ARCHAEOLOGY AT NORTH FINEGAYAN, GUAM

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Archaeologists study the people and cultures of the past based mainly on the material remains the people left in the ground. Like good detectives, the archaeologists have to look for evidence, gather clues, and interpret the evidence.

Before they go into the field, the archaeologists do documentary research to learn what has already been written about the area. Then they begin the field work by doing an archaeological survey, walking back and forth over the property to see if there is any evidence of people living or working there in the past. Even if there is no evidence of human activity on the ground surface, the archaeologists may do subsurface survey, digging into the ground to look for buried artifacts.

When artifacts are found, the archaeologists carefully excavate, usually by hand, to gather clues about who was present there in the past, when they were there, and what they were doing there. This stage of the work is known as data recovery, because the archaeologists are recovering information about the past. When as much information as possible has been gathered, it's the job of the archaeologists to interpret the evidence.

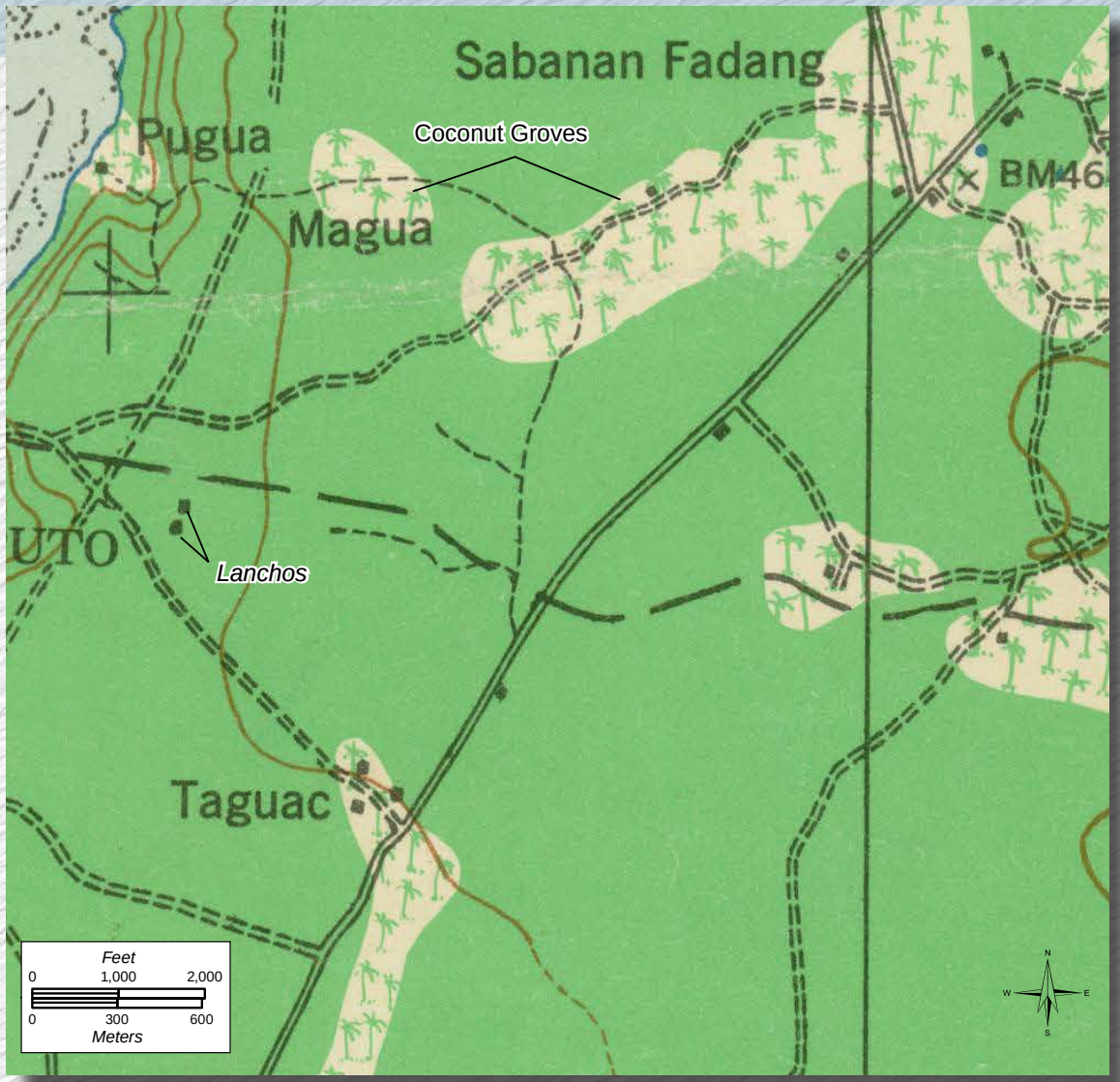
WHO?

WHAT?

WHEN?

WHERE?

WHY?



Coconut groves and *lanchos* located on a 1944 U.S. Army Map

LOOKING FOR EVIDENCE

This process of looking for evidence of past human activity at North Finegayan, Guam, was begun several years ago. Archaeological surveys over the years had recorded nine sites that were eligible for nomination to the National Register of Historic Places. Because military construction in the area would affect those sites, an archaeological data recovery project was conducted in 2016.

When the archaeologists went into the field in 2016, they were well equipped with the information from the documentary research (below).

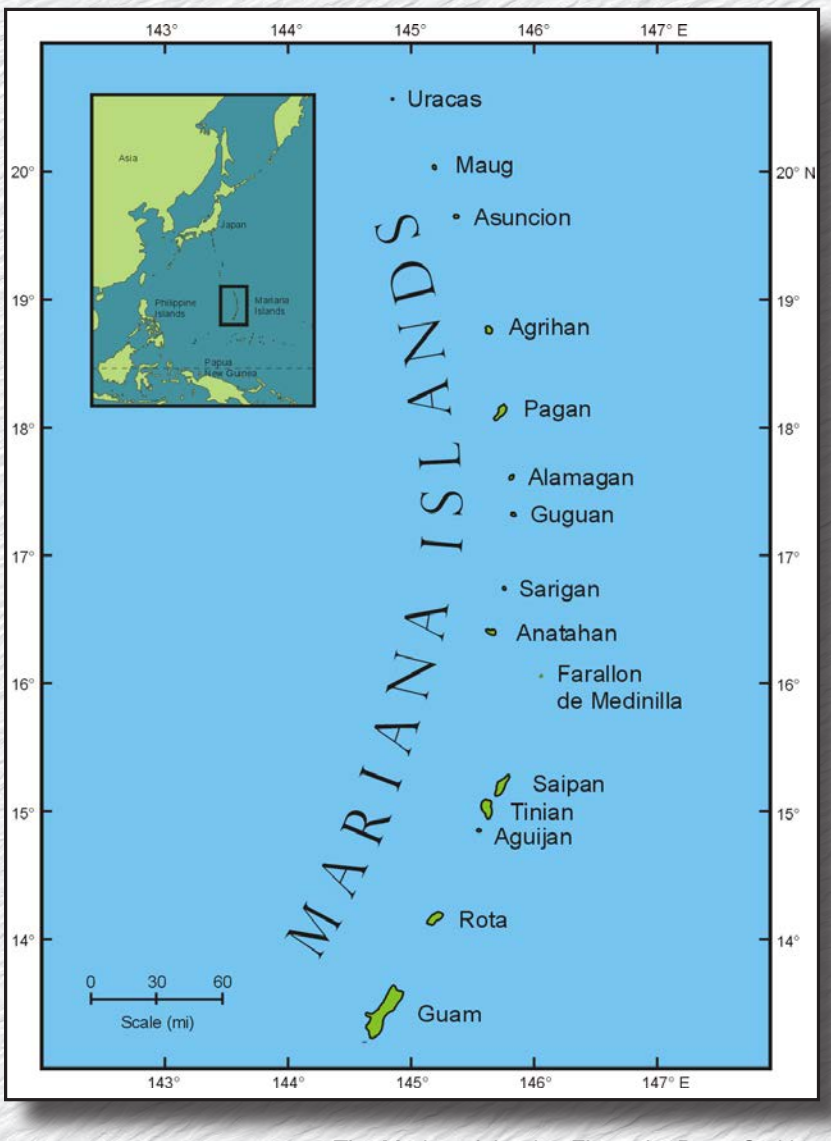
Early- to Mid-Twentieth Century Chamorro *Lancho* Lotz 1973

Based on previous studies, they knew that the sites were Latte Period artifact scatters, early 20th century cisterns, and World War II/ Post World War II artifact scatters and camps.

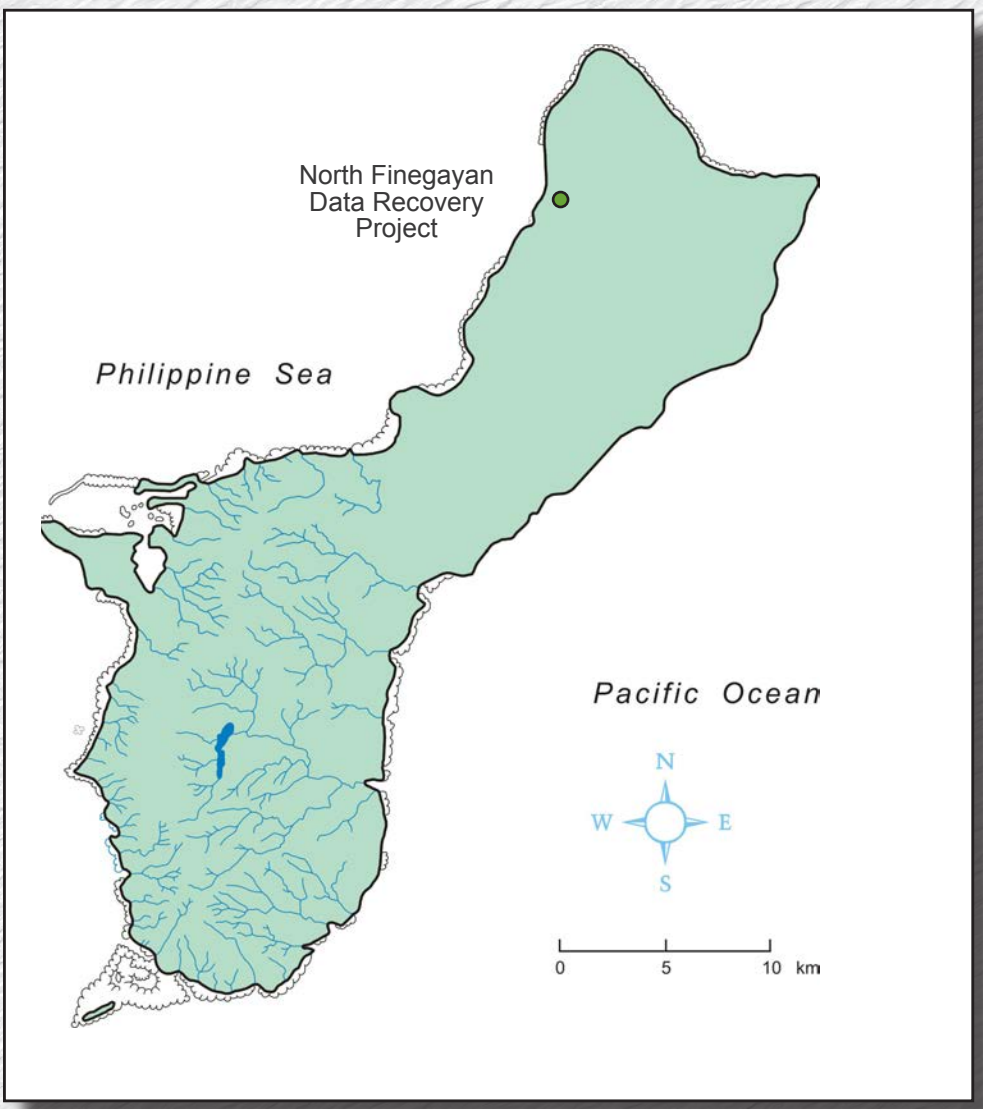
WHERE?

Guam is an island in the Western Pacific located approximately 1500 miles south of Tokyo and 1500 miles east of Manila. Guam is the largest and southernmost island in the Mariana Islands. The island was formed millions of years ago by volcanic activity. In the volcanic southern part of Guam, there are numerous rivers, but the northern half of the island is a raised limestone plateau with no streams.

North Finegayan is on that Northern Plateau in the municipality of Dededo. Before World War II, the area was known as Machanao. After the war, most of Machanao became part of Andersen Air Force Base and Naval Communications Station. Now North Finegayan is the location of the Naval Base Guam Telecommunications Site.



The Mariana Islands. Figure by Barry Smith.

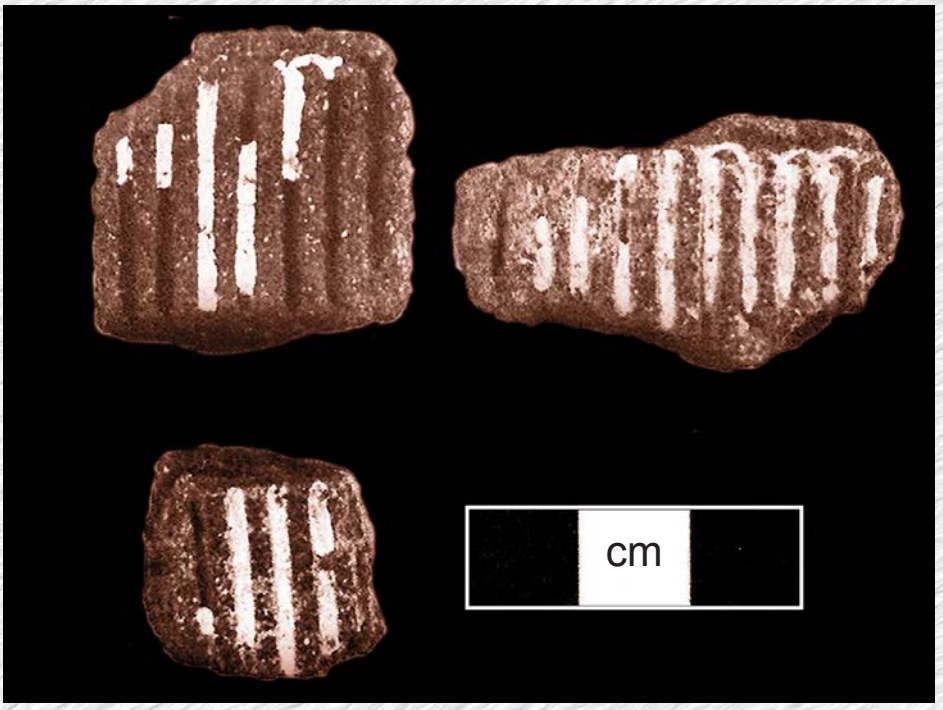


Guam, showing the lack of streams on the Northern Plateau.
Figure by Barry Smith

WHO? WHEN?

People have lived on Guam for at least 3,500 years and maybe longer. The early inhabitants, who came from islands in Southeast Asia, became the indigenous people of the Mariana Islands. It is likely that there was more than one major migration to the Marianas. There is growing evidence of an early migration, corresponding to the beginning of the Pre-Latte Period, and a later migration, corresponding to the beginning of the Latte Period.

The Pre-Latte Period began by at least 1500 BC. Pre-Latte cultural deposits are found below the surface close to the coasts of the Mariana Islands. Artifacts that characterize the Pre-Latte Period include pottery sherds with red-slipped exterior surfaces, some of which are decorated with lime-filled designs, stone and shell tools, and beads and bracelets made from cone shells.



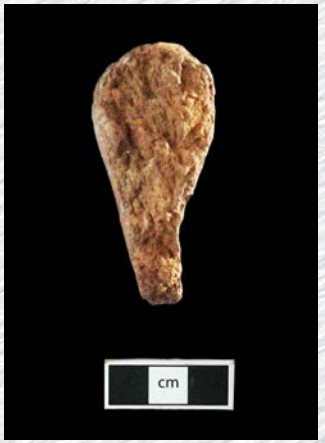
Pre-Latte decorated sherds with incised and impressed lines in-filled with lime.
(Adapted from Hunter-Anderson et al. 2001)

The Latte Period began by at least AD 1000 and is characterized by the stone structures called *latte* sets and small pottery scatters. A *latte* set consists of two parallel rows of upright stone shafts (*haligi* in Chamorro) associated with capstones (*tåsa*). The number of shafts in a set varies, but sets with eight, ten, or twelve shafts are common.

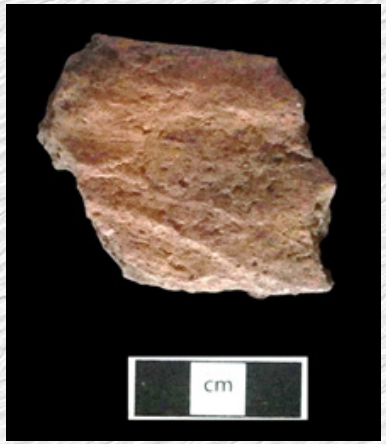
Based on the cultural materials associated with *latte* sets, archaeologists believe they functioned as foundations for residential structures. Latte Period sites are widely distributed along the coastline as well as in the interior of the Mariana Islands. Characteristic artifacts of the Latte Period include plain pottery sherds, stone mortars (*lusong* in Chamorro), stone and shell tools, and beads made from *Spondylus* shells.

Latte stones in Latte Stone Park, Hagatna, Guam. Photo by Hajime Nakano from Tokyo, Japan. https://commons.wikimedia.org/w/index.php?curid=4052621

Lightly combed body sherd



Type B rim sherd

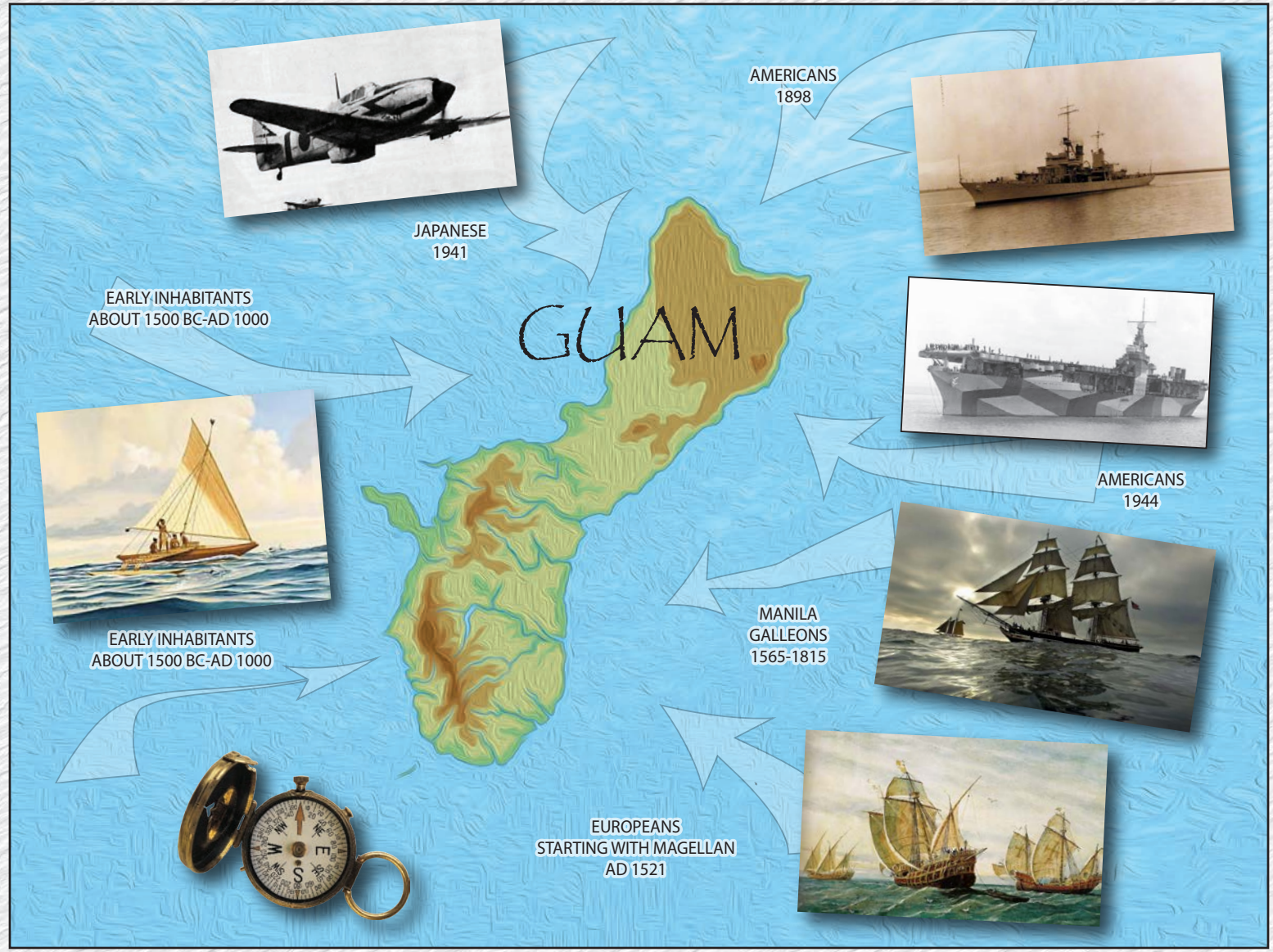


Plain type B rim sherd

The long period of time before European Contact lasted until the arrival of Magellan's ships in AD 1521. Spain claimed possession of the Mariana Islands in 1565. That same year the Manila Galleons began sailing from Acapulco, New Spain (Mexico) to Manila, Philippines, making stops on Guam as they sailed west. In 1668 Spain colonized Guam and governed Guam until 1898.

As a result of the Spanish-American War in 1898, Spain lost control of Guam to the U.S. With the exception of the Japanese Occupation, which took place from December 1941 through July 1944, Guam has been governed as a part of the U.S. since 1898.

As time passed, more and more groups of people arrived on Guam—first the indigenous people, then Europeans, Americans, Japanese and others.


GUAM
JAPANESE
1941
AMERICANS
1898
EARLY INHABITANTS
ABOUT 1500 BC-AD 1000
AMERICANS
1944
EARLY INHABITANTS
ABOUT 1500 BC-AD 1000
MANILA
GALLEONS
1565-1815
EUROPEANS
STARTING WITH MAGELLAN
AD 1521

GATHERING CLUES

The preceding pages give us a very general idea of what happened on Guam. But what about these nine archaeological sites at Machanao or North Finegayan? How did the archaeologists gather clues about what happened in those specific places?

The sites had already been located by previous archaeological surveys in years past. When the archaeologists re-located the nine previously recorded sites, they began by digging shovel test pits, which measured about 20 inches by 20 inches and were dug down to the limestone bedrock. These were dug every 15 to 30 feet in each direction in order to determine the boundaries of the site. A shovel test pit was labelled "Positive" if it yielded evidence of human activity and "Negative" if no such evidence was obtained. The boundaries of the site were drawn to include the positive shovel test pits.

In areas with the highest density of evidence of human activity, excavation units were dug. These usually measured one meter by one meter (almost 40 by 40 inches) and were also dug until the limestone bedrock was reached. The excavated soil was screened through ¼-inch wire mesh to collect even small pieces of evidence.

Artifacts and Ecofacts

The evidence of human activity includes artifacts and ecofacts. Artifacts are man-made objects. Broken pieces of pottery, shell adzes, and stone tools are examples of ancient artifacts found at the sites.

Ecofacts are not man-made. They are natural objects, which come from plants or animals, but which also provide evidence of what the people were doing. Examples of ecofacts are charcoal from fires that were built in the past, pollen from plants that were cultivated or collected, and shells from seafood meals enjoyed long ago.

Diagnostic artifacts are especially useful for interpreting the evidence. These are artifacts that are indicative of a certain time period or a certain group of people. For example, ceramic pots from the Pre-Latte Period differ from those of the Latte Period. During the Pre-Latte Period, the rims of pots were about the same thickness as the walls of the pots or even a little thinner. These rim sherds are called Type A rims. But during the Latte Period, the rims of the pots were thicker than the walls, and the potters made thicker and thicker rims as time went on. These are called Type B rims. So if an archaeologist finds a Type B rim sherd, that is evidence that the pot was made during the Latte Period. An exceedingly thick rim is evidence that the pot was made toward the end of the Latte Period or during the early Post-Contact Period.

SITE 66-08-1350

At this site, the archaeologists didn't have to dig to get some good clues right away. There is a rectangular structure made of limestone rocks mortared together and covered with more mortar. This sturdy structure measures about 8 by 10 feet, and the walls are one foot thick. The walls of the structure are a little more than 2 feet tall above the ground surface, but the "floor" inside the walls is below ground surface. When the structure was first located during an archaeological survey in July 2007, it had about 5 feet of water in it, and several toads were swimming in the water.

There are no streams on the Northern Plateau. Because the plateau is limestone, Guam's abundant rainfall seeps through the porous limestone and forms a lens of freshwater below ground surface. In fact, that Northern Lens Aquifer now supplies 80 percent of Guam's drinking water.

In the past, water was not readily available on the Northern Plateau. It was necessary to catch rainwater in any container, large or small. This one happens to be large. It is a water storage tank, known as a cistern. When this cistern was in use, there was probably a wooden lid. You can see slots where the timbers that held the lid fit onto the cistern, but the wood is now gone. This kind of structure is also known as a Spanish well.

Slots along the top of the cistern probably held timbers to which a wooden lid was fastened.

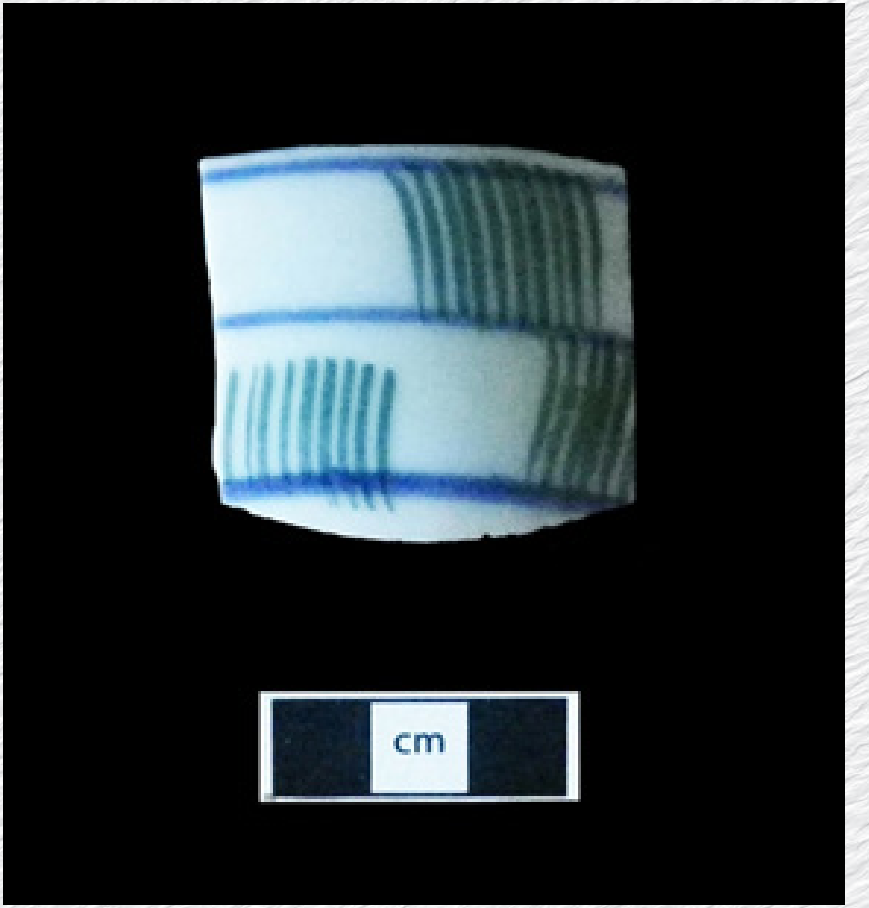
Does that mean that this structure dates to the Spanish Colonial Period? It could, but let's consider more of the clues. An excavation unit was dug on one side of the cistern. That excavation unit and the positive shovel test pits yielded fragments of Japanese and European historic ceramics, as well as glass bottles of Japanese, European and American manufacture. A few of these items may date to the late 1800s, but most date to the early 1900s. This cistern was probably the water supply for a ranch (or *låncho* in Chamorro) where people stayed and worked from time to time during the First American Territorial Period from 1898 to 1941. By the way, the toads were introduced to Guam in the 1930s, so they might not have even been on Guam when the cistern was built.

The cane toad, *Rhinella marina*.

Fragment of a Case gin bottle of Dutch origin, manufactured between 1880 and 1900.

Two historic ceramic fragments with maker's marks. The piece on the top was made in Japan between 1850 and1945. The piece on the bottom was made in England between 1853 and 1913.

The more recent Japanese ceramics, such as this rim sherd from a rice bowl, were likely left at the site during the Japanese Military Occupation from 1941 to 1944. This area may have been a brief Japanese military encampment toward the end of the American recapture of Guam as the Japanese defending forces withdrew to the northern part of the island. The cistern would have provided a needed source of water on the plateau.



Rim sherd from a Japanese rice bowl probably manufactured 1900-1940.

Not far from site 66-08-1350, but outside this project area, pieces of a container much smaller than the cistern were found. Archaeologists recovered 44 sherds of a large storage jar and reconstructed it. All of the pieces of the rim were present, and all of the pieces of the base were present. Only a few sherds from the walls of the vessel were missing and were replaced with white plaster of Paris during the reconstruction.

Historic storage jar reconstructed by Eleanor Wells.
Photos by Frank Wells.

Lines on the outside and inside of this unglazed stoneware jar are clues that it was made on a potter's wheel, and the hardness of the pottery indicates that the jar was kiln-fired, unlike Pre-Contact Chamorro pottery, which was fired at low temperatures. The jar is 20 inches tall, and on the shoulder is a group of three V's. Two of the letters are side by side and centered above a third V. This mark probably identified the maker or owner of the vessel. The jar was likely made in the Philippines or other Asian country, and it may have come to Guam during the Spanish Colonial Period. It would have been a useful container on the Northern Plateau.

SITE 66-08-2303

This area contained evidence of post-World War II clearing and use. There were several piles of earth pushed into place by bulldozers, and there were discarded wooden antenna posts and wire. But there was also evidence of a much earlier occupation, including *latte* stones.

The *latte* stones were no longer in place, but there was lots of evidence of human activity during the Latte Period. There were three large mortars or grinding stones (*lusong* in Chamorro). These are very heavy items, and they are made of volcanic rock not found on the limestone plateau. They had been carried to this place, where they were used with stone or wooden pestles to grind food plants and possibly medicinal plants.

Lusong found on the surface

Lusongs found on the surface

Additional evidence of people living at the site was found on the ground or below the surface in the shovel test pits and excavation units. These excavations revealed many smaller artifacts and ecofacts. This site yielded more broken pieces of pottery, more stone tool fragments, more sea shells, and more samples for radiocarbon dating than any of the other sites excavated during this project.

Two Type B rim sherds from *Latte* Period pots. The surface of the sherd on the left is "faintly combed" with vertical lines, and the surface of the sherd on the right is "randomly combed."

More than 750 pottery sherds weighing nearly 16 pounds were collected from this site. The pottery sherds came from a variety of pots, but all of the rim sherds were Type B rims and several of those were especially thick Type B rims. This is a good clue that these pots were made during the Latte Period and at least some were made toward the end of that period.

Fourteen stone tools or tool fragments weighing more than eight pounds were collected. Most are made from a kind of volcanic rock, known as andesite tuff, which would have been carried to the Northern Plateau. Some of the tools were pounders or pestles, probably used to grind food or medicinal plants. Some of the pounders or pestles may have been used with the *lusong*. One stone tool is an unfinished adze (an ax-like tool) with the blade end not yet sharpened.

Type B Rim with boldly combed surface.

Inverted rim from Late Latte Period storage jar

An unfinished stone adze from site 66-08-2303.

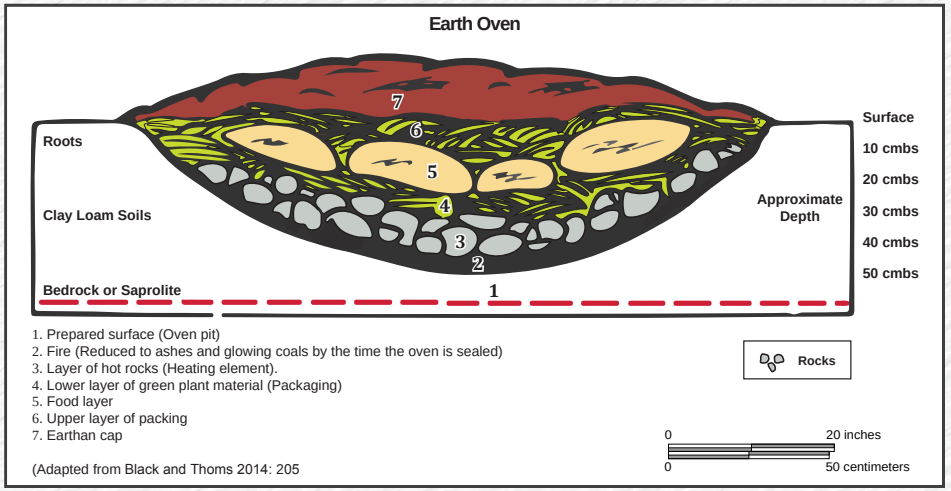
More than one and one-half pounds of sea shells were collected from the site. Pieces of shell from the giant clam *Tridacna*, or *hima* in Chamorro, account for most of that weight. The flesh of the giant clam is nutritious food, and the shell is strong material for making artifacts. The shells were no doubt carried to the plateau to make shell artifacts. Two *Tridacna* artifacts were collected from this site. One is a small fragment of an adze. The other is an interesting artifact now known as the *sinahi.*

Sinahi means crescent moon, and the shape of the artifact is somewhat similar to the crescent moon. The *sinahi* may have been an ornament during the Pre-Contact Period. Both ancient *sinahi* artifacts and modern replicas are worn nowadays mainly by Chamorro men, but there is little information about how the *sinahi* were used in the Pre-Contact Period. This particular *sinahi* appears to be unfinished, as there are no holes on the ends by which the artifact could be strung. One end comes to a sharp point, but the other end is more rounded.

Above is the *sinahi* seen from both sides.

Pig bones and deer teeth and bones were also found at the site. Those large land mammals were not introduced to Guam until the Spanish Colonial Period. It is possible those animals died naturally, but they may have been killed by hunters.

Three radiocarbon dates were obtained from site 66-08-2303. One cooking feature, an earth oven (*chåhan*) complex, dated between the late 1400s and mid-1600s. A midden or refuse feature dated between the early 1700s and early 1800s, and another cooking and midden feature dated during the 1700s. This means that the site was in use toward the end of the Latte Period and during much of the Spanish Colonial Period.



Earth oven or *chåhan* in Chamorro

The Chamorro people may have found the Northern Plateau to be a place of refuge during the turbulent years of the Spanish-Chamorro Wars (1670 to 1695) and the forced relocation into villages after the conflicts. They no doubt continued going to the Northern Plateau to harvest the useful plants growing there. Pollen and other microscopic plant parts from samples taken at the site were analyzed. It was found that useful plants including coconut (*niyok* in Chamorro), banana (*chotda*), pandanus or screwpine (*kafu*), cycad (*fadang*), and trees belonging to the *Moraceae* family (including breadfruit and banyan) grew in the vicinity of the site.

SITE 66-08-2305

During the documentary research conducted before field work, the archaeologists had learned that there was a post-war Seabee encampment located at Machanao. The word "Seabee" comes from the initials for Construction Battalion. The U.S. Construction Battalions were established soon after the start of World War II to construct the airfields, piers, hospitals, and housing needed during the war.

After the war, the Seabees worked on Guam to build Marine Corps Drive, the Glass Breakwater and the U.S. military bases. This camp at North Finegayan was occupied from 1947 to 1954, near the beginning of the Post-World War II /Second American Territorial Period. The remaining evidence of the Seabee camp includes roads, a pipeline, concrete foundations for Quonset huts, latrine trenches, 55-gallon drums, and post-war bottles and debris.

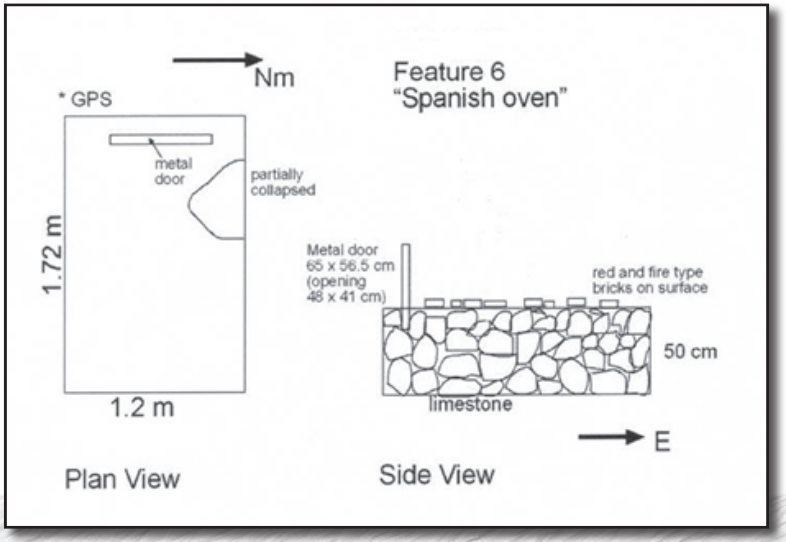
Concrete foundation for Quonset hut

Latrine Pit

Pipeline

There is also evidence of earlier use of the area. Situated amongst the post-war features is the remains of an outside oven or *hotnu* in Chamorro, which appears to have been built about the same time as the cistern at Site 66-08-1350. Both the cistern and the base of the oven were built with rough limestone rocks cemented together and covered with mortar. The walls of the oven were built with red clay tiles mortared together and topped with heat resistant bricks. The bricks are stamped "THE DENVER FIRE CLAY CO., HI FIRE". This American company made bricks from 1918-1942. At one end of the oven structure, there is a rusted metal frame for the door, but the dome of the oven has collapsed. The collapsed oven had later been used as a fire hearth.

Outside ovens similar to this one are sometimes called Spanish ovens, because they were first constructed on Guam during the Spanish Period, but they continued to be built into the Twentieth Century. The oven at site 66-08-2305 was likely built during the First American Territorial Period, and it was probably the heart of a pre-war *låncho*. The outside ovens were used to bake bread and cookies, and to roast whole pigs, hams, turkeys and beef. A few outside ovens, including two in Inarajan, are still in use.



Drawing of outside oven or *hotnu*

This oven was likely used to toast breadfruit, which was more abundant on the Northern Plateau in the past. The breadfruit was peeled and sliced, then baked in the oven to dry it. Breadfruit slices prepared in this way, known in Chamorro as *essok*, were crispy when eaten. They could be preserved in airtight containers, such as biscuit tins, and they could later be ground into flour to make other baked goods.

Outside oven or *hotnu*

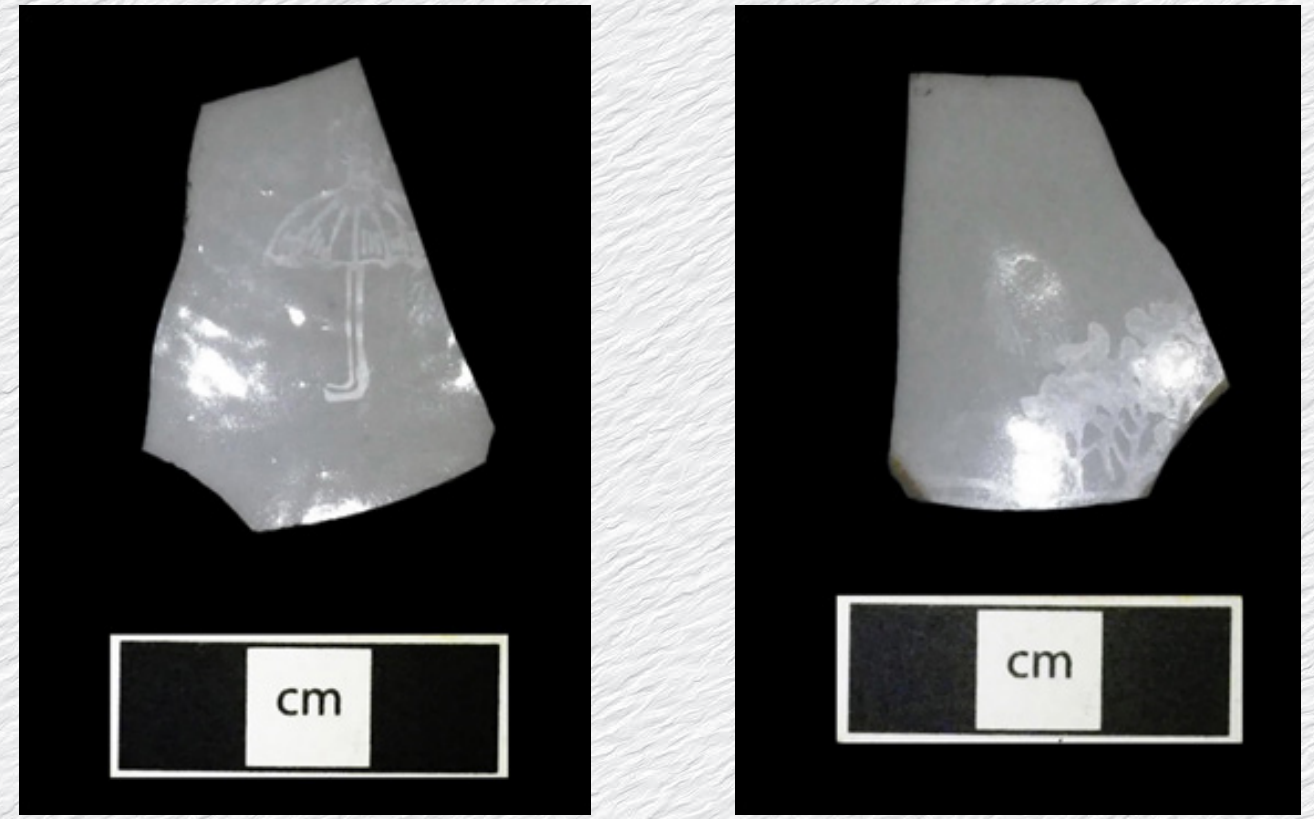
The indigenous seeded breadfruit tree (*Artocarpus mariannensis*) is *dokdok* in Chamorro, and the unseeded breadfruit tree (*Artocarpus altilus*), a prehistoric introduction, is *lemmai*.

Shells of the ark clam, *Anadara antiquata*, from the small shell *midden* west of the *hotnu* at Site 2305.

Japanese and European manufactured ceramics and glass.

West of the oven, the archaeologists found a scatter of Japanese beer and sake bottles, which likely date to the Japanese Military Occupation (1941-1944). An excavation unit in the area exposed a small *midden* or refuse heap of shells from the ark clam, *Anadara antiquata*. Like site 66-08-1350, this area might have been a brief Japanese encampment during the closing weeks of the war on Guam. A bomb crater with some 1944 American beer bottles was further evidence of World War II activity.

Sake bottle



Two sides of a thin, flat porcelain fragment from site 66-08-2305.
On one side is etched an umbrella or parasol and on the other side are flowers.

One historic ceramic was found in a shovel test pit at site 66-08-2305. It is a thin, flat piece of white porcelain with designs etched on both sides. On one side is an umbrella or parasol, and on the other side are flowers. This is a surprisingly delicate item to find on the Northern Plateau. The manufacturing date and place are not known.

SITE 66-08-2306

At this site the archaeologists found evidence of both Pre-Contact and 20th century use of the area. Fifty-five pottery sherds were collected, including two Type B rim sherds—a clue that this pottery was made during the Latte Period. Also collected were a few sea shells.

One radiocarbon date was obtained from the remains of an earth oven, and it showed that the area had been used during the 1300s or early 1400s. The area was probably visited off and on by people collecting forest resources, such as pandanus fruits and leaves. Pandanus or screwpine grows in the area now. The fruits are edible, and the leaves are useful for weaving.

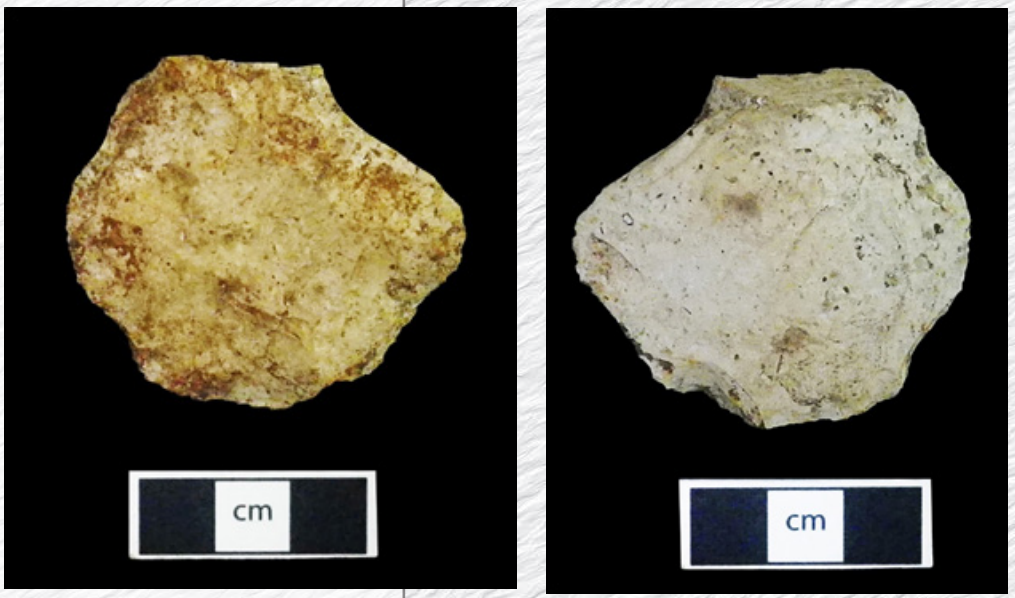
Pandanus tectorius. Photo by L. Gutierrez: Available at https://www.flickr.com/photos/guam-flora-fauna/albums/

Exterior and interior of a teapot spout found at site 66-08-2306.

Like sites 66-08-1350 and 66-08-2305, this site also appears to have been visited during the Japanese Military Occupation, perhaps by Japanese soldiers fleeing north at the end of the Americans retaking of Guam between July and August 1944. Japanese bottles and fragments of a porcelain teapot are the evidence of Japanese use of the site.

SITE 66-08-2307

This site is similar to site 66-08-2306. It's a small artifact scatter. Twenty-three pottery sherds were collected. Two of the analyzed sherds are Type B rim sherds, and one of those is exceedingly thick. As we might expect, based on that one exceedingly thick rim sherd, this site is later than site 66-08-2306. One radiocarbon date was obtained from the remains of an earth oven, and it ranges from the mid-1400s to the mid-1600s.



Two views of the chert flake from site 66-08-2307. The striking platform is at the top.

A small stone tool was collected from the surface of the site. This cutting tool was produced by a person striking a piece of chert in such a way that a flake was removed. The flake shows the striking platform, where the blow was struck. All other edges are sharp and useful for cutting. Small chips along the sharp edges indicate that the tool was used for activities like cutting, peeling or scraping.

No unworked sea shells were collected, but fragments of two *Tridacna* adzes were collected. One adze is almost complete, but the blade end is missing. The other adze fragment is the poll end only; that is the end opposite the blade. Archaeologists frequently find more adze poll end fragments than blade end fragments at sites. That may be because a workman would return to the site with the poll end still attached to the wooden handle, while the blade end was left where it broke off in the jungle. The wooden handle could be reused, and in some cases the remaining portion of the adze could be re-sharpened.

Fragments of two *Tridacna* adzes. Blade ends are missing from both adzes.

SITE 66-08-2308

At this site, shovel test pits and an excavation unit yielded 31 pottery sherds, including a Type B rim. Also recovered from the excavation unit was a fragment of a beautifully crafted pestle. A pestle is a heavy tool usually used with a mortar to crush or grind food or medicinal plants.

No sea shells were collected from this site, but two large parrot fish beaks were found in the excavation unit. Parrotfish are easy to catch, and the beaks are so sturdy that they remain in the ground for a long time. Parrotfish beaks are the most common fish remains found in archaeological sites on almost all tropical Pacific islands. It is unusual to find fish remains on the Northern Plateau, but site 66-08-2303 also had one parrot fish beak.

Like sites 66-08-2306 and 66-08-2307, this site is a small Latte Period artifact scatter.

Fragment of a pestle from site 66-08-2308.

Inside and outside of parrotfish beak from site 66-08-2307.

SITE 66-08-2309

This site has some remarkable similarities to site 66-08-2303. These two sites are the only sites in the project area at which *lusong*, unfinished stone adzes and unworked *Tridacna* shell were found. There are two *lusong* at site 66-08-2309. These heavy grinding stones, like those at site 66-08-2303, indicate an investment in the site. There are also stone tools here, including the poll end of an unfinished stone adze and the blade end of a beautifully finished adze. Site 66-08-2303 is the only other site from which a stone adze, also unfinished, was collected. Also collected at site 66-08-2309 were pieces of unworked *Tridacna* (*hima*) shells. The unfinished stone adzes and unworked *Tridacna* shells are evidence that stone and shell tools were being made at these two sites. Deer teeth and bones were collected at this site, like site 66-08-2303 also. Those would be more recent than the Latte Period artifacts, since those animals were not introduced to Guam until the Spanish Colonial Period.

Lusongs

However, only 18 pottery sherds were collected from this site compared with more than 750 from site 66-08-2303. What would explain so few sherds collected? There would be few sherds if the people who used this site were not using pots, but there are other explanations as well. Fewer sherds could result from the surface disturbance at this site.

The main feature at site 66-08-2309 is a large midden mound, which measures approximately 66 by 49 feet and is slightly elevated above the rest of the site surface. Heat-altered limestone cobbles found in the mound are evidence of the use of the area for cooking in earth ovens (*chåhan* in Chamorro). As the ovens were used, cleaned out, and reused, the mound accumulated. Found in the soil were pottery sherds and marine shells. This mound was probably the cooking area for a nearby *latte* residence. Like site 66-08-2303, samples from this site yielded pollen and other microscopic plant parts of coconut, banana, pandanus or screwpine and the *Moraceae* family of trees, which includes breadfruit and banyan trees.

Poll end of an unfinished stone adze

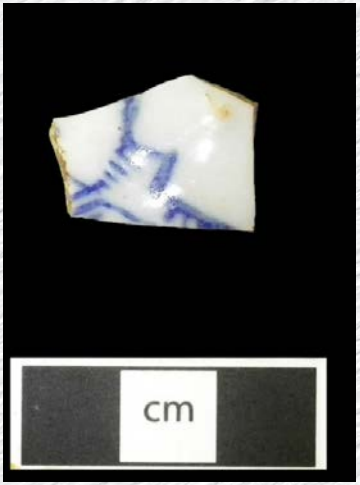
Blade end of a finished adze

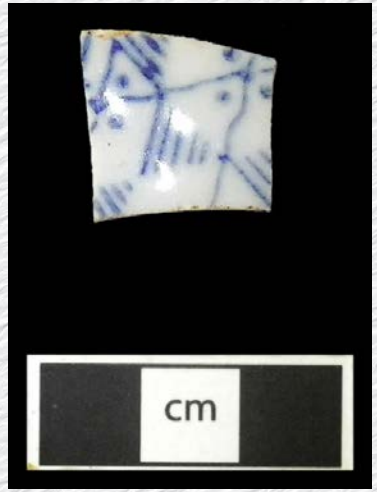
SITE 66-08-2701

This site was first recorded back in the 1980s, when a couple dozen pottery sherds were collected from the surface and from one excavation unit. Recently it was determined that the site measures about 112 by 72 feet, but the evidence of human activity was very sparse. Two more excavation units were dug, but only three more pottery sherds were recovered. No stone or shell artifacts or unworked sea shells were collected. Site 66-08-2701 is another small Latte Period artifact scatter similar to sites 66-08-2306, 66-08-2307, and 66-08-2308

SITE 66-08-2804

This site is a concrete cistern, which is nearly square, measuring approximately 6.4 by 6.0 feet. Like the site 66-08-1350 cistern, the walls of the cistern are one foot thick and about 20 inches above ground surface. The interior depth of the cistern is nearly 6 feet from the top of the walls. That means the cistern was excavated more than 4 feet deep into the limestone bedrock before being lined with concrete.





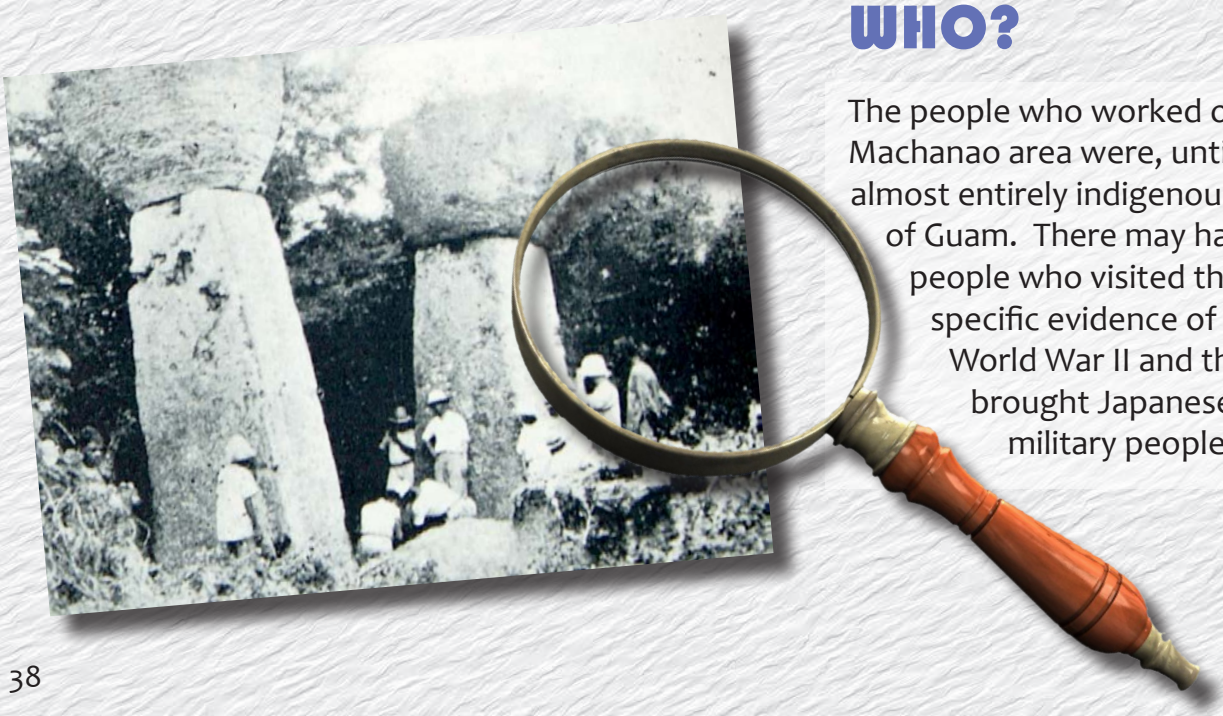
No lid for the cistern was noted, and there was no structure nearby for rooftop water collection, but a small *låncho* was noted in the area on pre-World War II maps. There is an earthen ramp on the south side of the cistern. It appears that the cistern could have been filled or emptied by people using a bullcart or other vehicle on the earthen ramp to carry water containers. This cistern was part of a pre-war *låncho* and may have been used for agricultural and/or residential purposes.

Cistern

An excavation unit was dug into the ramp, and 25 Latte Period sherds, a few shells of the ark clam *Anadara antiquata*, two pieces of Japanese porcelain, and a few fragments of metal were recovered. The Pre-Contact items were probably scraped together from the surrounding topsoil when the earthen ramp was created.

INTERPRETING THE EVIDENCE

Once the archaeologists had looked for the evidence of human activity in the Machanao region of the Northern Plateau, and once they had gathered the clues (the artifacts, ecofacts, and looking at historic maps) from each site, they were in a good position to interpret the evidence. They were able to answer the questions Who? What? When? Where? and Why?



WHERE?

The nine sites investigated during this project are located in the western part of the Northern Plateau of Guam. The area used to be known as Machanao and is now known as North Finegayan. The large historic storage jar was found north of the project area.

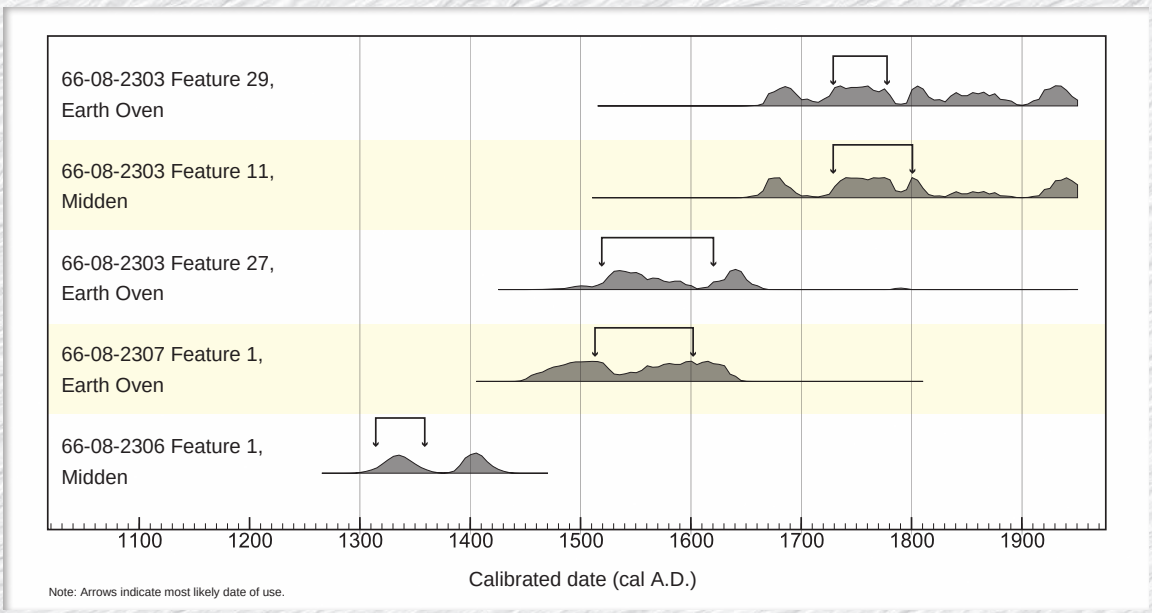
WHO?

The people who worked or lived in the Machanao area were, until the 20th century, almost entirely indigenous Chamorro people of Guam. There may have been Spanish people who visited the area, but no specific evidence of that was found. World War II and the post-war era brought Japanese and American military people to the area.

WHEN?

The radiocarbon dates and other evidence indicate that there were people in the Machanao area at least off and on from the 1300s. Although some Pre-Latte deposits have been found on other parts of the Northern Plateau, the earliest sites investigated during this project date to the Latte Period. Some of those sites continued into the Spanish Colonial Period.

There were sites with structures built and used during the First American Territorial Period, and sites with evidence of World War II and post-war activity were also recorded. So the use of the Machanao area was more or less continuous from the Latte Period to the present.



WHAT?

Six sites yielded evidence of *Latte* Period occupation or use. The two sites with large stone mortars (*lusong*) and with both finished and unfinished artifacts were residential sites where people lived, but the other four sites were small artifact scatters representing short-term use of the area.

The three sites with First American Territorial Period structures (the cisterns and outside oven) were no doubt ranches (*lånchos*) where people farmed. Coconut plantations and bamboo groves also dominated the plateau. The plantations were perhaps planted in the late Spanish Colonial Period for copra. Three sites had evidence of Japanese people fleeing north at the end of the American re-taking of Guam. The American Seabee Camp was a temporary residence for Seabees who arrived after the war to construct the infrastructure for the U.S. military. Military use of the area continues to the present.

WHY?

For a detective or an archaeologist working with material remains only and no living people, "Why?" is always the hardest question to answer, but we can interpret the evidence.

We know that the Northern Plateau was not a very hospitable place to live, because of the lack of surface water. However, people were motivated to come to the Machanao area because it offered something they wanted. During the earliest years, people probably went to the area to harvest plants that grow there. Cycads, pandanus, and breadfruit trees all produce edible fruits, as do coconuts and bananas, of course. Pandanus leaves are also useful for weaving. People may have harvested medicinal plants as well.

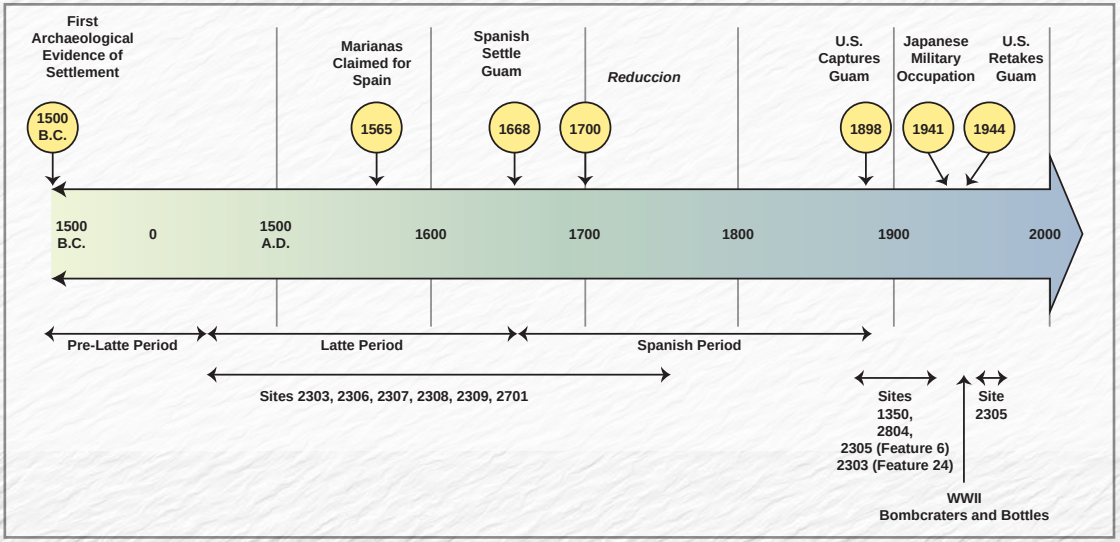
As time progressed, people lived at the sites like 66-08-2303 and 66-08-2309 for longer periods of time. They were likely cultivating some of these plants, such as bananas. During the Spanish Colonial Period and First American Territorial Period, the Chamorro people became more involved in agriculture, growing corn introduced by the Spanish. The lack of

surface water was improved by the cisterns that caught and stored rain water, which could be used for irrigation or residential purposes.

People came not only for plant products, but to hunt animals as well. The large land mammals, like deer (*binådu* in Chamorro) and pig (*babui*), were introduced during the Spanish Colonial Period, and bones and teeth found at sites 66-08-2303 and 66-08-2309 prove the presence of those animals on the Northern Plateau. People have probably hunted there for at least two or three hundred years.

Safety may have been another reason for people coming to the Northern Plateau. Possibly Chamorro people took refuge there during the years of the Spanish-Chamorro Wars and the forced resettlement into villages. Japanese soldiers passed through the area looking for safety during the final weeks of the American retaking of Guam. After the war, the Americans established the Seabee camp and eventually took over the area for military purposes.

This archaeological data recovery project has increased our understanding of human activity at North Finegayan, Guam, but good archaeologists, like good detectives, are always looking for more clues.



GLOSSARY

Archaeological data recovery - retrieving information about the past from a site, usually by hand excavation and analysis of the excavated materials.

Archaeology - the study of the people and cultures of the past based on the material remains they left behind.

Archaeological site - a place where people of the past lived or worked and left evidence of having been there.

Archaeological survey - the examination of a piece of property to determine if cultural deposits are present.

Artifact - man-made object, such as a tool or a work of art.

Cultural deposit --soils or sediments that contain evidence of human activity.

Diagnostic Artifacts - artifacts that are indicative of a certain time period or a certain group of people.

Documentary Research - the study of written records.

Ecofact - a natural remnant of a plant or animal that reveals something about the past.

European Contact - the arrival of the first Europeans; in Guam, this took place in AD 1521.

Excavation Unit - usually a one meter square (almost 40 by 40 inches) in which hand excavations take place from ground surface to culturally sterile soil or bedrock.

Feature - an area with concentrated evidence of human activity, such as an earth oven or shell midden.

First American Territorial Period - the period of time from the end of the Spanish Period in 1898 until the beginning of the Japanese Occupation in 1941.

Indigenous - occurring naturally in a place, native.

Japanese Occupation - the World War II years during which Japanese troops occupied Guam (1941 to 1944).

Latte Period - the Pre-Contact years during which the *latte* sets were built (about AD 800-1,000 to 1521 or after).

***Latte* set** - two parallel rows of upright stone shafts (*haligi* in Chamorro) associated with capstones (*tåsa*).

Lithic - stone; in archaeology this word usually applies to a stone tool, tool fragment or debris from stone tool manufacturing.

Midden - a trash deposit from the past containing food refuse such as seashells and bones.

Post Contact Period - in the Mariana Islands, the period of time from European Contact in AD 1521 until the present.

Pottery sherd - a broken piece of a ceramic pot.

Pre-Contact Period - in the Mariana Islands, the period of time from the arrival of the earliest people until European Contact in AD 1521.

Prehistoric Period - the period of time before written history; in the Mariana Islands, this is the same as the Pre-Contact Period (approximately 1500 BC until AD 1521).

Pre-Latte Period - the Pre-Contact years before *latte* sets were built (approximately 1500 BC until 800 or 1000 AD).

Rim sherd - a broken piece of a ceramic pot from the rim of the pot

Second American Territorial Period - the period of time from the American re-taking of Guam in 1944 until the present.

Shovel Test Pit (STP) - an excavation dug with a shovel, usually about 50 cm by 50 cm (approximately 20 inches by 20 inches) from ground surface to culturally sterile soil.

Spanish Colonial Period - the period of time from European Contact in AD 1521 or from Spain claiming the Mariana Islands in 1565 until the end of the Spanish American War in 1898.

Type A rim sherd - a rim sherd with the rim the same thickness or less thick than the wall of the pot.

Type B rim sherd - a rim sherd with the rim thicker than the wall of the pot.

SCIENTIFIC NAMES IN THE TEXT

Anadara antiquata - the ark clam, an edible mollusk

Cocos nucifera - the coconut tree, *niyok* in Chamorro, indigenous to the Mariana Islands..

Cycas micronesica - an indigenous species of cycad, *fadang* in Chamorro

Moraceae (not italicized) - the family of trees that includes banyan (*nunu* in Chamorro) and breadfruit. The indigenous seeded breadfruit tree (*Artocarpus mariannensis*) is *dokdok* and the unseeded breadfruit tree (*Artocarpus altilus*), a prehistoric introduction, is *lemmai* in Chamorro.

Musa - the genus of the banana tree, *chotda* in Chamorro, a prehistoric introduction to the Mariana Islands.

Pandanus tectorius - an indigenous species of screwpine, *kafu* in Chamorro.

Rhinella marina - the cane toad, formerly *Bufo marinus*, introduced to the Mariana Islands in the 1930s.

Rusa mariana - the Philippine deer, formerly *Cervus mariannus*, *binådu* in Chamorro, introduced to Guam in the 1770s.

Sus scrofa - the pig, *babui* in Chamorro, introduced to Guam during the Spanish Period

Spondylus - the genus of bivalves commonly called thorny oysters although they are not true oysters, the shells of which were used for making beads during the Latte Period.

Tridacna - the genus of the giant clam, *hima* in Chamorro.

CHAMORRO WORDS IN THE TEXT

Babui - the pig, *Sus scrofa*.

Binådu - the Philippine deer, *Rusa Marianna*.

Chåhan - earth oven; the method of cooking in an earth oven.

Chotda - the banana plant, genus *Musa*.

Dokdok - the indigenous seeded breadfruit tree, *Artocarpus mariannensis*.

Essok - baked or sun-dried breadfruit.

Fadang - the cycad plant.

Haligi - the shaft of a *latte*.

Hima - the giant clam; clams of the genus *Tridacna*.

Hotnu - outside oven, introduced to Guam during the Spanish Period.

Kafu - pandanus or screwpine, *Pandanus tectorius*.

Låncho - a ranch or farming area with a simple shelter.

Latte - a stone pillar with an upright shaft (*haligi*) and a capstone (*tåsa*).

Lemmai - the prehistorically introduced unseeded breadfruit tree, *Artocarpus altilus*.

Lusong - a stone mortar.

Niyok - the coconut tree, *Cocos nucifera*.

Nunu - the banyan tree.

Tåsa - the capstone of a *latte*.

Sinahi - crescent moon; a Pre-Contact artifact in the shape of a crescent moon.

WHERE CAN I GET FURTHER INFORMATION?

Websites:

www.Guampedia.com contains articles about archaeology, history, and culture of Guam.

www.nps.gov/state/GU/index.htm lists the National Historic Park on Guam with links to photographs, audio clips, and videos regarding the history of Guam.

https://www.nps.gov/efmo/learn/education/so-what-does-an-archeologist-do.htm describes what archaeologists do.

http://www.radiocarbon.com/about-carbon-dating.htm describes the history of radiocarbon dating and how it works

http://www.pastperfect.org.uk/archaeology/pollen.html describes what pollen analysis is and how it works

www.pbs.org/wqbh/nova/tech/radiocarbon-dating.html

http://www.visitguam/chamorro-culture/heritage-sites/ gives short descriptions of history, legends, sites of Guam

www.wpcouncil.org/coralreef/documents/Mariana Archaeological Review of Archaeological and historical data concerning reef fishing on Guam and the Northern Mariana Islands

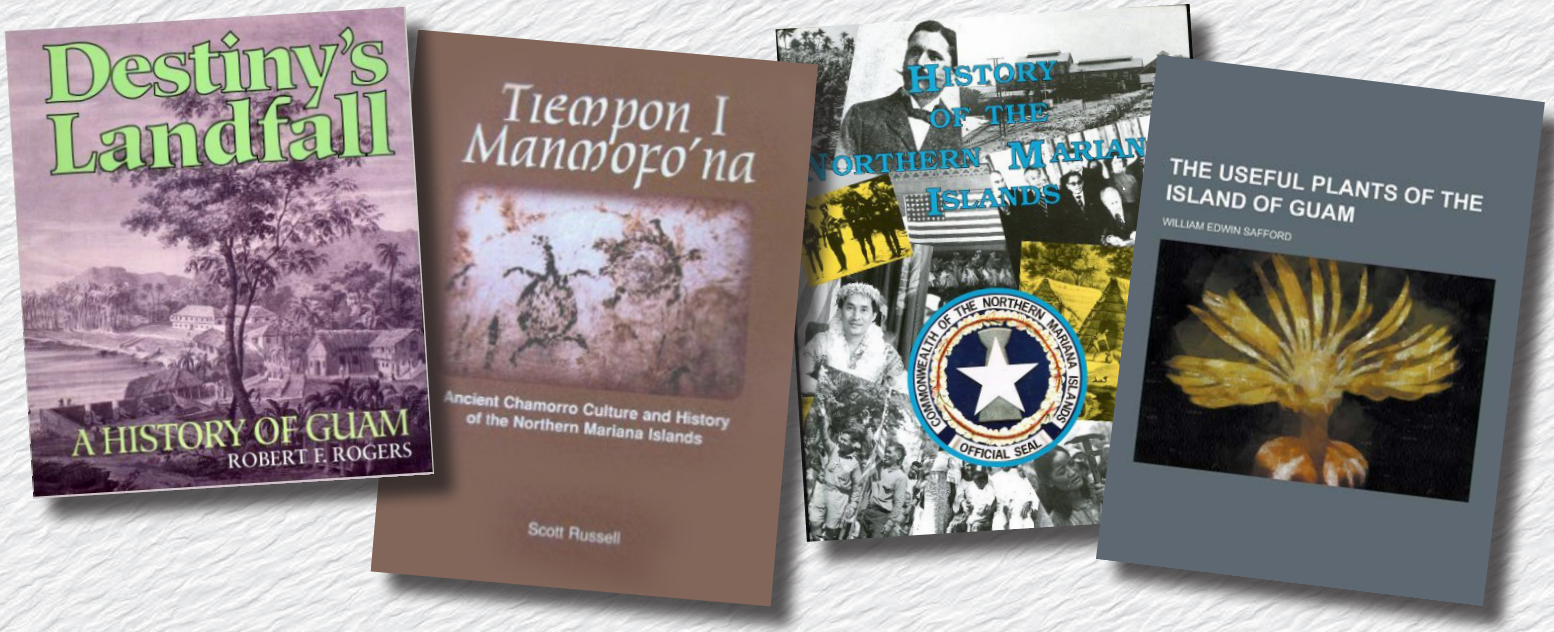
Books:

Destiny's Landfall: A History of Guam by Robert F. Rogers (1995)

Tiempon I Manmofo'na: Ancient Chamorro Culture and History of the Northern Mariana Islands by Scott Russell (1998)

History of Mariana Islands to Partition by Don Farrell (2011)

Useful Plants of Guam by William Edwin Safford (1905 with facsimile printing in 2009)



Planned construction at North Finegayan, Guam, will affect 9 archaeological sites, which the Navy had previously determined to be eligible for listing on the National Register of Historic Places. In preparation for the construction and in order to mitigate adverse effects to the cultural resources, the Navy conducted an archaeological data recovery project in 2017. The project complies with the National Historic Preservation Act. This booklet has been prepared to inform the public about the work.