



The Unlucky Voyage: *Batavia*'s (1629) Landscape of Survival on the Houtman Abrolhos Islands in Western Australia

Alistair Paterson · Jeremy Green · Wendy van Duivenvoorde · Daniel Franklin · Ambika Flavel · Liesbeth Smits · Jeffrey Shragge · Martijn Manders · Corioli Souter · Deb Shefi · Ross Anderson · Thomas Hoskin · Nader Issa · Mike Nash

Accepted: 3 May 2022 / Published online: 4 May 2023
© The Author(s) 2023

Abstract The loss of the Dutch East India Company ship *Batavia* in 1629 on the Houtman Abrolhos off the west coast of Australia and subsequent mutiny is one of the most dramatic events in the history of European encounters with Australia, and was widely popularized in 17th-century publications. The archaeological remains surpass that of a shipwreck with its consequent jetsam and flotsam, and are the silent witnesses to a cultural landscape of survival created within a few months by a horrible sequence of events. Here we present archaeological evidence

collected from 2014 to 2019 in a new research project that informs on these historical events. We discovered 12 victims in single and multiple graves, as well as evidence for survivors' resistance to a band of mutineers and remains of the possible gallows site where 7 mutineers were executed. Together these sites contribute to the understanding of the survival landscape at one of the earliest European sites in Australia.

Resumen La pérdida en 1629 del barco *Batavia* de la Verenigde Oostindische Compagnie (Compañía

A. Paterson (✉) · J. Green
Department of Archaeology, University of Western
Australia, M257, Perth 6009, Australia
e-mail: alistair.paterson@uwa.edu.au

J. Green · C. Souter · D. Shefi · R. Anderson
Department of Maritime Archaeology, Western Australian
Museum, 47 Cliff Street, Fremantle 6160, Australia

W. van Duivenvoorde
Department of Archaeology, Flinders University, College
of Humanities, Arts, and Social Sciences, Flinders
University, GPO Box 2100, Adelaide 5001, Australia

D. Franklin · A. Flavel
Centre for Forensic Anthropology, University of Western
Australia, M257, Perth 6009, Australia

L. Smits
University of Amsterdam, Faculty of Humanities,
ACASA-Archaeology (Amsterdam Centre of Ancient
Studies and Archaeology), Turfdragsterpad 9,
1012XT Amsterdam, the Netherlands

J. Shragge
Center for Wave Phenomena, Department of Geophysics,
Colorado School of Mines, 1500 Illinois Street, Golden,
CO 80401, U.S.A.

M. Manders
Leiden University, Rapenburg 70, 2311 EZ Leiden,
the Netherlands

M. Manders
Cultural Heritage Agency of the Netherlands, Ministry
of Education, Culture and Science, PO Box 1600,
3800 BP Amersfoort, the Netherlands

T. Hoskin · N. Issa
School of Earth Sciences, and Centre for Energy
Geoscience, University of Western Australia, M257,
Perth 6009, Australia

M. Nash
Tasmanian Parks and Wildlife Service, 134 Macquarie
Street, Hobart 7000, Australia

Holandesa de las Indias Orientales) en las Houtman Abrolhos frente a la costa occidental de Australia y el subsiguiente motín se encuentran entre los eventos más dramáticos en la historia de los encuentros europeos con Australia, popularizados ampliamente en las publicaciones del siglo XVII. Los restos arqueológicos superan al de un naufragio con sus consiguientes desechos y restos, y son los testigos silenciosos de un paisaje cultural de supervivencia creado en pocos meses por una horrible secuencia de acontecimientos. Aquí presentamos evidencia arqueológica recopilada desde 2014 hasta 2019 en un nuevo proyecto de investigación en el que se informa sobre estos eventos históricos. Descubrimos 12 víctimas en tumbas simples y múltiples, así como evidencia de la resistencia de los sobrevivientes a una banda de amotinados y restos del posible sitio de la horca donde fueron ejecutados 7 amotinados. Juntos, estos sitios contribuyen a la comprensión del paisaje de supervivencia en uno de los primeros sitios europeos en Australia.

Résumé Le naufrage en 1629 du navire *Batavia* de la Verenigde Oostindische Compagnie (Compagnie Hollandaise des Indes orientales) dans les Houtman Abrolhos au large de la côte occidentale de l’Australie et la mutinerie ayant suivi, comptent parmi les événements les plus dramatiques de l’histoire des confrontations européennes avec l’Australie, ayant été largement popularisés dans les publications du 17^{ème} siècle. Les vestiges archéologiques vont au-delà de ceux d’une épave et de ses débris et fragments consécutifs rejetés par la mer sur le rivage. Ils sont les témoins silencieux d’un paysage culturel de survie créé au cours de quelques mois par une horrible série d’événements. Nous présentons ici les preuves archéologiques collectées entre 2014 et 2019 au cours d’un nouveau projet de recherche faisant le récit de ces événements historiques. Nous avons découvert 12 victimes dans des tombes individuelles et multiples, ainsi que des éléments indiquant la résistance des survivants à un groupe de mutins et les vestiges d’un possible site de gibet où 7 mutins furent exécutés. Ensemble, ces sites contribuent à une compréhension du paysage de survie sur l’un des tous premiers sites européens en Australie.

Keywords Western Australia · Dutch East India Company · *Batavia* · mutiny · shipwreck archaeology

Introduction

This article presents findings from over a decade of archaeological work, in particular fieldwork between 2014 and 2019, that has reassessed sites related to wreck of the ship *Batavia* in 1629 and the mutiny that followed. We describe new sites found in the project and also the reanalysis of existing collections alongside new archaeological evidence. The aim of this project was to contribute to the understanding of the heritage related to the *Batavia* wrecking event and, in doing so, consider these sites in relation to maritime and island historical archaeology. This evidence is mobilized here to explore the various phases of the wreck of the *Batavia*, namely the pre-impact, impact, recoil, rescue, and post-trauma stages.

The Verenigde Oostindische Compagnie (VOC, or the Dutch United East India Company) vessel *Batavia* was wrecked in the early hours of 4 June 1629 on Morning Reef in the Wallabi Group of the Houtman Abrolhos Islands, off the coast of Western Australia (Fig. 1). It was the first VOC ship to be lost off the coast of the Southland, as Australia was then known. The loss of *Batavia* on its maiden voyage was calamitous, leading not only to the loss of a valuable ship and accidental deaths, but the mass murder of over 100 souls: of the 341 men, women, and children who left the Netherlands (as well as infants born during the voyage), only 122 would ultimately arrive in the East Indies (Pelsaert 1647, 2002:220–221). Archaeological evidence for the shipwreck and related historical events includes the underwater shipwreck and archaeological sites on several islands in the Wallabi Group, some of which were first excavated between the 1960s and 1970s following their discovery.

The significance of the event and archaeological sites has long been understood. In 2006 the “*Batavia* Shipwreck Site and Survivor Camps Area 1629” was entered onto Australia’s National Heritage List, recognizing their iconic archaeological and historical significance to the nation.

Batavia, along with other Dutch shipwrecks and narratives of encounter and exploration, represents the Dutch relationship with the Southland in the early modern period. The *Batavia* story juxtaposes the perception of the VOC as the world’s first multinational and globally active company against the exceptional, site-specific events in the Houtman Abrolhos Islands.

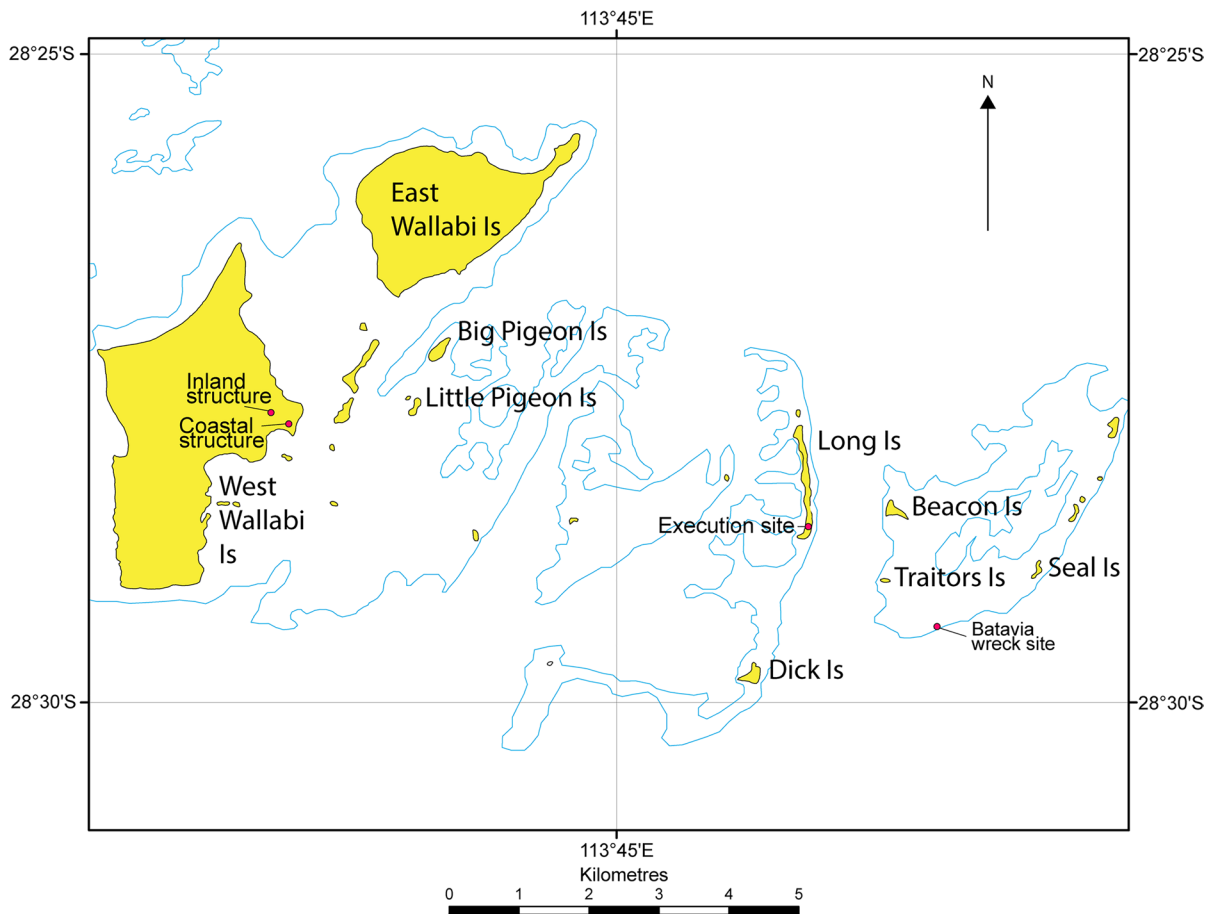


Fig. 1 The Wallabi group, Houtman Abrolhos Islands, Western Australia, and key locations related to the wreck of *Batavia*. (Map by Alistair Paterson, 2022.)

The *Batavia* story provides a series of sometimes macabre “firsts” for Europeans in Australia: the first mass murder of Europeans, the first European description of an Australian marsupial, the oldest surviving European structure, and the first promulgation of a European legal process—leading to the punishment of the mutineers. Pelsaert’s published account was the earliest best-selling book set in Australia (Pelsaert 1647).

There were also early encounters with Aboriginal Australians. These did not happen in the islands where there is no evidence for Aboriginal occupation, rather they occurred on the Australian mainland coast. Senior merchant Francisco Pelsaert’s account of attempting to contact Nhanta people on the midwestern coast on 17 June 1629 is the first known European encounter with western Australian Aboriginal people:

“We next saw eight black men, each carrying a stick in his hand, and these approached to the distance of a musket shot, but when we went towards them they ran away and we could not get them to stop where they were so that we might come up to them” (Pelsaert 2002:73–74; Drake-Brockman 2006:120). The fate of two Dutch mutineers marooned on the Australian mainland with “Nuremberg toys, knives, beads, bells and small mirrors” to trade with Aboriginal people remains unknown (Pelsaert 2002:186,220; Drake-Brockman 2006:217; Van Duivenvoorde et al. 2019).

There are significant contemporary legacies of the discovery of the *Batavia* site, including the first archaeological excavation of a VOC shipwreck, the world’s first specific maritime archaeological legislation, and the first academic training course in maritime archaeology in Australia. Moreover, the need to

professionally manage the shared cultural heritage led to the development of the Agreement between the Netherlands and Australia Concerning Old Dutch Shipwrecks,¹ the first mutual-heritage agreement between the two countries.

In 2007 the Western Australian Museum and University of Western Australia undertook a program of survey and excavation in the Wallabi Group. The aims of this work were to record the positions accurately and test the archaeological potential of selected sites on West Wallabi, Long, East Wallabi, and Beacon islands, and to formulate a future research and management strategy for these terrestrial archaeological sites (Souter et al. 2007:v). Expanding on this work, between 2014 and 2018 the Australian Research Council–funded project, “Shipwrecks of the Roaring Forties: A Maritime Archaeological Reassessment of Some of Australia’s Earliest Shipwrecks,” conducted research on *Batavia* sites (Paterson and Green 2021).

In this article we present for the first time the results of this program of research, which has significantly expanded the understanding of the cultural landscape created following *Batavia*’s wrecking and survivors’ activities. In maritime archaeology there is an established interest in survivors’ behavior, following the disciplinary shift to interpret shipwrecks as part of historical and social processes (Gould 1983; Gibbs 2002, 2003) influenced by ideas regarding human psychology in response to extreme events, such as shipwrecks (Leach 1994). Westerdahl’s (1992) original and influential conception of the “maritime cultural landscape” is used to structure the presentation of the archaeological evidence across the Wallabi Group of the Houtman Abrolhos Islands, a structural decision that also provides a form of narrative for the *Batavia* event: from shipwreck to recovery, mutiny, resistance, redemption, and revenge.

The sites related to the *Batavia* shipwreck raise questions regarding the ways in which a set of locations on land and sea continue to provide evidence for the harrowing historical events, known mainly from contemporary and often secondhand accounts. To be able to answer these questions it was necessary

to map the area in detail and virtually reconstruct the contemporary 17th-century landscape. For this, the current landscape was mapped and surveyed, excavations were conducted, and historical events plotted in chronological order.

History of the “Unlucky Voyage”

The story of the *Batavia* wreck became widely known with the 1647 publication of *Ongeluckige Voyagie van’t Schip Batavia* (Unlucky voyage of the ship *Batavia*), published by Jan Jansz., which was taken from VOC commander Francisco Pelsaert’s journals (Fig. 2) (held in the Nationaal Archief, i.e., the Dutch National Archives) (Pelsaert 1629:232–316). This account was so popular it ran to nine printed editions, the last published in 1664 (Ariese 2012). The 1963 discovery of the *Batavia* wreck site by rock-lobster fishers living on the islands was a result of research published in the 1950s by Henrietta Drake-Brockman (1956), who had obtained a translation of Pelsaert’s handwritten journal. Other research includes Edwards (1966), Pelsaert (2002), Dash (2003), and Ariese (2012).

In brief, the *Batavia* survivors found themselves amongst destructive surf on a reef in the Indian Ocean; the Australian continent lay 30 nautical miles eastward. Two of three small boats aboard *Batavia* were deployed, returning to report that several small islands could be reached, and 180 people were ferried off the wreck. Seventy people remained on the wreck, drunkenly looting supplies; forty died as the ship broke up. Of the 282 people who survived the wrecking event, most ended up on a small, waterless, coral-shingle island that later became known as “*Batavia*’s Graveyard” (now Beacon Island) (Pelsaert 2002:220–21). The passengers included the predicant Bastiaensz.—with his wife, seven children and maid—and Lucretia van der Mijlen and her maid, traveling to join her husband in Batavia. There were 18 other females, 5 children, and 4 infants on board: at least 2 infants had been born during the voyage.

Order was deteriorating and freshwater supplies were critically low: 20 people died of sickness or dehydration in the days following the wreck (Pelsaert 2002:220–221). *Batavia*’s skipper, Adriaan Jacobsz., was under the authority of senior merchant Francisco Pelsaert, responsible for the VOC’s interests.

¹ Australia-Netherlands Committee on Old Dutch Shipwrecks <<https://www.directory.gov.au/portfolios/agriculture-water-and-environment/department-agriculture-water-and-environment/australia-netherlands-committee-old-dutch-shipwrecks>>.

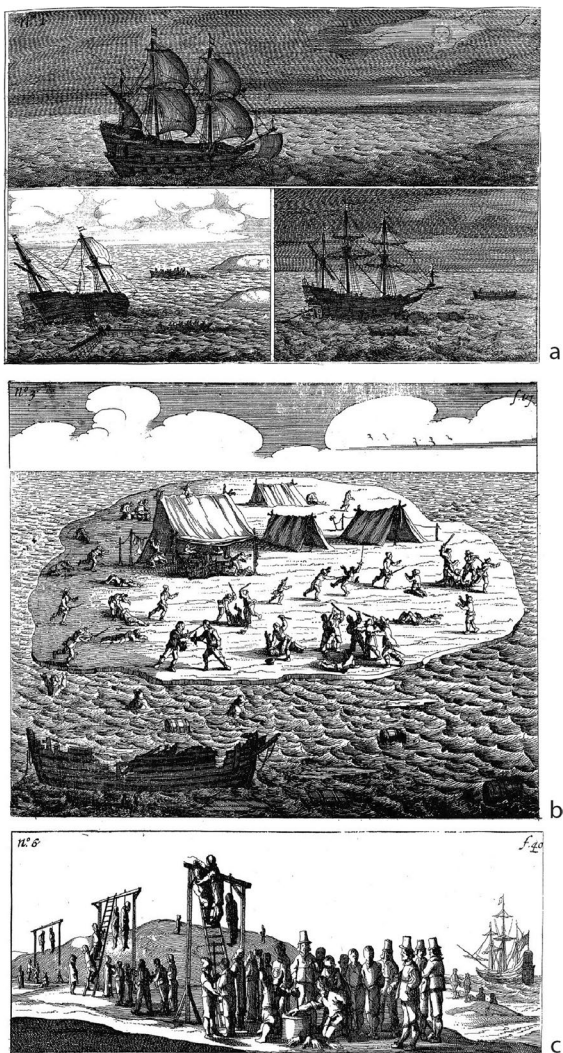


Fig. 2 Images from the Jan Jansz. 1647 edition of *Ongeluckige Voyagie*: (a) the wreck, (b) “Batavia’s Graveyard,” and (c) the execution site (Pelsaert 1647, 2002:62,86,170; Drake-Brockman 2006:174,211).

Four days after the wreck, on 8 June 1629, Pelsaert, Jacobsz., and 46 others set sail in the ship’s boat to search for water on the Western Australia coast, towing the yawl (Pelsaert 2002:69). They encountered an inhospitable coast “very steeply hewn” and, unable to find water, decided to sail the remaining 900 mi. to the VOC trading settlement of Batavia (modern Jakarta, Indonesia) to obtain assistance. They arrived in Batavia on 7 July, one month later, and Governor-General Coen directed Pelsaert to return immediately in the *Saerdam* to rescue the survivors and recover

the company’s goods. The rescue group departed on 19 July, but, surprisingly, it took them until 17 September to relocate the Wallabi Group of islands.

Extraordinarily, in the intervening three-and-a-half months, more than half of the survivors had been slain during a reign of terror under the direction of the ship’s junior merchant, Jeronimus Cornelisz. On 5 July 1629, Cornelisz. appointed his own council, whose members embarked on a murderous rampage. At least 125 people were murdered, and women were raped and assaulted (Pelsaert 2002:85; Drake-Brockman 2006:130).

The main resistance to this terrifying regime was from a group of loyal soldiers led by Wiebbe Hayes, who had been sent by Cornelisz. to the “High Island” (now East Wallabi Island; later they moved to the nearby West Wallabi Island) without weapons, ostensibly to find water, but, in truth, it is assumed, to rid them from Beacon Island. However, the soldiers discovered fresh water and food and signaled their success to the Beacon Island survivors. The mutineers ignored their signals and, with the soldiers gone, became less inhibited in their killing. Other survivors managed to escape from Beacon Island to join this community of resistance, which grew to number 46 people. In early September Cornelisz. led a party to negotiate with the soldiers; however, Hayes and his men captured him. A subsequent attack led by Wouter Loos occurred on 17 September and was underway when the *Saerdam* finally arrived. The soldiers were able to alert Pelsaert to the mutiny, and the offenders were captured (Pelsaert 2002:84; Drake-Brockman 2006:130).

Pelsaert supervised the process of salvaging *Batavia*’s wreck of everything valuable, including chests of coins, jewels, a bronze cannon, and even barrels of vinegar. Pelsaert also oversaw the trial of the mutineers. Seven men, including Cornelisz. were taken to “Seals Island” (now Long Island) and “punished [t]here with death as an example to others, in order to prevent all disasters that may arise on the ship through suchlike men” (Drake-Brockman 2006:140). Two men were punished by being marooned, and others were convicted after arriving in Batavia.

On Beacon Island, human burials and 17th-century Dutch artifacts were found by resident rock-lobster fishers (Drake-Brockman 1956; Edwards 1966). Following discovery of the wreck site of *Batavia*, the Western Australian government enacted legislation to

Fig. 3 Beacon Island, aerial images: (a) 1960s, (b) 2014, and (c) 2015. (Photo a courtesy of Landgate, Government of Western Australia; b courtesy of Jeremy Green, Western Australian Museum; and c courtesy of Alistair Paterson, University of Western Australia.)

protect this and other historical shipwrecks, and instigated a professional maritime archaeological excavation program (Green 1975, 1977), which, over four seasons, excavated the shipwreck site and uncovered, amongst other things, the remaining wooden hull of the ship. While there has been some analysis of the central events and psychology of the mutineers (Tylor 1970; Dash 2003), the general patterns of survivors' activities on Beacon Island and elsewhere in the Wallabi Group remained only minimally explored archaeologically (Green et al. 1988; Stanbury 2000; Gibbs 2002; Souter et al. 2007).

“Batavia’s Graveyard”/Beacon Island

Beacon Island is a small, low-lying coral cay at the northwestern extent of the Morning Reef Group. The island is 0.028 km² in area, 350 m long, and only 3.5 m above sea level (asl). *Batavia* was wrecked 1.8 km south on the fringing reef. The island is composed of coral-shingle slabs, evident around the coastal margin. In the center of the island a thin deposit of soil composed of shell, coral, sand, and humic material sustains shrubs, small trees, and a seabird population of terns, shearwaters, eagles, and gulls. The island’s margins are prone to change, as evidenced by comparison of aerial photographs from the 1960s to the present day (Fig. 3). Coastal erosion occasionally exposes *Batavia*-related artifacts, such as ceramics.

Historically, investigations on Beacon Island were difficult, given the presence of the seasonal western rock-lobster fishing industry and 20th-century fishers’ huts built over some of the sites. Archaeological material, including burials (those known were Beacon Island Burial [BIB]–1, BIB–2, BIB–3, and the skull of BIB–4), was found during amateur excavations from the 1960s. A mass grave first discovered in the 1980s by fishers digging a drain was eventually reported during an Historic Shipwrecks Act 1976 amnesty in 1992. The grave was excavated over three separate excavation seasons, 1994, 1999, and 2001 (Gibbs 1994; Pasveer



Table 1 Descriptions of human skeletal remains recovered from burials on Beacon Island (1960–2018)

Individual ^a	Description	Sex	Age Range	Stature
BIB-1	Calvaria + postcranial skeleton	Female	16–18 yr.	1.61 m
BIB-2	Skull + postcranial skeleton	Male	18–20 yr.	N/A
BIB-3	Skull + postcranial skeleton	Male	20–34 yr.	1.82 m
BIB-4	Cranium + postcranial skeleton	Male	20–34 yr.	1.72 m
BIB-5	Cranium + postcranial skeleton	Male	35–49 yr.	N/A
BIB-6	Cranium + postcranial skeleton	Male	35–49 yr.	1.79 m
BIB-7	Skull + postcranial skeleton	Male	20–34 yr.	1.76 m
BIB-8	Skull + postcranial skeleton	Likely male	14–16 yr.	N/A
BIB-9	Skull + postcranial skeleton	N/A	4–6 yr.	N/A
BIB-10	Deciduous + permanent teeth only	N/A	6–9 mo.	N/A
BIB-11	Skull + postcranial skeleton	N/A	~15 yr.	N/A
BIB-12	Skull + postcranial skeleton	Male	20–34 yr.	1.68 m
BIB-13	Skull + postcranial skeleton	Female	20–34 yr.	1.60 m
BIB-14	Skull + postcranial skeleton	Male	45–50+ yr.	1.68 m
BIB-15–BIB-21	Seven skeletons of various preservation/completeness	Analyses pending		

Note: N/A=cannot be determined.

^aIn 2018 all individuals were recoded with “BIB” numbers (BIB=Beacon Island bodies).

et al. 1998; Stanbury 2000). The remains of six individuals were recovered, including three adult males (BIB-5, BIB-6, BIB-7), two children (one possibly male, BIB-8, BIB-9), and an infant (BIB-10) (Paterson and Franklin 2004; Franklin 2012) (Table 1). In addition to skeletal material were metal artifacts: buttons, wire, a thimble, a buckle, and a pewter spoon.

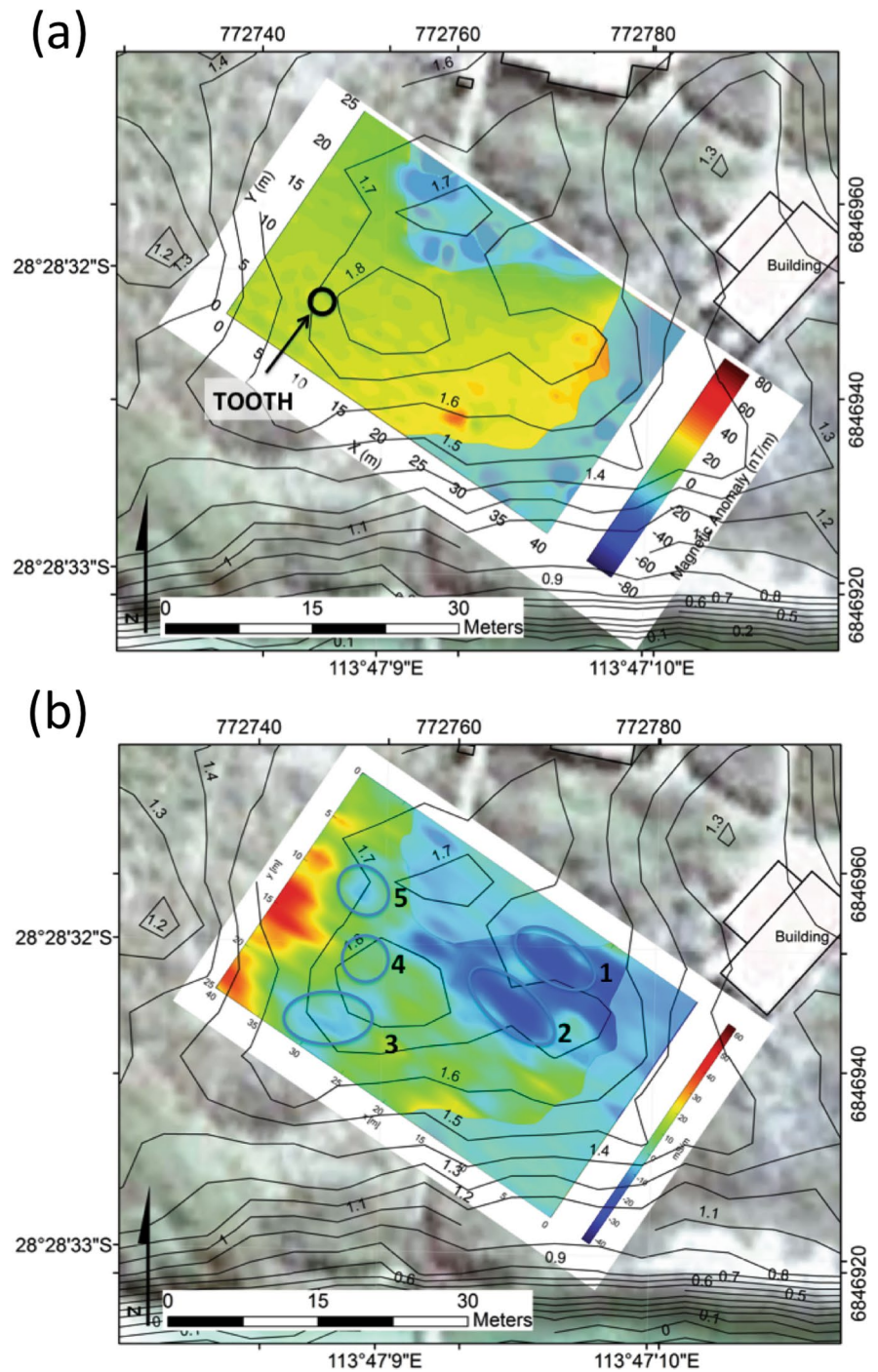
In 2014, in view of the clear impact of a commercial fishing industry on the fragile archaeological evidence of Australia’s earliest European occupation of the continent, the Western Australian government negotiated a settlement to relocate the commercial lobster fishers from Beacon Island. In June 2014, the modern fishing-camp structures were demolished, and the industrial rubbish removed (Fig. 3). Immediately after that, the Australian Research Council-funded project, “Shipwrecks of the Roaring Forties: A Maritime Archaeological Reassessment of Some of Australia’s Earliest Shipwrecks,” instigated a geophysical survey program to better understand the subsurface deposits and island formation, and test for archaeological signatures (Shragge et al. 2017). Then, a series of five field seasons was conducted across several islands, including Beacon Island, providing new archaeological evidence that was subject to specialist materials analyses, and—for the skeletal evidence—absolute-dating, genetic, and isotopic analyses.

In 2014 and 2015 the geophysical survey was conducted on Beacon Island, known to have been the place where most of the people on board *Batavia* had been taken and where, subsequently, most of them died. Complementary near-surface techniques (total magnetic intensity, electromagnetic-induction mapping, resistivity, and ground-penetrating radar) were deployed alongside metal detection to identify anomalous target zones for archaeological excavation. The focus for the geophysical study was a 25 × 40 m² cleared area and the footprints of the demolished buildings (Fig. 4). The challenges were threefold: (1) the shallow floor of geophysical investigation (~1.5 m) due to strong signal attenuation within the saline water table; (2) significant lateral variations in the naturally reworked soil, sand, and coral-fragment cover above the saltwater zone; and (3) generally weak contrast in physical properties between geophysical targets (e.g., skeletal material and metal/ceramic fragments) and the natural background materials (Shragge et al. 2017).

The Human Discoveries (2014–2018)

The location of excavations on Beacon Island was informed by the geophysical results and surface finds of a human tooth and other small skeletal elements (foot and hand bones) brought to the surface

Fig. 4 Geophysical remote sensing results at Beacon Island on background historical photogrammetry with overlaid elevation contours: (a) Processed total magnetic-intensity (TMI) map highlighting the areas contaminated with 20th-century metallic waste (strong red and blue anomalies), the area not considered for excavation (partial transparent field overlaying red and blue anomalies), and the location of the surface tooth find from a previous expedition; (b) processed electromagnetic-induction (EMI) results showing the locations of negative (blue) anomalies that indicate thicker soil and sand cover and are loosely correlated with the locations of skeletal burials. Numbers indicate suggested excavation locations based on the anomalous geophysical readings. (Figure by Jeffrey Shragge, 2022, after Shragge et al. [2017].)



by nesting birds (Fig. 5). The stratigraphic profile encountered across the island during the 2015–2018 excavations was relatively uncomplicated although with some highly disturbed areas—where there was soil, the upper ca. 0.5 m of soil (SU1[2]) tended

to present heavy bioturbation from bird burrowing and nesting. This upper unit was also disturbed by the aggregate of 20th-century human activity, evidenced by modern artifacts, rubbish disposal pits, and fossicking. In addition to clearing for houses

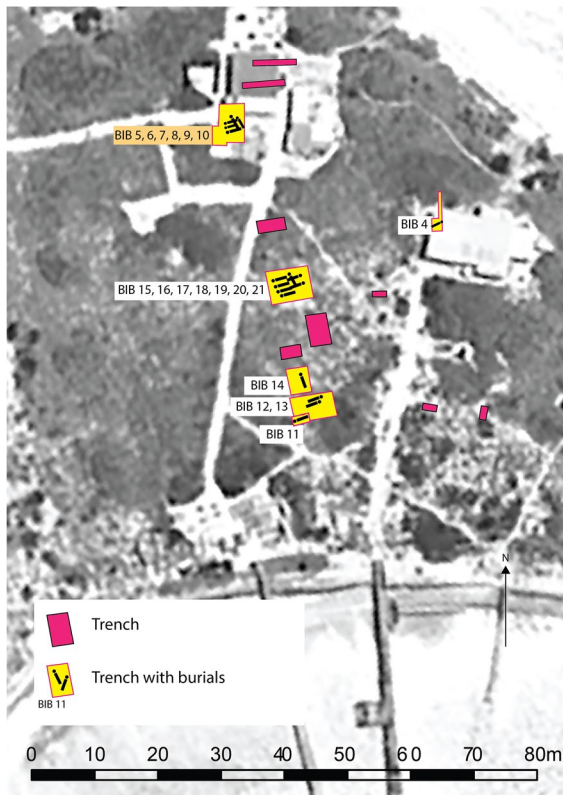


Fig. 5 Beacon Island, showing the locations of archaeological investigations from 1999 to 2018 and the alignment of designated burials. (Map by Alistair Paterson, 2022; base map: aerial photo, 1960s.)

and sheds, pathways had been formed, causing additional disturbance and erosion. Many of the burials therefore had 20th-century materials immediately above them. Furthermore, nesting shearwaters had often burrowed through, under, and even within, skeletal remains. The less-disturbed underlying soil (SU2) was less sandy and contained more compacted shell grit and other finer-grained marine deposits, such as broken coral, crustaceans, and *Mollusca* spp. The pH remained high (ca. 9) across each of these stratigraphic units. Underneath these soils beds of hard coral shingle (SU3) were found, which, when encountered by *Batavia* survivors digging graves, defined the bases of the burials. The tidal, saline water table was encountered during deeper excavations, at around 1.5 m. Burials at the water table were poorly preserved due to leaching of the organic component of the skeletal remains and moisture level changes.

The first human remains discovered as part of this research was a postcranial skeleton found during the demolition of huts in 2014—the skull for this individual (BIB-4) was originally recovered in the 1960s and is exhibited in the Western Australian Museum, Geraldton. Fortuitously, a small fragment of the squama of the right temporal bone was found in association with skeleton BIB-4; this unequivocally matches a defect in the cranial vault of BIB-4 created by a sharp trauma at the time of death, thus confirming the cranium and postcranial skeleton represent the one person. This individual appeared to have been dragged into a shallow grave as the right arm was pulled above the head (Fig. 6).

In 2015 excavations located three complete burials: one was a single burial (BIB-11, at 1.4 m depth), and located 2 m north was a shallower double burial (BIB-12 and BIB-13, at 0.7 m and 0.8 m depths). BIB-11 was noteworthy for having two lead musket balls and an amber bead bracelet recovered in association with the remains (Fig. 7a, c). The musket balls were not lodged in the body, but possibly had been carried in BIB-11's shirt pockets (being found at chest height). While tenuous, we infer that the musket balls may relate to the 10-day period immediately following the wreck when no water was available and reportedly about 30 people died of disease and dehydration (Pelsaert 2002:220), given that sucking lead is a method historically used to alleviate thirst, and the *Batavia* shipwreck survivors are known to have chewed on lead in the days after the wrecking (Brinck 1645; Pelsaert 2002:22). BIB-12 carried what appears to have been a lice comb (Fig. 7d), while BIB-13 had clothing clasps and textile fragments in association (Fig. 7b, g). The varying depths of each of these burials appeared to relate to the depth of available soil overlying beds of coral shingle.

In 2016 the burial of another individual (BIB-14, at 1.4 m depth) was excavated next to the complete skeleton of a juvenile Australian sea lion (*Neophoca cinerea*); a majolica jar (Fig. 7e) was also found in close association. As with other human burials excavated on the island, the coral shingle layer defined the base of the burial. The sea-lion skeleton provided an opportunity for dating by association, and a sample was analyzed by the Radiocarbon Dating Laboratory at the University of Waikato. Sample Wk-44762 (791,20) returned a measured ^{14}C age of 791 ± 20 BP. This corresponds to a calibrated

Fig. 6 Beacon Island, burials discovered from 2015 to 2018: (a) BIB–11 skull, (b) BIB–11, (c) BIB–14, (d) BIB–4, (e) BIB–12, (f) BIB–13, (g) BIB–15 through BIB–19, and (h) BIB–20 and BIB–21. (Photos by Alistair Paterson, a, b, 2014; c, 2016; d–f, 2015; g, 2017; and h, 2018.)



calendar age between 500–370 cal BP (95.4% probability; dates calibrated in OxCal v4.2.3 using the IntCal13 curve (Bronk Ramsey 2009; Reimer et al. 2013), thus corresponding to the *Batavia* event. This is the first dated archaeological evidence for native faunal remains contemporary with the survivors. While there were no visible butchery marks observed associated with the skeleton, in 1980 seal remains with butchery marks were described by the museum, though these were not carbon dated (Kirkham 1980).

In 2017 and 2018 another communal grave that contained the skeletal remains of seven individuals was excavated (Fig. 7). The upper part of the grave contained five individuals (BIB–15, BIB–16, BIB–17, BIB–18, BIB–19, at a maximum depth of 0.7 m). Excavation of these five individuals revealed a further two individuals beneath them (BIB–20 and BIB–21, at a maximum depth of 1 m). It appears that the mass grave represents two separate burial events, as the deeper two burials were deliberately covered

Fig. 7 Beacon Island, selected artifacts: (a) musket balls, (b) clothing clasps, (c) amber beads, (d) a comb, (e) a majolica jar, (f) a gray stoneware jar, and (g) cloth fragments. (Photos courtesy of the Western Australian Museum, 2018.)



with sterile soil from the initial burial pit, after which the upper five bodies were added, possibly contemporarily. The only artifacts were a small pewter spoon located at the pelvis of BIB-18 and a gray stoneware jar found adjacent to the grave (Fig. 7f).

In total, 12 new *Batavia* victims were discovered. Through the application of the forensic approaches for analysis of skeletal remains (physical and molecular), the project team is working toward elucidating a more comprehensive understanding of the general

life history of these individuals up to the point of their deaths. The results of the physical analyses of the more recently discovered skeletal remains will be the subject of future work. Relative to the latest discoveries, however, there is no obvious evidence of trauma, violent or otherwise, in any of these individuals. Absence of traumatic indicators in the skeleton cannot preclude a violent death; such evidence can be obscured or missing, especially when the material is compromised. However, the very obvious injuries

present in the burials recovered in the 1960s, all of which were buried in relatively close proximity, could indicate that the communal burials in the central part of the island represent a different death context, one that could be associated with a more orderly burial of the many individuals who died soon after the wrecking (e.g., drowning or other “natural” causes of death relating to disease, dehydration, or injury). Whilst the actual cause of death of those individuals may never be known, the ongoing holistic analysis and interpretation of the historical, archaeological, and physical anthropological evidence may assist toward establishing a clearer understanding of the broader context of the different burial events thus far unearthed on Beacon Island. The activities directly related to the wrecking of the *Batavia* were not limited to Beacon Island alone. Traces of what happened can also be found on other islands of the Abrolhos. Together, they make up a maritime cultural landscape that was formed over a short period of time but has survived due to the remote location of the islands. By investigating the archaeological traces contained within this broader cultural landscape, more about what must have happened in the few months following the wrecking can be understood.

Resistance and Survival on West Wallabi Island

Another directly related location is West Wallabi Island, known to the *Batavia* survivors as one of the two “High Islands” (West and East Wallabi islands). This was the focus of resistance to the mutineers. There Wiebbe Hayes and his soldiers found water and food. Pelsaert’s description of “cats”—actually the endemic population of Tammar wallabies (*Macropus eugenii*), a small macropod that had survived on the Abrolhos on East and West Wallabi islands—was the earliest description by a European of an Australian marsupial. Curiously, this description was not included in the official printed publication of Pelsaert’s journal, *Ongeluckige Voyagie*, but appeared in his handwritten journal. It was not until Drake-Brockman obtained a translation of Pelsaert’s journal and identified the location of *Batavia* in the Wallabi Group that this description was revealed. Wiebbe Hayes’s men located two “wells” (presumably natural sink holes in the limestone that were opened up) on “High Island” and lit fires to signal their success, but

were later forced to defend themselves from the mutineers led by Cornelisz.

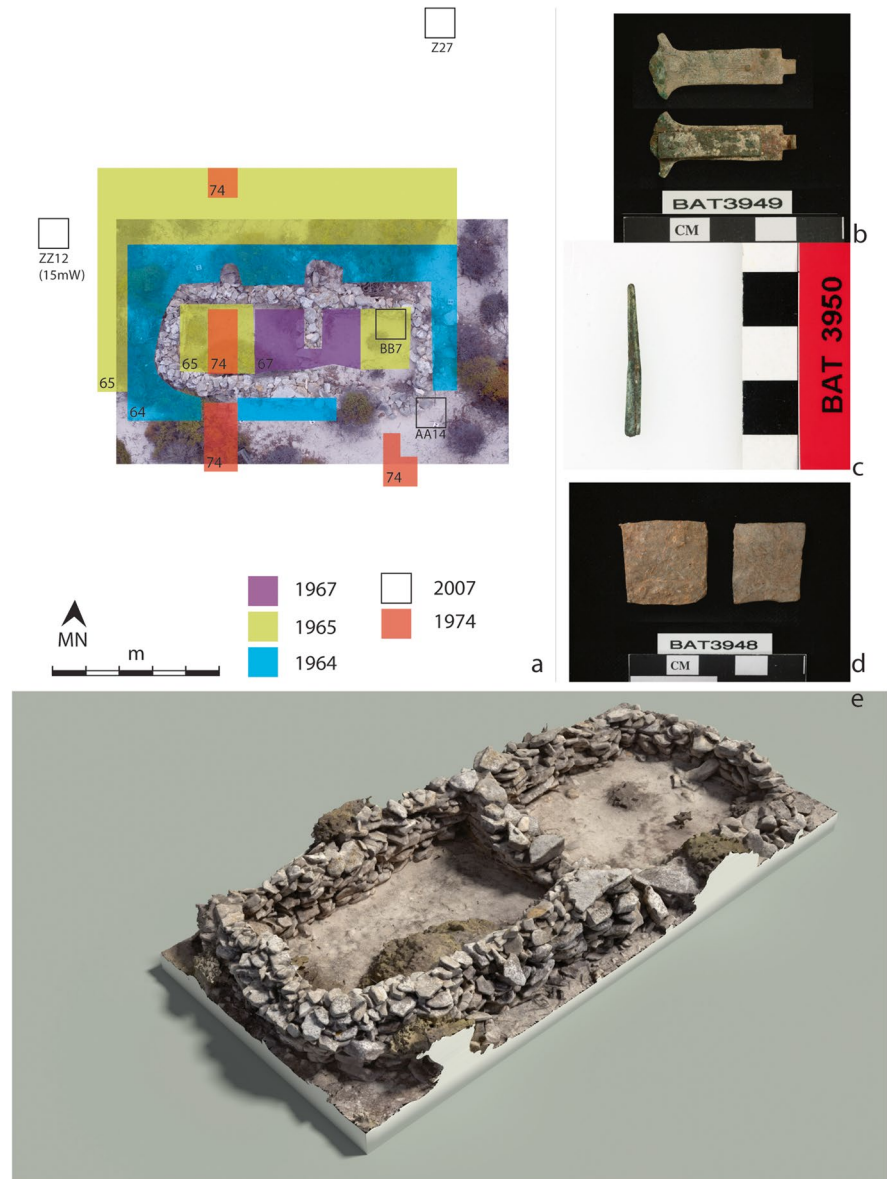
West Wallabi Island is 7.2×5 km, with a highest elevation of 15 m. The island is composed of carbonate limestone, forming natural cavities to trap rainwater. The remains of two stone-walled structures are on the island (Fig. 8). The first is located in the center of the island. There is no archaeological evidence to relate this building to *Batavia*, and it may relate to 19th-century activities, such as guano mining; however, there is no firm evidence to support this interpretation either. The second structure is smaller, 8.2×3.4 m in dimensions, and divided into two rooms. It is located in low scrub 60 m from the shoreline. While there is no description of a building by Pelsaert, the coastal location correlates with his description of the soldiers’ defense against the mutineers’ attacks—as this location can only be approached by sea across a large expanse of shallow reef composed of sharp rock and coral. While much of this island’s coast is limestone cliff, the structure is located on a beach that is protected by the shallow reef. It was possibly here that the soldiers’ defense was mounted. When the soldiers heard of the killings from escaping survivors, they “set out to defend themselves if they should come to fight them, and made arms from hoops and nails, which were tied to sticks [translation courtesy of the Western Australia Museum²]” (Pelsaert 1629:245v).

Early amateur excavations of the coastal structure were undertaken in 1964 and 1966 by staff and students from Aquinas College in Perth and then by the Western Australian Museum in 1967 and 1974 (O’Loughlin 1965, 1966; Bevacqua 1974). While the records of these are poor, they describe the discovery of 17th-century Dutch artifacts and food remains.

Given the historical significance of the coastal structure as the earliest known European structure in Australia and its relationship to the *Batavia* story, four 1×1 m excavations were conducted in 2007 inside and outside the small building to see whether any archaeological potential remained (Fig. 8a). These confirmed the presence of *Batavia*-related artifacts, such as an aglet, other clothing parts, brass book clasps, and small cut lead squares. The function of

² See the Western Australia Museum Website, <<https://journals.museum.wa.gov.au/about-pelsaert>>.

Fig. 8 West Wallabi Island: (a) coastal structure showing the extent of excavations, (b) a book clasp; (c) lace end, (d) lead squares, and (e) photogrammetry of coastal structure, 2018. (Photo a by Alistair Paterson, b–d courtesy of the Western Australia Museum, and photogrammetry e by Kevin Edwards.)



the latter is not clear. Along with two other examples found on the wreck itself (Souter et al. 2007:6–12), they resemble lead tokens used to account for attendance at events or to exchange for food in Holland during the 17th and 18th centuries (Baart et al. 1977:409). Similar square-shaped lead objects have also been identified as gaming pieces (Baart et al. 1977:460) (Fig. 8). Both the coastal and inland structures were recorded using 3-D photogrammetry, with the aim of providing a baseline condition survey and to generate further publicly accessible 3-D content to interpret the *Batavia* story to the public.

Following *Saerdam's* arrival on 17 September 1629, Pelsaert ordered High/East Wallabi Island to be burnt in order to reduce vegetation and enable them to catch “cats” (tammar wallabies) and find water. At least one murder occurred, that of the upper barber, Frans Jansz., by Cornelisz.’s men. Pelsaert’s crew found three sinkholes, of which only one had good water, enlarging the opening with pickaxes and crowbars, and subsequently obtained enough water to replenish the ship’s supplies (Green and Stanbury 1988:17). In 2007 and 2015 work was carried out to record the locations of freshwater

rock holes more precisely, with eight rock holes recorded as sites that could have been used by the Dutch (Souter et al. 2007:27–28).

Retribution at Seals Island/Long Island

The island currently known as “Long Island” is another place that can be connected to the events of the *Batavia* mutiny. Long Island correlates with Pelsaert’s description of “Seals Island”: a 0.74 km², 4.8 km long coral cay, in places less than 15 m wide, rising to 3 m asl. It lies opposite Beacon Island across a 1 km wide, deepwater channel. According to Pelsaert, Seals Island was where many survivors were exiled by the mutineers and where two mass killings took place: one on 15 July 1629, when 18 men and ship’s boys were killed (Pelsaert 2002:120–121,196–197; Drake-Brockman 2006:107), and one on 18 July, when 15 or more women and children were targeted (Drake-Brockman 2006:108). Later, after their trials, seven mutineers, including Cornelisz., were executed by hanging on a gallows structure erected on Seals Island (Drake-Brockman 2006:67,92) and were most likely left hanging as *Saerdam* sailed away, consistent with Dutch practice of the time (Souter et al. 2007:14).

The gallows were predicted to have been made from timbers or flotsam from *Batavia*, as there was no suitable construction material on the islands. Metal detecting in 5 m transects along the entire length of Long Island was undertaken over several field seasons from 1999 to 2007 (Souter et al. 2007). The results included the discovery of an artifact made of sheet lead folded into a rough ball, tentatively identified as a rudimentary “morning star” weapon, with evidence of square-section ferrous nails (since corroded) having been fixed through holes in the ball of lead (Fig. 9a).

The metal-detector survey located a concentration of metal fastenings at the southern end of Long Island, at a point adjacent to the western shore offering the most accessible beach for a small-boat landing (Fig. 9b). The fastenings included a wrought-iron bolt (BAT80547) typologically consistent with VOC fasteners of the early 17th century. Analysis of this fastening found the metal to be wrought iron, with the metal composition and inclusions consistent with a pre-1840 date (Souter et al. 2007:20–21). In 2015

an area directly adjacent to this find was excavated, resulting in the recovery of a large number of heavily corroded iron artifacts with a total weight of 9851 g (Fig. 9c). A range of identifiable fastenings included spikes, nails, and rivets. This concentration of material accords with the predicted remains of collapsed timber gallows structures. Based on the above evidence, we argue that the *Batavia* mutineers were executed at this site.

A Landscape of Surviving

As presented here, the recent archaeological work related to the wreck of the VOC ship *Batavia* (1629) has shifted from a focus on the shipwreck toward an understanding of the greater maritime cultural landscape within which the *Batavia* events occurred, and the archaeological record of these events survives both under and above water. A surprisingly rich set of sites on land complement the archaeological shipwreck record. The archaeological data now facilitate consideration regarding the historical account of Pelsaert—remembering that he was not actually present when most of the events occurred—and the specific behavioral responses to the events of the shipwreck. Gibbs (2002, 2003) has considered the *Batavia* events in behavioral terms, breaking them into a series of stages of survivor behavior. The purpose of this was to “introduce a comparative structure to disparate disaster situations over both space and time” (Gibbs 2002:68). It is now possible to build on Gibbs’s theoretical framework and further consider relationships among the *Batavia* shipwreck, survivor camps, individual and collective behaviors, archaeology, and the cultural landscape as corollary to the Dutch historical accounts.

Gibb’s approach builds on Leach (1994) in a consideration of phases, namely pre-impact, impact, recoil, rescue, and post-trauma stages. For *Batavia* these include the journey (pre-impact) and wrecking event (impact), and the initial movement of survivors from the wreck to islands in the reef and eventually Beacon Island. The “recoil” phase for *Batavia* victims encompasses documented deaths from the lack of freshwater, the voyage to Batavia by the senior officers, and the shifting power structures as mutineers led the violent, sadistic, and murderous campaign against survivors. Recent archaeological research has

Fig. 9 Long Island: (a) a morning star, (b) the excavation at the presumed execution site, and (c) fastenings. (Photo *a* courtesy of the Western Australia Museum, 2018; *b* by Alistair Paterson, 2016; and *c* by Alistair Paterson, 2018.)



much to contribute to the understanding of this phase. Analysis of the human remains found that none of the newly discovered burials excavated in the center of the island bore visible signs of death by violence, although that neither confirms nor refutes a “natural death.” All of these graves were close to the current land surface, the deepest being 1.4 m. Some earlier victims found when Beacon Island was still occupied by fishers did clearly show signs of violence. So, while this does not exclude their murder, we can surmise that these central burials may represent victims from the early days following the wreck, buried together in shallow graves in a sometimes-orderly fashion—indicated by rows of burials—and some

whose burials seem to have been more hurried. It had been proposed the area of the island closest to the wreck was controlled by the mutineers (Gibbs 2003:77); our suggestion is that burials were concentrated here in the center of the island as a functioning graveyard. The burials also included a few personal items, such as clothing and jewelry, suggesting these were not required by the survivors at the time of burial, at least sufficiently enough to remove them. Together, this suggests that, for the central burials, respect for those buried was important. Following Pelsaert’s account, perhaps these were victims from the initial recoil phase following the wreck when natural deaths were common, rather than from the

subsequent period characterized by murders, the victims of which were sometimes described as having been clandestinely disposed of in the sea to hide the evidence.

The recoil phase includes the activity on other islands, for which there is evidence on Long (Seals) Island for makeshift weapons used either by the mutineers or those they would murder. Unlike Beacon Island, there appears little likelihood that the remains of those who died here would be found, given they would not have been buried. On West Wallabi Island the built structure and its associated archaeology provide evidence of the presence of the loyalist resistance faction led by Wiebbe Hayes. Items associated with the *Batavia* wreck were found during several excavations, identifying the building as one that can be associated with the men sent to the island to look for water and food, as well as those men, women, and children that managed to escape from Beacon Island at a later stage. The natural features and the possible historical fire places positioned along the coast facing toward Beacon Island give some indication of how these people managed to survive, to communicate, and to defend themselves against the mutineers.

The “rescue” phase would have had a significant effect on the archaeological record, as the Dutch largely recovered all items deemed to be of any material value to the VOC; however, on Long Island a distinct concentration of iron fastenings was found that has been interpreted as the location for the gallows site where the mutineers were executed. If so, the landscape can be further visualized as it looked like right after Pelsaert arrived. It is probable that a decision was made to leave the gallows standing with the seven executed mutineers hanging as a message regarding transgressions against the VOC. This was common practice in the Netherlands at that time. This decision was a clear indication of the reach of the company, which was shocked by the mutineers’ transgressions and the inversion of strict structures of social order that made the hazardous and remote work of the VOC possible on the far side of the world.

Conclusion and Further Work

The archaeological record contained within the maritime cultural landscape of the Wallabi Group thus continues to enhance the understanding of the

Batavia story. Through the physical remains we give the historical information a geographical context which reinforces our understanding of specific related events. Future work will be focused on the forensic analysis of human remains, including physical assessment and various chemical and molecular studies using stable-isotope technology and DNA, and digital reconstructions (McCarthy and van Duivenvoorde, this issue). In terms of the individuals, the next challenge is to further reconstruct the diet and provenance of the men, women, and children who were buried on Beacon Island. Additional work into researching the context of the burials and survivors’ burial practices will facilitate further understanding of the victims, their lives, and their place in the *Batavia* story. The *Batavia* story and the interpretation of these sites features significantly within the recently declared Houtman Abrolhos Islands National Park, where future visitors can experience the archaeological findings in the years leading up to 2029 and the planned 400-year commemoration of *Batavia*.

Acknowledgments: We acknowledge Australian Research Council funding for Project LP130100137 and partners: the University of Amsterdam, Curtin University, Flinders University, East Carolina University, the British Museum, the embassy of the Kingdom of the Netherlands in Australia, the Cultural Heritage Agency of the Netherlands, the National Archives of the Netherlands, Prospero Productions, the Australasian Institute for Maritime Archaeology, the Tasmania Parks and Wildlife Service, and the Western Australian Museum. We thank our many project staff and fieldworkers 2014–2018, the Fisheries Department and Geraldton TAFE, Geraldton Air Charters, the Department of the Environment, and the people of the Houtman Abrolhos Islands and Geraldton for their interest in *Batavia* heritage. The 2007 fieldwork was funded by an Australian government “Gift to the Nation” Grant to the Western Australian Museum. We dedicate this paper to the memory of Professor Geoffrey Bolton (1931–2015), a tireless advocate for maritime history in the “West.”

Funding Open Access funding enabled and organized by CAUL and its Member Institutions

Declarations

Conflict of Interest Statement On behalf of all the authors, the corresponding author states that there is no conflict of interest.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative

Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Ariese, Csilla
2012 *Comparisons between the Different Versions of the Ongelukkige Voyagie*. Western Australian Museum, Department of Maritime Archaeology, Report No. 331. Perth, Australia.
- Baart, Jan, Wiard Krook, Ab Lagerweij, Nina Ockers, Hans van Regteren Altena, Tuuk Stam, Gerard Stouthart, and Monika van der Zwan
1977 *Opravingen in Amsterdam. Twintig jaar stadskernonderzoek* (Excavations in Amsterdam. Twenty years of city investigation). Fibula van Dishoeck, Haarlem, the Netherlands.
- Bevacqua, Bobby
1974 *The Slaughter Point Site: An Archaeological Investigation of a Site Associated with the Batavia Shipwreck*. Western Australian Museum, Department of Maritime Archaeology, Report No. 2. Perth, Australia.
- Brinck, Ernst
1645 2052 Extracten uit journalen van reizen naar Oosten West Indië (Extracts from journals of voyages to the East and West Indies). 1 bandje, 12°. 5299 Ernst Brinck, handschriften (uit archief Stadsbestuur Harderwijk, inv.nrs. 2013–2061), 16e–17e eeuw (Streekarchivariaat Noordwest-Veluwe), A [Archieven.nl] <https://www.archieven.nl/nl/zoeken?mivast=0&mizig=210&miadt=434&micode=5299&milang=nl&mizk_alle=Extracten%20uit%20journalen%20van%20reizen%20naar%20Oost-%20en%20West%20Indi%C3%AB&miview=inv2#inv3t2>. Accessed 19 January 2023.
- Bronk Ramsey, Christopher
2009 Bayesian Analysis of Radiocarbon Dates. *Radiocarbon* 51(1):337–360.
- Dash, Mike
2003 *Batavia's Graveyard*. Phoenix, London, UK.
- Drake-Brockman, Henrietta
1956 The Reports of Francisco Pelsaert. *Western Australian Historical Society* 5(2):1–18.
- Drake-Brockman, Henrietta
2006 *Voyage to Disaster: The Life of Francisco Pelsaert: Covering His Indian Report to the Dutch East India Company and the Wreck of the Ship Batavia in 1629 off the Coast of Western Australia, together with the Full Text of His Journals Concerning the Rescue Voyages, the Mutiny on the Abrolhos Islands and the Subsequent* *Trials of the Mutineers*, E. D. Drok, translator. University of Western Australia Press, Perth, Australia.
- Edwards, Hugh
1966 *Island of Angry Ghosts*. Hodder & Stoughton, London, UK.
- Franklin, Daniel
2012 Human Skeletal Remains from a Multiple Burial Associated with the Mutiny of the VOC Retourschip Batavia, 1629. *International Journal of Osteoarchaeology* 22(6):740–748.
- Gibbs, Martin
1994 *Report on the Excavation of Skeleton Sk5, a Victim of the Batavia Massacre of 1629*. Department of Maritime Archaeology, Western Australian Maritime Museum, Report No.112. Perth, Australia.
- Gibbs, Martin
2002 Maritime Archaeology and Behaviour during Crisis: The Wreck of the VOC Ship *Batavia* (1629). In *Natural Disasters, Catastrophism and Cultural Change*, J. Grattan and R. Torrence, editors, pp. 66–86. Routledge, London, UK.
- Gibbs, Martin
2003 The Archaeology of Crisis: Shipwreck Survivor Camps in Australasia. *Historical Archaeology* 37(1):128–145.
- Gould, Richard A.
1983 *Shipwreck Anthropology*. University of New Mexico Press, Albuquerque.
- Green, Jeremy N.
1975 The VOC Ship *Batavia* Wrecked in 1629 on the Houtman Abrolhos, Western Australia. *International Journal of Nautical Archaeology* 4(1):43–63.
- Green, Jeremy N.
1977 *The Loss of the Verenigde Oostindische Compagnie Retourschip Batavia, Western Australia 1629: An Excavation Report and Catalogue of Artefacts*. British Archaeological Reports, Supplementary Series No. 489. Oxford, UK.
- Green, Jeremy N., and Myra Stanbury
1988 *Report and Recommendations on Archaeological Land Sites in the Houtman Abrolhos*. Department of Maritime Archaeology, Western Australian Maritime Museum, Report No. 29. Fremantle, Australia.
- Green, Jeremy, Myra Stanbury, and Femme Gaastra (editors)
1988 *The ANCODS Colloquium: Papers Presented at the Australia–Netherlands Colloquium on Maritime Archaeology and Maritime History*. Australian National Centre of Excellence for Maritime Archaeology, Western Australian Maritime Museum, Special Publication No. 3. Fremantle, Australia.
- Kirkham, Leea John
1980 Abrolhos Project, 1980: Beacon Island Excavation, West Wallabi Island Survey, Western Australian Museum. Manuscript, Department of Maritime Archaeology, Western Australian Museum, Fremantle, Australia.
- Leach, John
1994 *Survival Psychology*. Macmillan, Sydney, Australia.

- O'Loughlin, Peter M.
1965 *Expedition to Wallabi Islands of Houtman's Abrolhos: August 24th–August 31st, 1964*. Aquinas College, Manning, Australia.
- O'Loughlin, Peter M.
1966 *Second Expedition to Wallabi Islands of Houtman's Abrolhos: August 23rd–August 31st, 1965*. Aquinas College, Manning, Australia.
- Pasveer, Juliette, Alanah Buck, and Marit Van Huystee
1998 Victims of the *Batavia* Mutiny: Physical Anthropological and Forensic Studies of the Beacon Island Skeletons. *Bulletin of the Australian Institute for Maritime Archaeology* 22:45–50.
- Paterson, Alistair G., and Daniel Franklin
2004 The 1629 Mass Grave for *Batavia* Victims, Beacon Island, Houtman Abrolhos Islands, Western Australia. *Australasian Historical Archaeology* 22:71–78.
- Paterson, Alistair G., and Jeremy N. Green (editors)
2021 *Shipwrecks of the Roaring Forties: Researching Some of Australia's Earliest Shipwrecks*. University of Western Australia Publishing, Nedlands, Australia.
- Pelsaert, Francisco
1629 Dagregister int verliesen van het schip *Batavia*, verzeijlt zijnde op het Zuijtlant door Francisco Pelsaert, Junij tot December 1629 (Daily register of the losses of the ship *Batavia*, sailing on the Zuijtlant by Francisco Pelsaert, June to December 1629). 1.04.02, inv.nr. 1098, 232–316, 1602–1795, Archieven van de Verenigde Oostindische Compagnie, Nationaal Archief, the Hague, the Netherlands.
- Pelsaert, Francisco [Pelsert, François]
1647 *Ongeluckige voyagie, van 't schip Batavia, nae de Oost-Indien* (Unlucky voyage, of the ship *Batavia*, to the East Indies). Jan Jansz., Amsterdam, the Netherlands.
- Pelsaert, Francisco [Pelsaert, François]
2002 *De Schipbreuk van de Batavia, 1629* (The shipwreck of the *Batavia*, 1629), V. D. Roeper, introduction. Walburg Pers, Zutphen, the Netherlands.
- Reimer, Paula J., E. Bard, A. Bayliss, J. W. Beck, P. G. Blackwell, C. Bronk Ramsey, C. E. Buck, H. Cheng, R. L. Edwards, M. Friedrich, P. M. Grootes, T. P. Guilderson, H. Haffidason, I. Hajdas, C. Hatté, T. J. Heaton, D. L. Hoffmann, A. G. Hogg, K. A. Hughen, K. F. Kaiser, B. Kromer, S. W. Manning, M. Niu, R. W. Reimer, D. A. Richards, E. M. Scott, J. R. Southon, R. A. Staff, C. S. M. Turney, and J. Van Der Plicht
2013 IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years Cal BP. *Radiocarbon* 55:1869–1887.
- Shragge, Jeffrey, David Lumley, Nader Issa, Thomas Hoskin, Alistair G. Paterson, and Jeremy Green
2017 Surveying *Batavia's* Graveyard: Geophysical Controlled Experiments and Subsurface Imaging of Archaeological Sites on an Indian Ocean Coral Island. *Geophysics* 82(4):B147–163.
- Souter, Corioli, Ross Anderson, Tristan D. Campbell, Alistair G. Paterson, and Wendy Van Duivenvoorde
2007 *Report on the 2007 Western Australian Museum, Department of Maritime Archaeology, Batavia Survivor Camps Area, National Heritage Listing Archaeological Fieldwork*. Australian National Centre of Excellence for Maritime Archaeology, Western Australian Maritime Museum, Special Publication No. 3. Fremantle, Australia.
- Stanbury, Myra (editor)
2000 *Abrolhos Island Archaeological Sites: Interim Report*. Australian National Centre of Excellence for Maritime Archaeology, Western Australian Maritime Museum, Special Publication No. 5. Fremantle, Australia.
- Taylor, Peter
1970 The *Batavia* Mutineers: Evidence of an Anabaptist “Fifth Column” within 17th-Century Dutch Colonialism. *Westerly* 4:33–45.
- Van Duivenvoorde, Wendy, Daryl Wesley, Mirani Litster, Fanny Wonu Veys, Widya Nayati, Mark Polzer, John McCarthy, and Lidwien Jansen
2019 Van Delft before Cook: The Earliest Record of Substantial Culture Contact between Indigenous Australians and the Dutch East India Company Prior to 1770. *Australasian Journal of Maritime Archaeology* 43:27–48.
- Westerdahl, Christer
1992 The Maritime Cultural Landscape. *International Journal of Nautical Archaeology* 21(1):5–14.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.