

IN-HOUSE ARCHAEOLOGICAL AND ETHNOGRAPHIC RECONNAISSANCE SURVEY IN THE INTERIOR OF NGARDMAU STATE, PART ONE: ARCHAEOLOGICAL FINDINGS

The In-house Archaeological and Ethnographic Reconnaissance Survey in the Interior of Ngardmau State was conducted in early to mid 2012 to identify, evaluate and map historical and cultural resources in the interior of Ngardmau State in order to determine which areas should be the focus of more intensive investigation and prioritization for future research. The survey report consists of two parts. Part One contains the archaeological findings; Part Two contains the ethnographic findings.

Survey and Inventory and Project Review/Archaeology Section & Oral History and Ethnography Section, Bureau of Arts and Culture/Palau Historic Preservation Office, Republic of Palau

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Panorama photos from Ngerchelechuus, the highest elevation in Palau, located in Ngardmau.

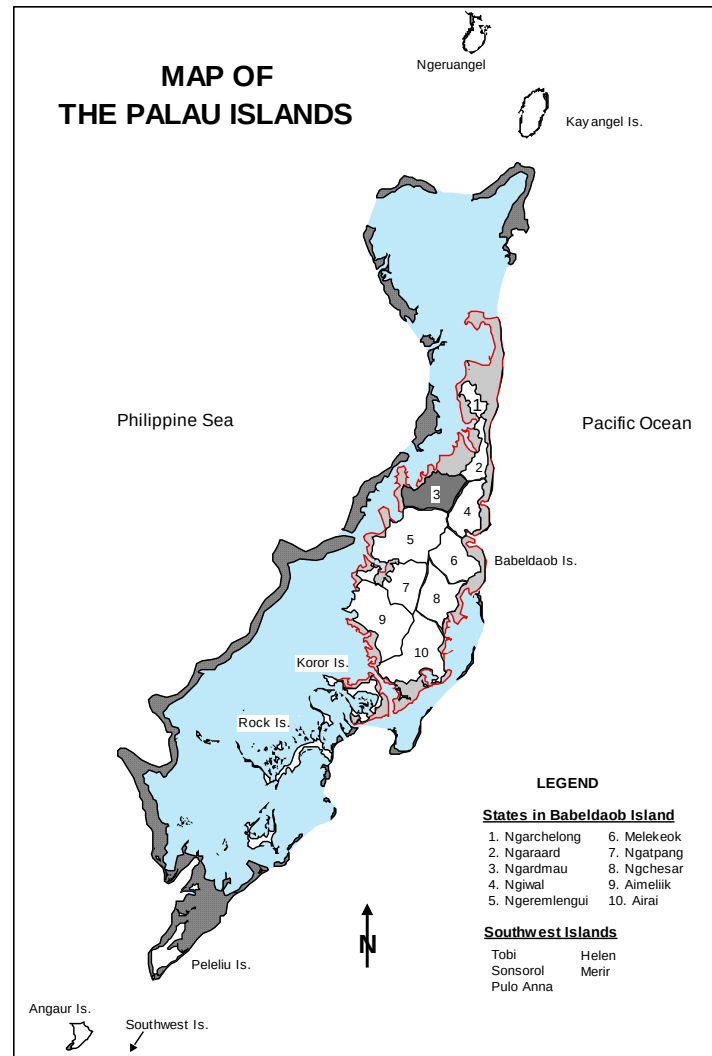


Figure 1: Map of Palau showing the ten states on Babeldaob. Ngardmau is highlighted.

MISSION STATEMENT

A Obis er a Ibetel a Cherechar a oureor el kirel a osebecheklel me a omengelueluel a uldedelid e mekreos el ibetel me a ngesechel a cherechar er a beluu er a Belau el melisiich, e meleketek, e omekeroul er chelecha el mo remedad.

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SOURCE: Kesolei & Associates. (n.d.). Bureau of Arts and Culture (BAC) integrated planning process 2006-2008 (draft). Manuscript on file at Bureau of Arts and Culture/Palau Historic Preservation Office.

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EXECUTIVE SUMMARY

With the completion of the Compact Road in the last decade interest in accessing and developing more land on Babeldaob is growing. In an effort to mitigate the effects of increased traffic and development on the cultural and historic resources of Palau's largest island, the Bureau of Arts and Culture/Palau Historic Preservation Office (BAC/HPO) has been conducting a state by state survey of cultural and historic sites. Those sites which were already known or previously recorded in fieldwork and publications have been identified and evaluated by the BAC/HPO in all 16 states, including the 10 states on Babeldaob. The BAC/HPO is currently investigating those areas within each state on Babeldaob where there has been no prior survey or investigation. These include the vast interior portions of each state comprised of numerous archaeological regions. This report contains the results of a reconnaissance survey conducted in Ngardmau State, on the western side of the island. The results of this survey confirm that there is a compelling need to conduct intensive level surveys of sites and features in the interior, undeveloped and largely uninhabited areas of Ngardmau. The survey also highlighted that these areas contain a number of unexpected hazards and other conditions that will need to be adequately addressed before such surveys can be safely undertaken.

Another consideration that needs to be factored into future archaeological surveys in Palau is the immensity of the land that comprises the interior portions of each state. The state interiors had previously been scheduled to be surveyed in their entirety on the order of one per year. This older schedule was overly ambitious and did not factor in several issues such as a practical amount of time to conduct the surveys, especially as the Republic of Palau is a young, developing nation and the expertise of the BAC/HPO archaeologist, ethnographer and historic preservation specialists must necessarily be divided between several types of historic preservation tasks, each imperative to saving the cultural and historic resources of the nation and Peoples of Palau. Therefore, three important contributions of the Ngardmau reconnaissance survey are: 1) the recommendation of a new survey schedule; 2) the prioritization of archaeological regions containing significant and/or threatened sites and oral histories; and 3) recommendations for how to plan and prepare for the safe conduct of surveys in these regions.

PROJECT OVERVIEW

Introduction

Title 19 of the Palau National Code (PNC) empowers the BAC/HPO to work toward preserving the historical and cultural heritage of the people of Palau. In order to accomplish this mission the BAC/HPO, through its five sections (Survey and Inventory and Project Review/Archaeology, Oral History and Ethnography, Palau Register, Public Education, and Administration) engages in projects designed to protect and preserve the tangible and intangible historical and cultural heritage through archaeology surveys and oral history collections, nomination of significant sites to the Palau Register of Historic Places, development and dissemination of educational materials to teachers, students and the public at large, and the ongoing development of a strong regulatory framework to protect these all too often fragile and vanishing properties.

To accomplish all of these goals, one of the main tasks of the BAC/HPO is to conduct a nationwide, state by state survey to collect information on all tangible and intangible sites, features, objects and/or areas and their associated ethnographic information in order to assist the BAC/HPO and the states with future

development goals. Specifically, PNC Title 19 requires that the BAC/HPO “develop a nationwide survey to identify documents and gather information on actual or potential historical sites, tangible or intangible cultural properties, and living national treasures... [§ 131 (d)].” Whether plans include construction, preservation or tourism, it is vital that this information is collected so that the Peoples of Palau can benefit from the most complete amount of knowledge prior to any work.

A systematic survey of the identified sites in each state was initiated by the Division of Cultural Affairs (the precursor to the BAC/HPO) in the 1980s and completed by the BAC/HPO in the 2000s. The last publication from this phase of the survey project was published in 2004. The second phase, the survey and inventory of previously unidentified or undocumented sites began around this time. To date, seven (7) of the states, Hatohobei, Kayangel, Melekeok, Ngaraard, Ngarchelong, Ngiwal, Sonsorol (in alphabetical order, see Appendix C) are considered completed. It should be noted, however, that this does **not** imply that the BAC/HPO considers every cultural or historical site in these states identified, or every oral history or life story collected. Within the parameters of the field

survey methodologies and technologies of the time, and given logistical and geographical considerations, as well as the availability of elders in the community to interview or who were willing to share information, there is still information that can and should continue to be collected as the BAC/HPO conducts its various activities. The finalization of the survey portion of fieldwork in each of these states only means that the first round of systematic investigation of sites and the collection of interviews has been completed, but further information will be collected as opportunity arises.

The goal to survey on a state-wide level, versus focusing on hamlets, archaeological regions, or another smaller geographical or regional subset, created some additional challenges for the office, but for the most part conducting surveys on such a large scale, where each state was essentially surveyed only twice, had been successful and was considered by the office to be key to defending against some of the more serious threats to Palauan heritage by development. However, recent proposed changes to the management of professional staff by the U.S. National Park Service (NPS), which has oversight over the Historic Preservation Fund (HPF) that funds the surveys, has

led to a reconsideration of the scope of the surveys, which may lead to a shift from conducting one state-wide survey a year to spreading the survey of a state across multiple years. This will mean each of the remaining four states on Babeldaob (Ngardmau, Ngaremlengui, Aimeliik and Airai. Ngchesar was surveyed in 2011-2012 and the final report was completed in 2012) will take numerous years to complete.

Challenges to the Ngardmau Survey

The original intent of the survey was to conduct an intensive level survey of the interior area of Ngardmau State and complete the survey for the state with a comprehensive report at the end of the year. The unsurveyed area of the state, according to the last in-house survey (Olsudong et al. 2003), totals approximately 28 square kilometers, or 89% of the total land area. The majority of this land would be considered part of the interior of Ngardmau. It might be perhaps an understatement to remark that the initial consideration of a comprehensive survey of this area in one year was an overly ambitious project. This was further compounded by the overwhelming workload in the office as this immense area was being attempted in a year when the BAC/HPO was

preparing to conduct three state-wide surveys (two intensive level and one reconnaissance level), instead of the one state survey that had been the norm before the loss of the National Archaeologist in 2009. The completion of three state surveys would normally not be attempted in one year, but the goal for the 2011-2012 field season was to bring the office up-to-date and in compliance with granting requirements. The total potential survey area of these three surveys was 123 square kilometers (15,197 hectares) or 37% of the total land mass of Babeldaob (Olsudong et al., 1998, 2001, 2003 and Palau Conservation Society website, accessed 21 Sept 2012).

In addition, a careful review of the project notifications for the past several state surveys revealed that the office had in fact been completing both a reconnaissance level survey AND an intensive level survey simultaneously. To continue such a survey style might have been possible with an all Palauan archaeological team, individuals who grew up in Palau and knew many of these areas and informants personally, but the addition of a non-Palauan as archaeologist, coupled with the extended absences of the two Palauan section staff (one was unavailable due to medical issues for three months and the other was

unavailable due to medical issues for most of the first half of the year), meant the archaeology surveys could not be conducted as efficiently as prior years.

This was compounded by the fact that two of the three surveys scheduled for the year, Ngchesar State and Ngardmau State, were planned and accepted as projects by the NPS, years before the new archaeologist began working in 2011¹, so the ability to change the survey to a more realistic schedule was difficult. The extension of these projects only to the end of the FY'11 fiscal year (October 1, 2011 – September 30, 2012) created an huge workload and the absence of the section staff for fieldwork between 25-50% of the time during this year left the burden of completing these projects solely to the new archaeologist, who also had the current fiscal year's survey project of Ngaremlengui State to complete.

Four additional complications during the 2011-2012 survey season led to revising the schedule to complete the Ngardmau State survey as a multi-step process. The first was the unfortunate passing of the High Chief of Ngardmau just before the survey was scheduled to commence. As a sign of respect, the

¹ Ngardmau was an FY'09 project and Ngchesar was an FY'10 project.

Governor's office asked us to postpone the survey until the necessary protocols were completed and the state closed its doors for survey for several months.

The second was the unforeseen material consequences of World War II, which has left a significant and largely unrecorded landscape of unexploded ordnance (UXO or ERW, explosive remnants of war) in many areas, most famously on the island of Peleliu, but also in large numbers in areas such as Ngardmau State, where the Japanese mined bauxite. The bauxite mines were a major target for bombing by the U.S. and were also heavily defended by the Japanese during World War II, specifically 1944 and 1945. The amount of UXO material in Ngardmau was unexpected. The dangerous nature of these materials was brought to the BAC/HPO survey team's attention by the UXO experts of Cleared Ground Demining who strongly recommended in verbal and written form (see Appendix D), that portions of Ngardmau be avoided until cleared of UXO and that other portions of the state be professionally surveyed for the presence of UXO prior to further investigation. The lack of full appreciation of the dangers to the survey team, coupled with a lack of knowledge as to the likely locations of these materials necessitated a revision of

the original survey methodology early on during the fieldwork.

The third complication resulted from an internal set of circumstances between the BAC/HPO and the NPS that led to a freezing of all funds to the office for three months during the time when the survey team was scheduled to conduct the Ngardmau survey. The frozen funds, which included salaries and benefits for six of the eleven staff as well as all project funds, meant that the office was unable to pay for guides, gas for transportation to the field, or any supplies. In addition, the remaining funds that were slated to be used for this project were unavailable by the time the survey could be restarted, so that by the time the funds were released by the NPS at the end of June, there was no money and no time left to complete any further surveying, even if areas had been identified which might be considered safe for investigation.

The final complication to the investigation, which was also exacerbated due to a lack of knowledge about the environment, were the risks from the bauxite test pits and other hazards in the forests and savannas. Bauxite test pits are placed randomly throughout Ngardmau. They can reach depths of over 8 meters,

have very small openings, and are often covered with brush, making them impossible to detect. There are also more modern hazards, such as hunter traps, where an old 55 gallon drum is buried in a path or trail up to the rim and filled with water or covered with brush. During this survey the archaeologist, following one of the local guides, slipped into one of these traps, fortunately without suffering any major injury.

As a result of the time and budget constraints mentioned above, and given the inherent dangers of traveling into undocumented areas with a large amount of potentially unstable UXO and other hazards along with guides who were not familiar with the unsurveyed areas, the survey team stopped the fieldwork portion of the survey after approximately two weeks in the field and concentrated on securing information through archival and other research and interviews with elders in the community. A request was made to the NPS to revise the original project to a reconnaissance level survey and work continued to produce this report.

The original survey design called for a reconnaissance and intensive level survey. As this was re-evaluated

the survey staff concluded that the only practical and responsible consideration was to separate the survey tasks into two distinct projects. The reconnaissance survey would be completed as this project and an intensive level survey of identified priority areas based on this report would follow in a future fiscal year. There was some debate as to the efficacy of this approach, since prior surveys had been successful as dual-level projects, but the challenges and findings of this survey unequivocally substantiate this as the only safe and practical approach to this and future surveys of the interior portions of states. Therefore, one of this survey's significant contributions is the recommendation to reorganize the current BAC/HPO survey schedule and process. The initial scope of work for this survey was divided into several components, each based on a number of considerations as to how to make all the surveys successful. Future survey designs will incorporate the lessons learned from this project to enable to staff to complete in-house surveys efficiently, effectively and safely.

Survey Boundaries

A reconnaissance level survey is designed to collect pertinent information in order to determine the best course of action for a possible intensive level survey.

The NPS defines archaeological reconnaissance and intensive level surveys as follows:

Reconnaissance Level Survey. Reconnaissance survey entails archival research and a field visit to determine the identity and location of resources present in an area. Such surveys should be designed so that a determination can be made from the results as to when it is worthwhile to obtain the additional level of documentation (through an Intensive Level Survey) necessary for a National Register nomination. (HPF Grants Manual, page 6-16)

Intensive Level Survey. Intensive level survey is the systematic, detailed field (and archival) inspection of an area designed to identify fully architectural, archeological, and historic properties; and calculated to produce a level of documentation sufficient, without any further data, to evaluate National Register eligibility. (HPF Grants Manual, page 6-15)

Intensive level surveys have been conducted in all the states which are considered completed in the formal survey process. The goal for this reconnaissance survey was to prepare a list of suspected sites and key priority areas which could be investigated in intensive level surveys at later dates and to establish recommendations of the necessary considerations for conducting the surveys efficiently, effectively, and safely.

According to the schedule developed by the BAC/HPO over previous years, the survey boundaries for the investigation of the unrecorded sites in any state began with an examination of the areas already surveyed in previous work. Any area not already recorded was considered part of the scope of work for the secondary-level investigation. Since many of the traditional Palauan villages and historic sites occur close to the shore and these are the areas most intensively surveyed in previous work the BAC/HPO considered the second phase of surveying largely an interior survey of each state, although in fact the survey area initially covered any unrecorded area regardless of its location.

Once the unrecorded areas were identified the next step was to determine which areas were likely to contain traditional or historic sites, and which areas may be considered inaccessible either due to the terrain or other factors which made it impossible to survey. For example, areas which are restricted such as watersheds or bird sanctuaries would be excluded from the survey area.

Table 1 lists the protected areas in Ngardmau. Survey in these areas might be curtailed or prohibited

depending on accessibility and information from the state office. Only Ngerchelechuus was in the immediate area in which fieldwork was conducted for this survey.

Table 1: List of protected areas in Ngardmau

Name	Ecosystems or species	Year established	Approximate Size (km ²)
Ngermasech Conservation Area	Mangrove, reef flat, seagrass bed	1998	2.93
Ileakelbeluu	Patch reef	2005	.62
Ngerchelechuus	Forest, Mountain vista	2005	.30
Ngardmau Waterfall (Taki)	Waterfall	2005	6.12

Table extracted from the Protected Areas in Palau listing by the Palau Conservation Society (PCS); not an official government listing. Sizes are approximate. (SOURCE: http://www.palauconservation.org/cms/images/stories/resources/pdfs/ProtectedAreas_PANSites_Nov2011.pdf, accessed 2 October 2012).

Figure 2 shows a map of the state of Ngardmau including those areas already surveyed (circled and shaded in purple). The map was created using Google Earth and overlaid with information from the GIS database that has been built up over time by the BAC/HPO. The white line roughly represents the state



Figure 2: Map of Ngardmau State showing previously surveyed areas.

boundary and the light yellow line is the Compact Road, which runs through all the states on Babeldaob. The initial areas under consideration for survey in Ngardmau were all those areas not in purple. The goal for this survey at first was to investigate the unsurveyed regions and identify areas of interest either using local guides from the state, hunters who were familiar with the interior, or elders who could

share stories of cultural and historic sites that had not yet been collected in previous research on Ngardmau.

Methodology

The initial methodology, when the survey was still being attempted as intensive level, was to go out to unsurveyed areas with local guides and cover as much ground as possible to record any features or sites that might be located. In the past the local guides have been experienced with the interior terrain of their state and have been able to direct the survey team to either locations they know of or have heard about, or likely areas of cultural or historic activity. However, the guides for Ngardmau, while enthusiastic and willing to proceed, were not very experienced navigating in the interior areas, so there was much discussion at the start of the fieldwork regarding what areas would be best to look at and where we might investigate.

After this factor was considered the survey team attempted to redesign the survey by choosing areas according to a predefined search pattern, where the team would go into an area based on an analysis of the map and record anything that could be found. This method is systematic but also more arbitrary and

probably would not have covered as much area as a survey of known locations or interior sections that were previously explored by guides or hunters. The use of a search pattern is a conventional practice in archaeology and would have served to provide the office with the requisite information it needed to complete the survey. The discovery of UXO material almost immediately into our survey halted the survey team's efforts to complete the survey in this manner since it became quickly apparent that there was a real danger to the team members who might encounter such materials in many parts of the state. The age of the materials adds to the complication of encountering UXO. At 70 years old and situated in a tropical climate, these UXO, which include grenades, incendiary devices and ammunition, have been assessed by the UXO experts of Cleared Ground Demining as highly unstable. There are reported cases of such explosives spontaneously self-combusting throughout the Republic of Palau. This additional factor meant that no amount of avoidance or preparation could fully mitigate the danger of the UXO.

Despite the short amount of time spent in the field the survey team did manage to record five sites, and

incorporate those sites into the BAC/HPO archaeological sites database. GPS and photos of all the sites were collected and the trench with two cave entrances found in one area was mapped.

HISTORIC AND ENVIRONMENTAL CONTEXT²

History and Traditional Position of Ngardmau

Ngardmau state is located on the west side of Babeldaob. It borders three other states, Ngaremlengui to the south, Ngiwal to the east and Ngaraard to the north. The polity of Ngardmau was once a part of Desbedall (the East Coast, in the federation of the other side of heaven under the oversight of Reklai of Melekeok). Today it belongs to Keiukl (the West Coast, in the federation of the other side of heaven under the oversight of the Ibedul of

Koror). Figure 3 shows a map with some of the place names mentioned in oral histories of Ngardmau.

The older name for Ngardmau is Ongedechuul (meaning one who is clever or ingenious). Some say that the reason it was called Ongedechuul is that the people who settled the various villages in Ngardmau came from very different places and yet they were clever enough to transcend their difference and work to become one polity. (Tellei, Basilius, and Rehuher 2005, p. 139)

During the Japanese era, Ngardmau was developed as an industrial center. The largest economic activity was the bauxite mining operations. A railway system facilitated transport of the bauxite ore from the mines in the hills to the coast for shipment. The Japanese also built a school for Palauan and Japanese children, a hospital, and a power plant to supply electricity to the various commercial and governmental enterprises. They also constructed roads, a dock, and housing units for the hundreds of Japanese who lived in the area.

During World War II, the Japanese military fortified Ngardmau. Gun emplacements, foxholes, and trenches were constructed and a camp was set up. Today the

² This section is extracted largely from the 2003 BAC/HPO publication, *Inventory of Cultural and Historical Sites and Oral History of Ngardmau State: Volume I: Inventory of Cultural and Historical Sites*, prepared by Rita Olsudong, Calvin T. Emesiochel, and Errolflynn T. Kloulechad [Olsudong et al. 2003], and from the 2005 publication *Palau Compact Road Archaeological Investigations, Babeldaob Island, Republic of Palau, Phase I: Intensive Archaeological Survey, Volume III: Oral History Documentation*, by Julita Tellei, Umai Basilius and Faustina K. Rehuher of the Palau Resource Institute, [Tellei, Basilius, and Rehuher 2005].

traditional village of Ngerutoi is riddled with foxholes³ and trenches because it served as a camp for the Japanese army in Ngardmau. During the war many villages moved to outlying areas like Ngertuker, Ngerchedach, Irur, Ngermasech, and Ngereklabong. (Tellei, Basilius, and Rehuher 2005, p. 141)

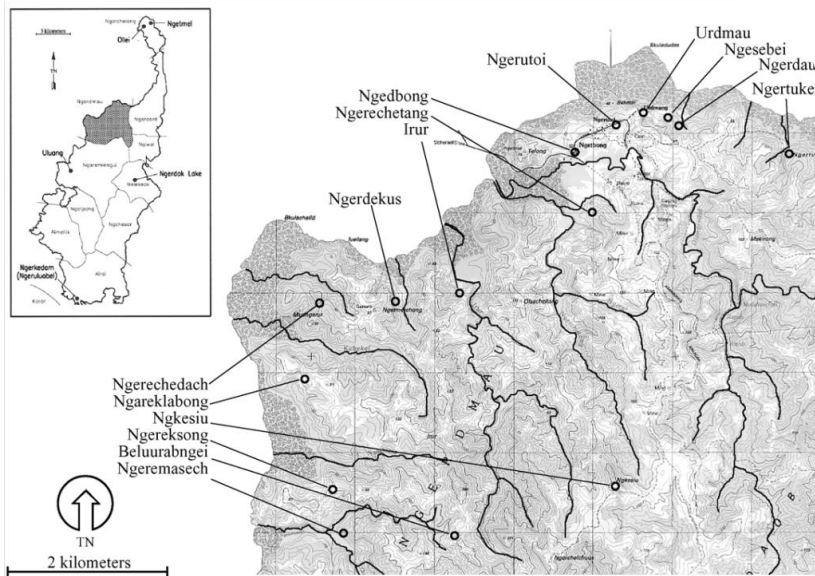


Figure 3: Location of place names mentioned in oral histories of Ngardmau, from Tellei, Basilius and Rehuher 2005: 140).

³ This term is used to describe holes either dug into the ground or in the hillside but these could possibly also be labeled *bōkūgō* (Japanese) or *bokungo* (Palauan), a shelter or air raid shelter which was something like a cave but might only fit one person.

Geography of Ngardmau

Ngardmau is situated on the central west coast and stretches east to Rael Kedam (the long ridge that bisects the island into east and west). It is approximately 35.17 square kilometers encompassing 31.64 square kilometers of land. The remaining 3.53 square kilometers is a string of thick mangrove along the west coast. The land is rugged with steep hill slopes that are deeply dissected by streams and rivers. The lowlands are usually forested and flat, but ridges are mainly covered with tall grasses and ferns. Today, residential areas are concentrated on a flat area near the west coast. Behind the coastal ridges are large, now bare terraced hills that were stripped during the bauxite mining operations of the Japanese era.

The rivers and streams flow from the interior and drain into the west coast including Diong er a Did, a river that runs westerly from the western slope of the high ridge which parallels the coast. Together with its tributaries it comprises one of the largest watersheds in Palau. The settlement of Ngardmau is located within the traditional villages of Urdmau, Ngerutoi and Ngetbong. Running through the main residential area in an east-west direction is a concrete road that branches south from the eastern side of the residential

area to Diong er a Did. Savanna areas around the settlement are being maintained as gardens. (Olsudong et al. 2003, pp. 5-7)

Previous Archaeological and Ethnographic Studies

Several archaeological and ethnographic studies have been conducted in Ngardmau State. The earliest maps of traditional villages (Ngetbong, Ngerutoi and Urdmau), were drawn in the early 1900s during the German ethnographic expedition under Augustin Krämer (1919). This collection also includes drawings of meeting houses and stone features. Osborne (1966) studied terrace systems at the northeast of the residential area of Ngardmau State. Van Tilburg (1991) identified one of the stone faces in Ngerutoi traditional village called Edub er a Ielech (part of B:NR-2:1 f3) in her work on monoliths in Palau. Hijikata (1995) also conducted a study on monoliths around Palau during the 1930s where he identified several stone features in Ngerutoi and Urdmau traditional villages.

In 1983 Snyder (1983) conducted a reconnaissance level survey and put several test pits around the residential areas and surrounding lands as part of the

work of the Historic Preservation Office during the Trust Territory (TTPI) Administration. This was followed in 1995 by a reconnaissance level survey, conducted by the Division of Cultural Affairs, of areas around the traditional villages Snyder did not survey (Blaiyok et al. 1995). Although both of these are identified as reconnaissance level surveys they do not strictly adhere to the definition of reconnaissance level and might instead be considered something in between reconnaissance and intensive level. The Blaiyok et al. report, for example, is only 39 pages, but contains 14 maps.

Liston (1996) monitored the trenching for the telecommunication line in the residential areas in the state and recorded subsurface deposits throughout the project area. During the archaeological survey for the Compact Road construction, which was finalized in a 13 volume report, several sites behind the residential area to the east were identified. Most of them related to bauxite mining (see for example Liston (2011) and also Olsudong et al. 2003, p. 7 and references).

The first intensive level survey was conducted by the BAC/HPO in 2002. A total of 69 sites were identified, including 14 traditional villages, 18 terraces, three

caves, one traditional dock, one historic dock, one taro patch, four stone features, 21 historic relics relating to the Japanese Administration, three World War II sites, and three areas containing scattered sherds. This survey focused on areas where sites were already known; those already identified by other researchers, published in articles or reports or through information collected in interviews with the local population. (Olsudong et al. 2003, p. 1)

Site Types and Site Numbering

The use of site types to record areas, features, sites or objects is an important component of archaeological data collection. Over the years the sites types list identifying Palauan traditional and historical sites has been developed with the help of many specialists. The following is the list of approved site types and definitions developed by the Palau Historic Preservation Office to identify sites located throughout the Republic of Palau. The definition is a description of the site type and does not include spatial limits or boundaries. Boundaries for each site type are determined on a site by site basis. This list should not be considered the final word on site types in Palau, it is continually refined and discussed, and site types can

be added at a later date. The list is in alphabetical order.

Site Type

Bathing Area

Definition

A bathing area typically identified with a stone platform adjacent to a stream.

Bathing Pool

A bathing area that is carefully shaped and paved.

Burial: *Historic*

A non-Palauan burial of an individual.

Burial: *Traditional*

A single burial of a Palauan, usually identified in at least one oral history. These do not include multiple burials, or burials associated with platforms (*odesongel*).

Cave Site: *Historic*

Cave that was used during the historic period, including those used in association with the Yapese stone quarry. Those used by the Japanese during World War II are listed as Historic Remains: WWII.

Cave Site: *Traditional*

Cave that was used by Palauans prior to the historic period.

Site Type	Definition	Site Type	Definition
Crown	Stand alone mound feature, not part of a terrace. Not all mounds are defined as crowns.	Scattered Artifacts	Artifact fragments.
		Scattered Sherds	Pottery fragments.
Dock: <i>Historic</i>	Dock constructed during one of the historic administrations in Palau (Spanish, German, Japanese, TTPI) to non-traditional specifications.	Shell Midden	Shell fragments found in a pile and associated with human activity.
		Stone Face	Monolith with one or more carved faces.
Dock: <i>Traditional</i>	Dock that is traditionally constructed of paved stone.	Stone Feature: <i>Traditional</i>	Stand alone stone artifacts such as resting platforms, monoliths, stone faces, etc.
Historic Remains: Administration	Material associated with one of the historic administrations in Palau (Spanish, German, Japanese, TTPI).	Stone Feature: <i>Historic</i>	Stand alone stone artifacts such as pottery kilns, cooking hearths, etc.
Historic Remains: WWII	Material associated with World War II (1939-1945), usually either Japanese or American in origin.	Taro Patch	Wetland area for growing taro.
Landmark	An area associated with a specific, significant event in Palauan history, usually without tangible remains.	Terrace Set	A complete set of terraces including a crown.
Monoliths	Upright stones, found singly or in groups.	Terraces	Earthworks created by notching existing ridge or hills to create a stepped hillside.

Site Type

Traditional Village

Definition

A complete stone work village containing stone paths which connect to all stone platforms, docks, as well as other stone features, i.e. resting platforms, bathing pool, etc. Only sites containing a noteworthy number of identifiable village features will be identified as a Traditional Village. Otherwise the site will be listed as a component of a traditional village (bathing pool, dock, etc.).

Trail

A path or series of connecting paths used by Palauans, typically found in the interior of Babeldaob. A trail may be slightly elevated from the surrounding area; it may be paved or lined with stone. It usually has multiple oral histories associated with the area and/or cannot be associated with one particular traditional village.

Site TypeUnderwater: *Historic***Definition**

Sites that can be found underwater, including shipwrecks and aircraft losses, dating to one of the historic administrations (Spanish, German, Japanese, TTPI). Underwater may also refer to sites which are only partially or periodically submerged.

Underwater:
Traditional

Sites that are traditionally made underwater or partially underwater, such as fish traps. Underwater may also refer to sites which are only partially or periodically submerged.

Water Well

Water well constructed using stone. Can be historic or traditional.

Each site documented within an archaeological survey receives a site number and site type designation. The name of the site, when known, is also included. In previous surveys investigators typically assigned their own numbering system to site and features. This has resulted in confusion when trying to compile or compare results of different archaeological studies. In

order to develop a uniform numbering arrangement an in-house system was developed in 1981 to organize a cataloging system. Cultural and historical sites are assigned numbers following the BAC site numbering system. Each site number is a four part code.

For example, the designation **B:NR-1:1** is identified as

B	Belau
NR	Ngardmau State
1	Urdmau Region
1	Urdmau Traditional Village

B is the designation for Belau (Palau) and represents any site in the Republic of Palau. The second designation (**NR**) is a two letter code for the state, the third is the number for the village or region within the state, and the fourth part is the number designating the site in the village or the region. A feature number for a feature inside the site is sometimes added as a fifth code, designated by the letter **f** followed by a number in the text.

Archaeological Regions of Ngardmau

For purposes of this survey the state is separated into archaeological regions. Archaeological regions are

generated using information from informants and the locations of sites. The boundaries for the regions are not fixed and can be altered based on the collection of new information. The boundaries between the regions are archaeological boundaries and not village boundaries, except for two areas in Ngardmau in which they overlap. The boundary between Urdmau and Ngerutoi regions is a stream called Ngechiul that flows down the ridge south into the residential area. The boundary between Ngerutoi and Ngetbong regions is a stream called Luutang.

Ngardmau is divided into 14 archaeological regions:

- B:NR-1 Urdmau
- B:NR-2 Ngerutoi
- B:NR-3 Ngetbong
- B:NR-4 Ongimii
- B:NR-5 Ngerchetang
- B:NR-6 Irur
- B:NR-7 Ngerdekus
- B:NR-8 Ngerchedach
- B:NR-9 Ngereksong
- B:NR-10 Ngermasech
- B:NR-11 Beluurebngei
- B:NR-12 Ngerchelechuus
- B:NR-13 Ngel
- B:NR-14 Olngebard

These archaeological regions, unlike the contemporary villages, comprise the entire land area of Ngardmau State. Archaeological regions were chosen instead of contemporary villages in order to account for all accessible land within each state boundary.

Figure 4 shows the map of Ngardmau, identifying each region and each set of inventoried sites within each region. The areas not highlighted represent the potential total survey area under initial consideration for this reconnaissance survey.

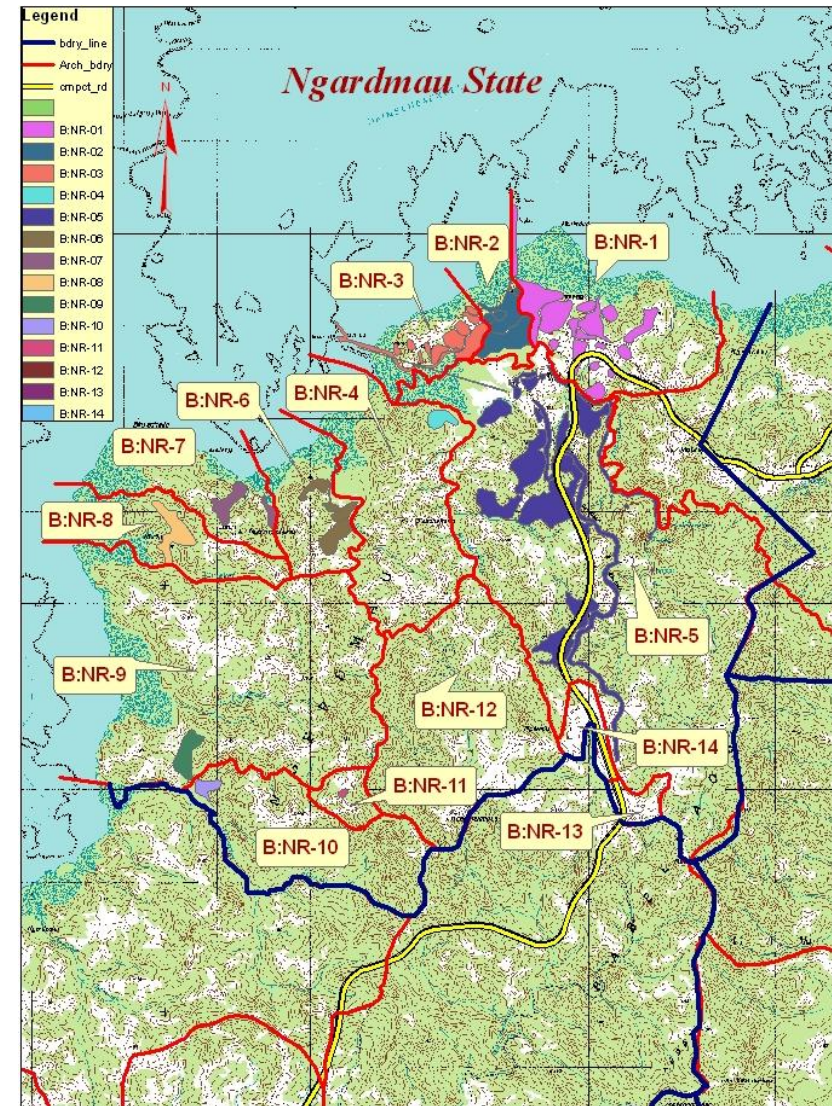


Figure 4: Map of Ngardmau State showing archaeological regions within the state, as well as previously recorded sites. Boundaries are relative to the archaeological regions and should be considered as applicable beyond their use as archaeological regions.

SURVEY RESULTS

Introduction

The Ngardmau survey was intended to begin in November 2011, as the first of two overdue surveys to be conducted after the hiring of an archaeologist to fill the position left vacant by the sudden and untimely passing of Rita Olsudong, National Archaeologist, in 2009. An archaeologist was hired and reported to work at the end of June 2011.

Unfortunately, just as the survey team was about to begin, the High Chief of Ngardmau, Beouch Sakaziro Demk, passed away. Protocol dictates an extended amount of mourning and events to commemorate such an important and high status figure and the state requested that the BAC/HPO postpone the survey until they were able to accommodate our request for guides and other assistance. With the added volume of work to be completed during this fiscal year due to a two year delay conducting in-house surveys, the survey team decided to begin the survey of Ngchesar, one of three surveys the section needed to complete by September 2012. After the survey of Ngchesar was completed, the survey team returned to Ngardmau and initiated fieldwork in April 2012.

Previous surveys of the interior areas of states have involved intensive surveys using local guides to assist the section with locating sites and negotiating the dense jungles, overgrown savannas and winding rivers. Although most of the section staff engaged in surveying is Palauan and can be said to be experienced with hiking and maneuvering through the terrains on Babeldaob, it is important to have guides from each state who are experienced in their own unique environment to assist the survey team. This is also considered culturally appropriate, an essential component of any survey conducted by the office. Only Palauans from that state can speak for that state (see Asang 2004, p. 105 or Kesolei 1977). Further, their involvement provides pathways into the community as it is important within the Palauan cultural context that people or efforts have an understood local identity (see Smith 1978).

Our guides for this project were very supportive, eager to guide and contribute, and were knowledgeable in many ways. However, they did not have a solid understanding about the unsurveyed sites in the state, particularly within the interior regions. This became evident early on so the survey team was left with attempting to use some type of systematic search

pattern to look for sites. Such a systematic search pattern is only viable when the surveyors are experienced hikers who know how to negotiate the difficult terrain. For various reasons throughout the survey there was only one BAC/HPO staff member out of two from the section available to go with the archaeologist, who was new to Palau and not an experienced hiker in its terrain. For a period of time during the survey period both staff members were unavailable. These ongoing absences created a deficiency in the team. The survey team had planned to make up for this deficiency with guides who would be able to navigate through the area, but the guides, while enthusiastic, were inexperienced with both the interior regions and the ability to guide others through the terrain. The survey team was considering its options as it tried to choose areas to survey, but as the events mentioned previously unfolded it became apparent that the team was not going to be able to continue the survey beyond the few days it was able to get into the field (see Figure 8 at the end of this section for some examples of the hazards encountered during the survey).

The survey team still managed to survey a few significant areas and these are identified in Figure 5. Several of the sites

identified by the team are in association with previously recorded sites but the team was able to record one or two areas that suggest some very significant and intriguing finds might await the BAC/HPO survey team when it will be able to conduct more thorough intensive level surveys of the state.

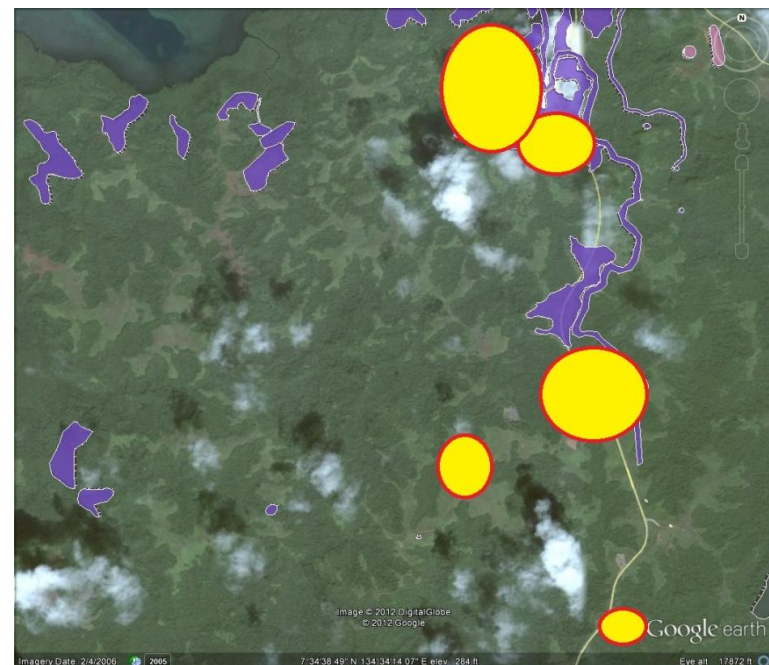


Figure 5: Map of Ngardmau showing previous surveyed areas (in purple) and general areas surveyed during this survey (in yellow). Note there is some area overlap between the two surveys.

Findings

The areas surveyed for this report are found in three archaeological regions, B:NR-5 (Ngerchetang), B:NR-12 (Ngerchelechuus), and B:NR-14 (Olngebard). Four sites were recorded and identified as new sites. One of the four sites is adjacent to a previously recorded site which is now on the Palau Register of Historic Places. One additional site was recorded but its location is currently undetermined due to separate boundary claims by neighboring states. That location is identified without a site number after the others. The list of findings is organized by archaeological region. The description of each region is derived from the descriptions found in the BAC report, *Inventory of Cultural and Historical Sites and Oral History of Ngardmau State: Volume I: Inventory of Cultural and Historical Sites*, prepared by Rita Olsudong, Calvin T. Emesiochel, and Errolflynn T. Kloulechad (2003). Further information concerning the sites already identified in this region can be found in that report.

Representative photographs are included and some additional photographs can be found in Appendix B at the end of this report. GPS coordinates were taken for most recorded material through the tagging of all photos with the location data. Some were also measured using a Garmin hand held GPS unit.

Ngerchetang Region (B:NR-5)

This region occupies the east central part of the state between the two major rivers, Diong er a Did to the north and east and Ngerchetang River to the west, and goes south to Rael Kedam. The area is mostly high hills with dense forests and savannas that dot several areas throughout the region. This region contains 19 previously recorded archaeological sites. Most of the sites are related to the bauxite mining during the Japanese era.

Site Number: B:NR-5:21

Site Name: Historic Site

Site Type: Historic Remains

This site is adjacent to B:NR-5:9, which is a bauxite mine strip and was previously identified in Snyder (1983). The site was reexamined and expanded during the 2002 BAC/HPO survey (Olsudong et al., 2003). The remains of the bauxite strip mining, including some of the equipment used to haul and transport the bauxite, are still in this area.

During the current survey this area, down slope from B:NR-5:9 was investigated. The survey team found

evidence of bivouac habitation, with scattered cooking implements and storage drums.

At least one item of unexploded ordnance (UXO), a canister that was suspected to contain 30 pounds of incendiary material (based on similar information provided by Cleared Ground Demining while investigating another area during this survey) was located at this site, and several more appeared to be partially buried and/or hidden under leaves. As soon as the first UXO object was located the survey team left the site and aborted further survey in the area.

B:NR-5:9 is on the Palau Register of Historic Sites and this entire area is considered significant for its association with the bauxite mining during the Japanese administration.

Site Number: B:NR-5:22

Site Name: Cave Site

Site Type: Historic Remains

This site is also adjacent to two other recorded sites, B:NR-5:8 and B:NR-5:15. Both sites are part of the bauxite strip mining operation by the Japanese during their administration of the islands.

The survey team recorded two caves, each with two entrances, and evidence of habitation (cooking drums, bottles, etc.). There was also a pile of ceramic insulators of the type known to be used by the Japanese for the electrical wiring that criss-crosses the entire island. The area is down slope from the two adjacent sites. Based on the location and features this has been classified as a new site. The caves and makeshift cooking implements suggest this was used during the war when the area was fortified and defended by the Japanese.

[Ngerchelechuus Region \(B:NR-12\)](#)

The region occupies the south central part of the state and is east of the Beluurebngai region (B:NR-11). The highest point in Palau, known as Ngerchelechuus, occupies the southern part of the region. Most of the area is rugged with high hills that are bisected by streams and covered with forest and a few savannas on the ridge tops. Only one site was previously recorded in the region.

Site Number: B:NR-12:2

Site Name: Bauxite Test Pits

Site Type: Historic Remains

The area is a savanna that leads down slope off the west side of the road to Ngerchelechuus. There are two bauxite test pits hidden in the savanna. One was filled with water and we could not determine the exact depth or measurements. The second one measured 130cm x 60cm and was 320cm deep (Figure 6). Based on the lack of information about this region at present, and the location of the test pits we have chosen to classify this area as a distinct site.

Figure 6:
Ngirachewes
Aderkeroi of
Ngardmau State
and Calvin
Emesiochel of the
BAC measure a
bauxite test pit at
B:NR-12:2.



Olgebard Region (B:NR-14)

This region is a savanna called Olgebard which is the northern part of the ridge system that Ngel Region (B:NR-13) occupies and continues north to a high hill before it turns southwest following the dirt road to

Ngerchelechuus for several meters before it ends at the southeast corner of Ngerchelechuus Region (B:NR-12). The entire site in 2002 was overgrown with *itouch* (*Gleichenia linearis*) and shrubs. One site was identified in this region that has since been listed on the Palau Registrar of Historic Places.

Site Number: B:NR-14:2

Site Name: Historic Site

Site Type: Historic Remains

This site is adjacent to the first site recorded in this region (B:NR-14:1), which is a unique stone platform (*iliud*). This site contains several bauxite pits and a defensive feature that looks similar to anti-aircraft gun emplacements elsewhere on the island. The area is directly across from B:NR-5:9, the bauxite mine strip, but there is no record that these features were ever surveyed. Based on the significance of the traditional Palauan site (B:NR-14:1), and its acceptance to the Palau Register of Historic Places, it was decided not to expand the area of that site to include these historic features. This area is instead classified as a new site.

Unidentified Region

This area is located in an area with separate boundary claims by neighboring states, and is receiving a temporary designation until the dispute can be settled.

Site Number: 2012-T1

Site Name: Historic Site

Site Type: Historic Remains

This area contains a large collection of assorted sites, features and artifacts that make it difficult to define beyond a general descriptor. There is a large cave with two entrances and a large trench dug to hide and/or protect the entrances, a smaller cave where the entrance is collapsed, a number of foxholes that are shaped like bauxite test pits but are not deep enough to qualify as test pits, and are located in close proximity to the caves, an extended stone path that branches off in several directions and is of unusual construction for either traditional Palauan or Japanese era road building, and an extensive collection of UXO in various forms and varying degrees of decay.

The large cave is dug out of the earth and is similar in construction to many other Japanese built caves from the World War II era. Based on this and on the large amount of UXO and other defensive/offensive features surrounding the site we have chosen to classify it as a Japanese cave (Figure 7). There is a path leading 3.75m from the adjacent dirt road/path into the trench that divides into a 'U' shape and marks the entrances to the cave. One entrance measures 1.4m high by 0.8m wide. The interior depth of the cave was measured at 5.43m before hitting the collapsed portion the blocked further access into the cave. The other entrance is partially collapsed but measures 1.87m high by 0.97m wide. The inside depth was measured to 1.87m until the collapsed portion. The depth of the trench to the two entrances measures 2.3m and the width measured between 0.7m and 0.8m. The distance between the two entrances is 3.6m. It is highly likely that both entrances were for one large cave but it was not possible to confirm this. The smaller cave nearby is completely collapsed at the entrance and was not measured.

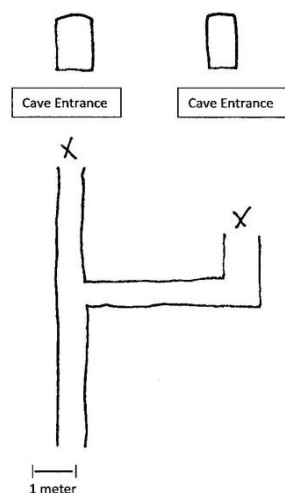


Figure 7: Rough sketch of trench to cave showing both entrances (X) and the relative size of each.

the bauxite mining it is probable that this equipment would have been used to create shallower pits for individuals to use for protection. Eight of these holes were recorded at this site, six near the caves and two directly off the stone path in the area. They measured as follows:

The foxholes were initially identified by the local team members as bauxite test pits, given their rectangular shape. However, the number of these holes recorded, their proximity to the caves and trails, and the relative shallowness of every hole led us to reconsider their use and reclassify them as foxholes. The technique to create test pits is presumably equally effective when digging foxholes, and if the equipment was already available in the area due to

Length(cm)	Width(cm)	Depth(cm)
120	57	85
150	70	80
125	65	66
180	70	45*
145	80	70
150	75	75
191	60	64
110	76	102

*Indicates no longer intact or partially collapsed.

The stone path was approximately 0.7cm wide and extended away from the caves in several directions. Historic bottle fragments were found in association with the path, as were the latter two foxholes in the table above, and a tunnel/trench which was partially collapsed and not measured. We were unable to follow the path completely so it is unclear what it might be meant to connect or go to but the team agreed that it was very unusual and unlike stone paths that have been recorded as traditional Palauan or Japanese era. The width is not large enough for vehicles and is also too narrow to be considered a Palauan design.

Finally, there is an extensive collection of unexploded ordnance of varying types and levels of decay. In one area near the large cave there were between 10-12 large canisters that were later identified by Steve

Ballinger of Cleared Ground Demining as containing 30 pounds of incendiary explosives each (Figure 9). There was also unused and spent ammunition and a cluster of live grenades of the type used by the Japanese during World War II. The discovery of this much ordnance led the survey team initially to stop the survey and leave the area. The team returned a few weeks later with Cleared Ground to get an assessment of the material (see Appendix D).



Figure 8: Examples of the hazards found in the field. Left, an incendiary device; Below left, drum buried in the path; Below, bauxite test pit.



Figure 9: Examples of the incendiary devices and other UXO found at one site in Ngardmau. The ammunition in the photo below is circled.



RECOMMENDATIONS

Introduction

Due to a variety of unanticipated and unavoidable obstacles the survey was not as comprehensive as initially envisioned when it was conceived as a reconnaissance and intensive level survey. However, even after redesigning the Ngardmau State survey to solely reconnaissance level, there are numerous significant contributions that resulted from the research and fieldwork conducted during this reconnaissance survey.

Despite the truncated nature of this survey it is evident that there remains great potential for the discovery and identification of both traditional and historic sites within the undocumented areas of Ngardmau's interior. Based on the experiences from this survey and evidence from other interior areas around Babeldaob **we strongly recommend that a series of intensive level surveys be the next steps to documenting the cultural and historic heritage of Ngardmau.** This information will be incorporated into the ongoing state by state survey project that is of primary importance to the Republic of Palau.

A Research Design for the Babeldaob Interior [The Interior Landscape](#)

Each state on Babeldaob has its own unique landscape and Ngardmau is no exception. With most of the population of Palau currently residing in Koror, or in villages near the coast in each state, and with much of the interior of Babeldaob uninhabited and unused except for the occasional hunters, the opportunity to develop a comprehensive understanding of this large and culturally significant area has led the archaeology and oral history/ethnography sections of the BAC/HPO to begin formalizing a research design that can be used to investigate and interpret the sites and features that are likely to be found in the unsurveyed areas in the interior of each state. This will involve extensive development of an understanding of the Palauan view of the Babeldaob interior within Palauan cosmology (see Kloulubak et al. 2012, the Ngchesar oral history state survey report).

Perhaps the only advantage to conducting three state surveys in a year, which covered nearly 40% of Babeldaob, is that it gave the archaeology and oral history/ethnography survey teams the opportunity to visualize across a broader landscape, allowing them to consider cross-boundary sites, features and histories

rather than the typical delimiting boundaries of state borders that focus the attention inward. This is particularly significant given the extensive oral histories that explain much of Palauan traditional culture, but can be difficult to interpret when examining sites that appear to archaeologists to pre-date the traditional villages, such as the extensive terrace system that covers at least 20% of the interior of Babeldaob (Liston 2009). One such series of sites, the trail systems that criss-cross the island and have likely been used for thousands of years has not been adequately investigated in either the archaeological or ethnographic literature. It is one feature of the interior landscape that is recommended for further investigation in an intensive level survey of Ngardmau, as well throughout all future studies of the Babeldaob interior.

Trail Systems

One aspect of the interior landscape that has not been well-documented is the system of trails that cover the area. While many of these trails can be traced to traditional villages, the trails in the interior are also referenced in multiple oral histories spanning many generations. The trails also allow for movement of people across state boundaries, a concept that invites

additional speculation on the nature of the trails in the interior of Babeldaob, their age and development.

With ten states comprising the whole of Babeldaob it is easy to compartmentalize the area into smaller sections and ignore the interconnectedness of the geography, particularly when considering the interior. Rael Kedam, the ridge that runs along the central part of the island and separates the eastern and western portions is a key element to the identification of boundaries within Palauan society. This long ridge cuts through Babeldaob from Ngardmau to Airai and is linked to migration patterns in oral history (see Blaiyok et al. 1995 for example), yet little has been done in archaeological research to understand the ridge and the trails that are on or connected to it beyond what is documented during the state surveys. Figure 10 shows the location of the ridge on Babeldaob.

The interpretation of trails in research on Palau has been explored in only a few publications, but those publications indicate there is significant potential to pursue a more intensive investigation of this type of site. For example Parmentier likened paths [trails] through the forests with social paths that are used to

navigate Palauan social interaction (1987:114), and used the spatial organization of paths to further explain how Palauans interpret their social environment. Describing paths at Imeong in Ngaremlengui he writes, “[t]hese footpaths across hillsides and along riverbanks are the source of conceptual paths linking the villages of Ngeremlengui [sic] to the capital at Imeiong [sic].” (Parmentier 1987:207).

The identification of the Ngchesar Trail (B:NC-1:17) as unique in terms of the number of histories associated with it and its potential age suggests that further investigation of trails in the interior of other states such as Ngardmau, and the interconnectedness of these trails using oral histories and archaeological investigation would also be a worthwhile research endeavor. Tellei, Basilius and Rehuher (2005) include in their brief discussion of the Ngchesar Trail a description of the trail and the larger trail system being used by both the “hunters and warriors of the village or Ngersuul” and the “villagers of the polity of Ngchesar when traveling to villages along the central west coast of Babeldaob.” (Tellei, Basilius and Rehuher 2005:72). For the most part, however, the locations, histories and interconnectedness of trails, in particular

trails in the interior of Babeldaob, have not been systematically investigated.

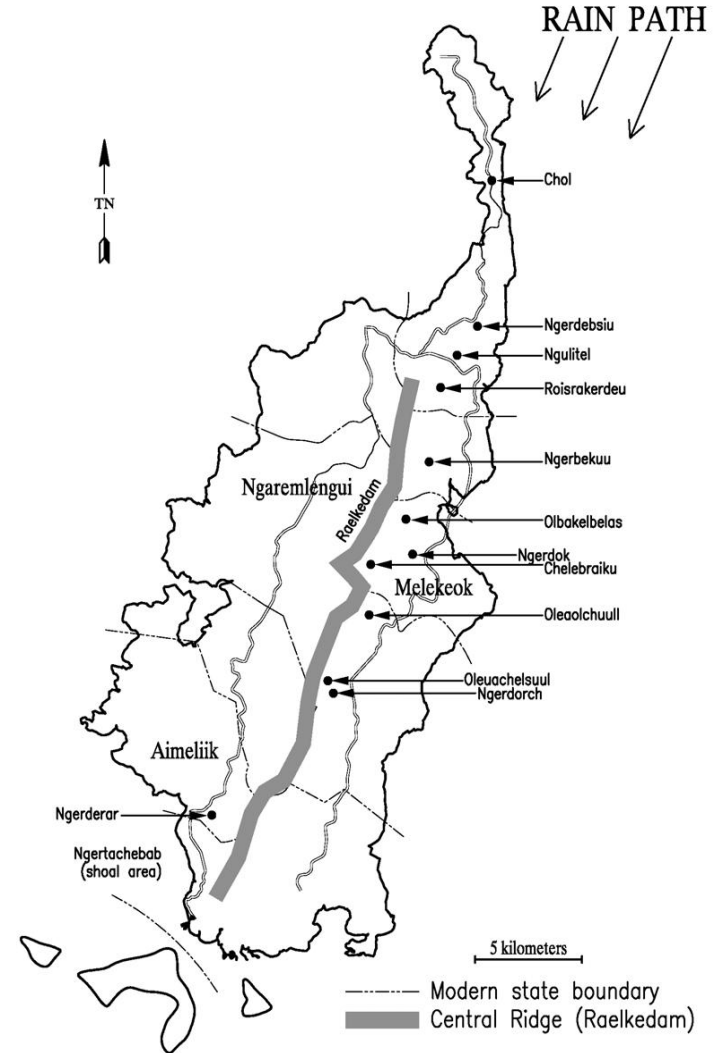
This is also supported by the identification of an unusual trail in the as yet undetermined region of Ngardmau. The trail there, measuring roughly 0.7cm wide and lined at least partially with stone is of a size and construction that is uncommon in Palau. The trail led off in several directions but the survey team was unable to follow any part of it since it was also in close association with a large cache of UXO material and the team left the area to avoid further contact with this material. It is likely this trail is related to the Japanese era materials found in close proximity, but the area needs more documentation before this can be determined. The trail may continue through regions 12, 13 and/or 14 and possibly outside the boundaries of Ngardmau State.

Trail systems can also be a useful starting point for developing a research design of intensive level surveying in areas where potential hazards such as those found in Ngardmau are evident. Hunters from all the states often use the old trails and portions of the old Japanese road system as they wind their way around the interior. Following the trails with a guide

who is experienced using them may curtail the risks in the interior and allow the survey team the opportunity to explore the trail system/s, as well as areas adjacent to the trails that may yield valuable information. Even this type of surveying is recommended only with a UXO specialist, but the foundation for conducting a survey that focuses on the trails can be developed by conducting interviews with Elders, hunters, and others who have been to the trails and/or know their histories.

Kloulubak and Marsh (2012) began to collect information concerning the trails in Ngardmau and Part II of this report contains the results of their interviews and research. Further development of an interior research design is recommended before intensive level investigation begins.

Figure 10. Map showing location of Rael Kedam on Babeldaob. From Tellei, Basilius and Rehuher 2005, p. 21.



Future Surveys in Ngardmau State

In addition to the potential research design outlined above there are several other recommendations the archaeology section strongly encourages be considered prior to the start of any future fieldwork.

Survey Schedule

Prioritization of Ngardmau archaeology regions based on the development of an interior landscape concept, and the utilization of extant trails or trail systems, coupled with the realities of living in a nation with an extensive amount of hazardous materials from World War II means the creation of a survey schedule that meets the goals of any future research design in a safe and effective manner is paramount. The focus for the fieldwork for this survey was archaeological regions 12, 13 and 14 (see Figure 11). The trail or path identified in the unidentified region is roughly in this area and so it is recommended that an intensive level survey of this area is a priority for Ngardmau State. However, the creation of a realistic survey schedule must fall within the parameters of the following safety issues that can be found in Ngardmau, and are likely to be found in other states as well as the survey continues within the interior of Babeldaob. Grant and program managers need to consider the following

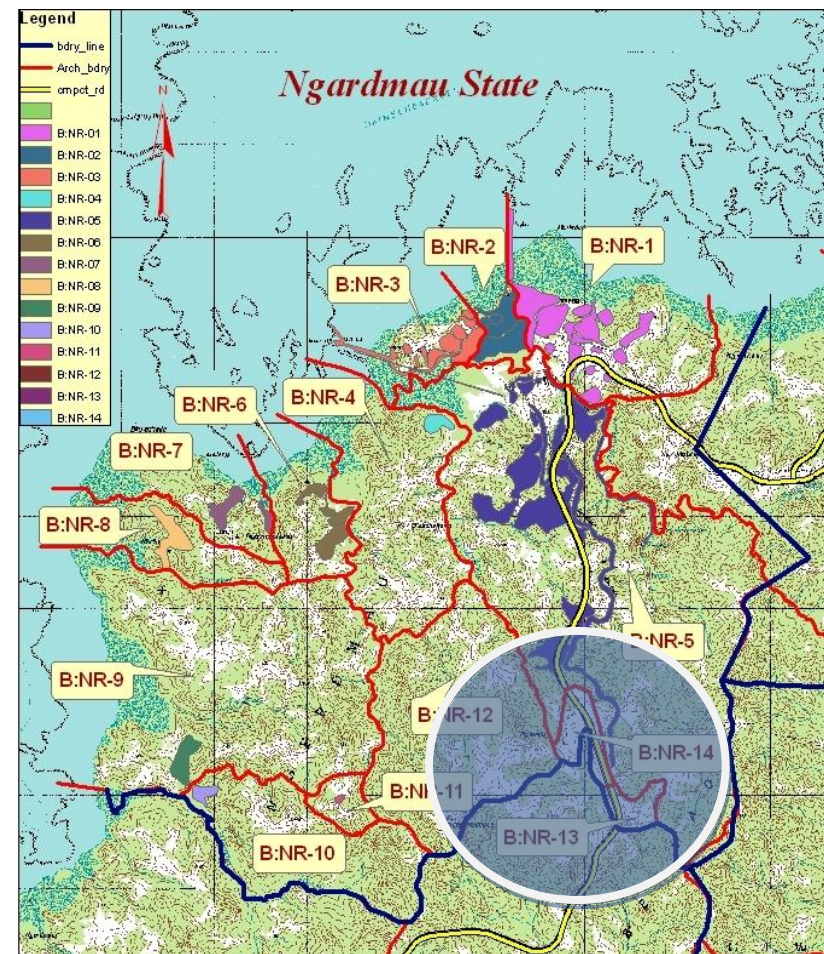


Figure 11: Map of Ngardmau State showing the approximate area where additional fieldwork is recommended as the next phase of the survey.

issues to ensure that the safety of the survey team is addressed, and that the optimal amount of terrain can be covered given the ever present time and budget constraints of doing intensive level survey work.

Safety Issues: UXO (Unexploded Ordnance)

Ngardmau was bombed by the Americans during World War II, and was also heavily defended by the Japanese. As such the possibility of chance encounters with UXO anywhere in the state is arguably much higher than other states. For example, during the survey conducted in Ngchesar immediately prior to this survey, virtually no ordnance of any kind was discovered, even in areas known to be in use during the War.

After the conclusion of the fieldwork the BAC obtained a copy of the draft ordnance and explosives removal for the Compact Road project, which is a narrow corridor within all the states through which it passes. According to this report, 619 items of ordnance, including fuses, hand grenades and a 50 kg Japanese bomb were identified in “Package C” which includes Ngardmau and a portion of Ngaremlengui (n/a 2006, p. 49).

Recommendation: Any area which is under consideration by the survey team to investigate should either be first cleared of UXO, or individuals with a specialization in the detection and clearance of UXO should be contracted and allowed to accompany the survey team to alert them of potential hazards. Cleared Ground Demining, for example, a not for profit NGO originating in the United Kingdom, has done considerable clearing in the Republic of Palau since 2009 has been very effective in assisting archaeologists in the past with their survey needs, so there is already precedent in Palau to incorporate some type of UXO assessment into archaeological surveying.

Safety Issues: Bauxite Test Pits

The presence of bauxite and bauxite mining means that there are bauxite test pits dotting the landscape. These test pits are very randomly distributed and often impossible to see until one is literally on top of them. To fall into such a pit, that may be 3 meters or more deep, as was encountered during this survey, could result in serious injury. The survey team encountered test pits even in areas which were not ultimately mined so there is no way to ascertain in advance where these pits may be found. (Figure 12).

Recommendation: A request to the state government for guides has always been an important component to conduct the archaeological survey. It is recommended, however, that this request now be improved by respectfully requesting guides with experience with the interior area, and also with guiding people through difficult terrain, or, if such guides are not available during the time scheduled for the survey, a request could be made to invite an experienced guide from another state to assist with the survey.

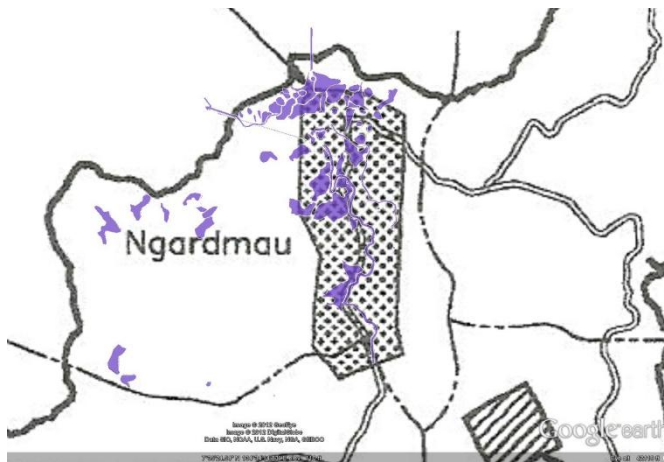


Figure 12. Map of Ngardmau showing bauxite test pit and sites recorded in the 2003 survey. Map from Tellei, Basilius and Rehuher 2005: 31, sites overlaid using Google earth.

Safety Issues: Topography

A very real challenge to completing any survey of the interior is the topography, and the need for experienced guides to safely and efficiently navigate through the dense forests and savannas that define these regions. While it is certainly possible to investigate the interior of Babeldaob without guides, it can severely curtail the amount of time that can be spent surveying, since much of the day would be spent navigating into and out of the regions without getting lost or stuck in an inaccessible area. Experience has shown that a knowledgeable guide who can find the hunting trails, or negotiate an easier way back to the Compact Road near where the vehicle was parked is far more efficient than finding oneself miles from the car, or stuck in a swamp and having to climb out to reach an exit point. All of this limits the amount of area that can be effectively surveyed.

Recommendation: Again, the need for experienced guides in the interior is of paramount importance for the safe and successful completion of any survey and the BAC/HPO should work with the state to ensure that knowledgeable guides are available during the fieldwork portion of the survey.

Draft Reports

Palau is a thoughtful nation and the loss of the development and review of a draft report in the year prior to the submission of a final report, one of the decisions made by the U.S. grant oversight agency this year, reduces the amount of time Elders, Chiefs, government officials and others can digest and consider the information in the archaeological inventories. For a reconnaissance survey such as this perhaps such extended review is not necessary, but the intensive level surveys need to be produced in such a way that the people who need the information the most, and are the most affected by it, are allowed the time to reflect on what new information to the inventory, and possibly new sites for the Palau Register of Historic Places, will mean for their future. The typing of sites within archaeology is an inexact science, and many sites found in Palau do not fit into a well-defined typology, nor are sites interpreted in the same manner by locals and archaeologists. There needs to be some balance that considers the needs of the granting agency and the collection of information for the inventory of sites in Palau with the needs of the communities and the people who live there.

Recommendation: The BAC/HPO and the NPS should develop a project review timeline that takes into consideration the realities of the fiscal years and granting requirements with the need to respond in a culturally appropriate manner to the amount of time it should take to review significant reports or products that concern the cultural, historical and archaeological heritage of the Republic of Palau.

Palau Register of Historic Places

A main goal of the inventory of cultural and historic sites is the addition of new sites to the Palau Register of Historic Places. The information collected during archaeological and ethnographic fieldwork is a key component to identifying potential new sites for inclusion to the register. Appendix A lists the sites currently on the Palau Register of Historic Places as of September 2012.

Eligibility for the Palau Register of Historic Places requires that the following conditions are met:

Significant districts, sites, buildings, structures and objects are those that possess integrity of location, design, setting, materials, workmanship, feeling and association, and

1. That are associated with events that have made a significant contribution to the broad patterns of Palauan history; or
2. That are associated with the lives of persons significant in Palauan History or Culture; or

3. That are associated with lyrics, folklore and traditions in Palauan culture; or

4. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

5. That have yielded, or may be likely to yield information important in prehistory or history.

Since this is a reconnaissance level assessment there are no recommendations for inclusion of any of the sites recorded during this survey at this time. However, the stone path that was identified as part of the area in site 2012-T1, and may be part of a trail system, is an unusual find, and one which deserves additional investigation. Depending on what information can be collected during an intensive survey, this might be a good candidate for inclusion on the Register under criteria one, four and/or five.

Table 2 lists the sites in this report along with the eligible criteria if appropriate and recommendations.

Table 2. List of sites identified in this report and recommendations for eligibility to the Palau Register of Historic Places.

Site Number	Site Name	Eligible Criteria	Recommendation
B:NR-5:21	Historic Site	1, 5	Proximity to a registered site, B:NR-5:9 may add to the significance once additional research can be conducted
B:NR-5:22	Cave Site	1, 5	Representative of the extensive defensive features constructed during WWII
B:NR-12:2	Bauxite Test Pits	1	Not very significant by itself but part of the very significant bauxite mining operation that transformed the Ngardmau landscape during the Japanese administration
B:NR-14:2	Historic Site	1, 4, 5	Significant as a potential WWII defensive site in proximity to the bauxite mining operation
2012-T1	Historic Site	1, 4, 5	Potentially significant and unusual features and construction techniques of both the trail and the foxholes warrant further investigation in this area to determine eligibility for the Palau Register of Historic Places

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APPENDIX A: List of Sites in Ngardmau State on the Palau Register of Historic Places

Site Number	Site Name	Site Type	Date Registered	Notes
B:NR-01:01-f4	Ikeam el Diong	Water Well	10/20/1993	Restored 1996
B:NR-01:02	Ngetilai	Terraces	10/18/2005	
B:NR-01:04	Beluu er a Ngerdau	Traditional Village	2/6/2004	
B:NR-02:01-f3	Edub er a Ielech	Dock: <i>Traditional</i>	5/8/1996	
B:NR-02:01-f17	Olketokel er a Udoud el Bad	Stone Feature	5/21/1997	
B:NR-02:01-f27	Orsachel er a Dub	Stone Feature	10/16/1997	
B:NR-02:01	Beluu er a Ngerutoi	Traditional Village	4/28/2000	
B:NR-02:03	Ii er a Ngerchab	Cave Site: <i>Traditional</i>	12/19/1996	
B:NR-05:03	Coastal Defense Gun	Historic Remains: WW II	10/31/2008	
B:NR-05:08	Mine Strip	Historic Remains: Admin.	5/16/2003	
B:NR-05:09	Mine Strip	Historic Remains: Admin.	5/16/2003	
B:NR-05:12	Railroad Tracks	Historic Remains: Admin.	9/2/2004	Restored 1998
B:NR-05:13	Japanese Dam	Historic Remains: Admin.	9/2/2004	
B:NR-13:02	Anti Aircraft Gun	Historic Remains: WW II	10/31/2008	
B:NR-14:01	OIngebard	Stone Feature	10/18/2005	

APPENDIX B: Photos of the Cave in the Undetermined Area, along with Guide Orrukem Demk



APPENDIX C: Final State Inventory Reports Completed by the BAC/HPO (Listed Alphabetically)⁴

State	Year	Report
Hatohobei	2004	Final, Archaeological Inventory and Oral History Survey of Hatohobei State
Kayangel	2006	Final, Inventory of Historic Properties in Kayangel State
Melekeok	2011	Final, Inventory of Historic Properties in Melekeok State
Ngaraard	2007	Final, Inventory of Cultural and Historical Sites in Ngaraard State
Ngarchelong	2006	Final, Inventory of Historic Properties in Ngarchelong State
Ngchesar	2012	Final, Cultural and Historical Sites of Ngchesar State Volume I: Archaeological Survey Report
Ngiwal	2008	Final, Inventory of Historic Properties in Ngiwal State
Sonsorol	2004	Final, Archaeological Inventory and Oral Histories Survey of Sonsorol State

⁴ **NOTE:** This is the list of state inventory reports the BAC/HPO considers finalized but this is not to suggest that any of these are comprehensive or complete inventories of all the cultural and historical sites in any of these states. The collection of site information is always considered an ongoing process and new sites and features will be added to the database as they are encountered. These reports reflect the compilation of the major surveys conducted by the BAC/HPO Survey and Inventory/Archaeology Section in each state and are used for permitting, research and to identify additional sites to the Palau Register of Historic Places.

APPENDIX D: Letter from Cleared Ground Demining (CGD) regarding Ngardmau State



Steve Ballinger, Operations Director
Cleared Ground Demining
6035 Peleliu State Governor's Office
Peleliu State, Republic of Palau, 96940

Director Dwight Alexander
Bureau of Arts and Culture / Palau Historic Preservation Office
Ministry of Community and Cultural Affairs
PO Box 100, Koror
Republic of Palau, 96940

Ref: CGD/BAC/001/12

16th October 2012

Dear Director Alexander,

This letter is in regards to a request from the BAC / HPO Archaeologist, Dr Suzanne Finney, to assess a site in Ngardmau State that she was concerned contained Explosive Remnants of War (ERW). On 24th April 2012 a five man ERW survey team from Cleared Ground Demining accompanied Dr Finney to the site in order to provide an evaluation of the explosive hazards at the location.

The explosive contamination at the site was centred around a WWII defensive trench / bunker system with initial contamination found in an area measuring approximately 50m x 50m. The items located at the site included blast and fragmentation hand grenades, high explosive mortars and 30lb demolition charges. All of the items were in an unstable condition due to their age and being exposed to the elements for the last 68 years.

Based on the presence of the large quantities of explosive ordnance, Cleared Ground cautioned Dr Finney against visiting the site again until the area could be cleared of the ERW. We would also strongly advise to the BAC / HPO to consider measures to ensure the safety of personnel conducting surveys suspected of containing ERW, which could involve a preliminary survey of the area to assess for ERW contamination or to have an EOD Technician as an additional HPO Survey team member, if such funding could be found.

Cleared Ground is currently seeking approval under its existing grants to clear the immediate area around the trench system.

Please do not hesitate to contact me should you seek advice or clarifications regarding this letter.

Yours Sincerely,

A handwritten signature in black ink, appearing to read "Steve Ballinger".

Steve Ballinger
Operations Director
Cleared Ground Demining

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