillios and Blake (2015) (Table 4.3). Sheep bones were distinguished from goat bones via osteometric differences outlined in Prummel and Frisch (1986) and Onar et al. (2008), and sheep vertebrae from human vertebrae via diagnostic measurements in Wilke et al. (1997). Bones unable to be classified were afforded a general description, e.g. 'unidentified long bone' and the species assumed based on relative size. The length of all bones was measured along the longest side, most often corresponding to the proximal–distal length of the bone. An exception was made for vertebrae, which were measured along the proximal–distal distance according to the standard anatomical position, despite this being the shortest length.

Table 4.3: Animal species identified and/or expected at Sturtbrae

Mammal	
Sheep	*Ovis aries*
Cattle	*Bos taurus*
Pig	*Sus scrofa*
Brushtail possum	*Trichosurus vulpecula*
Rabbit	*Oryctolagus cuniculus*

Bird	
Chicken	*Gallus gallus*

Mollusc	
Native mud oyster	*Ostrea angasi*

The taxonomic composition of Sturtbrae's faunal assemblage was then compared to those of a selection of relevant historical archaeological studies, as in Table 4.4.

Table 4.4: Comparative faunal assemblages via Popkin et al. (2012:1784)

Site	**Species**			
	Sheep	**Cow**	**Other**	**Unidentified**
Moreland Street, VIC (English 1991)	(80.7%)	(6.2%)	(3.2%)	(9.8%)
Divett St, SA (Briggs 2000)	872	80	189	—
Regentville Midden, NSW (Weaver 2003)	78	35	12	—
Conservatorium Cistern, NSW (Weaver 2003)	462	351	34	—

Taphonomic features like butchery or gnawing marks were recorded, since they provide a framework in which archaeologists can determine the 'multiple processes and events that cumulatively determine the content and condition of skeletal assemblages from archaeological sites' (Stodder 2008:73). Completeness for faunal remains was considered in relation to whole bones: 1–24%, 25–49%, 50–74%, 75–99% and 100% for complete bones. Evidence of post-mortem burning, calcination, cutting, gnawing, significant abrasion or rounding were recorded. To allow comparison to other analyses, the presence or absence of butchery marks was also recorded (Briggs 2000; Crabtree and Campana 2008). These marks were considered in relation to primary, secondary and tertiary cuts, where 'primary' refers to slaughtering, skinning and the removal of inedible portions; 'secondary' to the subdivision of the carcass into consumption units (Figure 4.8); and 'tertiary' to further subdivision when cooking and consuming before discard. Since it cannot be confirmed whether these features meant bones were for human consumption, bones were ascribed the loosely functional category 'faunal remains'.

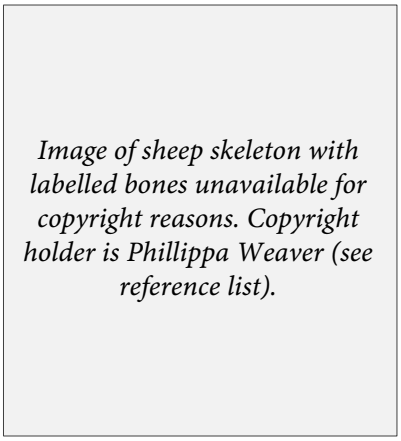


Figure 4.8: Butchering a sheep—the cuts and bones involved: A) Dorsal view (left), 'Preparing Mutton' from the Perth Sunday Times (6 May 1923:7). Retrieved via Trove, March 19, 2022, from <http://nla.gov.au/nla.news-article58048273>. B) Lateral view (right) from the SA Blyth Agriculturist (October 18 1912:3). Retrieved from Trove, March 18, 2022, from <http://nla.gov.au/nla.news-article215931752>. C) Sheep skeleton (missing extremities) from Weaver (2003).

Table 4.5: Sheep butchery sections, uses and relative value ranks (Weaver 2003:40; English 1991:84–85; Beeton 1861:305–314).

Butchery section	Skeletal element	Uses	Relative value rank
Loin (including tenderloin, short loin & chump)	Lumbar vertebrae, ilium, acetabulum, sacrum, dorsal rib 12, thoracic vertebrae 13 & coccygeal vertebrae 1–3	Roast, chops	1
Rib loin or rack	Dorsal rib 5–12 & thoracic vertebrae 5–12	Ribs, chops, roasting	1
Leg (shank off)	Femur, ischium, pubic bone & patella	Steaks, roast, boiling	2
Shoulder	Scapula, proximal humerus & diaphysis	Roast, stew	3
Best neck or fore quarter	Dorsal rib 1–4 & thoracic vertebrae 1–4	Cutlets, chops	4
Breast (including flank & flap)	Ventral rib 1–12, costal cartilages, sternum & xiphoid process	Boiling, stew	4
Scrag or neck	Cervical vertebrae 1–7	Stew, broth, boiling	5
Foreshank	Radius, ulna, carpals & distal humerus	Stew, poor quality roast, soup	5
Hind shank	Tibia, fibula, calcaneus, tarsals and astralagus	Stew, poor quality roast, soup	5
Feet	Metapodials & phalanges	Boiling, soup	6
Head	Skull, mandible, maxilla, hyoid & teeth	Boiling, soup	6

The fusion of epiphyses provides an estimate of the age of the animal at death, as summarised by Popkin et al. (2012) (Table 3.2) (see also Hatting 1983; Moran and O'Connor 1994; Silver 1969; Zeder 2006). This may allude to a preference for eating lamb (sheep <18 months), hogget (18–24 months) or mutton (>2.5–3 years) and, with each afforded a different price point, an approximate socioeconomic position of the resident household.

Figure removed due to copyright restriction.

Miscellaneous other

Objects not included in other categories (e.g. plastic) were considered 'miscellaneous other' and fewer additional variables were recorded.

Photographic recording

All artefacts were photographed in the photography lab at Flinders University, Bedford Park, Adelaide, using the department's Nikon D750 attached to an AF-S VR Micro-NIKKOR 105 mm f/2.8G IF-ED lens, adjustable camera rigs and flash soft-boxes. Exposure was set to 1/200 sec, f/13, ISO 200 for all photos. Fieldwork photography used an Olympus Stylus TG-4 Tough. All photos included in this thesis were taken by the author unless otherwise indicated.

Desktop research

Documentary evidence was required to interpret the artefacts vis-à-vis the history of Sturtbrae and its inhabitants, to evaluate the effectiveness of mudlarking as an archaeological method. Documentary and oral history research included archival research via the City of Mitcham's Heritage Research Centre, the State Library of South Australia (SLSA) and Trove, and anecdotes from Shephard and Mills descendants and the prolific May Mills, as well as her interviews in the SLSA collection.

Limitations

Mudlarking involves opportunistic sampling, which by its nature involves several variables, biases and limitations, mostly related to the 'abundance, clustering, obtrusiveness, visibility and accessibility' of cultural material noted by Schiffer et al. (1978:4). Weather was a significant constraint, with 2021 marking Adelaide's wettest winter in six years, with days of continuous rain flooding Sturtbrae's creek and at one point contaminating it with untreated sewerage. A mini tornado also rendered the area inaccessible in late July. Persistently cloudy weather and an accumulation of silt and algae affected the ability to observe objects on the creekbed. Nonetheless, these issues are shared with real-world mudlarks, whose successful collection of artefacts is at the whim of tides, weather, the visibility of objects and other factors.

Chapter 5:

Results

Two hundred and five artefact fragments from 160 individual artefacts, totalling approximately 8.2 kg, were found while mudlarking in Sturtbrae's creek. The largest material group by a considerable margin was faunal remains (70 artefacts), followed by ceramic (MNA=35) then glass artefacts (MNA=31). There were 22 metal artefacts and two 'miscellaneous'—one plastic and one charcoal.

Table 5.1: Summary of artefacts by material and minimum number of artefacts (MNA) and minimum number of fragments (MNF)

Material	MNA	MNA %	MNF	MNF %	Weight (g)
Faunal remains	70	43.8	93	45.4	882.9
Ceramic	35	21.9	43	20.1	1442
Glass	31	19.4	33	16.1	2260.3
Metal	22	13.8	30	14.6	3598.4
Miscellaneous	2	1.3	6	2.9	4.9
Total	160	~100.0	205	~100.0	8188.4

Despite proving the second least frequent category of artefacts, metal made up the majority by weight (43.9%), with the inverse true of the faunal remains collected from the creek (Figure 5.1).

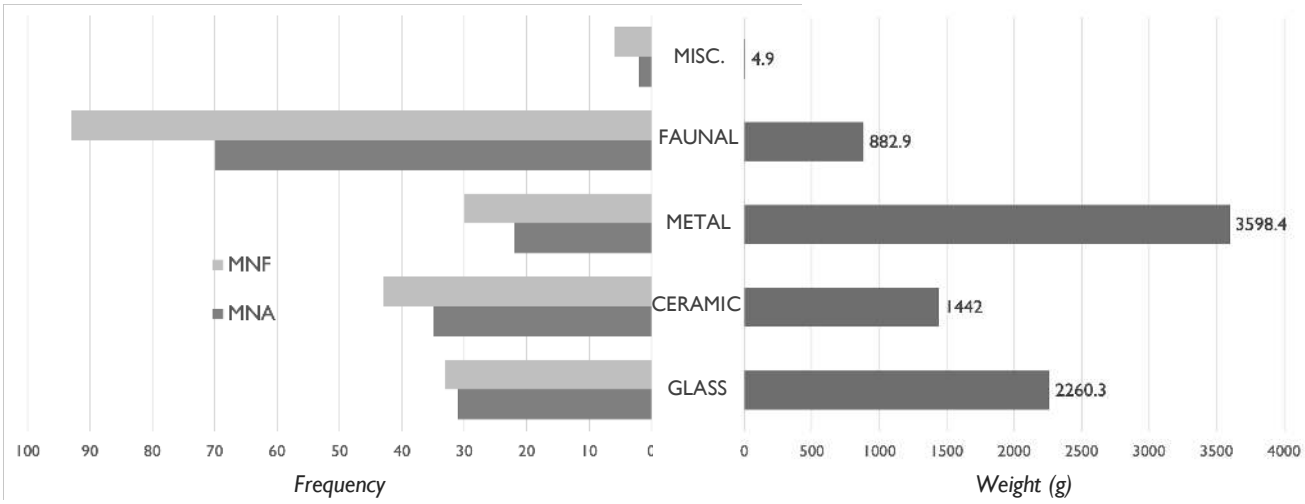


Figure 5.1: Summary of artefacts by material type: MNA, MNF and weight

Based on relative proportion rather than artefact or fragment counts, this assemblage can be compared to the other historical archaeological sites outlined earlier, correlating best with the Caboonbah and Quebec Street assemblages (see Figure and Table 5.2).

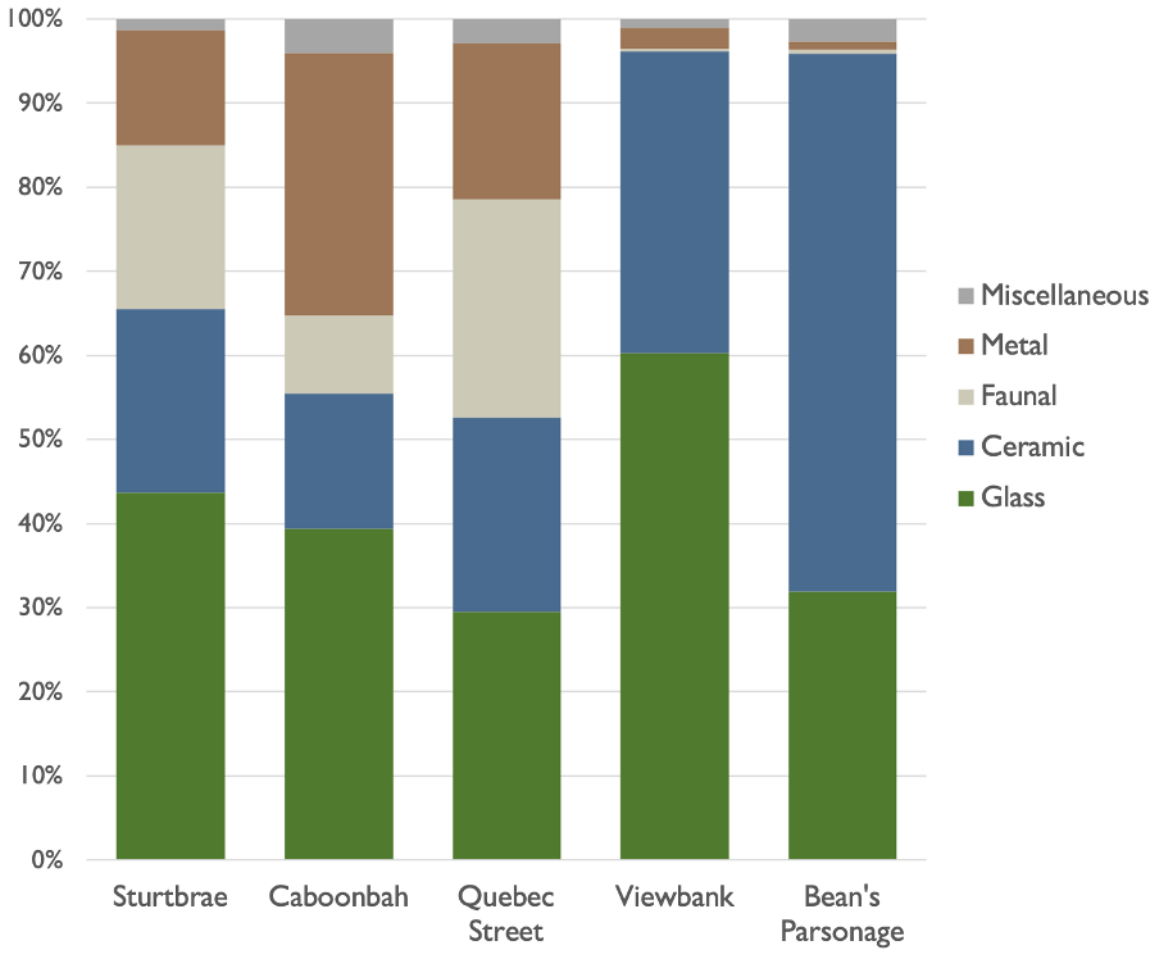


Figure 5.2: Proportion of artefacts at Sturtbrae and comparative sites

Table 5.2: Comparative summary of artefact material type proportions (%)

Material	Historical archaeological sites				
	Sturtbrae	**Caboonbah**	**Viewbank**	**Bean's Parsonage**	**Quebec Street**
Glass	43.8	39.3	60.3	31.9	29.5
Ceramic	21.9	16.2	35.9	64.0	23.1
Faunal	19.4	9.3	0.3	0.5	25.9
Metal	13.8	31.2	2.5	0.9	18.6
Misc.	1.3	4.1	1.03	2.7	2.9

Focusing on the function of artefacts in the assemblage reveals a trend toward capturing consumption patterns, with 'organic material' followed by 'eating and drinking' as the most represented functional types (Figure 5.3 and Table 5.3). Artefacts categorised as 'eating and drinking' and 'tools and equipment' provided the majority of the assemblage's weight, at 41.2% (3370.3 g) and 35.3% (2892.6 g) respectively. Table 5.3 also summarises the Sturtbrae assemblage in terms of specific functions, showing the three most numerous to be 'faunal remains' (MNA=70), 'storing food and drink' (MNA=26) and 'serving and consuming food' (MNA=20).

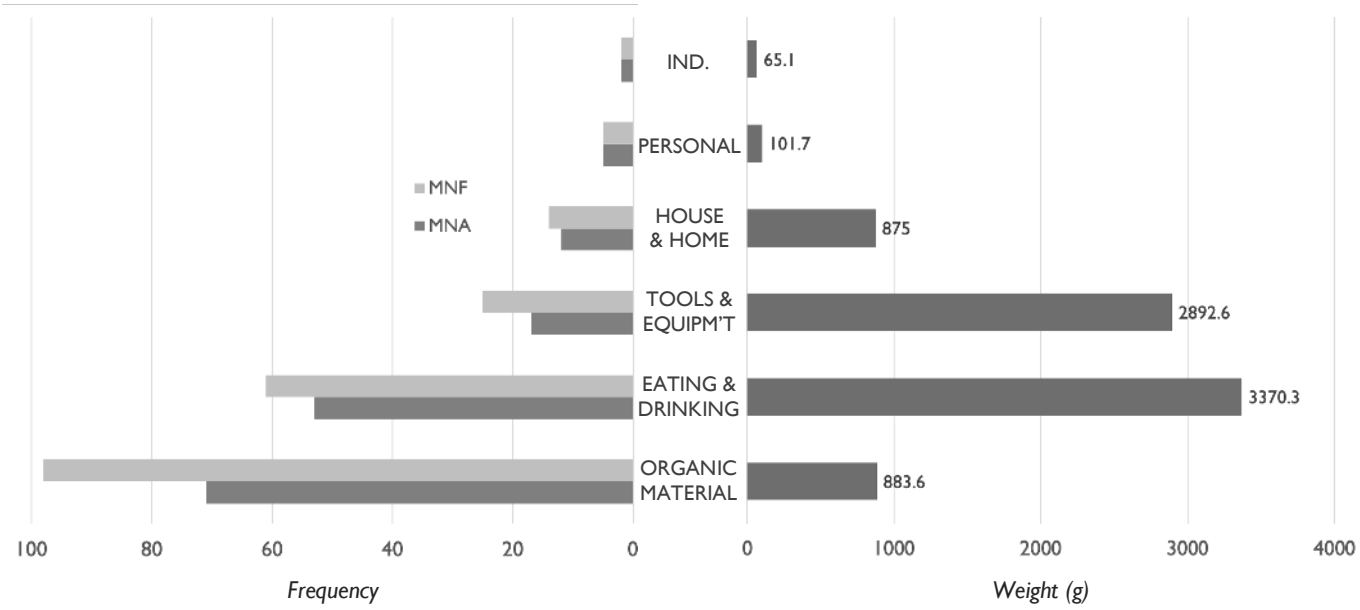


Figure 5.3: Summary of artefacts by functional type: MNA, MNF and weight

Table 5.3: Summary of artefacts by general and specific function

General function	Specific function	MNA	MNA %	MNF	MNF %	Weight (g)
Organic material	Faunal remains	70	43.8	93	45.4	882.9
	Floral	1	0.6	5	2.4	29.1
	Total	(71)	(44.4)	(98)	(47.8)	(883.6)
Eating and drinking	Preparing food	1	0.6	1	0.5	353.4
	Serving and consuming food (i.e., tableware)	20	12.5	21	10.2	902.7
	Serving and consuming tea (i.e., teaware)	5	3.1	12	5.9	156.3
	Serving and consuming (other)	1	0.6	1	0.5	17.2
	Storing food and drink	26	16.3	26	12.7	1796.8
	Total	(53)	(33.1)	(61)	(29.8)	(3370.3)
Tools and equipment	Writing and drawing	1	0.6	1	0.5	23.2
	Industry	11	6.9	20	9.8	2344.4
	Transport	3	1.9	3	1.5	521.9
	Weapons and ammunition	2	1.3	2	0.9	6.2
	Total	(17)	(10.6)	(25)	(12.2)	(2892.6)
House and home	Utility	10	6.3	12	5.9	821.9
	Decorating	1	0.6	1	0.5	25.8
	Gardening	1	0.6	1	0.5	24.28
	Total	(12)	(7.5)	(14)	(6.9)	(875.0)
Personal	Health and hygiene	3	1.9	3	1.4	97.5
	Clothing and accessories	1	0.6	1	0.5	0.1
	Recreation	1	0.6	1	0.5	4.1
	Total	(5)	(3.1)	(5)	(2.4)	(101.7)
Indeterminate	—	2	1.3	2	0.9	65.1
Total	—	160	~100.0	205	~100.0	8188.4

Comparing these statistics with the Viewbank, Caboonbah and Quebec Street, it appears Sturtbrae's assemblage is most similar to that of Viewbank.

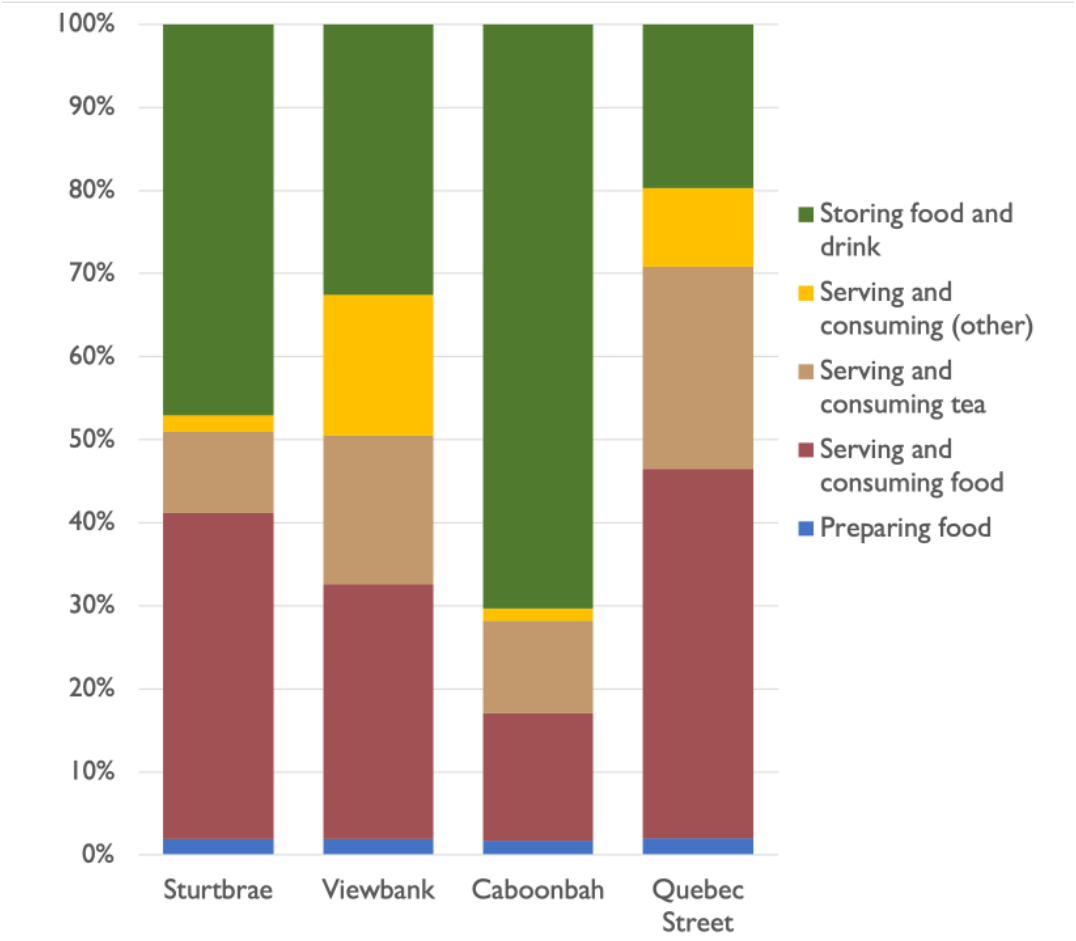


Figure 5.4 (above) & Table 5.4 (below): Comparison of sites by functional type proportions (%)

Eating & drinking	**Historical archaeological sites**			
	Sturtbrae	**Viewbank**	**Caboonbah**	**Quebec Street**
Preparing food & drink	2.0	1.9	1.7	2.0
Serving and consuming food	39.2	30.7	15.4	44.5
Serving and consuming tea	9.8	17.9	11.1	24.4
Serving and consuming (other)	2.0	16.9	1.5	9.5
Storing food and drink	47.1	32.6	70.4	19.7

Table 5.5: The representation of general and specific forms in the assemblage

General form	MNA	MNF
Animal bone	70	93
Glass bottle	24	26
Tableware	22	22
Work equipment	9	16
Teaware	6	12
Fixture	6	6
Cover (food)	2	2
Closure (utility)	2	2
Medicine bottle	2	2
Horse-related	2	2
Ammunition	2	2
All other forms	1	—

Specific form	MNA	Specific form (cont'd)	MNA
Scapula	16	Non-alcoholic bottle	4
Rib	15	Ind. long bone	2
Alcohol bottle	11	Ind. bone	2
Wire	8	Vinegar or salad oil	2
Femur	7	Plate or platter	2
Vertebra	6	Radius/ulna	2
Bowl	6	Nappy plate	2
Dinner plate	6	Serving dish	2
Ind. bottle	6	Medicine bottle	2
Tile	5	Shotgun case	2
Humerus	4	All other forms	1
Tibia	4		

As expected, most artefacts retrieved from the dynamic creek environment are highly fragmented. Of the 143 of artefacts for which completeness could be estimated, only eight (5.6%) were complete, and 88 (61.5%) between 1–24% of a complete object (Table 5.6).

Table 5.6: Summary of diagnostic artefacts by level of completeness

Material	1–24%	25–49%	50–74%	75–99%	100%	Total
Glass	23	4	0	0	4	31
Ceramic	22	5	2	0	0	29
Faunal	43	14	4	5	3	69
Metal	0	4	2	6	1	20
Misc.	0	0	0	1	0	1
Total	88	27	8	12	8	143

Glass

Of the 160 artefacts found over the course of this research, 31 (19.3%) were glass. Of these, a majority (MNA=22, 71.0%) were bottles used for storing food and drink.

Table 5.7: Summary of glass artefacts by functional categories and function

Functional category	Function	MNA	Percentage (%)
Eating and drinking	Storing food and drink	22	71.0
	Serving and consuming food	1	3.2
	Total	(23)	(74.2)
Personal	Health and hygiene	3	9.7
House and home	Furnishing	1	3.2
	Decorating	1	3.2
	Total	(2)	(~6.5)
Tools and equipment	Transport	1	3.2
	Writing and drawing	1	3.2
	Total	(2)	(~6.5)
Indeterminate	Indeterminate	1	3.2
Total	—	—	~100.0

Of the glass artefacts, the majority (MNA=21, 67.7%) were small shards (<25%) of larger vessels. Four were 25–49% complete while the completeness of two artefacts was indeterminate. Four were complete (100%) vessels: one perfume bottle (STB01/G01), one oil polish bottle (STB01/G02), and two beverage bottles (STB01/G016 and STB01/G021).

Table 5.8: Glass artefacts by completeness

Completeness	MNA	Percentage (%)
1–24%	21	67.7
25–49%	4	12.9
50–74%	0	—
75–99%	0	—
100%	4	12.9
Indeterminate	2	6.5
Total	**31**	**~100.0**

Just under half of the glass artefacts in the assemblage (MNA=15, 48%) were colourless (Figure 5.5). Six shards (19%) were amber, five (16%) aqua and two each green and olive-green (7%). One shard (STB01/G014) was yellow Depression glass.

Of the 23 artefacts categorised under 'Eating and drinking' (Table 5.9), the majority were bottles, including beverage bottles assumed to have been refilled, reused or repurposed and not always contain original liquids. Only one artefact was used to serve or consume food—a shard from a pressed glass serving bowl (STB01/G010). A variety of sub-forms were present (Figure 5.9).

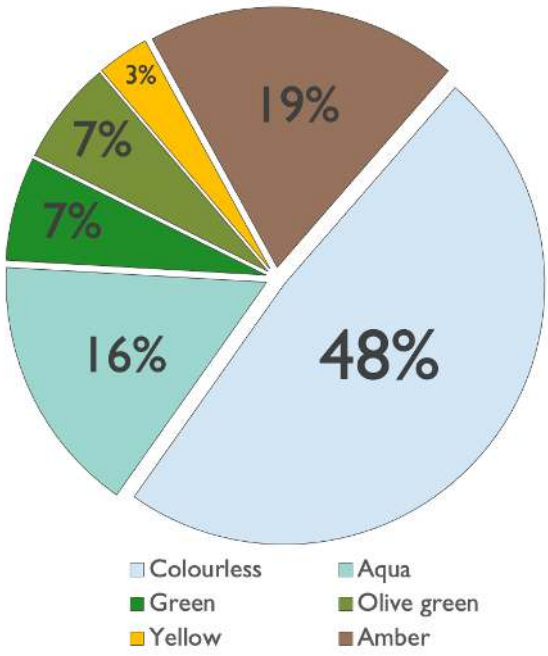


Figure 5.5. Proportion of glass artefacts at Sturtbrae by colour

Table 5.9: Summary of 'Eating and drinking' glass artefacts by form

Function	General form	Specific form	MNA	%
Storing food and drink	Bottle	Alcohol bottle (e.g., beer or wine)	11	47.8
		Non-alcoholic beverage bottle (e.g., soft drink, water)	4	17.4
		Indeterminate beverage bottle	6	26.1
		Salad oil bottle	1	4.4
	Total	—	(22)	(95.7)
Serving and consuming food	Tableware	Bowl	1	4.4
Total	—	—	**23**	**~100.0**

Nine glass artefacts (29% of the glass assemblage) were embossed, providing information about their manufacture. As shown in Table 5.10, the oldest embossed glass artefact was the Piesse and Lubin perfume bottle (STB01/G001, Figure 5.7) dating to 1870 ±10. The most contemporary were locally manufactured beer bottles. One fragment (STB01/G026) was an amber body sherd with continuous, overlapping conchoidal fractures bifacially and along multiple margins, with smaller striation visible under magnification—possibly evidence of intentional flaking (Figure 5.6).

Table 5.10: Embossing on glass artefacts

Manufacturer	Maker's mark	Place of manufacture	Period
Adelaide Bottle Co.	"THIS BOTTLE IS THE PROPERTY OF THE ADELAIDE BOTTLE COOPERATIVE COMPANY LIMITED SOUTHWARK" and faint pickaxe logo (lower body) "1950"/"050"/"3039" (base)	Adelaide, Australia	1950
Adelaide Bottle Co.	'…E CO. P/L'	Adelaide, Australia	c.1980
Adelaide Glass Manufacturers	'1959' and AGM logo	Adelaide, Australia	1959
Adelaide Glass Manufacturers	'1944/A' and AGM logo	Adelaide, Australia	1944
Brooke's	'KE'	Melbourne, Australia	c.1935
Caldwell's Inks	'…LDWELL/…NKS'	Sydney, Australia	1905–1925
Piesse and Lubin	'PIESSE/AND/LUBIN/LONDON" (Back) "1 1/2 OZ" (Base)	London, England	c.1870
Q.P. Manufacturing Co.	"KEWPIE/OIL POLISH"	Melbourne, Australia	1922
Schramm & Co.	'ADEL…'	Adelaide or Melbourne, Australia	c.1900

Other artefacts relevant to the research questions are:

- STB01/G001: A complete Piesse and Lubin perfume bottle, c.1870 ± 10 (Figure 5.7)
- STB01/G007: A colourless fragment found to be part of a c.1925 car headlight

Figures 5.6: "Flaked" glass artefact

Figure 5.7: Piesse and Lubin perfume bottle

Ceramic

Of the 160 artefacts in the Sturtbrae assemblage, 35 were ceramic, accounting for 21.9% of the overall assemblage. Of these, a majority (MNA=27, 77.1%) were used for eating and drinking.

Table 5.11: Summary of ceramic artefacts by functional categories and function

Functional category	Function	MNA	Percentage (%)
Eating and drinking	Serving and consuming food	19	54.3
	Serving and consuming tea	5	14.3
	Serving and consuming other	1	2.9
	Indeterminate	2	5.7
	Total	(27)	(77.1)

House and home	Furnishing	6	17.1
	Gardening	1	2.9
	Total	(7)	(20.0)
Indeterminate	Indeterminate	1	2.9
Total	—	35	~100.0

Eating and drinking—tableware and teaware

The 27 ceramic artefacts used for eating and drinking are important and most extensively used in comparative studies, so the following results focus on them alone. Twenty-three objects were identified as being used to serve or consume food (i.e. tableware) or tea (i.e. teaware, including items made from refined earthenware, both whiteware and ironstone, and white stoneware (Table 5.13).

Table 5.12: Ceramic tableware and teaware by general and specific functions

Specific function	General form	Specific form	Quantity	MNA%
Serving and consuming food	Tableware	Dinner plate	6	26.1
		Bowl	5	21.7
		Ind. plate or platter	3	13.0
		Nappy plate	2	8.7
		Dessert plate	1	4.3
		Dish	1	4.3
		Indeterminate	1	4.3
Total	—	—	(19)	(82.6)
Serving and consuming tea	Teaware	Trio saucer	2	8.7
		Mug	1	4.3
		Saucer	1	4.3
Total	—	—	(4)	(17.4)
Total	—	—	23	~100.0

Table 5.13: Ceramic artefacts by ware type

Ware type	Overall ceramics		'Eating and drinking' ceramics	
	MNA	Percentage (%)	MNA	Percentage (%)
Ironstone	12	34.3	10	37.0
Stoneware	6	17.1	4	14.8
Whiteware	5	14.3	4	14.8
Bone china	4	11.4	4	14.8
Porcelain	4	11.4	3	11.1
Earthenware	2	5.7	1	3.7
Redware	1	2.9	1	3.7
Terracotta	1	2.9	0	0
Porcelain & bone china	8	22.8	7	25.9
Earthenware & Stoneware	27	77.1	20	74.1

Of the 15 decorated ceramic artefacts, most (MNA=9) were decorated with transfer prints (Table 5.14), although a range of other techniques were present (Figure 5.8). Nine had decorative moulded edges (e.g. shell edge), two were hand painted and one featured Chelsea Grape sprigging. Transfer patterns were present in blue (MNA=4), black (MNA=1) and multicoloured (MNA=4).

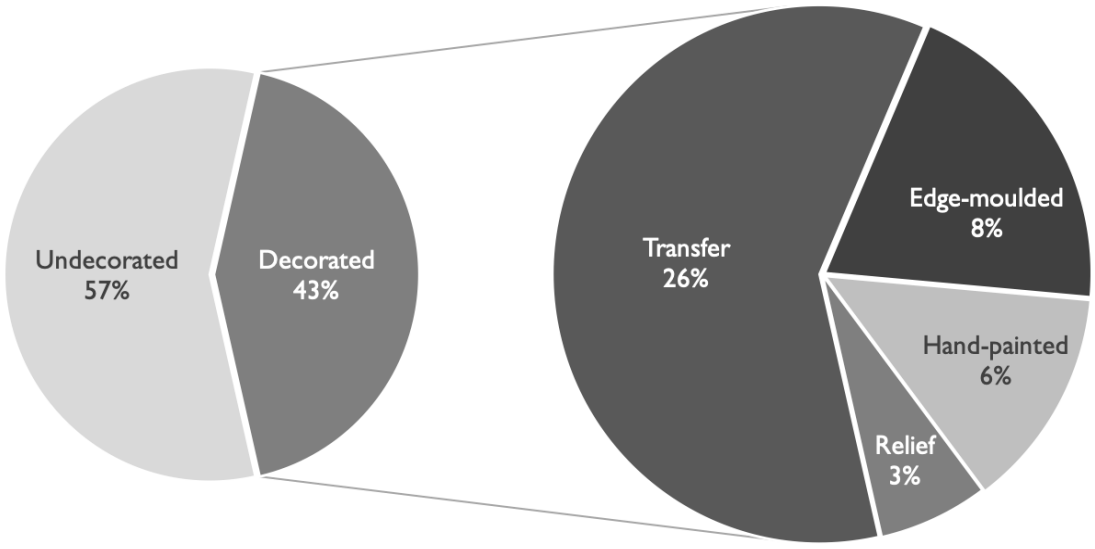


Figure 5.8: Proportion of types of decoration

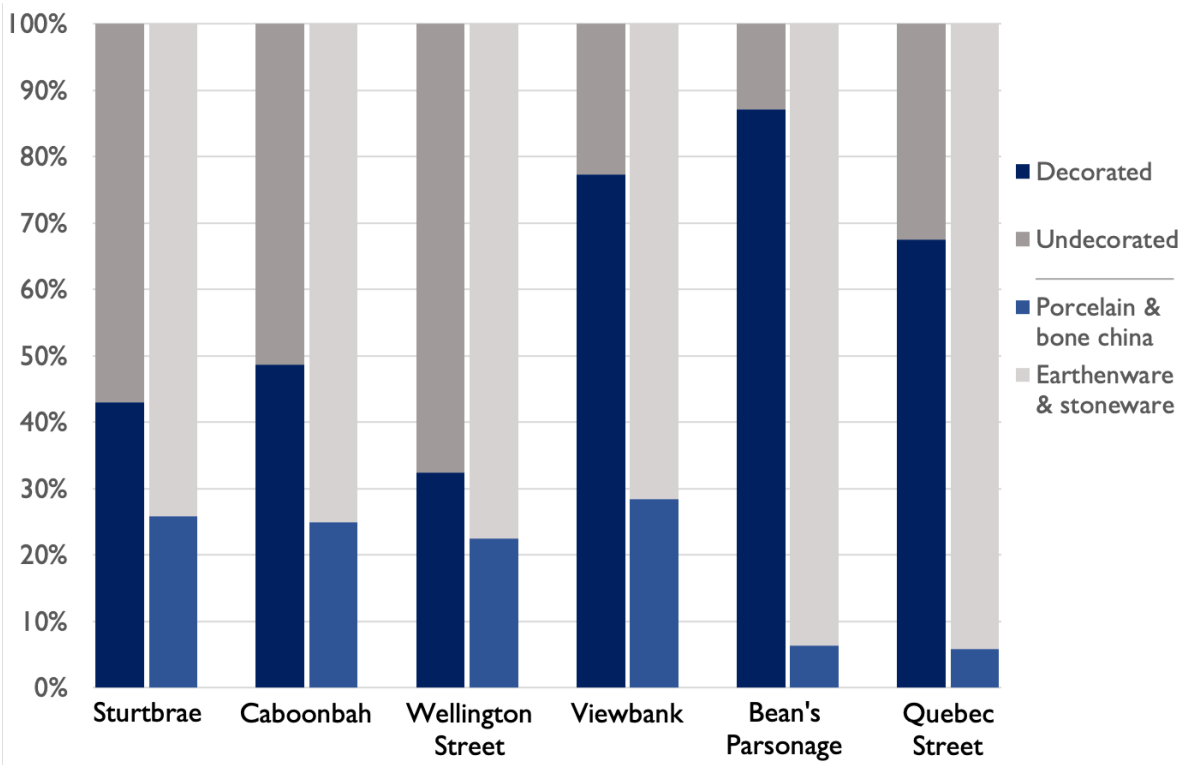


Figure 5.9: Comparing ceramic assemblages by decoration and ware type

Comparing Sturtbrae's artefacts with other sites (Figure 5.9), it appears that Caboonbah again parallels Sturtbrae, the Queensland site having the most similar proportions of decorated ceramic vessels and high-quality porcelain or bone china compared to earthenware and stoneware. Bean's Parsonage in regional Victoria and Quebec Street, Port Adelaide, share the least similarities with Sturtbrae's ceramic composition.

Table 5.14: Transfer print examples from Sturtbrae's ceramic assemblage

Transferware pattern	Illustrative example	Example from Sturtbrae
Fibre/Seaweed In popular usage: 1840–1880, brown/black colour introduced in 1830s		 STB01/C003
Blue Chelsea/Chelsea Grape In popular usage: 1860–1930		 STB01/C007
Plaza (Exclusive to Royal Doulton) In popular usage: 1930s		 STB01/C008

Floris Ligna

'Aesthetic' movement
in popular usage: c.1885

STB01/C009

Rhine

In popular usage: 1820–1950s

(bottom half)
STB01/C033

Willow

In popular usage: 1850–1950s

(from inner rim)
STB01/C035

Unidentified polychrome floral pattern on ewer/pitcher, potentially based on Minton's nineteenth century 'Passionflower' or early-twentieth century 'Poonah' patterns.	N/A	 STB01/C034
Unidentified striped lettering/message Likely used: 1980s–present	N/A	 STB01/C028/1
Unidentified cartoon featuring girl with push-along horse and toys on Japan-made bone china Likely used: 1940s–1960s	N/A	 STB01/C018

Even in a small assemblage, there is at least one potential set: a c.1898–1913 scalloped, beaded-edge Johnson Bros set. Although difficult to verify, the varying condition of the five sherds—each collected during different mudlarking events and from various parts of the creek—suggest they do not belong to the same vessel but to the same set. That none conjoin and only some share a base diameter adds to this likelihood.

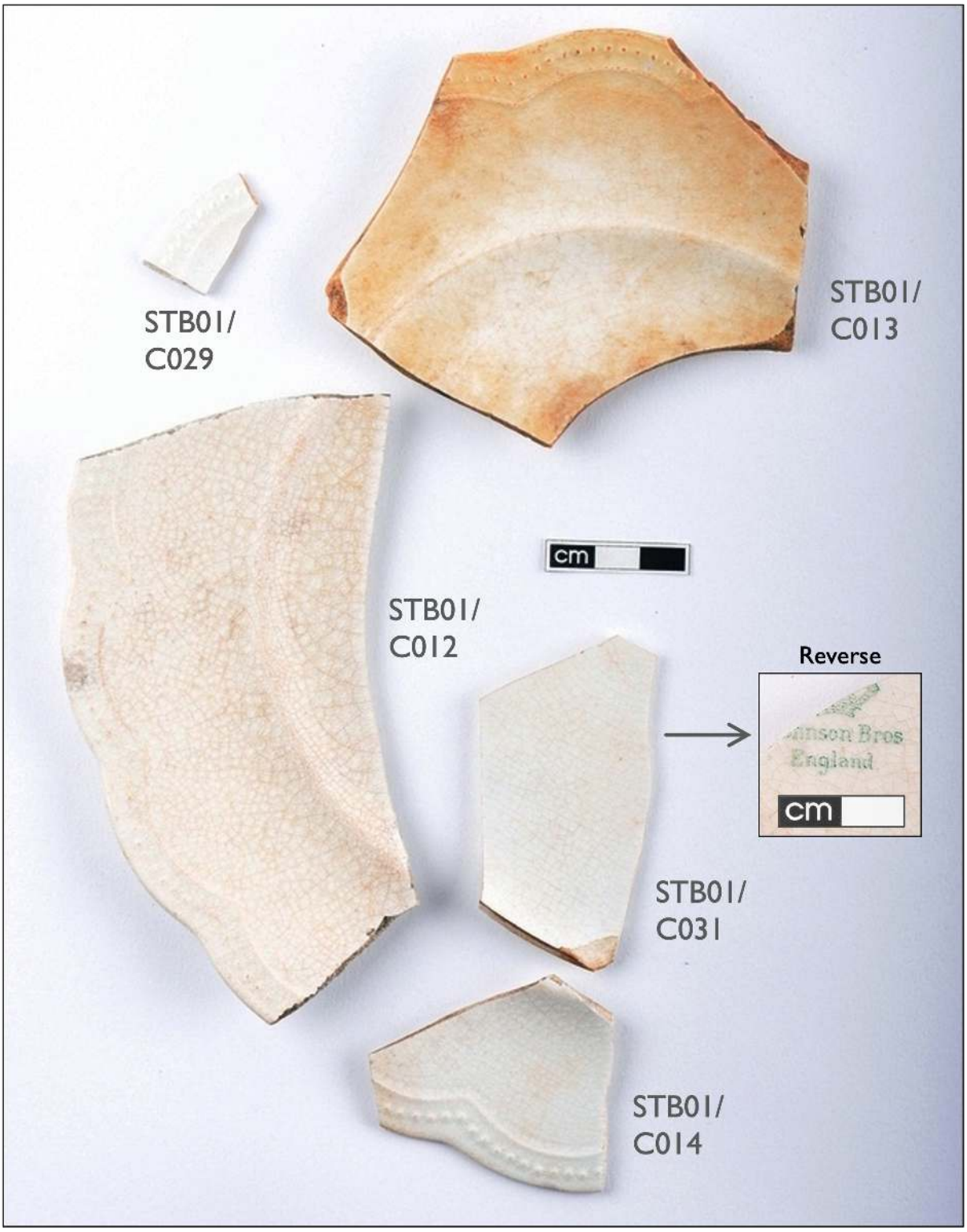


Figure 5.10: Johnson Bros 'set'

Of 'house and home' ceramic objects, almost all were mosaic tiles of various unremarkable designs. No other types of artefacts, like figurines or tobacco pipes, were found.

Faunal remains

Faunal remains represented the largest artefact material category in the assemblage, comprising 43.8% of the total artefactual assemblage (MNA=70) and 45.4% of its fragments (MNF=93), most of which are from identifiable domesticate species. Fifty-six sheep bones, seven cattle bones and one each of chicken, brushtail possum and rabbit were found, as well as three native mud oyster shells and one indeterminate animal bone (Table 5.15). Twenty-four fragments were undiagnostic.

Table 5.15: Summary of faunal remains by species and contribution to the faunal assemblage

Animal	Species	MNA	MNA%	MNF	MNF%
Sheep	*Ovis aries*	56	80.0	56	60.2
Cattle	*Bos taurus*	7	10.0	7	7.5
Native mud oyster	*Ostrea angasi*	3	4.3	3	3.2
Chicken	*Gallus gallus*	1	1.4	1	1.1
Brushtail possum	*Trichosurus vulpecula*	1	1.4	1	1.1
Rabbit	*Oryctolagus cuniculus*	1	1.4	1	1.1
Indeterminate	Indeterminate	1	1.4	24	25.8
Total	—	**70**	**~100.0**	**93**	**~100.0**

Animal bone

Sheep represented 84.62% of the vertebrate elements in the assemblage (Figure 5.11). Scapulae were most common, followed by ribs, femora, radii/ulnae and vertebra (Table 5.16). Elements representing primary discard (from slaughter) include one sheep tooth, metatarsal, phalange and astragalus. Six cow ribs and one vertebra represented 10.77% of the assemblage. These statistics complement those from Moreland (English 1991) and Divett (Briggs 2000) Streets, the Regentville Midden and the Sydney Conservatorium archaeological excavations (Weaver 2003), to which the taxonomic composition at Sturtbrae is most comparable.

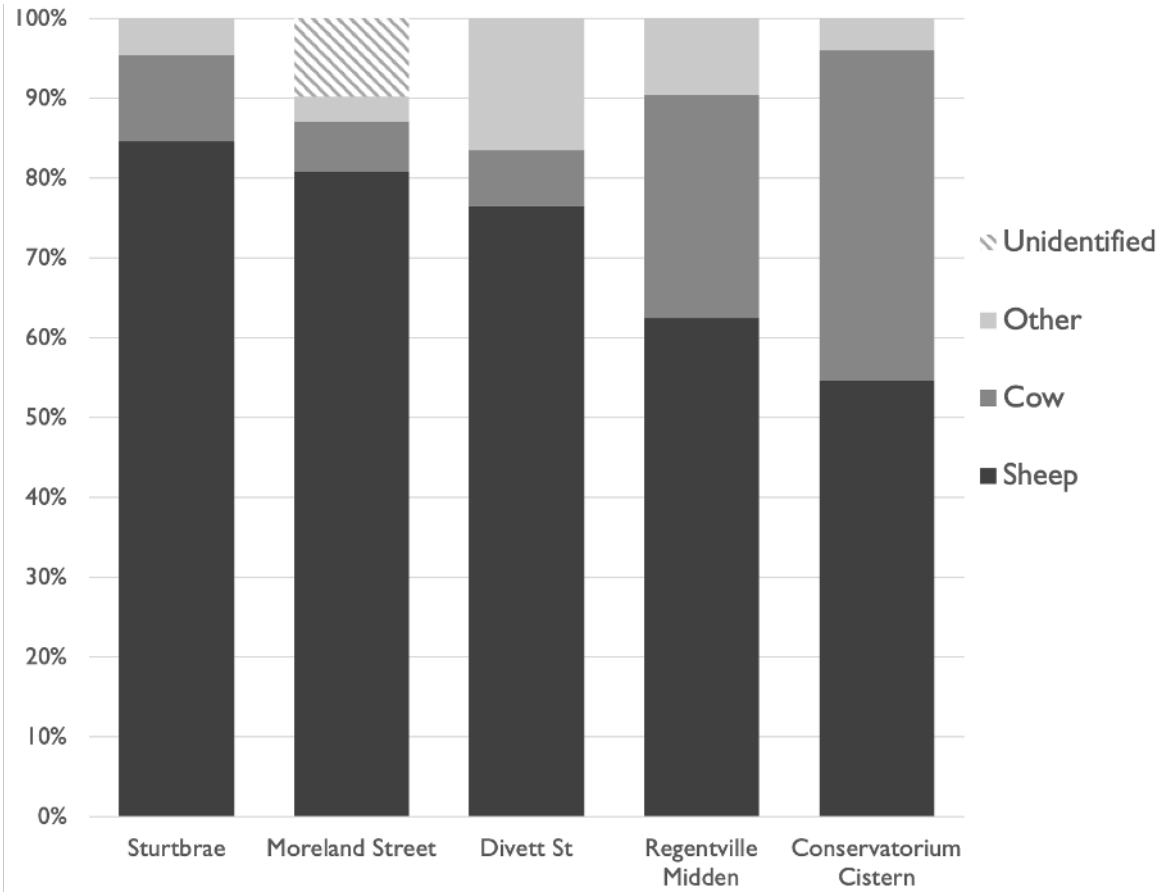


Figure 5.11: Comparing taxonomic composition between sites

Only the rabbit femur, possum humerus and sheep molar were intact, with all other bones in the assemblage fragmented to some degree. A number of these bones are light grey-blue or almost black, but this appears to be staining rather than burning as there is no calcination present.

Figure 5.12: Bones by species

Table 5.16: Diagnostic bones by element present (excluding shells and non-diagnostic elements)

Animal	Species	Element	MNA	MNA%	Median completeness
Sheep	*O. aries*	Scapula	16	24.6	1–24%
		Rib	9	13.8	1–24%
		Femur	6	9.2	1–24%
		Radius/ulna	5	7.7	50–74%
		Vertebra	5	7.7	25–49%
		Tibia	4	6.2	25–49%
		Humerus	3	4.6	25–49%
		Indeterminate long bone	3	4.6	1–24%
		Tooth	1	1.5	100%
		Metatarsal	1	1.5	75–99%
		Phalange	1	1.5	75–99%
		Astragalus	1	1.5	75–99%
		Total	(55)	(84.6)	1–24%
Cattle	*B. taurus*	Rib	6	9.2	1–24%
		Vertebrae	1	1.5	25–49%
		Total	(7)	(10.8)	1–24%
Chicken	*G. gallus*	Pelvis	1	1.5	50–74%
Brushtail possum	*T. vulpecula*	Humerus	1	1.5	100%
Rabbit	*O. cuniculus*	Femur	1	1.5	100%
Total	—	—	65	~100.0	1–24%

Drawing on Weaver (2003:40), English (1991:84–85) and Beeton (1861), the proportion of sheep scapulae, vertebrae and humeri suggests the consumption of roast or stewed mutton shoulder, rib loin or rack, cutlets or chops from the fore quarter, all moderate-to-high value cuts. Primary slaughter taking place at Sturtbrae is suggested by the presence of teeth and extremities, although it is possible that poorly valued head meat was consumed.

Figure removed due to copyright restriction.

Using criteria outlined earlier, the age of the animal at slaughter can be inferred by the level of epiphyseal fusion. Most sheep bones to which these criteria can be applied were mutton (i.e. >12 months old) (see Table 5.17), with the overall average between 20–36 months. Combined with butchery marks (Figures 5.13 and 5.14), the assemblage suggests a preference for mutton or hogget over lamb. The minimum number of *O. aries* individuals (MNI), based on the number of scapulae present, is eight, with a minimum of one each of other species.

Table 5.17: Sheep age upon death, by artefact number and bone type.

Artefact no.	Element	Fusion	Age estimate*
STB01/F005	Proximal femur	Unfused	22–36 months
STB01/F055	Distal humerus	Semi-fused	4–12 months
STB01/F056	Complete femur	Unfused	24–37 months
STB01/F057	Proximal tibia	Unfused	27–41 months
STB01/F058	Distal radius	Unfused	21–39 months
STB01/F062	Femoral condyle	Unfused	24–37 months

*Average minimum–average maximum, rounded to nearest total number

Significant faunal artefacts are those that bear marks relating to consumption (see Figure 5.14):

- STB01/F024: A cut, grey-blue sheep vertebra
- STB01/F032: A smaller, cut sheep vertebra
- STB01/F048: A sawn cut cow rib fragment
- STB01/F049: A sawn cow rib fragment with potential bite mark
- STB01/F054: A cut sheep lumbar vertebra
- STB01/F058: The distal portion of a sawn, unfused radius, with a secondary cut or chop
- STB01/F060: A sawn sheep humerus
- STB01/F063: A divided bovine vertebra
- STB01/F066: The sawn distal end of a sheep radius

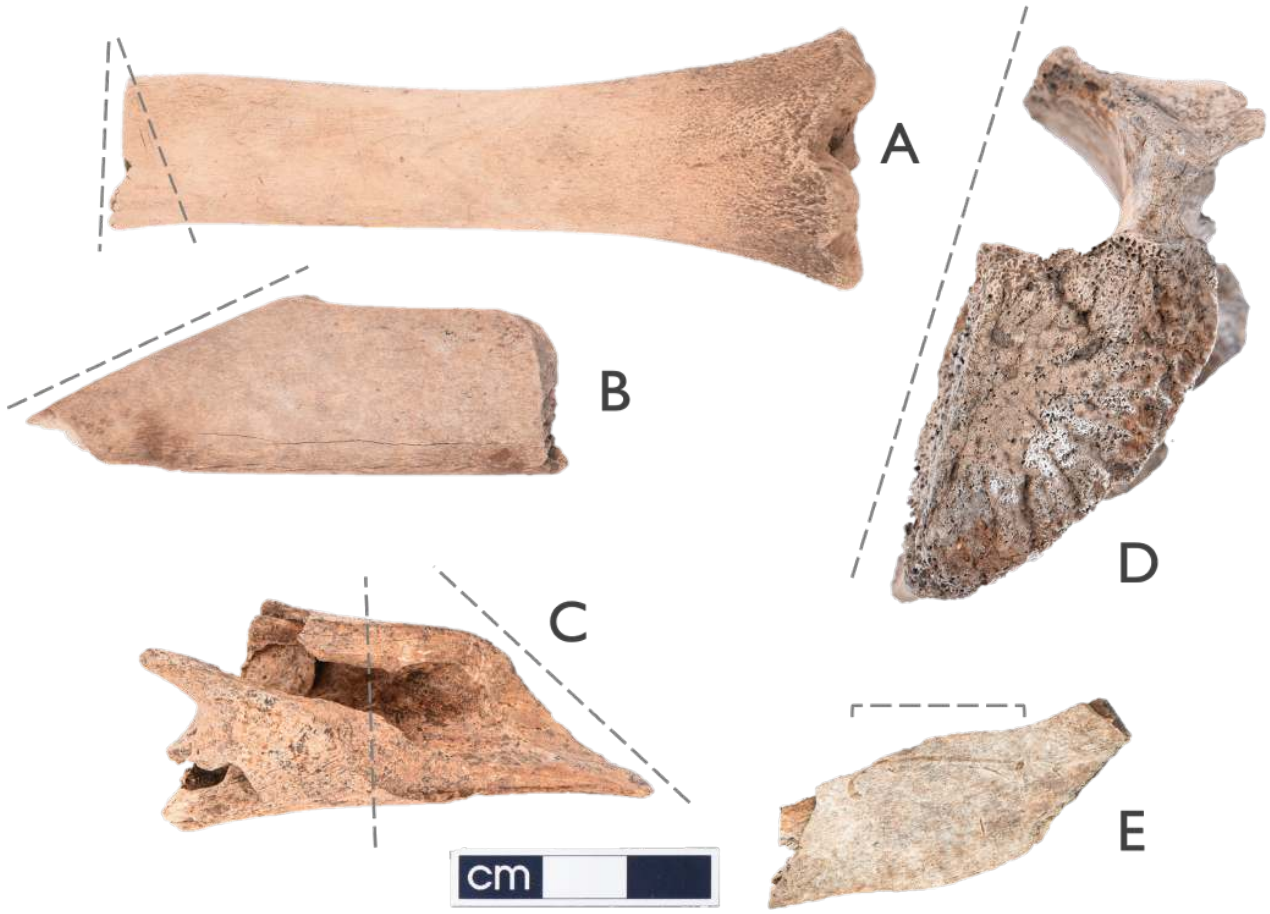


Figure 5.14: Examples of butchery marks in the assemblage, all to the same scale: **A)** F058, unfused distal sheep radius, with a secondary cut or chop mark; **B)** F048, likely cow rib, sawn and distinctly weathered; **C)** F060, sheep humerus; **D)** F063, divided cow vertebra; **E)** F049, cow rib with either chop or bite mark

Shell

Of supplementary interpretative value are three fragments of southern mud or native flat oyster (*O. angasi*). STB01/F052 and STB01/F053 (Figure 5.15) are 98.9 mm and 102.4 mm respectively, and belonged to large (i.e. >68–94 mm), mature specimens of the species that once carpeted thousands of kilometres of the Australian coastline prior to European colonisation (Mitchell et al. 2000:312). The local St Vincent Gulf population is estimated to have collapsed between 1880 and 1910, with the species now considered functionally extinct along all of mainland Australia (Gillies et al. 2018).

Figure 5.15: STB01/F051 (left) and STB01/F053 (right)

Metal

Metal objects constituted 13.8% (MNA=22) of the overall assemblage, and 14.6% (MNF=30) of the overall number of fragments. The majority were categorised as 'Tools and equipment' and, of these, most were work equipment like fencing wire.

Table 5.18: Summary of metal artefacts by function

General function	Specific function	MNA	MNA%	MNF	MNF%
Tools and equipment	Industry	11	50	19	63.3
	Transport	2	9.1	2	6.7
	Weapons and ammunition	2	9.1	2	6.7
	Total	(15)	(68.2)	(23)	(76.7)
House and home	Utility	3	13.6	3	10
	Total	(3)	(13.6)	(3)	(10)
Eating and drinking	Storing food and drink	2	9.1	2	6.7
	Preparing food	1	4.5	1	3.3
	Total	(3)	(13.6)	(3)	(10)
Personal	Clothing and accessories	1	4.5	1	3.3
Total	—	22	~100.0	30	~100.0

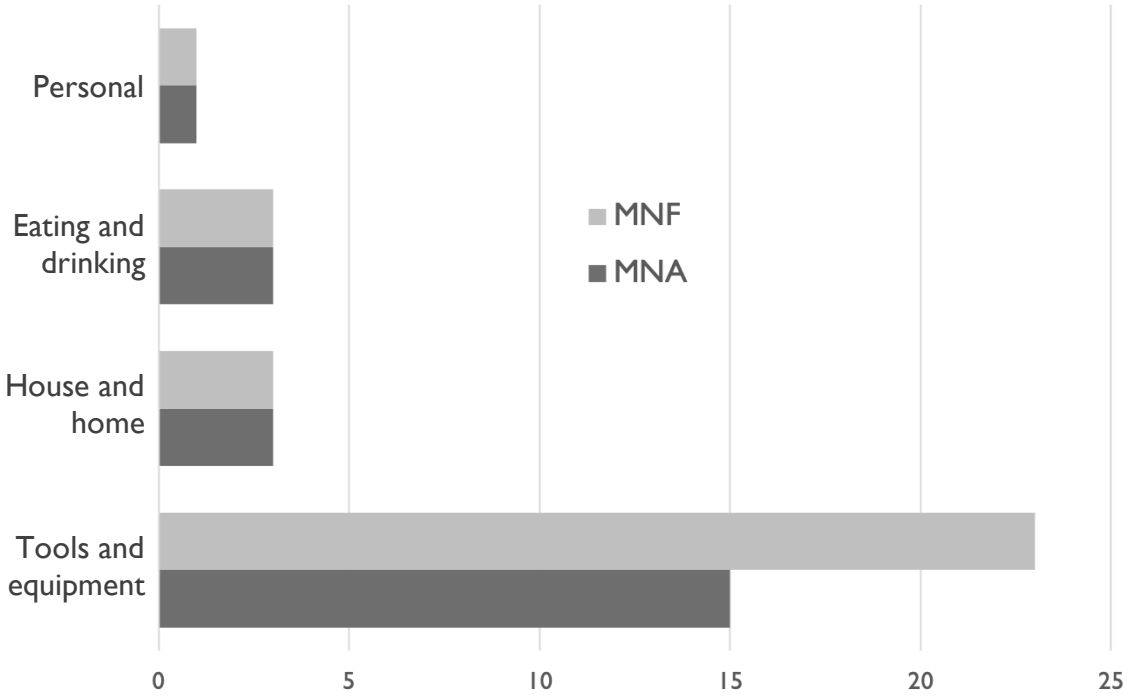


Figure 5.16: The frequency of metal artefacts by functional type

Weapons and ammunition

The two examples of ammunition were two case heads from an Eley-Kynoch 12-gauge shotgun cartridge, dating from 1923–1962 (Figure 5.17). These bear faint stamped letters 'ELEY—KYNOCH', the number '12' and the Imperial Chemical Industries logo, indicating its manufacture in Melbourne.

Figure 5.17: Eley-Kynoch cartridges

Transport

Two examples of transport-related metal were present: a horseshoe and what appears to be part of a wheel rim. The latter was compared to a range of round instruments to provide an estimated diameter of 44 cm.

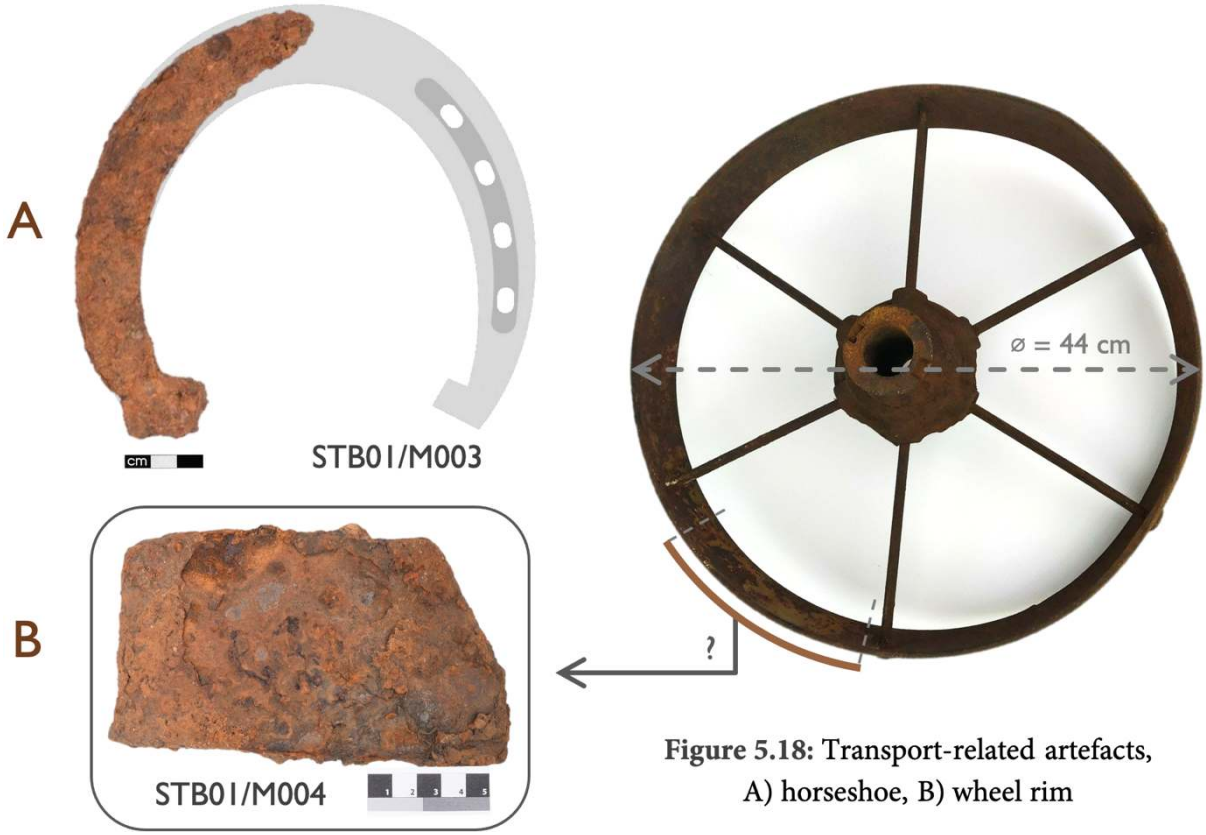


Figure 5.18: Transport-related artefacts, A) horseshoe, B) wheel rim

One artefact, a c.1925 telegraph insulator (STB01/M001, is identical to those installed outside the house's 1864 addition.

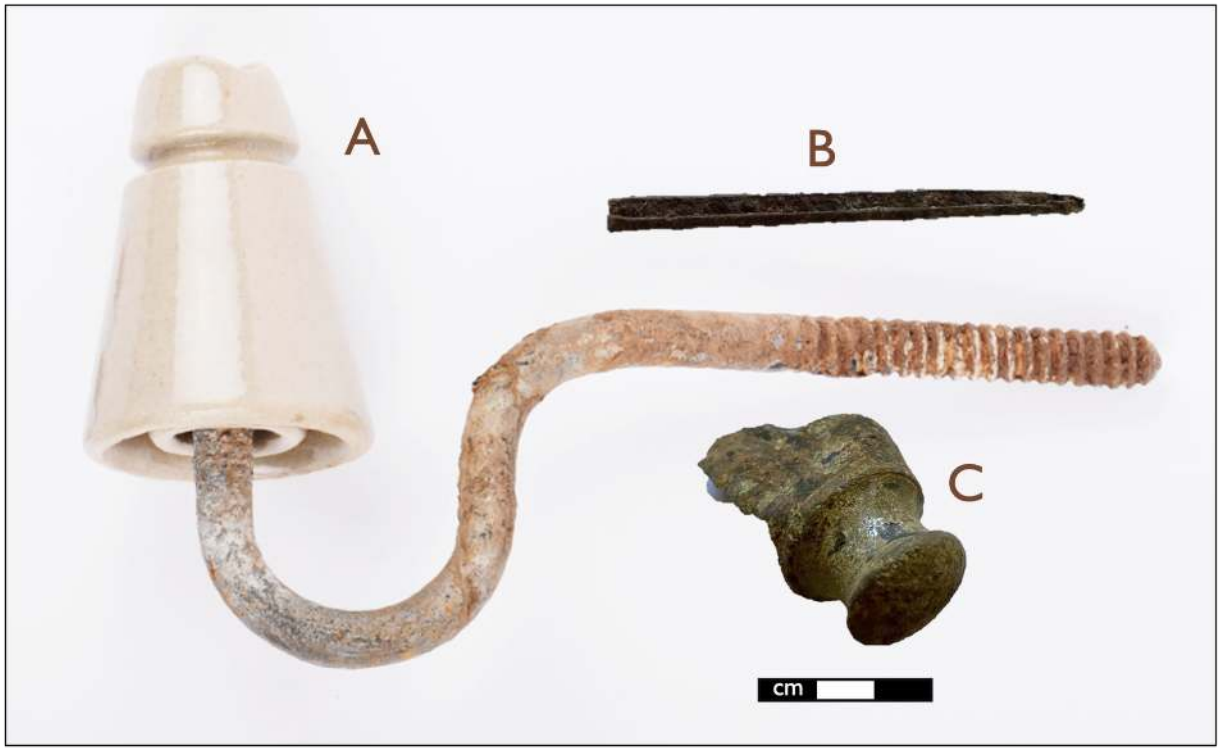


Figure 5.19: Other metal objects collected from the creek, all corroded to some degree: **A)** STB01/M001, ceramic insulator and inseparable metal fixing. Manufactured by Koster's Pottery, Norwood, SA (1930–1950); **B)** STB01/M022, most of what appears to be a fid; **C)** STB01/M016, a fragment of a likely brass knob

Other metal objects included a fid (used to splice rope) and a brass knob or handle, possibly belonging to a fire poker (Figure 5.19A/B). A delicate brass dress hook was also found (Figure 5.20), likely dating to the Victorian era, with smaller incarnations like this being used on undergarments or more delicate forms of clothing.

Figure 5.20: A brass dress hook, part of a Victorian-era hook and eye fastener

Miscellaneous other

Two artefacts could not be placed in any other material category: one c.1980s plastic paratrooper toy and one fragmented piece of charcoal.

Table 5.19: Summary of miscellaneous artefacts

General function	Specific function	General form	Specific form	MNA	MNA%	MNF	MNF%
Organic material	Floral	—	Charcoal	1	4.5	5	2.4
Personal	Recreation	Children's toy	Figurine	1	4.5	1	0.5

Chronology

Despite the fragmentary nature of the assemblage and its disturbed context, some artefacts nonetheless provided dating information (Figure 5.21), in turn providing an earliest date-of-use range (i.e. *terminus post quem*) that can be associated with periods in Sturtbrae's history.

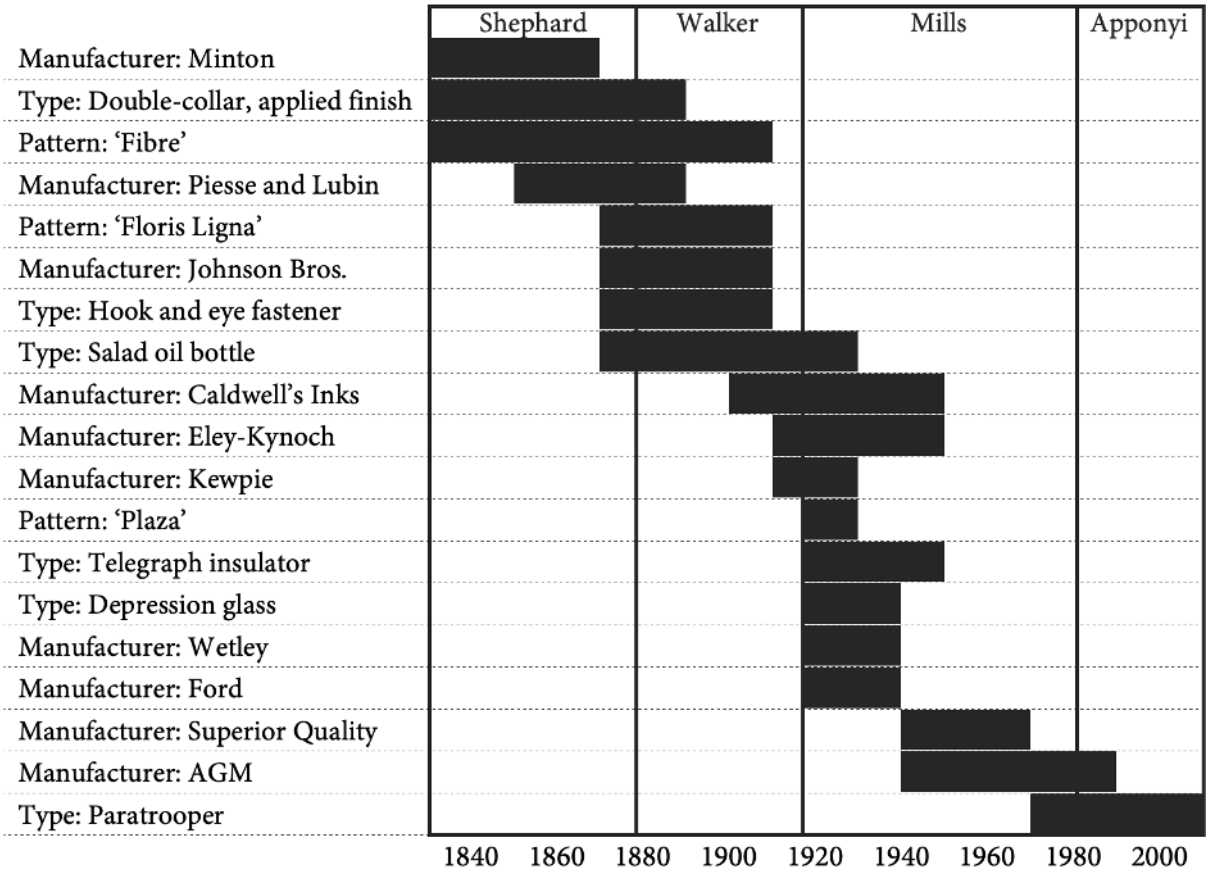


Figure 5.21: A correlation of the most readily dateable artefacts with Sturtbrae's resident families

Chapter 6:

Discussion

A small assemblage compared to those from other historical archaeological sites, the material retrieved from Sturtbrae's creek nonetheless allude to practices, behaviours and perhaps even specific events that occurred there, with artefacts dating from some of the earliest periods of European occupancy to the present. While the original ownership and depositional context of the objects are enigmatic as with most mudlarked material, the Sturtbrae assemblage points to the effectiveness of mudlarking as a useful archaeological method, with artefacts occurring in each of the typological or material categories collected from comparative nineteenth to early twentieth pastoral homesteads and in similar proportions. In turn, the assemblage showcases the potential for amateur, non-professional archaeologists to take part in archaeological discovery via mudlarking.

The following discusses how mudlarking has been afforded credibility as an archaeological investigation method at Sturtbrae, primarily through the ways in which the resultant assemblage conforms to Sturtbrae's history as portrayed through documentary evidence and academic literature, as well as to assemblages from comparative colonial Australian homesteads or households, especially Caboonbah, Viewbank and OKH, all of which the Sturtbrae assemblage closely resembles. Significant finds are discussed here, after which this chapter interrogates how the

results query the status quo in historical archaeological research, namely what, where and by whom it is most often undertaken.

Overview

Most of the 160 objects found during this project are comparable to those found in other Australian historical archaeological deposits, and therefore align with earlier expectations of Sturtbrae's material culture. Because of the development timeline in the locale, there can be an assumed association between most of the pre-1965 artefacts, Sturtbrae's inhabitants and the various activities they pursued at the property. Some artefacts have a specific correlation to Sturtbrae's history, but because of the dynamic nature of the riverine environment and cultural site formation processes, there can be no definite ascription of cultural material to original owners.

Eating and drinking

The 27 ceramic, 23 glass and three metal artefacts related to 'eating and drinking' reveal several key insights. Much of this is because almost all the glass and ceramic assemblage was able to be identified at Sturtbrae, compared to just 6.3% of the Caboonbah assemblage (Terry and Prangnell 2009:103). The Sturtbrae sample is too small to contain multiple identifiable teaware or tableware sets, but comparative analyses suggest adherence to genteel British social values.

Whiteware (including ironstone and white stoneware) makes up 65.7% of the Sturtbrae assemblage, 72% at Viewbank and 59% at Caboonbah. In comparison, bone china and hard-paste porcelain make up 25.9% at Sturtbrae, 25% at Caboonbah and 15.9% at Viewbank—all sites where locally renowned and political families lived. There were no white granite artefacts at Sturtbrae, consonant with most colonial sites where it is rarely represented, although a fifth of the ceramic assemblage at Viewbank was white granite (Brooks 2005:56–57). Porcelain teaware was instrumental to what Hayes (2011:39) calls 'the female domain' of 'paying calls', where women established and maintained their social networks and middle-class British etiquette. One can imagine Mrs Mills, head of the women's branch of the Country Party Association, doing just that. Large servingware is also indicative of events hosted at Sturtbrae, consistent with records of various social affiliations in Adelaide's religious, political and agricultural milieux. Decorative techniques evident at Sturtbrae also feature at Viewbank, Caboonbah and OKH, particularly scalloped edge-moulding

and the 'Willow', 'Rhine' and floral transfer patterns ubiquitous at Australian historic sites. While these were relatively more expensive than undecorated wares, Brooks (2005:62) cautions that this does not mean they were in fact unaffordable and may have been passed down and used by household staff, as suggested of matching 'Rhine' sets at Viewbank (Hayes 2014:62–63).

Although young Walker children lived at and Mills grandchildren visited Sturtbrae during their respective family's tenure, there is no evidence of children in the assemblage until the post-World War II period. The superior quality bone china children's tea set served to socialise children in genteel etiquette (Allison and Cremin 2006:62–63), and that this artefact dates to c.1950 exemplifies the continuation of such behaviour even as Australia shifted, becoming more egalitarian and colloquial.

Tools and equipment

Most of the metal artefacts in Sturtbrae's creek are expressions of the industries that took place there, and reminders that Sturtbrae functioned as a farm until the 1960s. The fid (STB01/M022: Figure 5.19B), for example, indicates the construction of rope or twine to bundle together goods packed at Sturtbrae, while the abundance of wire recalls their need to protect sources of both income and food—their sheep. Metal artefacts span shifts in technology too, with the horseshoe and cartwheel rim reminders of a time before cars, and the subsequent eras represented by a shard from a c.1925 Chevrolet pictured in the blurred background of an archived photograph, or a Mills family Ford used recreationally and for the family's political enterprises in the 1930s (Mills 1982).

House and home and personal

The 17 artefacts classified as either 'house and home' or 'personal' complement those categorised as 'eating and drinking', revealing a commitment to maintaining a respectable presentation of both the body and home. In the assemblage are oil polish, mosaic tiles, decorative bathroom fixtures and decorative Depression-era glass, which suggests that even during an economic downturn, it was essential to adhere to trends and 'keep up appearances'. For the body, the assemblage reveals the use of luxury perfume, with the c.1860 Piesse and Lubin being a favourite of Queen Victoria (S*outh Australian Register* 12 November 1856:1*)*, with the hook-and-eye fastener equally essential to Victorian-era women's fashion. The c.1980s paratrooper figurine represents children's play, a

departure from children being provided miniaturised adult ceramics and social etiquette lessons, although one ponders the gendered implications behind its use.

Organic material

Making up the largest proportion of artefacts, the faunal remains from Sturtbrae suggest a dietary preference toward hogget or mutton in line with contemporary standards, advertisements, recipes and economics, as well as the extended presence of sheep at the property. The presence of extremities and teeth suggests that primary butchering (i.e. slaughtering) had taken place at Sturtbrae, or that entire animals—including heads and feet—were consumed, with the subsequent waste deposited in or adjacent to the creek. A greater proportion of butchery marks at Sturtbrae than at Caboonbah (Terry and Prangnell 2009:103), together with the splitting of vertebrae and the cutting of limbs by joints, reveals typical carcass division.

Studies at OKH and Viewbank did not include faunal analyses, but the results at Sturtbrae are consistent with the taxonomic composition of other Australian historical archaeological sites, and similar to the nineteenth century, then-semirural Moreland Street assemblage in Footscray (English 1991). It is least like the older and more institutional Sydney Conservatorium Cistern assemblage (Weaver 2003) (see Figure 4.12). Despite the presence of charcoal, there does not appear to be any evidence of burnt bone. The staining of some bones is probably due to discolouring bacteria or proximity to other material, as has been recreated in experiments of animal bones submerged in shallow water for lengthy periods (Turner et al. 2018). That only some of the bone is present in this manner may be due to regular drying and flooding cycles affecting creek flow. Unaffected by these cycles appears to be the only invertebrate material collected from the creek, the three *O. angasi* shells. Considering their mature size, it is likely they were procured some time before the distribution and diameter of the oyster species diminished c.1880–1890, and before their natural oyster beds became extinct off mainland Australia in the early twentieth century.

Caveats: Conservation, contamination and confidence

Conservation

The fragmentation of the most collected material types (faunal remains, glass and ceramic) and artefact forms (glass bottles and animal bones) is as expected, which may be explained by site formation and taphonomic processes acting upon fragile materials and forms.

Interestingly, the assemblage also demonstrates a surprising degree of material conservation, with large glass bottles, diagnostic porcelain sherds and even a brittle chicken pelvis surviving disturbance in the creek. This speaks to the coexistence of conservation and deterioration in the complex and dynamic waterway environment and suggests that artefacts have not tumbled downstream but were indeed local to Sturtbrae, eventually being deposited into locations where their further flow downstream was slowed or obstructed. The five conjoined pieces of the children's porcelain tea trio were found within a metre of one another, pointing toward local discard of broken material into or near the creek, where even the most fragile of material can be preserved in place and relatively intact.

Contamination

Site contamination cannot be ruled out, with a lingering likelihood of material being washed into the creek more recently, particularly considering the presence of distinctly modern material, like the two machine-made beer bottle bases (STB01/G023 and STB01/G024). To reiterate earlier discussions, a site's integrity or lack thereof does not always equate to archaeological value and there is nonetheless interpretative value in the assemblage. If, however, they were deposited by Sturtbrae's more recent inhabitants, it suggests continued consumption, discard and deposition practices over more than 160 years.

Confidence

Because of the various site formation and taphonomic processes that take place in such a dynamic environment as Sturtbrae's creek, there remain questions of confidence about the association between these artefacts and the inhabitants and activities at Sturtbrae and, in turn, with assumptions about their inferred dates of purchase, use and discard. Artefacts that nonetheless

appear to predate the 1923 arrival of the Mills family include a selection of ceramic, glass and metal artefacts. These artefacts, however, may have been brought to Sturtbrae by the family. The only certainty is that post-1965 material has no relationship with Sturtbrae's agricultural period, and that post-1984 objects have no association with the Shephard, Walker or Mills families. The potentially flaked glass artefact is greatly affected by this ambiguity, since for archaeologists to readily classify its cultural manufacture would require observing unmistakable cultural signatures or an association with a distinctive Aboriginal archaeological assemblage (Spry et al. 2021:51–52).

Little confidence can exist about whether the deposition of artefacts into the creek was accidental or intentional, since walking through Sturtbrae's contemporary boundary reveals apparently random scatters of distinctively historical glass bottle shards, transferware sherds and remnants of heavily corroded wire fencing. The exact origin of the material cannot be ascertained, with neither eroding archaeological contexts nor former refuse pits identified near the creek or anywhere within Sturtbrae's contemporary boundary. The use of a metal detector through the same area corroborated this conclusion, with no significant buried metal deposits observed.

Credibility through consistency

Mudlarking at Sturtbrae has proven to be an effective, low-cost archaeological method of artefact discovery, with the resulting assemblage having a desirable consistency with comparable historical archaeological sites and the documentary record.

Consistency with other mudlarked material

The artefacts found through mudlarking at Sturtbrae are mainly in line with the expectations listed in Chapter 2, but also with the objects typically found through mudlarking in other waterways as discussed in Chapter 1, with some exceptions. Unless providing the material from which a cultural object—such as a gaming piece, tool or button—was made, animal bones rarely feature in PAS reports and the social media posts of popular mudlarks. This may, however, just speak to bones being left uncollected in waterways in favour of material with more assumed archaeological, historical or economic value.

Consistency with comparable site assemblages

Conforming with similar assemblages at OKH and Caboonbah, the exercise at Sturtbrae gives credence to mudlarking being an effective or at least helpful tool for archaeological research. Much like the material excavated from Caboonbah, OKH and Viewbank, the archaeological assemblage collected from the surface of Sturtbrae's creek suggests a genteel lifestyle across multiple eras and households, with a consistent—and at Sturtbrae, unbroken—sense of Britishness throughout.

Consistency with the historical documentary record

It appears that some of the artefacts collected during this study can be associated with narratives recorded in the historical documentary record, including stories or anecdotes from the Mills and Shephard family descendants, newspaper coverage and other sources. The TQM of the ceramic telegraph insulator and attached metal fixture, for instance, corresponds to the extension of the telecommunications line to the Mills's property and is identical to those still installed on one side of the house. The number of objects from the early 1950s might also suggest a significant deposition event, one which may coincide with the 90th birthday celebration (Figure 6.1) of Lizzie Martha Champion Mills—matriarch of the Mills household, widow of William G. J. Mills and mother of May and Margret Mills. If one can tie the unbroken c.1950 bottles and ceramics to this, it is noteworthy since even historical archaeologists are rarely able to associate artefacts with a specific day in a site's history.

Figure 6.1: Lizzie Martha Mills's 90th birthday celebrations: Top) Family members centred around the former stables, and Bottom) Women and children reclining near the front verandah. (Photos courtesy of the Mills family <millturn>)

Of particular interest is the shard of amber glass with marks resembling those on knapped and retouched implements made by Aboriginal people in the early 'culture-contact' period. Although possibly naturally caused, the overlapping conchoidal fractures along all but one margin on both faces, with one margin also featuring smaller striations, point toward cultural manufacture rather than incidental damage. The artefact is strikingly similar in percussion pattern to Aboriginal glass

artefacts identified at putalina/Oyster Cove, lutruwita/Tasmania (Allen and Jones 1980) and western Victoria (Loy and Wolski 1999:69), and similar in thickness and weight to those made from bottle bodies at Gooragan/Bustard Bay, Queensland (Ulm et al. 2009:113), Boorloo/Perth (Harrison 2000), Native Mounted Police camps in far-north Queensland (Perston et al. 2021) and several sites in Cadi/Sydney (Goward 2011). Glass led to the easy manufacture of multi-purpose tools, and there were various trade networks in glass and other European-derived material after 1788, often long before Aboriginal people had seen Europeans themselves (Lawrence and Davies 2011:57). Whether the glass artefact from Sturtbrae was made or used locally is indeterminable since no similar objects were retrieved. However, analogous glass artefacts were retrieved from other sites on the fringes of colonial settlements (Foghlú et al. 2016:7), including in southern Adelaide along the Onkaparinga River, where 4.7% of an assemblage was amber glass flaked like STB01/G026 (Freeman 1993). If the flaking is cultural, this may be the only artefactual evidence of Aboriginal presence at Sturtbrae.

The inclusion of the Imperial Chemical Industries (ICI) logo on the Eley-Kynoch 12-gauge shotgun shells dates their manufacture to between 1926 and 1963 (*Western Mail* 16 November 1950:63). The cartridges from which the collected shells arise, manufactured in Melbourne's western suburbs, were widely advertised and available in Adelaide (see Figure 6.2), so their use at Sturtbrae is perhaps unremarkable. More noteworthy, however, is their connection to several incidents that, in turn, tie the cartridges to other material collected in the course of mudlarking.

One suggestion for the use of a shotgun exists in the presence of the single rabbit (*O. cuniculus*) bone found in the creek. News articles about repeated dog attacks, however, suggest another possible reason, tied to the large quantity of sheep bones found in Sturtbrae's creek while mudlarking. April 1930 marked the most damaging of the attacks on Mills family sheep, with 20 out of their 56 prized ewes killed by dogs and more mauled. The *Chronicle* (17 April 1930:12) described 'dead animals lying all over the field' with 'most … found in a creek which runs through the property'. Similar incidents at Sturtbrae were reported in 1932, 1952 and later in neighbouring areas, highlighting the persistence of livestock losses in Adelaide's foothills. Of the substantial number of sheep bones found in different sections of the creek and emerging at different times, there are some with evidence of butchery and parts of the animal not ordinarily consumed by

people (e.g. teeth and toes), suggesting that at least some of these faunal remains may belong to sheep dead of natural causes. Even without reports of dog attacks, the number of sheep bones points to the ubiquity of sheep at Sturtbrae throughout its history, and of mutton rather than lamb being eaten by Sturtbrae's inhabitants.

Figure removed due to copyright restriction.

Figure 6.2: An advertisement for Eley-Kynoch shotgun cartridges appearing in *The Chronicle* Thursday 1 June 1950, p. 49. Retrieved via Trove <http://nla.gov.au/nla.news-article93778557>.

Mudlarking surpassing the historical documentary record?

Mudlarking at Sturtbrae seems to have been most fruitful in retrieving cultural material from the early periods of the property's European occupation for which there is relatively scant historical evidence. While the Shephard and Walker families were recorded to live and pursue their pastoral or agricultural activities at Sturtbrae, there is little known about their domestic lives. To some degree, the intact Piesse and Lubin perfume bottle may speak of their socioeconomic situation or, at least, the imported luxury goods they could afford. The earliest available Piesse and Lubin advertising in South Australia—an 1856 advertisement for a frangipani perfume 'with which the Queen of England scents her handkerchief' (S*outh Australian Register* 12 November 1856:1*)*—suggests it is less likely to be a Mills-owned item and more plausible that it belonged to Ann Shephard or a daughter-in-law.

Conclusion

This thesis has successfully evaluated the effectiveness of mudlarking along a creek in Adelaide's southern margins, immediately adjacent to Sturtbrae, a suburban residence with over 170 years of European history as a mixed farm, Merino stud and home to several noteworthy Adelaideans. It has demonstrated that, despite post-depositional and taphonomic processes, it is possible to collect cultural material from waterways defined by their adjacency to historical sites. More importantly, this cultural material retains a capacity to be catalogued and contextualised like artefacts retrieved through other, more traditional archaeological methods.

One hundred and sixty objects were found at Sturtbrae through mudlarking. Being able to observe and analyse these objects has determined that material mudlarked from Sturtbrae's creek retains interpretative value, making for a useful tool to understand the behaviours, attitudes and activities of Sturtbrae's inhabitants, and to compare these with other historical archaeological sites both in and outside South Australia. Sturtbrae's artefacts, for instance, are tied to narratives of colonial expansion into Adelaide's then-periphery, of maintaining a sense of gentility and respectable behaviour even in the Antipodes, of changing fortunes, and of social transformation as a semi-rural homestead gave way to suburbia as known today. The objects interact with the historical documentary record in various ways. In some cases, they provide material evidence for events known to occur at Sturtbrae; others, like the glass artefact with hallmarks of being flaked by Aboriginal people, eclipse the historical documentary record, suggesting a capacity for mudlarked material to reveal otherwise undisclosed narratives of the past.

Despite Sturtbrae's assemblage being what Lawrence and Davies (2011:280) would describe as 'mundane, private and domestic', it is important, in the words of the late anthropologist James Deetz (1977:161), to remember these 'bits and pieces' and, equally, to 'use them in new and imaginative ways so that a different appreciation for what life is today, and was in the past, can be achieved'.

Looking forward

Since Sturtbrae remains in residential use, there is little opportunity for invasive or destructive exploration like that employed at OKH and Caboonbah, but more cultural material of historical archaeological potential will almost certainly continue to emerge in and near the study area, particularly downstream at Flinders University's Sturt Campus. It is also likely that waterways of a similarly historically settled nature—like those close to homesteads like Caboonbah and OKH, or near abandoned paddle steamer hubs like those mudlarked by Graham Boyd in NSW—act as similarly dynamic and rich repositories of cultural material. While cultural material therein may be of relatively low significance, waterflow puts them at a higher risk of loss or deterioration than buried terrestrial material, asserting again the importance of the mudlark's work in salvaging material often only intermittently visible or available. These sites may also be appropriate to utilise and compare mudlarking and other archaeological methods, such as test-pit excavation.

This research has shown mudlarking to be an effective archaeological method at Sturtbrae, warranting further consideration of the inclusion of non-professional or amateur archaeologists as mudlarks. Encouraging public archaeological methodologies and engaging community members in archaeological study in such a way could not only provide professionals with a cost-effective way to undertake archaeology, but also a means to persuade artefact collectors into ethical practice and cooperation with heritage professionals and organisations. If these organisations were to borrow from their UK counterparts who institutionalised collecting into the Portable Antiquities Scheme—with regulations, permits, liaison officers and an openly accessible database—they could capitalise on communities' willingness to engage with history and archaeology, in turn presenting a range of social benefits to those communities as well as knowledge to the archaeological discipline. More artefacts, assemblages and sites can be recognised, surveyed and researched and more perspectives included in archaeology's record of the past and its present-day practice, permitting community construction of heritage and archaeological knowledge. Such projects later being led and managed

by communities themselves, with less or no professional intervention, could serve to instigate a more democratic and public-driven 'archaeology from below' (Faulkner 2000:31–32), one that could truly challenge the 'Authorized Heritage Discourse' (Smith 2006; 2012).

Involving interested parties among the wider community and inviting active, supervised participation will see greater appreciation and acknowledgement of archaeology in Australia as it has elsewhere, especially if it follows public archaeological principles and recommendations from practitioners like Reid (2011) and Gould (2011) and considers alternative funding models like crowd-funded projects (Bonacchi et al. 2015). Mudlarking as public archaeology will extend what Lawrence and Davies (2011:15) argue to be the archaeologist's 'privilege': 'being able to explore and interpret the physical remains of so many things lost, abandoned and forgotten' and 're-imagining past individuals, families and communities'. Heritage is, after all, a finite resource and the more who can contribute to conserving, understanding and appreciating it, the better.

References

Adams, W.H. 2003 Dating historical sites: The importance of understanding time lag in the acquisition, curation, use, and disposal of artifacts. *Historical Archaeology* 37(2):38–64.

Agbe-Davies, A.S. 2010 Concepts of community in the pursuit of an inclusive archaeology. *International Journal of Heritage Studies* 16(6):373–389.

Allen, J. and R. Jones 1980 Oyster Cove: Archaeological traces of the last Tasmanians and notes on the criteria for the authentication of flaked glass artefacts. *Papers and Proceedings of the Royal Society of Tasmania* 114:225–233.

Allison, P.M. 1998 The household in historical archaeology. *Australasian Historical Archaeology* 16:16–29.

Allison, P.M. 2003 The Old Kinchega Homestead: Doing household archaeology in outback New South Wales, Australia. *International Journal of Historical Archaeology* 7(3):161–194.

Allison, P.M. 2014 Conversations and material memories: Insights into outback household practices at the Old Kinchega Homestead. *Historical Archaeology* 48(1):87–104.

Allison, P.M. and A. Cremin 2006 Ceramics from the Old Kinchega homestead. *Australasian Historical Archaeology* 24:55–64.

Allison, P.M. and V. Esposito 2020 *Who Came to Tea at The Old Kinchega Homestead?: Tablewares, Teawares and Social Interaction at an Australian Outback Pastoral Homestead*. Oxford: BAR Publishing.

Almansa Sánchez, J. 2016 You of all people ask me? Public archaeology is you: A response to Grima and the wider debate on the meaning of public archaeology. *Public Archaeology* 15(2–3):141–147.

Altaweel, M. 2021 The market for heritage: Evidence from eBay using natural language processing. *Social Science Computer Review* 39(3):391–415.

Amery, R. 2016 *Warraparna Kaurna! Reclaiming an Australian Language*. Adelaide: University of Adelaide Press.

Amery, R. and K.K. Power 2019 The role of land, fire and water in the Kaurna cultural and linguistic renaissance. In M.C.D. Adone and M.A. Brück (eds), *Fire, Water and Land in Indigenous Australia*, pp.43–65. Germany: Centre for Australian Studies.

Amery, R. and G.Y. Williams 2002 Reclaiming through renaming: The reinstatement of Kaurna toponyms in Adelaide and the Adelaide Plains. In L. Hercus, F. Hodges and J. Simpson (eds), *The Land is a Map: Placenames of Indigenous Origin in Australia*, pp.255–276. Canberra: Pandanus Books.

Anson, P.G. 1993 It's All a Load of Garbage: A Study of Waste Disposal Sites in Early Adelaide. Unpublished Graduate Diploma in Archaeology thesis, Department of Archaeology, School of Humanities, Flinders University, Adelaide.

Armour, D.A. 1969 Pothunter or professional? *Historical Archaeology* 3:3–6.

Arthure, S. 2012 'Not Just a Small Place': Marion Cultural Heritage Survey. Unpublished graduate report, Department of Archaeology, Flinders University, Adelaide.

Awaworyi Churchill, S., L. Farrell and R. Smyth 2019 Neighbourhood ethnic diversity and mental health in Australia. *Health Economics* 28(9):1075–1087.

Bailey, G., G. Momber, M. Bell, L. Tizzard, K. Hardy, A. Bicket, L. Tidbury, J. Benjamin and A. Hale 2020 Great Britain: The intertidal and underwater archaeology of Britain's submerged landscapes. In G. Bailey, N. Galanidou, H. Peeters, H. Jöns and M. Mennenga (eds), *The Archaeology of Europe's Drowned Landscapes*, pp.189–219. Cham: Springer International Publishing.

Bairstow, D. 1984 The Swiss Family Robinson model: A comment and appraisal. *Australian Journal of Historical Archaeology* 2:3–6.

Balista, C., S.T. Levi, A. Vanzetti and M. Vidale 1990 The use of potsherds for interpreting alluvial deposits: A case study in the Adige River basin (Italy). *MRS Online Proceedings Library* 185(1):561–570.

Balme, J. and M. Wilson 2004 Perceptions of archaeology in Australia amongst educated young Australians. *Australian Archaeology* 58(1):19–24.

Bankes, G. 1995 Peruvian pots, crafts and foreigners. *Journal of Museum Ethnography*(7):1–16.

Barford, P. 2020 Some aspects of the collection-driven exploitation of the archaeological record in England and Wales. *Revista d'Arqueologia de Ponent* 30:101–125.

Barkman-Astles, M. 2019 The art of balancing intrigue and integrity: The risks and rewards of public archaeology. In H. Williams, C. Pudney and A. Ezzeldin (eds), *Public Archaeology: Arts of Engagement*, pp.173–189. Oxford: Archaeopress Publishing Ltd.

Bayliss, A. and D. Reed 2001 *The Use of Historical Data in Flood Frequency Estimation*, Oxfordshire: Ministry of Agriculture, Fisheries and Food and Centre for Ecology and Hydrology.

Becker, E. 2009 Archaeology, metal detecting, and the development of battlefield archaeology in the United States. In S. Thomas and P.G. Stone (eds), *Metal Detecting and Archaeology*, pp.33–50. Rochester, NY: Boydell Press.

Beckett, E. and J. McDermott 2016 An online survey regarding cultural heritage management and the law in Australia. *Journal of the Australian Association of Consulting Archaeologists* 4:62–76.

Beeton, I.M. 1861 *The Book of Household Management*. London: Ward, Lock, & Company.

Belford, P. 2011 Archaeology, community, and identity in an English new town. *The Historic Environment: Policy & Practice* 2(1):49–67.

Bellendorf, P., H. Roemich, S. Gerlach, P. Mottner, E. López and K. Wittstadt 2010 Archaeological glass: The surface and beyond. *Glass Ceramic Conservation* 2010:137–144.

Benjamin, J., M. O'Leary, I. Ward, J. Hacker, S. Ulm, P. Veth, M. Holst, J. McDonald, P.J. Ross and G. Bailey 2018 Underwater archaeology and submerged landscapes in Western Australia. *Antiquity* 92(363):1–9.

Bennett, R. 2022 How do interventions using heritage-based activities, impact on mental health and wellbeing? An analysis of Breaking Ground Heritage and Operation Nightingale outcomes. In P. Everill and K. Burnell (eds), *Archaeology, Heritage, and Wellbeing*, pp.197–207. Abingdon: Routledge.

Birmingham, J. and T. Murray 1987 *Historical Archaeology in Australia: A Handbook*. Sydney: Australian Society for Historical Archaeology.

Bland, R. 2004 The Treasure Act and the Portable Antiquities scheme: A case study in developing public archaeology. In N. Merriman (ed), *Public Archaeology*, pp.272–291. Abingdon: Routledge.

Bland, R. 2005 Rescuing our neglected heritage: The evolution of the Government's policy on portable antiquities in England and Wales. *Cultural Trends* 14(4):257–296.

Bland, R. 2013 Response: The Treasure Act and Portable Antiquities Scheme. *Internet Archaeology* 33. Viewed 1 June 2021 <https://intarch.ac.uk/journal/issue33/bland.cfm>

Boardman, J. 2003 Soil erosion and flooding on the eastern South Downs, Southern England, 1976–2001. *Transactions of the Institute of British Geographers* 28:176–196.

Boardman, J. 2012 Archaeologists, collectors, and museums. In J. Cuno (ed), *Whose Culture?: The Promise of Museums and the Debate over Antiquities*, pp.107–124. Princeton, New Jersey: Princeton University Press.

Bonacchi, C., D. Pett, A. Bevan and A. Keinan-Schoonbaert 2015 Experiments in crowd-funding community archaeology. *Journal of Community Archaeology & Heritage* 2(3):184–198.

Briggs, S.M. 2000 Blood in the Street: An Archaeological Examination of a Commercial Faunal Assemblage from Lot 8–12 Divett Street Port Adelaide. Unpublished Honours thesis, Department of Archaeology, Flinders University, Adelaide.

Briggs, S.M. 2006 Portonian Respectability: Working-class Attitudes to Respectability in Port Adelaide through Material Culture, 1840–1900. Unpublished PhD thesis, Department of Archaeology, Flinders University, Adelaide.

Brighton, S.A. 2011 Applied archaeology and community collaboration: Uncovering the past and empowering the present. *Human Organization* 70(4):344–354.

Brooks, A. 2005 *An Archaeological Guide to British Ceramics in Australia, 1788-1901*. Melbourne: The Australasian Society for Historical Archaeology and the La Trobe University Archaeology Program.

Brooks, A., H.-D. Bader, S. Lawrence and J. Lennon 2009 Ploughzone archaeology on an Australian historic site: A case study from South Gippsland, Victoria. *Australian Archaeology* 68(1):37–44.

Brooks, A., S. Lawrence and J. Lennon 2011 The parsonage of the Reverend Willoughby Bean: Church, state, and frontier settlement in nineteenth-century colonial Australia. *Historical Archaeology* 45(4):1–19.

Brown, A.G. 1997 *Alluvial Geoarchaeology: Floodplain Archaeology and Environmental Change*. Cambridge: Cambridge University Press.

Brown, S. 2012 Toward an archaeology of the twentieth-century suburban backyard. *Archaeology in Oceania* 47(2):99–106.

Brown, T. 2002 Floodplain landscapes and archaeology: Fluvial events and human agency. *Journal of Wetland Archaeology* 2(1):89–104.

Burgess, H.T. 1907 *The Cyclopedia of South Australia in Two Volumes: An Historical and Commercial Review, Descriptive and Biographical, Facts, Figures, and Illustrations: An Epitome Of Progress*. Adelaide: Cyclopedia Co.

Burke, H., M. Morrison and C. Smith 2017 *The Archaeologist's Field Handbook: The Essential Guide for Beginners and Professionals in Australia*. Sydney: Allen & Unwin.

Burnett, L. and R. Webley 2020 Report of the Portable Antiquities Scheme 2018. *Post-Medieval Archaeology* 54(2):229–236.

Butterss, P. 2015 Building literary Adelaide, 1836–1860. *Journal of Australian Studies* 39(3):344–361.

Campbell, V. 2016 *Science, Entertainment and Television Documentary*. London: Palgrave Macmillan

Carman, J. and M.L.S. Sørensen 2009 Heritage studies: An outline. In M.L.S. Sørensen and J. Carman (eds), *Heritage Studies*, pp.29–46. London & New York: Routledge.

Carpenter, E. and S. Wolverton 2017 Plastic litter in streams: The behavioral archaeology of a pervasive environmental problem. *Applied Geography* 84:93–101.

Clarke, A., U. Frederick and A. Williams 2010 Wish you were here: Historic inscriptions from the North Head Quarantine Station, Manly, NSW. *Australasian Historical Archaeology* 28:77–84.

Clarke, A. and A. Paterson 2003 Cross-cultural archaeology: An introduction. *Archaeology in Oceania* 38(2):49–51.

Clarke, P.A. 1990 Adelaide Aboriginal cosmology. *Journal of the Anthropological Society of South Australia* 28(1):1–10.

Clarke, P.A. 1991 Adelaide as an Aboriginal landscape. *Aboriginal History* 15:54–72.

Clarke, P.A. 2012 *Australian Plants as Aboriginal Tools*. Kenthurst, NSW: Rosenberg Publishing.

Cohen, N. 2011 Community archaeology on the Thames. P. Drummond (ed) *The London Reader: Essays from LONDONICITY 2011, the First Annual London Studies Conference*, pp.2–12. London: Londonicity.

Cohen, N., G. Milne and E. Wagg 2012 The Thames Discovery Programme: Public engagement and research on London's foreshore. *Archaeology International* 15:79–86.

Coles, J.M. 1984 *The Archaeology of Wetlands*. Edinburgh: Edinburgh University Press.

Coles, J.M. 1987 Preservation of the past: The case for wet archaeology. In J.M. Coles and A.J. Lawson (eds), *European Wetlands in Prehistory*, pp.1–32. Oxford: Clarendon Press.

Colley, S. 2005 'Consumer choice' and public archaeology in and beyond the academy. *Australian Archaeology* 61(1):56–63.

Colley, S. 2006 A preliminary beef meat cuts typology for nineteenth-century Sydney and some methodological issues. *Australasian Historical Archaeology* 24:47–54.

Connah, G. 1993 *The Archaeology of Australia's History*. Cambridge: Cambridge University Press.

Cooper, B.J. 2019 Heritage stone in South Australia. *Australian Journal of Earth Sciences* 66(6):947–953.

Cosgrove, R., D. Frankel and D. Thomas 2013 From the moat to the Murray: Teaching practical archaeology at La Trobe University, Australia. *Australian Archaeology* 76(1):44–51.

Coy, J. 1978 *First Aid for Animal Bones*. Hertford: Rescue—The British Archaeological Trust.

Crabtree, P.J. and D.V. Campana 2008 Traces of butchery and bone working. In P.J. Crabtree and B.J. Adams (eds), *Comparative Skeletal Anatomy*, pp.323–345. Totowa, New Jersey: Humana Press.

Crampton, C. 2019 *The Way to the Sea: The Forgotten Histories of the Thames Estuary*. London: Granta Books.

Czerwinski, P. 2002 Archaeology along the Onkaparinga river, South Australia. *South Australian Geographical Journal* 101(2002):31–42.

David, B., L.J. Arnold, J.-J. Delannoy, J. Fresløv, C. Urwin, F. Petchey, M.C. McDowell, R. Mullett, G. Land and J. Mialanes 2021 Late survival of megafauna refuted for Cloggs Cave, SE Australia: Implications for the Australian Late Pleistocene megafauna extinction debate. *Quaternary Science Reviews* 253:106781.

De Leiuen, C. and S. Arthure 2016 Collaboration on whose terms? Using the IAP2 community engagement model for archaeology in Kapunda, South Australia. *Journal of Community Archaeology & Heritage* 3(2):81–98.

Deckers, P., M. Lewis and S. Thomas 2016 Between two places: Archaeology and metal-detecting in Europe. *Open Archaeology* 2(1).

Deetz, J. 1977 *In Small Things Forgotten: An Archaeology of Early American Life*. New England: Anchor.

Dellios, A. 2019 Personal, public pasts: Negotiating migrant heritage—Heritage practice and migration history in Australia. In K. Darian-Smith and P. Hamilton (eds), *Remembering Migration*, pp.219–236. Palgrave Macmillan Memory Studies. Cham: Springer.

Dellios, A. and E. Henrich 2020 *Migrant, Multicultural and Diasporic Heritage*. London: Routledge.

Dobat, A.S., A.S. Dobat and S. Schmidt 2022 Archaeology as "self-therapy": Case studies of metal detecting communities in Britain and Denmark. In P. Everill and K. Burnell (eds), *Archaeology, Heritage, and Wellbeing: Authentic, Powerful and Therapeutic Engagement with the Past*, pp.145–161. Abingdon: Routledge.

Donovan, P. 1984 Stained glass windows in South Australia: Their history and significance. *Historic Environment* 3(4):34–43.

Dortch, J., E. Beckett, A. Paterson and J. McDonald 2021 Stone artifacts in the intertidal zone, Dampier Archipelago: Evidence for a submerged coastal site in Northwest Australia. *The Journal of Island and Coastal Archaeology* 16(2–4):509–523.

Downes, A. and R. Griffiths 2016 *50 Finds From Yorkshire: Objects From the Portable Antiquities Scheme*. Stroud, Gloucestershire: Amberley Publishing Limited.

Edgeworth, M. 2011 *Fluid Pasts: Archaeology of Flow*. London: Bristol Classical Press.

Edwards, R. 1964 A former Aboriginal camp-site on the Sturt River at Marion, South Australia. *Mankind* 6(4):184–188.

Elia, R.J. 1997 Looting, collecting, and the destruction of archaeological resources. *Nonrenewable Resources* 6(2):85–98.

English, A.J. 1991 This Muttonous Diet. Aspects of Faunal Analysis and Site Comparison in Australian Historical Archaeology. Unpublished Honours thesis, Prehistoric and Historical Archaeology, University of Sydney, Sydney.

Evening Journal 1880 Family Notices. *Evening Journal (1869–1912)*. 20 April 1880:2.

Evening Journal 1892 Advertising. *Evening Journal*. 10 February 1892:4.

Everett, C. 1994 A Tale of Two Privies: Techniques for the Recovery of Organic Remains from Australian Latrine Deposits. Unpublished Honours thesis, Department of Prehistoric and Historical Archaeology, University of Sydney, Sydney.

Faulkner, N. 2000 Archaeology from below. *Public Archaeology* 1(1):21–33.

Ferring, C.R. 1986 Rates of fluvial sedimentation: Implications for archaeological variability. *Geoarchaeology* 1(3):259–274.

Field, J., S. Wroe, C.N. Trueman, J. Garvey and S. Wyatt-Spratt 2013 Looking for the archaeological signature in Australian megafaunal extinctions. *Quaternary International* 285:76–88.

Fillios, M. and N. Blake 2015 *Animal Bones in Australian Archaeology: A Field Guide to Common Native and Introduced Species*. Sydney: Sydney University Press.

Fincham, D. 2008 A coordinated legal and policy approach to undiscovered antiquities: Adapting the cultural heritage policy of England and Wales to other nations of origin. *International Journal of Cultural Property* 15(3):347–370.

Fletcher, E. 1996 *Buried British Treasure Hoards*. Witham: Greenlight Publishing.

Foghlú, B.Ó., D. Wesley, S. Brockwell and H. Cooke 2016 Implications for culture contact history from a glass artefact on a Diingwulung earth mound in Weipa. *Queensland Archaeological Research* 19:1–22.

Foster, R. 2009 'Don't mention the War': Frontier violence and the language of concealment. *History Australia* 6(3):68.61–68.15.

Fredheim, L.H. 2018 Endangerment-driven heritage volunteering: Democratisation or 'Changeless Change'. *International Journal of Heritage Studies* 24(6):619–633.

Freeman, J.A. 1993 A Preliminary Analysis of the Glass Artefacts Found on the Onkaparinga River Estuary. Unpublished Grad. Dip. Archaeology thesis, Department of Archaeology, Flinders University, Adelaide.

Gately, I. and J. Benjamin 2018 Archaeology hijacked: Addressing the historical misappropriations of maritime and underwater archaeology. *Journal of Maritime Archaeology* 13(1):15–35.

Gibbs, M. and S. Colley 2012 Digital preservation, online access and historical archaeology 'grey literature' from New South Wales, Australia. *Australian Archaeology* 75(1):95–103.

Gill, D. 2010 The Portable Antiquities Scheme and the Treasure Act: Protecting the archaeology of England and Wales? *Papers from the Institute of Archaeology* 20:1–11.

Gillies, C.L., I.M. McLeod, H.K. Alleway, P. Cook, C. Crawford, C. Creighton, B. Diggles, J. Ford, P. Hamer and G. Heller-Wagner 2018 Australian shellfish ecosystems: Past distribution, current status and future direction. *PLoS One* 13(2):e0190914.

Golson, J. 1986 Old guards and new waves: Reflections on antipodean archaeology 1954–1975. *Archaeology in Oceania* 21(1):2–12.

Gould, P.G. 2016 On the case: Method in public and community archaeology. *Public Archaeology* 15(1):5–22.

Goward, T. 2011 Aboriginal Glass Artefacts of the Sydney Region. Unpublished Honours thesis, Department of Prehistoric and Historical Archaeology, University of Sydney, Sydney.

Graham, M. 2004 Volunteering as heritage/volunteering in heritage. In R.A. Stebbins and M. Graham (eds), *Volunteering as Leisure/Leisure as Volunteering: An International Assessment*, pp.13–30. Oxfordshire: CABI Publishing.

Graham, R. and C. Whipp 1982 Archaeology of the southern Adelaide region: Burial grounds and practices. *Journal of the Anthropological Society of South Australia* 20(1):1–6.

Green, B. and T. Gregory 1978 An initiative on the use of metal detectors in Norfolk. *Museums Journal* 77(4):161–162.

Green, D.R. 1985 A map for Mayhew's London: The geography of poverty in the mid-nineteenth century. *The London Journal* 11(2):115–126.

Greer, S., R. Harrison and S. McIntyre-Tamwoy 2002 Community-based archaeology in Australia. *World Archaeology* 34(2):265–287.

Griffiths, S., B. Edwards, R. Karl, F. Labrosse, H. Miles, K. Moeller, J. Roberts, B. Tiddeman and A. Wilson 2015 Crowd-sourcing archaeological research: HeritageTogether digital public archaeology in practice. *Internet Archaeology* 40. Viewed 12 November 2021 <https://intarch.ac.uk/journal/issue40/7/3/toc.html>

Grima, R. 2016 But isn't all archaeology 'public' archaeology? *Public Archaeology* 15(1):50–58.

Grove, L. 2013 Heritocide? Defining and exploring heritage crime. *Public Archaeology* 12(4):242–254.

Guccione, M.J. 2008 Impact of the alluvial style on the geoarcheology of stream valleys. *Geomorphology* 101(1):378–401.

Gunton, E. 1983 *Gracious Homes of Colonial Adelaide*. Adelaide: Eric Gunton (self-published).

Guoth, N. and P. Macgregor 2019 Getting Chinese gold off the Victorian Goldfields. *Chinese Southern Diaspora Studies* 8(1):129–150.

Guttormsen, T.S. and L. Hedeager 2015 Interactions of archaeology and the public. *World Archaeology* 47(2):189–193.

Hall, S. 2000 Whose heritage? Un-Settling 'the Heritage', re-Imagining the post-nation. *Third Text* 49(Winter):3–13.

Hardy, A. 1984 Water and the search for public health in London in the eighteenth and nineteenth centuries. *Medical History* 28(3):250–282.

Harrison, R. 2000 'Nowadays with glass': Regional variation in Aboriginal bottle glass artefacts from Western Australia. *Archaeology in Oceania* 35(1):34–47.

Harrison, R. 2004 Shared histories and the archaeology of the pastoral industry in Australia. In R. Harrison and C. Williamson (eds), *After Captain Cook: The Archaeology of the Recent Indigenous Past in Australia*, pp.37–58. Sydney: AltaMira Press.

Harrison, R. 2005 Contact archaeology and Native Title. *Australian Aboriginal Studies*(1):16–29.

Haselgrove, C. 2007 Inference from ploughsoil artefact samples. In C. Haselgrove, M. Millett and I. Smith (eds), *Archaeology from the Ploughsoil: Studies in the Collection and Interpretation of Field Survey Data*, pp.7–29. Sheffield: University of Sheffield.

Hatting, T. 1983 Osteological investigations on Ovis aries L. *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening. Bind* 144:115–135.

Hayes, S. 2007 Consumer practice at Viewbank homestead. *Australasian Historical Archaeology* 25(2007):87–103.

Hayes, S. 2011 Gentility in the dining and tea service practices of early colonial Melbourne's 'established middle class'. *Australasian Historical Archaeology* 29:33–44.

Hayes, S. 2014 *Good taste, fashion, luxury: A genteel Melbourne family and their rubbish*. Sydney: Sydney University Press.

He, J., X. Li, S. Li, Y. Yin and H. Qian 2010 Study of seismic response of colluvium accumulation slope by particle flow code. *Granular Matter* 12(5):483-490.

Heath-Stout, L.E. 2020 Who writes about archaeology? An intersectional study of authorship in archaeological journals. *American Antiquity* 85(3):407–426.

Heath-Stout, L.E. and E.M. Hannigan 2020 Affording archaeology: How field school costs promote exclusivity. *Advances in Archaeological Practice* 8(2):123–133.

Hewitt, G. and J. Allen 2010 Site disturbance and archaeological integrity: The case of Bend Road, an open site in Melbourne spanning Pre-LGM Pleistocene to Late Holocene periods. *Australian Archaeology* 70(1):1–16.

Hiscock, P. 1985 The need for a taphonomic perspective in stone artefact analysis. *Queensland Archaeological Research* 2:82–97.

Hiscock, P. 2002 Quantifying the size of artefact assemblages. *Journal of Archaeological Science* 29(3):251–258.

Holmes, K. 1999 Gardens. *Journal of Australian Studies* 23(61):152–162.

Holmes, K. 2007 Volunteers in the heritage sector: A neglected audience? In R. Sandell and R.R. Janes (eds), *Museum Management and Marketing*, pp.222–235. Leicester Readers in Museum Studies. Abingdon: Routledge.

Holtorf, C. 2015 Are we all archaeologists now? *Journal of Contemporary Archaeology* 2(2):217–219.

Hope, J. 1992 Aboriginal burial conservation in the Murray/Darling Basin. In S. Kenderdine and B. Jeffery (eds), *Muddy Waters: Proceedings of the First Conference on the Submerged and Terrestrial Archaeology of Historic. Shipping on the River Murray, Echuca*, pp.1–9. Adelaide: State Heritage Branch, Department of Environment and Natural Resources, South Australia.

Illustrated Adelaide Post 1867 The sources of the Sturt. 23 April 1867:12.

Ireland, T. 2002 Giving value to the Australian historic past: Historical archaeology, heritage and nationalism. *Australasian Historical Archaeology* 20(2002):15–25.

Irwin, G. 2013 Wetland archaeology and the study of late Māori settlement patterns and social organisation in northern New Zealand. *The Journal of the Polynesian Society* 122(4):311–332.

Jack, R.I. 1996 Historical archaeology in Australia. *World Archaeological Bulletin* 7:22–31.

James, L.A. and W.A. Marcus 2006 The human role in changing fluvial systems: Retrospect, inventory and prospect. *Geomorphology* 79(3–4):152–171.

Karskens, G. 1999 *Inside the Rocks: The Archaeology of a Neighbourhood*. Sydney: Hale & Iremonger.

Karskens, G. and R. MacKay 1999 Historical archaeology in Australia: Historical or hysterical? Crisis or creative awakening? *Australasian Historical Archaeology* 17:110–115.

Keane, M.V. 2005 'Ourselves Alone'?: The Work of Single Women in South Australia, 1911–1961: The Institutions Which They Shaped and Which Shaped Them. Unpublished PhD thesis, School of Social Sciences, University of Adelaide, Adelaide.

Klembara, N. 2021 Diversifying the debate: Increasing the visibility and accessibility of queer heritage. *Antiquity* 95(384):1602–1604.

Konishi, S. 2019 First Nations scholars, settler colonial studies, and Indigenous history. *Australian Historical Studies* 50(3):285–304.

Landon, D.B. 2005 Zooarchaeology and historical archaeology: Progress and prospects. *Journal of Archaeological Method and Theory* 12(1):1–36.

Lawrence, S. 1999 Towards a feminist archaeology of households: Gender and household structure on the Australian goldfields. In P. Allison (ed), *The Archaeology of Household Activities*, pp.121–141. Abingdon: Routledge.

Lawrence, S. 2003 Exporting culture: Archaeology and the nineteenth-century British Empire. *Historical Archaeology* 37(1):20–33.

Lawrence, S., A. Brooks and J. Lennon 2009 Ceramics and status in regional Australia. *Australasian Historical Archaeology* 27:67–78.

Lawrence, S. and P. Davies 2011 *An Archaeology of Australia Since 1788*. New York, NY: Springer.

LeeDecker, C.H. 1994 Discard behavior on domestic historic sites: Evaluation of contexts for the interpretation of household consumption patterns. *Journal of Archaeological Method and Theory* 1(4):345–375.

Lehmann, L.V. 2015 The Garbage Project revisited: From a 20th century archaeology of food waste to a contemporary study of food packaging waste. *Sustainability* 7(6):6994–7010.

Lever, M. 2016 A damaged past: The effects of historical artefact collecting on the stone artefact record in Victoria. In C. Spry, E. Foley, D. Frankel and S. Lawrence (eds) *Excavations, Surveys and Heritage Management in Victoria*, pp.47–50. Bundoora: La Trobe University.

Lewis, M. 2021 Garden finds boost numbers of archaeological discoveries recorded during Lockdown. *Portable Antiquities Scheme News* 2021. Viewed 21 September 2021 <https://finds.org.uk/news/story/302>

Little, B.J. 2002 Archaeology as a shared vision. In B.J. Little (ed), *Public Benefits of Archaeology*, pp.3–19. Gainesville, Florida: University Press of Florida.

Little, B.J. and P.A. Shackel 2014 *Archaeology, Heritage, and Civic Engagement: Working toward the Public Good*. Walnut Creek, California: Taylor & Francis.

Littleton, J., K. Walshe and J. Hodges 2013 Burials and time at Gillman Mound, northern Adelaide, South Australia. *Australian Archaeology* 77(1):38–51.

Loy, T.H. and N. Wolski 1999 On the invisibility of contact: Residue analyses on Aboriginal glass artefacts from western Victoria. *The Artefact: Journal of the Archaeological and Anthropological Society of Victoria* 22:65–73.

Luque, J.M.M. 2020 When the tide is low: Intertidal archaeology in the estuaries of the province of Bizkaia (Basque Country, Spain). *Quaternary International* 566:315–322.

Lyman, R.L. 1987 On zooarchaeological measures of socioeconomic position and cost-efficient meat purchases. *Historical Archaeology* 21(1):58–66.

Madhani, J., L. Dawes and R. Brown 2009 A perspective on littering attitudes in Australia. *Environmental Engineer: Journal of the Environmental Engineering Society, Institution of Engineers Australia* 10(1):13–20.

Maiklem, L. 2020 *Mudlarking: Lost and Found on the River Thames*. London: Bloomsbury.

Malone, G. 2007 Ways of belonging: Reconciliation and Adelaide's public space Indigenous cultural markers. *Geographical Research* 45(2):158–166.

Mandel, R.D., P. Goldberg and V.T. Holliday 2017 Site formation processes. In C.W. Finkl (ed), *Encyclopedia of Earth Sciences Series*, pp.797–817. Dordrecht: Springer Netherlands.

Marsden, S. 1986 Metropolitan Adelaide: A short history. In J. Walker (ed), *South Australia's Heritage*, pp.87–100. Adelaide: Department of Environment & Planning.

Mate, G. and S. Ulm 2016 Another snapshot for the album: A decade of Australian Archaeology in Profile survey data. *Australian Archaeology* 82(2):168–183.

Mate, G. and S. Ulm 2021 Working in archaeology in a changing world: Australian archaeology at the beginning of the COVID-19 pandemic. *Australian Archaeology* 87(3):229–250.

Mayhew, H. 1865a Felonies on the River Thames. In *London Labour and the London Poor: A Cyclopædia of the Condition and Earnings of Those that Will Work, Cannot Work, and Will Not Work*, pp.366–372. London: Charles Griffin.

Mayhew, H. 1865b *London Labour and the London Poor: A Cyclopædia of the Condition and Earnings of Those that Will Work, Cannot Work, and Will Not Work*. London: Charles Griffin.

McManamon, F.P. 2002 Heritage, history, and archaeological educators. In B.J. Little (ed), *Public Benefits of Archaeology*, pp.31–45. Gainesville, Florida: University Press of Florida.

Menotti, F. 2012 *Wetland Archaeology and Beyond: Theory and Practice*. Oxford: Oxford University Press.

Menotti, F. 2013 Wetland occupations in prehistoric Europe. In F. Menotti and A. O'Sullivan (eds), *The Oxford Handbook of Wetland Archaeology*, pp.11–26. Oxford: Oxford University Press.

Meyer, H.A.E. 1843 *Vocabulary of the Language Spoken by the Aborigines of South Australia Preceded by a Grammar*. Adelaide: Allen.

Mihesuah, D.A. 1996 American Indians, anthropologists, pothunters, and repatriation: Ethical, religious, and political differences. *American Indian Quarterly* 20(2):229–237.

Miller, G.L. 1980 Classification and economic scaling of 19th century ceramics. *Historical Archaeology* 14(1):1–40.

Miller, G.L., P. Samford, E. Shlasko and A. Madsen 2000 Telling time for archaeologists. *Northeast Historical Archaeology* 29(1):1–22.

Miller, S.E. 2020 Community engagement in the twenty-first century. In C.E. Orser, A. Zarankin, P. Funari, S. Lawrence and J. Symonds (eds), *The Routledge Handbook of Global Historical Archaeology*, pp.150–176. Abingdon: Routledge.

Mills, M. 1969 Radio interview with May Mills. Interviewer: Lynne Arnold, *Now in Retirement* (Radio program). Adelaide: State Library of South Australia.

Mills, M. 1973 *Millbrae and its Founding Family*. Adelaide: Lutheran Publishing House.

Mills, M. 1982 Interview with Miss May Mills. Interviewers: Margaret and Ken Preiss. State Library of South Australia, Adelaide.

Mitchell, I.M., C.M. Crawford and M.J. Rushton 2000 Flat oyster (*Ostrea angasi*) growth and survival rates at Georges Bay, Tasmania (Australia). *Aquaculture* 191(4):309–321.

Moran, N.C. and T.P. O'Connor 1994 Age attribution in domestic sheep by skeletal and dental maturation: A pilot study of available sources. *International Journal of Osteoarchaeology* 4(4):267–285.

Mulvaney, D.J. 1990 *Prehistory and Heritage: The Writings of John Mulvaney*. Canberra: Department of Prehistory, Australian National University.

Murray, T. 2002 But that was long ago: Theory in Australian historical archaeology 2002. *Australasian Historical Archaeology* 20:8–14.

Murray, T. and J. Allen 1986 Theory and the development of historical archaeology in Australia. *Archaeology in Oceania* 21(1):85–93.

Murray, T., K. Buckley, S. Hayes, G. Hewitt, J. McCarthy, R. Mackay, B. Minchinton, C. Smith, J. Smith and B. Woff 2019 *The Commonwealth Block, Melbourne: A Historical Archaeology*. Sydney: Sydney University Press.

Nicholls, P.H. 2002 A Review of Issues Relating to the Disposal of Urban Waste in Sydney, Melbourne and Adelaide: An Environmental History. Unpublished PhD thesis, Department of Geographical and Environmental Studies, Faculty of Arts, University of Adelaide, Adelaide.

Nickerson, G.S. 1963 The provenience, reinterpretation, and persistence of an American archaeological derogation. *American Antiquity* 28(4):555–557.

Onar, V., G. Pazvant and O. Belli 2008 Osteometric examination of metapodial bones in sheep (*Ovis aries L.*) and goat (*Capra hircus L.*) unearthed from the Upper Anzaf Castle in Eastern Anatolia. *Rev Med Vet-Toulouse* 159:150–158.

Owen, T. and J. Steele 2005 Perceptions of archaeology amongst primary school aged children, Adelaide, South Australia. *Australian Archaeology* 61(1):64–70.

Oxford Archaeology 2009 *Nighhthawks and nighthawking: damage to archaeological sites in the UK & Crown Dependencies caused by illegal searching & removal of antiquities. Strategic study, final report.* Oxford: Oxford Archaeology.

Pardoe, C., R. Fullagar and E. Hayes 2019 Quandong stones: A specialised Australian nut-cracking tool. *PLOS One* 14(10):e0222680.

Parry, S. 2019 The benefits of archaeology. In H. Williams, C. Pudney and A. Ezzeldin (eds), *Public Archaeology: Arts of Engagement*, pp.38–40. Oxford: Archaeopress Publishing Ltd.

Paschke, J. 2012 Mudlarking in the Thames. *British Heritage* 32(6):56–59.

Paterson, A. 2005 Early pastoral landscapes and culture contact in Central Australia. *Historical Archaeology* 39(3):28–48.

Paynton, C. 2008 The Portable Antiquities Scheme and education. In S. Thomas and P. Stone (eds), *Metal Detecting and Archaeology*, pp.203–213. Heritage Matters. International Centre for Cultural and Heritage Studies, Newcastle University, Newcastle upon Tyne: The Boydell Press.

Peregrine, P.N. 2019 Sampling theory. In S.L. López Varela (ed), *The SAS Encyclopedia of Archaeological Sciences*, pp.1–3. New York: John Wiley & Sons.

Perry, S. 2018 Why are heritage interpreters voiceless at the trowel's edge? A plea for rewriting the archaeological workflow. *Advances in Archaeological Practice* 6(3):212–227.

Perston, Y., L.A. Wallis, H. Burke, C. McLennan, E. Hatte and B. Barker 2021 Flaked glass artifacts from nineteenth–century Native Mounted Police camps in Queensland, Australia. *International Journal of Historical Archaeology*:1–34.

Peter Freeman Pty Ltd 2002 *Kinchega National Park Conservation Management and Cultural Tourism Plan*. Sydney: NSW National Parks & Wildlife Service**:**12–31.

Petrie, L.-A. 2005 An inherently exclusionary regime: Heritage law-the South Australian experience. *Macquarie Law Journal* 5:177–200.

Phillips, C., D. Johns and H. Allen 2002 Why did Māori bury artefacts in the wetlands of pre-contact Aotearoa/New Zealand? *Journal of Wetland Archaeology* 2(1):39–60.

Pickard, J. 2007 The transition from shepherding to fencing in colonial Australia. *Rural History* 18(2):143–162.

Pickard, J. 2010 Wire fences in colonial Australia: Technology transfer and adaptation, 1842–1900. *Rural History* 21(1):27–58.

Piddock, S. 1992 Twentieth Century Historical Archaeology. Unpublished Honours thesis, Department of Archaeology, Flinders University, Adelaide.

Piddock, S. 2006 Two nineteenth century nurseries of the Adelaide Hills. In P. Smith, F.D. Pate and R. Martin (eds), *Valleys of Stone: The Archaeology and History of Adelaide's Hills Face*, pp.296–320. Belair, South Australia: Kōpi Books.

Piddock, S., F.D. Pate and P.A. Smith 2005 *Historic Sites and Landscapes: The Mitcham Hills,* Hills Face Zone Cultural Heritage Project Reports. Adelaide: Department of Archaelology, Flinders University.

Piddock, S., P. Smith and F.D. Pate 2009 A changed landscape: horticulture and gardening in the Adelaide hills face zone, South Australia, 1836–1890. *Historical Archaeology* 43(3):65–81.

Pitblado, B.L. 2014 An argument for ethical, proactive, archaeologist-artifact collector collaboration. *American Antiquity* 79(3):385–400.

Polites, G.L. 2022 Encouraging prosocial collecting behaviours: Aligning psychological motives and incentives among leisure hobbyists. *Leisure Studies* 41(4):1–17.

Pollard, K., C. Smith, J. Willika, V. Copley (Senior), V. Copley (Junior), C. Wilson, E. Poelina-Hunter and J. Ah Quee 2020 Indigenous views on the future of public archaeology in Australia: A conversation that did not happen. *Arqueologia Publica: Online Journal in Public Archaeology* 10:31–52.

Pope, A. 1988 Aboriginal adaptation to early colonial labour markets: the South Australian experience. *Labour History*(54):1–15.

Popkin, P.R., P. Baker, F. Worley, S. Payne and A. Hammon 2012 The Sheep Project (1): Determining skeletal growth, timing of epiphyseal fusion and morphometric variation in unimproved Shetland sheep of known age, sex, castration status and nutrition. *Journal of Archaeological Science* 39(6):1775–1792.

Port of London Authority 2021 *Thames foreshore permits*. Retrieved 11 June 2021 from <https://www.pla.co.uk/Environment/Thames-foreshore-permits>.

Portable Antiquities Scheme 2019 *Pottery Recording Guide*. London: Portable Antiquities Scheme. Retrieved 16 June 2021 from <https://finds.org.uk/counties/findsrecordingguides/wp-content/uploads/2019/03/Pottery-Guide-190312.pdf>

Prossor, L., S. Lawrence, A. Brooks and J. Lennon 2012 Household archaeology, lifecycles and status in a nineteenth-century Australian coastal community. *International Journal of Historical Archaeology* 16(4):809–827.

Prummel, W. and H.J. Frisch 1986 A guide for the distinction of species, sex and body side in bones of sheep and goat. *Journal of Archaeological Science* 13(6):567–577.

Ragless, M. 2006 Shepherds Hill Recreation Park: Suburban bush merges in time and place. In P. Smith, F.D. Pate and R. Martin (eds), *Valleys of Stone: The Archaeology and History of Adelaide's Hills Face*, pp.260–281. Belair, South Australia: Kōpi Books.

Ragless, M. and D. Schumann 2003 Local government turns 150: South Australia's first district and municipal councils. *Journal of the Historical Society of South Australia*(31):47–54.

Raine, S. 2021 Subterranean Spaces in the Penny Dreadful. In, C. Bloom (ed), *The Palgrave Handbook of Steam Age Gothic*, pp.61–73. Cham: Springer.

Rathje, W.L. 1979 Modern material culture studies. In M.B. Schiffer (ed), *Advances in Archaeological Method and Theory*, pp.1–37. New York: Academic Press.

Rathje, W.L. 1984 The garbàge decade. *American Behavioral Scientist* 28(1):9–29.

Rathje, W.L. 2002 Garbology: The archaeology of fresh garbage. In B.J. Little (ed), *Public Benefits of Archaeology*, pp.85–100. Gainesville, Florida: University Press of Florida.

Rathje, W.L. and C. Murphy 1992 *Rubbish!: The Archaeology of Garbage*. Tucson, Arizona: University of Arizona Press.

Reid, P. 2008 Community archaeology: From the grassroots. *Current Archaeology* 216:21.

Reid, P. 2011 Performance or participation: The relationship between local communities and the archaeological domain. In G. Moshenska and S. Dhanjal (eds), *Community Archaeology: Themes, Methods and Practices*, pp.18–27. Oxford: Oxbow Books.

Renfrew, C. 2000 *Loot, Legitimacy, and Ownership: The Ethical Crisis in Archaeology*. London: Duckworth.

Richardson, L.J. and J. Almansa-Sánchez 2015 Do you even know what public archaeology is? Trends, theory, practice, ethics. *World Archaeology* 47(2):194–211.

Rivera-Collazo, I.C., C. Rodríguez-Franco, J.J. Garay-Vázquez, H.M. Rivera-Claudio and R. Estremera-Jiménez 2020 Towards a definition and practice of communal archaeology: Ethics, informal learning, and citizen science in the practice of indigenous archaeology. *Journal of Community Archaeology & Heritage* 7(2):120–134.

Robbins, K.J. 2013 Balancing the scales: Exploring the variable effects of collection bias on data collected by the Portable Antiquities Scheme. *Landscapes* 14(1):54–72.

Rootenberg, S. 1964 Archaeological field sampling. *American Antiquity* 30(2):181–188.

Roper, D.C. 1976 Lateral displacement of artifacts due to plowing. *American Antiquity* 41(3):372–375.

Rose-Greenland, F. 2014 Looters, collectors and a passion for antiquities at the margins of Italian society. *Journal of Modern Italian Studies* 19(5):570–582.

Ross, B. 1984 *Aboriginal and Historic Places Around Metropolitan Adelaide and the South Coast*. Adelaide: The Anthropological Society of South Australia.

Ross, H., C. Baldwin and R. Carter 2016 Subtle implications: Public participation versus community engagement in environmental decision-making. *Australasian Journal of Environmental Management* 23(2):123–129.

Rowney, B.G. and K. McDougall 1982 *Register of State Heritage Items Nomination, "Sturtbrae"*, Register Research Programme, European Section, Heritage Conservation Branch, Department of Environment and Planning, Government of South Australia, Adelaide.

Roued-Cunliffe, H. 2017 Collection building amongst heritage amateurs. *Collection Building* 36(3):108–114.

Ruig, J.L. 1997 Collectors as taphonomic agents for the archaeological record. *Australian Archaeology* 44:68.

Russell, L. 2016 Fifty years on: History's handmaiden? A plea for capital H history. *Historical Archaeology* 50(3):50–61.

San Miguel, B. and M. House 2019 Promoting descendant communities in urban community archaeology: A study of Canberra, Australia. In J.H. Jameson and S. Musteață (eds), *Transforming Heritage Practice in the 21st Century*, pp.231–249. Cham: Springer.

Sandling, T. 2016 *A Mudlark's Treasures: London in Fragments*. London: Frances Lincoln Publishers.

Saville, A. 2002 Treasure trove in Scotland. *Antiquity* 76(293):796.

Sayer, F. 2015 Can digging make you happy? Archaeological excavations, happiness and heritage. *Arts & Health* 7(3):247–260.

Schacht, I. 2008 Determining Research Significance in Archaeological Collections from Historic Sites. Unpublished PhD thesis, School of History, Heritage and Society, Deakin University, Melbourne.

Schiffer, M.B. 1987 *Formation Processes of the Archaeological Record*. Salt Lake City: University of Utah Press.

Schiffer, M.B., A.P. Sullivan and T.C. Klinger 1978 The design of archaeological surveys. *World Archaeology* 10(1):1–28.

Schmitt, D.N. and C.D. Zeier 1993 Not by bones alone: Exploring household composition and socioeconomic status in an isolated historic mining community. *Historical Archaeology* 27(4):20–38.

Schrire, C. 1995 *Digging Through Darkness: Chronicles of an Archaeologist*. Charlottesville, Virginia, USA: University Press of Virginia.

Silver, I.A. 1969 The ageing of domestic animals. In D. Brothwell and E. Higgs (eds), *Science in Archaeology*, pp.283–302. London: Thames and Hudson.

Siossian, E. 2020 Mudlarking passion unearths Wallamba River treasures, offering unique glimpse into past. *ABC Mid North Coast*. Viewed 13 April 2021 <https://www.abc.net.au/news/2020-08-02/digging-for-history-mudlarking-wallamba-river/12480742>

Smith, C., V. Copley and G. Jackson 2018a Intellectual soup: On the reformulation and repatriation of Indigenous knowledge. In V. Apaydin (ed), *Shared Knowledge, Shared Power: Engaging Local and Indigenous Heritage*, pp.9–28. Cham: Springer International Publishing.

Smith, C., G. Jackson, J. Ralph, N. Brown, G. Rankin and Barunga Community 2021 An engaged archaeology field school with a remote aboriginal community: Successes, failures, and challenges. *Journal of Community Archaeology & Heritage* 8(2):105–126.

Smith, J. 2001a Unearthing the secrets of Viewbank Homestead. *Australasian Science* 22(7):46–47.

Smith, L. 2006 *Uses of Heritage*. Abingdon: Routledge.

Smith, L. 2012 Discourses of heritage: Implications for archaeological community practice. *Nuevo Mundo Mundos Nuevos (New World New Worlds).* Viewed 21 June 2021 <journals.openedition.org/nuevomundo/64148>

Smith, L. and E. Waterton 2009 *Heritage, Communities and Archaeology*. London: Duckworth.

Smith, P.A. 2001b Station camps: Identifying the archaeological evidence for continuity and change in post-contact Aboriginal sites in the south Kimberley, Western Australia. *Australian Archaeology* 53(1):23–31.

Smith, P.A., E. Dennis and G. de Rose 2005 The Sturt Gorge. In S. Piddock, F.D. Pate and P.A. Smith (eds), *Historic Sites and Landscapes: The Mitcham Hills Volume 2*, pp.56–62. Hills Face Zone Cultural Heritage Project Reports. Adelaide: Department of Archaelology, Flinders University.

Smith, P.A. and R.M. Smith 2009 Bricks and mortar: A method for identifying construction phases in multistage structures. *Historical Archaeology* 43(2):41–61.

Smith, P.A., K. Walshe and A. Burns 2018b Aboriginal People of the Marion Hills. In *Glenthorne: a Defining History & Indefinite Politics*, pp.1–26. Adelaide, South Australia: Friends of Glenthorne.

South Australian Register 1856 Advertising. 12 November 1856:1.

Southern Australian 1838 Coroner's Inquest. 22 September 1838:3.

Southern Australian Register 1894 Religious news. 6 October 1894:6.

Spooner, P. and M. Firman 2010 Origins of travelling stock routes: Connections to indigenous traditional pathways. *The Rangeland Journal* 32(3):329–339.

Spry, C., R. Kurpiel, E. Foley, J. Turnbull and P. Penzo-Kajewski 2021 Disentangling activity traces on Australian goldfields: An experimental study of quartz assemblages derived from knapping and gold prospecting. *Australian Archaeology* 87(1):49–62.

Steele, J., J. Clark, R. Tuffin and G. Jackman 2007 The archaeology of conviction: Public archaeology at Port Arthur Historic Site. In J.H. Jameson and S. Baugher (eds), *Past Meets Present: Archaeologists Partnering with Museum Curators, Teachers and Community Groups*, pp.69–85. New York: Springer.

Stein, J.K. 2001 A review of site formation processes and their relevance to geoarchaeology. In P. Goldberg, V.T. Holliday and C.R. Ferring (eds), *Earth Sciences and Archaeology*, pp.37–51. Cham: Springer.

Stodder, A.L.W. 2008 Taphonomy and the nature of archaeological assemblages. In M.A. Katzenberg and A.L. Grauer (eds), *Biological Anthropology of the Human Skeleton*, pp.73–115. Hoboken, NJ: Wiley Blackwell.

Stuart, I. and D. Gojak 1999 The potential for the archaeological study of clay tobacco pipes from Australian sites. *Australasian Historical Archaeology* 17(1999):38–49.

Talmage, V. and O. Chesler 1977 *The importance of small, surface, and disturbed sites as sources of significant archeological data*. Washington: National Park Service, US Department of the Interior.

Taplin, G. 1879 *The Folklore, Manners, Customs and Languages of the South Australian Aborigines*. Adelaide: E. Spiller, Acting Government Printer.

Teichelmann, C.G. and C.W. Schürmann 1840 *Outlines of a Grammar, Vocabulary, and Phraseology, of the Aboriginal Language of South Australia: Spoken by the Natives in and for Some Distance Around Adelaide*. Hindley Street, Adelaide: Robert Thomas & Co.

Terry, L. 2013 Caboonbah: The archaeology of a middle class Queensland pastoral family. *International Journal of Historical Archaeology* 17(3):569–589.

Terry, L. 2014 A Woman's Place... An Historical Archaeological Investigation of Identity and Power on the Nineteenth-century Pastoral Landscape of Southeast Queensland. Unpublished PhD thesis, School of Social Science, The University of Queensland, St Lucia.

Terry, L. and J. Prangnell 2009 Caboonbah homestead 'Big Rock' or 'Little Britain': A study of Britishness in late 19th and early 20th century rural Queensland. *Australasian Historical Archaeology* 27:99–110.

The Advertiser 1897 Quaterly meetings. 8 October 1897:6.

The Chronicle 1945 US troops arrive: how they came to Adelaide. 16 August 1945:28.

The Coromandel 1947 Grass Fire at Eden. 1 February 1947:2.

The Express and Telegraph 1870 Globe Quartz Mining. 30 September 1870:1.

The Mail 1929 Women Play their Part in Politics. Saturday 28 September 1929:19.

The South Australian Advertiser 1860 Classified Advertising. 23 March 1860:279.

Thomas, S. 2009 Wanborough revisited: The rights and wrongs of treasure trove law in England and Wales. In S. Thomas and P.G. Stone (eds), *Metal Detecting and Archaeology*, pp.153–165. Woodbridge: The Boydell Press.

Thomas, S. 2011 How 'STOP' started: Early approaches to the metal detecting community by archaeologists and others. In G. Moshenska and S. Dhanjal (eds), *Community Archaeology: Themes, Methods and Practices* pp.42–57. Oxford: Oxbow Books.

Thomas, S. 2013 Portable antiquities: archaeology, collecting, metal detecting. *Internet Archaeology* 33. Viewed 23 December 2021 <https://intarch.ac.uk/journal/issue33/editorial.cfm>

Tiechelmann, C.G. 1841 *Aborigines of South Australia: Illustrative and Explanatory Notes of the Manners, Customs, Habits, and Superstitions of the Natives of South Australia.* Adelaide: Libraries Board of South Australia.

Tindale, N.B. 1940 *Distribution of Australian Aboriginal Tribes: A Field Survey*. Adelaide: Royal Society of South Australia.

Tindale, N.B. 1974 *Aboriginal Tribes of Australia: Their Terrain, Environmental Controls, Distribution, Limits and Proper Names*. Canberra: Australian National University Press.

Tindale, N.B. 1987 The wanderings of Tjirbruki: a tale of the Kaurna people of Adelaide. *Records of the South Australian Museum* 20(1):5–13.

Tomalin, D. 1991 Archaeology in shallow water—the Slufter. *International Journal of Nautical Archaeology* 20(2):161–163.

Tripp, C.J. 2011 Why community archaeology? In G. Moshenska and S. Dhanjal (eds), *Community Archaeology: Themes, Methods and Practices*, pp.28–34. Oxford: Oxbow Books.

Turner, E., J. Hutson, A. Villaluenga, A. García Moreno and S. Gaudzinski-Windheuser 2018 Bone staining in waterlogged deposits: A preliminary contribution to the interpretation of near-shore find accumulation at the Schöningen 13II-4 'Spear-Horizon'site, Lower Saxony, Germany. *Historical Biology* 30(6):767–773.

Ulm, S., G. Mate, C. Dalley and S. Nichols 2013 A working profile: The changing face of professional archaeology in Australia. *Australian Archaeology* 76(1):34–43.

Ulm, S., K. Vernon, G. Robertson and S. Nugent 2009 Historical continuities in Aboriginal land-use at Bustard Bay, Queensland: Results of use-wear and residue analysis of Aboriginal glass artefacts. *Australasian Historical Archaeology* 27:111–119.

Veth, P., J. McDonald, I. Ward, M. O'Leary, E. Beckett, J. Benjamin, S. Ulm, J. Hacker, P.J. Ross and G. Bailey 2020 A strategy for assessing continuity in terrestrial and maritime landscapes from Murujuga (Dampier Archipelago), North West Shelf, Australia. *The Journal of Island and Coastal Archaeology* 15(4):477–503.

Vox 1943 Out Among the People—Pioneer's Son. *The Chronicle.* 11 November 1943:27.

Wade, J. 1985 Bottle collectors on archaeological sites. *Historic Environment* 4(4):35–37.

Walker, R.B. 1969 Methodism in the 'Paradise of Dissent', 1837–1900. *Journal of Religious History* 5(4):331–347.

Wallis, L.A. 2020 Disrupting paradise: Has Australian archaeology lost its way? *Australian Archaeology* 86(3):284–294.

Watson, S. 2019 River powers: Assembling publics, connections and materials in a global city. In *City Water Matters*, pp.73–104. New York: Springer.

Weaver, P. 2003 Faunal Analysis and Purchasing Power in the Australian Context. Unpublished Honours thesis, Department of Prehistoric and Historical Archaeology, University of Sydney, Sydney.

Weidenhofer, T. 1995 City of Mitcham Heritage Survey. *City of Mitcham & Department of Environment and Natural Resources, Adelaide*.

Western Mail 1950 Sporting cartridges in the making. 16 November 1950:63.

Wildesen, L.E. 1982 The study of impacts on archaeological sites. *Advances in Archaeological Method and Theory* 5:51–96.

Wilk, R.R. and W.L. Rathje 1982 Household archaeology. *American Behavioral Scientist* 25(6):617–639.

Wilke, H.J., A. Kettler, K.H. Wenger and L.E. Claes 1997 Anatomy of the sheep spine and its comparison to the human spine. *The Anatomical Record: An Official Publication of the American Association of Anatomists* 247(4):542–555.

Wilkinson, T.J. 2005 Soil erosion and valley fills in the Yemen highlands and southern Turkey: Integrating settlement, geoarchaeology, and climate change. *Geoarchaeology: An International Journal* 20(2):169–192.

Wilson, P. and M. Harrison 2013 Three years on from 'The Nighthawking Survey': Innovations in heritage protection. *Internet Archaeology* 33. Viewed 29 May 2021 <intarch.ac.uk/journal/issue33/wilson_index.html>

Wimmer, M. 2014 Gimme Shelter: Archaeology and the Social History of Structural Defence in Adelaide. Unpublished PhD thesis, Department of Archaeology, Flinders University, Adelaide.

Winter, S., J. Green, K. Benfield-Constable and M. Drummond-Wilson 2021 Investigating underfloor and between floor deposits in standing buildings in colonial Australia. *International Journal of Historical Archaeology* 25(1):170–191.

Wood, W.R. and D.L. Johnson 1978 A survey of disturbance processes in archaeological site formation. In M.B. Schiffer (ed), *Advances in Archaeological Method and Theory*, pp.315–381. New York: Academic Press.

Zarmati, L.F.C. 2017 'Pompeii-mania' in schools Down Under. *Journal of Public Archaeology* 1:1–9.

Zeder, M.A. 2006 Reconciling rates of long bone fusion and tooth eruption and wear in sheep (*Ovis*) and goat (*Capra*). In D. Ruscillo (ed), *Recent Advances in Ageing and Sexing Animal Bones*, pp.87–118. Oxford: Oxbow Books.

Appendices

Appendix 1: Port of London (PLA) requirements

Permit Types and Use

1. The Holder, while on the bed or shore of the Thames shall carry the Permit ID Card issued as part of this Permit, which must, on demand, be shown by him or her to an officer of the PLA or a police officer.
2. The Holder shall pay a fee (as published by the PLA) for the issue of this Permit and the Permit ID Card.
3. One Day or Standard Permits allow surface investigation of the foreshore only to a depth of 7.5cm (3 inches). No tools other than hand tools shall be used for such excavation.
4. A Mudlark Permit allows investigation of the foreshore only to a depth of 1.2m (3 feet 11 inches). No tools other than hand tools shall be used for such excavation. Such Permits are only available to current members of the Society of Thames Mudlarks. Not valid in 2022.
5. The PLA issues a Code of Practice set out in Schedule 4 for foreshore investigation, which shall be adhered to at all times. Failure to adhere to the Code is a breach of Permit conditions and will result in revocation of the Permit.
6. Every hole (however small or shallow) must, before the Holder leaves it and before the next inundation of the tide, be refilled so that the bed or shore is reinstated as nearly as possible to its condition before the digging was started.
7. The Holder must not work on the same hole on successive low waters without refilling the hole before the tide comes in. See condition 6 above.
8. The Holder must not deposit on the bed or shore any litter nor interfere in any way with any flora, fauna, birds or fish.
9. The Holder must not interfere with any person exercising a public right to fish on the bed or shore nor with anyone mooring or boarding or landing from a vessel nor with anyone exercising any other right to be on the bed or shore nor with any river works moorings navigation aides or other similar objects on the bed or shore.
10. The Holder must comply with all legislation, rules, regulations and byelaws applicable to the bed and shore and the use he or she is making of it.
11. **Restricted Areas**

For further details see maps on the Foreshore Permit Website

http://www.pla.co.uk/Environment/Metal-Detecting-and-Digging-on-the-Thames-Foreshore

11.1. No person, shall, except in an emergency, or with written permission of the Harbour Master, enter into an area within 70 metres of the northern bank of the River Thames between Westminster Bridge and 200 metre below Lambeth Bridge. (See Foreshore map Middle District)

11.2. The Holder must not dig or search:

- on any part of the bed or shore of the Thames which has been designated as a scheduled ancient monument (SAM)
  There are three SAMs listed at the date of issue of this permit these are Queenhithe Dock, City of London - SAM list entry number 1001994, an area of the foreshore adjacent to the Royal Palace at Greenwich - SAM list entry number 1410710 and the Launch Ways of the SS Great Eastern SAM list entry number 1423608.
- the foreshore in front of the Tower of London, (Tower Pier to Tower Bridge [TQ3360 8045] World Heritage Site)

11.3. The Holder must not go (and dig):

onto private property; or

- in respect of a Standard Permit or one Day permits only, onto any part of the north foreshore between the Tower Pier and Lambeth Bridge as shown on the attached plan;
- onto those parts of the bed or shore of the Thames not in the ownership of the PLA or the Commissioners, that is:
  i. the former GLC foreshore at Lambeth;
  ii. the Bridewell Estate foreshore, Wapping; or
- for security reasons, as advised by the Metropolitan Police Service, on the foreshore within 10 metres of the following locations, where any parts of the locations are accessible on the foreshore at low water:

  Royal Docks, Gallions Marina (Flood Barrier);
  All London passenger piers;
  Thames Flood Barrier in Woolwich Reach;
  Gas Pipelines, Blackwall Point;
  Greenwich Promenade;
  HMS President (MOD);
  St Katharine Dock Lock;
  All London road and rail bridges;
  City Hall;
  Custom House;
  HMS Belfast;
  London Eye;
  Thames House, Millbank;
  IMO Building, Albert Embankment;
  Riverwalk House, Westminster;
  No. 85 Albert Embankment; and
  Barn Elms Reach - Beverly Brook (Gas pipeline)

In addition the PLA and the Commissioners reserve the right to temporarily prohibit access to any part or parts of the bed and shore covered by this Permit from time to time without incurring any liability to the Holder.

12. Reporting and Recording Regime

12.1. The Holder must contact the Museum of London within one month of finding any object of archaeological or historical interest to make an appointment to have the objects identified and recorded. The Holder must provide the Museum with full details of the location and circumstances of discovery, and leave the finds with the Museum until they have been recorded under the provisions the national Portable Antiquities Scheme (PAS). The Museum will return the objects to the finder with a copy of the identification and PAS record as appropriate.

Note: The Museum of London (PAS) will, by 1st March each year, provide the PLA with a summary of the finds reported over the previous year, including details of the finder and where located. This information will provide the PLA with the information it requires to confirm the individual permit holders are reporting any finds they may make. The PLA may use this information when considering an application to renew a permit.

Permit holders applying to renew must indicate on their application form if any finds have been reported to the PAS during their current permit period.

12.2 Where an object found by the Holder is treasure or is believed by the Holder to be treasure, as defined by the Treasure Act 1996, then in addition to reporting the find to the Museum of London, the Holder must notify the find to the Coroner for the district in which the object was found, within 14 days as required by the Treasure Act 1996.

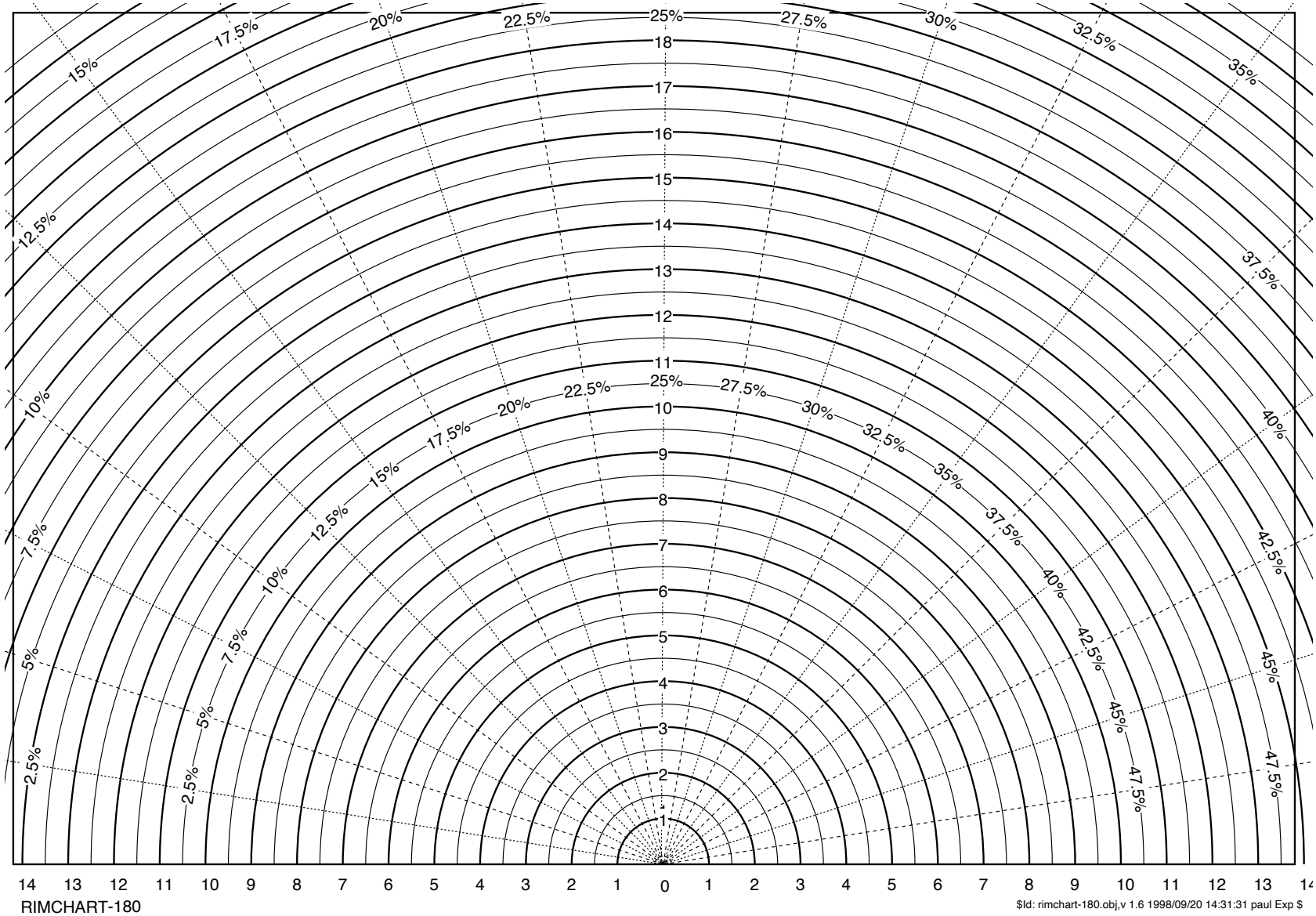
12.3 The PLA and the Commissioners reserve their rights in relation to the ownership of objects found, and the granting of permission under this Permit does not operate to transfer any such rights to the Holder.

Appendix 2: Sample field recording form

Site ID	Artefact no.	Date found	Artefact category	No. of items	Description	General function	Specific function	General form	Specific form	Completeness	Notes
STB01	*e.g. C001*	*e.g. 3/4/21*	*e.g. glass*	*1*	*e.g. Aqua shard with "KE"*	*e.g. eating and drinking*	*e.g. preparing food*	*e.g. cookware*	*e.g. cooking dish*	*1–24%, 25–49%, 50–74%, 75–99% or 100%*	*e.g. embossing, colour, etc*

Appendix 3: Ceramic rim and base diameter chart

(If enlarged to A3 scale)



Appendix 4: Artefact catalogue fields

Site ID: The overall site from which artefacts were retrieved, i.e. the 20 m stretch of Sturtbrae's creek that is the study area, abbreviated to STB01.

Artefact ID: The number assigned to each object or, in some cases, groups of objects, where the first letter indicates the material type, e.g. C001 for the first ceramic artefact or M010 for the tenth metal artefact catalogued.

No. of items: The number of items per object and catalogue entry, most relevant where multiple fragments are catalogued together, e.g. STB01/F070, where undiagnostic bone fragments were described, weighed and catalogued as one overall artefact.

Completeness: An estimate of how much the original object—if complete or unbroken—the catalogued artefact comprises, separated into ranges 1–24%, 25–49%, 50–74% and 75–99% as well as 100% for completely intact objects, e.g. STB01/C001, an unbroken perfume bottle. For ceramics, completeness was ascertained using a rim and base diameter chart (Appendix 3).

General function: As per the methodology used in this thesis, based on those used Viewbank (Hayes 2014), OKH (Allison and Esposito 2020), Caboonbah (Terry 2013) and Briggs's excavations at Divett Street (2000) and Quebec Street (2006) in Port Adelaide, this is the broadest classification category, e.g. 'eating and drinking' or 'house and home'.

Specific function: A more specific functional type or category, a second tier of function, e.g. 'preparing food' within 'eating and drinking'.

General form: The broadest classification of form, e.g. cookware.

Specific form: The second tier of classification of form, e.g. 'cooking dish' within 'cookware', or 'dinner plate' within 'tableware'.

Date of manufacture: An estimate of the earliest date the artefact was manufactured, based on additional desktop research, which in turn provides a *terminus post quem* for the object's appearance at Sturtbrae.

Significance: An evaluation of how valuable the object is in contributing to an interpretation of the Sturtbrae assemblage, or a level

of how strongly the artefact correlates to the available historical archaeological record of the site: high, medium or low.

Notes: Any additional notes recorded on the original field recording form, or any relevant additional information found in subsequent research and not corresponding to another column.

Glass only

Embossing: Lettering or motifs embossed on the vessel

Ceramic only

Rim diameter: Measurement based on placing rim sherds onto the ceramic rim and base diameter chart (Appendix 3)

Base diameter: Measurement based on placing base sherds onto the same chart

Arc length: A measure of completeness using the same chart as above, where the length of an arc compares to the 360° of a full rim

Ware type: The type of material used in the manufacture of ceramic vessels suggestive of economic value, e.g. earthenware, porcelain.

Design application method: How the decoration of the ceramic vessel was applied, e.g. transfer or sprig

Colour: The colour of the decorative feature, e.g. blue for the 'Willow' transferware in the Sturtbrae assemblage

Motif: The decorative pattern used on the ceramic vessel, e.g. 'Rhine' on a dinner plate in the assemblage

Trademarks: A maker's mark or stamp from the vessel's manufacturer

Faunal remains only

Genus/species: An ID of the genus/species where diagnostic

Bone type: The skeletal element represented

Butchery marks: Whether butchery marks were represented

Metal only

Metal type: The likely metal used in manufacturing the object—e.g. steel, iron, copper or brass—based on corrosion products.

Appendix 5: Artefact catalogue

Glass

Site ID	Artefact no.	No. of items	Description	Embossing	Dimensions				Completeness (%)	Colour	Function		Form		Date of manufacture	Manufacturing method	Significance	Notes
					Length (mm)	Width (mm)	Thickness (mm)	Weight (g)			General function	Specific function	General form	Specific form				
STB01	G001	1	Colourless glass bottle w/ rounded rectangular base	"Piesse / and / Lubin / London" "1 1/2 OZ" (Base)	87	45	N/A	82.4	100	Colourless	Personal	Health and hygiene	Bottle	Perfume bottle	c. 1870 ± 10		High	
STB01	G002	1	Colourless glass bottle	"Kewpie/Oil Polish"	195	67	N/A	329.4	100	Aqua	House and home	Furnishing	Bottle	Oil polish	1922		Med	Air bubbles in glass
STB01	G003	1	Colourless	N	27.2	30.6	6.37	11.2	1–24	Colourless	Personal	Health and hygiene	Medicine bottle	Medicinal	N/A		Low	
STB01	G004	1	Aqua	"ADEL"	44.5	55.0	10.6	37.7	1–24	Aqua	Eating and drinking	Storing food and drink	Bottle	Non-alcoholic, soft drink?	c.1900		Low	Schramm & Co. Adelaide?
STB01	G005	1	Brown	N	39.2	38.0	3.12	16.6	1–24	Amber	Eating and drinking	Storing food and drink	Bottle	Alcohol	1920–		Low	
STB01	G006	1	Colourless base	"53" (base)	52.8	44.9	6.37	30.2	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	Non-alcoholic			Low	Machine made
STB01	G007	1	Colourless shard of headlight	N	77.9	49.5	4.18	16.3	1–24	Colourless	Tools and equipment	Driving	Headlight	Headlight	1925–1930s		High	
STB01	G008	1	Colourless	N	38.2	29.1	6.84	14.7	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	IND			Low	
STB01	G009	1	Colourless shard	N	30.9	40.4	7.4	10.9	IND	Colourless	Eating and drinking	Storing food and drink	Bottle	IND			Low	
STB01	G010	1	Colourless shard	N	46.1	52.6	4.09	12.3	IND	Colourless	Eating and drinking	Serving and consuming food	Bowl	Bowl			Low	
STB01	G011	1	Dark green base fragment	N	43.8	33.9	5.14	10.4	1–24	Olive green	Eating and drinking	Storing food and drink	Bottle	Alcohol			Low	Knurling
STB01	G012	1	Aqua	"LDWELL" / "NKS"	73.0	48.7	4.58	23.2	1–24	Aqua	Tools and equipment	Writing and drawing	Bottle	Ink bottle	c.1910		Med	

STB01	G013.1	1/3	Colourless	N	114.1	39.3	1.8	13.5	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	Vinegar or salad oil			Low	Refits with STB01/G013.2 and G013.3
STB01	G013.2	2/3	Colourless	N	80.8	37.7	1.6	9.1	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	Vinegar or salad oil			Low	Refits with STB01/G013.1 and G013.3
STB01	G013.3	3/3	Colourless	N	37.2	33.6	1.5	2.3	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	Vinegar or salad oil			Low	Refits with STB01/G013.1 and G013.2
STB01	G014	1	Yellow	N	65.9	54.9	11.1	25.8	1–24	Yellow	House and home	Decorating	Glassware	Decorative glassware	Depression		Med	Depression glass
STB01	G015	1	Colourless	N	43.9	23.2	5.0	7.9	1–24	Colourless	IND	IND	IND	IND	?		Low	
STB01	G016	1	Brown	"THIS BOTTLE IS THE PROPERTY OF THE ADELAIDE BOTTLE COOPERATIVE" "1950"/"050"/"3039" (base)	290	60.4	21.7	580.1	100	Amber	Eating and drinking	Storing food and drink	Bottle	Alcohol	1950		Low	Suction scar
STB01	G017	1	Colourless neck	N	135	75.3	N/A	190.6	25–49	Colourless	Eating and drinking	Storing food and drink	Bottle	Alcohol	c.1920		Low	
STB01	G018	1	Colourless neck	N	142.6	75.3	N/A	196.4	25–49	Colourless	Eating and drinking	Storing food and drink	Bottle	Alcohol	c.1920		Low	Same type as STB01/G017
STB01	G019	1	Colourless neck	N	134.5	73.02	N/A	160.4	25–49	Colourless	Eating and drinking	Storing food and drink	Bottle	Alcohol	c.1920		Low	Same type as STB01/G017 and G018
STB01	G020	1	Green bottle neck	N	115.3	55.6	N/A	84.1	25–49	Olive green	Eating and drinking	Storing food and drink	Bottle	Alcohol	c.1860 (1840–1895)		Med	
STB01	G021	1	Colourless	"1959" / AGM logo (base)	200	44.3	N/A	215.4	100	Colourless	Eating and drinking	Storing food and drink	Bottle	Non-alcoholic	1959		Low	
STB01	G022	1	Green shard	N	19.5	13.9	N/A	1.6	1–24	Green	Eating and drinking	Storing food and drink	Bottle	IND			Low	
STB01	G023	1	Amber shard with embossed diagnostic information	"E CO. P/L"	27.4	49.8	3.1	5.2	1–24	Amber	Eating and drinking	Storing food and drink	Bottle	Alcohol	1980–		Low	Adelaide Bottle Co.
STB01	G024	1	Amber shard with modern features	N	31.2	42.0	3.8	8.1	1–24	Amber	Eating and drinking	Storing food and drink	Bottle	Alcohol	1980–		Low	Bumps on bottle above machine lines
STB01	G025	1	Aqua shard with "KE"	"KE"	34.6	35.2	5.4	7.7	1–24	Aqua	Eating and drinking	Storing food and drink	Bottle	Non-alcoholic			Low	Potentially Brookes

STB01	G026	1	Amber shard with several conchoidal fractures along most margins	N	31.9	13.2	3.4	2.7	1–24	Amber	Eating and drinking	Storing food and drink	Bottle	Alcohol			High	Potentially Aboriginal flaked tool? Conchoidal fractures and striations
STB01	G027	1	Colourless bottle base date-marked	"1944" "A" (maybe AGM monogram)	77.9	75	6.6	73.4	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	IND	1944		Low	AGM?
STB01	G028	1	Colourless bottle base	"5"	75	53.9	9.9	57.5	1–24	Colourless	Eating and drinking	Storing food and drink	Bottle	IND	1955 if AGM, otherwise 1930–1980		Low	Asymmetrical Owens suction scar
STB01	G029	1	Green shard	N	43.7	25.1	3.71	6	1–24	Green	Eating and drinking	Storing food and drink	Bottle	Alcohol	IND		Low	
STB01	G030	1	Thick aqua shard	N	44.5	32.6	4.97	13.6	1–24	Aqua	Eating and drinking	Storing food and drink	Bottle	IND	IND		Low	Two conchoidal fractures along one margin
STB01	G031	1	Amber fluted shard	N	34.1	32.7	1.8	3.8	1–24	Amber	Personal	Health and hygiene	Medicine bottle	Medicinal	IND		Low	

Ceramic

Site ID	Artefact no.	Description	Dimensions					Ware type	Decoration			Trademarks	Function		Form		Date of manufacture	Significance	Notes
			Rim diameter (cm)	Base diameter	Arc length (%)	Completeness (%)	Weight (g)		Colour	Application method	Motif/design		General function	Specific function	General form	Specific form			
STB01	C001	Discoloured bone china bowl sherd	14.0	6.4	50	50–74	73.7	Bone china	N/A	N/A	N/A	"WETL..." / "MADE" / "ENGLA" / partial overlapped S mark	Eating and drinking	Serving and consuming food	Table-ware	Nappy bowl	c. 1930	Med	Wetley (Sampson Smith); Longton, Staffordshire
STB01	C002	Terracotta pot sherd	12.5	N/A	15	1–24	24.28	Terracotta	N/A	N/A	N/A	N/A	House and home	Gardening	—	Plant pot	IND	Low	
STB01	C003	Brown fibre pattern sherd	N/A	N/A	N/A	1–24	11.1	Fine earthenware	Brown	Transfer	Fibre	N/A	Eating and drinking	Serving and consuming food	Table-ware	Bowl	c. 1860	Med	Minton?

								(white granite)											
STB01	C004	Wall-mounted soap holder	N/A	N/A	N/A	1–24	217	Earthenware	N/A	N/A	Fluted above	N/A	House and home	Furnishing	Fixture	Wall mounted soap dish	IND	Low	Weighs 215.07 g, points to renovations
STB01	C005	Stoneware plate sherd	N/A	12.5	25	25–49	40.9	Stoneware	N/A	N/A	N/A	N/A	Eating and drinking	Serving and consuming food	Table-ware	Nappy plate	IND	Low	Is grey discolouration or original colour? Inclusions and crazing
STB01	C006	Porcelain teacup sherd	7.5	N/A	35	25–49	8.9	Porcelain	N/A	N/A	N/A	N/A	Eating and drinking	Serving and consuming tea	Teaware	Teacup	IND	Low	Scalloped sides
STB01	C007	Stark white bowl sherd with blue relief decoration	10	N/A	26	25–49	30.1	Bone china	Blue	Relief	Chelsea Grape	N/A	Eating and drinking	Serving and consuming food	Table-ware	Bowl	c. 1930	Medium	Wetley (Sampson Smith); Longton, Staffordshire or Adderley
STB01	C008	Royal Doulton porcelain plate sherd	N/A	N/A	N/A	1–24	8.7	Bone china	Multi	Transfer	Plaza	MAD…/R…/ENGLAND' Royal Doulton motif	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	1932	High	Royal Doulton
STB01	C009/1	Aesthetic rim sherd	N/A	N/A	N/A	1–24	9.29	Fine earthenware (white granite)	Blue	Transfer	Floris Ligna	N/A	Eating and drinking	Serving and consuming food	Table-ware	Plate or platter	c. 1885	High	Aesthetic movement 1870–1900, featuring swastikas
STB01	C009/2	Aesthetic rim sherd	N/A	N/A	N/A	N/A	4.5	Fine earthen-ware (white granite)	Blue	Transfer	Floris Ligna	N/A	Eating and drinking	Serving and consuming food		Plate or platter	c. 1885		
STB01	C010	Ironstone sherd	N/A	12.5	11.4	1–24	31.7	Ironstone	N/A	N/A	N/A	Partial royal coat of arms	Eating and drinking	Serving and consuming food	Table-ware	Bowl	c. 1890	Low	
STB01	C011	Undiagnostic porcelain sherd	N/A	N/A	N/A	1–24	10.3	Porcelain	N/A	N/A	N/A	N/A	Eating and drinking	IND	IND	IND	IND	Medium	Either small bowl of teacup
STB01	C012	Largest scalloped sherd	27.5	12.5	17	1–24	71.5	Ironstone	N/A	N/A	Beaded and scalloped rim	N/A	Eating and drinking	Serving and consuming food	Table-ware	Dinner plate	1898–1901	High	Johnson Bros design, same as STB01/C013&C014, different discolouration
STB01	C013	Medium scalloped sherd	27.5	12.5	12.5	1–24	57.2	Ironstone	N/A	N/A	Beaded scallop rim	N/A	Eating and drinking	Serving and consuming food	Table-ware	Dinner plate	1898–1901		Johnson Bros design, same as STB01/C012 & C014

STB01	C014	Smallest scalloped sherd	27.5	12.5	7	1–24	15.5	Ironstone	N/A	N/A	Beaded scallop rim	N/A	Eating and drinking	Serving and consuming food	Table-ware	Dinner plate	1898–1901		Johnson Bros, same as STB01/C012&C013, different discolouration
STB01	C015	Brown terrazzo mosaic tile	N/A	N/A	N/A	N/A	2.2	Porcelain	N/A	N/A	N/A	N/A	House and home	Furnishing	Fixture	Tile	IND	Low	14.8 mm2
STB01	C016	White glazed mosaic tile	N/A	N/A	N/A	N/A	2	Earthenware	N/A	N/A	N/A	N/A	House and home	Furnishing	Fixture	Tile	IND	Low	
STB01	C017	White feathered edge rectangular plate sherd	N/A	N/A	N/A	1–24	12.4	Bone china	N/A	N/A	Feathered rim	N/A	Eating and drinking	Serving and consuming food	Table-ware	Serving platter?	IND	Medium	
STB01	C018/1	Largest children's tea trio sherd	N/A	7.5	N/A	25–49	24.7	Porcelain	Multi	Transfer	Girl with toys	"SUPERIOR QUALITY" / "M–"	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	c. 1950	High	Related to Lizzie Mills' 90th birthday?
STB01	C018/2	Children's tea trio sherd (dress)	N/A	7.5	N/A		19.52	Porcelain	Multi	Transfer	Girl with toys	"–ADE IN JAPAN"	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	c. 1950		
STB01	C018/3	Children's tea trio sherd (toy)	N/A	7.5	N/A		13.9	Porcelain	Multi	Transfer	Girl with toys	N/A	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	c. 1950		
STB01	C018/4	Children's tea trio sherd (no edge)	N/A	7.5	N/A		6.28	Porcelain	Multi	Transfer	N/A	N/A	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	c. 1950		
STB01	C018/5	Children's tea trio sherd (long edge, scallop)	N/A	7.5	N/A		19	Porcelain	Multi	Transfer	N/A	N/A	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	c. 1950		
STB01	C018/6	Smallest tea trio sherd	N/A	7.5	N/A		0.54	Porcelain	Multi	Transfer	N/A	N/A	Eating and drinking	Serving and consuming tea	Teaware	Tea trio saucer	c. 1950		
STB01	C019	Craft pottery	N/A	7.5	12	1–24	102.5	Ironstone	Multi	Hand-painted	Floral	"PLATT"	Eating and drinking	Serving and consuming food	Table-ware	Bowl	IND	Low	TBC
STB01	C020	White base sherd	N/A	7.5	30	25–49	13,7	Whiteware	N/A	N/A	N/A	N/A	Eating and drinking	Serving and consuming food	Table-ware	Nappy plate	IND	Low	Notched inner rim
STB01	C021	White base sherd with faint rim	N/A	N/A	N/A	1–24	5.8	Ironstone	N/A	N/A	N/A	N/A	Eating and drinking	Serving and consuming food	Table-ware	IND	IND	Low	
STB01	C022	Red paste sherd	N/A	N/A	N/A	1–24	0.4	Redware	N/A	N/A	N/A	N/A	IND	IND	IND	IND	IND	Low	
STB01	C023	Whiteware sherd	N/A	16.25	2.5	1–24	3.4	Whiteware	N/A	N/A	N/A	N/A	Eating and drinking	Serving and consuming food	Tablewa re	Tea/dessert	IND	Low	Measured from remnant base

STB01	C024	Brown tile sherd	N/A	N/A	N/A	N/A	2.9	Stoneware	Brown	Hand-painted	Colour edges	N/A	House and home	Furnishing	Fixture	Tile	IND	Low	
STB01	C025	Printed tile	N/A	N/A	N/A	N/A	3.84	Stoneware	Grey	Printed	Marble	N/A	House and home	Furnishing	Fixture	Tile	Modern	Low	
STB01	C026	White tile fragment	N/A	N/A	N/A	N/A	5.4	Stoneware	N/A	N/A	N/A	N/A	House and home	Furnishing	Fixture	Tile	Modern	Low	
STB01	C027	Brown oval stoneware dish	N/A	N/A	N/A	N/A	130.8	Stoneware	N/A	N/A	N/A	"W" / "O"	Eating and drinking	Serving and consuming food	Table-ware	Dish	IND	Low	
STB01	C028/1	Largest printed mug sherd with partial handle	N/A	10	22	1–24	28.2	Stoneware	Multi	Transfer	Striped message	N/A	Eating and drinking	Serving and consuming tea	Other	Mug	Modern	Low	
STB01	C028/2	Medium mug sherd with printed letters	N/A	10	N/A	1–24	9.7	Stoneware	Multi	Transfer	Striped message	N/A	Eating and drinking	Serving and consuming tea	Other	Mug	Modern	Low	Same vessel as C028/1, C028/3 and C032
STB01	C028/3	Smallest mug sherd with purple print only	N/A	10	N/A	1–24	8.7	Stoneware	Multi	Transfer	Striped message	N/A	Eating and drinking	Serving and consuming tea	Other	Mug	Modern	Low	
STB01	C029	Small, scalloped sherd	N/A	N/A	N/A	1–24	2.3	Ironstone	N/A	N/A	Beaded and scalloped rim	N/A	Eating and drinking	Serving and consuming food	Table-ware	Dinner plate	1898–1901	Med	
STB01	C030	Small undiagnostic whiteware sherd	N/A	N/A	N/A	1–24	0.7	Whiteware	N/A	N/A	N/A	N/A	Eating and drinking	IND	IND	IND	Modern	Low	
STB01	C031	Base sherd of Johnson Bros plate	N/A	10	10	1–24	17.2	Ironstone	N/A	N/A	N/A	"–HNSON BROS" / "ENGLAND"	Eating and drinking	Serving and consuming food	Table-ware	Dinner plate	1898–1901	Med	Johnson Bros beaded, scalloped set, part of set STB01/C012 – C014
STB01	C032	Additional printed mug sherd	N/A	10	22	1–24	12.2	Stoneware	Multi	Transfer	Striped message	N/A	Eating and drinking	Serving and consuming tea	Teaware	Mug	Modern	Low	Same vessel as CO28/1, C028/2, CO28/3
STB01	C033	Rhine pattern transferware	25	15	50	50–74	266.4	Ironstone	Blue	Transfer	Rhine	N/A	Eating and drinking	Serving and consuming food	Table-ware	Dinner plate	1845–	Med	
STB01	C034	Floral teapot fragment with partial handle	N/A	N/A	N/A	1–24	125.3	Ironstone	Multi	Transfer	Blue floral	N/A	Eating and drinking	Serving and consuming other	Other	Pitcher		Med	Similar design to Mason's Ironstone floral range
STB01	C035	Tiny Willow pattern fragment	N/A	N/A	N/A	1–24	1.4	Whiteware	Blue	Transfer	Willow	N/A	Eating and drinking	Serving and consuming food	Table-ware	Plate or platter	1790–	Low	

Organic material

Site ID	Artefact no.	No. of items	Description	Scientific identification		Dimensions			Completeness (%)	Butchery marks	"Function"		Form		Significance
				Genus/ species	Bone type	Length (mm)	Width (mm)	Weight (g)			General function	Specific function	General form	Specific form	
STB01	F001	1	Distal end of blackened sheep femur	*Ovis*	Femur	98.3	41.4	60.6	25–49	N	Organic material	Faunal remains	Bone	Femur	Low
STB01	F002	1	Glenoid fossa of blackened sheep scapula	*Ovis*	Scapula	53.7	35.8	14.4	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F003	1	Blackened rib fragment	*Ovis*	Rib	53.1	8.4	2.3	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F004	1	Blackened femoral head	*Ovis*	Femur	27.7	33.7	11.6	1–24	N	Organic material	Faunal remains	Bone	Femur	Low
STB01	F005	1	Blackened femur neck, no head	*Ovis*	Femur	65.2	32.5	25.1	1–24	N	Organic material	Faunal remains	Bone	Femur	Low
STB01	F006	1	Glenoid fossa of blackened sheep scapula	*Ovis*	Scapula	28.4	32.2	7.6	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F007	1	Blackened rib fragment	*Ovis*	Rib	40.0	16.6	2.5	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F008	1	Blackened undiagnostic bone fragment	*Ovis*	IND	44.3	17.9	2.4	1–24	N	Organic material	Faunal remains	Bone	IND	Low
STB01	F009	1	Blackened long bone fragment	*Ovis*	Long bone	45.3	14.6	4.1	1–24	N	Organic material	Faunal remains	Bone	Long bone	Low
STB01	F010	1	Black/blue scapula fragment	*Ovis*	Scapula	45.4	27.1	7.2	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F011	1	Black/blue long bone fragment	*Ovis*	Long bone	42.8	15.3	4.2	1–24	N	Organic material	Faunal remains	Bone	Long bone	Low
STB01	F012	1	Grey scapula fragment	*Ovis*	Scapula	45.4	29.6	3.3	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F013	1	Blackened femoral head	*Ovis*	Femur	15.5	25.7	4.7	1–24	N	Organic material	Faunal remains	Bone	Femur	Low
STB01	F014	1	Black/blue scapula fragment	*Ovis*	Scapula	29.1	31.8	3.6	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F015	1	Black/blue long bone fragment	*Ovis*	Long bone	46.7	12.9	3.7	1–24	N	Organic material	Faunal remains	Bone	Long bone	Low
STB01	F016	1	Blackened tibia head	*Ovis*	Tibia	29.6	37.1	8.4	1–24	N	Organic material	Faunal remains	Bone	Tibia	Low
STB01	F017	1	Blackened rib fragment	*Ovis*	Rib	40.6	15.6	2.7	1–24	N	Organic material	Faunal remains	Bone	Rib	Low

STB01	F018	1	Glenoid fossa of blackened sheep scapula	*Ovis*	Scapula	18.9	35.2	6.3	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F019	1	White/blue rib fragment	*Ovis*	Rib	22.8	8.6	0.9	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F020	1	White/blue rib fragment	*Ovis*	Rib	26.6	8.6	0.9	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F021	1	White/blue rib fragment	*Ovis*	Rib	30.5	17.2	1.4	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F022	1	White/grey fused radius/ulna	*Ovis*	Radius/ulna	65.9	44.8	14.3	1–24	N	Organic material	Faunal remains	Bone	Radius/ ulna	Medium
STB01	F023	1	Blackened rib fragment	*Ovis*	Rib	36.4	22.3	1.9	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F024	1	Grey/blue cut vertebra	*Ovis*	Vertebrae	38.6	39.9	6.0	25–49	Y	Organic material	Faunal remains	Bone	Vertebra	Low
STB01	F025	1	White/blue rib fragment	*Ovis*	Rib	23.7	13.2	2.2	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F026	1	Grey medial phalange	*Ovis*	Phalange	23.4	14.6	3.0	75–99	N	Organic material	Faunal remains	Bone	Phalange	Medium
STB01	F027	1	Grey/blue rib end	*Ovis*	Rib	29.4	21.5	1.6	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F028	1	Grey scapula fragment	*Ovis*	Scapula	46.6	26.2	4.6	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F029	1	Grey scapula fragment	*Ovis*	Scapula	31.6	21.2	2.1	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F030	1	Grey/blue scapula fragment	*Ovis*	Scapula	33.1	24.2	3.1	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F031	1	Possum humerus	*Trichosurus vulpecula*	Humerus	48.0	11.8	1.2	100	N	Organic material	Faunal remains	Bone	Humerus	Low
STB01	F032	1	Cut sheep vertebra	*Ovis*	Vertebrae	15.3	35.7	3.8	25–49	Y	Organic material	Faunal remains	Bone	Vertebra	High
STB01	F033	1	Sheep molar	*Ovis*	Tooth	37.5	16.9	8.2	100	N	Organic material	Faunal remains	Bone	Tooth	Medium
STB01	F034	1	Grey/blue scapula fragment	*Ovis*	Scapula	41.1	25.0	4.3	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F035	1	Grey/blue scapula fragment	*Ovis*	Scapula	32.1	22.9	2.6	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F036	1	Near complete humerus	*Ovis*	Humerus	131.6	42.0	55.5	75–99	N	Organic material	Faunal remains	Bone	Humerus	Low
STB01	F037	1	Large cut vertebra	*Ovis*	Vertebrae	52.2	80.2	28.9	25–49	N	Organic material	Faunal remains	Bone	Vertebra	High
STB01	F038	1	3 parts of distal tibia	*Ovis*	Tibia	141.7	29.8	29.0	50–74	N	Organic material	Faunal remains	Bone	Tibia	Low
STB01	F039	1	Large brown scapula fragment with glenoid fossa	*Ovis*	Scapula	68.2	40.4	14.9	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low

STB01	F040	1	Sheep metatarsal	*Ovis*	Metatarsal	58.8	16.4	6.6	75–99	N	Organic material	Faunal remains	Bone	Meta-tarsal	Medium
STB01	F041	1	Rabbit femur	*Oryctolagus cuniculus*	Femur	82.2	19.1	4.0	100	N	Organic material	Faunal remains	Bone	Femur	Medium
STB01	F042	1	Brown glenoid fossa of sheep scapula	*Ovis*	Scapula	68.2	33.9	11.9	25–49	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F043	1	Cow/beef rib fragment	*Bos*	Rib	97.2	24.5	15.3	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F044	1	Distal sheep radius	*Ovis*	Radius	75.8	35.2	21.3	25–49	N	Organic material	Faunal remains	Bone	Radius	Low
STB01	F045	1	Unfused distal sheep radius	*Ovis*	Radius	17.4	32.5	4.1	1–24	N	Organic material	Faunal remains	Bone	Radius	Medium
STB01	F046	1	Cow/beef rib fragment	*Bos*	Rib	57.5	31.7	12.4	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F047	1	Cow/beef rib fragment	*Bos*	Rib	49.9	28.0	4.1	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F048	1	Cow/beef rib fragment with saw cut	*Bos*	Rib	63.1	21.3	8.0	1–24	Y	Organic material	Faunal remains	Bone	Rib	High
STB01	F049	1	Cow/beef rib fragment with potential bite mark	*Bos*	Rib	46.1	16.4	1.9	1–24	Y	Organic material	Faunal remains	Bone	Rib	Medium
STB01	F050	1	Sheep scapula fragment	*Ovis*	Scapula	61.1	23.3	3.7	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F051	1	Oyster shell with flat side	*Ostrea angasi*	N/A	98.9	90.9	37.6	25–49	N	Organic material	Faunal remains	Bone	N/A	High
STB01	F052	1	Small oyster shell	*Ostrea angasi*	N/A	102.4	81.6	1.6	25–49	N	Organic material	Faunal remains	Bone	N/A	High
STB01	F053	1	Oyster shell, rounded	*Ostrea angasi*	N/A	44.1	35.7	51.4	25–49	N	Organic material	Faunal remains	Bone	N/A	High
STB01	F054	1	Cut sheep lumbar vertebra	*Ovis*	Vertebrae	36.7	33.6	7.0	25–49	Y	Organic material	Faunal remains	Bone	Vertebra	High
STB01	F055	1	Semi-fused, complete distal humerus	*Ovis*	Humerus	134.9	37.7	49.7	50–74	N	Organic material	Faunal remains	Bone	Humerus	Medium
STB01	F056	1	Femur with neither epiphyses	*Ovis*	Femur	135.4	42.1	56.5	50–74	N	Organic material	Faunal remains	Bone	Femur	Low
STB01	F057	1	Proximal, unfused tibia	*Ovis*	Tibia	72.9	33.3	20.4	25–49	N	Organic material	Faunal remains	Bone	Tibia	Medium
STB01	F058	1	Distal unfused sawn radius	*Ovis*	Radius	91.7	32.3	18.1	25–49	Y	Organic material	Faunal remains	Bone	Radius	High
STB01	F059	1	Beef rib fragment	*Bos*	Rib	76.6	28.9	24.0	1–24	N	Organic material	Faunal remains	Bone	Rib	Low
STB01	F060	1	Sawn juvenile (?) sheep humerus	*Ovis*	Humerus	26.0	57.0	9.3	1–24	Y	Organic material	Faunal remains	Bone	Humerus	High
STB01	F061	1	Shattered proximal end of sheep tibia	*Ovis*	Tibia	37.2	37.2	8.8	1–24	N	Organic material	Faunal remains	Bone	Tibia	Low

STB01	F062	1	Femoral condyles of sheep femur	*Ovis*	Femur	23.1	47.0	16.0	1–24	N	Organic material	Faunal remains	Bone	Femur	Low
STB01	F063	1	Divided beef lumbar vertebra	*Bos*	Vertebrae	54.6	63.8	43.5	25–49	Y	Organic material	Faunal remains	Bone	Vertebra	High
STB01	F064	1	Largely intact sheep scapula	*Ovis*	Scapula	152.2	72.2	29.6	75–99	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F065	1	Peripheral sheep scapula	*Ovis*	Scapula	99.2	19.9	7.2	1–24	N	Organic material	Faunal remains	Bone	Scapula	Low
STB01	F066	1	Sawn distal end of sheep radius	*Ovis*	Radius	42.5	16.6	2.7	1–24	Y	Organic material	Faunal remains	Bone	Radius/ ulna	Low
STB01	F067	1	Half sheep vertebra	*Ovis*	Vertebrae	17.2	27.3	3.5	25–49	N	Organic material	Faunal remains	Bone	Vertebra	Low
STB01	F068	1	Sheep astragalus	*Ovis*	Astragalus	22.3	19.8	4.1	75–99	N	Organic material	Faunal remains	Bone	Astra-galus	Low
STB01	F069	1	Chicken or poultry pelvis	*Gallus*	Pelvis	70.1	42.4	4.8	50–74	N	Organic material	Faunal remains	Bone	Pelvis	Medium
STB01	F070	24	Small fragments of unidentifiable bone, all presumably sheep, without butchery marks	IND	IND	N/A	N/A	29.1	IND	IND	Organic material	Faunal remains	Bone	IND	Low

Metal

Site ID	Artefact no.	No. of items	Description	Dimensions			Function		Form		Completeness (%)	Significance	Metal type	Date of manufacture	Notes
				Length (mm)	Width (mm)	Weight (g)	General function	Specific function	General form	Form					
STB01	M001	1	Telegraph insulator, connector and screw	190	51.5	283.6	House and home	Utility	Commun-ications	Insulator	100	High	Steel	N/A	Kosters Premiere Potteries (Norwood, SA, Australia), c.1930s
STB01	M002	2	Fragment of round rim	590.8	35.0	178.0	Tools and equipment	Industry	Work equipment	Barrel rim	1–24	Low	Iron		
STB01	M003	1	Half a horseshoe	175.0	30.0	124.2	Tools and equipment	Transport	Horse accessory	Horseshoe	25–49	Med	Iron		Width measured as width of shoe. Toe-clip rim shoe post-1850.
STB01	M004	1	Heavy sheet (?) of metal	162.3	89.7	381.4	Tools and equipment	Transport	Horse accessory	Cartwheel	1–24	Med	Iron		Likely part of a barrow/cartwheel
STB01	M005	1	Metal bottle cap	33.6	39.0	10.8	Eating and drinking	Storing food and drink	Cover	Cap	75–99	Low	Alumin ium		

STB01	M006	1	Jar lid	79.2	75.5	49.4	Eating and drinking	Storing food and drink	Cover	Lid	75–99	Low	IND		
STB01	M007	1	Wire	113.5	54.1	21.5	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Iron		Measured as square
STB01	M008	1	Wire woven to resemble machine gun	190.2	83.1	50.5	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M009	1	Largest wire object, woven in some places or single strand	223.4	164.4	1876.3	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M010	1	Multiple strands of wire folded to resemble callipers	115.7	75.4	49.7	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M011	1	Twisted double strand of wire	113.98	84.5	28.8	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M012	1	Bent single strand of wire	150.7	86.1	40.3	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M013	1	Cast iron enamelled tin or dish	165.2	75.4	353.4	Eating and drinking	Preparing food	Cookware	Dish	75–99	Low	Iron		
STB01	M014	1	Eley-Kynoch 12-gauge shotgun shell	7.7 (depth)	22.43	2.0	Tools and equipment	Weapons and ammunition	Ammunition	Shotgun case head	25–49	High	Brass	1923–1962	ICI = Imperial Chemical Industries, Footscray then Deer Park, Melbourne
STB01	M015	1	Eley-Kynoch 12-gauge shotgun shell in better condition	7.7	22.2	4.2	Tools and equipment	Weapons and ammun-ition	Ammunition	Shotgun case head	25–49	High	Brass	1923–1962	
STB01	M016	1	Brass knob	47.7	28.4	37.1	House and home	Utility	Furnishing	Knob or handle	75–99	Low	Brass		Likely a fire tool
STB01	M017	1	Short nail/tack	26.0	6.4	0.9	Tools and equipment	Industry	Work equipment	Nail	75–99	Low	Iron	IND	
STB01	M018	1	Dress hook	10.4	7.5	0.1	Personal	Clothing and accessories	Fastener	Dress hook	50–74	High	IND	c. 1901	Victorian era fashion
STB01	M019	5	Fragments of conjoined wire	N/A	N/A	60.9	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M020	4	Fragments of single wire strands	N/A	N/A	34.4	Tools and equipment	Industry	Work equipment	Wire	IND	Low	Steel		
STB01	M021	1	Latch	51.9	26.5	7.9	House and home	Utility	Fixture	Latch	50–74	Low	Iron		
STB01	M022	1	Fid	90.3	5.8	3.0	Tools and equipment	Industry	Work tool	Fid	75–99	Med			Awl or fid, ropemaking, e.g. packing bales of wool

Miscellaneous

Site ID	Artefact no.	No. of items	Material	Description	Dimensions			Function		Form	Completeness	Significance	Notes
					Length (mm)	Width (mm)	Weight (g)	General function	Specific function				
STB01	X001	5	Charcoal	Small pieces of charcoal	30.6	N/A	0.8	Organic material	Charcoal	Charcoal	N/A	Medium	Potentially from cooking or historical grass fires
STB01	X002	1	Plastic	Plastic children's paratrooper toy	61.7	30.1	4.1	Personal	Recreation	Toys	75–99%	Medium	Plastic parachute deteriorated

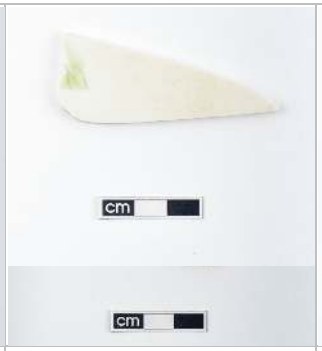
Appendix 6: Artefact photographs

(All photographs available as supplementary files)

					
STB01/G001	STB01/G002	STB01/G003	STB01/G004	STB01/G005	STB01/G006
					
STB01/G007	STB01/G008	STB01/G009	STB01/G010	STB01/G011	STB01/G012

					
STB01/G013	STB01/G014	STB01/G015	STB01/G016	STB01/G017	STB01/G018
					
STB01/G019	STB01/G020	STB01/G021	STB01/G022	STB01/G023	STB01/G024

					
STB01/G025	STB01/G026	STB01/G027	STB01/G028	STB01/G029	STB01/G030
					
STB01/G031	STB01/C001	STB01/C002	STB01/C003	STB01/C004	STB01/C005

					
STB01/C006	STB01/C007	STB01/C008	STB01/C009	STB01/C010+11	STB01/C012
					
STB01/C013 & C014	STB01/C015	STB01/C016	STB01/C017	STB01/C018	
					
STB01/C019	STB01/C020	STB01/C021	STB01/C022	STB01/C023	STB01/C024

				(See STB01/C031)	
STB01/C025	STB01/C026	STB01/C027	STB01/C028	STB01/C029	STB01/C030
(See STB01/C013)					
STB01/C031	STB01/C032	STB01/C033	STB01/C034	STB01/C035	STB01/F001

					
STB01/F002	STB01/F003	STB01/F004	STB01/F005	STB01/F006	STB01/F007
					
STB01/F008	STB01/F009	STB01/F010	STB01/F011	STB01/F012	STB01/F013

					
STB01/F014	STB01/F015	STB01/F015	STB01/F016	STB01/F017	STB01/F018
					
STB01/F019	STB01/F020	STB01/F021	STB01/F022	STB01/F023	STB01/F024

					
STB01/F025	STB01/F026	STB01/F027	STB01/F028	STB01/F029	STB01/F030
					
STB01/F031	STB01/F032	STB01/F033	STB01/F034	STB01/F035	STB01/F036

					
STB01/F037	STB01/F038	STB01/F039	STB01/F040	STB01/F041	STB01/F042
					
STB01/F043	STB01/F044	STB01/F045	STB01/F046	STB01/F047	STB01/F048

					
STB01/F049	STB01/F050	STB01/F051	STB01/F052	STB01/F053	STB01/F054
					
STB01/F055	STB01/F056	STB01/F057	STB01/F058	STB01/F059	STB01/F060

					
STB01/F061	STB01/F062	STB01/F063	STB01/F064	STB01/F065	STB01/F066
					
STB01/F067	STB01/F068	STB01/F069	STB01/F070	STB01/M001	STB01/M002

					
STB01/M003	STB01/M004	STB01/M005	STB01/M006	STB01/M007	STB01/M008
					
STB01/M009	STB01/M010	STB01/M011	STB01/M012	STB01/M013	STB01/M014

					
STB01/M015	STB01/M016	STB01/M017	STB01/M018	STB01/M019	STB01/M020
					
STB01/M021	STB01/M022	STB01/X001	STB01/X002		