

The Brisbane WWII Defence Maritime Landscape and what Remains: A Preliminary Analysis of the Brisbane at War Project.

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Abstract

Queensland was on the frontline in support of Allied offensives against the Japanese invasion of the South-West Pacific and New Guinea and has a rich history that has faded from the modern consciousness. Brisbane was the headquarters of General Douglas MacArthur, Supreme Commander of Allied Forces, Southwest Pacific Area and the associated 350,000 service personnel, which doubled the population. In response to the expansion of Imperial Japanese forces, Brisbane's maritime landscape was transformed to support the war in the Southwest Pacific. Sites and facilities built or upgraded included wharves, storage and supply facilities, a graving dock, mine watching posts, coastal forts, flying boat bases, ordnance depots, boom defences, repair facilities and communications stations. The expansion of this maritime landscape transformed Brisbane in the post-WWII era with many of the facilities being converted to civilian use. Now 77 years after WWII this maritime landscape has been transformed again, with limited evidence remaining. With what remains there is limited visual indication of its heritage significance. This paper presents the initial research that aims to document and understand the Brisbane WWII landscape during the war and what has happened to it, what has been lost, what is left and what needs protecting.

INTRODUCTION

Queensland was on the front line in support of Allied offensives against the Japanese invasion of the South-West Pacific and New Guinea. In response to the expansion of Japanese forces, Brisbane's maritime landscape was transformed to support the war in the South-West Pacific including the possible defence of the Australian mainland. While the focus of maritime archaeology is generally on shipwrecks and the story of the wrecking events, there is increasing acknowledgement that vessels do not operate in a vacuum but were part of a wider landscape of wharves, victuals, stores, fuel, and all the associated support and industry. Furthermore, this WWII maritime cultural landscape also played a significant role in the development of post-WWII Brisbane, with many of the facilities subsequently being converted to civilian use and still utilised 77 years later. However, there has been limited consideration for what this WWII landscape consisted of, how it operated, or what has been lost or survives today.

This paper represents one part of a larger study looking at the whole defence cultural landscape established in Brisbane during WWII as well as what remains now. It investigates the location and nature of the defence facilities and sites that were constructed or used and examines common characteristics between the sites, including their construction, design, and aesthetic. It then asks whether there were relationships between the sites

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as a means of understanding the system of defence. Finally, it considers what remains of this WWII landscape and some of the implications for future interpretation and management.

This paper is based upon the initial collection of WWII landscape and site data for the author's MPhil study. It draws on the first stage of research and analysis of raw archival data and limited reconnaissance and aerial photography surveys, prioritising maritime-related information. The information and conclusion are therefore offered here as a preliminary set of findings.

CULTURAL LANDSCAPES AND CONFLICT ARCHAEOLOGY IN AUSTRALIA

Conflict archaeology has grown to become a significant field of archaeology and the research makes possible an analysis of the sociological adaption to modern conflicts (Schofield, 2009: 4). The conflicts of the modern era (i.e. World Wars One and Two) are recognised areas for research (Stichelbaut and Cowley, 2016). What material is considered within the umbrella of conflict archaeology has expanded wider than just an examination of sites directly related to violence or conflict, to become inclusive of military, logistics, ordnance camps and facilities (Scott and McFeaters, 2011:104). According to Gheyle et al. (2016:12) 'artillery positions, military camps, training zones, hospital, military cemeteries, airfields, ammunition depots ... are equally important for understanding the war landscape—the archaeology of a conflict landscape cannot be limited to archaeology of the battlefield'. This expanding scope of what is defined as conflict archaeology is supported by the many studies conducted on non-battlefield sites, such as Glass (2012) on WWII air raid shelters in the United Kingdom, Barnes (2018) on a WWII Prisoner of War (PoW) camp in Arkansas, and Passmore et al. (2017) on WWII German munitions sites in NW Europe. What is considered important can sometimes be dictated by what is of public interest, there has been an emergence of 'battleless' battlefields, related to the Cold War conflict, becoming popular tourist sites along with other mundane sites, such as barracks (Prideaux, 2007).

The extended scope of study of conflict archaeology in the context of WWII is consistent with the broadening of interest developed within maritime archaeology, looking beyond the ship and wrecks to include support structures, facilities,

communities and industry, as well as wider human relationships with maritime environments (Domingues, 2014: 912). Conflict and maritime archaeology are still developing fields and the use of these inclusive definitions creates a large landscape of sites, with potential relationships that need to be examined to be understood (Bass, 2014:4; Ford, 2006:12; Scott and McFeaters, 2011:104).

The vast majority of published conflict archaeology research related to WWII within Australia is maritime and aviation related. There are therefore large gaps in our understanding of the WWII cultural landscape and the sites and places within, and lots of room for further work. Despite the gaps in research, there has been a range of significant studies conducted in Australia, such as Gojak (2002) on Sydney's defence heritage, Ainsworth et al. (2018), and Owen and James (2013) on the remains of 105 Radar Station in the Northern Territory and Hobbins' (2019) analysis of Australian WWII radar stations, Reeves et al. (2016) on documenting the Northern Territory WWII cultural landscape, Owen and James (2013) work on the WWII 105 Radar Station at Cox Peninsula in the Northern Territory, and Leahy (2019) on a wrecked WWII era RAAF Brewster Buffalo aircraft at Mount Stanley, Victoria. The remaining research identified on Australian sites is maritime aviation related such as the work by McCarthy (1997) investigating four WWII Catalina flying boats scuttled after the war off Rottneest Island, Western Australia and Ford (2006) studying WWII aircraft wrecks in Victorian waters. The most prolific researcher to publish work is Jung who has investigated Catalina flying boats in Darwin Harbour (2000; 2001; 2013a), flying boats in Broome (2004; 2007a; 2007b; 2008; 2018) and the WWII coastal gravesite of a Japanese Imperial Naval pilot in Broome (2013b).

Previous WWII Research in Brisbane and Queensland

There has been an increasing focus and effort to recognise and acknowledge the WWII heritage that exists in Brisbane and Queensland. The Queensland Department of Environment and Science (DES, 2014a) maintains a Queensland World War II Historic Places (QWWIIHP) website that includes a database of WWII sites. The sources of the information related to some of the listed sites is limited or absent, whereas other sites have many sources. Similarly, the *Australia @ War* site (Dunn, 2020a) provides a vast amount

of information about the bases, units and events of WWII but with little referencing to the sources of information. While there is no attempt in these sites to consider the WWII defence landscape as a whole, this information is suitable as a starting place for further research.

Even with considerable interest in WWII heritage from the community, there has been little published archaeological research related to WWII in Brisbane, Queensland, or Australia. Harvey (2013: 431) noted nearly ten years ago that even though significant historical archaeological research was being conducted in Queensland, there was a crisis in the lack of published work. Currently, no published WWII archaeological work could be identified for the Brisbane region. However, an abstract was located associated with a conference paper exploring the numerous military medical facilities that were established in Brisbane during WWII and their impact on the civilian sector (Pollard, 2013).

Though many individual sites are known, and some have extensive histories available, archaeological research on WWII sites in Brisbane, Queensland or Australia remains remarkably limited, including no systematic study of the whole landscape to understand what was there, how it was related, and what now remains. The following discussion will look at what cultural material falls within the defined boundaries of conflict and maritime archaeology as they relate in context to WWII and the concept of landscapes.

Some WWII archaeology has been published for other parts of Queensland, especially on maritime sites. Work has been done on submerged WWII aircraft wrecks near Townsville (Garrett et al., 2006); while O'Donnell (2020) sought to identify all of the possible aircraft wrecks in Queensland waters; and, Leahy (2018) reviewed evidence to dispute the identification of a United States Army Airforce WWII submerged aircraft wreck in Queensland waters. Burnell (2004) looked at the social and landscape impacts of WWII on Townsville, while Fyfe and Brady (2014) investigated historical inscriptions on the Torres Strait Island of Ngiangu which included inscriptions from the WWII period.

METHODOLOGY

The study of Brisbane's maritime cultural landscape during WWII falls within the subfields of conflict, historical and maritime archaeology and further draws on the frameworks of landscape

archaeology. Common methods, techniques and tools used in modern conflict archaeology employ archival research, which includes historical aerial photography, survey, and the use of geographical information systems (GIS) for the analysis and presentation of data.

One of the most important conceptual and methodological aspects of the project has been to embrace a holistic cultural landscapes approach to exploring and understanding the WWII maritime landscape of Brisbane. A cultural landscape has been described by Spencer-Wood and Baugher (2010: 464) as 'a landscape permanently altered by human activity', with the scale of study dependent upon the landscape under examination. Maritime cultural landscapes are considered to span the divide between land and sea (Bell and Blue, 2021). According to Goff et al. (2021) landscape archaeology provides a broader spatial understanding of artefacts and sites, and further, Klausmeier et al. (2006) have discussed the importance of a landscape context and moving the study beyond mere installations in the development of conflict archaeology, as well as the critical nature of documentary sources and oral histories. Additionally, they discussed how buildings are more than just structures, but reflections of their environment and time, and that they will have different meanings for different eras (Klausmeier et al., 2006: 7). This is an important consideration when assessing the importance of a structure. Since the purpose or context may not have been important during WWII does not mean that it does not have significance to later generations and the reverse is true. But to understand the landscape, we first need to identify the sites.

Existing Resources

As noted above, the main existing databases of WWII heritage for Queensland are the QWWIIHP (DESQG, 2014a) and *Australia @ War* site (Dunn, 2020a). These provide a baseline of sites and information that can be abstracted and synthesized into the current project's database, incorporating new fields and data that emphasizes the necessary features and connections for the eventual cultural landscape analysis. These catalogues of sites are not complete and, as previously discussed, can lack primary source information to support their existence or confirms details. Further, some of the listings only provide general information without a confirmed location. Of the 107 maritime sites located in the Brisbane area related to WWII, 19 were not listed on the QWWIIHP. Of the 197 Brisbane

Table 1: List of type classifications used to record sites, structures, or objects of WWII sites in Brisbane.

Type Code	Type classification	Group classification	Definition
001	Airfield	Operations	An airfield is any place that has a landing ground. It can be as simple as a grass strip with improvements or a large airbase that contains buildings, workshops, etc.
002	Communications Station	Communications	A wireless telephone transmitting station would be considered the same as radio telegraphy station used in the Defence of Britain system.
003	VHF/DF Homing Station	Detection	
004	Military Camp	General	Any land-based camp used by the Army, Airforce, etc.
005	Drill Hall	Training	A drill hall is a place such as a building or a hangar where soldiers practise and perform military drill.
006	Fort	Defensive	A military construction or building designed for the defence of territories in warfare.
007	Hospital	Medical	Military or Naval hospital.
008	Flying Boat Base	Operations	
009	Ordnance Depot	Logistics	A storage and supply location for munitions of all types
010	Heavy Anti-Aircraft Battery	Defensive	
011	Mine watchers Post	Detection	
012	Boom Defence	Defensive	
013	Graving Dock	Maintenance	
014	Supply Depot	Logistics	Supply or stores depot for goods other than munitions or food.
015	Naval Base	General	
016	Torpedo Maintenance Facility	Maintenance	
017	Wharf	Logistics	
018	Repair Facility	Maintenance	
019	Civil Construction Camp	Construction	A camp for civil construction workers for defence-related construction in support of the war effort.
020	Interrogation Centre	Intelligence	
021	Bombing Range	Training	A place for aircraft or naval shipping to practice bombing.
022	Headquarters	Command	
023	Observation Post	Defensive	
024	Signal Switchboard	Communications	
025	Air Defence Facility	Defensive	A facility used for air defence other than a Heavy Anti-Aircraft Battery.
026	Radar Station	Detection	
027	Naval Station	Operations	
028	Convalescent Depot	Medical	
029	Manufacturing Facility	Construction	A manufacturing facility set up and operated for the manufacture of naval/military/air force equipment.
030	Slip	Construction	
031	Training Facility	Training	
032	Support Facility	Logistics	
033	Wardroom/Mess	Logistics	
034	Fuel Oil Depot	Logistics	
035	Intelligence Camp	Intelligence	

WWII related sites currently identified from research in the Brisbane area 53 have not been recorded on the QWWIHP. The QWWIHP site has not been updated since 2014 and it is understood anecdotally

that there is no current funding for adding to or updating the website. As a result, there is further scope and need for research and analysis to fully understand the WWII cultural landscape of the Brisbane area.

Table 2: List of group classifications used to group associated type classifications for WWII sites in Brisbane.

Group Classification	Group code
Command	CMD
Communications	COM
Construction	CON
Defensive	DEF
Detection	DET
General	GEN
Intelligence	INT
Logistics	LOG
Maintenance	MTE
Medical	MED
Training	TRN
Operations	OPS

The method for the current project therefore has been to identify as many (and a wider variety of) sites as possible by conducting searches of a wide variety of primary source materials such as archives, historical aerial photography, and newspapers (as discussed further below) and record the details using a GIS database that allows for identification of duplicate information.

Recording system

A new database was created to record WWII sites identified through synthesis of existing datasets and from new archaeological and historical studies. The first step of the project was to determine how the different recording classes (sites, structures, and objects) that would be entered into the databases. The system used was designed such that the overarching recording class is a site, which may be just one structure, feature, or object, or might contain a mixture of these. For a very large site that contained many distinct components, the latter are designated as 'sub-sites'. However, it is only in exceptional circumstances where there is a genuine need to allow for better analysis and understanding. Designing a system with sub-sites creates an extra level of complexity for a benefit that can be addressed in another way.

Each database recording is given a type classification (e.g., naval base, military camp, mine watching post, airfield, heavy anti-aircraft battery). The *Defence of Britain* (DOB) classification schema was assessed but deemed not appropriate for the types of sites around Brisbane. No other existing broad-range WWII recording schema could be identified

or has been reported on. Some of the terms from the DOB schema have been used where appropriate. Consequently, a custom list of terms appropriate for the Australian context is being developed as sites are recorded, capturing relevant Australian archival and contemporary usage. The current list is detailed in Table 1. Additionally, Table 2 contains a list of 12 defined group classifications, with each type classification falling into one group.

The use of defined categories of information has assisted in the initial analysis of the sites and determining which sites can or should be further surveyed. The recording schema is a living document, developing as the research evolves, with the primary aim being to collect the data that will best assist with answering the current main research aims. A detailed recording database schema currently being used is detailed in Table 3. The sites, structures and object details are recorded in a GIS database in GeoPackage format.

The data on the QWWIIHP website was the starting point for the development of the new project database, although the website only contains basic details, mostly contained within the narrative of the listing. Potential sites of interest were identified and where sufficient historical information was available to confirm the connection to WWII, the site was then listed in the new database. A search was then conducted on the National Archives of Australia (NAA) to identify the most relevant record series and where possible to extract additional detailed information about the site. A search of the record series was then to be undertaken to identify any additional sites of a similar type, which could be cross-checked with the QWWIIHP site. This provided a handy cross check as, for instance, only eight airfields listed had previously been listed on the QWWIIHP website as being in the Brisbane region, while the additional research increased this to 18 airfields within the study area. The identification of sites was the first step in the project, and more detailed sub-sites (components) such as structures and objects being identified and recorded if required.

Archival record

As noted above, archival records (primarily from the NAA) have been used to research the details of the location, history, construction, and use of sites for addition to the project database. Many of the relevant records have been digitised and can be easily downloaded for further research and investigation. Some of the records contain plans

Table 3: Database schema currently being used for the Brisbane at War Project.

fid	System generated reference
No.	7-digit number The number begins with 4 as the entities are in Qld and this is the same as all Qld postcodes.
Name	Text
Class	Site / Sub-Site / Structure / Object
Type Classification	As per Table 1
Type Code	Autogenerated based on type section
Code	Autogenerated based on No. Class and Type
Code Label	Autogenerated based on No. Class, Type and Name
Description	Text
Mapping Name	Text
Associated Site Q	System answered field based on the entity class
Site Entity ID	If the entity class is Sub-Site / Structure / Object then the associated Site
Modern Suburb	Text
Historic Suburb	Text
Entity Street Address	Text
Historical Details	Text
Purpose-Built for WWII	Yes / No
Purpose Built Details	Text
Site History	Built for WWII / Expanded for WWII / Built for WWI / Built for other defence purposes / Built for government / Built for civil purposes
Previous Use Details	Text
Builder	Text
Builder Historic Details	Text
Cost of Construction	Number
Entity Built Date	Date
Entity Built Date Acc	Estimate / Year / Month / Day
Entity Current Service Use	Yes / No
Entity Obtained Date	Date
Entity Obtained Date Acc	Estimate / Year / Month / Day
Entity Relinquished Date	Date
Entity Relinquished Date Acc	Estimate / Year / Month / Day
Entity Service Length	Autogenerated length of service
Site Notes	Text
Site Plan	Link to image
Site Image	Link to image
Entity Remains	Undetermined / Yes / Possible / Unlikely / No
Entity Extent Remaining	100% (All) / >75% (Most) / >50% (Majority) / >25% (Part) / >10% (Limited) / >0% (Some Indication) / 0% (None) / To be determined
Entity Removal Date	Date entity removed
Entity Removal Date Acc	Accuracy of the date: Estimate / Year / Month / Day
Entity Removal Details	Text
Entity Existence Length	Autogenerated length of existence
Maritime Related	Yes / No
Aviation Related	Yes / No
Memorial	Unknown / Present / No memorial
Memorial Description	Text
Memorial Image	Link to image
Entity Agency Associations	Associated Agencies
Entity Country Associations	Associated Countries
Entity User Associations	Associated Units or Groups
Entity Org Associations	Associated Organisations (i.e. Naval, Government)
QHR Search	Not searched / listing / Not listed
QHR No	Number

QHR Link	Link
QHR Title	Text
QHR Listing Date	Date
QHR Notes	Text
QHR Plan	Link to image
QHR Page	Link to PDF
DES Data Requested	Date
QHR References	Linked document
BCC Heritage Search	Not searched / listing / Not listed / Not applicable
BCC Heritage No	Number
BCC Heritage Link	Link
BCC Heritage Title	Text
BCC Heritage Date Listed	Date
BCC Heritage Notes	Text
BCC Heritage Page	Link to PDF
AHD Search	Not searched / listing / Not listed
AHD Title	Text
AHD List	Text
AHD Place ID	Number
AHD Place File No	Text
AHD Notes	Text
AHD File	Link to PDF
AHD Image1	Link to image
AHD Image 2	Link to image
AHD Image 3	Link to image
AHD Image 4	Link to image
QWWIIHP Search	Not searched / listing / Not listed
QWWII No	Number
QWW Link	Link
QWWIIHP Webpage Print	Link to PDF
NAA Search	Not searched / listing / Not listed
NAA Reference List	Link to RTF
NAA Reference List PDF	Link to PDF
NAA Archive Only	Yes / No
References	
NAA Record Search List	Link to PDF
Other References Located	Yes / No
Entity Reference List	Link to RTF
Other References List PDF	Link to PDF
Other References	Link to document
Other References 2	Link to document
Historic Image Folder	Link to folder
Historic Image 1	Link to image
Historic Image 2	Link to image
Historic Image 3	Link to image
Modern Image 1	Link to image
Modern Image 2	Link to image
Modern Image 3	Link to image
QImagery Searched	Yes / No
QLD State Library Searched	Yes / No
Trove Searched	Yes / No
AWM Searched	Yes / No
NARA (Fold3) Searched	Yes / No
Wiki Searched	Yes / No
Local Records Folder	Link
Entity Research Notes	Text

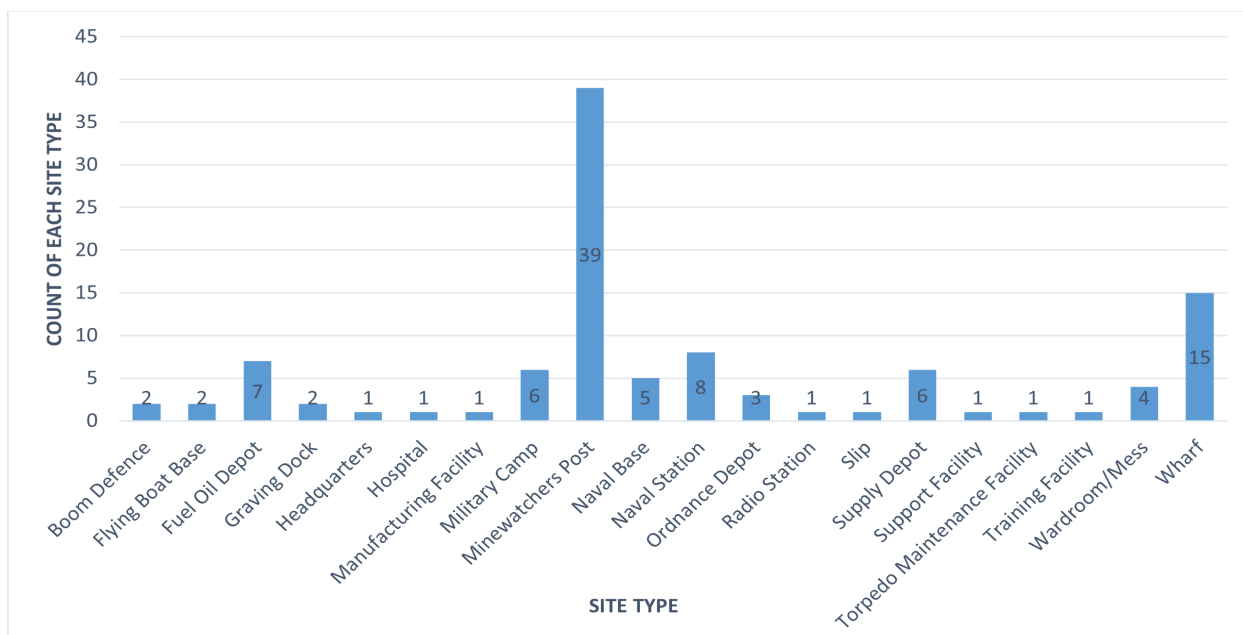


Figure 1. Count of operational maritime defence related sites during WWII by site type in Brisbane.

of intended construction and details of use and occupation. Where records have not been digitised, many are held in storage in Brisbane where access can be arranged, although some records are listed as being stored in Melbourne and have not yet been accessed. Other sources of information are unit and official histories, local histories, heritage reports and local government heritage registers. The use of archival records not only allows for the identification of sites and confirmation of their existence, but additionally to determine if there has been a change in the site as described in the archival records (O'Donnell, 2020: 94). These variations may be the result of subsequent changes to the site, or the site not being developed as was planned. Identifying and understanding these variations will tell a story that may provide a better understanding of the landscape, its use during the war and the events that followed in the post-war period.

When determining the WWII maritime cultural landscape in the context of Brisbane, which was a result of deliberate construction to aid in the defence of the region, many records were generated as the construction resulted from government expenditure. Because of the period being assessed, historical archaeological methods are of great use. Historical archaeology has been described as text-aided archaeology that draws on both archaeological and historical methods (Mayne, 2008: 97). The use of archives provides an important starting place to determine where sites might be located and what those sites may contain. The use of

archival records and other unreferenced websites has been used and found to be effective for identifying sites (O'Donnell, 2020).

Identified sites can then be researched further using archival records and field surveys to ground truth results. Being armed with the best information will ultimately save field time and resources (Burke et al., 2017: 29–32; Tuttle, 2014: 116). The methods used to record the sites can take many forms, including simple non-invasive site recording, photography, photogrammetry, and survey where physical remains are still visible.

Aerial Photography

Analysis of archival aerial photography is gaining in popularity as a tool for understanding what WWII sites existed, as well as their location and nature. Gheyle et al. (2014) employed aerial photography to look at the militarised landscape that resulted from WWI around Antwerp. Similar work was done by Kilpatrick (2016) using historical aerial imagery recorded in WWI that was combined with archival resources to bring a better understanding of how the war affected Scotland. The use of digital mapping and a GIS were pivotal in this understanding and to aid in ongoing research and the management of the identified remains. Reeves et al. (2016) employed remote sensing data to document WWII heritage in the Northern Territory of Australia. The research showed the huge potential of historical

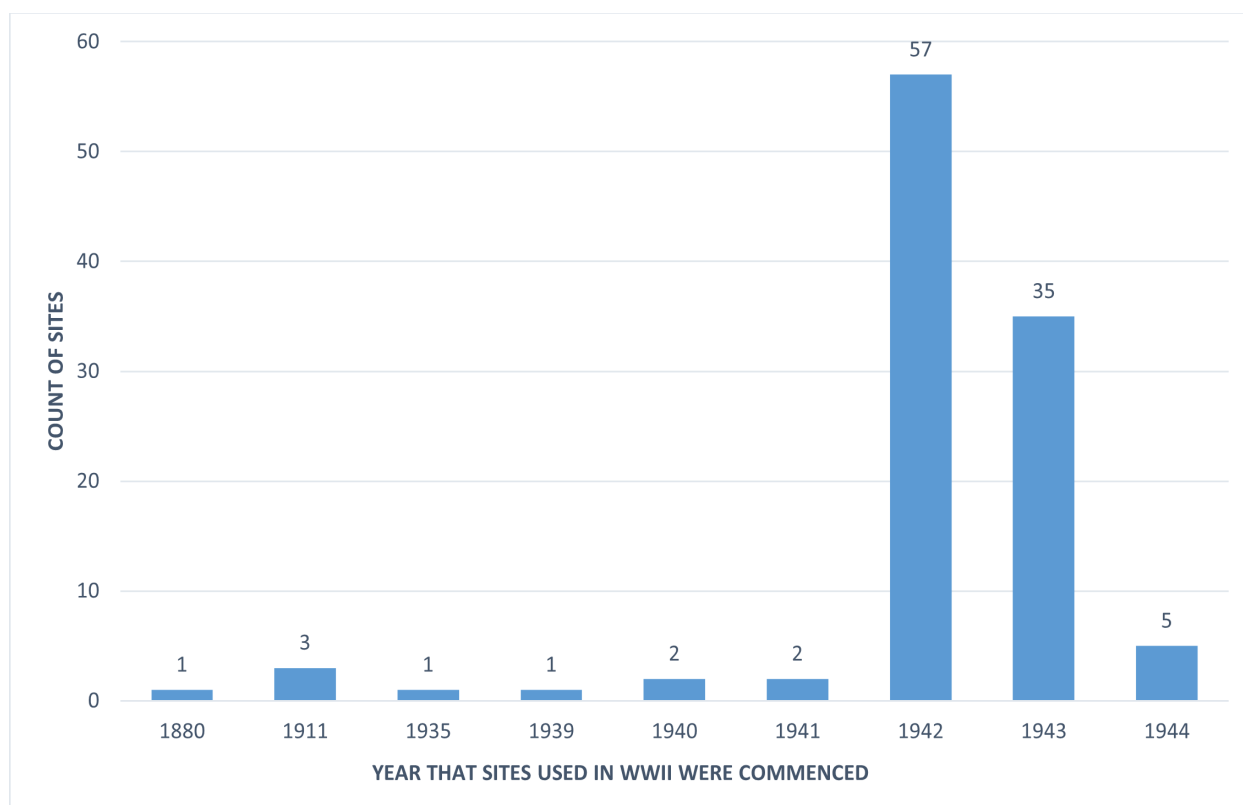


Figure 2. Count of the maritime defence related sites used during WWII in Brisbane by the year they were commenced.

aerial photographs to illustrate the changes that resulted from the Darwin bombings. The Tunwell et al. (2015) study of WWII military logistics networks in Normandy, France, makes use of a combination of archive documents, aerial photography, and a non-invasive field survey. The collected data were entered into a GIS database to allow cross-checking of features identified by field surveys and aerial imagery. A similar method was used by Tunwell et al. (2016) concerning WWII bomb craters from an Allied attack on a German position as part of the D-Day offensive. In his study of WWII Kiska, Spennemann (2012) determined that archival aerial photography and intelligence reports, though useful, could not be relied on to tell the whole story as some images may be missing or detail not visible, and there is always a need to survey.

In their search for air-raid shelters, Ainsworth et al. (2018) showed that aerial photography was valuable and where there was some uncertainty, non-invasive methods such as ground-penetrating radar (GPR) could be employed. Passmore et al. (2013) identification of a WWII German military supply depot in Normandy found that their ground survey was assisted by aerial photography. According to Cadman et al. (2007), aerial photography from

WWII has an important role to play in identifying and confirming details of military sites, their condition and development. Additionally, Reeves et al. (2016) used aerial photographs and GIS to document the WWII development of the Adelaide River area in the Northern Territory (NT). A similar technique was employed at WWI Western Front sites in Belgium where Gheyle et al. (2016) used aerial photography with field survey to compile data into a GIS to evaluate the remaining WWI heritage.

The use of aerial photography makes the identification and analysis of the extent of sites easier. However, this is dependent on the extent of aerial photography available. For the Brisbane region, there are two main sources of imagery, the Brisbane City Council (BCC) 1946 dataset and the data available from the Queensland Government QImagery. The aerial imagery available includes the Brisbane City Council (BCC) Aerial imagery—1946 dataset (BCC, 1946). The use of the BCC dataset relies on the site being within the BCC area and being still present in 1946, which some sites were not. Additionally, the 1946 images can be easily compared with current satellite images to quickly determine how much of the site potentially remains as it can be fed directly into the GIS software. Other historical imagery is available on the QImagery site

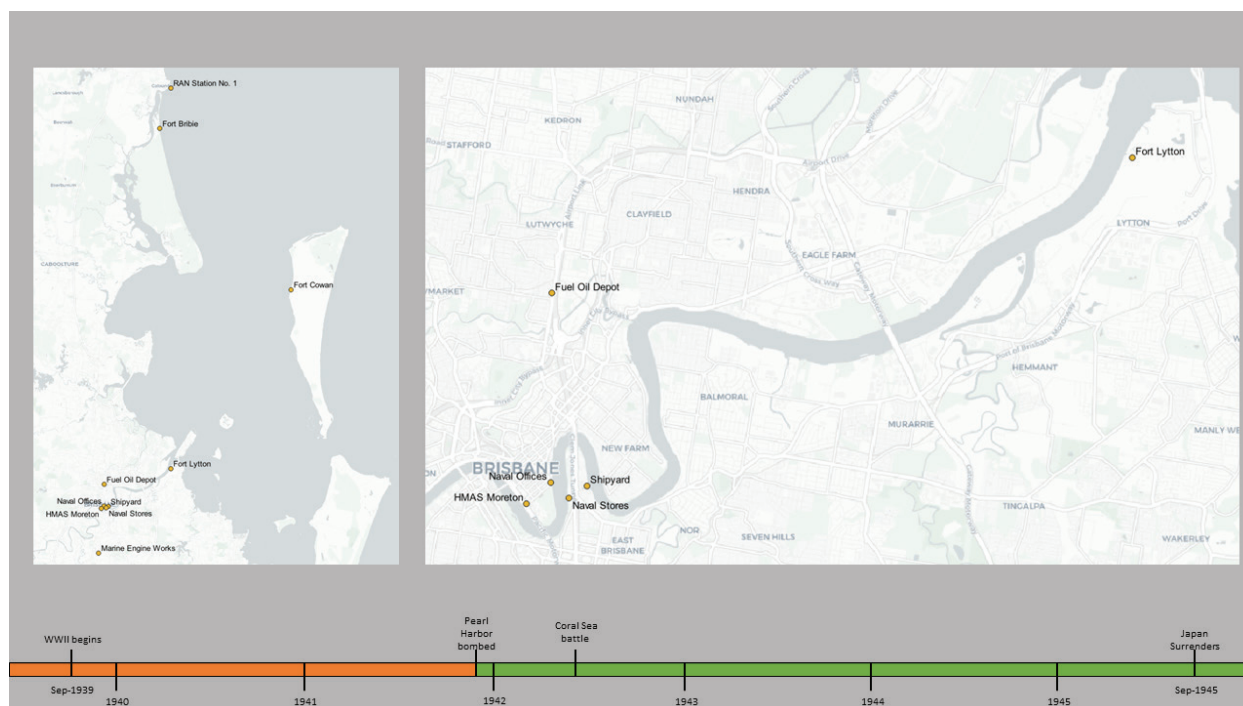


Figure 4. Maritime landscape in the Brisbane area was used for defence purposes during WWII and prior to Pearl Harbour.

(RAN) and of the US sites 17 (89%) were related to the United States Navy (USN). The following sections consider these sites with regard to the evolution of these systems throughout the course of the war.

Prior to the start of WWII

Before the start of WWII in 1939, Brisbane had a small maritime landscape that had developed to support local industry (Figure 3). Maritime sites consisted of a small graving dock at South Brisbane, a commercial slip at Kangaroo Point, commercial wharves at Teneriffe, Newstead, Hamilton, Pinkenba and a government wharf at Colmslie that were used for WWII naval or military activities. The naval facilities were limited to the pre-federation Queensland Marine Defence Force facilities that had been constructed in 1883 and were transferred to the Royal Australian Navy in 1911 on its formation (RAN, 2021). They consisted of a naval depot in Alice Street, naval offices in Edward Street, and naval stores at Kangaroo Point. The only harbour defence was Fort Cowan on Moreton Island which had been commissioned in 1935 to replace Fort Lytton as the examination battery for the Brisbane River (DESQG, 2007c). Fort Lytton had been constructed in 1880 and the grounds

were later used for defence purposes (Australian Construction Services, 1988). An army artillery battery was established in what would become Fort Bribie in July of 1939 (DESQG, 2007a). Though 19 of the WWII maritime sites identified existed before the start of WWII in September 1939, only seven were in use by the naval or military forces at this time. Five of the sites had no maritime connection before WWII.

The start of WWII

The start of WWII in Europe (1939) saw maritime related naval and military sites around Brisbane grow from seven to 11 (Figure 4). This included the addition of RAN Station No. 1 at Caloundra, which was classed as a 'port war signal station', which was used for communicating with ships entering Moreton Bay (DESQG, 2014c). Any ship entering Moreton Bay without approval could be fired on from Fort Bribie. Ships were required to enter the examination bay under the guns of the battery at Fort Cowan Cowan on Moreton Island. The RAN also had built and commenced operation of a naval fuel oil depot at Windsor by July 1940 (Dunn, 2020b). The land was obtained, and funding was approved in November 1939. The Evan Deakin Shipyard commenced in 1940 and used the unused slipway at Kangaroo Point with

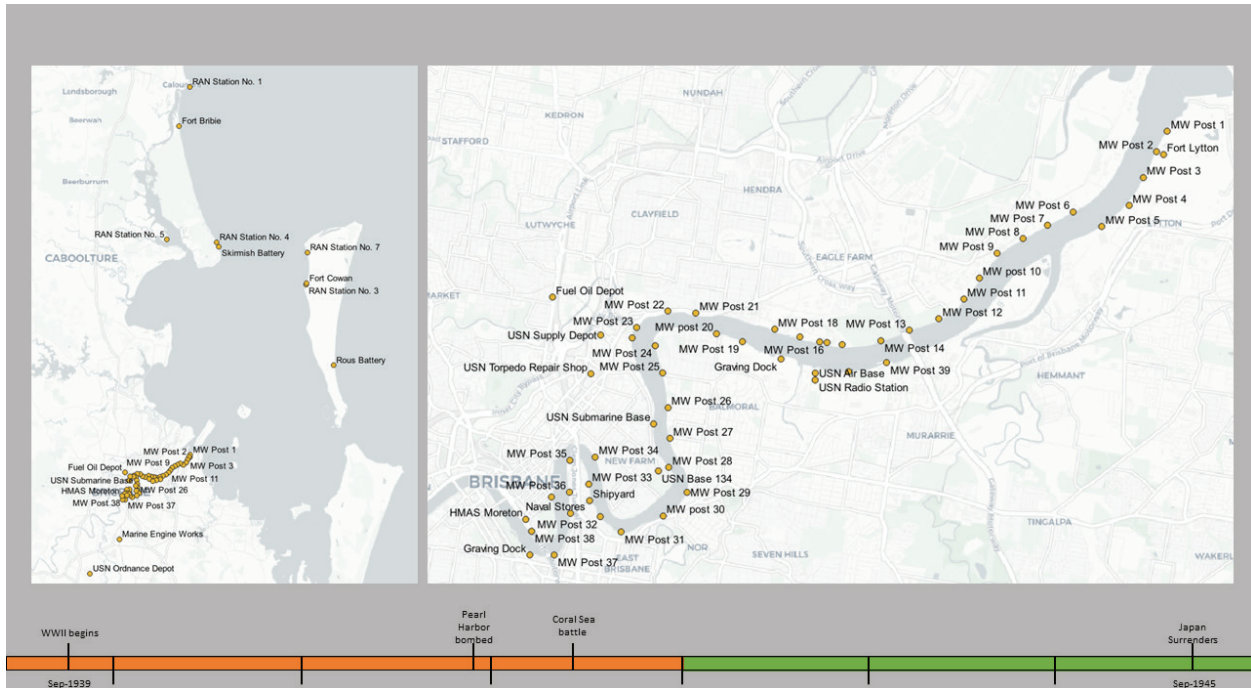


Figure 5. Maritime landscape in the Brisbane area used for defence purposes at the end of 1942.

a newly expanded dock, that was utilized to build 12 corvettes and a frigate for the RAN during WWII (BCC, 2021). Further, in June of 1941 Evan Deakin in collaboration with the Australian Government constructed and commenced the operation of the marine engine works at Rocklea (DESQG, 2014m).

Expansion in 1942

With the entry of Japan into WWII with the attack on Pearl Harbor on 7 December 1941 and their subsequent expansion into the South-West Pacific and later New Guinea, Brisbane became a strategic centre for the Allied forces. The expansion of maritime sites at this time was dominated by defensive infrastructure for Moreton Bay and the Brisbane River (Figure 5). Even though this infrastructure was constructed after the Pearl Harbor attack, some had been planned before this, such as 39 mine watching posts in the Brisbane River (NOCA, 1941–1943: 52).

Brisbane's maritime defences

The defence of the Brisbane River and approaches to Moreton Bay were improved with the installation of further defences. The defences consisted of additional artillery batteries, mine watching posts, indicator loops, asdic stations, controlled mining and supporting infrastructure. The additional

batteries were in two locations. One at the southern end of Bribie Island, known as Skirmish Point, was established in March 1942. The other was established in June 1942 in response to the sighting of Japanese submarines, at Rous Battery on the ocean side of the southern end of Moreton Island. The establishment of these batteries required the development of roads to support construction and completed sites (DESQG, 2014f).

The RAN planned and installed 39 mine watching posts along the Brisbane River by about April 1942 (Figure 6). These posts had been planned in September 1941 before Pearl Harbor and were supported by personnel from the Australian Army, US Army Air Corps, RAN and Women's National Emergency League. The Women's National Emergency League were stationed at 26 of the 39 posts as required. This role was in addition to the women's normal daytime employment. The posts were only occupied as required to ensure personnel maintained a level of readiness (NOCA, 1941–1943).

In June 1942 a controlled minefield was laid off Cowan Cowan in what would become RAN Station No. 3. This was part of extensive defences to protect Moreton Bay and Brisbane River from Japanese attack. These defences included RAN Stations Nos 4 and 7 at Woorim, Bribie Island and Comboyuro Point, Moreton Island respectively. They were both indicator loop and harbour defence ASDIC stations that detected the presents of submarines entering

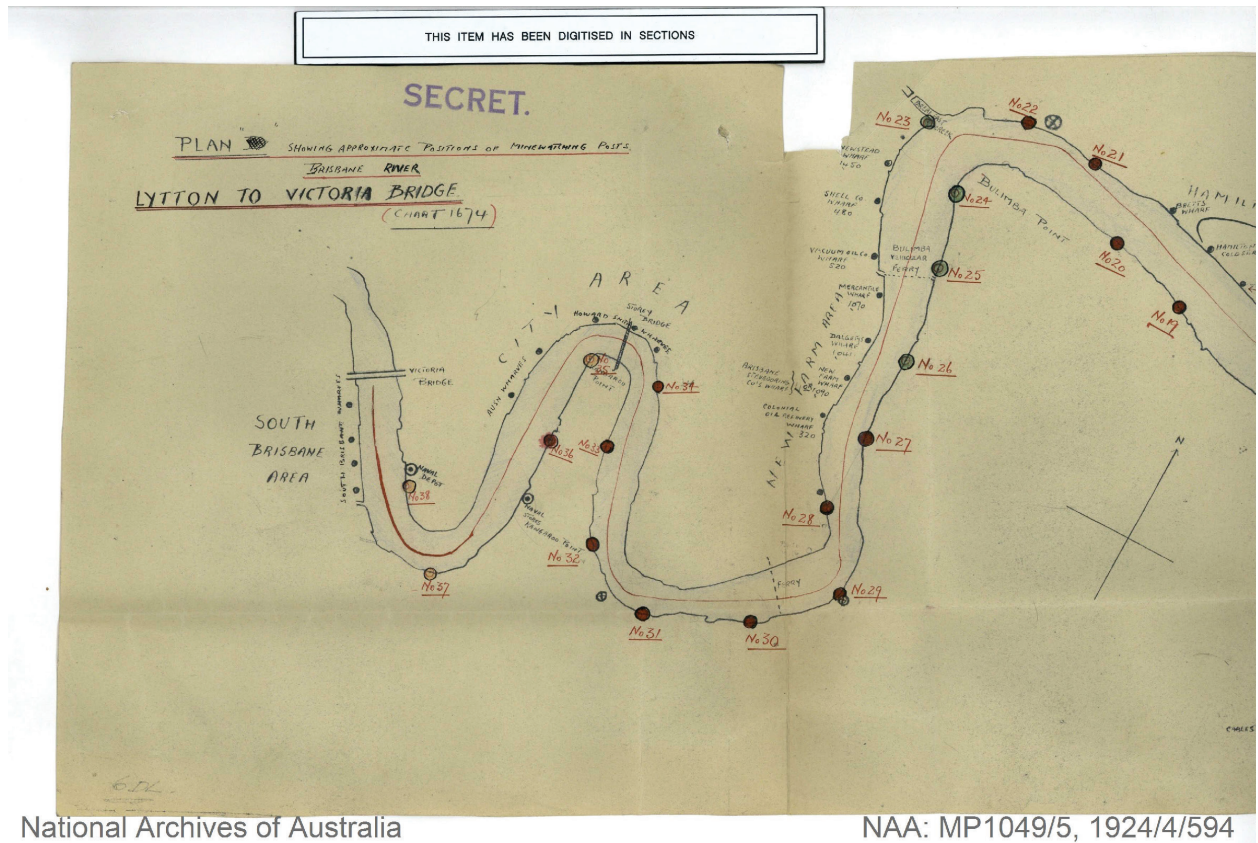


Figure 6. Plan showing approximate positions of mine watching posts along the Brisbane River from Lytton to Victoria Bridge (NOCA, 1941–1943:38).

Moreton Bay. There was a total of four indicator loops. If a submarine was detected entering the Bay, it could be attacked using the control mines operated by Station No. 3 at Cowan Cowan. Stations Nos 3, 4 and 7 were operational by the end of 1943 (Walding, 2008b). A Fairmile antisubmarine motor launch base was established at Colmslie at the site of the former acetate factory in late 1942 (DESQG, 2007b). The RAN also established a naval section at the Combined Training Centre at Toorbul Point adjacent to Bribie Island, known as RAN Station No. 5 (NOCA, 1942). This area was used for amphibious training of the army. In June 1942 the RAAF established the Hamilton Flying Boat Base (DESQG, 2014i).

USN support

The fall of the Philippines in March 1942, resulted in the USN establishing the New Farm Submarine Base which used existing wharfing facilities (Jones and Nunan, 2011: 8). Further Camp Darra was established as an ordnance depot in April 1942 (DESQG, 2014g; Mayo, 1991:54). By the end of 1942 they had established

a flying boat base and communication station at (DESQG, 2014e); a torpedo repair shop and supply depot at Bowen Hills (DESQG, 2014b); a naval base at New Farm (DESQG, 2014j); and a further supply depot at Newstead to cope with demand (DESQG, 2014k).

Maritime Infrastructure

With the fall of Singapore to Japanese forces in February 1942, a graving dock was required to service an aircraft carrier sized vessel in the Southern Hemisphere. Work commenced in August 1942 on the Cairncross naval graving dock, which was opened at Colmslie in September 1944 (WSBQCA, 1944–1945: 178). The dock was 230 m long and cost £1,100,000 in 1944, the dock was still in use until recently. In 2016 the site was offered for sale by the current owners (Westacott, 2016).

1943

By early 1943, a submarine supply centre had been constructed at Windsor (DESQG, 2014n),

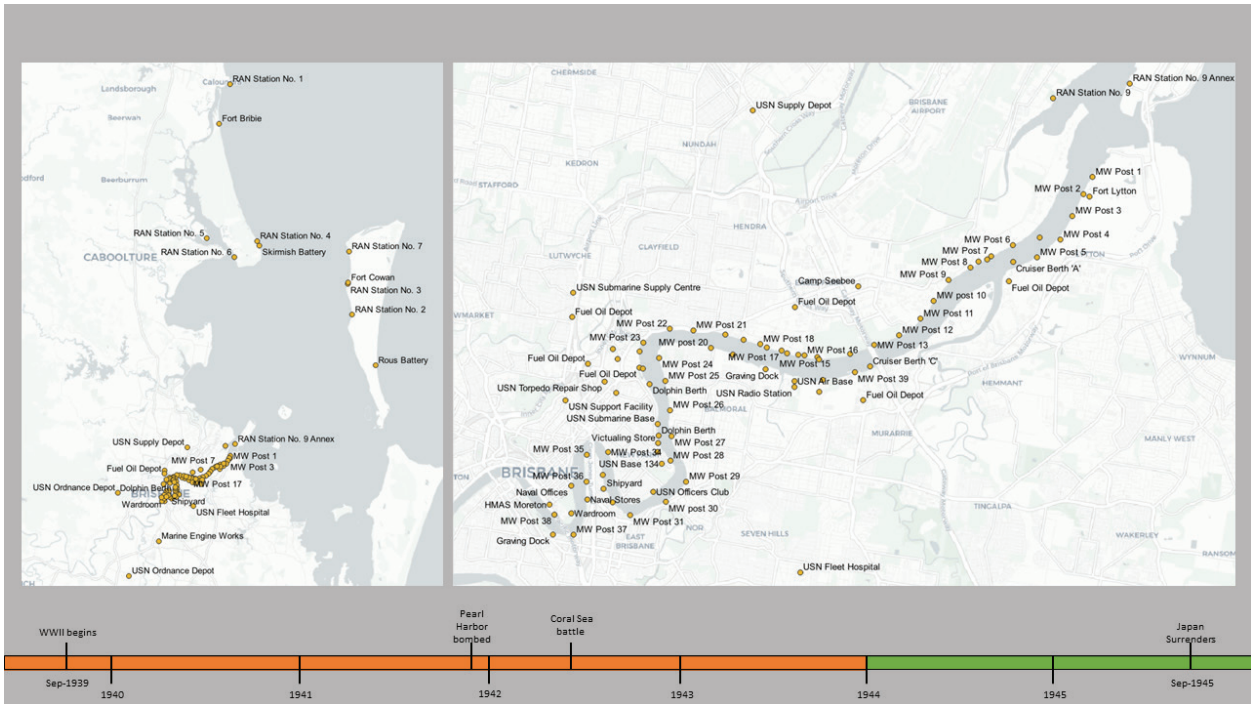


Figure 7. Maritime landscape in the Brisbane area used for defence purposes at the end of 1943.

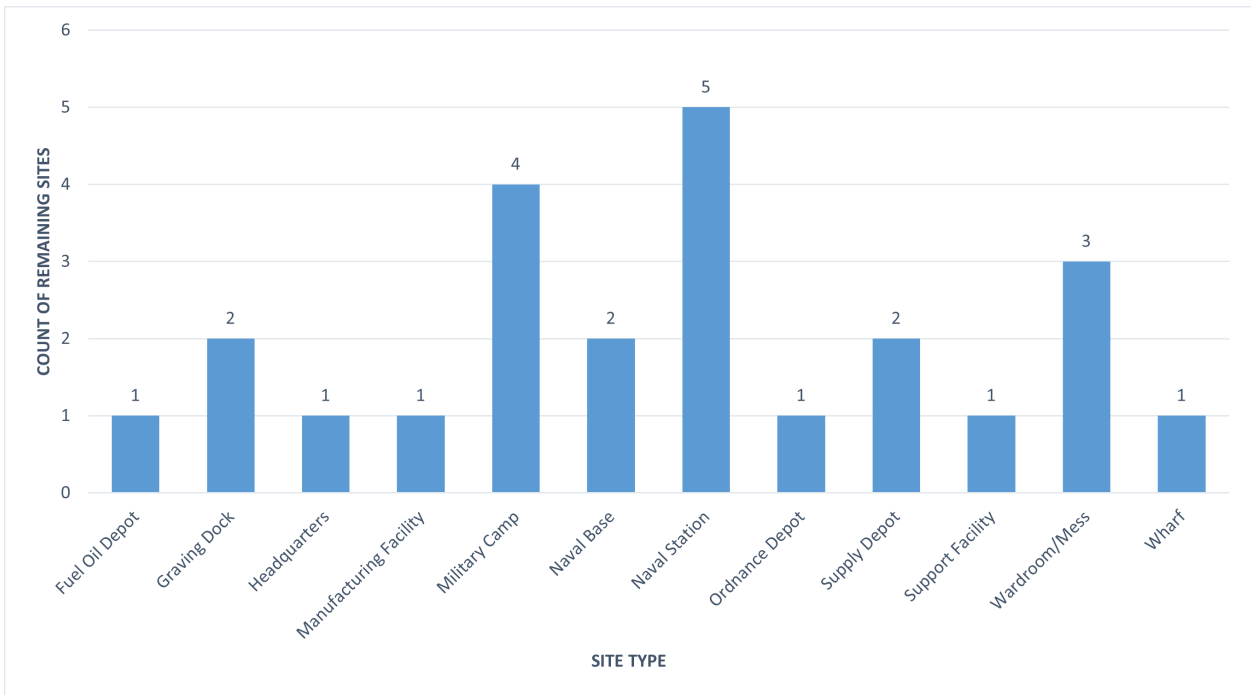


Figure 8. Count of the maritime defence sites used in WWII in the Brisbane area by site where some part of the site remains today.

an ordnance depot at Mt Cootha (NOCA, 1943–1949) and a fleet hospital at Camp Hill (DESQG, 2014d) (Figure 7). By June, extensive warehouses had been constructed at Northgate (DESQG, 2014) as well as other training, messing and support facilities. In just over one year that USN

had established a large footprint in Brisbane. The US Army had a maritime presence with the occupation and use of Brett’s (DESQG, 2014h) and Hamilton wharfs (NOCA, 1943–1947: 4) which were used for the transportation of personnel and equipment. RAN Station No. 2

an additional controlled mining and guard loop station was established by September of 1943 at Tangalooma on Moreton Island (Walding, 2008b), along with Boom defences in the Brisbane River, that involved RAN Stations No. 8, 9 and 10 (Walding, 2008a). An advanced Fairmile, RAN Station No.6 was also established on Bribie Island (Moreton Bay Regional Council, 2021). The need for further large berths and fuelling facilities was identified to support naval shipping, so a building programme was commenced that had largely been completed by August 1943 (War Cabinet Secretariat, 1942–1943). Ten Cruiser size dolphin berths were constructed with three fuelling berths. Each of the fuelling berths was supplied from two fuel oil storage facilities. The majority of the fuelling facilities were later sold to and used by industry after the war. A few of the fuel oil tanks are still in existence with most being replaced or removed. The majority of the berths have been removed and some have been replaced.

What remains

Seventy-seven years after WWII this maritime landscape has changed, with limited evidence remaining of many of the sites. Of the sites that still exist, there is limited visual indication of their heritage significance and often their connections and relationships to larger site complexes are obscure. Of the 107 maritime sites identified 44 have no remains, 39 it is unknown currently if there are any remains and 24 have known remains (Figure 8). Of these 24, nine were existing buildings or sites that were used for military purposes during WWII. Of the remaining 15, nine were concrete structures built on the beaches for Moreton Bay's defence and are in various states of decay or erosion. Of the remaining sites three were warehouses or large sheds that were sold and used by industry, such as the USN Supply Depot at Northgate, USN Camp Seabee at Eagle Farm used by the government for document storage, the marine engine works at Rocklea, now a construction training centre, and the USN officer's club at New Farm, which is now an events centre on the river. Recently the former USN Submarine Supply Depot at Windsor was still being used as an Officeworks. It has recently been knocked down by the Department of Education and tennis courts were installed.

DISCUSSION

From the limited analysis of the data at this early stage of the project, it appears that the defences for Moreton Bay and the Brisbane River were planned in anticipation of aggression from Japan and not in reaction to their entry into the war. This then provides some insight into the maturity of the Australian Government and defence thinking in the early part of WWII. However, this pre-planning contrasts with the majority of the maritime sites that were produced for the USN. The USN's move to Brisbane was a reaction to the loss of the Philippines bases and the advance of the Japanese into the SW Pacific.

A problem for a lot of the heritage that remained or remains is that the buildings were not elegant and their connection to the past was or is not obvious. Many of the buildings were constructed quickly and were designed to be functional as a result of necessity. However, given the longevity of some of these structures it is shown that they were well constructed, such as the storage sheds at Northgate, Eagle Farm, and Rocklea. However, their longevity is most likely a product of their continuing usefulness.

It is intended to conduct further research to determine which units and forces used or were associated with each site and to understand any command, organisational, spatial, and temporal relationship if any of the sites and facilities to each other. Further research will then be undertaken on selected sites or categories of sites to understand the historical narrative of the sites, including the physical description and identification of the groups associated with the site during World War II.

CONCLUSIONS

This paper presents the initial research related to the Brisbane maritime cultural landscape during WWII. It encompasses the archaeology subfields of conflict, historical and maritime archaeology. The initial research presented has been drawn from the data collected from the National Archives of Australia, Queensland WWII Historic Places website, Queensland Heritage Register, historical aerial photography and other available sources. The information was collated and analysed using GIS, which allowed for a visual understanding of the changes over time and the spatial relationship between sites. Some of the sites have known historical narratives but many do not and are indicative of limited archaeological research that

has been conducted on WWII sites in Brisbane, Queensland or Australia including no systematic study of the whole landscape, to understand what was and what remains.

ACKNOWLEDGMENTS

Professor Martin Gibbs, University of New England, Armidale for your advice and support.

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