

Historical archaeological research in Western Australia: a critical review and suggestions for future research

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Historical archaeological investigation in Western Australia has mirrored investigations common to much of historical archaeology in Australia, such as shipwrecks, European colonisation, cross-cultural contact, convictism and industry. While a number of large scale studies have made inroads into our understanding of colonial life, much of the focus of Western Australian historical archaeology has concentrated on investigating specific historic places in isolation rather than the larger systems which supported them. Western Australian historical archaeology has favoured remote rural and coastal sites in the north of the state, largely ignoring the large urban centres of the south-west. Areas of future research for the discipline include the archaeology of urban centres, colonial expansion in the south-west, understanding the impact of the convict system in 1850, then the gold rushes in the 1880s, and finally, social and industrial issues related to industries such as mining and timber-getting.

INTRODUCTION

To date no review of historical archaeological investigation within the state of Western Australia has been conducted. This paper, inspired by the joint 2012 ASHA/AIMA conference, aims to address the need for a critical review of research conducted over the past 30 or so years. It is carried out in the spirit of similar reviews (e.g. Casella 2006; Gojak 2001; Paterson and Wilson 2000) and aims to provide an overview of the nature and intent of historical archaeology within the state. The explicit intention here is to examine themes and areas that have been investigated and, crucially, to identify areas of need for future research. This paper accepts Orser's (1996:26-27) broad definition of historical archaeology as being the archaeology of the modern world, that it studies the '... processes that have formed and shaped modernity, and the way that the past is understood from the perspective of the present' (Hall and Silliman 2006:2). Dutch and British ships have been visiting the west of the continent since the seventeenth century, before the initial British colonisation of Western Australia which began in 1826 in Albany, while in 1829 settlement commenced around Perth, followed by movement into the north of the state after 1860. This paper will examine research covering this entire period.

MATERIAL REVIEWED

This review aims to provide coverage of significant works, giving preference to those projects that have used historical archaeology to advance our knowledge of the history of the state. Consequently the focus of this paper is on research focused work rather than on that conducted within a mitigation framework. This approach necessarily preferences published and scholarly research over grey literature produced as a result of commercial work. Where commercial projects have resulted in significant outcomes they will be discussed, but much of the grey literature produced as a result of commercial mitigation work is often limited in scope, or entirely descriptive, or both, with limited interpretation, and reports related to monitoring, investigation of individual features or test-pitting will not be referred to here due to space requirements. Likewise where published and scholarly work also lacks significant outcomes it is not discussed. However, while this means that much commercial output is not discussed in this paper, it should be acknowledged that this work gathers valuable information about Western Australian sites and contributes to both the development of the sub-discipline of historical archaeology in the state and knowledge of the state's history. Additionally,

prior to the commencement of widespread academic research in Western Australia in the 1990s, terrestrial historical archaeological work in the state was largely the province of consultants, and the early work of practitioners such as Jack McIlroy and Gaye Nayton should be acknowledged.

In order to comprehensively cover the peer reviewed published material, relevant journals were searched, including the three main Australian journals *Australian Archaeology*, *Australasian Historical Archaeology* and *Archaeology in Oceania*, relevant international journals such as *Historical Archaeology*, the *International Journal of Historical Archaeology* and *World Archaeology*, maritime archaeology journals such as the *AIMA Bulletin* and the *International Journal of Nautical Archaeology* and specifically Western Australian journals such as the *Records of the Western Australian Museum* and *Studies in Western Australian History*. To ensure coverage outside these journals searches were conducted using academic databases such as *JSTOR*, *Proquest*, *Informit* and *Academic Search Premier*. Searches were conducted in suitably stocked libraries and numerous published books were also examined. Unpublished scholarly output primarily comprising PhD, Masters and Honours theses, largely completed at the University of Western Australia, with some contributions from other universities such as Flinders and Notre Dame Australia, was also reviewed. Grey literature, comprising an unquantified collection of unpublished excavation and consultancy reports, and documents such as conservation plans, was reviewed where possible. This corpus of material is described as 'unquantified' because no collation of the grey literature has been attempted, such as has occurred with the *NSW Archaeology Online Project* (Gibbs and Colley 2012). There is currently no central repository for grey literature and no agency or other body has overall responsibility for this material. Some reports are lodged with the Battye Library, while others are held by the State Heritage Office or the National Trust, and many are simply provided to proponents without being otherwise disseminated. As such this review will use grey literature where known, but makes no pretensions towards claiming a comprehensive review of this material.

THEMATIC REVIEW OF PREVIOUS WORK

A number of specific areas have been targeted for historical archaeological research in Western Australia, and as such this review will be divided thematically. Major places listed in this review are shown in Figure 1.

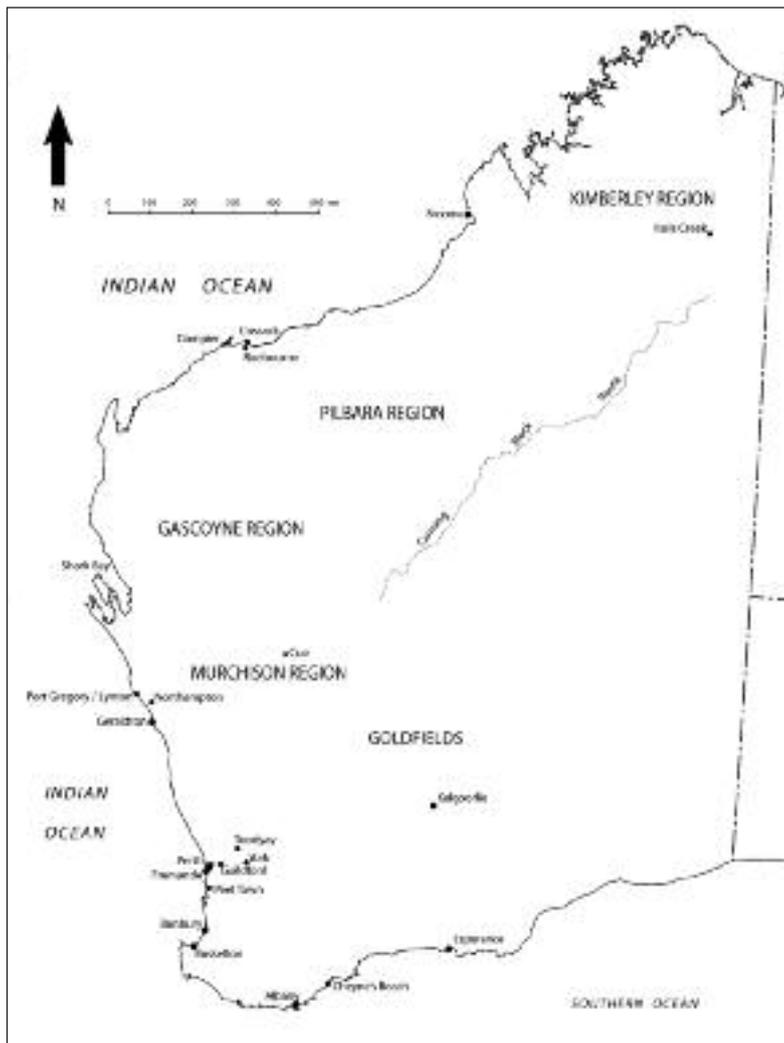


Figure 1: Map of Western Australia showing major places mentioned in-text.

Shipwrecks and maritime sites

Maritime archaeology has been heavily researched in Western Australia thanks largely to the Western Australian Maritime Museum. The result of Museum efforts to identify and locate wrecks in Western Australian waters has led to the development of the *Shipwrecks Database*, a searchable online resource accessed through the Museum website. This invaluable resource contains records for over 1650 shipwrecks, many of which have been extensively investigated by the Museum. Additionally, a number of overview publications (e.g. Broeze and Henderson 1986; Green *et al.* 2004; Green and Henderson 1974; Henderson and Cairns 1995; Henderson and Henderson 1988; Henderson 2010; McCarthy 2003, 2012) have been produced, particularly related to shipwrecks, while an extensive and easily accessible grey literature of excavation and other reports has developed. As such a comprehensive review of maritime archaeology in Western Australia is beyond the scope of this paper. Instead, a brief overview of major investigations will be provided.

Seventeenth and eighteenth-century Dutch VOC wrecks have been extensively investigated over the years (van Duivenvoorde 2013), with the excavation of ships such as the *Batavia* (e.g. Green 1989; Ingelman-Sundburg 1975), *Zeewijk* (e.g. Ingelman-Sundburg 1976, 1979), *Zuytdorp* (e.g. McCarthy 2006; Playford 1996) and *Vergulde Draeck* (e.g. Green 1983). A seventeenth-century British East India Company shipwreck, the *Trial*, has also been investigated (Green 1977, 1986). Gibbs (2002), Hunnybun (1995) and Marwick (1999) have

investigated survivor camps associated with the wreck of the *Batavia* on the Abrolhos Islands near Geraldton and particular attention has been given to physical anthropological study of the mass graves on Beacon Island (e.g. Franklin and Freedman 2003; Pasveer *et al.* 1998; Paterson and Franklin 2004).

A number of nineteenth-century British wrecks have provided information about the early Western Australian colony, including the *James Matthews* (Henderson 1975, 2008, 2009; Staniforth 2003), *Eglinton* (Staniforth 2003) and *Xantho* (McCarthy 2000; Veth and McCarthy 1999;). Staniforth (2003:141) used excavated cargoes from the *James Matthews*, wrecked in 1841, and the *Eglinton*, wrecked in 1852, to argue that the Western Australian economy prior to implementation of the penal system was severely depressed and based entirely on orders from the small group of Western Australian elites. In contrast he argued that the implementation of the penal system in 1850 injected capital into the Western Australian economy and allowed its inclusion in wider Imperial trade systems. Trade to the colony after the 1890s gold rushes was investigated in a similar fashion by Souter (2007) who analysed the assemblage from the wreck of the *Sepia*. The investigation of the *Xantho* (McCarthy 2000; Veth and McCarthy 1999) has demonstrated the spread of European activities into the state's northwest, and the vessel's use in the pearling trade, as a cargo ship, and in the transportation of Aboriginal prisoners. More recently there has been a shift to the investigation of twentieth-century maritime sites related to World War II. Wreck sites related to navy assets sunk during World War II, such as those of the *Sydney* and *Kormoran* (McCarthy 2009a, 2009b, 2011) have received attention, as have coastal sites related to these wrecks (Anderson and Garcia 2008). Coastal defence sites have also been investigated, with aircraft destroyed

during Japanese bombing raids recorded in Broome (Jung 2007, 2009) and submarine defences in Cockburn Sound (Anderson 2011).

Colonialism, colonisation, exploration and expansion

A number of studies have investigated colonialism and the nature of early colonisation, expansion and adaptation in Western Australia. Two main waves of colonisation have occurred, first in the south-west after 1826, then into the north after 1860. Burke (2007a) and Burke and others (2010) have investigated the failed settlement at Peel Town, 14 km south of Fremantle. Investigations at this site have shown that the initial 1829–1830 colonisation, which was intended to import a strict British social hierarchy to the new colony, rapidly broke down both physically and socially. Isolation, lack of leadership and a range of other privations encouraged indentured workers to actively undermine their colonial masters, leading to the collapse of the settlement. This mirrors Burke's (2004a, 2004b, 2007b) earlier PhD research in the Swan Valley which demonstrated that economic conditions within the colony prior to 1850 allowed working-class labourers to transcend traditional class barriers and acquire land and property. This economic mobility was allowed by lack of capital and labour within the colony, a small population and isolation from the rest of the Empire. However, Fleming's (2003) investigation of Haddrill's Cottage in the Swan Valley suggested that, despite this opportunity for economic mobility, traditional social relationships were maintained with labourers and elites

tending to marry within their own class, rather than crossing class boundaries. Burke (2004a:334) also demonstrated attempts by elites to maintain social hierarchy through the construction of large visible buildings, while Hamersley (2011) argued that they used landscape at the 1829 settlement on Garden Island to control the working classes. Similarly, Gardos (2004) argued in her Masters research at Old Farm Strawberry Hill in Albany that circumstances in the new colony allowed for a modicum of social as well as economic mobility. She suggested that the lack of available labour caused elites to engage in manual labour and mix with labouring classes, rather than maintaining the rigid hierarchies imported from Britain.

Burke (2004a) also argued that the intention during initial British colonisation to establish traditional British-style rural areas based around market towns was rapidly undermined by lack of capital and consumer goods within the colony. Instead, small local hamlets developed in the hinterland, dependent upon the exploitation of local resources. Nayton (2011: 53), who analysed the development of the Swan River economy, also suggested that the self-sufficiency of these communities was limited to the production of foodstuffs and a restricted range of goods based on locally available resources. Shortages of imported structural materials resulted in the need to use whatever local materials were available for buildings and infrastructure (Nayton 2011:23-27). Both Burke (2004a:346) and Staniforth (2003:141) demonstrated that these shortages before 1850 were the result of a lack of capital within the colony, which inspired an abnormal trade system based on orders from colonial elites, rather than the delivery of speculative trade cargoes to Western Australian ports. It was not until the advent of the convict system in 1850 that contact with the rest of Empire increased and an influx of capital allowed the inclusion of the colony in standard world trading networks.

Nayton (1992, 2011) also investigated the second wave of colonisation in the state's north, investigating sites at Broome, Old Onslow and Cossack. Using her market capitalism model she argued that the necessity to ship goods through Fremantle rather than directly from northern ports hindered the capacity of northern industry to thrive. Additionally, the prohibition on convicts in the northern expansion contributed to labour shortages, leading to the necessity to develop new industries based on local resources and made possible by Aboriginal labour, such as pearling, based out of Cossack and Broome, and a dependence on sheep pastoralism throughout the north-west.

The town of Cossack has been intensively studied compared to other early Western Australian sites. As well as Nayton (2011), McIlroy (1988, 1990) conducted extensive surveys to record the town, while Clifford (2008, 2012) used glass artefacts collected at Cossack in her study of glass patination processes. Cossack was also a central site for the major ARC funded project, *The Historical Archaeology of the European Period in the Pilbara* (hereafter referred to as HAPP) which aimed to develop an understanding of '... the origins and development of past cultural processes and colonial systems in the Pilbara' (Paterson 2006:100). This project, particularly focused on colonial European expansion and contact with Indigenous people, was wide ranging, encompassing a number of themes and resulting in numerous publications (including Paterson 2006, 2008, 2011; Paterson and Wilson 2009) and research theses (including Bolton 2013; Carson 2003; Lewis 2003; McHarg 2006; Sanders 2005; Sinclair 2006; Wilson 2005). It investigated nineteenth-century sites including Cossack, coastal pearling and whaling sites throughout the Dampier Archipelago and numerous pastoral stations, arguing that European expansion was dependent upon the exploitation of Aboriginal labour. The

study found that while Indigenous people tended to aggregate their camps around these European settlements they maintained traditional practice through rock-art and the incorporation of European material culture such as bottle glass into traditional tool manufacture.

Culture contact studies

A number of other studies have examined culture contact between Indigenous Australians and European settlers, primarily in the state's north. The ARC-funded project *Picturing Change* built on HAPP, examining contact rock-art in the Pilbara region (Tacon et al. 2012), demonstrating that images of European material culture were incorporated into existing rock-art practice by Indigenous people. A number of Honours theses have also examined cross-cultural contact in the Pilbara using both direct analysis of rock-art motifs and spatial analysis of their positioning in the landscape (Fyfe 2010; Harris 2009; Smith 2008; Strano 2009). Although it is still in its infancy, a new ARC-funded multi-disciplinary project also plans to investigate culture contact on Barrow Island, across a range of site types (Souter et al. 2006).

Culture contact has also been examined in the Kimberley region where O'Connor and others (2013) have interpreted rock-art as being used by Indigenous people to restate traditional themes in response to pressure from European expansion. Smith (2001; Smith and Smith 1999) examined the process of Indigenous movement from traditional nomadism to station-based life, demonstrating that it involved a change in material culture and diet, but that changes were informed by traditional preferences and practice. Harrison (2002a, 2002b, 2002c) conducted research at Old Lamboo Pastoral Station, near Hall's Creek. He argued for Aboriginal agency in mediating contact with settlers, evidenced through their recontextualisation of specific material culture such as iron tools (Harrison 2002b:73-74) and suggested that the two groups experienced a shared history in the development of pastoralism in the region. The combined research of Smith, Harrison and Paterson demonstrates Indigenous responses to the arrival of white settlers as part of a continuum of cultural behaviour. They argue that Indigenous responses, seen through rock art and the adoption of European material culture occurred within existing cultural traditions and were designed to mitigate the significant changes that were being imposed on traditional culture.

A number of other studies have also examined settler-Aboriginal interaction in Western Australia. Stingemore (2002, 2010) examined the incarceration of Indigenous people in syphilis hospitals on islands in Shark Bay in the early twentieth century. She showed that institutional processes were used to study and control Aboriginal people, most of whom actually did not have syphilis, and despite the impact of institutionalisation Aboriginal inhabitants were able in part to maintain traditional lifeways and beliefs. Technological adaptation through the use of glass for Indigenous tool-making has also been examined by a number of researchers. Harrison (1996, 2000) examined Aboriginal glass artefacts from two regions, Shark Bay and the Perth region, concluding that technological variation between the two districts may reflect differential Aboriginal reactions to new materials. Curry-Bowran (2011) concentrated on the Perth region and concluded that Noongar people were not passive in response to European incursions on their traditional lands, but instead were active agents in their attempts to mediate relations with the colonists. Harrison (2003, 2006) argued that the knapping of artefacts from bottle glass represented Aboriginal agency in response to the arrival of Europeans. In particular he positioned the manufacture of the Kimberley Point during the nineteenth century as 'an artefact of colonial desire' (Harrison

2006:63) created by Aboriginal people to meet the wants of European collectors, although this argument has been strongly refuted by Akerman (2008).

Convictism and penal transportation

A number of studies have investigated convict transportation to Western Australia. Gibbs (2001, 2006) conducted a pilot study that aimed to ‘... understand some of the more fundamental aspects of the *structure* of the system and its physical expression’ (Gibbs 2001:60). He developed a convict site typology, delineating between places crucial to the operation of the system (e.g. prisons, depots, work stations), accommodation (e.g. barracks and villages), and public works (e.g. roads, bridges, buildings) resulting from convict labour. He also assessed the archaeological potential of known Western Australian convict sites. Gibbs (2007) conducted survey and limited excavation of one convict depot, at Lynton, arguing that its physical position was the result of aesthetic rather than practical considerations and that this led to the failure of the settlement. Winter (2011, 2013a, 2013b, 2013c), built on the baseline data developed by Gibbs, explicitly situating Western Australian convictism as part of the larger system of British transportation, showing how the evolution of that system over time led to the form seen in the Swan River colony and arguing that the Western Australian system was ideologically, legislatively and physically different to that in operation in eastern Australia. He investigated convict depot sites at Guildford, Toodyay and York in the Avon Valley region, using spatial analysis to argue that they were open access places rather than punitive penal sites, and that ticket-of-leave convicts residing there had a relatively high level of personal freedom. He juxtaposed this with the highly restricted Fremantle Prison, designed for the reform and punishment of convicts (Bavin 1994). Bush (2012) investigated the contribution of convicts to Western Australia’s built environment. She also noted the difference between the Western Australian convict system and that of earlier convict regimes in the eastern states, demonstrating that skilled ticket-of-leave men, trained in the British public works prison system by the Royal Engineers, caused a fundamental change to the built environment in the colony. She argued that convicts brought modernity in building techniques and materials and provided the colony with a skilled labouring force that allowed an expansion of building sizes and styles. Studies which deal peripherally with convictism include those by Burke (2004a) who discussed the effect of the system on the development of Guildford, and Allen (2002) who investigated evidence of gender at the Guildford Police Station and Gaol site.

The centre of the convict system in Western Australia was Fremantle Prison (Figure 2), but investigation of this site has gone beyond just the convict period, examining the prison’s working life between 1855 and 1991. It has been included in a number of larger studies. Casella’s (2009) investigation of graffiti within cells was part of a larger global study of prisoner graffiti. Kerr (1984, 1988) discussed the prison as part of his larger study of Australian penal architecture, showing that it was a product of contemporary ideology. The substantive study of the prison was conducted by Bavin (1994) as part of her doctoral studies, with subsequent studies by Burke (1998) and Mein (2010) as part of Honours projects. Bavin’s project investigated Fremantle Prison as one of three Western Australian colonial prisons and she demonstrated that the monitoring and control of prisoners was the most important aspect of prison design (Bavin 1994:238); that social contact



Figure 2: The main cell block at Fremantle Prison from the south.

between prisoners was tightly controlled (Bavin 1994:239); and that religious areas were of crucial importance to the design of nineteenth-century prisons and central to ideas of prisoner reform (Bavin 1994:242). Both Burke (1998) and Mein (2010) analysed assemblages recovered from underfloor deposits within prison cells but with differing results. Burke (1998) drew a distinction between private and public space at the prison, suggesting that assemblages recovered from within cells represented private activity. Mein (2010) went beyond this, suggesting that assemblages recovered from two separate cells demonstrated prisoner coping strategies designed to deal with the monotony of prison life.

Studies of labour and industry

A number of studies have concentrated on the development of industry and the experience of the people involved in them. Given the centrality of mining in the history of Western Australia, it might be expected that historical archaeology would have focused extensively on this industry. Only two major studies, however, have examined nineteenth-century mining, one focusing on mining prior to the 1890s gold rushes and the other examining 1890s goldfield sites. Gibbs (1997a, 1997b, 2010a) examined mid-nineteenth-century mining in the Murchison region around Northampton, concentrating on lead and copper exploitation. His study recorded a number of mines and settlements and he examined both the technology of mining (Gibbs 1997a) and social organisation within settlements (1997b; 2010a). He demonstrated that a lead smelter at Warribanno, used for processing ore from the nearby Geraldine mine, was based on state-of-the-art contemporary British technology and produced high grade ore, but despite this the mine failed and the smelter consequently closed (Gibbs 1997a:61-63). His investigation of the nearby Gwalla settlement suggests that despite a largely convict workforce, local leaders attempted to create an idealised and highly organised society in a remote frontier location (Gibbs 1997b, 2010a).

Fleming’s (2011) PhD research examined 1890s gold rush settlements in the Mid West goldfields near Cue. She suggested that despite evidence for some adherence to what might be termed a global gold rush culture, Western Australian gold rush participants were strongly influenced by local conditions, manifesting in evidence for cooperative practices to ensure survival in harsh conditions. Populations were also

impacted by, and contributed to a developing Australian identity that was influenced by local events and conditions. One other major study investigated sites crucial to mining during the gold rushes. Bolton's (2009) ARC-funded PhD research examined settlements along the Golden Pipeline, built to bring water from Mundaring to the eastern goldfields settlements of Kalgoorlie and Coolgardie. Her research showed these sites to be mostly ephemeral and transient, peopled largely by men either travelling to the goldfields or working on infrastructure built to service the goldfields, including the railway line and water pipeline.

Whaling has been extensively researched, with a number of studies demonstrating the importance of bay-whaling to the early Western Australian economy. These have provided good historical context for the industry and a number of sites have been investigated in detail. McIlroy (1986) recorded remnants of the Bather's Bay whaling station in the centre of Fremantle, including the tryworks, jetty and associated structures. Gibbs (1995, 1998 2005, 2010b) investigated numerous sites but concentrated on the remote south coast site at Cheyne's Beach, which developed as the Fremantle site was in decline. He charted the development of the site and analysed a rich faunal assemblage, showing that the inhabitants relied heavily on the consumption of domestic rather than native animals. Rodrigues (2011) conducted a preliminary investigation at the site of the Pakington Whaling Station at Port Gregory, recording a range of material culture related to whaling activities but without significant analysis. These studies have investigated the social and industrial aspects of whaling, demonstrating that the Western Australian industry was largely remote, almost entirely based on shore whaling, and prior to the advent of the convict system in 1850, provided important economic stimulus to the depressed Western Australian economy.

Pearson (1986, 1990) investigated industrial technology associated with the lime-burning industry and recorded a number of kiln sites in the south-west of the state. He determined that, due to the abundant sources of limestone in Western Australia, lime burning was rapidly adopted by early settlers but there was wide variation in kiln types which may have related to the geographical origins of the people using them. Gibbs (2007) recorded a lime kiln at the Lynton convict depot, suggesting the use of lime mortar was an expedient use of locally available materials, while Bush (2012) found that lime was a crucial component of pre-1850 construction, as lime wash protected inferior bricks and rammed earth structures from degradation due to weather.

A number of other industrial processes have been examined within Honours theses. The colonial timber industry was investigated by Smith (2003) who studied timber mill sites at the Jarrahdene and Dean Mills in the southwest, and Winter (2005) who examined primary timber-getting in the forests to the east of Perth. Allia (2005) investigated early building styles and techniques in the Swan River colony, while Checchi (2008) examined the beginnings of the wine making industry, and Woodhams (2002) conducted a preliminary study of the early Western Australian railways. Finally, Cunneen (2005) studied the development of the south-coast fishing industry.

DISCUSSION

The preceding thematic review suggests that, while a number of major studies have been completed, there is still significant scope for research to be conducted in historical archaeology in Western Australia. While research conducted to date has been extensive in specific areas, in others it must be considered that only baseline data have been gathered. Much of the work conducted has been atheoretical and site based, rather than concentrating on larger processes and systems. Encouragingly,

over time there has been a shift towards a more theoretically based approach, with a number of major studies conducted in the last two decades taking sophisticated approaches to research questions.

When considering the development of the sub-discipline in the state, the clear dichotomy between the investigation of marine and terrestrial sites must be acknowledged. The strength of maritime archaeology in Western Australia is the result of numerous factors including movements to protect wreck sites since the 1960s, leading to the enacting of the *Maritime Archaeology Act 1973*, and the development of an extremely strong and proactive research environment at the Western Australian Maritime Museum dating from that period (Rodrigues 2011:76-91). In contrast, until the 1990s terrestrial historical archaeology in Western Australia primarily occurred in the commercial sphere and the early important work cited in this paper was largely conducted as a result of consultancy projects. The vast majority of research focused projects have been conducted since 1990, mirroring a rise in interest in historical archaeology within the discipline of archaeology at The University of Western Australia. However, there was not a tenured academic position within Western Australian universities filled by a historical archaeologist until the year 2000. Encouragingly there are now at least four tenured academic positions filled by researchers engaged in historical archaeological investigation in Western Australia.

When assessing historical archaeological research conducted in Western Australia there are clear areas where a great amount of knowledge has been accumulated. Obviously investigation of ship-wrecks and other maritime sites is considerably developed. Four other areas have had coverage allowing an understanding of systems rather than individual sites. These are convictism and penal archaeology; Indigenous contact in the Pilbara and Kimberley; the whaling industry; and to a lesser extent, colonisation and development of the state. For convictism the research of Bavin (1994), Gibbs (2001), Bush (2012), and Winter (2013a) have provided significant insight into the Western Australian convict system. Additionally, current intensive research at Fremantle Prison is providing insight into the post-convict use of this one major site. However, there is a need for considerable further work relating to the convict period. Convictism in regional areas, particularly those south of Perth, and the life of ticket-of-leave men in private employment is not well understood, while the use of convicts as a labour force and in particular, the major transformation caused by conversion to a penal colony also need investigation.

Colonisation and Indigenous contact in the state's north is also well understood thanks to the efforts of Paterson (2006), Smith (2001) and Harrison (2002c). There is limited knowledge, however, of Indigenous participation in pastoralism or indeed other industries in the south and east of the state. Other contact and post-contact Indigenous sites such as missions and massacre sites, as well as the nature of contested space on the frontier all have great potential for research. Burke (2004a), Paterson (2006) and Nayton's (2011) studies have provided significant understanding of the waves of European colonisation throughout Western Australia, although the experience of settlers in different places and at different times needs further investigation.

When looking at the entire corpus of historical archaeological research in Western Australia, a number of factors become immediately apparent. First, the vast majority of studies have been conducted in rural areas of the state, often in frontier situations. Second, most research has concentrated on sites in northern (Pilbara and Kimberley regions) and central (Murchison region) areas of the state or on coastal sites. Third, the nature of much of the research has been as pilot projects conducting the first investigation of a particular topic. In these

cases, while significant insight has been gained further research is required to consolidate those initial steps. And fourth, research has been confined to a number of narrow topics, with wide scope for expansion.

The most glaring omission is the limited research into urban settlement sites. There has been virtually no investigation of the state's major nineteenth-century population centres, with the exception of Guildford, where a number of studies have been conducted (e.g. Allen 2003; Allia 2005; Burke 2004a). There has been no research on the development of Perth, Bunbury, Geraldton or Kalgoorlie, and only limited engagement with Fremantle and Albany. Of the latter, the majority of research in Fremantle has centred around Fremantle Prison, with only two papers (McCarthy 1987; McIlroy 1986) being published on non-penal parts of the settlement, and a small number of consultancy reports on specific parts of the city (e.g. Burke 2006; McIlroy 2008), while research in Albany has concentrated primarily on the site of Old Farm Strawberry Hill (Gardos 2004; Paterson and Winter 2008). Given that urban centres have housed the majority of the population since European colonisation, their omission within research frameworks needs immediate redress. The archaeological investigation of Perth city is similarly limited, with only three unpublished research theses that concentrate on individual sites (Bavin [1994] at Perth Gaol and Waddell [2001] and Elder [2008] for East Perth Cemetery) and a number of consultancy reports that concentrate on individual sites (e.g. Gow *et al.* 2012 for the Deanery and Nayton 1998, 2003, 2010 at Government House). As Perth has served as the capital of Western Australia since 1829, this lack of research is anomalous. However, developing appropriate research projects for Perth city becomes problematic when it is considered that the centre of the city in the twenty-first century, where most modern development is occurring, is the same as that during the nineteenth century. The erection of high-rise buildings throughout this urban core has obliterated most evidence of that initial settlement, with very few places left that would retain a nineteenth-century deposit. Figure 3, a view of St. George's Terrace, the 'main street' of Perth since settlement in 1829, demonstrates the dilemma, showing that modern high-rise buildings dominate the landscape. In contrast Fremantle has retained much of its nineteenth-century character. However, research into the development of Fremantle is also needed. For both Perth and Fremantle, important questions include the nature of initial settlement and expansion beyond the urban core, adaptation to the local Western Australian environment, the nature of the relationship between the two places, the impact of the implementation of the penal colony in 1850, the lifeways of inhabitants, culture-contact in an urban environment and a range of other possibilities. The same research questions could also be equally applied in the other regional centres. There is less of a development imperative in these towns (with the exception of Kalgoorlie) and so less urgency, but similarly important research possibilities.

The concentration of existing research, not only on rural areas, but also on the sparsely populated north and east is also of interest. During the nineteenth century the majority of the rural population and development was restricted to the south-west corner of the state and indeed, expansion beyond this was discouraged before 1850. A number of interesting questions could be investigated in this area, including the nature of adaptation to new environments, the development of

pastoral and agricultural industries, contact with Noongar traditional owners, and in particular, the nature of life in small, isolated settlements on the periphery with limited contact with the centre. This investigation of isolation could be extended to the entire state, which in the first half of the nineteenth century was amongst the most isolated outposts of the British Empire and further research into the impact of this isolation is needed. In particular settler adaptation during this early period needs further investigation.

Another potential large scale question is the difference between Western Australia and the eastern Australian colonies. The assumption that historical processes in Western Australia have been similar to the eastern states has been challenged by a number of researchers including Winter (2013a, 2013b) and Bush (2012) who demonstrate that the convict system in the west was distinctly different from that of the eastern colonies, while Staniforth (2003:126) has argued that the development of the Swan River colony was severely retarded compared to other Australian colonies, also implying a difference between east and west. These differences have implications for the nature of material culture within the colony, including processes for acquisition through trade, use and adaptation. Western Australia underwent two major transformative events in the nineteenth century, the implementation of the penal colony in 1850 and the gold rushes in the 1890s. The impact of these events on the state has only had limited investigation and provides great scope for further research.

Beyond these large scale processes a number of areas not yet discussed are ripe with research possibilities. Of the nineteenth-century industries that were important to the state's survival, only whaling has been researched in a fashion that allows a good understanding of the industry and processes established within it. All other Western Australian colonial industries have had limited or no investigation. Both the industrial processes associated with these industries and labour and social relations of those people working within them provide possibilities. Important industries that have so far gone untouched include the sandalwood trade, pastoralism and agriculture in the south-west, and flour milling. Industries with limited investigation include the development of the rail and transport system, including the nineteenth-century process of road building. Other industries with significant potential include the fishing industry, wine making and beer brewing, and the development of the Western Australian building industry. The two economically important industries of timber-getting and mining also require further investigation. Important questions for investigation of the timber industry



Figure 3: View of St George's Terrace from the Barracks Arch, looking east.

include the nature of the adaptation of existing technologies to the hardwood timbers of jarrah and karri, the social systems within isolated, short lived timber settlements, and the development of appropriate systems for transporting timber from forest to mill.

For the mining industry, important questions relate to the nature of gold rush expansion in the eastern gold fields, and in particular the twentieth-century expansion of coal, iron ore, nickel and other mineral exploration and exploitation. Given that the history and economy of the state is so intrinsically linked to the mining industry, these should be considered priority research areas. In particular, the tendency of mining companies to use open-cut pit-mining in areas of nineteenth-century exploration (e.g. the Kalgoorlie Super Pit) potentially obliterates early evidence of this industry. Other areas with research possibilities include the many failed settlements on the periphery, the development of the overland telegraph line, and other forms of communication with the eastern states. A number of twentieth-century developments are also of interest, including the network of military sites set up throughout the state during World War II, and subsequent Greek and Italian post-war migrations.

CONCLUSION

This review has provided an overview of historical archaeological investigation in Western Australia. When the relatively recent commencement of terrestrial historical archaeology is considered, a significant corpus of research has been conducted. Encouragingly, there have been a number of recent projects addressing larger issues beyond the site level, and other similar projects are either ongoing or currently in the planning stage. However, there is still much to achieve in Western Australian historical archaeology and there remains vast potential for the discipline to play a substantial role in providing information about the development of the Swan River colony and then the state of Western Australia. Probably the most pressing need, and the area with the greatest potential, is the investigation of the heritage of the urban centres of the south-west. These places, home to the majority of the population of the state for its 175 year history, are largely unresearched and without a consideration of their development we cannot hope to gain an understanding of what life was like for the majority of the inhabitants of the state for the majority of its history.

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REFERENCES

- AKERMAN, K. 2008 'Missing the Point' or 'What to Believe – the Theory or the Data': Rationales for the Production of Kimberley Points, *Australian Aboriginal Studies* 2008:70-79.
- ALLEN, C. 2002 Gender in the Archaeological Record at Guildford Gaol and Police Station, Honours thesis, University of Western Australia.
- ALLIA, S. 2005 Colonial Period (1840 to 1890) Brick Buildings in Guildford, Western Australia, Honours thesis, University of Western Australia.
- ANDERSON, R. 2011 'Fear of the Deep: Cockburn Sound's World War II Anti-Submarine Boom Defence', *The Bulletin of the Australian Institute for Maritime Archaeology* 35:39-49.
- ANDERSON, R. and R. GARCIA 2008 'The Discovery, Identification and Site Formation Processes of a Weapon Related to the Landing of HSK 'Kormoran' (1941) survivors at Quobba Station, Western Australia', *The Bulletin of the Australian Institute for Maritime Archaeology* 32:42-50.
- BAVIN, L. 1994 The Punishment Administered: Archaeology and Penal Institutions in the Swan River Colony, Western Australia, PhD thesis, University of Western Australia.
- BOLTON, S. 2009 Just Passing Through: The Archaeology of Settlements en route to the Eastern Goldfields, Western Australia, PhD thesis, University of Western Australia.
- BOLTON, S. 2013 In the Shadow of the Rains: A Study of the Relationship between Vegetation and Climate in the Pilbara (1981–2006), Graduate Diploma thesis, Curtin University of Technology.
- BROEZE, F. and G. HENDERSON 1986 *Western Australians and the Sea: Our Maritime Heritage*, Western Australian Museum, Perth.
- BURKE, S. 1998 Analysis of the 'Public' and 'Private' Areas Within Fremantle Prison Using Spatially Distinct Artefact Assemblages, Honours thesis, University of Western Australia.
- BURKE, S. 2004a The Material Basis of the Settlement Process: The Historical Archaeology of the Swan District, Western Australia, 1827 to 1860, PhD thesis, University of Western Australia.
- BURKE, S. 2004b 'Innovation and Adaptability: The European Archaeology of the Swan Valley', *Journal of the Royal Western Australian Historical Society* 12:359-372.
- BURKE, S. 2006 A Report on Archaeological Excavations on Sites in High Street west. January 2006, unpublished report for the City of Fremantle.
- BURKE, S. 2007a 'The Archaeology of 'Clarence': A Settlers' Camp from the 1829-30 Peel Association at Henderson', *Journal of the Royal Western Australia Historical Society* 13:145-163.
- BURKE, S. 2007b 'Fences, Furrows, Ditches and Settlement Policy: Rapid Landscape Change in the Swan River Colony', *History Australia* 4:3.1-3.15.
- BURKE, S., P. DI MARCO and S. MEATH 2010 'The Land 'flow(ing) ... with milk and honey': Cultural Landscape Changes at Peel Town, Western Australia, 1829–1830', *Australasian Historical Archaeology* 28:5-12.
- BUSH, F. 2012 The Convicts' Contribution to the Built Environment of Colonial Western Australia between 1850–1880, PhD thesis, Curtin University of Technology.
- CARSON, A. 2003 Ah Kim's Garden: Ethnicity in the Archaeological Record at Cossack, Western Australia, Honours thesis, University of Western Australia.
- CASELLA, E.C. 2006 'Transplanted Technologies and Rural Relics: Australian Industrial Archaeology and Questions that Matter', *Australasian Historical Archaeology* 24:65-75.
- CASELLA, E.C. 2009 'Written on the Walls: Inmate Graffiti within Places of Confinement', in A.M. Beisaw and J.B. Gibb (eds) *The Archaeology of Institutional Life*, University of Alabama Press, Tuscaloosa, pp. 172-186.

- CHECCHI, J. 2008 Towards the Archaeology of the Vine: An Ethno-Archaeological Study of the Techniques and Technologies Employed by Italian Winemakers of Perth, Honours thesis, University of Western Australia.
- CLIFFORD, P. 2008 'Patinated Glass from Cossack, Western Australia', *Journal of the Royal Society of Western Australia*, 91:275-291.
- CLIFFORD, P. 2012 Patina on Historic Glass in the Cossack Region, Honours thesis, University of Western Australia.
- CUNEEN, C. 2005 Traps and Tackle: A Study of the Evolution of Fishing on the South Coast of Western Australia, Honours thesis, University of Western Australia.
- CURRY-BOWRAN, S. 2011 Toward a Contact Archaeology of Perth, Honours thesis, University of Western Australia.
- ELDER, J. 2008 To What Extent are Western Australian Tombstones Erected at New Norcia, Pinjarra and East Perth Cemeteries from 1830–1890 a Reflection of Social Groups in society at that Time? Honours thesis, University of Western Australia.
- FLEMING, K. 2003 Haddrill's Cottage: A Study of Class and Status in the Swan District during the Late Nineteenth and Early Twentieth Centuries, Honours thesis, University of Western Australia.
- FLEMING, K. 2011 Global Patterns and Local Contexts: An Archaeological Investigation of Late Nineteenth to Early Twentieth Century Gold Mining Settlements in the Upper Murchison, Western Australia, PhD thesis, University of Western Australia.
- FRANKLIN, D. and L. FREEDMAN 2003 'A Bioarchaeological Investigation of the Beacon Island Land Sites and the Victims of the *Batavia Mutiny*', *Homo: Journal of Comparative Human Biology* 54:81.
- FYFE, J. 2010 What Were They Thinking and Why Did They Do It? An Archaeological Examination of the Social Behaviours of Europeans Expressed Through Historical Inscriptions at Two Northern Australian Rock Art Sites, Honours thesis, University of Western Australia.
- GARDOS, A. 2004 The Historical Archaeology of the Old Farm on Strawberry Hill: A Rural Estate 1827–1889, Albany, Western Australia, Masters thesis, University of Western Australia.
- GIBBS, M. 1995 The Historical Archaeology of Shore Based Whaling in Western Australia 1836–1879, PhD thesis, University of Western Australia.
- GIBBS, M. 1997a 'The Technology of Colonial Ore Processing in Western Australia: The Warribanno Lead Smelter', *Australasian Historical Archaeology* 15:55-65.
- GIBBS, M. 1997b 'Landscapes of Meaning: Joseph Lucas Horrocks and the Gwalla Estate, Northampton', *Studies in Western Australian History* 17:35-60.
- GIBBS, M. 1998 'Colonial Boats and Foreign Ships: The History and Archaeology of Nineteenth Century Whaling in Western Australia', in S. Lawrence and M. Staniforth (eds) *The Archaeology of Whaling in Southern Australia and New Zealand*, The Australasian Society for Historical Archaeology and The Australian Institute for Maritime Archaeology Special Publication No.10, pp. 36-47.
- GIBBS, M. 2001 'The Archaeology of the Convict System in Western Australia', *Australasian Historical Archaeology* 19:60-72.
- GIBBS, M. 2002 'Maritime Archaeology and Behaviour During Crisis: The Wreck of the VOC Ship *Batavia* (1629)', in J. Grattan and R. Torrence (eds) *Natural Disasters, Catastrophism and Cultural Change*, Routledge, New York, pp. 66-86.
- GIBBS, M. 2005 'The Archaeology of Subsistence on the Maritime Frontier: Faunal Analysis of the Cheyne Beach Whaling Station 1845–1877', *Australasian Historical Archaeology* 23:115-122.
- GIBBS, M. 2006 'The Convict Places of Western Australia', *Studies in Western Australian History* 24:71-97.
- GIBBS, M. 2007, 'Lynton: Convicts, Landscape and Colonisation Strategies in Midwest Western Australia', *Australasian Historical Archaeology* 25:57-69.
- GIBBS, M. 2010a 'Landscapes of Redemption: Tracing the Path of a Convict Miner in Western Australia', *International Journal of Historical Archaeology* 14:593-613.
- GIBBS, M. 2010b *The Shore Whalers of Western Australia: Historical Archaeology of a Maritime Frontier*, Australasian Society for Historical Archaeology and Sydney University Press, Sydney.
- GIBBS, M. and COLLEY, S. 2012 'Digital Preservation: Online Access and Historical Archaeology 'Grey Literature' from New South Wales, Australia', *Australian Archaeology* 75:95-103.
- GOJAK, D. 2001 'Convict Archaeology in New South Wales: An Overview of the Investigation, Analysis and Conservation of Convict Heritage Sites', *Australasian Historical Archaeology* 19:73-83.
- GOW, A., K. WILLIAMS, J. DORTCH and S. WINTER 2013 Archaeological Excavation at the Deanery Site, City of Perth, Western Australia, unpublished report for the Anglican Diocese of Perth.
- GREEN, J. 1977 *Australia's Oldest Wreck: The Loss of the Trial, 1622*, British Archaeological Reports Supplementary Series 27, Oxford.
- GREEN, J. 1983 'The *Vergulde Draeck* Excavation 1981 & 1983', *The Bulletin of the Australian Institute for Maritime Archaeology* 7:1-8.
- GREEN, J. 1986 'The Survey and Identification of the English East India Company Ship, *Trial*', *International Journal of Nautical Archaeology* 15:195-202.
- GREEN, J. 1989, *The Loss of the Verenigde Oostindische Compagnie Retourschip BATAVIA, Western Australia 1629. An Excavation Report and Catalogue of Artefacts*, British Archaeological Reports International Series 489, Oxford.
- GREEN, J. and HENDERSON, G. 1974 'Marine Archaeology at the Western Australian Museum', *Australian Archaeology* 1:15-17.
- GREEN, J., M. GAINSFORD and M. STANBURY 2004 *Western Australian Museum Department of Maritime Archaeology, Western Australian Maritime Museum. A Compendium of Projects, Programmes and Publications 1971–2003*, Australian National Centre of Excellence for Maritime Archaeology Special Publication No. 9, Fremantle.
- HALL, M. and SILLIMAN, S.W. 2006 'Introduction: Archaeology of the Modern World', in M. Hall and S.W. Silliman (eds) *Historical Archaeology*, Blackwell, Oxford, pp. 1-19.
- HAMERSLEY, T. 2011 A 'Sterling' Command: An Investigation into the Cultural Landscape of the Settlement Established on Garden Island, Western Australia, 1829, Honours thesis, University of Notre Dame Australia.
- HARRIS, D. 2009 Signs of the Times: Rock-art and Cross-Cultural Interaction at Springs Station, Pilbara Region, Western Australia, Honours thesis, University of Western Australia.
- HARRISON, R. 1996 An Analysis of the Technology and

- Variability of Aboriginal Glass Artefacts in the Shark Bay and Swan Regions of Western Australia, Honours thesis, University of Western Australia.
- HARRISON, R. 2000 'Nowadays with Glass': Regional Variation in Aboriginal Bottle Glass Artefacts from Western Australia', *Archaeology in Oceania* 35:34-47.
- HARRISON, R. 2002a '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*, Sydney University Press, Sydney, pp. 37-58.
- HARRISON, R. 2002b 'Australia's Iron Age: Aboriginal post-contact metal artefacts from Old Lamboo Station, Southeast Kimberley, Western Australia', *Australasian Historical Archaeology* 20:67-76.
- HARRISON, R. 2002c Ngarrangani, Ngamungamu, Jalanijarra – 'Lost Places', Recursiveness and Hybridity at Old Lamboo Pastoral Station, Southeast Kimberley, WA, PhD thesis, University of Western Australia.
- HARRISON, R. 2003 'The Magical Virtue of These Sharp Things': Colonialism, Mimesis and Knapped Bottle Glass Artefacts in Australia', *Journal of Material Culture* 8:311-336.
- HARRISON, R. 2006 'An Artefact of Colonial Desire? Kimberley Points and the Technologies of Enchantment', *Current Anthropology* 47:63-88.
- HENDERSON, G. 1975 'James Matthews' Excavation Summer 1974-75', *Australian Archaeology* 3:40-45.
- HENDERSON, G. 2008 'The Wreck of the Ex-Slaver James Matthews', *International Journal of Historical Archaeology* 12:39-52.
- HENDERSON, G. 2009 *Redemption of a Slave Ship: The James Matthews*, Western Australian Museum, Perth.
- HENDERSON, G. 2010 *Unfinished Voyages: Western Australian Shipwrecks 1622-1850*, University of Western Australia Press, Nedlands.
- HENDERSON, G. and L. CAIRNS 1995 *Unfinished Voyages: Western Australian Shipwrecks 1880-1900*, University of Western Australia Press, Nedlands.
- HENDERSON, G. and K.J. HENDERSON 1988 *Unfinished Voyages: Western Australian Shipwrecks 1850-1880*, University of Western Australia Press, Nedlands.
- HUNNEYBUN, B. 1995 Skullduggery at Beacon Island, Honours thesis, University of Western Australia.
- INGELMAN-SUNDBERG, C. 1975 'The V.O.C. Ship *Batavia* 1629 Report on the Third Season of Excavation', *Australian Archaeology* 3:45-53.
- INGELMAN-SUNDBERG, C. 1976 'The V.O.C. Ship *'Zeewijk'* 1727 Report on the 1976 Survey of the Site', *Australian Archaeology* 5:18-33.
- INGELMAN-SUNDBERG, C. 1979 'The V.O.C. Ship *Zeewijk* Lost in 1727: A Preliminary Report on the 1977 Survey of the Site', *Australian Archaeology* 9:45-59.
- JUNG, S. 2007 'A Defabrication Method for Recording Submerged Aircraft: Observations on Sunken Flying Boat Wrecks in Roebuck Bay, Broome, Western Australia', *The Bulletin of the Australian Institute for Maritime Archaeology* 31:26-31.
- JUNG, S. 2009 'Site Formation Process (Wing Inversion) at Catalina Flying Boat Wreck Sites Lying in Roebuck Bay, Broome, WA', *The Bulletin of the Australian Institute for Maritime Archaeology* 33:19-31.
- KERR, J. S. 1984 *Design for Convicts*, Library of Australian History, Sydney.
- KERR, J.S. 1988 *Out of Sight, Out of Mind: Australia's Places of Confinement, 1788-1988*, S.H. Ervin Gallery, National Trust of Australia, Sydney.
- LEWIS, S. 2003 Historic Shellfish Subsistence: A Cossack case study, Honours thesis, University of Western Australia.
- MARWICK, B. 1999 The Archaeology of Insurrection. An investigation into the subsistence behaviours of the *Batavia* survivors, Honours thesis, University of Western Australia.
- McCARTHY, M. 1987 'The Ocean Jetty: The Colonial Beergarden?', *Australian Archaeology* 24:32-35.
- McCARTHY, M. 2000 *Iron and Steamship Archaeology: Success and Failure of the SS Xantho*, Kluwer Academic/Plenum, New York.
- McCARTHY, M. 2003 'The Holistic Approach to the Maritime Heritage: The Western Australian Case Study after 30 Years', *The Bulletin of the Australian Institute for Maritime Archaeology* 27:25-34.
- McCARTHY, M. 2006 'The Dutch on Australian Shores: The Zuytdorp Tragedy – Unfinished Business', in L. Shaw and W. Wilkins (eds) *Dutch Connections: 400 years of Australian-Dutch maritime links, 1606-2006*, Australian National Maritime Museum, Sydney, pp. 94-109.
- McCARTHY, M. 2009a 'Towards an Understanding of the Importance of the HMAS *Sydney II* and HSK *'Kormoran'* sites. Part 1: The genesis and evolution of the controversies', *The Bulletin of the Australian Institute for Maritime Archaeology* 33:72-78.
- McCARTHY, M. 2009b 'Towards an Understanding of the Importance of the HMAS *Sydney* and HSK *'Kormoran'* sites. Part 2: The Inordinate Delay in Commencing a Search', *The Bulletin of the Australian Institute for Maritime Archaeology* 33:79-85.
- McCARTHY, M. 2011 'Archaeology and the HMAS *Sydney*', *The Bulletin of the Australian Institute for Maritime Archaeology*, 35:18-27.
- McCARTHY, M. (ed.) 2012 *Shipwrecks of Australia's West Coast*, Western Australian Museum, Welshpool.
- McHARG, K. 2006 Function and Identity in the Archaeological Record: A Functional Analysis of Cossack Fringe Sites, Honours thesis, University of Western Australia.
- McILROY, J. 1986 'Bathers Bay Whaling Station, Fremantle, Western Australia', *The Australian Journal of Historical Archaeology* 4:43-50.
- McILROY, J. 1988 An Archaeological Survey of the Asian Quarter, Cossack, unpublished report for the Cossack Task Force.
- McILROY, J. 1990 Cossack Archaeological Survey: Pearl Street to China Town, unpublished report for the Heritage Council of Western Australia.
- McILROY, J. 2008 The Excavation of an 1840s Cottage Complex in Pioneer Park, Fremantle: An Addendum to the Phillimore Street Precinct Archaeological Conservation Plan, unpublished report for the City of Fremantle.
- MEIN, E. 2012 Inmate Coping Strategies in Fremantle Prison, Western Australia, Honours thesis, University of Western Australia.
- NAYTON, G. 1992 'Applying Frontier Theory to a Western Australian Site: The Problem of Chronological Control', *Australasian Historical Archaeology* 10:75-91.
- NAYTON, G. 1998 Government House Grounds, Perth. Archaeological Investigation of Paths in Lower Garden, unpublished report for the Governor's Establishment and the Department of Contract and Management Services.

- NAYTON, G. 2003 Report of Archaeological Monitoring of the Kitchen Yard, Government House, Perth, unpublished Report for Department of Housing and Works and the Governor's Establishment.
- NAYTON, G. 2010 Short Report on Results of Ground Probing Radar Survey of First Government House Site, unpublished report for the Governor's Establishment.
- NAYTON, G. 2011 *The Archaeology of Market Capitalism: a Western Australian Perspective*, Springer, New York.
- ORSER, C.E. 1996 *A Historical Archaeology of the Modern World*, Plenum Press, New York.
- O'CONNOR, S., J. BALME, J. FYFE, J. OSCAR, M. OSCAR, J. DAVIS, H. MALO, R. NUGGETT and D. SURPRISE 2013 'Marking Resistance? Change and Continuity in the Recent Rock Art of the Southern Kimberley, Australia', *Antiquity* 87:539-554.
- PASVEER, J., A. BUCK and M. VAN HUUSTEE 1998 'Victims of the *Batavia* Mutiny: Physical Anthropological and Forensic Studies of the Beacon Island Skeletons', *The Bulletin of the Australian Institute for Maritime Archaeology* 22:45-50.
- PATERSON, A. 2006 'Towards a Historical Archaeology of Western Australia's Northwest', *Australasian Historical Archaeology* 24:99-111.
- PATERSON, A. 2008 *The Lost Legions: Culture Contact in Colonial Australia*, Altamira Press, Lanham.
- PATERSON, A. 2011 'Considering Colonialism and Capitalism in Australian Historical Archaeology: Two Case Studies from the Pastoral Domain', in S.K. Croucher and L. Weiss (eds) *The Archaeology of Capitalism in Colonial Contexts: Postcolonial Historical Archaeologies*, Springer, New York, pp. 243-268.
- PATERSON, A. and D. FRANKLIN 2004 'The 1629 Mass Grave for *Batavia* Victims, Beacon Island, Houtman Abrolhos Islands, Western Australia', *Australasian Historical Archaeology* 22:71-78.
- PATERSON, A. and A. WILSON 2000 'Australian Historical Archaeology: Retrospects and Prospects', *Australian Archaeology* 50:81-89.
- PATERSON, A. and A. WILSON 2009 'Indigenous Perceptions of Contact at Inthanoona, Northwest Western Australia', *Archaeology in Oceania* 44:99-111.
- PATERSON, A. and S. WINTER 2008 Archaeological Investigation of the Farm House, Old Farm Strawberry Hill, Albany Western Australia (February and July 2008), unpublished report for the National Trust of Australia (Western Australia).
- PEARSON, M. 1986 'Archaeological Interpretation and Ethnographic Analogy: the Lime Industry in WA', *Archaeology in Oceania* 21:94-102.
- PEARSON, M. 1990 'The Lime Industry in Australia: An Overview', *The Australian Journal of Historical Archaeology* 8:28-35.
- PLAYFORD, P.E. 1996 *Carpet of Silver: The Wreck of the Zuytdorp*, University of Western Australia Press, Nedlands.
- RODRIGUES, J. 2011 'Pakington Whaling Station, Port Gregory: A Short Report on Site Inspections and Later Discoveries of Whaling-Related Features and Evidence', *Australasian Historical Archaeology* 29:52-58.
- RODRIGUES, J. 2011 *Finders Keepers: An Examination of the Impact of Diver Interaction with Shipwrecks as Revealed by the 1993 Amnesty Collections*, PhD thesis, University of Western Australia.
- SANDERS, N. 2005 *On the Spinifex Plains: An Analysis of Ceramic Sherds from Old Sherlock Station in the Pilbara, Western Australia*, Honours thesis, University of Western Australia.
- SINCLAIR, L. 2006 *An Investigation into the Production of Rock Art and Historical Graffiti at Three Early Pastoral Head Stations in the Pilbara: Cooya Pooya, Old Woodboork and Springs Stations*, Honours thesis, University of Western Australia.
- SMITH, J. 2003 *Of Mills and Men: The Archaeology of Private and Public Industry in the Forests of Western Australia 1895-1913*, Honours thesis, University of Western Australia.
- SMITH, P.A. 2001 'Station Camps: Identifying the Archaeological Evidence for Continuity and Change in Post-Contact Aboriginal Sites in the South Kimberley, Western Australia', *Australian Archaeology* 53:23-31.
- SMITH, S. 2008 *Early Pilbara Headstations: Spatiality and Social Relations*, Honours thesis, University of Western Australia.
- SMITH, P.A. and SMITH, R.M. 1999 'Diets in Transition: Hunter-Gatherer to Station Diet and Station Diet to the Self-Select Store Diet', *Human Ecology* 27:115-133.
- SOUTER, C. 2007 *Archaeology of the Iron Barque Sepia - An Investigation of Cargo Assemblages*, Masters thesis, University of Western Australia.
- SOUTER, C., PATERSON, A. and HOOK, F. 2006 *The Assessment of Archaeological Sites on Barrow Island and the Dampier Archipelago, Western Australia: A Collaborative Approach*, *The Bulletin of the Australian Institute for Maritime Archaeology* 30:86-94.
- STANIFORTH, M. 2003 *Material Culture and Consumer Society: Dependent Colonies in Colonial Australia*, Kluwer Academic/Plenum Publishers, New York.
- STINGEMORE, J. 2002 *Treponemal Diseases and the Isles of the Living Dead: An Investigation into 'Syphilis' in Australia and its Effects on the Indigenous Australians*, Honours thesis, University of Western Australia.
- STINGEMORE, J. 2010 *Surviving the 'Cure': Life on Bernier and Dorre Islands under the Lock Hospital Regime*, PhD thesis, University of Western Australia.
- STRANO, A. 2009 'Hidden Perspectives': An Analysis of the Engravings and Historical Writing at Old Woodbrook Station, Pilbara, Northwestern Australia, Honours thesis, University of Western Australia.
- TACON, P., J. ROSS, A. PATERSON and S. MAY 2012 'Picturing Change and Changing Pictures: Contact Period Rock Art of Australia', in J. McDonald and P. Veth (eds) *A Companion to Rock Art*, Wiley-Blackwell, Malden, pp. 420-436.
- VAN DUIVENVOORDE, W. 2013 *Dutch East India Company (VOC) Shipbuilding: The Archaeological Study of Batavia and Other Seventeenth-Century VOC Ships*, Texas A&M University Press, College Station.
- VETH, P. and M. MCCARTHY 1999 'Types of Explanation in Maritime Archaeology: The Case of the *SS XANTHO*', *Australian Archaeology* 48:12-15.
- WADDELL, K. 2001 *Nineteenth Century Grave Markers in South Western Australia: A Temporal and Spatial Study*, Honours thesis, University of Western Australia.
- WILSON, M. 2005 *Variation Amongst Glass Artefact Assemblages at Cossack, Western Australia*, Masters thesis, University of Western Australia.
- WINTER, S. 2005 *Timber-Getting in the Forest: An Archaeological Case Study of Six Nineteenth-Century Sawpit Sites*, Honours thesis, University of Western Australia.
- WINTER, S. 2011 'A Preliminary Report on Archaeological

- Investigations at Two Western Australian Regional Convict Depots', *Australian Archaeology* 73:65-68.
- WINTER, S. 2013a Global, Regional and Local Networks: Archaeological Investigation of the Western Australian Penal Colony 1850–1875, PhD thesis, University of Western Australia.
- WINTER, S. 2013b 'The Global versus the Local: Modelling the British System of Convict Transportation after 1830', in M. Beaudry and T.G. Parno (eds) *Archaeologies of Mobility and Movement*, Springer, New York, pp. 133-149.
- WINTER, S. 2013c 'Legislation, Ideology and Personal Agency in the Western Australian Penal Colony', *World Archaeology*, available from <http://www.tandfonline.com/doi/full/10.1080/00438243.2013.850903#.UoLoP-JUF8E>.
- WOODHAMS, C. 2002 Site Formation and Site Identification in Railway Station Sites, Honours thesis, University of Western Australia.