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TALAGI PICTOGRAPH CAVE, GUAM

Vic April
Historic Preservation Office, Guam

This paper presents the results of an archaeological survey of Talagi Pictograph Cave located immediately north of Andersen Air Force Base, Guam. The objectives of the survey were to locate, map, and describe the cave and its associated features, evaluate their significance and provide recommendations for their preservation. A total of 18 features including pictographs and bedrock mortars were documented Detailed documentation of all features identified included mapping, describing, and photographing. The documentation provided sufficient information to evaluate the significance of the cave. Based on the criteria for the National Register of Historic Places, the cave and it associated features are eligible for the Register under criterion (d), yielded or likely to yield information important in prehistory or history.

While a considerable amount of wok has been carried out on the prehistory of the Mariana Islands, and in particular, of Guam (see below), there is paucity of work that documents rock art sites. This paper will consider one such example, the Talagi Pictograph Cave in the Tarague area of northern Guam.

The Talagi Pictograph Cave has been mentioned briefly by Hornbostel (1921-23) Osborne (1947), and Liston (1998). The cave has been visited by many people including non-archaeologists. However, the cave has not been documented in detail. The fieldwork consisted of mapping of the cave and its features including pictographs and bedrock mortars, and photographic documentation.[1]

ENVIRONMENTAL BACKGROUND

Guam is the largest of the 15 islands collectively called the Marianas. It is located approximately 3,400 miles west-south-west of the Hawaiian Islands, 1,500 miles east of the Philippines and 2,000 miles north of Papua New Guinea. The island of Guam consists of 209 square miles and approximately 30 miles long and 4 to 8 miles wide. Guam is divided into two geologic units divided by Adelup-Pago Bay fault. The northern half is primarily raised limestone plateau. The porosity of limestone at northern Guam provides little or no surface water. The southern half of the island is hilly and contains numerous stream valleys. The rocks are mostly volcanic in origin. The impermeable nature of the southern Guam provides for surface water and not subsurface freshwater lens as opposed to the northern Guam.

There are two seasons on Guam, wet and dry. The wet season is between July and November and the dry season is from January to May. June and December are the transition months. The average temperature on Guam is about 80 degrees. Daily temperatures seldom reach over 90 degrees and rarely drop below 70 degrees.

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HISTORICAL BACKGROUND

Guam's history is divided into five (5) major periods, Prehistoric Period, Spanish Occupation, the First American Period, Japanese Occupation, and the Second American Period.

Spanish Occupation

Ferdinand Magellan first arrived at Guam during his navigation around the world on March 6, 1521. Magellan experience during his brief stay on Guam involved a cultural clash. Magellan ship contained items such as steel that Chamorros could use to facilitate their daily activities. These items including a small skiff, an important accessory for ocean journey were taken from the ship. The taking of the items prompted the conflict between the locals and the crew of the ship. Several homes and many lives were claimed during the conflict before the skiff was recovered.

Several attempts to Christianize the local people by other European explorers were unsuccessful until late 1600s when the permanent mission was established on Guam by Father Luis San Vitores. While San Vitores' intention to Christianize local people was effective in the first several years of his mission, Chamorro nobility began to show resentment toward the missionaries. The nobles maintained that the low class people should not participate in the baptism since they are not allowed to participate in any activities that the nobles are engaged in. This, however, was in contradiction with the mission of San Vitores which was to spread the word of God to anybody who needed to be saved regardless of his social status. The conflict between the missionaries and the local people escalated when Choco, a Chinese trader who arrived the Marinas 30 years before San Vitores, accused missionaries of using poison water to baptize people. The disagreement between the Christians and the local people and the accusations made by Choco appear to be the main reasons for the outbreak of the Spanish/Chamorro conflict. More than ten priests and twenty lay helpers and thousands of Chamorros lost their lives during the conflict.

The period between 1690 and 1740 (Hezel and Driver 1988:138) was one of the most significant periods in the Spanish colonization in the Marianas. That is when the basic pattern of Spanish colonial administration was established and continued for the next 200 years. Guam was divided into six villages, each with a population of approximately 200-300 people who had their own little church. People became very involved in church that they scheduled their activities such as farming and fishing around the morning and afternoon masses. People lived peacefully but the population continued to decline. Deadly diseases and warfare were the primary reasons for depopulation but also people were already weakened by years of conflict and other problems such as leaving their lands and to start new life at different places in which they had to adjust to new lifestyles that were not familiar to them (Hezel and Driver 1988:140).

The Spanish colonial period is characterized by monuments such as Magellan's monument, San Vitores Martyrdom or camp where Filipino patriots were interned. Forts, bridges, churches, and some houses from the last century of the occupation are also some of the characteristics of Spanish colonial period on Guam (Guam Historic Preservation Plan 1974).

Garcia (1683 in Athens 1986:30) mentions that Tarague had a large population in 1675. This is based on one occasion when five hundred people came to church most of whom were adults. The Tarague was suggested to contain a single nucleated population comprising of a single political unit. The village appeared to have a church at that time.

In 1678, (Moore 1983:30) Garcia stated that the new governor made a trip to Tarague when he heard about the rebellious villagers and wanted to institute punishment.

The governor and his group started about two o'clock in the afternoon and walked most of the night but could not reach Tarague since the trail was so dense. Instead they went to a nearby village named Apoto (Haputo). The Spaniards burned houses and went back to Agadna (Agana). They were happy since they have "given the new government such a splendid beginning" (Athens 1986:30).

This movement suggests that Tarague being the center of rebellious activities must have

been an organized and important village that attracted the attention of Spaniards. In 1680 all of the population of north coast were relocated to Inapsan, a newly established village just north of Tarague (Ray 1980: 27)

Another indication that Tarague played some kind of important role in the community was that three native principals of Tarague were imprisoned in Agana before the galleon arrived on Guam (Garcia 1939:58 in Athens 1986:31).

First American Period

Following the Spanish American War in 1998, Guam became an American jurisdiction. Under the command of Henry Glass, U.S. troops bombarded a Spanish fort that guarded the Apra Harbor. The bombardment lead to a quick surrender by the Spanish Commander. Under the terms of the Treaty of Paris, the former Spanish colonies including the Philipines, Cuba, Puerto Rico, and Guam became U.S. possessions (Russell and Fleming 1989:1).

Civic and public works buildings used as schools, a few houses depicting vernacular architectural styles are some of the few characteristics of the first American period. Plaza de Espana which was the Naval governor's residence which most of it was destroyed during WWII is a significant attribute to Guam's history (Guam Historic Preservation Plan 1997:1).

Atkins Kroll & Co. acquired three hundred acres of coconut plantation at Tarague in 1917 from a Japanese syndicate who started the plantation 1911. James Nelson who was the plantation manager moved to live at Tarague in the early 1920s. Every month twenty to thirty Chamorros would process copra and loaded them in a Kevara for shipment. The reduced price of copra in 1930s on the world market forced Atkins Kroll to sell the plantation. The plantation remained abandoned until the conclusion of World War II (Ballendorf 1984:32 in Athens 1986:31).

Japanese Occupation

On December 8, 1941 Japanese military forces made their initial attack on Guam (Sanchez 1979:1). The Japanese attack continued for the next two days as more targets were identified. In the early morning of December 10, the firs wave of Japanese troops consisting of 5, 000 army approach the shores of Dungca's beach and Tumon Bay. Their assignment was to capture Agana and destroy any military installations on the island. About twenty Chamorro men, women, and children were killed by the Japanese troops. The only real resistance the Japanese encountered was the American troops who set up their positions at the Plaza de Espana and members of the Insular Guard. After a short exchange of fighting, Governor McMillan realized there was little chance of winning and therefore moved to stop the fighting. Shortly after the Japanese captured McMillan, he signed the surrender paper that transferred the authority of the island to the Japanese (Russell and Fleming 1989:7). After the authority was transferred to the Japanese, the U.S. Servicemen were sent to the prisoners of war camp in Japan and the Chamorro prisoners of war were sent to the camp in Agana.

In anticipation of American Attack, Japanese began to fortify the island around 1944. It can be presumed that the fortification of the island began shortly after the island was captured. In other parts of Micronesia fortification began in the 1930s although it was a violation of the League of Nation's Mandate.

The Japanese began to fortify all possible invasion beaches. Because of the large size of Guam, lack of materials needed, and the shortage of time, it was necessary to use civilian laborers. Civilian men and women were forced to plant crops and perform construction of fortification. The civilians labored ten hours a day and oftentimes labor conditions were brutal. Western part of the island was the main fortified area. Development of the interior positions received little attention while the fortified area along the East Coast were abandoned (Crowl 1960:334). This can be confirmed by some of the caves along the Turtle Cove cliff line that were not excavated to depths useable for defense purposes (April 1984).

On July 21, 1944, U.S. troops made their initial bombardment at Agat and Asan. Thousands of rounds were expended in the first day of invasion. U.S. troops faced some difficult resistance from the Japanese due to rough ter-

rain and positions of the Japanese defense at Gaan Point and other locations along the central West Coast. After the West Coast was captured on July 29th. the Japanese had several more strong defensive positions including Fonte to Mount Tenjo. Mount Mataguac and Mount Santa Rosa were the last strong defensive positions that were captured by the 8th of August. On August 10, 1944 Guam was once again controlled by the Americans, but not before more than 1,200 U.S. soldiers were killed and more than 5,700 wounded. Japanese lost more than 10,000 lives in their effort to defend the island. (Russell and Fleming 1989:8-14).

The site associated with the Japanese occupation include pillboxes, man-made tunnels, coastal defense gun positions, airfields, and anti aircraft positions.

Tarague experienced brutal fighting in 1945 during the American invasion of Guam. One Japanese battalion was stationed at Tarague and hundreds of civilians and soldiers took refuge there (Satoh 1982 in Athens 1986:31).

Second American Period

Immediately after WWII, U.S. military government was installed on Guam. The modern period which began right after the War until present has made rapid changes on Guam. The population of the island has increased tremendously as well as expansion of governmental agencies and private sectors. In 1950 the Organic Act of Guam was created giving the Chamorros and those who were on Guam before 1950 the U.S. citizenship. In 1962 the U.S. Navy Security Clearance requirement for entering the island was lifted and paved the way for tourist opportunities to visit the island.

PREHISTORY OF GUAM

The prehistory of Guam consists of two major sequential periods, Pre-*Latte* and *Latte* Periods. The Pre-*Latte* period began around 1,660 years B.C. and ended around 900 A.D. The *Latte* Period began around 900 A.D. and ended during the Spanish occupation. The Pre-*Latte* period consists of three phases, the early phase, the intermediate phase, and the transitional phase (Moore 1983). The early phase began at 1,660 B.C. and ended at 500 B.C. This period is marked by the presence of a thin walled everted rim pottery called Marianas Red Ware and pottery with lime filled impressed decoration. The Intermediate Phase began around 500 B.C. and ended at A.D. 1. This period is signified by a thicker pottery with calcareous sand temper. The Transitional Phase began at A.D. 1 and ended at 900 A.D. This period is characterized by a much thicker pottery in the form of shallow bowls. *Latte* period of Guam's prehistory began around A.D. 900 and continued into the Spanish colonization of Guam and the rest of the Mariana Islands. This period is marked by the occurrence of a megalithic structure commonly known as *Latte*, a foundation of a wooden house that contains two rows of stone pillars parallel to each other with their individual semi-circular capstones, and a pottery called Marianas plain with Volcanic Sand Temper.

OVERVIEW OF ARCHAEOLOGICAL WORK ON GUAM

The first archaeological study to be conducted on Guam was performed by Hans G. Hornbostel in the 1920s. The work by Hornbostel was never reported until 1932 when the outcome of his work was published by Laura Thompson. Osborne, Carpenter, and Smith who were military officers conducted archaeological studies on Guam in 1945-46. They recorded *latte* sites and conducted excavations in various sites around Guam in which they identified different types of artifacts including pottery, shell and stone tools (Osborne, 1947). Osborne also visited Jinapsan and recorded *latte* structures, and ground stone artifacts such as mortars. A pictograph cave containing stick figures was also observed. In Ritidian Point, Urunao and Janum Point at the northeast to northwest of the island, Osborne noted *latte* structures, pottery, marine shells, and concentration of midden. Osborne interprets that the presence of inland sites is a result of a growing population in which the food resources at the coastal areas could not support thereby forcing the population to expand into interior areas where source of food was abundant. It was also speculated that the inland sites may have been places for religious activities and there-

fore were not heavily utilized as settlement areas.

Alexander Spoehr (1957) conducted archaeological studies on Guam between 1949 and 1950. The results of his work in which radiocarbon dates were acquired were used to establish the chronological framework of the Marianas prehistory, namely Pre-*Latte* and *Latte* Periods. Eric Reed (1952) of the National Park Service conducted a reconnaissance survey on Guam in which he identified numerous *latte* structures. The results of his study were used to prepare preservation recommendations for Guam. Reed documented sites in Hilaan which were first discovered by Osborne in mid 1940s. These sites contained *latte* structures and midden in cave shelters. Pagat Point located northeast of Guam in the municipality of Mangilao was also visited by Reed. Reed identified and recorded *latte* structures, ground stone tools, and cultural deposits up to thirty cm deep.

A decade later Fred Reinman conducted an intensive archaeological survey on Guam (Reinman, 1965). He excavated numerous artifacts including pottery, stone and shell tools, fishhooks, ornaments and human burials. His intention was to refine the two chronological framework of Guam's prehistory proposed by Spoehr. Reinman (1974) returned to Guam to conduct another comprehensive survey in the early 1970s. He identified more than one hundred thirty sites throughout Guam. Within these sites, more than one hundred and twenty *latte* structures were identified. Reinman's work contributed to the establishment of a baseline study for prehistoric settlement pattern on Guam and the Marianas. At the northeast coast of Guam, Reinman identified twenty sites containing *latte* structures, midden deposits, stone pavings, and a *latte* quarry located at Camanayo Point. Twenty of the *latte* structures found at the northeast coast were concentrated at Mocham. As normally observed in areas where concentration of *latte* structures exist, the largest one is always located in the center and surrounded by smaller ones. At Pagat Point, Reinman recorded stone alignments which he interprets as defensive mechanisms against Spanish missionaries and soldiers.

John Craib (1986) conducted survey and excavation at Pagat Site. His work revealed evidence of Pre-*Latte* and *Latte* Period materials. Pagat site contains *latte* structures, rock shelters, midden deposits, ground tools such as mortars, pounders, and pestles. Subsurface materials include pottery, stone and shell adzes, fishhooks, beads, spear points, sea shells, bone awls, shell ornaments and human burials.

(Moore *et al.* 1988; Moore *et al.* 1989) conducted archaeological survey of the Huchanao area, now the Mangilao Golf Course. Rock alignments, pottery scatters, and rock shelters were recorded.

Workman and Haun (1995) conducted a data recovery in Huchanoa. Evidence of Pre-*Latte* occupation materials including redware pottery and numerous different shapes and sizes of vessels within a deeply stratified cultural layers whose depth is more than four meters overlain by *Latte* Period materials including shell and stone tools, and pottery were recorded. Underneath one of the limestone outcrops located on the second terrace contained human burials, food debris, pottery and shells. A Radiocarbon date of 3,686 B.P. obtained from this site represents the oldest date on Guam to date.

Highness *et al.* (1992) conducted an inventory survey of Fadian Beach and documented fourteen sites. The sites included caves, scatters of artifacts, sinkholes, and overhangs. Subsurface resources included hearths, shells and fish bones, and human burials. This area represents both Pre-*Latte* and *Latte* Periods. A radiocarbon date of 1,000 B.C. representing Pre-*Latte* Period and 850 A.D. representing *Latte* Period were acquired from this area.

Haun *et al.* (1990) conducted archaeological survey and subsurface testing at Faifai Beach where stratified cultural deposits including Pre-*Latte* and *Latte* Period materials were exposed. Subsurface cultural deposits include marine shells, shell and lithic artifacts, charcoal, pit features, and human burials. Surface resources include *latte* structures, mortars, a large water cave, overhangs with prehistoric cultural deposits, and bedrock mortars.

There are several pictograph caves on Guam that have been identified but not thor-

oughly recorded (Figure 1). One of the known pictograph caves is located in the Naval Magazine (Jennings Bunn, Regional Cultural Resource Manager for the Navy, personal communication, 2003). This pictograph cave contains numerous figures including humans', sticks, circles, fish, and many other figures that are difficult to determine what they represent. They appear to have been drawn by fingers with lime-like pigment.[2]

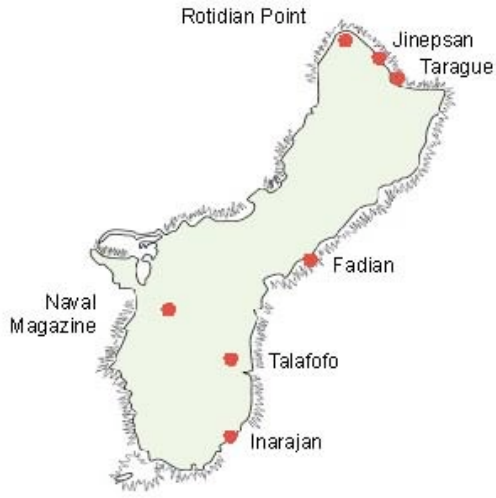

Figure 1. Map of Guam showing the location of known pictograph sites

Ritidian Point located at the northwest of Guam contains caves with pictographs. One of the caves containing pictographs is dark which requires flashlights to view the figures. Some of the pictograph figures are located in areas within the cave that are rather difficult to get to. (pers. obs.)

At Fadian, a rock art cave consisting of thirteen pictographs and one petroglyph was recorded. The pictographs contain anthropomorphic stick figures probably created by lime paste or chipped into the rock surface (Highness et. al 1992:33). The figures are similar to pictographs identified by Laura Thomson (1932) at Talofofo. The pictographs are interpreted by Haun and Brown (1990) as indication of religious and or ceremonial activities (Highness *et al.* 1992:33).

Gadao's Cave in Inarajan contains more than fifty pictograph figures that occupy a section of wall fifty cm above the floor of the cave to 1.5 meters high and distributed 2.5 meters across. Most of the figures range between two to three cm in height. A few of them reach twenty cm in heights. The style of figures vary from simple geometric designs to more complex designs. They are all line drawings with similar thickness regardless of their size. Reinman (1974) interprets this as having to do with limitation of implement used to draw, probably fingers. The exact type of materials used is hard to determine, however, it is white lime-like material that bonds well to the limestone. Some of the figures are fading due to water and weathering (HPO file no. 66-05-0142).

PREVIOUS ARCHAEOLOGICAL WORK IN THE VICINITY OF THE PROJECT AREA

There have been numerous studies conducted within the vicinity of the project area. These studies include among others, work by (Hornbostel 1923) Ray (1981), Kurashina *et al.* (1981) Kurashina and Claychulte (1983), Moore (1983), Moore and Amesbury (1986) Athens (1986), and Jolie Liston *et al.* (1996).

Hans Horbostel (1923) identified a set of pictograph in a cave at Tarague. He mentions that the cave may have been an extensive pictograph cave judging from a large amount of white spots on the walls. Though the image could not provide clearly delineated figures. Liston (1996) identified a set of eight to ten pictographs located high up on the wall that appears to be the Tarague Cave. The description of Horbostel's pictographs does not correspond with Tarague Cave pictograph, unless he did not notice the pictographs high up on the wall above the entrance.

Erwin Ray (1981) conducted archaeological study in Tarague for his graduate work. His aim was to look for evidence of similar discontinuity in archaeological record observed in the Northern Marianas by Alexander Spoher in his earlier work. He excavated twelve test units. Most of his test units (9) revealed *Latte* Period materials. They included bone spear points, petles, mortars, and fishhooks. Two of the test

units uncovered Pre-*Latte* Period deposits including pottery, adzes, hammerstones, stone knives, scrapers, choppers, coral and sea urchin spine abraders, fishhooks, sinkers, shell lime containers, and shell beads. Ray's work produced two radiocarbon dates of 405 B.C. to A.D. 30 and 365 B.C. to A.D. 220. Ray concluded that there was a minimum of a single discontinuity in the archaeological record in Tarague.

Kurashina *et al.* (1981) Kurasina and Clayshulte (1983) conducted an archaeological investigation in an area adjacent to Ray's study area. The aim of the investigation was to determine the origin of human occupation of Guam in general and Tarague in particular and to see how cultural and natural processes have affected culture as evidenced in archaeological data. Kurashina and Clayshulte (1983 b: 120) uncovered both the Pre-*Latte* and *Latte* Period materials. Two Pre-*Latte* Period tridacna adzes recovered from the excavation came from type of tridacna shells that are believed to have been absent in the Marinas during Holecene. This tools are concluded to have been imported form other places in Micronesia possibly through trade or some sort of communication network. The archaeological work in Tarague by Kurashina *et al.* (1981) produced a radiocarbon date of 1434-405 B.C. This date appears to be one of the oldest dates in the Western Pacific. However, Athens (1986) argues that since the dated material was taken from the white beach sand close to the sterile soil, where there is an ocean reservoir effect on the shell, it could have greatly affected the radiocarbon date results. An over estimation of true calendar date of about 570 years was not considered (Athens 1986:116).

Another problem with the date is whether the dating samples in the earliest two stratigraphic units were associated with cultural materials found in these units since the deposits were clearly secondary. There is a possibility that the cultural layers from the top layers may have infiltrated into the lower layers through natural processes (Athens 1986:116). The extremely low density of cultural materials in the lower layers makes this issue a critical one to consider.

Moore (1993) conducted an archaeological investigation in Tarague for her Master's thesis. Her focus was to measure changes in the pottery production. The results of Moore's analysis helped refined the two broad sequential periods of Guam's prehistory established by Spoehr. Moore proposed three periods within the Pre-*Latte* period. First is the Early Pre-*Latte* (1485 B.C. to 55 B.B.) Second is Intermediate Pre-*Latte* Period (500 B.C. to A.D.1). Third is the Transitional Period (A.D. 1 to 900 A.D). These have been discussed earlier.

During *Latte* Period, (Moore 1983) people began to bury their dead around their living areas. This period marks the introduction of megalithic structure known as *latte*, mortars, and Marianas Plain ware pottery. The appearance of mortars suggests new food preparation and or intensification of agriculture. Greater number of fishhooks and shell adzes became evident during the later period. Evidence of consumption of pelagic fish, reef fish, and fruit bats continued to be found during *Latte* Period. However, degrease in shellfish consumption became evident.

More and Amesbury (1986) conducted an archaeological subsurface testing at the northern part of Tarague for a recreation facility. The study revealed both Pre-*Latte* as well as *Latte* Period materials. As expected, *latte*r materials were uncovered from the upper layers while the earlier cultural resources were found in the lower strata. Two radiocarbon dates were acquired from this area. One was calibrated to A.D. 1220 to 1396 and the other A.D. 892 to 1129.

Liston *et al.* (1996) conducted cultural resources survey at Tarague Embayment. The purpose of the survey was to provide data to be used to develop an interpretive program and long-term recommendations for the cultural resources of Tarague Embayment under the Legacy Resource Management Program (Liston *et al.* 1996:1).

The survey of Tarague located one hundred and thirty nine archaeological localities. Sites included thirty eight pre-contact complexes and one hundred and one discrete features, including twenty four rock alignments, twenty artifact scatters, sixteen rock shelters, ten rock

mounds, seven bedrock mortars, six water-bearing caves, four caves/sinks, and three trails Liston *et al.* (1996:133).

Two test units were excavated at one of the block rock shelters (Site 8-1588, Feature 30). The two test units uncovered fish bones, fruit bat bones, vertebrates, a large amount of medium sized lizard bones and numerous species of seashells. The thin sherds with slipped/washed surface with Calcareous Sand Temper and Mixed Sand Temper recovered from test unit one and six suggest that the site was used during Pre-*Latte* Period. Date acquired from test unit one, 402-192 B.C. and test unit six, 795-397 B.C. corresponds well with Moore's Intermediate Pre-*Latte* Period date, 1000-500 B.C. (Liston *et al.* 1996:122). This site is interpreted as a field shelter which was continually used for a long time for exploitation of inland natural resources. The primary and permanent residential areas were located along the coast (Liston *et al.* 1996:122).

METHODOLOGY

Knowing that pictographs can fade overtime through weathering and human interaction, a careful search of the cave for rock art other than the ones already known was conducted. Ones the cave had been thoroughly searched and all the pictographs had been identified, the documentation commenced.

The documentation of the Talagi Pictograph Cave consisted of mapping of the pictographs and the cave and its associated bedrock mortars. The point of beginning was established in an area in front of the cave where the entire cave and bedrock mortars were clearly visible. The mapping required two people. One was recording the dimensions of points being measured while the other stretched the tape. The pictographs which are located five meters above the base of the cave could not be mapped using the established point of beginning and tape. It required one person to clime on a ladder to the pictograph area and measured each one of the figures and their distance from each other. The dimensions were read to and recorded by another team member who already sketched the pictographs on a separate paper. Photographic documentation using digital camera was also accomplished. The Geographic Positioning System (GPS) reading of the cave was taken.

Materials and equipment used in the mapping included graph papers, an alidade, a plane table, a stadia rod a measuring tape, mechanical pencils, an expandable ladder, a compass, an explorer GPS and a digital camera.

Figure 2. Talagi Pictograph Cave as seen from the beach

Figure 3. Talagi Pictograph Cave showing rubble strewn floor and graffiti

RESULTS OF SURVEY

The survey resulted in the description and mapping of the cave and its associated features, pictographs and bedrock mortars.

Description of the cave

The Talagi Pictograph Cave is located just outside of the northern boundary of Tarague Beach, Andersen Air Force Base Guam on a property owned by the Government of Guam.

Figure 4. Talagi Pictograph Cave

Figure 5. Talagi Pictograph Cave

Figure 6. Talagi Pictograph Cave

Table 1. Description and dimension of figures in cms

Fea. No	Type	Left arm	Right arm	Left leg	Right leg	thickness	Overall height
1	Human figure	3	-	1.5	2	1-1.5	8
2	"	5	5	-	-	1-1.5	6
3	"	6	8	3	4	1-1.5	10
4	"	6	7	5	4	1-1.5	8
5	"	5	6	4	2	1-1.5	8
6	"V" shape figure	5	6	-	-	1.5	-
7	Line	-	-	-	-	1.7	11
8	"V" shape figure	7	6			1.7	
9	"T" shape figure	6	6	-	-	3	11
10	Human figure	4.5	1	-	-	1.5	18
11	Human figure	4	3.5	4	4	1.5	11
12	Human figure	4	4.5	4	4	1.5	11

It is at the base of a limestone cliff approximately thirty meters high and about twenty five meters west of the mean low tide mark (Figure 2). The opening of the cave that faces north measures six meters from the ground to the ceiling and fifteen meters from one side to the other. The depth of the cave measures twenty - four meters.

The cave once had a wider opening. However, that opening has been partially covered by numerous large limestone boulders that fell from the top (Figure 3). Inside of the cave is littered with rocks ranging in size a basketball and larger to fist size and smaller. The rocks were brought in by strong storm surge and roof fall. In the 1970s the cave was used as a

bar serving alcohol and other beverages. After it was abandoned, it became a visiting place especially for people who are into graffiti as evidenced by spray painting on the walls. In the 1990s, owners of Inapsan, property north of the Talagi Pictograph Cave, ran a three-inch waterline to their property. This waterline was continuously bolted on the face of the cliff and ran across the cave mouth. Remnants of the pipeline can still be seen on the face of the cliff where the cave is located.

The cave contains at least nineteen features. Of that, thirteen are pictographs representing different figures (Figure 4), six are bedrock mortars, and one is a lime-like element located just above the pictograph area. Some of the pictographs appear to represent human figures, however, some of which do not have heads and some do not have legs and or hands (Figure 6). A few of the figures associated with what appear to be human figures are painted clearly but are difficult to determine what they represent. Two of the figures have straight lines meeting each other to form "V" shapes while one figure has only a straight line. The heights of these figures range between seven and eleven cm. The width of the lines ranges between one and one and half cm (Figure 5).

The bedrock mortars are concentrated in an area approximately four meters square at the eastern portion of the cave's entrance. The mortars range between ten and sixteen cm in diameter and between three and half and eleven cm in depth.

The following are the detailed descriptions of each one of the features:

Feature 1. This feature appears to represent a human figure but without the right arm and the head. A small portion of the lower neck can be recognized. The right leg measures two cm long and the left leg measures one and half cm in length. The height is eight cm and the left arm measures three cm in length. The lines that make up the figure are one cm wide.

Feature 2. Located forty cm to the left of Feature 1 is Feature two 2. This is a figure that is similar to Feature 1 except it does not have legs, neck and head. The height measures six cm and the two arms are identical at five cm each in length. The width of the lines is between one and one and half cm.

Feature 3. Feature 3 is located twenty cm to the left of Feature 2. It is a figure representing human image. It has both legs and arms and the head. The right arm measures six cm long while the left arm measures eight cm in length. The left and right legs are three and four cm long respectively and the height is ten cm. The width of the lines ranges between one and one and half cm.

Feature 4. Ten cm directly below Feature 3 is Feature 4 which is another complete human figure. The left and right arms measure six and seven cm respectively. The legs are five and four cm while the height measures eight cm. The width of lines measures between one and one and half cm.

Feature 5. Feature 5 is another human figure located twelve cm to the left of Feature 4. The left arm measures five cm and the right arm is six cm long. The left leg is four cm and the right measures two cm long. The overall height of the figure is eleven cm. Very small part of the neck area is visible. Immediately to the left is a figure that has faded and is difficult to recognize but it might be a figure depicting human image. The lines range between one and half cm in width.

Feature 6. Feature 6 is located sixty cm left of Feature 5. This feature is a "V" shape figure whose left side measures six cm and the right side is five cm long. The lines are one and one half cm in width.

Feature 7. Located ten cm left of Feature six is a straight line figure measuring six cm long by 1.7 cm wide.

Feature 8. This is a "V" shape figure with a line branching out to the right immediately above it. The left side measures seven cm and the right side measures six cm. The width of the lines measures 1.7 cm. The line above is seven cm long.

Feature 9. This feature is located ten cm directly below Feature 8. It is a "T" shape figure that measures six cm on both sides of the "T". The height measures eleven cm and width of the lines is three cm.

Feature 10. Feature ten is located fifteen cm to the left of Feature 8. It is a feature that rep-

resents a human image except it does not have legs. The left arm measures 4.5 cm while the right arm measures only 1 cm. The height is eighteen cm and the width is 1.5 cm. Immediately to the left are four lines pointing different directions at the level of the left arm.

Feature 11. Feature 11 is another human image located 3 cm to the left of Feature 10. This figure does not have a neck. The left arm measures 4 cm and the right arm is 3.5 cm in length. Both legs measure 4 cm. The thickness measures 1.5 cm while the height is 11 cm.

Feature 13. Omitted.[3]

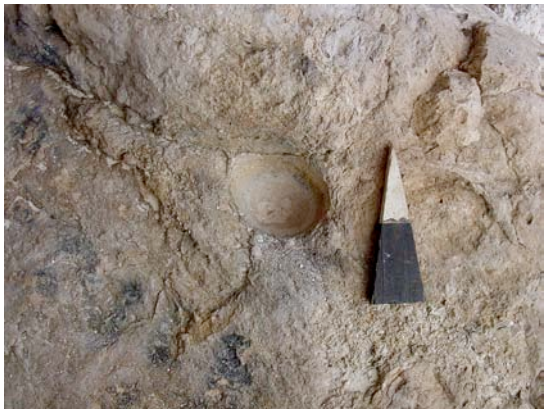

Figure 7. Talagi Pictograph Cave Feature 14. Bedrock mortar

Figure 8. Talagi Pictograph Cave Feature 15. Bedrock mortar

Feature 12. Six cm below Feature 11 is another human figure. This figure is similar to Feature 11which does not have a neck. The left arm measures 4 cm long and the right arm measures 4.5 cm in length. The right and left legs are identical at 4 cm in length. The thickness of the figure is 1.5 cm while the height measures 11 cm.

Figure 9. Talagi Pictograph Cave Features 16 (left) and 17 (right). Bedrock mortar

Feature 14. Feature 14 is a bedrock mortar located on the surface of a limestone shelve approximately 1.5 meters above the ground surface immediately west of the cave entrance. It is one of the six bedrock mortars concentrated in an area approximately two square meters. This mortar is an oval shape that measures 16 by 10 by 3.5 cm deep (Figure 7).

Feature 15. This is another bedrock mortar located two meters west of Feature 14. It measures 14 by 11 cm by 8 cm deep (Figure 8).

Feature 16. One meter east of Feature 15 is another bedrock mortar. It measures 15 by 13 cm by 7 cm deep (Figure 9).

Feature 17. Feature 17 is another bedrock mortar located at 20 cm west of Feature 16. Its dimensions are 16 by 15 by 11 cm in depth (Figure 9).

Feature 18. This is a bedrock mortar located 1 meter south of Feature 17. It measures 10 by 10 cm in diameter and 6 cm in depth (Figure 10).

Feature 19. Located 50 cm south of Feature 18 is another bedrock mortar. It measures 10 by10 cm in diameter and 6 cm in depth (Figure 10).

Figure 10. Talagi Pictograph Cave Features 18 (top) and 19 (bottom). Bedrock mortar

Of the twelve pictographs identified and recorded in the Talagi Pictograph Cave, eight appeared to represent human images. Two are "V" shape, Feature 6 and 8. One, Feature 9, is a "T" shape and one, Feature 7, is a straight line. All eight human figures had both the left and right arms except for Feature 1 that did not have the right arm. Six of the human figures, Feature 1, 3, 4, 5,11, and 12 had both the left and right legs. The two "V" shape figures, Feature 6 and 8 had almost identical dimensions, Feature 6, had 5 and 6 cm and Feature 8 had 6 and 7 cm with their thickness measuring at 1.5 and 1.7 cm respectively. Nine of the features had line thickness of between 1 to 1.5 cm. Two features, 7 and 8 had line thickness that measures 1.7 cm. Feature 9 was exceptionally thick measuring at 3 cm. The overall height of all features range between 6 and 18 cm. Features 2 and 7 are the shortest measuring at 6 cm while Feature 10 is the tallest at 18 cm. Feature 11 and 12 which are the easternmost features adjacent to each other had very similar dimensions. Their arms are between 3.4 and 4.5 cm long and their legs are identical at 4 cm in length. The thickness are 1.5 while the heights are 11 cm.

Table 2. Description and measurements in cms

Feature No.	Description	Diameter	Depth
13	Omitted		
14	Bedrock mortar	16X10	3.5
15	Bedrock mortar	14X11	8
16	Bedrock mortar	15X13	7
17	Bedrock Mortar	16X15	11
18	Bedrock mortar	10X10	6
19	Bedrock mortar	10X10	6

The six bedrock mortars varied in depth and diameter. Only two bedrock mortars, Feature 18 and 19 had identical dimensions at ten by ten by six. The rest, Features 14 to 17 ranged in diameter between fourteen by eleven and sixteen by fifteen. The depth ranged between three and half to eleven cm. Feature 14 was the shallowest at three and half while Feature 17 was the deepest at eleven cm.

ASSESSMENT OF SIGNIFICANCE

The significance of site assessments is based on the National Register of Historic Places criteria for evaluation. The National Register of Historic Places is an official listing of properties that are "significant in American history, architect, archaeology, and culture" (National Historic Preservation Act Section 101 (a) (1). A property has the National Register of Historic Places significance if it meets two criteria (36CFR Part 60:4). (1) the site must possess integrity of location, design, setting, materials, workmanship, feeling, and association; and (2) it must be characterized by at least one of the following:

It must be associate with events that made significant contributions to broad patterns of history;

It must be associated with lives of persons significant in the past;

It must embody distinctive characteristics of a type, phase, or method of construction, or represent the work of a master, or posses high

artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction (representative examples of site types) ; or

It must have yielded or be likely to yield information important in prehistory or history (information content) (36CFR Part 60.4).

A site may be assessed as significant for its cultural value. This assessment follows the "guidelines for consideration of Traditional Cultural Values in historic preservation review. The guidelines define cultural values as the contribution made by an historic property to an ongoing society or cultural system. A traditional cultural value is a cultural value that has historical depth" (ACHP 1985:1). The guidelines also specify that " a property need not have been in consistent use since antiquity by a cultural system in order to have traditional cultural value" (ACHP 1985:1).

The physical condition of a site determines its integrity and research value. The research value of a site rests on its potential to provide significant information. If a site is rare and in good condition which can provide significant historic or prehistoric information, its research value will be high. If a site is somewhat disturbed it will have a reserve research value or marginal value if deteriorated. The integrity of a site may be good if very intact, fair if somewhat intact and poor if deteriorated.

Based on the National Register of Historic Places criteria, Talagi Pictograph Cave is eligible for inclusion into the National Register of Historic Places under criterion (d) for information content and traditional cultural value.

Although the cave itself has been altered, the features (bedrock mortars, pictographs) that make the cave significant are still very intact making the research value and integrity of the cave high.

Concluding Discussions And Recommendations

The Talagi Pictograph Cave displays some unique characteristics but at the same time shows similar features that can be observed in other caves. The pictographs located approximately five meters above the ground display similar figures as other known pictographs on Guam such as Gadao Cave in Inarajan and Ritidian Pictograph Caves. However some of the figures that appear to represent human images are different in that they do not have legs and or arms and heads. The distance between each individual pictograph range from three to sixty cm. Generally the heights of the pictographs appear to be consistent with the exception of a couple. The thickness of the lines are very similar except one which is exceptionally thick, almost two cm thicker than the rest. Majority of the figures represent human images but a few of them look like modern alphabets.

Like other caves, such as Ritidian Pictograph Cave, Talagi Pictograph Cave has a concentration of bedrock mortars. The mortars range in depth from as shallow as three and half cm to as deep as eleven cm. Their diameters are between ten to sixteen cm. The concentration of bedrock mortars within a two meters square area can be as close to each other by twenty cm while some are more than a meter apart.

The first six and the last three figures (see table 1) are very consistent in thickness at between one and one half cm and between six and sixty cm apart. If it is true that finger tips were used at Talagi pictographs, it is further suggested that these rock arts were created by one person otherwise more than one person with very similarly sized finger tips were involved in creating these pictographs. The distance between individual features which are between six and sixty cm and the fact that some type of ladder was used to reach the pictograph area suggest that only one person was up there at a time. This does not necessarily mean that it was impossible to use more than one ladder at a time, however, if that was the case, then people had to work from the opposite directions, otherwise they would have bumped to each other at five meters above the ground (fig.10). The heights of pictographs which seven of them had identical measurements suggest that some form of measuring mechanism was employed.

The depth of bedrock mortars in which four of them had comparable depths at between six and eight cms, and two had a difference of depth of little over seven cm suggest a

number of things. The four, Features 15, 16, 18, and 19 were probably used consistently for about the same amount of time. If more than one pestle or pounder were used in Features 18 and 19, they must have had very similar sizes. The fact that diameters of Features 14 and 17 had comparable measurements but their depths had big differences, suggest that perhaps Feature 17 was used until it reached its present depth where a pestle could no longer be used comfortably in that feature made it necessary to create another one perhaps Feature 14. Otherwise same or similarly sized pestle(s) was used in both Feature 14 and 17 but Feature 14 was not used as much or was created at a much later time.

The concentration of bedrock mortars with an average distance of approximately fifty cm apart from each other which provides appropriate spacing, could also suggests that several people could have used the mortars all at the same time.

To date no one has been able to answer questions regarding the meaning of pictographs, their age, and the materials used to create them. We can only speculate that pictograph figures may represent cultural relationships and patterns of communication and commerce among people. Change of styles sometimes may reflect new ideologies and other cultural practices for example, religion (internet).

The question of how long will it take to form an eleven cm deep mortar using a pounder is something that is not understood now. However, hands on exercise using similar kind of rocks can be done to provide a fairly accurate estimation as to how long will it take for a certain mortar to get to a certain depth.

The uniqueness of Talagi Pictograph Cave makes it highly recommended site for the National Register of Historic Places. It is further recommended that a more thorough study with the aim of determining the substance used to create pictographs at least at the Talagi Cave be conducted. If the substance can be dated a radiocarbon dating should also be done.

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ENDNOTES

[1] On September 2003, a team of three people conducted survey of the cave to fully document it. The team consisted of William Hernandez, Historic Preservation Specialist III, Joe Garrido, Historic Preservation Specialist I, and Vic April, Territorial Archaeologist who oversaw the fieldwork. A total of 32 person hours were expended in the field.

[2] Based on an examination of Talagi Pictograph Cave it can be assumed that at some of the pigment was obtained by dissolving pure white clay gathered from mud wasp nests (figure 11).

Figure 11. Talagi Pictograph Cave Muswasp nest from white clay.

[3] . A round feature was recoded which turned out to be a mudwasp cocoon (see figure 11).

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