

NAN MADOL: CEREMONIAL CENTER OF EASTERN MICRONESIA

As Nominated by
the Federated States of Micronesia
For Inscription on the World Heritage List

January 2015



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Dr. Kanefusa Masuda (ICOMOS-ICORP)

Dr. Takuya Nagaoka (NGO Pasifika Renaissance/ University of Auckland)

Dr. Anita Smith (Deakin University)

Mr. Adam Thompson (Independent Archaeologist; former FSM Staff Archaeologist)

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EXECUTIVE SUMMARY

State party

Federated States of Micronesia

State, province or region

Madolenihmw Municipality, Pohnpei Island, Pohnpei State

Name of property

Nan Madol: Ceremonial Center of Eastern Micronesia

Geographical coordinates to the nearest second

N 6° 50' 21", E 158° 19' 42"

Textual description of the boundaries of the nominated property

This is the first nomination of a serial property 'Ceremonial Centers of Eastern Micronesia' that will in future include two components – Nan Madol (the property of this nomination) and Lelu (to be nominated in future, see Appendix E for draft parts on Lelu components).

Nan Madol is an archaeological site on the southeast coast of Pohnpei Island. The boundaries of the site encompass the entire site of man-made islets constructed on the reef adjacent to Temwen Island. A buffer zone has been delineated which surrounds the nominated property and includes the whole of Temwen Island and incorporates properties of the major stakeholders who have provide access to the site

and have agreed to support the World Heritage nomination.



Map of the nominated property, showing boundaries and buffer zone (based on the data from McCoy, Alderson and Thompson in press).

Criteria under which property is nominated

Criteria iii, iv and vi

Draft statement of Outstanding Universal Value

a. Brief synthesis

The site of Nan Madol is the larger of two monumental stone complexes known as the Ceremonial Centers of Eastern Micronesia, centers of complex political, religious and social systems that developed in the Micronesia from around 1200 AD. Nan Madol on the island of Pohnpei and the center of Lelu on Kosrae attest to the emergence of highly stratified chiefdom systems and governance evident in many islands or archipelagos of the Pacific Ocean from around 1000 years ago.

Nan Madol and Lelu, separated by 550 km of open sea, are megalithic settlement complexes constructed on artificial, man-made islands that extend across a shallow reef platform within the fringing reef of the Pohnpei and Kosrae respectively.

Nan Madol is the larger and more intact of the two ceremonial centers, an elaborate and megalithic complex consisting of more than ninety artificial islets of basalt and coral boulders, separated by navigable channels, that provide the foundation on which massive basalt structures have been constructed with massive lengths of prismatic/columnar basalt placed in header and stretcher patterns that surround tombs, residential complexes, and sites for sacred or ceremonial activities.

Construction of the islets is likely to have commenced around 1200 AD on the reef adjacent to Temwen Island, a small island off the southeast coast of Pohnpei following initial human colonization of the island around 2000 years ago. In the following millennium, as population and settlements grew alongside an increasing reliance on agriculture, chiefly societies emerged eventually to be unified across Pohnpei under a paramount chief, the Saudeleur. Nan Madol became the place of residence, administration and ritual for the Saudeleur and their elite. The consolidation of chiefly power under the Saudeleur Dynasty is associated with the major phase of construction of the massive stone structures of Nan Madol. Existing islets were expanded and new islets and structures were built using huge blocks of stacked prismatic basalt mined elsewhere on Pohnpei and transported to the site. Dwellings existed on many of the islets while others had special purposes including food preparation and canoe making. Oral traditions place the downfall of the

Saudeleur around 1600 AD when Isokelekel, son of the Pohnpeian thunder god, overthrew the Saudeleur. He established a new political order with himself as the paramount chief or Nahmwarki of Madolenihmw, the chiefdom adjacent to Nan Madol. By the 1820s people no longer lived at Nan Madol but it continues to retain a religious and traditional significance. The Nahmwarki system continues into the present as the traditional system of governance in Pohnpei. Ownership of Nan Madol is held by the Nahmwarki title and transferred to each successive Nahmwarki. This is a traditional system passed down since the end of the Saudeleur dynasty around 1500-1600 AD.

Across the Pacific, following an initial colonization period, as island populations gradually expanded, semi-autonomous polities emerged to compete for resources, alliances and the struggle for the power reigned supreme. Populations became rooted in their political and economic boundaries, creating a depth of generational links tied to the land and sea. Sedentary settlements increased their reliance on cultivated foods. The archaeological evidence, oral histories and genealogies of the Pacific islands confirm that the millennium prior to European contact was a time of great social change throughout the Pacific. Environmental and economic pressures associated with the development of an increasing political stratification led to the appearance of complex chiefly societies that became the systems of traditional or customary governance that were encountered by Europeans from the 16th century and continue to structure present-day Pacific Island societies.

This development of distinctive chiefly social structures within the Pacific is a phenomenon associated with the appearance of monumental architecture in many parts of the Pacific from around 1000 years ago. Examples of this include Eastern Polynesia, Tonga and Samoa and Micronesia. Nan Madol is an outstanding Micronesian expression of this pan-Pacific phenomenon, tangible evidence of this increasing social, political and economic stratification, and a symbol of the power of the chiefs to command the labor to build monumental structures and mobilize a significant labor force.

The outstanding universal value of the Ceremonial Center of Nan Madol lies in its being a unique Pacific Island expression of the global association of monumental

architecture with the emergence of social complexity in a region and the development of elaborate political hierarchies that have the capacity to create impressive, monumental structures as emblems of power and authority.

b. Justification of criteria

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

Nan Madol, a Ceremonial Center of Eastern Micronesia, bears exceptional testimony to the development of chiefly societies in the Pacific Islands. The huge scale, technical sophistication and concentration of elaborate megalithic structures of Nan Madol bear testimony to complex social and religious practices of the island societies that persisted for over 500 years.

Criterion (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

Nan Madol is an outstanding small island example of monumental architecture associated with the appearance of stratified societies and centralization of power that is evidenced in many parts of the world. The megalithic stone complex of Nan Madol includes chiefly dwellings, ritual/ceremonial sites, mortuary structures and domestic sites that bear unique testimony to the origin and development of chiefly societies evidenced across the Pacific Islands from around 1000 years ago and associated with increasing island populations and intensification of agricultural production.

Criterion (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. Nan Madol is an expression of the origin and development of traditional chiefly institutions and systems of governance in the Pacific Islands that continue into the present in the form of the Nahmwarki system under which Nan Madol is traditionally owned and managed.

c. Statement of integrity

The integrity of Nan Madol is ensured by the inclusion within the boundaries of the nominated property all the key structures that demonstrate the architectural forms and diversity or construction techniques and materials in both components of the property. The boundary of Nan Madol includes all islets listed by Hambruch (1910) in the first full survey and recording of the complex.

d. Statement of authenticity

The authenticity of the nominated property is held in the setting, interrelationships, forms and variety of the structures and canals of both properties. There has not been any reconstruction of the structures apart from minor repairs. Nan Madol has not been impacted by major developments although vegetation and siltation on the site are compromising its conservation and the visual and aesthetic appreciation of property.

Archaeological research over the past 30 years at Nan Madol has provided evidence of the origin, development and construction of the megalithic complex and the activities at each site. Oral traditions and historical records provide insight into the social history and the centrality of Nan Madol in establishing the Pohnpeian system of traditional governance through the Nahmwarki system.

Archaeological excavation has been limited and much of the archaeological deposit remains intact and potentially offers further information about the specific functions of various islets and social interactions reflected in the site.

The purpose of each of the islets has been passed down by oral tradition. Minimal archaeological excavation has occurred within Nan Madol. Instead, research has focused on mapping and surface collection. Development has remained well outside the boundaries of the nominated property. The site was included on the US National Register of Historic Places in 1980. A single small path has been constructed with removable wooden bridges providing access for tourists. Some archaeological features extend beyond the boundary of the nominated property into the buffer zone. These features include areas on the small surrounding islands that

would have been used in the transportation of stone.

e. Requirements for protection and management

Nan Madol is included on the US National Register of Historic Places (19741219 74002226) and is on the Pohnpei State Register of Historic Properties and protected under the Pohnpei Historic and Cultural Preservation Act 2002. Proposed protection mechanisms for Nan Madol, which include a Pohnpei State law and draft management system (Appendix A), are adequate to ensure the Outstanding Universal Value of Nan Madol to be maintained for a longer term. The property is also protected through customary protocol and respect. To access Nan Madol visitors are requested to first ask permission from the Nahnmwarki. Combining this existing legislation, customary protection for the property described below provides sufficient provisions for the protection and management of Nan Madol as a World Heritage Site.

FSM and Pohnpei State officials acknowledge that the Nan Madol Preservation and Management Plan (1992) needs improvements and updating in the light of the provisions of the 2002 Act. This work is currently underway. A draft management system for Nan Madol was developed based on agreements during the 2012 Nan Madol Capacity Building Workshop, which was attended by stakeholders from government agencies and community. Proposed organizational structure consists of the Nan Madol World Heritage Board, the Nan Madol World Heritage Management Committee, and the Temwen Island World Heritage and Tourism Committee, in which different types of stakeholders, such as national, state, and local government representatives, traditional authorities, and community, will be involved (see Section 5.e).

Name and contact information of official local institution/agency

Organization: FSM Office of National Archives, Culture and Historic Preservation

Address: PO Box PS 175, Palikir, Pohnpei FM 96941, Federated States of Micronesia

Tel: (691) 320-2343/6922

Fax: (691) 320-5634

E-mail: hpo@mail.fm; kusgoose@hotmail.com

1. IDENTIFICATION OF THE PROPERTY

1.a. COUNTRY

Federated States of Micronesia

1.b. STATE

Madolenihmw Municipality, Pohnpei Island, Pohnpei State

1.c. NAME OF THE PROPERTY

Nan Madol: Ceremonial Center of the Eastern Micronesia

1.d. GEOGRAPHICAL COORDINATES TO THE NEAREST SECOND

N 6° 50' 21", E 158° 19' 42"



Figure 1.1. The location of Pohnpei and Kosrae (based on U.S. Central Intelligence Agency 2002).

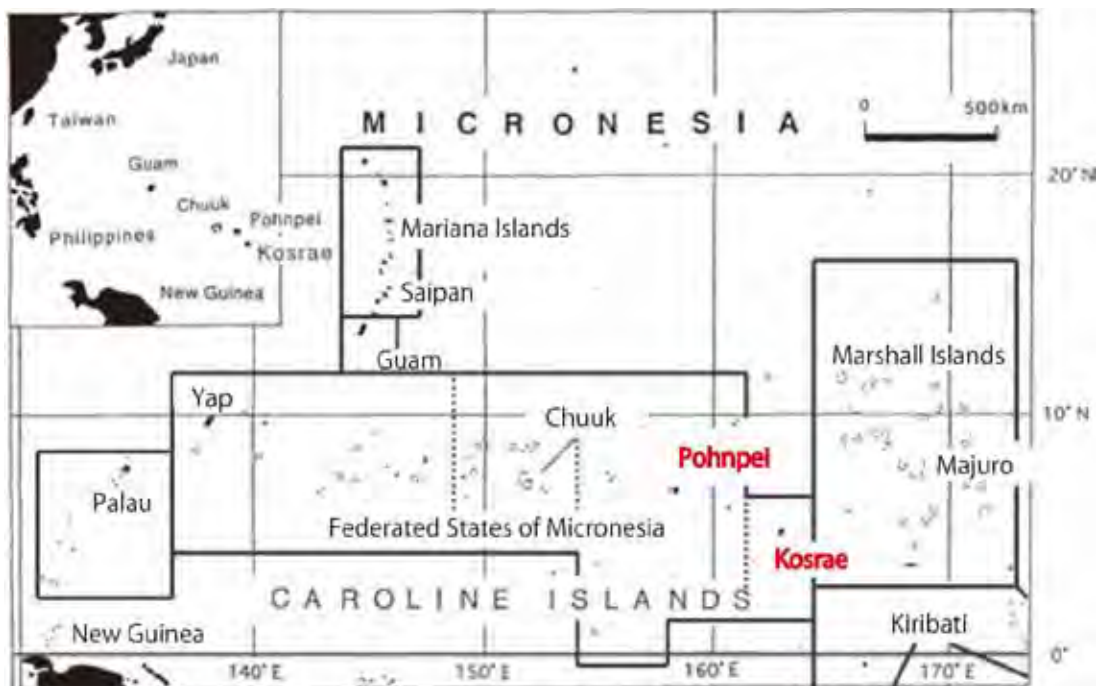


Figure 1.2. The location of Pohnpei and Kosrae in Federated States of Micronesia.



Figure 1.3. The location of Nan Madol on the Island of Pohnpei.

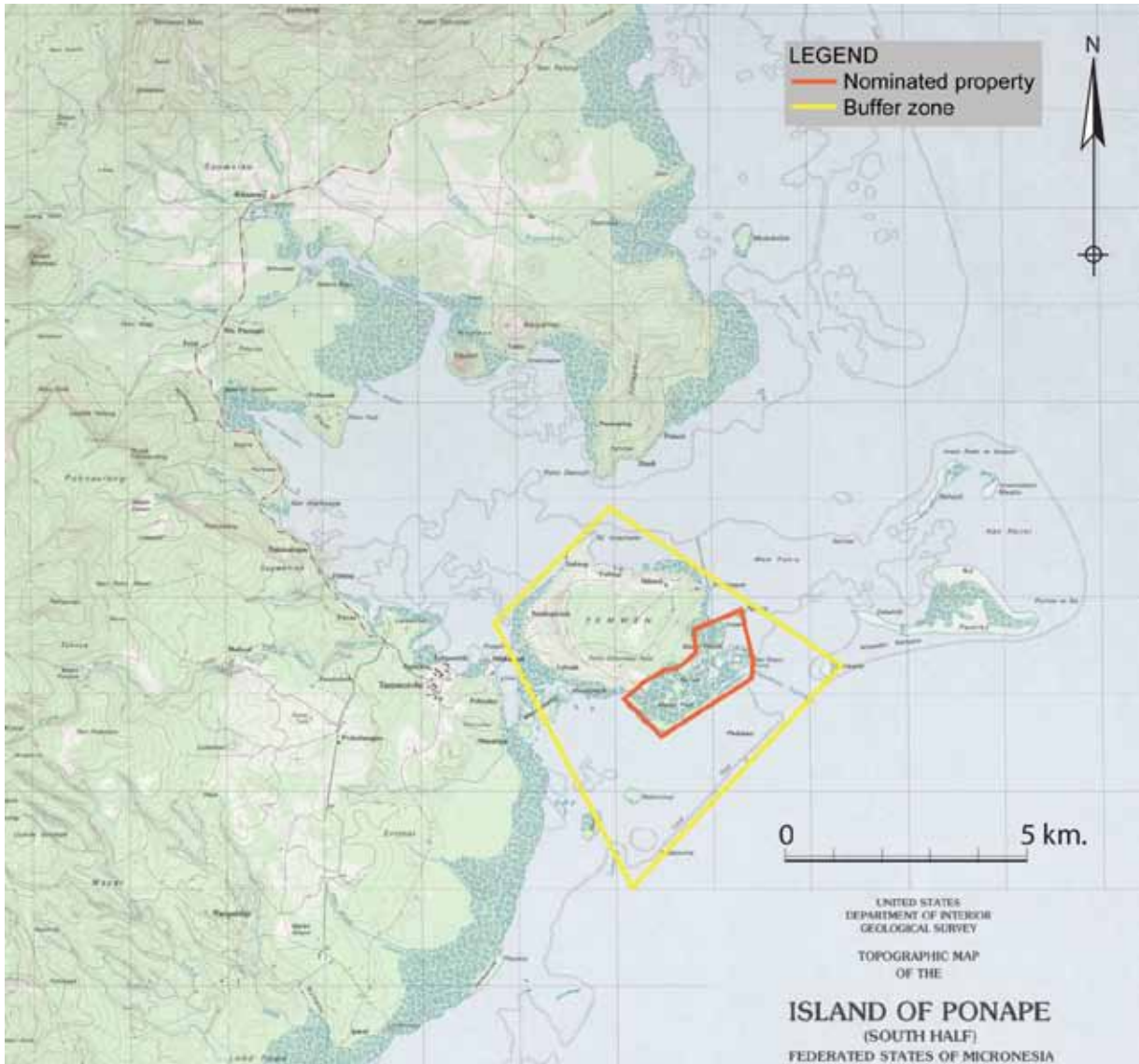


Figure 1.4. The nominated property and the buffer zone in relation to Temwen Island on the south east coast of the Island of Pohnpei (based on U.S. Geological Survey 1983a, 1983b).

1.e. MAPS AND PLANS, SHOWING THE BOUNDARIES OF THE NOMINATED PROPERTY AND BUFFER ZONE

Maps and plans showing the locations and boundaries of the nominated property and the buffer zone as well as legal protective designations are shown below:



Figure 1.5. The location and boundaries of the nominated property and the buffer zone (based on the data from McCoy, Alderson and Thompson in press).

Coordinates for the nominated property and its buffer zone:

	Northing	Easting	Hectares
Nominated property			76.7
N	6°50'56.25"	158°20'10.12"	
E	6°50'39.86"	158°20'13.99"	
W	6°50'27.68"	158°19'31.74"	
S	6°50'15.14"	158°19'43.94"	
Coordinates of the central point	6° 50' 21"	158° 19' 42"	
Buffer zone			664
N	6°51'30.43"	158°19'26.71"	
E	6°50'38.94"	158°20'43.02"	
W	6°50'52.69"	158°18'49.11"	
S	6°49'26.54"	158°19'34.32"	

1.f. AREA OF THE NOMINATED PROPERTY AND PROPOSED BUFFER ZONE

The total area of the nominated property and that of the buffer zone are given below:

Area of nominated property: 76.7 ha

Buffer zone: 664.0 ha

Total: 740.7 ha

2. DESCRIPTION

2.a. DESCRIPTION OF PROPERTY

Nan Madol is located on Pohnpei Island in the Federated States of Micronesia (FSM) (Figure 2.1). FSM is a federation of four small island groups in the north west Pacific Ocean spread over approximately 2,900 km between latitudes 137° and 163°. The four island groups, from west to east are Yap, Chuuk, Pohnpei and Kosrae, the latter two formally known as the Eastern Caroline Islands. Nan Madol is on the southeast coast of Pohnpei.

Nan Madol along with Lelu on Kosrae Island (the second component of the future serial nomination for the Ceremonial Center of Eastern Micronesia) are described as the twin capitals in the Eastern Micronesian Islands. These monumental stone cities exemplify a mastery of stone masonry and its pinnacle in the planning, technology and construction of extensive stone architectural complexes.

Nan Madol is a settlement complex built atop artificial islands extended across a shallow reef platform within the fringing reef of the adjacent small island of Temwen Island. The construction of Nan Madol expanded the land area of small coastal and lagoon islets, and created navigable canals between the islets. On the islets are monumental stone structures, some with walls some 6 to 7 meters high. The islets are constructed of basalt and coral boulders topped by lengths of prismatic/columnar basalt placed in header and stretcher patterns that surround tombs, residential complexes, and sites for sacred/ceremonial activities.

The megalithic construction of the site took place from AD 1200-1300 to AD 1500-1600, and involved the small island populations in the mining, moving and manoeuvring of an estimated 2,000 tons of volcanic rock every year for at least three to four centuries without the benefit of pulleys, levels, metal tools or wheels.

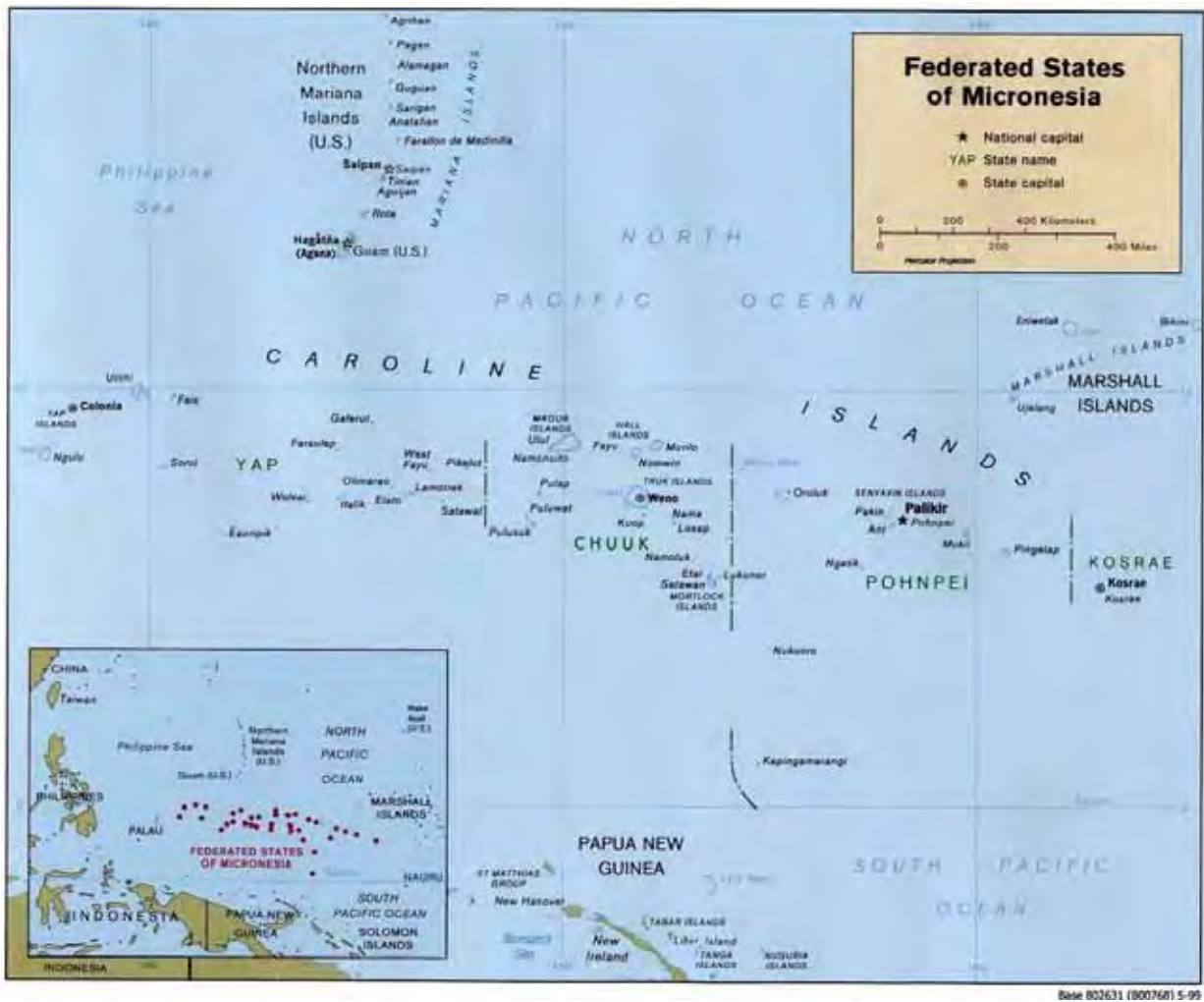


Figure 2.1. Location of the island of Pohnpei in Federated States of Micronesia (University of Texas Libraries 2014).

2.a.1. The Setting of Nan Madol, Pohnpei Island

The island of Pohnpei (formerly, Ponape) is situated at 6° 53' North and 158° 14' East, in the Eastern Caroline Islands of Micronesia. Pohnpei is the main island of Pohnpei State, where the capital of the Federated States of Micronesia (FSM), Palikir, is located. It is an oval-shaped high volcanic island, the third largest in Micronesia with a land area of approximately 334.1 km² and a population of 34,685 (Figure 2.2). The center of the high volcanic island reaches elevations of 772 m. This height in combination with the tropical trade winds produces roughly 4,650 mm of rain annually in the center of the island, one of the highest rainfalls within the Pacific Islands.



Figure 2.2. Pohnpei Island and the location of the nominated property (based on U.S. Geological Survey 1983a, 1983b).

Being near the equator, the island maintains temperatures range from 21 to 32 degrees Celsius with average of 27 degrees Celsius. The climate supports the cultivation of tropical crops such as coconut, breadfruit, banana, yam, taro, and *sakau* (kava). Almost all cultivation, which is a form of agro-forestry, mixing agriculture and secondary forest, occurs at lower elevations. The island has a rich reef system and

lagoon, and the coastlines are predominantly mangrove forest with an exception of sand beaches on reef islets. The high degree of rainfall on Pohnpei produces brackish swampy waters immediately around the coast in which mangroves thrive. The marine systems provide a rich source of food.

2.a.2. Nan Madol in Pohnpeian history and oral traditions

Linguistic and archaeological evidence indicates that eastern Micronesia, of which Pohnpei is a part, was settled around 2500-2000 years ago probably during the late phase of expansion of people into Remote Oceania archaeologically characterized by the presence of post-Lapita pottery, and from an area between the Bismarck archipelago and the Southeast Solomons–Vanuatu region (Kirch 2000).

Much of our knowledge and understanding of Pacific Island societies in the past comes from the rich oral traditions of the region. In Pohnpei, knowledge of the traditional history of the island is conserved through oral transmission of this knowledge. Large amount of oral traditions on Pohnpei history and Nan Madol were also recorded during the early European contact phase (Bernart 1977, Fischer *et al.* 1977, Hadley 1987, Hambruch 1932, Hanlon 1988). The detail and emphasis of the associated oral traditions varies (e.g., Petersen 1990), but there is general agreement on the key elements of the ethno-history of Nan Madol and Pohnpei (Bernart 1977, Hadley 1987). This can be divided into four consecutive periods: the period of people, the period of the Saudeleurs, the period of Nahmwarki, and the period of the foreigners.

The period of people

A series of voyages of immigrants from different origins reached Pohnpei bringing with them new plants, technology, geomorphological features and ideas, enriching the originally-barren island through time. The seventh voyage brought a large group of people from Katau Peidi, or ‘Downwind Katau,’ a mythical land to the west of Pohnpei. This group was headed by two wise and holy brothers, Olosihpa and

Olosohpa. After settling at the northern part of the island in the area now known as Sokehs, they built a place of worshipping for a religious belief known as *pwongin sapw* (literally, 'worship of the land') (Mauricio 1983:213-214). Subsequently they moved to Nett, U and finally to Madolenihmw, where, gradually gaining assistance from all the people of Pohnpei, they built artificial islets on a reef, which was later became known as Nan Madol, literally 'between the intervals,' referring to space between the houses on the artificial islets (1983:208-209).

The period of the Saudeleurs

The period of the Saudeleurs began when the older brother, Olosihpa, died and Olosohpa, his younger brother became the first ruler of the entire island of Pohnpei, taking the title of Saudeleur, literally, 'Lord of Deleur,' Deleur being the area immediately surrounding Nan Madol and presumably the primary base of Saudeleur's power. Nan Madol served as the royal residence for the Saudeleur rulers. The number of the named Saudeleurs, who are said to have belonged to the founders' clan, the Dipwilap clan, varies among sources: eight (Bernart 1977:8), nine (Hadley 1987:9-41, Jenks 1970:9), 12 (Mauricio 1993), and 17 (Hambruch 1932:336). The early Saudeleurs were good rulers. The yearly *pwongin sapw* ceremonies were conducted by the Saudeleurs at Nan Madol to worship their chiefly deity Nahnisohnsapw (Mauricio 1983:213-214). The custom of the first fruit tribute to the chief, which has continued until today, was established at that time. However, the oral traditions describe the increasing cruelty and greediness of subsequent Saudeleurs, describing them as tyrants under which people greatly suffered.

The fall of the Saudeleur dynasty began, when the last Saudeleur confined the paramount god, the thunder god Nahn Sapwe, at Nan Madol. Nahn Sapwe escaped to Katau Peidak or 'Upwind Katau' a mythical land in the east, where he impregnated a barren woman of his own Dipwinpahnmei clan by squeezing lime in her eyes. From this union she gave birth to a boy named Isokelekel. The godly boy grew up hearing stories of the Saudeleurs, leading him to sail to Pohnpei with 333 companions to overthrow the Saudeleur. Isokelekel's victory over the Saudeleur after a series of

bloody battles introduced a new political system, beginning the period of the Nahnmwarki.

The period of Nahnmwarki

After negotiating with prominent chiefs, priests and the gods of Pohnpei, Isokelekel was ordained as the first Nahnmwarki, the paramount chief, of the Madolenihmw chiefdom, and established his base at Nan Madol as many of his succeeding Nahnmwarkis did. He subsequently failed to maintain the sovereignty over the whole island and Pohnpei split into regional chiefly polities. His son Nahlepenien, became the first Nahnken of Madolenihmw, the highest ranking chief in the second ruling line, thus creating dual sacred-secular chiefly lines headed by Nahnmwarki and Nahnken. Nahlepenien later moved north and established the U chiefdom, becoming its first Nahnmwarki. The other regions, Kiti, Sokehs and Nett, also subsequently emerged as chiefdoms, establishing the dual chiefly systems similar to that of Madolenihmw and U over time.

At the arrival of the Euro-Americans during the nineteenth century, the island was separated into these five chiefdoms (see Figure 2.3). This is the system of traditional chiefly governance that is still in place on Pohnpei today.

The period of the foreigners

The first confirmed European sighting of Pohnpei was the Spanish explorer Pedro Fernandez de Quiros and his crew in 1595 (Hezel 1979). In the following centuries western contact with Pohnpei, was largely undocumented and likely sporadic until around 1830, when western contact with Pohnpei increased rapidly, with the increase in whaling activities. In 1852, the Honolulu Branch of the American Board of Commissioners for Foreign Missions (the Boston Mission) began sending Christian missionaries to the island. Detailed reports of Nan Madol were published around the 1850s, and early recordings and scientific studies were later conducted by Kubary in the 1870s and by Christian in 1896 (see 2.b.1.1).

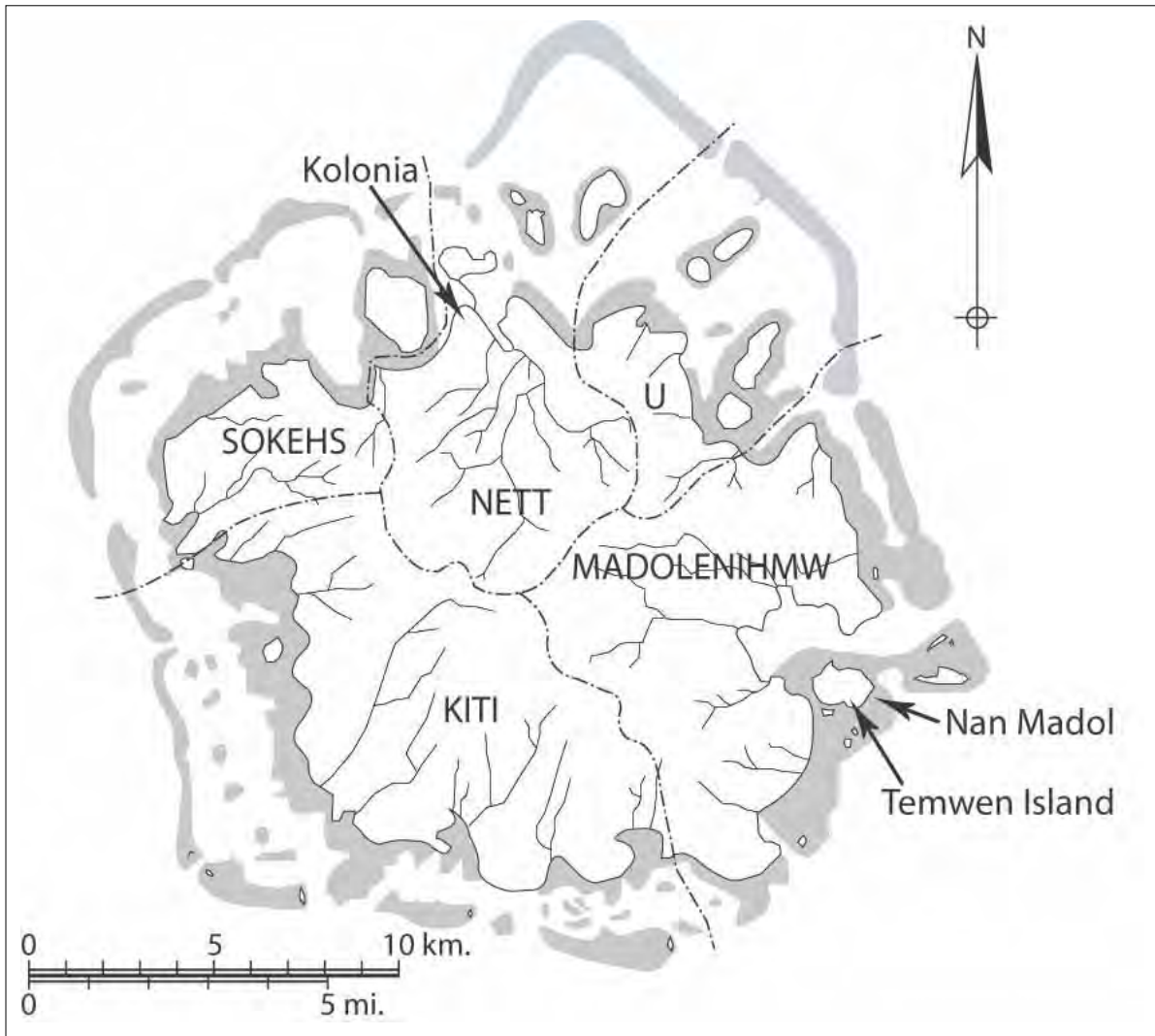


Figure 2.3. Pohnpei Island showing traditional chiefly political and administrative division and the location of Nan Madol.

The mid-1880s saw an intensification of colonization policies by major Euro-American powers, and in 1886 the expansive Caroline Islands were colonized by Spain. In 1899, Spain ceded the Micronesian islands to Germany after its defeat in the Spanish-American War. The islands remained under German rule until 1914, when they were seized by Japan during the First World War. German colonies above the equator were subsequently confiscated under a League of Nations Mandate, and Japan assumed control of the Micronesian islands. After the Second World War, they became part of the Trust Territory of the Pacific Islands under U.S. administration in 1947. In 1979 the former Trust Territories became the Federated States of Micronesia

and as an independent nation and entered into a free association with the United States in 1986.

2.a.3. Nan Madol description and archaeology

The Nan Madol component of the Ceremonial Centers of Eastern Micronesia is located in the modern-day municipality and the traditional chiefdom of Madolenihmw (Figure 2.3). The site is a complex of structures and artificial islets in the intertidal zone of a reef flat along the east shores of Pohnpei's largest lagoon islet, Temwen Island. The eastern corner of the complex faces to the reef passage (Nahkapw Harbor), which extends to the outer ocean. Since the site's gradual abandonment from around the sixteenth century, mangrove forest has continued to encroach on the site. It is currently covered with dense vegetation, mainly mangrove (mostly *Rhizophora*, *Bruguiera*, and *Sonneratia*) as well as some strand plants (e.g., *Barringtonia*, *Thespesia*, *Heritiera*). Some cultivated plants, most frequently coconut, are planted on some islets. Thorny shrubs introduced in Pohnpei in the historic period dominate some of the previously-disturbed islet surfaces (Ayres 1993:15-16). The site is now uninhabited, but occasionally used by local residents for limited agricultural purposes (e.g., harvesting tree fruits).

Nan Madol refers to the ruins of a megalithic administrative complex composed of 99 named and some unnamed artificial islets (Figure 2.4 and Table 2.1) in a rectangular area of approximately 1.5 km by 0.7 km, covering approximately 1.3 km². The complex is surrounded by massive seawalls on the southwest, southeast and northeast, which define the complex and protect it, while it is adjacent to Temwen Island on the northwest. The site is comprised of approximately 300,000 m³ of stone building materials with a total mass of 0.5 to 0.75 million metric tons (Ayres and Sheller 2002:111). Islets were linked by the network of tidal canals, which provided a means of travel by canoes, although many of these canals are now overgrown with mangrove or impassable due to the accumulation of silt resulting from this growth. In addition to Nan Madol Central, several other artificial islets (e.g., Nahningi, Nahkapw) and the adjacent Pohnpei main island coastline are associated with the site complex

according to oral traditions and are included in 'Greater Nan Madol,' which largely corresponds to the ancient territory of Deleur (Deleur "Empire"), the immediate territory of the Saudeleurs (Saxe *et al.* 1980) (Figure 2.5).

The nominated property and the proposed buffer zone encompass the area surrounding the site, including Temwen Island and its southeastern reef flats, which covers two islets, Nangih and Nahkapw (Figure 1.5). These two islets are considered as immediate extension of Nan Madol. Nahningi, for instance, is an artificial islet, and the style of its enclosing walls is identical to those Nan Madol islets. Nahkapw, which was originally a natural island, shows ancient attempts to artificially augment the islet boundaries by enclosing them with stone walls. In addition, a stone wall was said to have extended from Nahkapw to Peiniot Islet at the northeast corner of Nan Madol (Hambruch 1936:56-57, Saxe *et al.* 1980:56-68).

The buffer zone includes the entirety of Temwen Island, since its residents habitually utilize the terrestrial and marine resources in and surrounding Nan Madol. It has been a traditional custom that, upon the ordainment, a new Nahnmwarki of Madolenihmw takes up his official residence on Temwen and becomes part of the community.

The southeastern reef flat and part of Nahkapw Bay is included in the buffer zone, as it is the most common access point to Nan Madol from the other parts of the island and the world beyond the reef. Traditionally the sea and the spiritual importance of facing the ocean is supposedly the most critical reason for the selection of Nan Madol's location (as discussed below). The sea was essentially important for maritime communities of Pohnpei as a medium of communication (Hau'ofa 1994), bridging Nan Madol with other parts of Pohnpei for tributes and exchanges and with other island groups, as shown in oral traditions and by the presence of exotic artifacts/materials excavated from Nan Madol.

The buffer zone also includes Kasin Nahmw en Nangih Stingray Sanctuary Marine Protected Area on the reef flat at the southwestern part of the nominated property, which was established under the Marine Sanctuary and Wildlife refuge Act of 1999 and protects stingray habitat and explicitly prohibits the taking of stingrays.

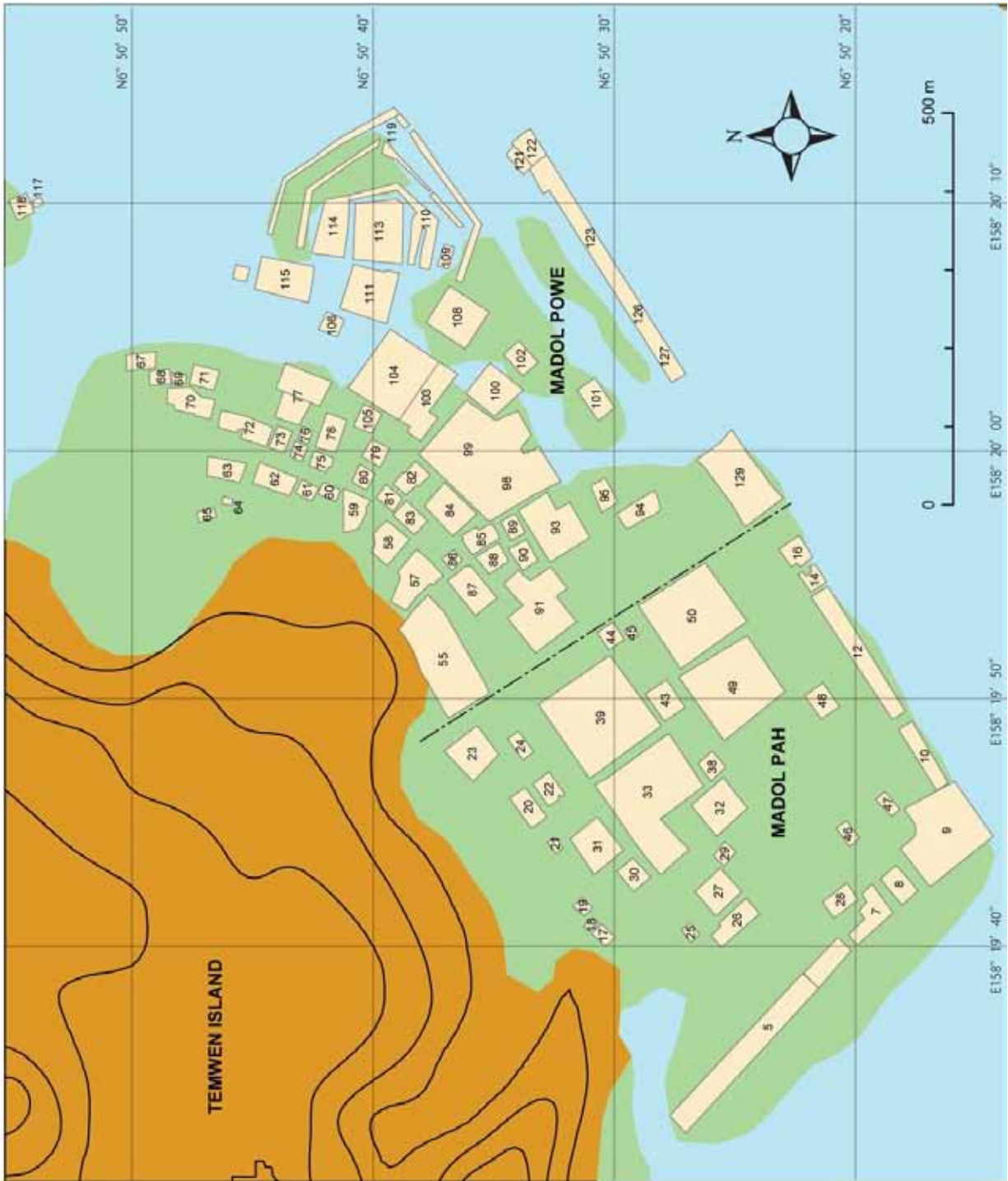


Figure 2.4. Nan Madol. Hambruch's (1936:21) islet numbers (Table 2.1) are in brackets following islet names in the text.

Table 2.1. List of artificial islets in Nan Madol.

Site No. ¹	Islet ²	Site No. ¹	Islet ²	Site No. ¹	Islet ²
5	Pohnkeimw	49	Palakapw	88	Likinpei
7	Pahnmeid	50	Dorong	89	Sakapas
8	Mweid	55	Peinkitel	90	Parailap
9	Pahnwi A	57	Peidoh	91	Usenamw
10	Pahnwi B	58	Pwilel	93	Dapahu
12	Kapinet	59	Reidipap	94	Pahn Katau
14	Pikalap	60	Sapwereirei	95	Paraktuhke
16	Lemensai	61	Peinmei	98	Peilapalap
17	Peinmet	62	Likindalok	99	Rasalap
18	Likinsau	63	Imwiniap	100	Pwulak
19	Sapwei	64	Peinuht	101	Peinering
20	Sapwenleng	65	Sapwenluhk	102	Peinior
21	Pedenleng	67	Imwinmap	103	Pahseid
22	Pilenleng	68	Map	104	Usendau
23	Pahndipap	69	Sapwengei	105	Sapwuhtohr
24	Pedeped	70	Sapwolos	106	Pwallahng
25	Peinpwe	71	Ainiar	108	Peikapw Sapwawas
26	Nihkonok	72	Sapwenpwe	109	Narukep
27	Reilap	73	Peiniap	110	Pahndowas
28	Dolewe	74	Sapwakaapw	111	Dau
29	Peilam	75	Sapwendau	113	Nandowas
30	Reitik	76	Sapwuhtik A	114	Pahndowas
31	Wasahu	77	Sapwuhdir	115	Kohnderek
32	Kelepwel	78	Nihmokemok	117	Peiniot A
33	Pahnkedira	79	Nihrik	118	Peiniot B
38	Peinmwek	80	Nihdor Reidipap	119	Nanmwoluhsei A
39	Peikapw	81	Dauahdpeidak	119	Nanmwoluhsei B
43	Idehd	82	Pohndake	119	Nanmwoluhsei C
44	Reitaup	83	Dauahdpeidi	121, 122	Karian
45	Dekehtik	84	Usenpei	123	Lukopen Karian
46	Pahnisou	85	Sapwohng	126	Sapwuhtik B
47	Peinieir	86	Sapwenpei	127	Angeir
48	Mand	87	Sakapeilong	129	Lemenkau

¹ Hambruch 1936:21. ² Based on Panholzer and Mauricio 2003.

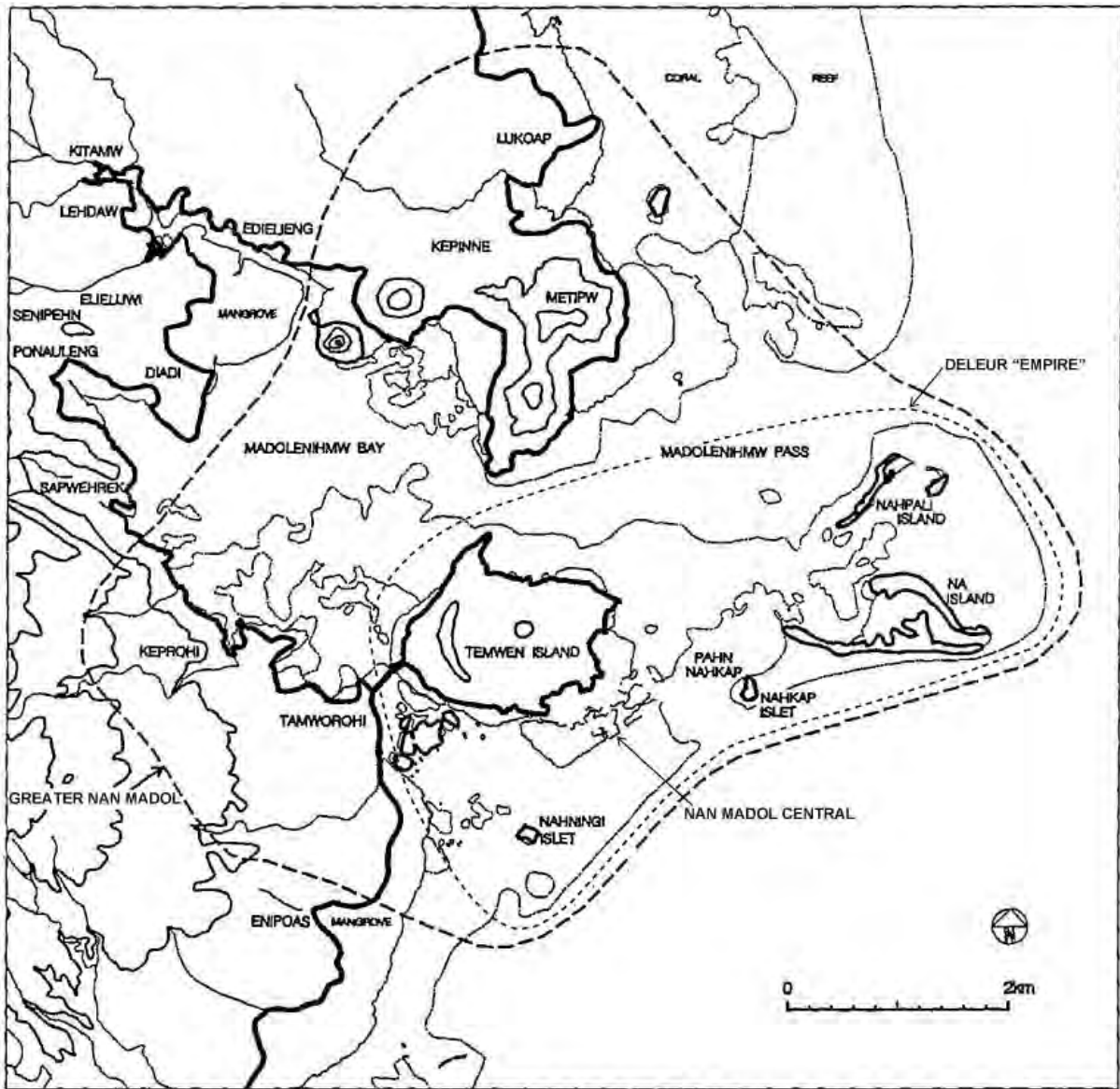


Figure 2.5. Greater Nan Madol and Deleur "Empire" (based on Ayres 1993:17, Figure 3 and Ayres *et al.* 1983:274, Figure 53).

The artificial islets range in area from 160 to 12,700 m², with the medium sizes being most common (Athens and Bath 1990:282, see Appendix B for the details of individual islets). The foundations of these islets were all constructed of coral cobbles and basalt boulders, with columnar basalt, defining the surface of islets (Figure 2.6). Basalt columns of 0.5-5 tons stacked to a height of one to two meters to create a foundation wall (Figure 2.7), while boulders of 50-60 tons is particularly common in outer wall facings. On Pahnwi Islet (#9), for example, massive basalt boulders

measuring almost 3.5 meters in diameter, some weighing up to 90 tons, are stacked to a height of roughly 10 meters in the southwest corner of the islet with enclosures that are filled with huge amounts of coral cobbles (JCIS 2012:9) (Figure 2.8). On all the islets, the inside of the enclosing walls is filled with tons of coral rubble fill acquired from the reef flat to raise the surface of the islet above sea level, while on some islets, soil was transported from Temwen or/and the main island to fill the coral mass surface.

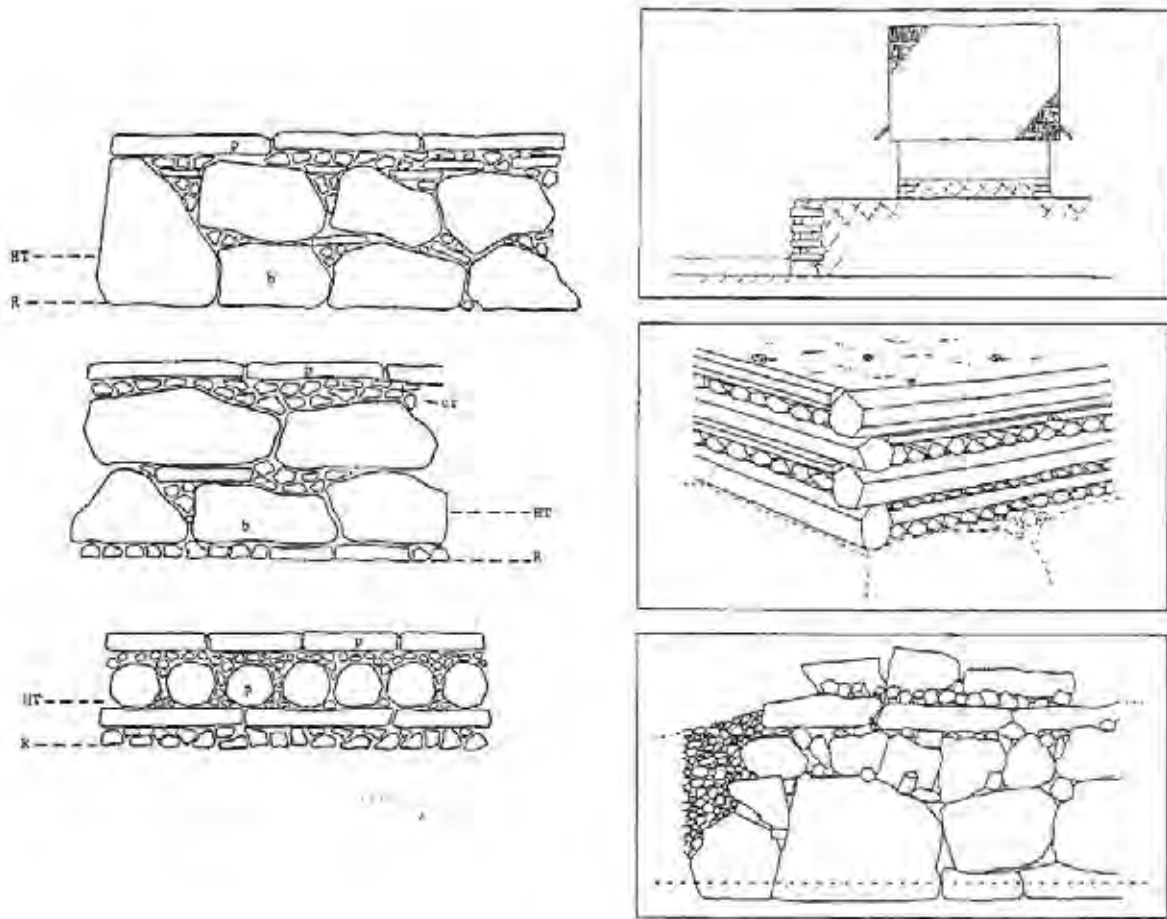


Figure 2.6. Structure of the artificial islets (left: Hambruch 1936:15-16, Figures 5-6, right: Ayres 1993:25, Figure 6).



Figure 2.7. Columnar basalt used in a wall built by in a header-stretcher technique Nandowas Islet (#113) (Photo by Takuya Nagaoka, 2012).



Figure 2.8. The southwest corner of Pahnwi Islet (#9), Nan Madol (Photo by Osamu Kataoka, 2011).

According to oral traditions, the Nan Madol complex is divided into two sections based on Pohnpeian tradition where the east-west axis follows the easterly trade wind: the northeastern half named is Madol Powe or 'Upper Nan Madol' (with 60 islets) and the southwestern half is Madol Pah or 'Lower Nan Madol' (with 34 islets) (Figure 2.4). The former was where priestly residences were located, while the latter was where the paramount chiefs of the Saudeleur dynasty resided and exercised their power through ritual and political affairs (Hambruch, 1936:5, 13). In addition, Hambruch's (1911) informants add 'grave-wall' islets on the outer edge. The majority of tombs and mortuary features are located on those seawall islets, while those features are very scarce in the other two sections.

In Madol Powe, there is the greatest number of small islets and the highest islet density. Retaining walls of those islets are built predominantly of small to medium sized basalt boulders (Athens and Bath 1990). In this section, Nandowas (#113), architecturally the most impressive islet, is dominant (Figures 2.7, 2.9 and 2.10). There are three massive royal tombs of the Saudeleurs and early Nahmwarkis,



Figure 2.9. Nandowas Islet (#113) (Photo by Osamu Kataoka, 2009).

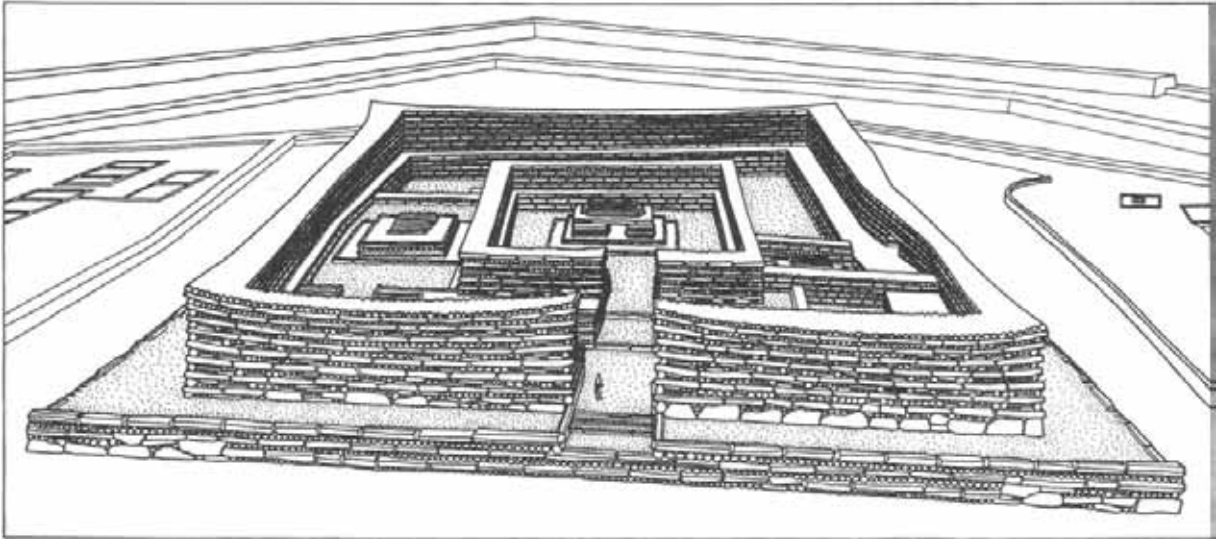


Figure 2.10. Perspective view of Nandowas Islet (#113) (Morgan 1988:68-69).

according to traditions (Hadley 1987:93). The central tomb is enclosed by the inner wall, while two tombs are surrounded by the outer wall. The characteristic walls, which utilize columnar basalt in a header-stretcher technique (Figure 2.7), reach 8.1 m, the maximum height of a free standing wall in the complex. Human bones and rich grave goods, including exotic items such as shell valuables, obsidian artifacts (Ayres and Mauricio 1987), silver crucifixes, and coins (Ward 1967, 6:135), reported to be found in the tombs confirm the high prestige of the islet.

In contrast, in Madol Pah, larger islets are distributed with more distance between them. Their retaining walls built of columns are generally higher than those of Madol Powe. In this section, Pahnkedira (#33) is considered to be the most important, as the Saudeleur's residence and the large Temple of Nankieilmwahu (19 m by 37 m) were located there (Ayres *et al.* 1983) (Figure 2.11). With 39 architecturally significant features and 98 sub-features, it is also one of the most complex sites in Nan Madol. The named four corners of the islet are said to be constructed by stone-fitters from Madolenihmw, Kiti, Sokehs and Katau Peidak or 'Upwind Katau,' mythical land in the east.

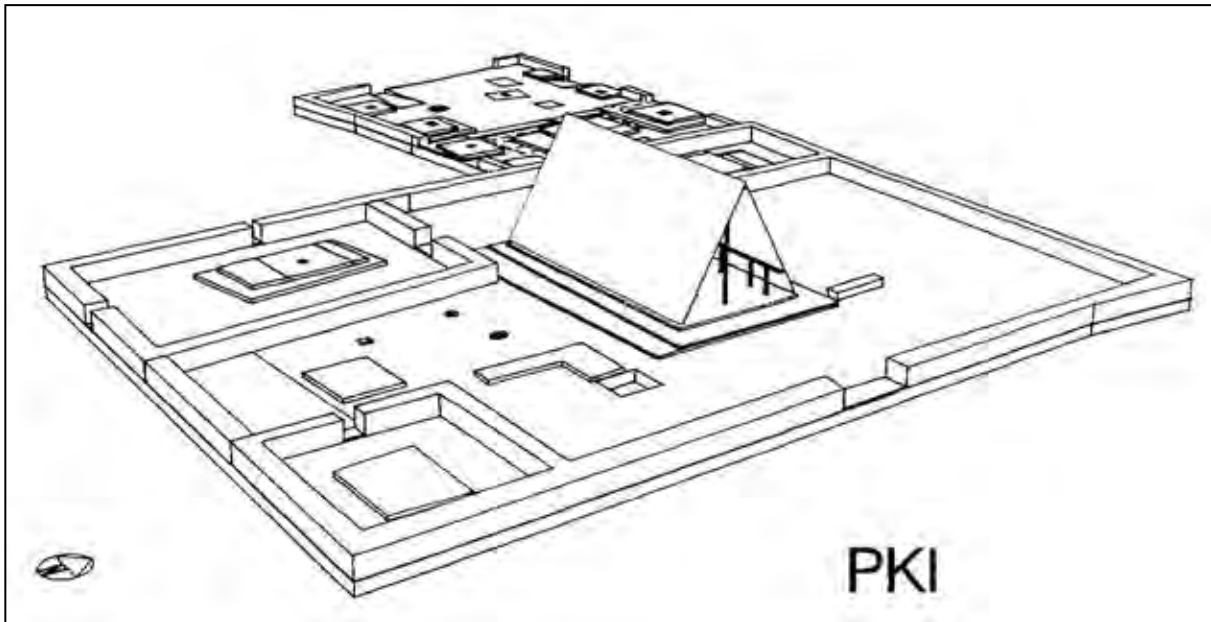


Figure 2.11. Computer-generated view of Pahnkedira Islet (#33), showing reconstructed Nankieilmwahu Temple (Ayres 1993:58, Figure 19).

Architectural structures, built on the islets, include house foundations, assembly houses (*nahs*), temples/shrines (e.g., Nankieilmwahu Temple on Pahnkedira Islet [#33]), and tombs (*lolong*) for high status persons in a sub-clan (Ayres 1990:201). Thatch roofed superstructures are expected to be built on stone house foundations as depicted in historical photographs (Figure 2.12).

Archaeological studies to date (Athens 1980a, Ayres 1985, 1990) have found that the location of Nan Madol has been inhabited from as early as 2000 years ago, and that construction of the artificial islets began around AD 500. Judging by the commencement of construction using basalts columns (Ayres *et al.* 1983) and the beginning of religious rituals on Idehd Islet (#43) (Athens 2007), it is believed that the Saudeleur regime was formed sometime between AD 1000 to 1200. Isokelekel's overthrow of the Saudeleur dynasty corresponds archaeologically with the cease of megalithic construction around AD 1500 to 1600 (Ayres 1990, Bath and Athens 1990). After the collapse of the Saudeleur polity, Nan Madol steadily fell into ruin, although some of the artificial islets were kept occupied by the Madolenihmw chiefly families and were used for religious rituals until western contact in the nineteenth century.

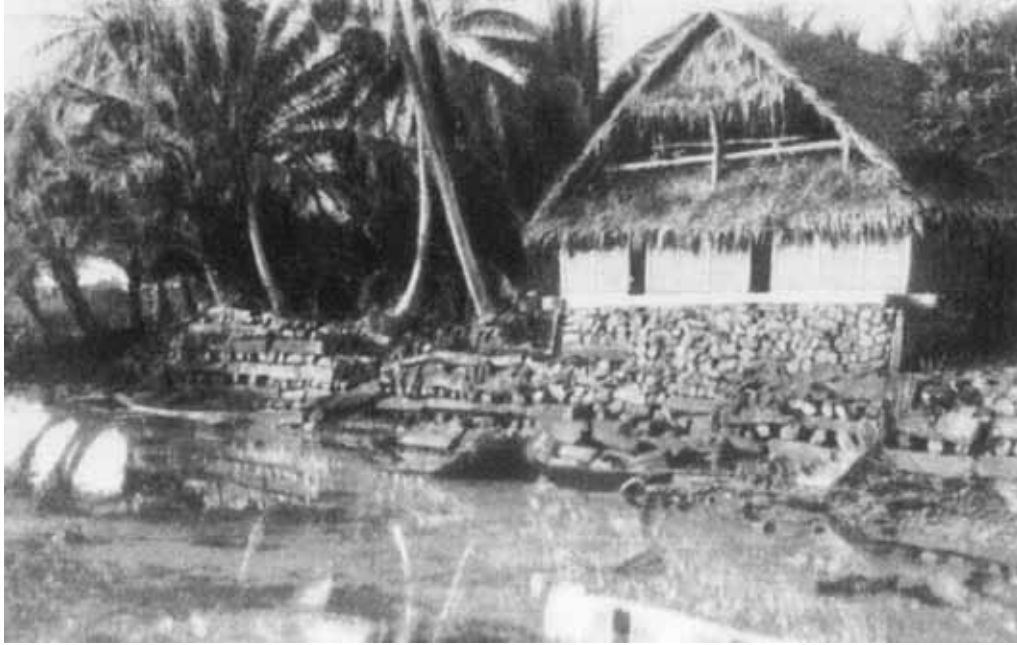


Figure 2.12. High chief, Nahlaimw of Madolenihmw's assembly house on Usendau Islet (#104) in 1910 (Hambruch 1936: Plate 2).

2.b. HISTORY AND DEVELOPMENT OF THE NAN MADOL: CEREMONIAL CENTER OF EASTERN MICRONESIA

Information derived from oral traditions, the historical record, and archaeological studies, provide the following story of the history and development of Nan Madol the Ceremonial Centers of Eastern Micronesia.

Pohnpei was initially settled at least 2,000 years ago although the people and their origin are not clear. The generally accepted theory is that the Eastern Micronesian islands were settled from the south, by people from eastern Melanesia, perhaps during the latter or post Lapita era. The location of founding settlements is subject to debate, although oral histories suggest they may have been on the off-shore reef islands or strategically defended shoreline locales—a pattern common throughout the low islands of this region, island Melanesia and western Polynesia. On Pohnpei, it may have been the reef areas off of Temwen Island.

Pottery appears in the archaeological record of Pohnpei only briefly in the period before about AD 500. However at European contact, there was no indigenous pottery or pottery-making industry. Other information vital to the outline of the past of

the Eastern Micronesian islands includes the appearance of breadfruit and three aroid cultigens (*Colocasia*, *Cyrtosperma* and *Alocasia*) at least on Kosrae some 2,000 years ago (Athens 1995). All these cultigens needed the intercession of a human hand to introduce them. Other changes in the early archaeological record include a in the regular exploitation of shellfish from an initial emphasis on bivalves before AD 500 to gastropods after that date (Athens 1995).

Across the Pacific, following an initial colonization period, as island populations gradually expanded, semi-autonomous polities emerged to compete for resources alliances and the struggle for power reigned supreme. Populations became rooted in their political and economic boundaries, creating a depth of generational links tied to the land and sea. Sedentary settlements increased their reliance on cultivated foods. Environmental and economic pressures associated with the development of increasing political stratification ultimately led to the appearance of complex chiefly societies. The rise of the Ceremonial Centers of Eastern Micronesia - Nan Madol and Lelu - is the tangible evidence of this increasing social, political, and economic stratification. In each the symbol of the power of the chiefs to command the labor to build these monumental sites is expressed and reinforced.

On Pohnpei, sometime around AD 1100 and possibly earlier according to oral history, a culture (in the oral history, it is referred to as two brothers, Olosohpa and Olosihpa) from Katau Peidi, an unnamed faraway land to the west, settled at Sokehs island and eventually moved around Pohnpei to Temwen island. Here they built Nan Madol as a religious center dedicated to the richness of the reef resources. The oral histories credit the brothers with establishment of the Saudeleur dynasty, which united the island. It is here that the culture/brothers blended with local customs to create uniquely Pohnpeian practices, such as the feeding of the sacred eel (Hadley 1987). Over time, the Saudeleurs grew powerful, abusive and authoritarian, and reigned as paramount chiefs until AD 1638, or at least the early 1600s (Rainbird 2004).

The downfall of the Saudeleur dynasty came from the east (Katau Peidak), likely Kosrae as oral histories on both Pohnpei and Kosrae attest. This was the homeland of the legendary Isokelekel (known as Nanparatak on Kosrae), who arrived

on Pohnpei with an army of 333 men (a number drawn from the oral histories) (Bernart 1977:73). The hero Isokelekel defeats the Saudeleurs and establishes a new political order that continues to exist today. He installed at its head a high chief called the Nahmwarki, who took up residence at Nan Madol. The Pohnpeian legend says that Isokelekel served as the first Nahmwarki; the Kosraean story has several versions of the fate of the hero, ranging from living out his life quietly on Pohnpei or dying after the war or returning to Kosrae to give up fighting, throwing away his spears and settling down to live a quiet life. According to oral histories, the modern Pohnpeian paramount chiefs Nahmwarki of Madolenihmw, where Nan Madol is located, trace their lineage to Isokelekel. As the site of the new governing system, Nan Madol was in use and remained the home of the Nahmwarki until sometime in the 1700s. By the 19th century, however, Nan Madol was all but abandoned, though it continued to be used for periodic religious observances. The site of Sawptakai eventually developed as a new secondary center of governance in Kiti.

Nan Madol remains central to the full cultural history of Pohnpei, from initial settlement up to the modern era and in particular the rise of a highly complex stratified society that once was influential in the Eastern Micronesian islands (Goodenough 1986).

2.b.1. History of research of Nan Madol

The Nan Madol site complex attracted the attention of even the earliest Western visitors to the island because of its size and unusual architectural style. The first documented report regarding Nan Madol was written by O'Connell (1972:182-188), who describes it as a "ghost town" in appearance due to mangrove vegetation during his stay on Pohnpei between 1828-1833. In the 1850s, more detailed accounts were reported by early missionaries, Clark (1852) and Gulick (1857), who included some details of the architecture and a plan map of Nandowas Islet (#113).

Since the 1870s, more serious scholarly efforts, including mapping and excavations, had conducted. A Polish-born naturalist and ethnographer, Kubary (1874), for instance, provides the first relatively complete map of Nan Madol (Figure

1936).

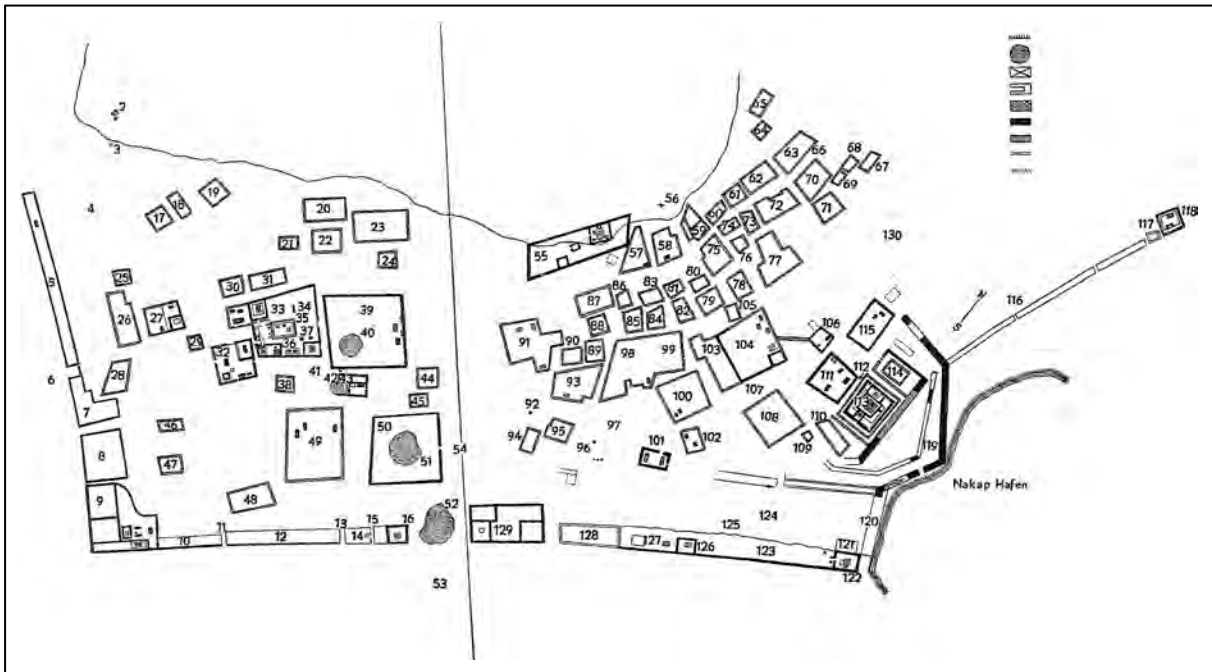


Figure 2.14. Hambruch's map of Nan Madol (Hambruch 1936:20, Figure 9).

Several Japanese scholars carried out archeological studies on Nan Madol during the 1910s-1930s (e.g., Hasebe 1915, Yawata 1932a, 1959, Muranishi 1942). Intoh (1999) compiled a database of all artifacts deposited in universities and research institutions collected by Japanese researchers from archaeological sites in Micronesia, along with shell artifacts collected from Nan Madol.

The 1963 Smithsonian Institution project carried out some of the first systematic excavations. By using a newly-developed scientific dating method, radiocarbon dates from some excavations were published as a note in 1965 (Radiocarbon 1965).

Several Historic Preservation studies funded by the U.S. Historic Preservation Program of the U.S. National Park Service have been undertaken at Nan Madol since 1977. The first of these involved reconnaissance by Ayres in 1977 and 1978 (Ayres and Haun 1978, Ayres *et al.* 1979); the second, done by Saxe in 1979, attempted to define the site complex boundaries (Saxe *et al.* 1980).

The third by Athens in 1979-1980 included islet mapping and surface artifact

collections on four islets (Athens 1980a). In 1984, he mapped 25 islets and conducted excavations on 14 of those islets (Athens 1985).

The fourth by Ayres in 1981 included detailed maps of two major islets, Pahnkedira (#33) and Usendau (#104), surface artifacts collections, and excavations (Ayres *et al.* 1983.). In 1984, Ayres completed survey, surface artifact collection, and mapping of six islets in addition to test excavations in three islets (Ayres 1993:20). He continued archaeological investigation on many islets in 1987-1989 (Ayres 1993) and on two islets in 1995 (Ayres and Wozniak 1998), which contributed to the accumulation of archaeological data on Nan Madol.

More recently, in 2005, Kataoka and his colleagues conducted excavations on two islets (Kataoka, Ono and Nagaoka in prep.). Ayres and his associates' archaeological work in 2008 and 2011 concentrated on continuing to map the outer seawall islets (Ayres *et al.* 2009, 2012). Recent investigation has also been made into which quarries were used to build Nan Madol and the development of a chronological sequence for the use of these quarries (McCoy and Athens 2011).

To date roughly half the islets in Nan Madol have been mapped and surface collected, and 19 islets have been dated. Modern archaeological studies focusing on the site have been accumulated to cover various topics: marine resources utilization (Kataoka 1985, 1991, 1996, 2006, Leach *et al.* 1987, 1996), dietary (Ayres *et al.* n.d.), material culture (Athens 1980b, 1990, Bryson 1989, Rainbird 2007, Ayres and Mauricio 1987), stone sourcing (Ayres *et al.* 1997, McCoy and Athens 2011), mortuary facilities (Ayres and Seikel 2014, Seikel 2011), stone transportation (Ayres and Scheller 2002), underwater archaeology (Wright and Ayres 1993), inter-island interaction (Kataoka 2009), archaeo-astronomy (Esteban 2014), and sociopolitical development (Alderson 2013, Athens 2007, Ayres 2002, Bath 1984b, Bath and Athens 1990). Studies and collections of oral traditions on Nan Madol include: Bernart 1977, Fischer *et al.* 1977, Hadley 1987, 2014, Hambruch 1936, Hanlon 1988, 2011, 2012, Mauricio 1983, 1993, Petersen 1990, and Shimizu 1990. Historical studies on it are Athens 1981, Fischer 1964, and Hanlon 1990.

2.b.2. Archaeological reconstruction of the development of Nan Madol

Past archaeological investigations clearly show Nan Madol's central position in Pohnpeian prehistory and provide the baseline culture history of the island, in combination with rich ethnohistoric information (based on Ayres 1990:189). This culture historical sequence consists of the following phases that are discussed in detail below:

I. Settlement and adaptive integration phase (500-1 BC)

Inter-tidal occupation, inland forest clearance, calcareous tempered pottery in use

II. Peinai phase (AD 1-1000)

Stone house foundations, breadfruit storage pits, pottery with limited decorative elements, Nan Madol islets with some columnar basalt construction as early as AD 500-600.

III. Nan Madol phase (AD 1000-1500)

Expansion and formalization of Nan Madol and formation of the Saudeleur polity, chiefly residential architecture, stylized tombs (*lolong*), pottery declining in use—increasingly plainware—or absent

IV. Isokelekel phase (AD 1500-1826)

Disintegration of the Saudeleur polity, new title system, chiefly complexes and new style assembly house (*nahs*), post-pottery phase

V. Early Contact phase (AD 1826-1885)

Western contact, Nan Madol occupation continues but in a non-center role

IV. Historic phase (AD 1885-present)

Western contact and colonial governments

I. Settlement and adaptive integration phase (500-1 BC)

We need to note that the earliest phase in this model is only known from possible anthropogenic changes to the primary vegetation seen in pollen cores, which need to be confirmed by additional archaeological evidence in future research.

Substantial archaeological record on initial settlement begins from the first centuries AD (Athens 1990:21, Athens and Stevenson 2012:37).

Direct archaeological evidence excavated from sand layers beneath the fill of two islets, Dauahdpeidak (#81) (Ayres 1993) and Dapahu (#93) (Athens 1990), suggests that the inter-tidal zone adjacent to Temwen was first inhabited around two thousand years ago (Ayres 1993:29-30), when it was sand beaches or bars prior to the construction of Nan Madol. These dates are among the earliest for settlement sites in Pohnpei. The distinctive location of this intertidal site in the vicinity of deep water-reef passage, which probably represents a stilt-house settlement, is common to other early settlement sites on Pohnpei as well as Lapita sites in the western Pacific (Lepofsky 1988). This probably reflects the ocean-orientation of initial occupation related to economic (e.g., exploitation of marine resources) and social (e.g., extensive exchange systems, intermarriage) factors. The nature of the site as ancestral place possibly contributed to the selection of the location of the Saudeleur's administrative center (Kirch 2000:197).

II. Peinai phase (AD 1-1000)

The construction of artificial islets using columnar basalt began around AD 500-600 (Ayres 1990:204). Although the nature of the site and the construction is still ambiguous, the scale of the construction seems to be rather small and the labor involved in the project was possibly limited within a small region possibly the Deleur area.

III. Nan Madol phase (AD 1000-1500)

It is assumed that as the population increased so too did the complexity of the social system. This is associated with extensive islet construction by AD 1000 (Ayres 1990:204). Construction began near the inner edge of the complex adjacent to the Temwen Island shore and gradually expanded seaward. Islets at or near the seawall of ritual significance such as Nandowas (#113), and nearby seawall islet,

Nanmwoluhsei (#119) were constructed after approximately AD 1200 (Ayres 1993:31), which is confirmed by recent high precision uranium series dates from Nandowas, suggesting tomb construction began no later than AD 1186 and was completed by no later than AD 1212 (McCoy n.d.). This corresponds with a major megalithic expansion phase in AD 1300-1500 of Pahnkedira Islet (#33), the Saudeleur's residence, the islet having been initially constructed as early AD 900-1000 (Ayres *et al.* 1983:123-126). This megalithic construction phase significantly overlaps with radiocarbon dates from a two-meter deep midden pile on Idehd Islet (#43), accumulated through *pwongin sapw* ceremonies over a long period of time according to traditions. That is, these important sacrificial rituals for the Saudeleur polity were performed from AD 1200-1300 to AD 1500-1600 (Athens 2007:204-205). This evidence indicates that Nan Madol functioned as the administrative and religious center of the Saudeleur polity ruling over the entire island of Pohnpei, from around AD 1200 to the late 1500 or early 1600s AD, a period of around 300-400 years (Athens 2007:206). At this time the population of Pohnpei is estimated to be around 25,000 (Ayres *et al.* 1979).

Archaeological artifacts recovered from Nan Madol vary in both type and quantity from one islet to another and reflect different time periods and the functions of individual islets. Prehistoric artifacts recovered from Nan Madol have been described by various researchers as a typical Micronesian tool kit, being dominated by shell adzes, fishhooks, scrapers and other tools and only a small number of lithic artifacts (Athens 1980a, Ayres 1983, Ayres *et al.* 1983, Hambruch 1932). The outstanding feature of the Nan Madol assemblages are their rich high status goods such as shell ornaments (e.g., beads, bracelets, pendants), shell "valuables" (e.g., large ceremonial *Tridacna* adzes, trolling lure shanks), and exotic stone artifacts (e.g., obsidian flakes, stone adzes) that have been recovered mainly from the stone tombs.

Archaeological interpretation of the Nan Madol occupation is greatly enhanced by rich oral traditions, which describe the names, functions and other associated stories of individual islets (Bernart 1977, Hadley 1987). Various functions of major islets told in traditions, for instance, include: coconut oil manufacturing (Peinering Islet [#101]), visitors' landing (Pahnwi Islet [#9]), local medicine and healing (Lemenkau Islet [#129]), clam aquaculture (Dorong Islet [#50]), moray eel feeding rituals (Idehd

Islet [#43]), high priests' burials (Kerian Islet [#122]), priests and early Nahnmwarkis' residences (Usendau Islet [#104]), wave breaker and gate to the mythical undersea settlement (Nanmwoluhsei Islet [#119]), servants' residences (Kelepwel Islet [#32]), food storage and preparation (Wasahu Islet [#31]), funeral rituals (Kohnderek Islet [#115]), cooking (Dapahu Islet [#93]), guards' residences (Dau Islet [#111]), and sacrificial turtle husbandry (Peikapw Islet [#39]) (Hadley 1987:89-115, see Appendix B for associated oral traditions of individual islets).

Nan Madol in its final form was residential with as many as 80% of structures (133 out of 162 structures) recorded on 31 islets being residential (Athens and Bath 1990:281). Pohnpeian oral traditions relate that Saudeleur elites and their serving priests were physically segregated from the populace and their lives depended on tributes they demanded from around Pohnpei.

Among royal (Madol Powe), priestly, and mortuary (Madol Pah) areas of Nan Madol, the greatest investment of labor was made in the mortuary sector, followed by royal and priestly sectors in order (1990:284). Mortuary activities and associated rituals appear to be critical during in the Saudeleur's reign. This corresponds with Pohnpeian oral traditions that the site of Nan Madol was selected due to the presence of a mythical undersea settlement (*kahnimweiso*) of various spirits including those of the deceased in its vicinity (Hadley 1987:5). The ocean-oriented location of tombs (*lolong*) in Nan Madol, primarily on seawall islets, seems to confirm this notion (cf. Ayres 1993:88). Only selected priests and possibly Saudeleur elites were involved in mortuary rituals and the magnificence of the megalithic administrative center and its construction are likely to reflect and to reinforce the ideological base for the Saudeleur's hegemony.

The location of Nan Madol also may be related to traditional Pohnpeian cosmology. The geographical location at the easternmost of Pohnpei facing to the easterly trade wind, is believed to be the entrance to the island from the outer world. The breadfruit season (*rahk*), for example, was believed to be brought from a legendary place in south called Namwen Parahs ('lagoon of Parahs') or Nan Parahs ('in Parahs') to Pohnpei from east to west through Na, Peiniot Islet (#117/ #118) of Nan Madol, and Temwen ('forehead [of Pohnpei Island]' for this reason) by high gods

(*eni lapalap*). Considering the ritual importance of breadfruit in Micronesian societies, this notion may have influenced a similar location of Lelu site in Kosrae as part of the eastern Micronesian ‘Kachaw ideology’ as discussed below.

The construction of megalithic structures was not confined to Nan Madol. The distribution of stylized tombs (*lolong*), characterized by the wall structures of basalt columns is widespread on Pohnpei. There are also complexes of residential and religious structures similar to that of Nan Madol such as the Sapwtakai complex (Figure 2.15), in Kiti. It is the second biggest site complex in Pohnpei, constructed between c. AD 1325 to 1700 as the seat of a regional chief Soukiti (Bath 1984a, 1984b), although the scale of construction is not compatible to Nan Madol (Ayres and Scheller 2002:120, Table 1), suggesting the Saudeleur’s supreme power over other chiefs around the island. The monumental-scale construction of Nan Madol was achieved through the unification of the island under the Saudeleur’s rule, as, according to Hambruch’s (1936:14-15) informants, basalt stones were said to be transported from distant quarries around the island, such as Lohd (6 km from Nan Madol) and Nan Diadi (5 km) in Madolenihmw and Awak (20 km) and Dehpehk (15 km) in U, by means of the inclined surface of tree trunks, especially coconut palms, using leverage.

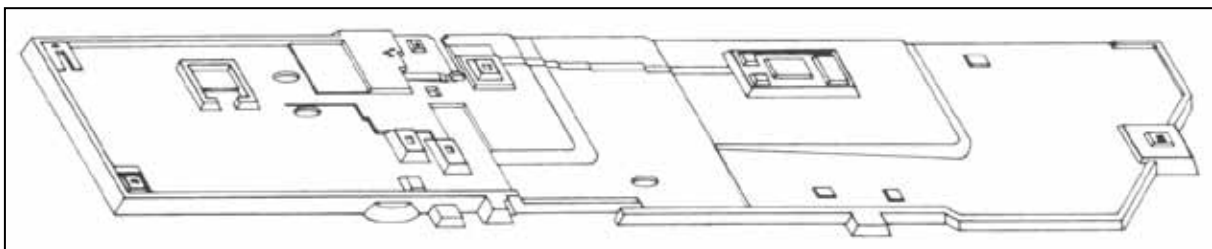


Figure 2.15. Perspective view of the Sapwtakai complex (Bath and Athen 1990:287, Figure 6).

The prosperity and influence of the Saudeleur polity may have influenced or spread beyond Pohnpei, stimulating the development of unique megalithic culture in eastern Micronesia. A stone-fitter from Katau Peidak or ‘Upwind Katau,’ mythical land in the east, for example, participated the Nan Madol construction (see above). The selection of the site, which opened its gate at the eastern corner to the ocean, may

have connected the ruling Saudeleur dynasty not only to the spiritual worlds but the outer world. Archaeological evidence of this regional interaction in the form of exotic artifacts has been found at Nan Madol. These include adzes of West Polynesian type and obsidian artifacts possibly from the Admiralty Islands in Melanesia (Ayres and Mauricio 1987). Oral traditions speak of 'mythical valuables' transported from the overseas for the Saudeleur rulers (Bernart 1977:38-43).

Further evidence for the role of Nan Madol became as a center of influence in an Eastern Micronesian interaction sphere (Ayres 1990:202), relates to the spread of Kachaw ideology in the region (Goodenough 1986). Similarities in the chronology of Nan Madol and Lelu suggest this interaction as do other isolated examples of megalithic structures in Eastern Micronesia and stimulated sociopolitical development in the region. 'Stone gods' of exotic basalt occasionally found on coral atolls in the region such as an outer islands of Pohnpei, Sapwuahfik (formerly Ngatik) Atoll (Goodenough 1986:561), and Namu Atoll in the Marshalls (Finsch 1893:396, Pollack 1977:93-96, Tobin 2002:54-55), suggest interaction across the region.

IV. Isokelekel phase (AD 1500-1826)

Active islet and megalithic construction at Nan Madol ceased between AD 1500-1600, and may be associated with the collapse of the Saudeleur dynasty (Ayres 1990, Bath and Athens 1990). Nan Madol steadily fell into ruin, although small-scale construction of residential features (e.g., house foundations) continued until the European contact (Ayres 1990:204). The early Nahnmwarkis are said to have resided at Nan Madol, while many of later ones resided on Temwen Island after a devastating typhoon during the seventh Nahnmwarki's reign (e.g., Hadley 1987). At the time of the European contact in the early nineteenth century, Nan Madol was largely abandoned except for a very few islets. Contributing to this phenomenon was likely to have been the decentralization of power on the island leading to decrease in the tributes the newly-established Madolenihmw chiefly family could demand and therefore being unable to sustain their living on Nan Madol (Fischer 1964:52-53). Nan Madol continued as a place of religious ceremonies until the mid-nineteenth century

(Hanlon 1988:200-201) and were kept occupied by the Madolenihmw chiefly families until the early 1900s (Figure 2.12).

The legacy of Nan Madol and the emergence of the complex socio-political systems it reflects continues in Pohnpeian society in the Nahmwarki system, a highly evolved chiefly system that underpins land tenures, governance and decision making with an associated honorific language and prestigious ornaments (e.g., ceremonial woven belts), ceremonies and traditional practices.

V. Early contact phase (AD 1826-1885)

The occupation and use of Nan Madol had significantly declined by European contact. Historic artifacts in Nan Madol archaeological record, which include a range of objects (e.g., bronze nails, clay tobacco pipes, glass sherds, iron items, exotic sandstone discs) indicate the Pohnpeians were eager to obtain foreign objects in the early historic period, as nearby Deleur (Madolenihmw) and Pohnahtik Harbors were the main ports for whaling ships during the nineteenth century. There are early historic reports that two silver crucifixes and coins were found at a burial chamber on Nandowas Islet (#113) in 1840 (Ward 1967, 6:135). It seems that those items, which were acquired through undocumented pre-nineteenth century interaction with the Spaniards, were presented to Madolenihmw elites as tributes and were incorporated in indigenous burial rituals.

IV. Historic phase (AD 1885-present)

Foreign visitors began to loot tombs in Nan Madol as early as the 1830s (Riesenberg 1968:2), which continued to occur throughout the early historic period. Some islets were kept occupied by the chiefly lineage of Madolenihmw and residents of Temwen Island until the post-war period. Christian (1899a:79), for example, notes a house on Usendau Islet (#104) in 1896, where Hambruch (1936:12) also reports the high ranking chief Nahlmw of Madolenihmw's residence in 1910. The sacredness of the place, however, has contributed to keeping Nan Madol untouched and human

activities to a minimum throughout the historic period until recently.

The local governments began its efforts to preserve Nan Madol in the 1970s. The Historic Preservation Fund administered by the U.S. National Park Service (NPS) was given to the Trust Territory of Pacific Islands Historic Preservation Office (Saipan) from 1974 to 1985 to conduct archaeological and historical projects. In 1976, the Ponape Historic Preservation Committee was organized and began maintenance work at major historic sites, including Nan Madol. In 1985, Nan Madol was designated a U.S. National Historical Landmark. From 1986 to the present, NPS has given funding to individual states in the FSM and has assisted to develop the FSM National and the Pohnpei State Historic Preservation Offices (Denoncour 1981:30, National Park Service 2013). The Pohnpei State Government, particularly the Pohnpei State Historic Preservation Office and Pohnpei Tourism Office, has taken charge of the protection and maintenance (e.g., clearance of vegetation) of Nan Madol until present.

2.b.3. Nan Madol and Lelu: similarities, differences and connections

There are similarities and differences between Nan Madol and Lelu, the second component of the proposed future serial property of the Ceremonial Centers of Eastern Micronesia. These can be partially explained by respective developments on their individual islands, yet both also retain sufficient connections in oral histories, location and construction and form to be historically linked to one another. Both are located on off-shore islands and the possibility that this was the ideal solution for the rise and establishment of a paramount chief who could rule over a unified populace. An off-shore locale, an island that was wholly man-made meant that no ties to any lineage or landed gentry or even to a deep history of place could be made. This cut any familial rivalries that could also arise. So the independence symbolized by each of these places made them all the more powerful as elite centers, as ruling centers, as the centers of all economic and political activities that interfaced with the rest of the world.

Graves (1986) described Lelu, and Nan Madol by association, as 'disembedded' elite centers as opposed to true cities. He based his description on

Willey's (1979) and Blanton's (1978) work describing the Zapotec capital, Monte Albán, a major Precolumbian Oaxacan site. A disembedded capital is described as one where the political decision-making activities are separate from the mainstream commercial activities. In a true city, those two activities are integrated. True cities are generally found in regions of limited resources where the full distribution of commercial goods depends on the interjection of the elite. In relation to Lelu and Nan Madol, viewing them as 'disembedded elite centers' as opposed to true cities, becomes one of classificatory terminology - both display an equivalent development that is seen in many other prehistoric cities around the world, though they exist within a specific environment and with different needs.

Naturally, the 'disembedded' description of these sites only makes sense when there is a state-level, commercially-active society from which these centers could 'disembed' themselves. Within the context of the chiefly societies of Micronesia, those commercial activities were never truly centralized as in the form of a pure state-level society. That degree of complexity was never needed in Micronesia, especially these two islands, where elite centers formed around the most honored chiefs. Interestingly, the supposition of a non-city organization in Nan Madol and Lelu ignores the commercial activity that did occur in the form of long-distance exchange networks in which both played key roles. The existence of these exchange networks is seen in the presence of exotic goods including *Spondylus* shell necklaces, pearl shell lure shanks and obsidian "spears." While there is little need for a commercial network for everyday goods, a rich exchange network of prestigious goods exists throughout this area of the Pacific. These goods tied islands together into a network of respect. Within this context, the elite centers of Nan Madol and Lelu took on the role of place, their monumentality and megalithic architecture welcomed and impressed visitors from afar, as well as struck terror into any who would try to conquer these islands. They reflected an administration that could rally the resources to build magnificent places and by extension could easily rally the same resources as a warring army. As such, and contrary to critics like Graves, this alone makes Nan Madol and Lelu cities by definition, functioning as state-level societies within the larger Pacific community.

Differences between Lelu and Nan Madol also exist, but these are more in the

nature of the local architectural knowledge and accomplishments. Tomb construction, for example, differs significantly, Lelu's tombs being truncated pyramids with a cribbed crypt while those at Nan Madol are rectangular platforms with large rectangular crypts. In the identification of house locales, Lelu has pavements and short platforms whereas Nan Madol has taller platforms. Lelu's living compounds have high walls whereas it is Nan Madol's burial compounds have high walls. These differences suggest independent planning and construction, the sites being constructed by local cultures rather than by migrations from one island to the other. Yet, their similarities too indicate a common ancestral culture that appears to have split and subsequently followed their own parallel paths of development.

The oral histories attest that Nan Madol and Lelu were known to each other and trade goods from the larger Pacific area also suggest regional interaction and connections. The two sites, for instance, share a similar inventory of artifacts that include adzes, necklaces, arm rings, trolling lure ornaments, lancet and disc-shaped bead necklaces, large kava pounding stones, and the debris of food preparation and feasting activities. The chronology of the sites suggests their parallel development with the two sites built concurrently.

3. JUSTIFICATION FOR INSCRIPTION

3.1.a. Brief synthesis

The site of Nan Madol is the larger of two monumental stone complexes known as the Ceremonial Centers of Eastern Micronesia, centers of complex political, religious and social systems that developed in the Micronesia from around 1200 AD. Nan Madol on the island of Pohnpei and the center of Lelu on Kosrae attest to the emergence of highly stratified chiefdom systems and governance evident in many islands or archipelagos of the Pacific Ocean from around 1000 years ago.

Nan Madol and Lelu, separated by 550 km of open sea, are megalithic settlement complexes constructed on artificial, man-made islands that extend across a shallow reef platform within the fringing reef of the Pohnpei and Kosrae respectively.

Nan Madol is the larger and more intact of the two ceremonial centers, an elaborate and megalithic complex consisting of more than ninety artificial islets of basalt and coral boulders, separated by navigable channels, that provide the foundation on which massive basalt structures have been constructed with massive lengths of prismatic/columnar basalt placed in header and stretcher patterns that surround tombs, residential complexes, and sites for sacred or ceremonial activities.

Construction of the islets is likely to have commenced around 1200 AD on the reef adjacent to Temwen Island, a small island off the southeast coast of Pohnpei following initial human colonization of the island around 2000 years ago. In the following millennium, as population and settlements grew alongside an increasing reliance on agriculture, chiefly societies emerged eventually to be unified across Pohnpei under a paramount chief, the Saudeleur. Nan Madol became the place of residence, administration and ritual for the Saudeleur and their elite. The consolidation of chiefly power under the Saudeleur Dynasty is associated with the major phase of construction of the massive stone structures of Nan Madol. Existing

islets were expanded and new islets and structures were built using huge blocks of stacked prismatic basalt mined elsewhere on Pohnpei and transported to the site. Dwellings existed on many of the islets while others had special purposes including food preparation and canoe making. Oral traditions place the downfall of the Saudeleur around 1600 AD when Isokelekel, son of the Pohnpeian thunder god, overthrew the Saudeleur. He established a new political order with himself as the paramount chief or Nahmwarki of Madolenihmw, the chiefdom adjacent to Nan Madol. By the 1820s people no longer lived at Nan Madol but it continues to retain a religious and traditional significance. The Nahmwarki system continues into the present as the traditional system of governance in Pohnpei. Ownership of Nan Madol is held by the Nahmwarki title and transferred to each successive Nahmwarki. This is a traditional system passed down since the end of the Saudeleur dynasty around 1500-1600 AD.

Across the Pacific, following an initial colonization period, as island populations gradually expanded, semi-autonomous polities emerged to compete for resources, alliances and the struggle for the power reigned supreme. Populations became rooted in their political and economic boundaries, creating a depth of generational links tied to the land and sea. Sedentary settlements increased their reliance on cultivated foods. The archaeological evidence, oral histories and genealogies of the Pacific islands confirm that the millennium prior to European contact was a time of great social change throughout the Pacific. Environmental and economic pressures associated with the development of an increasing political stratification led to the appearance of complex chiefly societies that became the systems of traditional or customary governance that were encountered by Europeans from the 16th century and continue to structure present-day Pacific Island societies.

This development of distinctive chiefly social structures within the Pacific is a phenomenon associated with the appearance of monumental architecture in many parts of the Pacific from around 1000 years ago. Examples of this include Eastern Polynesia, Tonga and Samoa and Micronesia. Nan Madol is an outstanding Micronesian expression of this pan-Pacific phenomenon, tangible evidence of this increasing social, political and economic stratification, and a symbol of the power of

the chiefs to command the labor to build monumental structures and mobilize a significant labor force.

The outstanding universal value of the Ceremonial Center of Nan Madol lies in its being a unique Pacific Island expression of the global association of monumental architecture with the emergence of social complexity in a region and the development of elaborate political hierarchies that have the capacity to create impressive, monumental structures as emblems of power and authority.

3.1.b. Criteria under which inscription is proposed

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared

Nan Madol, a Ceremonial Center of Eastern Micronesia, bears exceptional testimony to the development of chiefly societies in the Pacific Islands. The huge scale, technical sophistication and concentration of elaborate megalithic structures of Nan Madol bear testimony to complex social and religious practices of the island societies that persisted for over 500 years.

Criterion (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

Nan Madol is an outstanding small island example of monumental architecture associated with the appearance of stratified societies and centralization of power that is evidenced in many parts of the world. The megalithic stone complex of Nan Madol includes chiefly dwellings, ritual/ceremonial sites, mortuary structures and domestic sites that bear unique testimony to the origin and development of chiefly societies evidenced across the Pacific Islands from around 1000 years ago and associated with increasing island populations and intensification of agricultural production.

Criterion (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. Nan Madol is an expression of the origin and development of traditional chiefly institutions and systems of governance in the Pacific Islands that continue into

the present in the form of the Nahnmwarki system under which Nan Madol is traditionally owned and managed.

3.1. c. Statement of integrity

The integrity of Nan Madol is ensured by the inclusion within the boundaries of the nominated property all the key structures that demonstrate the architectural forms and diversity or construction techniques and materials in both components of the property. The boundary of Nan Madol includes all islets listed by Hambruch (1910) in the first full survey and recording of the complex.

3.1.d. Statement of authenticity

The authenticity of the nominated property is held in the setting, interrelationships, forms and variety of the structures and canals of both properties. There has not been any reconstruction of the structures apart from minor repairs. Nan Madol has not been impacted by major developments although vegetation and siltation on the site are compromising its conservation and the visual and aesthetic appreciation of property.

Archaeological research over the past 30 years at Nan Madol has provided evidence of the origin, development and construction of the megalithic complex and the activities at each site. Oral traditions and historical records provide insight into the social history and the centrality of Nan Madol in establishing the Pohnpeian system of traditional governance through the Nahnmwarki system.

Archaeological excavation has been limited and much of the archaeological deposit remains intact and potentially offers further information about the specific functions of various islets and social interactions reflected in the site.

The purpose of each of the islets has been passed down by oral tradition. Minimal archaeological excavation has occurred within Nan Madol. Instead, research has focused on mapping and surface collection. Development has remained well outside the boundaries of the nominated property. The site was included on the US

National Register of Historic Places in 1980. A single small path has been constructed with removable wooden bridges providing access for tourists. Some archaeological features extend beyond the boundary of the nominated property into the buffer zone. These features include areas on the small surrounding islands that would have been used in the transportation of stone.

3.1.e. Protection and management requirements

Nan Madol is included on the US National Register of Historic Places (19741219 74002226) and is on the Pohnpei State Register of Historic Properties and protected under the Pohnpei Historic and Cultural Preservation Act 2002. Proposed protection mechanisms for Nan Madol, which include a Pohnpei State law and draft management system (Appendix A), are adequate to ensure the Outstanding Universal Value of Nan Madol to be maintained for a longer term. The property is also protected through customary protocol and respect. To access Nan Madol visitors are requested to first ask permission from the Nahnmwarki. Combining this existing legislation, customary protection for the property described below provides sufficient provisions for the protection and management of Nan Madol as a World Heritage Site.

FSM and Pohnpei State officials acknowledge that the Nan Madol Preservation and Management Plan (1992) needs improvements and updating in the light of the provisions of the 2002 Act. This work is currently underway. A draft management system for Nan Madol was developed based on agreements during the 2012 Nan Madol Capacity Building Workshop, which was attended by stakeholders from government agencies and community. Proposed organizational structure consists of the Nan Madol World Heritage Board, the Nan Madol World Heritage Management Committee, and the Temwen Island World Heritage and Tourism Committee, in which different types of stakeholders, such as national, state, and local government representatives, traditional authorities, and community, will be involved (see Section 5.e).

Personnel and funding

The relevant institutions involved in implementation of the Nan Madol Management System have been in charge of the protection and management of the site and have adequate personnel with enough experience to continue their duties, although additional training opportunities for them are needed to augment their skills. The key institutions are: the FSM National and Pohnpei State Historic Preservation Offices (HPOs), the FSM Tourism Unit (FSM Department of Resources and Development) and the Pohnpei Tourism Office (Pohnpei State Department of Land and Natural Resources) (see Section 5.j).

Both FSM National and Pohnpei State Governments have been committed to financially assist the FSM and Pohnpei HPOs in their effort to nominate Nan Madol as a World Heritage site. The HPOs have also received additional funding from the Federal Historic Preservation Fund grant administered by U.S. National Park Service. However, support for the preservation of Nan Madol from other countries has been lacking, as the local framework for preservation cooperation has yet to be established. Additional financial and human support in relevant areas (e.g., cultural heritage management, tourism) needs to be sought from the international community to further enhance the protection and management of the site through educational and research programs.

Interpretation

Education about Nan Madol is important for public awareness, not only for tourists but also for the locals. The following media have been discussed as possible tools to further understanding about the site: (1) production of educational DVDs, pamphlets, a website, and interpretive panels at the site, and (2) establishment of a State museum and on-site display center, both of which will require external funding.

Monitoring

Monitoring the state of conservation at the nominated property has been

conducted periodically and systematically to examine the effectiveness of conservation work in the area. In the Nan Madol Management System, technical advisors and HPO staff from the Nan Madol World Heritage Management Committee will play a central role in monitoring, evaluation and feedback on the conservation state. Monitoring will be carried out in different periods depending on individual indicators such as stability of monuments, marine environment, overgrowth of vegetation, navigable channels, climate change, disasters, visitor and tourism pressure, social mapping and land use, and scientific and technical evaluation (Table 6.1). Based on the report of monitoring activities, the Nan Madol World Heritage Board will refer to a short-term management plan (see Section 6 for the details) for next steps.

Threats to the property

Long-term threats to the heritage values of Nan Madol are elaborated in Section 4, and include development pressures, environmental pressures and natural disasters. Proper monitoring and mitigation measures can control most threats. Major long-term threats and strategies for mitigation measures are summarized in Table 3.1.

3.2. COMPARATIVE ANALYSIS

To demonstrate the Outstanding Universal Value of Nan Madol, a systematic comparative analysis has been completed. During World War II, Nan Madol was referred to as the ‘Venice of the Pacific,’ a reference attached to it by allied pilots who flew over this part of the Pacific. They were drawing from their own knowledge of the medieval city of Venice in Europe and based their reference solely on similarities between the islet/canal configuration. However, for a comparative study on ceremonial centers in the Pacific, this reference is irrelevant since there is neither cultural connection nor common function between Venice and Nan Madol.

Table 3.1. Challenge and mitigation measures for the maintenance of Nan Madol.

	Threats	Long-term strategy for mitigation measures
Development pressures	Agricultural use	Development of conservation awareness
	Trampling and movement of stone elements by visitors	Limit visitors' movements to particular trails and locations
	Diversion of soil and stone elements for other purposes	Development of conservation awareness
Environmental pressures	Settling of wall stones and decomposition of coral fill	Monitoring and technical intervention (e.g., restoration, anastylosis)
	Wave action and tidal change	Monitoring and technical intervention (e.g., restoration, anastylosis)
	Vegetation growth	Clearance of vegetation, especially large tree species
	Bioturbation of fill by marine and terrestrial animals	Development of conservation awareness (especially related to pigs)
Natural disasters	Typhoons	Clearance of potentially-hazardous large tree species

Three different approaches have been taken in the comparative analysis. The first is to compare the property to other properties that exist in the region of Austronesian speaking peoples across the Pacific. The peoples of Austronesia, including the indigenous population of Pohnpei, share a common ancestry and cultural background. The second approach is to compare Nan Madol with other ceremonial centers within the region of the Federated States of Micronesia, to demonstrate why Nan Madol is a candidate for the World Heritage list as an outstanding example of ceremonial centers in this region. The third approach is to compare Nan Madol with other ceremonial centers around the world, including those inscribed on the World Heritage List. Through these approaches, a more comprehensive understanding of the universal and specific characteristics of the site will emerge.

Comparison to properties of similar values in the Pacific Islands

The builders of Nan Madol belong to the large group of Austronesian speaking peoples. Archaeological and linguistic studies indicate that the Austronesians originated somewhere in the area of present day South China, Taiwan and Island Southeast Asia, and dispersed into the islands of Melanesia and Western Polynesia through Papua New Guinea around 1500 BC leaving an archaeological signature known as the Lapita Cultural Complex. The descendants of these peoples subsequently migrated across and colonized the rest of Oceania including Micronesia, Central and Eastern Polynesia. Eastern Micronesia, including Pohnpei and Kosrae, was initially settled by the Austronesians sometime around 500 BC.

Although the Austronesians span a vast geographical area, there are many commonalities in their cultures and societies, which are attributed to their shared ancestral culture and heritage. These commonalities include an arboriculture based principally on root crops and animal husbandry including pigs, dogs and chickens, but they lacked a metal-working technology. To varying degrees their societies were politically stratified and led by hereditary chiefs. These societies are categorized by anthropologists as 'chiefdoms,' a stage in political complexity or economy between a 'segmentary society' and a 'state' (Renfrew and Bahn 2008) (Table 3.2). The appearance of chiefdoms is sometimes associated with the construction of large-scale monuments that reflect the prestige of the chief and provide a space in which rituals symbolizing and maintaining the power of the chiefs and elites are performed. More complicated and stratified societies are often categorized as 'early states' (Claessen and Oosten 1996), embryonic of a 'state-organized' society. In the Pacific, the traditional societies of Hawai'i and Tonga have been categorized as early state societies. It is probable that the political economy of the Saudeleur Dynasty could also be considered an early state (See Section 2). The following section provides a comparative base for the ensuing discussion on the significant values inherent in Nan Madol. It will present a description of some of the prominent and monumental properties associated with the Austronesians in the Pacific (Table 3.3). Many of these properties are listed or tentatively listed on the World Heritage list, each represents an example of the range of megalithic cultures found in the Pacific.

Table 3.2. A Scheme of Political Economies (Renfrew and Bahn 2008: 180).

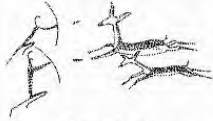




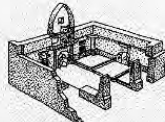



	MOBILE HUNTER-GATHERER GROUPS	SEGMENTARY SOCIETY	CHIEFDOM	STATE
	 <p><i>San hunters, South Africa</i></p>	 <p><i>Man plowing, Valcamonica, Italy</i></p>	 <p><i>Horseman, Gundestrup caldron</i></p>	 <p><i>Terracotta army, tomb of first emperor of China</i></p>
TOTAL NUMBERS	Less than 100	Up to few 1000	5000-20,000+	Generally 20,000+
SOCIAL ORGANIZATION	Egalitarian Informal leadership	Segmentary society Pan-tribal associations Raids by small groups	Kinship-based ranking under hereditary leader High-ranking warriors	Class-based hierarchy under king or emperor Armies
ECONOMIC ORGANIZATION	Mobile hunter-gatherers	Settled farmers Pastoralist herders	Central accumulation and redistribution Some craft specialization	Centralized bureaucracy Tribute-based Taxation Laws
SETTLEMENT PATTERN	Temporary camps	Permanent villages	Fortified centers Ritual centers	Urban: cities, towns Frontier defenses Roads
RELIGIOUS ORGANIZATION	Shamans	Religious elders Calendrical rituals	Hereditary chief with religious duties	Priestly class Pantheistic or monotheistic religion
ARCHITECTURE	Temporary shelters  <i>Paleolithic skin tents, Siberia</i>	Permanent huts Burial mounds Shrines  <i>Neolithic shrine, Çatalhöyük, Turkey</i>	Large-scale monuments  <i>Stonehenge, England – final form</i>	Palaces, temples, and other public buildings  <i>Pyramids at Giza</i>  <i>Castillo, Chichén Itzá, Mexico</i>
ARCHAEOLOGICAL EXAMPLES	All Paleolithic societies, including Paleo-Indians	All early farmers (Neolithic/Archaic)	Many early metalworking and Formative societies	All ancient civilizations, e.g. in Mesoamerica, Peru, Near East, India and China; Greece and Rome
MODERN EXAMPLES	Inuit San, southern Africa Australian Aborigines	Pueblos, Southwest USA New Guinea Highlanders Nuer and Dinka, E. Africa	Northwest Coast Indians, USA 18th-century Polynesian chiefdoms in Tonga, Tahiti, Hawaii	All modern states

Table 3.3. List of Similar Properties in the Pacific.

No.	Name of property	State party	Criteria	Status ¹	Id. No.	Year
1	<i>Ahu and Moai</i> on Easter Island (Rapa Nui National Park)	Chile	i, iii, v	W	715	1995
2	<i>Marae</i> in East Polynesia (Le site sacré de Tapu-tapu-ātea /Te Pō, vallée de Ō-po-ä) (Les Iles Marquises)	France	iii, iv, v, vi	T		2010
		France	iii, v, vii, ix, x	T		2010
3	<i>Heiau</i> in Hawai'i (Papahānaumokuākea Marine National Monument)	United States	iii, vi, viii, ix, x	W	1326	2010
4	The Ancient Capitals of the Kingdom of Tonga	Tonga	iii, iv	T		2007
5	<i>Latte</i> Stones in Mariana Islands	United States				
6	Yapese Stone Money Sites	Palau/ FSM	i, ii, iii, iv	T		2004

¹ W: World Heritage, T: Tentative list.

1. *Ahu* and *Moai* of Rapanui (Easter Island)

Easter Island is famous for its megalithic stone statues called *moai* (Figure 3.1), but originally these figures were a part of ceremonial complexes called *ahu*. The average height of a *moai* is around 3.5 meters and weighs about 20 tons, the largest is about 20 meters high and weighs about 90 tons.

The *ahu* is both the temple complex and the name of the platform on which the *moai* have been placed. The *ahu* are constructed with stones, ranging from tightly to loosely fitted basalts arranged in a dry wall masonry and supported by a rubble fill. It is said that *ahu* were associated with specific clans on the island, and that a variety of rituals had been conducted at each one. A number of these ceremonial centers were constructed from about AD 1100 to 1500 along the coastline of the island. Competition between the chiefs on the island fostered the construction of larger, more elaborate *ahu* as well as the erection of larger *moai*. Unfortunately, interrelated factors, such as population pressure, warfare, new socio-religious practices, climate change and environmental degradation, led to the decline of this megalithic culture

after AD 1500.

The monuments of Easter Islands were inscribed on the list of UNESCO World Cultural Heritage in 1995 as “Rapa Nui National Park.”



Figure 3.1. *Ahu* Tongariki in Easter Island.

Ahu evolved from the traditional Polynesian *marae*, a temple complex with a stone platform, stone or wooden backrests/statues raised on the platform and a bounded plaza in front of the platform (see below for description). *Marae* are found across Eastern Polynesia, in the archipelagos of the Society Islands, Marquesas Islands and Cook Islands; in the Hawaiian Islands, the *marae* is known as *heiau*. The *moai* is part of a long line of standing structures placed atop sacred/ceremonial platforms, and likely originated from the traditional stone and/or wood backrests of the Western Pacific that were transformed into the traditional stone and/or wood figurative *tiki*-type statues of Eastern Polynesia. Therefore, the megalithic monuments of Easter Island are closely connected to the counterparts in other cultures in the Pacific.

2. *Marae* in East Polynesia

The *marae* in East Polynesia, whether in the Society Islands, Marquesas

Islands or Cook Islands (the *heiau* of the Hawaiian Islands will be treated separately), are a type of traditional ceremonial center often associated with a specific clan or polity. Generally a *marae* is a ceremonial space with stone platforms (*ahu*), backrests or statues, and a bounded plaza; some large scale *marae* were composed of several platforms creating a ceremonial complex.

Although there are no *marae* inscribed as World Heritage sites, these monuments are important evidence for understanding the cultural heritage of the Austronesians. The Taputapuatea Marae on Ra'iatea Island in the Society Islands is considered to have been the central temple and religious center of Eastern Polynesia and is included on the World Heritage Tentative List of France (Figure 3.2). Some *marae* in the Marquesas Islands are also components of a mixed property on the French World Heritage Tentative List.

Marae are still regarded as sacred places by local communities. Those in New Zealand are no longer stone platforms but wooden buildings. Traditionally, they were sacred places for community rituals, meetings and decision-making; today they continue to be used as meeting places and are a symbol of Maori cultural identity.



Figure 3.2. Taputapuatea Marae in Ra'iatea.

3. *Heiau* in Hawai'i

The *heiau* of Hawai'i (Figure 3.3) are derived from the *marae*; they are temple complexes with stone platforms that support wooden *tiki* in a defined ceremonial

space. There are a variety of *heiau*, and they are distributed throughout the islands of Hawai'i. *Heiau* were used for the worship of Hawai'ian gods such as Lono, the god of fertility, and Ku, the god of war. Oral histories suggest that ceremonies involving human sacrifice had been conducted at the *heiau*, although there is no concrete archaeological evidence for this. A number of *heiau* were either abandoned in the nineteenth century under pressure from the colonial governments or destroyed by European missionaries during this period. Some of them have been restored recently and are regarded as a symbol of indigenous Hawai'ian identity.

Hawai'ian *heiau* listed as World Heritage properties include the ceremonial sites on Mokumanamana and Nihoa Islands, part of the ten islands and atolls in Northwestern Hawaii designated as the Papahānaumokuākea Marine National Monument.



Figure 3.3. Ulupo Heiau in Oahu.

4. Ancient capitals of the Kingdom of Tonga (Ha'amonga 'a Mau'i and *langi*)

A *langi* is a burial mound for chiefs in Tonga. The mound is made of fitted large coral limestone slabs and packed soil. In the ancient capital of Mu'a, a number of *langi* were constructed for the royal family of Tu'i Tonga (Figure 3.4), along with earthworks and a fortification. The capital was a political center of the Tongan

Maritime Empire, which once dominated a vast region that included parts of Fiji and Samoa, and was ruled by the Tu'i Tonga from AD 1200 to AD 1800.



Figure 3.4. A *langi* in Mu'a.



Figure 3.5. Ha'amonga 'a Maui.

The former capital of Heketa, to the north of Mu'a, was established around AD 950. It is dominated by a massive monument identified as a trilithon and called Ha'amonga 'a Mau'i (Figure 3.5). It is comprised of three massive coral limestone slabs, each weighing more than 20 tons and standing at least 6 meters high. The original purpose of this monument remains unknown; however, it may have served as a symbol of the power and prestige of the paramount chief of the Tu'i Tonga Dynasty.

The *langi* in Mu'a and Ha'amonga 'a Mau'i are megalithic monuments associated with the Ancient Capitals of the Kingdom of Tonga, currently on the Tentative List for World Heritage designation.

5. *Latte* stones in Mariana Islands

Megalithic monuments called *latte* are found throughout the Mariana Islands, including Guam and Saipan (Figure 3.6). These monumental features were erected by the Chamorro people between AD 800 and 1600. *Latte* sets are comprised of a group of coral limestone pillars topped with hemispherical-shaped capstones, also made from coral limestone. *Latte* stones were originally used as the foundation for wooden structures, likely the house of a chief or a temple for rituals. Sometimes burials are associated with *latte* sites, with graves placed between the *latte* rows. The largest example of *latte* sets in the Marianas is found at the House of Taga site, located on Tinian Island. The pillars are around 5 meters tall and weigh about 20 to 30 tons; they were arranged in two parallel rows. Some of the House of Taga *lattes* were mined from a quarry more than one kilometers south of the site. Another quarry site, the As Neives quarry site on Rota, includes the largest unearthed *latte* stones in the Marianas.

Stone pillars, monoliths, also appear in other island groups in this part of the Pacific including the Republic of Palau, on the island of Babeldoab (Figure 3.7). The site of Badrulchau, at the northern end of Babeldoab, was erected about AD 100 to 1600 and contains a series of megalithic stone monoliths that are described in oral history as part of a building foundation, a similar function to that of *latte* stones. There are 37 stone monoliths at the site. They are made from basalt and weigh on average

about 5 tons; several display carving in the form of a human face. Badrulchau is considered a kind of ceremonial center. The stone monoliths of Badrulchau and the *latte* stones of the Marianas suggest a cultural connection between the Mariana Islands and the western part of Caroline Islands.



Figure 3.6. *Latte* stones in Guam.



Figure 3.7. Stone Monoliths in Palau.

An additional, perhaps deeper, connection between *latte* stones and the region of island Southeast Asia is suggested by the wooden posts erected by the Ifugao in the Philippines and in the post-and-capstone imagery found in bas-relief carvings at Borobudur in Java, Indonesia. In both instances, the posts displayed have a rounded capstone atop a pillar. According to ethnographic information from the Ifugao, the capstone was intended to prevent rats from climbing into the structures resting on the posts. Borobudur was built by the Sailendra Dynasty in the eighth century, and is derived from an Austronesian speaking population. This evidence suggests possible interaction or at least a cultural relationship between the peoples of the Mariana Islands, Philippines and Indonesia.

6. Yapese stone money sites

Yapese stone money, or *rai*, consists of large circular stone disks carved out of a crystalline limestone formed derived from aragonite and calcite crystals (Figure 3.8). The average size of a *rai* is around 0.6 to 1.0 meter in diameter, with even larger ones around 3 meters in diameter weighing some 5 tons. Although *rai* is a kind of local money distributed in Yap, its raw material is not available on the island. *Rai* were carved from a quarry site located in the Rock Islands of Palau, about 500 kilometers away from Yap, and were transported by boat back to Yap. The voyage was considered so dangerous that the imported stone money was highly valued by the Yapese. Some of the largest examples of the stone disks were carved in the nineteenth century and transported to Yap on-board European made ships; these stones carry less value than the smaller, older stone disks because they entailed less risk in those transporting the *rai*. While the *rai* is considered to be a kind of currency, it is not used for purchasing daily goods; it is a symbol of wealth and used as ritual gifts on ceremonial occasions such as marriages and funerals. Many *rai* are placed on display at “money banks,” or public dance platforms, as well as in front of meeting houses or along pathways. Even though ownership of a particular piece of *rai* changes, the stone itself is rarely moved.



Figure 3.8. Yapese stone money.

The Yapese stone money sites, including both the regional sites in Yap and the quarry site in Palau, are nominated for UNESCO World Heritage Site designation as a transnational serial property.

Summary of comparison to similar properties in the Pacific

Five indicators are used as the basis for comparing Nan Madol to similar properties in the Pacific: date, size of site, population size, urbanization, and level of technology. Together, each indicator adds to the comparative base suggesting degree and scale of monumentality and the extent of the societies that constructed the monuments.

- Date is an indicator of the stage of social evolution in the human/cultural history of the site.
- Size of site is an indicator of the dimensions of the monuments. Here we classify site size into three categories depending on the extent of central monuments within the property: A: over 100 ha; B: 50-100 ha; C: less than 50 ha.

- Population size is an indicator of the dimensions of the societies that produced the monuments. Here we classify population into three categories, with the understanding that population size is only an estimate: A: over 20,000; B: 5,000 to 20,000; C: less than 5,000.
- Urbanization is an indicator of the extent of social and economic organization of the societies that produced the monuments.
- Level of technology is an indicator of the stage of technological development within the societies that produced the monuments.

The following table summarizes the indicators for each property.

Table 3.4. Comparison between Nan Madol and Similar Properties in the Pacific: Scale of Monuments and Their Societies.

No.	Name of property	Date	Site size	Population size	Urbanization	Level of technology
1	<i>Ahu and moai</i> of Rapa Nui	AD 1100-1500	C	B	Absent	Stone tools
2	<i>Marae</i> in East Polynesia	AD 1000-1800	C	B	Absent	Stone tools
3	<i>Heiau</i> in Hawaii	AD 1000-1800	C	A	Absent	Stone tools
4	The ancient capitals of the Kingdom of Tonga	AD 900-1800	A	A	Present	Stone tools
5	<i>Latte</i> stones in Mariana Islands	AD 800-1600	C	B	Absent	Stone tools
6	Yapese stone money sites	AD 1000-1800	C	B	Absent	Stone tools
7	Nan Madol	AD 1200-1600	A	A	Present	Stone tools

- Regarding date: most of the properties fall into the second millennium AD; Nan Madol dates fall into the same time range as the other properties.
- Regarding size of the site: Nan Madol is larger in extent than the other properties, including the Ancient Capitals of Tonga (even though they fall into the same size category as Nan Madol); the artificial islets of Nan Madol cover an area approximately 1.5 km by 0.8 km. It is among the largest monuments in the Pacific.

- Regarding population size: Pohnpei, Tonga and the Hawaiian Islands had large populations, enough to support the construction of prominent monuments.
- Regarding urbanization: only the ancient capitals in the Kingdom of Tonga, Nan Madol and Lelu were large enough to be considered nascent state-level organizations established before European contact in the Pacific.
- Regarding the level of technology: all the prehistoric societies in the Pacific relied on stone and shell tool technology; they had no metal tools: there is no difference between them in terms of technology.

From the list of indicators, Nan Madol shares the same level of technology as the other Pacific properties discussed; however, in all other indicators, it rivals only the level and extent of development in the Kingdom of Tonga, yet even in comparison to the ancient capitals of Tonga it is still larger and more expansive. In terms of scale of monumentality and extent of a population base needed to support construction, Nan Madol truly is an outstanding example of the effort involved in constructing and maintaining such a site.

There are a variety of megalithic monuments in the Pacific Islands, each of which was closely associated with the ceremonies, rites and rituals involving chiefs and the high ranking members of society. Their appearance, design, setting, architectural expertise inherent in their planning and execution, procurement of the raw materials used, and overall expanse reflect an increasing level of social complexity within the region, even though there is no direct evidence of cultural influence or interaction between their populations. Nan Madol and the other Pacific Island monuments described here bear silent witness to a much larger and deeper cultural affinity, the kind that comes from historical connections that are part of the Austronesian dispersal across the Pacific. In this sense, the scale, location and construction of the Nan Madol represents a unique endeavor in the Pacific—with the exception of Lelu in Kosrae, there is no other example in the Pacific of a network of artificial islets built in an off-shore locale, and used as a high ranking administrative/residential/ceremonial/mortuary center. The other Pacific Island examples of monumentality are confined to landed areas on main islands, and generally consisted of site complexes with a limited range of features and associated

functions.

Origin of population in Pohnpei and Kosrae and their ancestral society

According to archaeological and linguistic studies, the eastern end of the Caroline Islands, including Chuuk, Pohnpei and Kosrae, was colonized sometime around 500 BC or so, by Austronesian speakers from the south, from the region of Melanesia (Kirch 2000). Melanesia has a deep history of colonization, with the Bismarck Archipelago and Solomon Island settled more than 20,000 years ago. However, sometime around 1500 to 1000 BC, a maritime culture of Austronesian speakers began to colonize the coastal and off-shore islands throughout the region of Melanesia; these were the Lapita peoples (Kirch 1997). It is highly probable that the first colonizers of Pohnpei derived from this southern region, by a maritime population from the islands of Melanesia who were direct successors of the Lapita peoples.

Many archaeologists believe that the Lapita society was politically stratified and ruled by hereditary chiefs. It is likely their social system was reinforced through a trading network focused on the acquisition and redistribution of prestige goods, with exotic items obtained in long-distance interactions controlled by high ranking lineages, or elites (Friedman 1982; Green and Kirch 1997). However, the existence of monumental ceremonial centers, whether built of stone or wood, within the Lapita settlements has never been identified archaeologically. Pohnpei's chiefly political system and the foundations of its cultural tradition are thought to have originated in the ancestral Lapita cultural complex, but the form and shape of a ceremonial center like Nan Madol does not seem to be directly associated with this ancestral population.

What the Lapita cultural complex does offer toward the distinctive characteristic of Nan Madol is artificially constructed islets in sheltered off-shore areas along island coastlines. At the Talepakemalai site in the Mussau Islands, Bismarck Archipelago, archaeologists discovered the remains of stilt houses in the shallow lagoon (Kirch 1997). The tradition of stilt houses built in off-shore locations is still widely practiced throughout the Bismarck Archipelago and Solomon Islands today. Additionally, the lagoons of both Malaita and Langalanga in Solomon Islands support

a group of artificial islets. These artificial islets are made of coral limestone, and are used by the local population as the foundations for their villages. It is estimated that the oldest examples date to before the eighteenth century, while newer islands continue to be built even today. It has been suggested that the purpose of these constructions is to avoid the mosquitoes that cause malaria, for the convenience of exchange, for access to marine resources, and for defense against enemies. Although the artificial islets in the Solomon Islands are not directly associated with the complex of Nan Madol in Pohnpei, the tradition of off-shore settlements may be traced back to a common ancestral culture.

Linkage with Polynesian culture

The ceremonial centers in Polynesia, such as *marae* in the Society Islands, *heiau* in Hawaii and *ahu* in Easter Island, are similar in their form and function; however, their relationship to the form and function of Nan Madol has not been sufficiently established. One traditional practice, the existence of a kava (*sakau*) drinking culture throughout Polynesia, suggests possible cultural interactions with Pohnpei or an even deeper history of practice founded in the ancestral populations of Austronesian speakers. Pohnpei and Kosrae are alone in Micronesia in having a history of using kava. On Pohnpei, according to ethnographic sources, the use of kava follows a strict protocol controlled by elites and used in prescribed social circumstances. Using a variety of botanical, genetic and chemical evidence, northern Vanuatu has been identified as the most likely area for the domestication and initial dispersal of the kava plant (*Piper methysticum*) (Lebot *et al.* 1992). In the many parts of Polynesia, especially western Polynesia, including Tonga and Samoa, kava drinking is closely related to rituals and ceremonies controlled by chiefs. Linguistic studies suggest that kava drinking was introduced to Pohnpei through contact with Polynesians (Crowley 1994). This may imply direct contact and influence between Pohnpei and Polynesia before European contact.

Linkage with Mariana Islands and the Eastern Caroline Islands

Historical and cultural contact between the eastern Caroline Islands, including Pohnpei and Kosrae, the Mariana Islands, including Guam and Saipan, and the western Caroline Islands, including Palau and Yap, has not been fully clarified or understood. Archaeological and linguistic data suggests that the Mariana Islands were colonized by a group of Austronesian speakers around 1500 BC from Southeast Asia, in the area of the South China Sea (Spoehr 1957), Palau was colonized by an Austronesian group from Island Southeast Asia or Melanesia around 1000 BC (Clark 2005), and Yap and the Caroline atolls were settled by a settled group from Palau and possibly Island Southeast Asia sometime during the first millennium BC (Intoh and Leach 1985, Intoh 1997).

One possibility hypothesized for contact across the region rests in the ethnographically recorded *sawei* interaction sphere, a long distance exchange network that spanned the western Caroline Islands and possibly other islands in the western Pacific (Alkire 1965). The *sawei* was characterized as a bicultural system of tribute, gift exchange, and disaster relief initiated by the Yapese Empire, which was simultaneously a system of regional integration and a prestige-good exchange network where certain elite groups on Yap controlled the flow of goods necessary for social reproduction. The major participants in the *sawei* system were the islanders of Yap and the Carolinian atolls such as Fais, Lamotrek, Satawal and Puluwat; however, the extent of interaction also reached northward to the Mariana Islands, south to Palau and as far east as Namonuito and Chuuk (Hage and Harary 1991). So it is possible that some interaction between the eastern and western Caroline Islands took place prior to European contact. Linguistic data indicates that there are a number of shared loan words in the languages of Yap and the Carolinian atolls, further solidifying direct interaction among the western Caroline Islands (Ross 1996), with the possibility of an extended linguistic network of root and loan words filtering into the eastern Carolines.

In sum, the people and culture of Pohnpei is part of a larger interrelated and shared network that spans the Caroline Islands and extends into other parts of the Pacific, and is rooted in an ancestral population of Austronesian speakers.

Commonalities are seen in linguistic roots, including loan words, participation in a long-distance trade and interaction network, cultural practices such as kava drinking, and monumental architecture marking a place of ceremony, power and prestige. The monumental site of Nan Madol is a reflection of this shared common historical and cultural background (Figure 3.9). The uniqueness of Nan Madol lies in its integrity, size, and multiplicity of functions; it is the one site where the full function of an administrative center, ceremonial site and mortuary locale are drawn into one place constructed as a network of off-shore artificial islets and dressed with megalithic architecture. Within the region, Nan Madol exhibits Outstanding Universal Value as a representative of the Austronesian cultures in the Pacific.

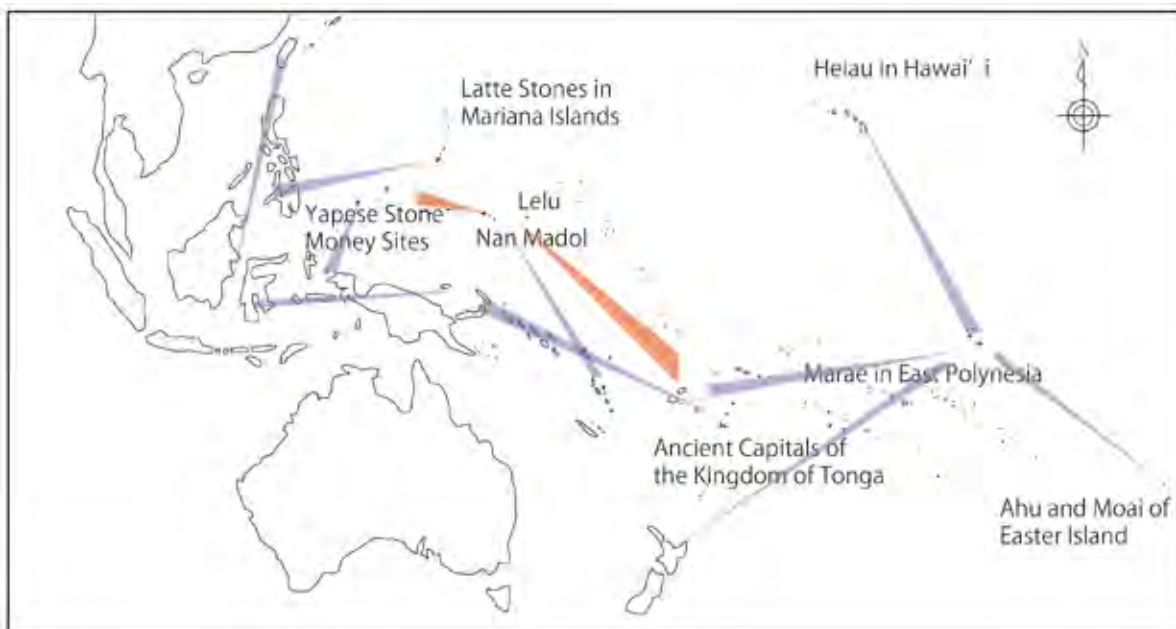


Figure 3.9. Map of Oceania showing distribution of the similar properties. Blue lines indicate supposed routes of Austronesian migration. Red lines indicate supposed cultural contact around Pohnpei/Kosrae region.

Comparison to properties of similar ceremonial centers within the Federated States of Micronesia

In the Federated States of Micronesia, there are other megalithic structures similar to those within the ceremonial center of Nan Madol. Many are located on

Pohnpei Island, but are smaller in scale than those at Nan Madol. Tables 3.5 and 3.6 summarize the structure and stone size used in the construction of three different sites (including Nan Madol) on Pohnpei (Ayers 2002). In this comparison, the magnitude of construction at Nan Madol is evident. A site complex such as Awak, for example, likely served as a center of sociopolitical organization; it supported tombs, meeting houses, and residential complexes that were built in a style comparable to Nan Madol. A second site, Sapwtakai (Figure 2.15), a late prehistoric-early historic center in Kiti, on the island's south coast, dates to about AD 1400; it is among the largest complexes on the main island of Pohnpei and consists of many small structures also built in the same style as structures at Nan Madol. Yet, both of these site complexes are dwarfed by comparison to Nan Madol. What such a comparison does do is suggest that the architectural style and construction techniques present at Nan Madol were a local phenomena, with indigenous cultural roots.

The only comparable example of a large-scale ceremonial center in the Federated States of Micronesia similar to Nan Madol is the ruins of Lelu on Kosrae Island. The site of Lelu consists of a group of artificial islets built on a shallow reef platform just off the northeast coast of Kosrae. Like Nan Madol it is a monumental stone complex built over several centuries and served as a combined administrative, ceremonial and mortuary center, the point from which the paramount chief, *Tokosra*, ruled. Although the area of the Lelu complex is about 24 ha, about one-third the size of Nan Madol, it is larger than either Awak or Sapwtakai on Pohnpei. But, unlike Nan Madol or the other Pohnpeian sites, parts of Lelu outside the ancient administrative and ceremonial core are still occupied. Even with the current occupation of Lelu Town, the site of Lelu remains an important example of a ceremonial center in the region of Eastern Micronesia; therefore the possibility of extending the World Heritage site of Nan Madol to include Lelu will be considered in the future.

Table 3.5. Comparison of structural sizes of three chiefly centers on Pohnpei.

	Awak (local chiefdom)	Sapwtakai (regional center)	Nan Madol (paramount)
Area of complex	0.6 ha	1.1 ha	75 ha
Total construction volume	3,000 m ³	3,500 m ³	300,000 m ³
Total mass of complex	8,000 m tons	10,000 m tons (est.)	500,000-750,000 m tons
Large single tomb feature (area/vol)	285 m ² /220 m ³	230 m ² /345 m ³	3,000 m ² /18,000 m ³
Large single transported stone	2 m tons	5 m tons	60 m tons

Table 3.6. Comparison of stone sizes per types transported for construction in three levels of chiefly centers on Pohnpei.

Stone type	Awak (local chiefdom)	Sapwtakai (regional center)	Nan Madol (paramount)
Largest stone type transported	Volcanic boulder/ Column	Volcanic boulder	Volcanic boulder
Type 1. Columnar lava rock: size (mass) range of natural local columns ¹	Range: 0.02-0.5 m tons Upper limit: 0.5	none known	none known
Type 1. Size (mass) range of construction columns moved	Range: 0.02-2 m tons	Range: 0.05-1.5 m tons	Range: 0.04-10 m tons
Type 2. Boulder rock: upper mass limit of natural local boulders	45 m tons	60 m tons	130 m tons
Type 2. Largest construction boulder moved	1 m tons	5 m tons (est.)	60 m tons
Type 3. Coral boulder from reef	Range: 1-20 kg (rare)	Range: Very rare	Range: 5 kg -0.3 m tons

¹ Mass is calculated at 2,900 kg/m³ for the crystal-rich lava columns and 2,700 kg/m³ for the flow-banded basalt boulders (the range is on the order of 2,400 to 3,100 kg/m³ for the basalt stone used in building). Columns range from nearly perfect prismatic forms that are neatly pentagonal and hexagonal for their entire length to ones with one end showing a hexagonal cross-section and then grading into an octagonal shape on the other, thus a close approximation of diameter is measured and this is used to calculate volume.

Comparison to similar properties in the World Heritage List

Ancient Monumental Ceremonial Centers are characteristically seen in chiefly and incipient state societies throughout the world, often presented in the form of large-scale megalithic monuments (Table 3.7). The construction of these megalithic monuments requires a large labor force and a social system more complicated and stratified than that of segmentary society. In a chiefdom, at the very least, a monument's function as a ceremonial center is often highlighted as a visible emblem of power and prestige, where both political and ritual activities are equally emphasized in the social reproduction of the chiefly or incipient state hierarchy. A true state society would encompass a much higher degree of complexity, with an administrative and religious organizational structure that included enactment of laws, a taxation system, a centralized bureaucracy and armies, and an institutionalized religious system with a permanent clergy and canonical convictions.

Table 3.7. List of Similar Properties on the World Heritage List

No.	Name of property	State party	Criteria	Id. No.	Year
1	Stonehenge, Avebury and associated sites	United Kingdom	i, ii, iii	373	1986
2	Megalithic temples of Malta	Malta	iv	132	1980
3	Pyramid of Djoser (Memphis and its Necropolis – the Pyramid fields from Giza to Dahshur)	Egypt	i, iii, vi	86	1979
4	Historic center of Oaxaca and archaeological site of Monte Albán	Mexico	i, ii, iii, iv	415	1987
5	Sacred city of Caral-Supe	Peru	ii, iii, iv	1269	2009
6	Moju-Furuichi Kofungun, ancient tumulus clusters	Japan	ii, iii, iv	n.d.	n.d.
7	Great Zimbabwe National Monument	Zimbabwe	i, iii, vi	364	1986

At Nan Madol, a chiefdom or even incipient state designation seems to fit best with the structure of the site, and is further reinforced by the documented sources of a chief's power, that is the control of prestige goods, rituals and monuments within the society (Earle 1997). This designation also fits well with the political economy identified in the Saudeleur Dynasty that founded Nan Madol. According to oral

histories, a variety of ceremonies were conducted on some of the artificial islets, such as Idehd (#43). Each artificial islet within Nan Madol was constructed with a coral base on top of which structures were raised using massive basalt rocks and columnar fragments. Both the construction of the islets and acquisition of building materials is testimony to a demonstration of the power and authority wielded by a chiefly class, and positions Nan Madol at the center of the political economy in the society.

1. Stonehenge

Stonehenge (Figure 3.10) is a megalithic monument erected sometime between 2500 BC and 2000 BC. It consists of a ring of standing stones set within earthworks. The largest stone is around 7 meters in height. All the stones at Stonehenge were transported from a quarry site about 40 kilometers away. Stonehenge was mainly used from the late Neolithic to the Bronze Age, and represented a political economy that falls into the category of chiefdom. Some scholars believe the function of the site was related to astronomy, others suggested it was associated with rituals such as ancestor worship. There are a number of grave features around the site.



Figure 3.10. Stonehenge.

2. Megalithic temples of Malta

The megalithic temples of Malta (Figure 3.11) were built between 4500 BC and 2000 BC, extending from the Neolithic to the Bronze Age. The earliest temple of Ġgantija was erected during the earlier Neolithic period and was dedicated to the God of Fertility. It was constructed during a time dominated by stone tool technologies, which makes it comparable in terms of technology to the megalithic constructions at Nan Madol. Although the timing and architectural styles of the two complexes are entirely different.



Figure 3.11. Ġgantija of megalithic temples of Malta.

3. Pyramid of Djoser

Pyramid of Djoser (Figure 3.12) in the Saqqara necropolis is the earliest example of Egyptian pyramids, built in the 27th century BC by Pharaoh Djoser of the 3rd Dynasty within the Egyptian Old Kingdom. It was originally designed as a huge mastaba, a conventional burial structure in the Early Dynastic Period (from the 31st to 27th centuries BC). After subsequent extensions, the final form became a stepped pyramid. There were several structures, including a funerary temple, royal palace, the Heb-sed ritual courtyard, tombs, and storehouses built around the pyramid and

enclosed by outer walls. The arrangement of this ceremonial complex is comparable to Nan Madol in that the range of functions—administrative, residential, ceremonial and funerary—is located in a single place.

The period of the 3rd Dynasty was the beginning of Old Kingdom (from the 27th to 22nd centuries BC) when a number of pyramids were built. The framework for a state-level organization was created at this time, albeit some elements of a state were as yet undeveloped. As such, this represents an example of the society that is increasing in complexity from an early state system. The Pyramid of Djoser is registered on the UNESCO World Heritage list as a component of “Memphis and its Necropolis – the Pyramid Fields from Giza to Dahshur.”



Figure 3.12. Pyramid of Djoser.

4. Historic center of Oaxaca and archaeological site of Monte Albán

Monte Albán (Figure 3.13) is an archaeological complex that dates between 500 BC and AD 800. It was a sociopolitical and economic center in the Zapotec culture, and included a palace, temples, tombs and a ballgame court. Monte Alban is located on a small hill, where water and food resources were limited. Nevertheless, this locale was selected as a ceremonial center because the people of Zapotec regarded the hill as a sacred place. Some motifs represented in the bas-reliefs on the

temple walls depicted scenes of human sacrifice, which suggests that rituals involving human sacrifice were conducted at the temple, similar to other civilizations in Mesoamerica.



Figure 3.13. Monte Albán.

5. Sacred city of Caral-Supe

In Andean societies of the Formative Period, the construction and renewal of temples took on a great significance. The earliest temple of Kotosh, constructed during the pre-ceramic period, appears to represent the onset of a period of increasing complexity and the emergence of a much more complicated, possibly state-like society. Around 2500 BC, the city of Caral-Supe (Figure 3.14) was built. It consisted of a group of pyramids and temples as well as a theater and settlements. Evidence of an agricultural system that included beans, sweet potato and maize is found around the site, even though the arable land around the site was quite limited. The location of Caral-Supe, in a resource-poor area, suggests that other factors dominated the choice of the building site, perhaps elevating its significance as a ceremonial center.



Figure 3.14. Sacred City of Caral-Supe.

6. Mozu-Furuichi Kofungun, ancient tumulus clusters

From the third to sixth centuries AD, a number of distinctive monuments, keyhole-shaped tombs, were built throughout the Japanese Archipelago. Among them, the tumulus clusters of Mozu-Furuichi in the Osaka Plain are the most impressive examples. They were built mainly around the fifth century AD. The largest example is the Daisen Kofun (the legendary site of Emperor Nintoku's mausoleum) (Figure 3.15). It is nearly five hundred meters in length, which makes it the largest ancient tomb in the world. The surface of the mound was covered by cobbled stones, which made it look like a stone mountain. The tumuli were intended for the royal family of Daioh (an ancient great king) and elites. The Mozu-Furuichi ancient tumulus clusters are on the Tentative List for UNESCO World Heritage designation.

Although the society at this period was highly stratified, it was still in the early stages of a state-like organization, particularly as the use of writing was limited and the framework of a state governance system was undeveloped. Burial goods discovered in the tombs were primarily ceremonial items such as bronze mirrors and jasper ornaments, which are associated with the Early Kofun Period (the third to fourth centuries). The monumentality of the tumuli and their association with burials of high status suggests that a prestige system was in place at this time. In the shift to the Middle and Late Kofun Periods (the fifth to sixth centuries), burial goods shifted to

practical items such as arms, armors and harnesses. The shift in burial goods toward symbols of war, war heroes and war-making also suggests that the role of tumuli as ceremonial centers shifted to monuments of the state, where the king's/emperor's prestige was tied to the success of his war-making machine.



Figure 3.15. Daisen Kofun in the Mozu-Furuichi ancient tumulus clusters.

7. Great Zimbabwe National Monument

Great Zimbabwe (Figure 3.16) is the ruins of megalithic city that dates back to the ninth century AD, and once served as the capital of the Kingdom of Zimbabwe during the country's Late Iron Age. This archaeological complex is surrounded by stone walls called "Great Enclosure," and is located on a hill called "Acropolis." The Great Enclosure was not only a residence for king but also a ceremonial space. It harbored both a political district where the king took the reins of government and ritual district where a number of religious artifacts were distributed. The king took on a dual role at the site; he was not only the head of the political system but also the religious

system. Great Zimbabwe was also a trading hub, at the center of commerce for the Indian Ocean; a number of imported Chinese ceramics were found at the site.



Figure 3.16. Great Enclosure of Great Zimbabwe.

Summary of comparison to similar properties on the World Heritage List

In general, megalithic monuments around the world appear to be associated with societies organized as either chiefdoms or early/incipient states. From one example to the next, these monumental sites served as ceremonial centers that encompassed both the sacred and secular; they functioned simultaneously as ritual/religious sites and political centers. This condition aptly describes Nan Madol during the Saudeleur Dynasty, making the megalithic complex comparable to the other ceremonial centers in the world.

As above, Nan Madol is compared to similar properties on the World Heritage List or designated as Tentative Listings using the five indicators of date, site size, population size, urbanization, and level of technology in order to assess the magnitude of the monuments and societies that produced the monuments. The following table (Table 3.8) demonstrates the status of these indicators with respect to these properties.

Table 3.8. Comparison between Nan Madol/Lelu and similar properties on the World Heritage List in the scale of monuments and their societies.

No.	Name of property	Date	Site size ¹	Population Size ²	Urbanization	Level of technology
1	Stonehenge, Avebury and Associated Sites	2500-2000 BC	C	B	Absent	Stone tools
2	Megalithic Temples of Malta	4500-2000 BC	C	B	Absent	Stone tools
3	Pyramid of Djoser	2600 BC	C	A	Present	Iron tools
4	Historic Center of Oaxaca and Monte Albán	500 BC-AD 800	C	A	Present	Metal tools except iron
5	Sacred City of Caral-Supe	2500 BC	B	A	Present	Metal tools except iron
6	Moju-Furuichi Kofungun	AD 400	C	A	Present	Iron tools
7	Great Zimbabwe National Monument	AD 800	B	A	Present	Iron tools
8	Nan Madol	AD 1200-1600	A	A	Present	Stone tools

¹ A: over 100 ha; B: 50-100 ha; C: less than 50 ha. ² A: over 20,000; B: 5,000 to 20,000; C: less than 5,000.

- Regarding date: Nan Madol is relatively later than these other properties, especially those of Neolithic Europe.
- Regarding size of the site: Nan Madol is among the larger examples of these properties. The dimensions of individual monuments, like the Pyramid of Djoser and Mozu-Furuichi Kofungun, are greater than those of Nan Madol, but in terms of the extent of the monuments, Nan Madol is more expansive.
- Regarding population size: the island population of Pohnpei was not necessarily greater than any of the other examples listed above. Yet the limited population on the island succeeded in producing such a large monumental construction, which implies a high level of organization.
- Regarding urbanization: Nan Madol achieved an incipient state level of organization, which controlled the population on the island. Whether or not an urban landscape was established on the island is a question that has yet to be addressed in the archaeology.

- Regarding level of technology: stone technology dominated the culture of Pohnpei at the time Nan Madol was built, similar to the Neolithic Age in Europe.

In sum, it is clear that Nan Madol is no less an outstanding monument than other similar properties already inscribed on the List of World Heritage. Furthermore, Nan Madol is a distinctive example among these properties, owing to the enormity of effort and energy that was needed to construct such a monumental undertaking on a small remote island.

The conclusion to be drawn from all these comparisons is that there is an inherent propensity within the human species to build societies with large socio-religious centers for an honored elite. However, this takes on different forms based on the environmental, technological, and cultural differences of people through time and across the world. Only by looking at each of these sites in their own right can we fully understand and appreciate what each of those peoples of the past lived through and created.

Conclusion

Nan Madol is an extraordinary example of a monumental site in the Pacific, and the culmination of a long history rooted in the ancestral Austronesian culture. Compared to other monumental sites in the Pacific, Nan Madol is larger and more complex, drawing together the secular and sacred in one place and serving as an administrative, residential, ceremonial and mortuary site. Its off-shore location and network of artificial islets supporting megalithic structures also serves to separate Nan Madol from other Pacific Island monumental sites, and elevates it as a unique and unprecedented place that bears witness to the creative and architectural mind of its population. On the world stage, Nan Madol rivals any of the monumental sites constructed within chiefdom and incipient/early state level societies. In each example described above, every monumental site served as a symbol of the power and prestige of the ruling head, whether a king, a head of state, a paramount chief, or a chief, and they testified to the ability of the ruling head to organize and control a labor force as well as the raw materials and resources needed in the constructions.

Like Stonehenge or the Pyramid of Djoser, the stone used as raw material in their construction had to be obtained from off-site quarries and transported to each site. Like the funerary monuments such as Mozu-Furuichi Kofungun, the tombs of Nan Madol stood as acknowledgment to the highest ranking among the Pohnpeian population. However, the overall complex of Nan Madol is most comparable to places like Great Zimbabwe or Monte Alban, as all served a multiplicity of functions that included administrative, ceremonial, residential and/or funerary activities. In this sense, Nan Madol is an outstanding example of a complex chiefdom or early/incipient state society and a testament to human creativity in the design and rendering of monumentality of the site; its Outstanding Universal Value is justified on this evidence alone.

3.3 PROPOSED STATEMENT OF OUTSTANDING UNIVERSAL VALUE

a. Brief synthesis

The site of Nan Madol is the larger of two monumental stone complexes known as the Ceremonial Centers of Eastern Micronesia, centers of complex political, religious and social systems that developed in the Micronesia from around 1200 AD. Nan Madol on the island of Pohnpei and the center of Lelu on Kosrae attest to the emergence of highly stratified chiefdom systems and governance evident in many islands or archipelagos of the Pacific Ocean from around 1000 years ago.

Nan Madol and Lelu, separated by 550 km of open sea, are megalithic settlement complexes constructed on artificial, man-made islands that extend across a shallow reef platform within the fringing reef of the Pohnpei and Kosrae respectively.

Nan Madol is the larger and more intact of the two ceremonial centers, an elaborate and megalithic complex consisting of more than ninety artificial islets of basalt and coral boulders, separated by navigable channels, that provide the foundation on which massive basalt structures have been constructed with massive lengths of prismatic/columnar basalt placed in header and stretcher patterns that

surround tombs, residential complexes, and sites for sacred or ceremonial activities.

Construction of the islets is likely to have commenced around 1200 AD on the reef adjacent to Temwen Island, a small island off the southeast coast of Pohnpei following initial human colonization of the island around 2000 years ago. In the following millennium, as population and settlements grew alongside an increasing reliance on agriculture, chiefly societies emerged eventually to be unified across Pohnpei under a paramount chief, the Saudeleur. Nan Madol became the place of residence, administration and ritual for the Saudeleur and their elite. The consolidation of chiefly power under the Saudeleur Dynasty is associated with the major phase of construction of the massive stone structures of Nan Madol. Existing islets were expanded and new islets and structures were built using huge blocks of stacked prismatic basalt mined elsewhere on Pohnpei and transported to the site. Dwellings existed on many of the islets while others had special purposes including food preparation and canoe making. Oral traditions place the downfall of the Saudeleur around 1600 AD when Isokelekel, son of the Pohnpeian thunder god, overthrew the Saudeleur. He established a new political order with himself as the paramount chief or Nahnmwarki of Madolenihmw, the chiefdom adjacent to Nan Madol. By the 1820s people no longer lived at Nan Madol but it continues to retain a religious and traditional significance. The Nahnmwarki system continues into the present as the traditional system of governance in Pohnpei. Ownership of Nan Madol is held by the Nahnmwarki title and transferred to each successive Nahnmwarki. This is a traditional system passed down since the end of the Saudeleur dynasty around 1500-1600 AD.

Across the Pacific, following an initial colonization period, as island populations gradually expanded, semi-autonomous polities emerged to compete for resources, alliances and the struggle for the power reigned supreme. Populations became rooted in their political and economic boundaries, creating a depth of generational links tied to the land and sea. Sedentary settlements increased their reliance on cultivated foods. The archaeological evidence, oral histories and genealogies of the Pacific islands confirm that the millennium prior to European contact was a time of great social change throughout the Pacific. Environmental and economic pressures

associated with the development of an increasing political stratification led to the appearance of complex chiefly societies that became the systems of traditional or customary governance that were encountered by Europeans from the 16th century and continue to structure present-day Pacific Island societies.

This development of distinctive chiefly social structures within the Pacific is a phenomenon associated with the appearance of monumental architecture in many parts of the Pacific from around 1000 years ago. Examples of this include Eastern Polynesia, Tonga and Samoa and Micronesia. Nan Madol is an outstanding Micronesian expression of this pan-Pacific phenomenon, tangible evidence of this increasing social, political and economic stratification, and a symbol of the power of the chiefs to command the labor to build monumental structures and mobilize a significant labor force.

The outstanding universal value of the Ceremonial Center of Nan Madol lies in its being a unique Pacific Island expression of the global association of monumental architecture with the emergence of social complexity in a region and the development of elaborate political hierarchies that have the capacity to create impressive, monumental structures as emblems of power and authority.

b. Justification for criteria

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared

Nan Madol, a Ceremonial Center of Eastern Micronesia, bears exceptional testimony to the development of chiefly societies in the Pacific Islands. The huge scale, technical sophistication and concentration of elaborate megalithic structures of Nan Madol bear testimony to complex social and religious practices of the island societies that persisted for over 500 years.

Criterion (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

Nan Madol is an outstanding small island example of monumental architecture

associated with the appearance of stratified societies and centralization of power that is evidenced in many parts of the world. The megalithic stone complex of Nan Madol includes chiefly dwellings, ritual/ceremonial sites, mortuary structures and domestic sites that bear unique testimony to the origin and development of chiefly societies evidenced across the Pacific Islands from around 1000 years ago and associated with increasing island populations and intensification of agricultural production.

Criterion (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. Nan Madol is an expression of the origin and development of traditional chiefly institutions and systems of governance in the Pacific Islands that continue into the present in the form of the Nahmwarki system under which Nan Madol is traditionally owned and managed.

c. Statement of integrity

The integrity of Nan Madol is ensured by the inclusion within the boundaries of the nominated property all the key structures that demonstrate the architectural forms and diversity or construction techniques and materials in both components of the property. The boundary of Nan Madol includes all islets listed by Hambruch (1910) in the first full survey and recording of the complex.

d. Statement of authenticity

The authenticity of the nominated property is held in the setting, interrelationships, forms and variety of the structures and canals of both properties. There has not been any reconstruction of the structures apart from minor repairs. Nan Madol has not been impacted by major developments although vegetation and siltation on the site are compromising its conservation and the visual and aesthetic appreciation of property.

Archaeological research over the past 30 years at Nan Madol has provided evidence of the origin, development and construction of the megalithic complex and

the activities at each site. Oral traditions and historical records provide insight into the social history and the centrality of Nan Madol in establishing the Pohnpeian system of traditional governance through the Nahnmwarki system.

Archaeological excavation has been limited and much of the archaeological deposit remains intact and potentially offers further information about the specific functions of various islets and social interactions reflected in the site.

The purpose of each of the islets has been passed down by oral tradition. Minimal archaeological excavation has occurred within Nan Madol. Instead, research has focused on mapping and surface collection. Development has remained well outside the boundaries of the nominated property. The site was included on the US National Register of Historic Places in 1980. A single small path has been constructed with removable wooden bridges providing access for tourists. Some archaeological features extend beyond the boundary of the nominated property into the buffer zone. These features include areas on the small surrounding islands that would have been used in the transportation of stone.

e. Requirements for protection and management

Nan Madol is included on the US National Register of Historic Places (19741219 74002226) and is on the Pohnpei State Register of Historic Properties and protected under the Pohnpei Historic and Cultural Preservation Act 2002. Proposed protection mechanisms for Nan Madol, which include a Pohnpei State law and draft management system (Appendix A), are adequate to ensure the Outstanding Universal Value of Nan Madol to be maintained for a longer term. The property is also protected through customary protocol and respect. To access Nan Madol visitors are requested to first ask permission from the Nahnmwarki. Combining this existing legislation, customary protection for the property described below provides sufficient provisions for the protection and management of Nan Madol as a World Heritage Site.

FSM and Pohnpei State officials acknowledge that the Nan Madol Preservation and Management Plan (1992) needs improvements and updating in the light of the provisions of the 2002 Act. This work is currently underway. A draft management

system for Nan Madol was developed based on agreements during the 2012 Nan Madol Capacity Building Workshop, which was attended by stakeholders from government agencies and community. Proposed organizational structure consists of the Nan Madol World Heritage Board, the Nan Madol World Heritage Management Committee, and the Temwen Island World Heritage and Tourism Committee, in which different types of stakeholders, such as national, state, and local government representatives, traditional authorities, and community, will be involved (see Section 5.e).

4. STATE OF CONSERVATION AND FACTORS AFFECTING THE PROPERTY

4.a. PRESENT STATE OF CONSERVATION

All elements of the component of Nan Madol are in fair physical condition. Nan Madol is not under threat from developmental or tourism pressures but it is subject to environmental pressures and a lack of conservation planning. Nan Madol is subject to threats from natural disasters including cyclones or typhoons, storms and associated storm surges, and may be impacted by climate change and associated sea level rise in the future.

The present condition of the archaeological features at Nan Madol varies considerably, but overall has remained adequate. None of the features are under serious threat from major environmental, developmental or tourism pressures or natural disasters. The site has been sufficiently protected by both the Pohnpei Historic and Cultural Preservation Act (2002) and traditional customary practice. The whole site is listed as a historic place on the U.S National Registry of Historic Places and the Pohnpei State Registry of Historical Properties, which ensures its protection under the Act as described in Section 5.b. A comprehensive management system, which includes management plans, is detailed in Sections 5 and 6.

The Japanese Consortium for International Cooperation in Cultural Heritage (JCIC Heritage) (Kataoka *et al.* 2012:13-26, see Appendix C) conducted an extensive survey of Nan Madol in 2010 to assess the present state of conservation at the site and the factors affecting its state of conservation. According to the survey, the Nan Madol complex can be roughly divided into four areas relating to particular environmental threats: (1) the artificial islets from Nahkapw Harbor along the reef on the open ocean side (from Nanmwoluhsei [#119] to Pahnwi [#9]); (2) the group of artificial islets bounded by the artificial islets mentioned in (1) and extending to Temwen Island; (3) the channels intersecting the artificial islets; and (4) the group of

artificial islets along the coast of Temwen (the group of northwestern islets of upper Nan Madol, including Peidoh [#57]).



Figure 4.1. Expansion of swamp land on Peidoh (#57) (Kataoka *et al.* 2012:14, Photo 2).

Area (1) is directly susceptible to the ebb and flow of the tide, as well as waves and the wind. As a result, the bottom sand of the reef has accumulated along the seawall, and many parts of the islets display signs of collapse caused by waves and dense vegetation growth. Furthermore, large trees on the islets that have fallen due to strong winds and dry weather have caused the stone construction of the islets to collapse or loosen.

In Area (2), almost all islets are covered by a dense growth of vegetation, including trees of various sizes. The roots of the trees are causing the stone foundations to loosen, and trees that have withered and fallen are causing the basalt boulders of the perimeter wall to collapse or are otherwise causing serious damage to the islets.

In Area (3), climate changes that have occurred after construction of the islets and the tourist trails created in recent years have changed the water level and flow of the waterways, and have turned the soil to silt in many places, thus allowing mangrove trees to flourish and their roots to damage the ruins. In some waterways,

withered mangrove trees are causing silt and sand to accumulate and are creating a vicious cycle of destruction.

In Area (4), soil and sand that are running off from Temwen Island due to tidal action and rainwater are accumulating around the islets, choking the flow of water in the waterways and forming mud lakes and swamps (Figure 4.1).

The current status of conservation of individual islets is described in Appendix B. Details of major threats to the Outstanding Universal Value of the site will be discussed in the following section.

4.b. FACTORS AFFECTING THE PROPERTY

(i) Development pressures

Nan Madol does not face serious development pressures, as the site is currently uninhabited and is visited by a relatively small number of visitors (see Section 5.h). In addition, the sacredness of the site to Pohnpeian people also has contributed to its protection. It is possible, however, to enumerate some potential threats to the site, such as (1) agricultural use, (2) trampling and movement of stone by visitors, and (3) diversion of soil and scavenging stone for other purposes.

Some tree and root crops such as coconut trees (*Cocos nucifera*), breadfruit trees (*Artocarpus attilis*), papaya (*Carica papaya*), and taro (*Alocasia macrorrhiza*), were planted on the larger islets such as Peinkitel (#55), Dau (#111) and Pahnkedira (#33) in the past (Figure 4.2), where the ground was prepared and filled with soil (Ayres *et al.* 1983), although the majority of islets are filled with coral rubble and are generally unsuitable for agricultural use.

Trampling and movement of stone by visitors both from overseas and from Pohnpei (most numerous students from school trips) have affected the surface archaeological structures in the site.

The diversion of soil and scavenging of stone from the ruins for other purposes (i.e., cultural reuse) have affected the archaeological features over a long period of time up to the present. This threat, however, has been limited in recent years due to a



Figure 4.2. Dense crop trees such as coconut and breadfruit trees planted on Nandowas (#113) (Kataoka *et al.* 2012:18, Photo 10).

lack of human habitation and infrequency of other activities at the site.

The only exception is the recent destruction of structures to accommodate the construction of tourist trails, which run from Temwen Island to Nandowas (#113) and pass through six islets. There is no question that the construction of tourist trails to any site brings cultural and natural impacts. This includes the diversion and/or scavenging of stone and soil that were originally used in the initial construction of the ancient ruins (Figure 4.3), but also the construction of land bridges across the islets have clogged the waterways causing changes in the water flow that have accelerated the accumulation of silt and promoted the secondary growth of mangrove forests and other trees (Figure 4.4).

Another issue, siltation of the mangroves is an on-going natural process that may be seen in other parts of the site away from the tourist trails. Therefore, it is difficult to assess how much the tourist trails are to blame. This natural siltation rapidly increased following the construction of the causeway from Temwen to the main island, according to local informants.

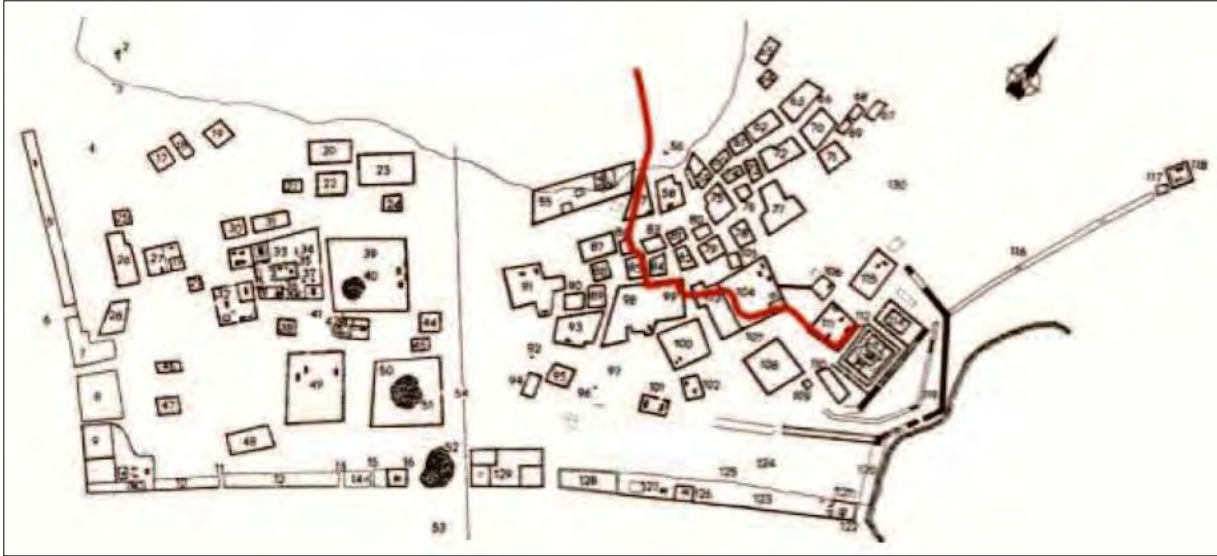


Figure 4.3. Location of tourist trails (Kataoka *et al.* 2012:25, Figure 21).



Figure 4.4. Accumulation of silt near a land bridge (Kataoka *et al.* 2012:25, Photo 32).

Furthermore, the trails have made it possible for visitors to travel to multiple islets from Temwen by land, which has increased the number of visitors to the islets and brought an entirely new set of problems that have resulted in the collapse, bowing and distortion of the ruins from trampling on the enclosure walls, terraces and other structures and by moving the stone elements (Kataoka *et al.* 2012:21-23). Changes in building materials, which cause less impact on the surrounding environment, may need to be considered in the future. In addition, careful

assessment will be required when the construction of any semi-permanent facility is planned.

A more destructive practice has been the mining of sand from beneath the islet of Pahnwi (#9 and #10) which, coupled with wave action, has caused the collapse of the islet's largest wall in the past decade.

(ii) Environmental pressures (e.g., pollution, climate change, desertification)

Since the ancient city fell to ruin and was left abandoned for years after the fall of the Saudeleur Dynasty, the structures on many of the islets have been subject to extensive damage from various natural factors. Those environmental threats are currently the main factors affecting Nan Madol's conservation. There are four main destructive forces acting upon the ruins: (1) settling of wall stones and decomposition of coral fill, (2) wave action and tidal change, (3) vegetation growth, particularly large tree species, and (4) bioturbation of fill by marine and terrestrial animals. The impact of all these forces varies according to islet construction and location. The destructive agents are not isolated and independent of one another because a number of interrelationships exist. Other destructive forces include coral growth, and rainfall.

The settling and decomposition of wall fill is most apparent in the higher retaining walls bordering islets and in the free standing walls of architectural features constructed on the surface of islets. Settling of the core fill combined with the gradual crumbling of the coral rubble, acts to create a bulge in the wall facing and eventually outward collapse of the wall facing and fill (Figures 4.5 and 4.6).

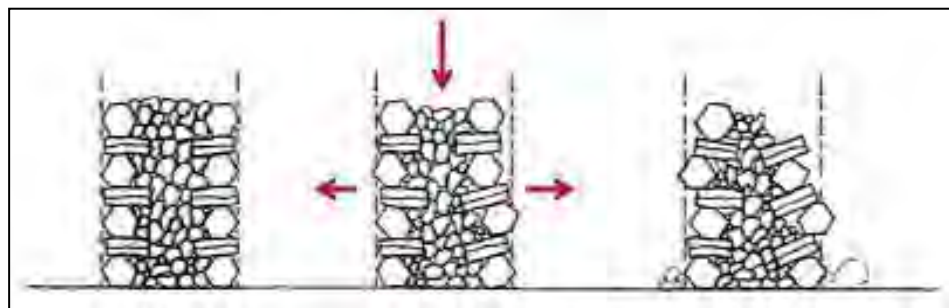


Figure 4.5. Diagram of the prism wall collapse process (Ayres *et al.* 1983: 242, Figure 47).



Figure 4.6. Collapse of the north perimeter wall seen from inside, Nandowas Islet (#113) (Kataoka *et al.* 2012:20, Photo 17).

Wave action and tidal change are probably the most destructive forces, particularly on the seaward walls. One effect of wave action is the slow erosion of islet fill, particularly the soil and sand components as well as smaller coral and basalt cobbles. The changing tide is another erosive force, which contributed to removal of islet fill, particularly soil, and wall collapse in all areas of the ruins. Another influence of the waves and tides is the deposition of sand and silt, which creates a soil media for vegetation growth, particularly of mangrove trees (Figure 4.7).

Vegetation growth is the most pervasive destructive force, which wedges apart wall stones and disturbs fill by roots (Figure 4.8). This can collapse large portions of walls or disturb islet fill. Among tree species in the area, the mangrove formation, which is the most abundant, is probably the most destructive type of vegetation because of its pervasive root systems. However, the outer mangroves may also serve to protect the site from wave action and may be considered a positive part of the natural aesthetic. Equally destructive are large groves of wild hibiscus trees that re-establish in areas subject to extensive clear-cutting.

Another pervasive destructive effect, bioturbation, is caused by a variety of marine and terrestrial organisms (e.g., pigs, crabs, rats, worms, shrimps, insects, land snails) (Ayres *et al.* 1981:241-258).



Figure 4.7. Collapse of the stone wall and the sedimentation of sand (Kataoka *et al.* 2012:25, Photo 28).



Figure 4.8. Withered trees on a structure made of stacked basalt columns, Pahnkedira (#33) (Kataoka *et al.* 2012:24, Photo 25).

Thus, the ruins of Nan Madol are a product of the complex impacts of diverse natural, cultural and artificial factors (Figure 4.9).

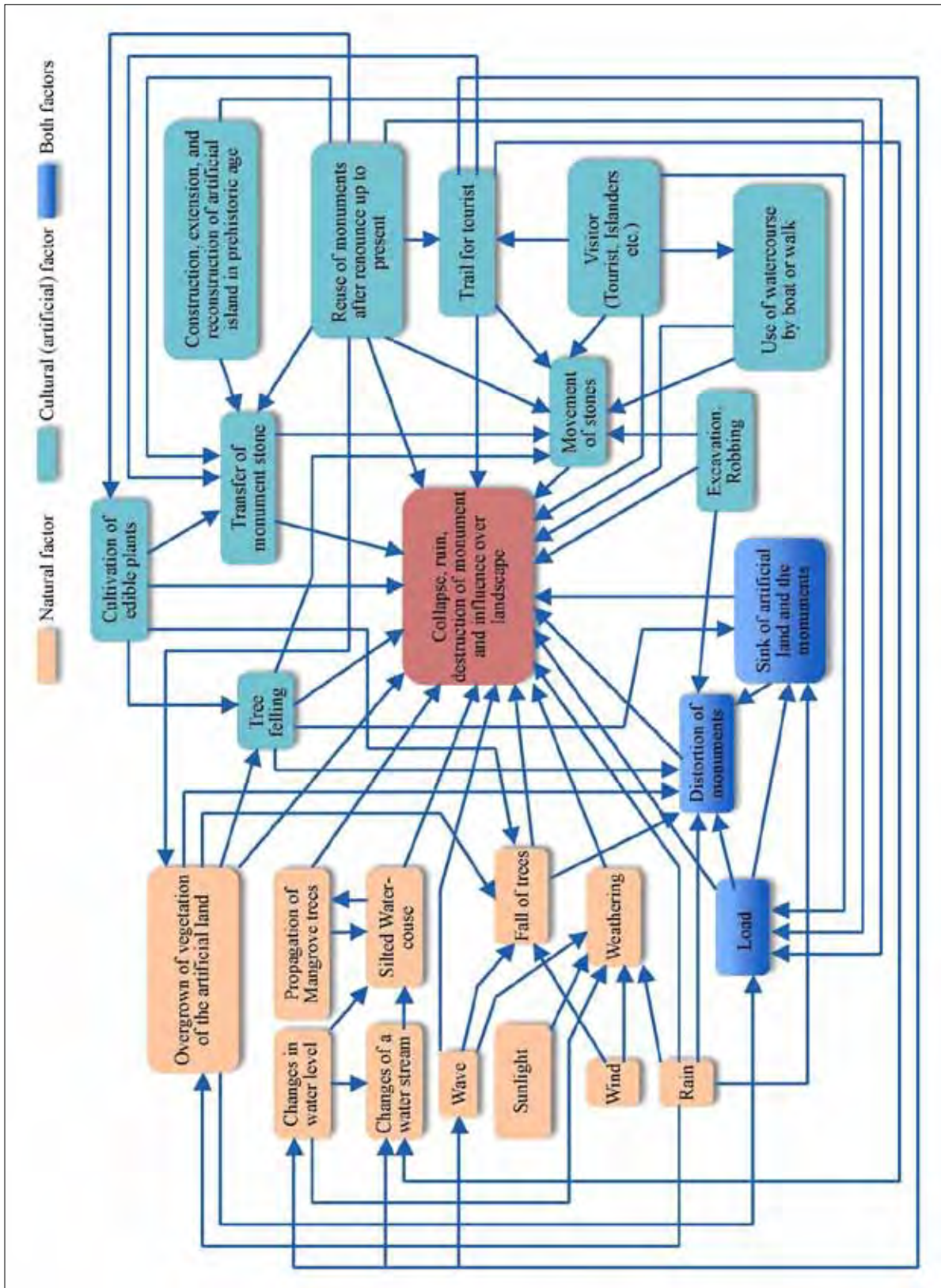


Figure 4.9. The factors affecting the state of conservation of Nan Madol (Kataoka *et al.* 2012:27).

(iii) Natural disasters and risk preparedness

Natural disasters, most typically in form of typhoons, have damaged Nan Madol in the past. Oral traditions (Hadley 1987), for instance, relate devastating typhoons damaging the site and forcing the residents to relocate elsewhere. Large waves during typhoons are a very destructive force. Typhoons, however, occur only intermittently in Pohnpei since the main centers of typhoons are further south and west of the island. The frequency of tropical cyclones passing Pohnpei is less than one every three years (Lander and Khosrowpanah 2004:22, Figure 21).

There is little that can be done to prepare for typhoon damage on the site, although clearance of vegetation, especially potentially-hazardous large trees, will prevent the risk of damage to archaeological structures in case of accidental tree falls during typhoons. The Pohnpei Tourism Office's local maintenance staff are dedicated to preventative vegetation clearance, spending four hours per day around Nandowas (#113). This work will need to be expanded to other areas in the site.

A possibility of other natural disasters, such as floods and fires, are a very low level of risk for Nan Madol, and the occurrence of earthquakes is not known in the region.

(iv) Responsible visitation at World Heritage site

Overall foreign visitor numbers are low in FSM (around 23,000 in 2012), although they have been steadily increasing in the past decades. American visitors account for the largest percentage at roughly 40%, followed by Japanese visitors, who account for approximately 20%. A significant number of visitors also come from European and Asian countries. In addition to tourists, many visitors are people in the marine products industry who come to FSM on business. Many people in the fishing industry also come to FSM, lured by the rich fishing grounds surrounding the islands (FSM Division of Statistics 2006).

There is currently no statistical data available on the number of visitors to Nan Madol. The number of visitors to Pohnpei in 2012 who stated their purpose as "tourism and visitors" was around 4,000 (FSM Division of Statistics 2006), suggesting

there were around ten visitors per day at most; although this number could be much smaller, around three visitors per day, according to local residents. Since there are neither guides, official pamphlets nor information panels to provide tourists with appropriate descriptions about the history and value of Nan Madol and its traditions, the majority of visitors simply walk around Nandowas (#113), the most spectacular ruins of the site, but do not visit the other islets, many of which are not easily accessible due to vegetation growth and water crossings. Pohnpeian school children from some schools also make annual visits to the site, which are arranged through the Pohnpei State Historic Preservation Office. Local residents infrequently visit the site to fish, to harvest tree fruits, and to undertake other household activities (e.g., firewood gathering).

The tourism infrastructure is relatively limited in Pohnpei, in accordance with the current visitor number. At present, no large hotels or lodging facilities exist near Nan Madol that could accommodate a large number of tourists at one time. A small group of tourists led by local tour guides, who are acquainted with oral traditions of Pohnpei and Nan Madol, is considered to be ideal by participants of the past workshops, as this will promote tourists' understanding of both Nan Madol and Pohnpeian culture. In addition, pamphlets and an on-site museum are planned for further facilitation of visitors' understanding of the site.

It is difficult to estimate the future number of visitor after World Heritage inscription, although it will almost assuredly increase more than in the past, if the pattern at other World Heritage sites remains true. At this moment, low accommodation capacity (a total of 314 persons at 11 hotels in Pohnpei) logistically limits the number of tourists in Pohnpei. Although there was no discussion on the carrying capacity of Nan Madol in the past workshops, this issue is planned to be discussed by stakeholders in the near future to insure the preservation, integrity and the sacred nature of the site.

Possible forms of deterioration of the site due to an increase in tourists are mainly trampling and movements of stones, discussed above. This can be minimized by limiting visitors' movements to particular locations and trails, as has been currently done. Another possible influence is encroachment of the ruins' sacredness. To

maintain tourists' respectful behaviors, educational efforts will be made through tour guides, brochures, and tourist facilities (e.g., an on-site museum).

(v) Number of inhabitants within the property and the buffer zone

Estimated population, as at January 2015, located within:

Area of nominated property	0
Buffer zone	230
Total	230

5. PROTECTION AND MANAGEMENT OF THE PROPERTY

5.a. OWNERSHIP

Nan Madol was officially granted to the government as public land following the development of the Trust Territory government in 1986. The site remains under the traditional customary ownership of the Nahmwarki Madolenihmw. The Constitutions of Pohnpei State and the FSM requires the governments to respect the traditions of the island and therefore the traditional ownership of the Nahmwarki. Land abutting Nan Madol belongs to a large number of local customary landowners and access to the site is via roads that traverse customary land.

The responsibility for decision-making in regard to tourism, financial benefit and conservation of the site has been contested and the Pohnpei and local governments have embarked on a community consultation program in the development of a management system that will recognize the multiple interests of the local community and government in management of Nan Madol.

In November 2011, a Memorandum of Understanding was signed by municipal, state, and national government and the traditional owners of Nan Madol and the surrounding areas - everyone who could claim ownership of Nan Madol either traditionally or by law - agreeing to nominate Nan Madol as a World Heritage site. A copy of the Memorandum is attached in Appendix A.

5.b. PROTECTIVE DESIGNATION

The government of FSM is composed of three independent branches of power under the president, who is the head of state: judicial (supreme court), legislative (FSM government assembly), and administrative (executive body). The FSM Constitution acknowledges the customary interests of the traditional chiefs and adopts a governing system that grants administrative power not only to the federal

government but also to the state and community governments, and stipulates that states shall have their own constitution. Under this system, Nan Madol is administratively protected by the federal government and the state government of Pohnpei, as well as customarily protected by the Nahnmwarki.

Nan Madol was designated a National Historic Landmark in 1986 and is included on the Pohnpei State Register of Historic Properties. Prior to independence it was included on the US National Register of Historic Places (19741219 74002226). The site is protected under the Pohnpei Historic and Cultural Preservation Act (2002). FSM and Pohnpei state officials acknowledge that the Nan Madol Preservation and Management Plan (1992) needs updating in the light of the provisions of the 2002 Act. This work is currently underway.

Relevant sections of the Pohnpei Historic and Cultural Preservation Act (2002) are:

§3-106. Nan Madol ruins; authorization for appropriation; administration.

(1) Revocation of private interests. The ruins of Nan Madol in Madolenihmw, Pohnpei, with the land on which they stand are hereby declared to be property of Pohnpei, and are placed in the custody of the local government of Madolenihmw. Any private interest which there may be in the islands of Nan Madol, as defined by the German Government, and any improvement thereon, such as food trees and plants, are hereby revoked.

(2) Responsibility for preservation. The local government of Madolenihmw is directed to keep the stonework clear of any kind of tree with large roots that might damage the ruins, and also to keep undergrowth out, so that anyone desiring may come and inspect the ruins. The Madolenihmw Government may cause coconut palms to be planted on any of the islands of Nan Madol except the central island of Nandowas (#113).

(3) Rights of Madolenihmw Government. In return for caring for Nan Madol, the Madolenihmw Government is authorized to harvest copra there. Profits from this copra shall be used for the care and maintenance of the ruins, as needed. Any profits not needed for this purpose shall be entered into the local government general fund. The Madolenihmw Government may use its discretion in allowing individuals to

harvest copra on Nan Madol in return for at least fifty percent (50%) of the net profits, or may cause the copra to be harvested by any form of public labor it may devise.

(4) Maintenance and improvement program. There is hereby authorized for appropriation from the general fund of Pohnpei Treasury a sum to help repair, preserve, and maintain the Nan Madol ruins. All sums herein authorized for appropriation shall be expended by the Governor solely for the purposes specified in this section. This program shall be administered by the Governor, who shall make a progress report at each regular session of the Legislature.

Source: PDC §13-6, 3/71; D.L. No. 3L-58-73 §34, 5/29/73

5.c. MEANS OF IMPLEMENTING PROTECTIVE MEASURES

The Office of National Archives, Culture and Historic Preservation (NACH) is an administrative institution of the federal government of FSM in charge of supervising legal and administrative activities relating to the protection of cultural heritage, culture and history. The Historic Preservation Office under it is responsible for coordinating cultural heritage protection within the nation (FSM HPO).

There are also Historic Preservation Offices (HPOs) at the state level, which coordinate the protection of cultural heritage in each state. The FSM HPO and the HPO in Pohnpei, where Nan Madol is located, work in close cooperation with each other. The FSM HPO also works cooperatively with the other three state HPOs: however, their distance from Pohnpei prevents more direct access to both resources and expertise.

The NACH receives its funding from the FSM government, as well as grant monies and human resources support from the US National Park Service. Two experts—an anthropologist and an archaeologist—are funded by the US National Park Service. They work at NACH but are stationed at one of the four state HPOs. There is no museum on-island to preserve, exhibit or display artifacts from Nan Madol.

Other institutions are involved in the preservation of Nan Madol as a tourism resource, including the FSM Department of Resources and Development and the Pohnpei Department of Land and Natural Resources.

5.d. EXISTING PLANS RELATED TO MUNICIPALITY AND REGION IN WHICH THE PROPOSED PROPERTY IS LOCATED

Legislation insured that funding for the local municipal government to clear undergrowth was supposed to come from the copra harvests. But, as the harvesting of copra is no longer economically viable at this time, a more reliable source of funding is needed by the municipal government to continue the clearance of undergrowth. Currently the Pohnpei Office of Tourism has been given the responsibility of clearing around Nandowas (#113); the role of the municipal government of Madolenihmw is uncertain.

5.e. PROPERTY MANAGEMENT PLAN OR OTHER MANAGEMENT SYSTEM

The management systems in Nan Madol will be coordinated through an umbrella Ceremonial Centers of Eastern Micronesian World Heritage Management Committee comprised of representatives from the FSM government and the Nan Madol World Heritage Board. The first FSM World Heritage Steering Committee Meeting was held in April 2014 to discuss an outline for a comprehensive management plan.

A draft management system for Nan Madol was developed based upon the insights, conclusions and agreements that were reached during the Fall 2012 Nan Madol Capacity Building Workshop. It was attended by various stakeholders representing a wide range of interests in the site's management, protection, preservation, and promotion upon acceptance to UNESCO's World Heritage List (see Appendix A).

On the basis of the outcomes of the workshop, a management system has been developed. Management of the site will be coordinated by a Ceremonial Centers of Eastern Micronesian World Heritage Management Committee comprised of representatives from the FSM government and the Nan Madol World Heritage Board. The first meeting of the Management Committee Meeting was held in April 2014 where an outline and process for development for a comprehensive management plan for Nan Madol was discussed. This management plan is under

development but not yet completed.

A vision for Nan Madol in 2030

- To have the values of the site protected through customary and non-customary (legal) processes
- To have the traditional values of the site respected
- To have the site managed through preservation, rehabilitation and restoration of the tangible cultural heritage
- To have the values of the site promoted through education and tourism

Guiding principles of management and tourism

- Management and tourism at Nan Madol should incorporate a balance between the model of traditional, customary leadership and custodianship and the various governmental agencies and structures
- The benefits and responsibilities for tourism to and management of the Nan Madol site should be equitably shared (see Appendix D)
- Tourism and management plans should not disrupt in any way the present day practices of local residents (such as farming and fishing) around the site who depend on certain economic modes to sustain their lives
- The sacred nature of Nan Madol for local residents should always be recognized, respected, and not infringed upon
- The wishes, concerns, and leadership of the Nahnmwarki of Madolenihmw (the traditional steward of Nan Madol) should be recognized and respected at all times.

This management system has a structure that includes national, state, and local government representation, traditional authority, and community:

- Government: Those government agencies that take part in the management system are: cultural heritage protection (the FSM Office of National Archives,

Culture and Historic Preservation and the FSM National and Pohnpei State Historic Preservation Offices) and tourism management (the FSM Department of Resources and Development and the Pohnpei State Department of Land and Natural Resources), and local liaison (Madolenihmw Municipal Office).

- Traditional leaders and local residents: Due to Nan Madol's spiritual significance in local community, it relies on traditional customary practice for its protection; participation of traditional leaders and local residents is vital for sustainable way of protecting the site. The Nahmwarki of Madolenihmw and Nan Madol En Ihmw Incorporated, an NGO composed of local residents (see below), are involved in the protection of Nan Madol. For instance, when conducting an excavation or other types of surveys at Nan Madol, it is still today necessary to follow tradition and provide details of the research to the Nahmwarki and obtain his permission. In addition, it is the local residents that collect entrance fees for Nan Madol from tourists (see below). Some residents were granted permission to own part of the land on Peinkitel (#55) in Nan Madol by the German colonial government (1899-1914).

At present, different groups of stakeholders act independently of the others in collecting fees, cleaning the site, constructing trails, and otherwise managing the ruins. To ensure the effective implementation of the management plan, coordination and cooperation among the stakeholders is essential.

Nan Madol World Heritage site management system

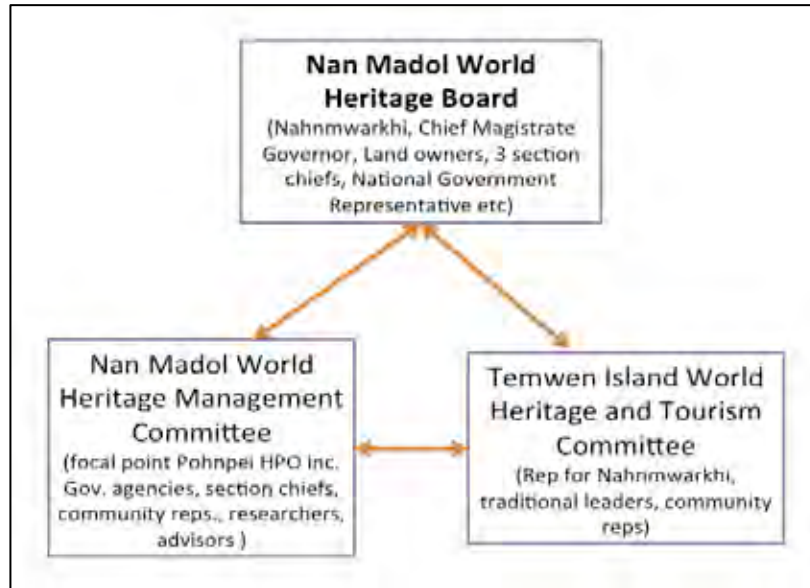


Figure 5.1. Proposed management structure of the Nan Madol World Heritage site management system.

Nan Madol World Heritage Board

The Nan Madol World Heritage Board would have overarching responsibility for the management of the property; it is charged with high-level decision making. The Board would meet regularly twice a year and as required. Membership in the Nan Madol World Heritage Board could include:

- Nahnmwarki of Madolenihmw
- Municipal Government – Chief Magistrate
- State Government- Governor
- Land owners adjacent to the site
- 3 section chiefs from Temwen
- National Government Representative (UNESCO Focal Point)
- + others as recommended from government and traditional leaders
- + technical advisors as required

Nan Madol World Heritage Management Committee

The Nan Madol World Heritage Management Committee would be responsible for implementing decisions of the Nan Madol World Heritage Board, reporting to the Board and overseeing day-to-day management of the property. The Pohnpeian State Historic Preservation Office would be the focal point for the Nan Madol World Heritage Management Committee and would include representatives from the government agencies involved in management of the property, researchers, representatives of traditional leaders, and local community representatives.

The Nan Madol En Ihmw Corporation, a non-governmental and non-profit organization (NGO), was established in 1993 (FSM Corporate Reference No. 16-93) by the Nahmwarki (Chair of the corporation) to safeguard Nan Madol. It was envisaged that the corporation would manage fees and commissions from tour operators and individual visitors to Nan Madol, and work in close association with the Pohnpei State Historic Preservation Office. This fund would then be used to manage and conserve the site. Draft guiding principles of the corporation are:

- The benefits from heritage tourism should be distributed across the entire community
- Protection of the cultural integrity of the property
- Recognition of the cultural protocol surrounding the site
- Compliance with international standards for protection of the property as specified in the Operational Guidelines for the Implementation of the World Heritage Convention
- Promotion of benefits of World Heritage inscription through a community project of sustainable cultural heritage tourism
- Maintenance of traditional culture with a halting of practices that endanger the site including gardening activities that lead to excavation of the sites and pig pens that pollute the site.

Nan Madol World Heritage Management Committee could include:

- HPO representative

- Tourism representative
- Pohnpeian researchers
- Municipal government representative
- Traditional leaders representative
- Education Department representative
- Tourism industry representative
- NGO Nan Madol En Ihmw representative
- Local community representative
- + others: Public Safety Department, Environmental Protection Agency, Conservation Society of Pohnpei, Marine Resources Division, National Emergency Management

Temwen Island World Heritage and Tourism Committee

The Nan Madol World Heritage Management Committee would work in association with a Temwen Island World Heritage and Tourism Committee comprised of local community representatives overseeing the maintenance and protection of the Nan Madol site and coordinating the Nan Madol Community Tourism Project. Temwen Island World Heritage and Tourism Committee would include:

- Traditional leaders
- Local community representatives

Implementation of the management system can be divided into three areas: (1) education/ public awareness, (2) management of Nan Madol – preparation, presentation, protection, monitoring and maintenance, and (3) tourism planning and management.

(1) Education/ public awareness

With each stakeholder acting independently of the others, there is a lack of sufficient sharing of information among the groups. Possibly due to this, some local residents harbor a sense of distrust toward the government and are concerned that

the government will deprive them of their stake in the land and the ruins. The absence of a framework for sharing information among the various parties and consolidating their efforts to protect the site as one is perhaps the greatest issue in considering future protection measures. Cooperation between the government, the Nahnmwarki and landowners is indispensable to developing and attracting more tourists to the site.

Nan Madol has been excavated by many archaeologists from foreign countries to date, and many of its artifacts have been removed from the site and the country. For this reason, local residents are extremely leery of foreigners excavating and making off with artifacts from a site that is the resting place of their ancestors. The fact that the results of most surveys conducted by foreign researchers have not been properly passed on to local residents seems to have contributed to local residents' distrust. In effect, they have been deprived of the opportunity to complement the history that they know through oral tradition with history based on scientific research. In light of this understanding, it is necessary to make sure local residents are given sufficient advance explanation even in cases of international cooperation when some type of task is required for protection of the site.

The FSM HPO has a plan to organize the study results that have already been submitted to the FSM government by foreign archaeologists. Such materials should be made available to local residents in some form in the future, so that residents could use them to learn more about their history.

The Nahnmwarki of Madolenihmw was consulted in January 2015 to obtain his approval and blessing of the proposed buffer zone for the nominated site, the management and structure of management of the site and the necessary educational/awareness programs for the community. The Pohnpei State Historic Preservation Office followed the consultation with community educational programs on Temwen Island, which is included in the proposed buffer zone.

(2) Management of Nan Madol

The JCIC-Heritage (Kataoka *et al.*2012:24) team's survey in Nan Madol in 2011 finds that an essential part of ensuing tasks is to create an overall map of Nan

Madol and an accurate ground plan of all artificial islets as a priority, and to plot the following conditions on the maps as basic reference for future preservation of the ruins:

- Present state of the ruins (e.g., damage): to establish measures for urgent restoration and improvement of danger areas and measures for the permanent preservation, protection, and restoration of the ruins through detailed observation of each artificial islet.
- Soil and vegetation on the islets, in the channels, and the surrounding areas: to clarify the relationship between the soil and vegetative growth and the necessity and methods of deforestation.
- Waves and the water flow during the rise and fall of the tide around the ruins and in the channels (water volume, direction, and force): to assess the state of damage of the ruins on the open ocean side, the impacts of the accumulation of silt in the channels and the growth of mangrove trees and other vegetation on the ruins, and in particular, shed light on the changes in the water flow mechanism caused by the tourist trails.
- Annual rainfall, winds, and light: to assess the past and present state of weathering of the basalt boulders and corals composing the ruins.

A phased and specific short-term, medium-term, and long-term survey needs to be developed and scheduled based on a master plan. Research on the effective conservation of the site continues to be conducted over the long term.

The current admission fee system is confusing to most tourists, because it is not something that has been established based on discussion and agreement between the government and local residents. Tourists must pay three dollars to the Nahmwarki to enter the site by boat, to the landowner for entrance to the site and use of the tourist trail that begins on his land, and to a local resident for use of an access road on his land that extends to the entrance. Local residents seem to have concerns that the government will deprive them of their right to collect admission fees and take away their earnings. To protect this site and draw more tourists in the future, it is necessary to establish a proper admission fee system and appropriately distribute

and utilize the earnings for the benefit of protection activities.

Finally, with a population a little under 36,000, Pohnpei has very few people who engage in cultural heritage protection and conservation. Both the national and state HPOs have a limited staff, and are not able to undertake large-scale conservation and restoration projects. Under this situation, development of human resources in cultural heritage management is expected to become a major issue before international cooperation can be provided for protection of Nan Madol.

(3) Tourism planning and management

There are neither guides, official pamphlets, information panels nor museums to provide tourists with appropriate information about the history and value of Nan Madol and its traditions. To prevent confusion arising from an increase in tourists and to accurately communicate the true value of Nan Madol, it is urgently necessary to develop a tourism infrastructure. Related to this, the National and State Tourism Offices have a plan to train local tour guides. A discussion has begun among relevant government officials on the possibility of constructing an on-site museum in the vicinity of Nan Madol to provide tourists with detailed explanations about the site (see also Appendix D).

Schedule of action plan for the implementation of the Nan Madol World Heritage site management system

The following action plan (Table 5.1) was designed in accordance with the September 2012 UNESCO Workshop goals that attendees agreed upon.

Table 5.1. Nan Madol World Heritage Site Management System for implementation schedule.

Needs	Action	Goal	Agency/ personnel responsible	Completion target date	Monitoring/tracking process
Education/ public awareness	Facebook page to promote Nan Madol and provide updates on inscription process	Keeping public up-to-date on the UNESCO WH inscription process for the site and to educate the public on the officially recognized history, research findings, and other matters concerning Nan Madol	Pohnpei State HPO Public Educator	A live Facebook page should be ready by February 2013	Once up, the site should be continually updated to include news on how the UNESCO process is going as well as information on the significance and history of the site.
	Organize and gain support for Community Participation Meeting— Scheduled for January 2013	Through participation and collaboration, gather, educate, and engage local community in Temwen on the UNESCO process—what to expect, vision, what they will be asked to do, what the government (local, state, national) will be doing, etc.	This meeting should be organized and supported by both the Nahnmwarki and the Chief Magistrate	Before December holiday period	The meeting/workshop should be recorded by video in its entirety so that a record is preserved of what was discussed and agreed upon by all.
	Create a standard protocol for visitors to the site that honors traditional beliefs. This should be available at the site and through various tourism outlets	Ensure that visitors are respecting local customs and behaviors at the sacred site of Nan Madol	Pohnpei State HPO should collaborate with traditional knowledge holders to create a standard information form that is agreed upon by all.	December 2012—this should be complete and ready to present at the above community workshop/meeting planned for January 2013	Should be complete before meeting so that it can be presented to all stakeholders as something already completed.
	Educational DVD on UNESCO— What it stands for, service, process...	Get everyone onboard and on the same page about what is happening—this is for communities (easy to understand)	Pohnpei State HPO (FSM Staff Archaeologist and Anthropologist)	December 2012	Complete by end of 2012, and have ready for January Community Participation Meeting— Produce multiple copies to be distributed
Needs	Action	Goal	Agency/ personnel responsible	Completion target date	Monitoring/tracking process
Management of Nan Madol— preparation, presentation, protection, monitoring and maintenance	Inventory status of islets	This inventory of the various states of preservation for all of the islets at the site will be done in order to provide a baseline going forward for monitoring purposes. It can also be used to compare to previous data collected in order to understand which areas are in need of immediate attention	Pohnpei State HPO (FSM Staff Archaeologist)	December 2012	A database will be created with a standard measurement protocol that can be used to track the state of preservation from the various islets. Once this first baseline study is completed, it can be used to longitudinally compare future inventories in order to more fully understand the pace of which islets are experiencing decay, overgrowth or other forms of natural destruction.

	Collect Oral Histories on the changes to Nan Madol over time—What is changing and how fast?	Oral histories and stories of the state of Nan Madol over the years will help to compliment the above archaeological inventory. It will also help to provide stories that may be useful in generating public awareness (i.e., videos, articles, Facebook page)	Pohnpei State HPO Field Researcher	February 2013	This can be done as key informants become available. It should accompany reports on the inventory project above.
	Collect oral histories and archival data on neighboring cemetery to possibly be included as a core site related to Nan Madol	Understand the significance of the cemetery to the story of Nan Madol in order to determine how it will fit within the Nan Madol narrative	Pohnpei State HPO Field Researcher	December 2012	Should be done before January meeting so that information can be completed and presented to community for their assessment.
	Collect several oral histories of Nan Madol—perhaps from the Nahmwarki and other leaders who have abundant knowledge.	These stories will be used in the nomination. Direct quotes, in the native language, supporting the history and significance of the site are vital and need to be included in the application.	Pohnpei State HPO Field Researcher	March 2013	Needs hurry on this. Just needs to be completed before the actual application process begins—which will not occur until at least March 2013.
Needs	Action	Goal	Agency/ personnel responsible	Completion target date	Monitoring/tracking process
Tourism planning and management	Training program for Nan Madol guides	To provide a standard training framework to ensure that guides to the site professional present the same interpretive stories that is agreed upon. This training will also include aspects of customer service, as well as important teachings of traditional protocol to be presented.	Pohnpei State Office of Tourism	???	???
	Tourism video for Nan Madol and also traditional protocols that can be shown to visitors on the plane (modeled after Hawaii's video)	Promote awareness and knowledge for Nan Madol and local customs, traditions, and protocols that would be helpful to communicate to visitors/tourists.	Pohnpei State Office of Tourism/ Pohnpei State HPO/ FSM HPO	???	???
	Tourism exit survey to be provided at airport upon departure	Questionnaire for tourists asking about information on visiting Nan Madol and other general tourism information. Needed for the collection of accurate data on visitors to site, as well as understanding how the experience was.	Pohnpei State HPO (FSM Staff Anthropologist) / Pohnpei Office of Tourism/ World Park	Questions already prepared and sent forward to State government and Office of Tourism. Target date for implementation (placement in Airport): November 2012	Office of Tourism will replenish surveys and input data onto spreadsheet every week. This information will be shared with and made available to various stakeholders.

5.f. SOURCES AND LEVELS OF FINANCE

There is currently no regular or ongoing funding for conservation work at Nan Madol, although two maintenance positions are funded by the Pohnpei State Government. The work of these two officers is to clear vegetation along the access track to the site and remove rubbish from the site. The NGO Nan Madol En Ihmw Incorporated will manage fees and commissions from tour operators and individuals who visit Nan Madol; these funds are to be used for site maintenance. Further financial and technical resources are needed to manage the site and in particular to stabilise the structures.

5.g. SOURCES OF EXPERTISE AND TRAINING IN CONSERVATION AND MANAGEMENT TECHNIQUES

The US National Park Service provides financial and human support. In FSM, where human resources are few, foreign archaeologists dispatched to the FSM HPO play an extremely important role. Japan, for its part, provides cooperation through the Asia/Pacific Cultural Center for UNESCO (ACCU) by inviting a number of individuals to Japan to receive individual training on the protection of ruins. In the tourism sector, tourism experts and other specialists from JICA are dispatched to the Department of Resources and Development and the Tourism Department. However, no cooperation from any country has been provided for the preservation of Nan Madol, as the local framework for preservation cooperation has yet to be established. In view of FSM's historical relationship with Japan and Japan's assistance to date, requests for assistance in the protection of Nan Madol and for tourism promotion can be expected to increase in the future.

5.h. VISITOR FACILITIES AND INFRASTRUCTURE

As discussed in Section 4.b (iv), there is no official statistical data on visitor numbers to Nan Madol, although a rough estimate of about 1000 annual visitors is based on reports by local stakeholders and tour operators. Annual visitor arrivals to

FSM have been increasing steadily in past decades and this tendency is expected to continue in the future, especially after the World Heritage inscription.

Tourism infrastructure is limited in Pohnpei. There are 11 hotels in Kolonia and its vicinity, with a total capacity of 314 persons. These hotels are all concrete constructions with mid-range prices. There are around 20 restaurants (nine are in the hotels) in and around Kolonia; they offer western, Japanese, Korean, Chinese, fast food, and local food.

The only facilities for visitors at Nan Madol are a toilet facility and tourist trails. The former was built by the landowner on his land at the entrance of the tourist trails on Temwen Island. The latter runs from Temwen to Nandowas Islet (#113) (see Section 4 for their details and impact on the site). As discussed in Section 4.b (iv), a plan for building an on-site museum in the vicinity of Nan Madol (probably on Temwen) is under discussion, although no detailed plan or funding proposal has been developed yet. The Pohnpei State Historic Preservation Office (HPO) has been in the process of re-establishing a Pohnpei State Museum to include a display on Nan Madol (e.g., archaeological artifacts), as discussed in the following section. The FSM Congress and the FSM HPO have begun discussions on the possibility of introducing a bill to establish a National Museum. An official brochure of Nan Madol, which was made by the Pohnpei HPO in 1989, has been out of print for more than ten years owing to a lack of funding for reprinting.

There are only three licensed land operators for Nan Madol tours, with five guides in total. Many hotels take their visitors to Nan Madol (with a total of around 12-13 staff guides); unfortunately, their guides are not trained in the history of the site, and cannot be relied upon to provide reliable explanations of the site. There is no official system in place for the training tour guides.

5.i. POLICIES AND PROGRAMMES RELATED TO THE PRESENTATION AND PROMOTION OF THIS PROPERTY

The FSM National and Pohnpei State Historic Preservation Offices are largely responsible for all policies and programmes related to the presentation and promotion

of Nan Madol. The latter, the Pohnpei HPO, is most relevant here and is tasked with:

- The establishment and maintenance of programs and facilities to preserve the anthropological heritage of Pohnpei;
- The establishment and implementation of programs and projects to encourage the continuation of Pohnpeian customs and traditions;
- The establishment and maintenance of a Pohnpei State Museum.

More particularly, the Pohnpei HPO carries out the following programs related to Nan Madol.

- Nan Madol World Heritage Consultation Workshop: The Pohnpei HPO facilitates the Nan Madol World Heritage Consultation Workshops for stakeholders of Nan Madol; the workshops are aimed at the recognition, protection and presentation of the site.
- Ethnographic survey: To document traditional culture both in Pohnpei and its outer islands, the Pohnpei HPO conducts in-house projects and facilitates outsourcing contract projects.
- Archaeological survey: All development projects are surveyed prior to the commencement of work, to ensure that these development areas/sites do not contain actual or potential historic properties or resources.
- Inventory of historic sites: The Pohnpei HPO conducts its work on a map of historic sites within Pohnpei State. A GPS with the appropriate GIS software will be used to collect data in order to provide accurate location and information about the historic sites and resources of the State.
- Registry of historic places: The Pohnpei HPO has formalized a State Registry system or database. A historically and culturally significant site is nominated onto the list for both the U.S National Registry of Historic Places and the Pohnpei State Registry of Historical Properties.
- Public education: Promoting the perpetuation of traditional practices and knowledge to the general public is essential to historic and cultural preservation in Pohnpei. Leading school groups to historical and cultural sites,

most frequently Nan Madol, is an important role/activity of the Pohnpei HPO, although this program relies on individual schools and teachers' willingness. The Pohnpei HPO has developed an educational program and service for the purpose of making available to the public facts and information on historic properties within the state, including oral traditions significant to the cultural heritage of the state and its political subdivisions. As part of its ongoing program, a monthly radio program was developed to inform and educate the public about the importance of protecting and preserving Pohnpei's cultural and historic heritage.

- Establishment of a Pohnpei State Museum: Since its closure in the mid-2000s, there has been no museum in Pohnpei State. A Master Plan for the new Pohnpei State Museum is available. The Pohnpei HPO has been in the process of reestablishing the museum.
- Maintenance of historic places: The Pohnpei HPO is responsible for upgrading all of Pohnpei's parks and historic properties. This involves the daily maintenance and beautification of the important historic sites and properties, including Nan Madol.
- Support for foreign researchers: Among the Pohnpei HPO's responsibilities is to facilitate foreign researchers' archaeological and anthropological projects, which will contribute to both academic studies and future public education of this understudied area.
- Pohnpei Cultural Day: This annual festival is an important opportunity to celebrate Pohnpeian traditional culture, which attracts a large audience from around Pohnpei. This celebration is organized by a committee consisting of government officials from relevant agencies.

The Pohnpei HPO operates with a combination of funds and resources. Most of the Pohnpei HPO's funding comes from the Pohnpei State Government (General Fund) and the U.S. National Park Services' Historic Preservation Fund Grant.

5.j. STAFFING LEVELS (PROFESSIONAL, TECHNICAL, MAINTENANCE)

The FSM National Historic Preservation Office (FSM HPO), under the Office of the National Archives, Culture, and Historic Preservation and whose main duties are to oversee the state historic preservation offices and to administer the Historic Preservation Fund grants, is currently staffed by four employees: Acting Director/National Historic Preservation Officer (1), Administrative Officer (1), Financial Management Specialist (1), and Office Secretary (1).

The Pohnpei State HPO, under the Pohnpei State Department of Land and Natural Resources, has been the main institution to implement the Nan Madol Management System; it is currently staffed by six employees: Chief/State Historic Preservation Office (1), Federal Program Coordinator (1), Field Researcher (1), Historic Preservation Specialist (1), Assistant Public Educator (1), and Clerk Typist (1). Most of the staff has many years of experience in this office; as such, the staff has sufficient skills and knowledge for their responsibilities, although they actively seek in-house training and other opportunities that can help enhance their performance and upgrade their skills. Training is needed in such areas as program administration, grant management, computer application, and archaeological and anthological filed research.

The FSM Tourism Unit, in the FSM Department of Resources and Development, is staffed by a Deputy Assistant Secretary (1) and a Japanese overseas volunteer (JICA Senior Volunteer), and a Tourism Adviser. The Pohnpei Tourism Office, which is under the Pohnpei HPO, is staffed by Clerk (1), maintenance supervisors (4) and maintenance laborers (7). Among them, one supervisor and one laborer are in charge of the maintenance of Nan Madol, although carrying out a larger scale clearance of vegetation in a large area requires the increase of personnel in the future. The Pohnpei Visitors Bureau, a nonprofit organization established and chartered by the FSM Government, is staffed by an Acting General Manager (1), an Information Officer (1), a Project Coordinator (1) and a Grounds Keeper (1).

At the College of Micronesia Pohnpei campus, the Division of Hospitality and Tourism offers an associate degree in hospitality and tourism management and conducts short-term hospitality training for area businesses. This program is designed

to enable students to become productive workers, owners and managers in the field of hospitality and tourism, more particularly in the food service, lodging, airline, travel provider and general tourism industries. The Division has five teaching staff, in addition to affiliated staff in the fields of accounting and language (Japanese).

As described in Section 5.h, only three companies are licensed land tour operators and are staffed with a total of around five guides. The hotels that offer Nan Madol tours have around 12-13 guides, but they are not trained in the history of Nan Madol. There are no training courses or tourism instructors who can provide “guides” with a knowledge of Nan Madol. A plan for the Pohnpei HPO staff to offer a workshop for guides has been discussed recently.

Traditional leaders are drawn from both the chiefdom (*wehi*) (administratively municipality) of Madolenihmw and smaller sections (*kousapw*). The former includes two lines of chiefs headed by the paramount chief (Nahnmwarki) and the secondary chief (Nahnken), around 28 persons total, and numerous lesser chiefs. The latter is headed by section chiefs (*soumas en kousapw*) and has a similar, but smaller, title system to the chiefdom. There are sections in the buffer zone. Some, mostly elderly, members of the community hold knowledge on Nan Madol and other traditional landmarks in the area as well as traditional skills (e.g., weaving, canoe building, medicine, dancing), and play an important role in transmitting their knowledge to younger generations.

6. MONITORING

6.a. KEY INDICATORS FOR MEASURING STATE OF CONSERVATION

It is necessary to recall that conservation is:

- The preservation of a property from any alteration caused by humans (negligence, damage, looting, etc.) or nature (disaster, pollution, weathering, etc.) activity.
- Applied to some portion of a property through legal or physical means, to secure its sustainability.

Preventive conservation aims at:

- Anticipating the risk of degradation or alteration by analyzing the exogenous causes of the said risk (environment, lack of maintenance of the monuments, etc.) or endogenous causes (material weathering, structural instability of the monuments, etc.).
- Delaying the decay of a property by taking measures complying with the conservation protocols that mitigate risks and their consequences.

The nominated property and the buffer zone will be monitored periodically and systematically to measure the conservation of the entire nominated area and its buffer zone. The objective of the monitoring system is to measure the conservation, identify relevant remedial actions, and ensure the implementation of authorized activities while at the same time keeping the system simple and relevant. The key indicators for measuring state of conservation are listed below:

Table 6.1. Summary of monitoring indicators, periodicity and location of records.

Indicator	Periodicity	Location of records
Stability of monuments	Monthly	All records will be kept at the FSM Office of the National Archives, Culture, and Historic Preservation (NACH)
Marine environment	Biannual	
Overgrowth of vegetation	Biannual	
Navigable channels	Biannual	
Climate change	1 year	
Disasters	1 year	
Visitors and tourism pressure	1 year	
Social mapping and land-use	5 years	
Scientific and technical evaluation	5 years	

Stability of monuments

Since the monuments of Nan Madol fell to ruin and was left abandoned for years, the structures on many of the islets have been subject to extensive damage from various natural factors, such as the rampant growth of vegetation, the accumulated load of the structure over time, and changes in water level, tides, water flow, rain and wind caused by climate changes (Figure 6.1). In order to retain the Outstanding Universal Value of the properties, the stability of each artificial islet is to



Figure 6.1. Example of collapse of a basalt structure in Nan Madol.

be monitored monthly by Pohnpei State HPO, and reported to the FSM Office of the National Archives, Culture, and Historic Preservation (NACH). When a risk to stability is observed, such as stone-fall or collapse in the stone construction, an emergency treatment is to be carried out by the State HPO. When a critical risk to monument stability is identified, a technical intervention, such as restoration and/or anastylosis, is to be implemented by the State HPO and the NACH, after a scientific and technical consultation by the ad hoc experts group commissioned by the Ceremonial Centers of Eastern Micronesia World Heritage Management Committee (see the detail below).

Marine environment

Since the site complex of Nan Madol lies in the intertidal zone of a reef flat, the sea is an important component of the OUV of the properties. To prevent degradation of the sites from the marine environment, including water pollution and inappropriate use of marine resources, Pohnpei and State HPO monitor the marine environment periodically and report it to the NACH biannually. In addition, the State HPO remains alert to the possible existence of underwater cultural heritage in and around the protected area.

Overgrowth of vegetation

A dense growth of vegetation, particularly roots of large trees, is a potential risk for the deterioration of the monuments and archaeological features (Figure 6.2). In addition, it poses an impediment to visitors' access to the sites. On the other hand, the vegetation on the sites is an important natural component of the properties as it creates a mysterious atmosphere for the sacred places. Some of the vegetation also holds stone structures together and provides shaded areas for visitors moving through the site. Additionally, implementation of improper tree clearance may damage the stone structure itself; for example, the rotting stub of cut tree can create a gap between the stone components of the structure, and set off a collapse. Therefore, the Pohnpei State HPO monitors the extent of the vegetation density periodically, and

carries out tree clearing as necessary; they report their activities to the NACH biannually.



Figure 6.2. Example of overgrowth of vegetation on an artificial islet in Nan Madol.

Navigable channels

An extensive network of channels extends throughout the group of artificial islets of Nan Madol, and serves as inter-islet passages. However, some of the channels are blocked by silt accumulation and mangrove growth, and are not navigable. For example, the half-opened dikes constructed a couple of decades ago between islets and now used as tourist trails may have changed the water flow and led to the siltation of the channels (Figure 6.3). The navigable condition of any channel must be maintained not to ensure visitors' access but also to retain the authentic landscape of the "floating city" of Nan Madol. Therefore Pohnpei State HPO monitors the condition of navigable channels periodically and studies the water flow mechanism. They carry out clearance of the mangrove and dredge the channels as necessary. In cooperation with specialists, they also evaluate the impact caused by the existing dikes used as tourist trails, and consider their replacement with another method of between-islet passage that will have less impact on the environment. They

report their activities biannually to the NACH.



Figure 6.3. Example of blockage of a channel, possibly caused by a half-opened dike between islets.

Climate change

Various factors caused by climate change have a negative impact on the properties. Sea level change can cause a total submergence of the artificial islets and accelerate expansion of mangrove. Increasing frequency of storms and the associated tidal wave can damage the stone construction of the sites, especially the artificial islets on the open ocean side. Rising average temperature encourages overgrowth of vegetation. To assess the degree of environmental shift associated with climate change, Pohnpei State HPO carries out weather observations including rainfall, temperature, wind, amount of insolation, and tidal level. They report these data to the NACH once a year.

Disasters

The major risks for the group of artificial islets in Nan Madol are earthquake and tsunami. Pohnpei State HPO surveys and identifies the vulnerabilities of the

monuments, and carries out necessary interventions such as the installation of supports and consolidation. Typhoons are also a risk to the conservation of the site. To prevent the risks caused by typhoon, Pohnpei State HPO staffs identify and clear potentially-hazardous large tree species. They report the current condition of the vulnerable positions to the NACH once a year.

Visitors and tourism pressure

Tourism has a positive impact on the economy of the local community where the property is situated, but it has also a negative impact on the conservation and preservation of the property itself. Therefore, tourism must be controlled by a proper management plan and its implementation in a sustainable way. In cooperation with the Pohnpei Visitors Bureau, Pohnpei State HPO keeps statistics on the number of visitors to the sites, and monitors impacts caused by tourists, including graffiti, removal of artifacts, and deterioration of the monuments. They also carry out public opinion research in the local community about the tourism impact on the local community periodically. The periodic assessment report on tourism as related to the properties is to be submitted to the NACH once a year.

Social mapping and land-use

The development undertaken in areas neighboring the property, regardless of whether it is located in a protected zone or not, has impacts on the state of conservation of the property. It must be monitored and assessed with the perspective of safeguarding the heritage and sustainable development in the local communities. Therefore Pohnpei State HPO, in cooperation with the Department of Land and Natural Resources, the Department of Health and Human Services, the Office of Social Affairs, and the Office of Economic Affairs in the Pohnpei State Government, carries out social mapping in the local communities, including village layout, infrastructure, demography, land use, welfare and economic condition, with the understanding and cooperation of the traditional leaders and local residents. The periodic social mapping report is to be submitted to the NACH every five years.

Scientific and technical evaluation

An assessment of the present state of conservation of the properties is to take place every five years by the Scientific and Technical Committee on Safeguarding Nan Madol. The Committee, organized by the NACH, is comprised of the Pohnpei State HPO, some National and State authorities such as the Pohnpei Visitors Bureau, the FSM Department of Resources and Development, etc., and the delegates of stakeholders including traditional leaders of local communities and land owners. In addition, the Committee invites international experts, such as researchers in archaeology, architecture and environmental studies, as advisors for scientific and technical consultation. The Committee is to approve recommendations regarding the conservation and management of the properties for the next five years. Emergency monitoring activities in the event of unforeseen threats are to be implemented by the ad hoc experts group commissioned by the Committee.

6.b. ADMINISTRATIVE ARRANGEMENTS FOR MONITORING PROPERTY

The NACH is to oversee, coordinate and facilitate all monitoring activities at the properties. In Nan Madol, the Pohnpei State HPO conducts periodic monitoring activities, and reports their activities to the NACH periodically. These activities are reviewed and approved by the Nan Madol World Heritage Board and the Ceremonial Centers of Eastern Micronesian World Heritage Management Committee respectively.

Figure 6.4 shows the framework of administrative arrangements for monitoring properties.

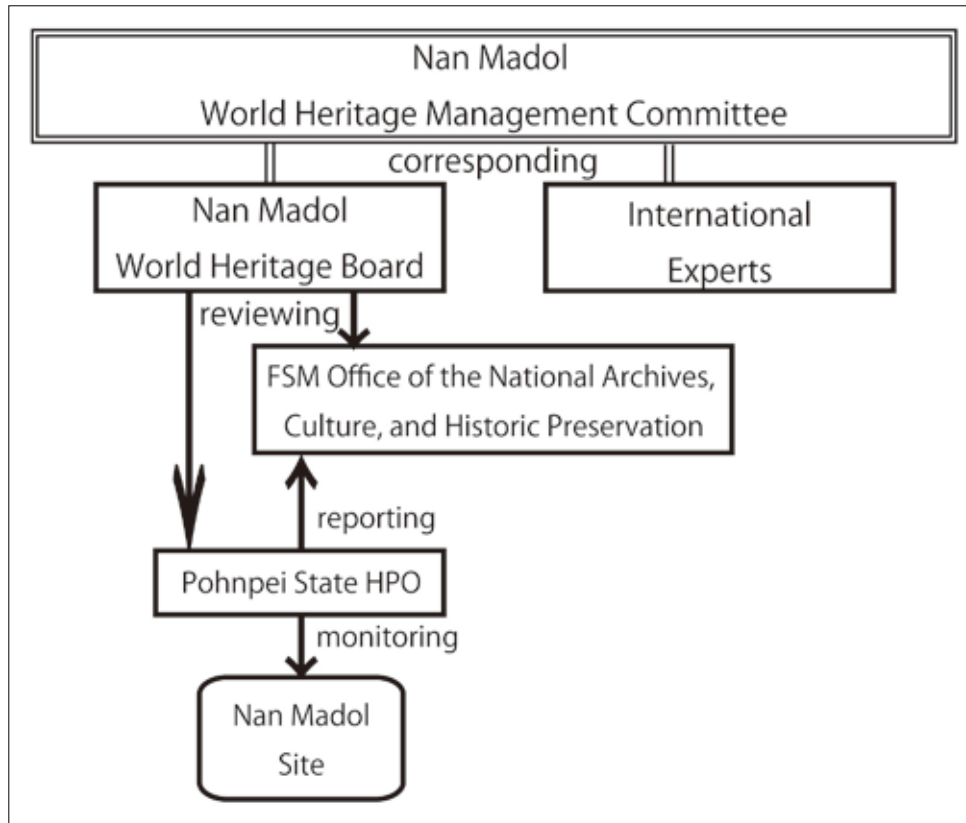


Figure 6.4 Diagram of administrative arrangements for monitoring properties.

Contact Information:

FSM Office of the National Archives, Culture, and Historic Preservation
 P.O. Box PS 175
 Palikir, Pohnpei, FM 96941
 Federated States of Micronesia
 Tel: (691) 320-2343
 Fax: (691) 320-5634
 Email: hpo@mail.fm

6.c. RESULTS OF PREVIOUS REPORTING EXERCISES

A recent reporting exercise was carried out by experts from the Japan Consortium for International Cooperation in Cultural Heritage in February 2011, and the report was published in 2012 (JCIS 2012, see Appendix C).

Other results of previous reporting exercises are as follows:

- Reports regarding state of conservation of OUV in Nan Madol: Athens 1980, 1985, Ayres 1985, 1993, Ayres and Haun 1980, Ayres and Mauricio 1997, 2009, Ayres *et al.* 1981, Ayres *et al.* 1983, Ayres *et al.* 1997, Ayres *et al.* 2008, 2012, Kataoka in prep., Kataoka, Ishimura and Nagaoka in prep., Kataoka, Ono and Nagaoka in prep., Saxe *et al.* 1980, and Wahba 1992.
- Reports regarding other indicators: overgrowth of vegetation (Stemmerman and Proby 1978), climate change (NOAA 1990, Ward 1988), and social mapping and land-use (Office of Planning and Statistics 1979).

7. DOCUMENTATION

7.a. PHOTOGRAPHS AND AUDIOVISUAL IMAGE INVENTORY AND AUTHORIZATION FORM

ID No. ¹	Format ²	Caption ³	Date	Photographer/ Director	Copyright owner	Contact of owner	Non exclusive cession of rights
C	D	Nan Madol, Pohnpei Island	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
ES	D	Map of the nominated property, showing boundaries and buffer zone	2014	Google	Google		No
1.1	D	The location of Pohnpei and Kosrae	2002	U.S. Central Intelligence Agency	U.S. Central Intelligence Agency		No
1.2	D	The location of Pohnpei and Kosrae in Federated States of Micronesia	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
1.3	D	The location of Nan Madol on the Island of Pohnpei	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
1.4	D	The nominated property and the buffer zone in relation to Temwen Island on the south east coast of the Island of Pohnpei	1983	U.S. Geological Survey	U.S. Geological Survey		No
1.5	D	The location and boundaries of the nominated property and the buffer zone	2014	Google	Google		No
2.1	D	Location of the island of Pohnpei in Federated States of Micronesia	2014	University of Texas Libraries	University of Texas Libraries		No
2.2	D	Pohnpei Island and the location of the nominated property	1983	U.S. Geological Survey	U.S. Geological Survey		No
2.3	D	Pohnpei Island showing traditional chiefly political and administrative division and the location of Nan Madol	2013	Takuya Nagaoka	Takuya Nagaoka	takuya.nagaoka@gmail.com	Yes
2.4	D	Nan Madol	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
2.5	D	Greater Nan Madol and Deleur "Empire"	1983 1993	William Ayres, Alan Haun, and Rufino Mauricio	William Ayres, Alan Haun, and Rufino Mauricio	wsayres@oregon.uoregon.edu	No
2.6	D	Structure of the artificial islets	1936 1993	Paul Hambruch, William Ayres	Paul Hambruch		No
2.7	D	Columnar basalt used in a wall built by in a header-stretcher technique Nandowas Islet (#113)	2012	Takuya Nagaoka	Takuya Nagaoka	takuya.nagaoka@gmail.com	Yes
2.8	D	The southwest corner of Pahnwi Islet (#9)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes

2.9	D	Nandowas Islet (#113)	2009	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
2.10	D	Perspective view of Nandowas Islet (#113)	1988	William Morgan	William Morgan		No
2.11	D	Computer-generated view of Pahnkadira Islet (#33), showing reconstructed Nankieilmwahu Temple	1993	William Ayres	William Ayres	wsayres@oregon.uoregon.edu	No
2.12	D	High chief, Nahlaimw of Madolenihmw's assembly house on Usendau Islet in 1910	1936	Paul Hambruch	Paul Hambruch		No
2.13	D	Kubary's map of Nan Madol	1874	J.S. Kubary	J.S. Kubary		No
2.14	D	Hambruch's map of Nan Madol	1936	Paul Hambruch	Paul Hambruch		No
2.5	D	Perspective view of the Sapwtakai complex	1900	Joyce Bath and Stephen Athens	Joyce Bath and Stephen Athens	isathens@iarii.org	No
3.1	D	<i>Ahu</i> and <i>Moai</i> of Rapanui (Easter Island)	2007	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.2	D	Taputapuatea marae in Ra'iatea	2000	Michel-Georges Bernard	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Marae_Raiatea_2.jpg	Yes
3.3	D	Ulupo Heiau in Oahu	2011	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.4	D	<i>A langi</i> in Mu'a	2005	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.5	D	Ha'amonga 'a Mau'i	2005	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.6	D	<i>Latte</i> stones in Guam	2012	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.7	D	Stone Monoliths in Palau	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.8	D	Yapese stone money	2002	Eric Guinther	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Yap_Stone_Money.jpg	Yes
3.9	D	Map of Oceania showing distribution of the similar properties	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
3.10	D	Stonehenge	2007	Garethwiscombe	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Stonehenge2007_07_30.jpg	Yes
3.11	D	Ggantija of megalithic temples of Malta	2006	Daniel Hausner	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Ggantija_Temples_(1).jpg	Yes
3.12	D	Pyramid of Djoser	2010	Berthold Werner	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Sagqara_BW_5.jpg	Yes
3.13	D	Monte Albán	2005	Hajor	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Mexico_Oax.MonteAlban.Panorama.02.jpg	Yes
3.14	D	Sacred City of Calal-Supe	2007	Kyle Thayer	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Caral_1.JPG	Yes
3.15	D	Daisen Kofun in the Mozu-Furuichi ancient tumulus clusters	1985	Ministry of Land, Infrastructure and Transport Government of Japan & moja resized	Wikimedia Commons	http://ja.wikipedia.org/wiki/%E3%83%95%E3%82%A1%E3%82%A4%E3%83%AB:NintokuTomb.jpg	Yes
3.16	D	Great Enclosure of Great Zimbabwe	1997	Jan Derk	Wikimedia Commons	http://en.wikipedia.org/wiki/File:Great-Zimbabwe-2.jpg	Yes
4.1	D	Expansion of swamp lands on Peidoh (#57)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
4.2	D	Dense crop trees such as coconut and breadfruit trees planted on Nandowas (#113)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
4.3	D	Location of tourist trails	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes

4.4	D	Accumulation of silt near a land bridge	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
4.5	D	Diagram of the prism wall collapse process	1983	William Ayres, Alan Haun, and Rufino Mauricio	William Ayres, Alan Haun, and Rufino Mauricio	wsayres@oregon.uoregon.edu	No
4.6	D	Collapse of the north perimeter wall seen from inside, Nandowas Islet (#113)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
4.7	D	Collapse of the stonewall and the sedimentation of sand	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
4.8	D	Withered trees on a structure made of stacked basalt columns, Pahnkedira (#33)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
4.9	D	The factors affecting the state of conservation of Nan Madol	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
5.1	D	Proposed management structure of the Nan Madol World Heritage Site management system	2012	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
6.1	D	Example of collapse of a basalt structure in Nan Madol	2011	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
6.2	D	Example of overgrowth of vegetation on an artificial islet in Nan Madol	2011	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
6.3	D	Example of blockage of a channel, possibly caused by a half-opened dike between islets	2011	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
6.4	D	Diagram of administrative arrangements for monitoring properties	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
AB	D	Pohnkeimw (#5)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Pahnmeid (#7)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Mweid (#8)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	North west corner of Pahnwi (#9)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Kapinet (#12)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Pikalap (#14)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Lemensei (#16)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Peinmet (#17)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Sapwenleng (#20)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Pilenleng (#22)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Nihkonok (#26)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Uasau (#31)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Kelepwel (#32)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	View of Pahnkadira from Kelpwel (#33)	1984	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Pehi en Mweik viewd from Kelepwel (#38)	1984	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	East wall of Peikapw (#39) facing the islet of Idehd (#43)	2012	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes

AB	D	East corner of Idehd (#43)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	West wall of Peitaup (#44)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Pahnisou (#46)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Peinieir (#47)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Mand (#48)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	North wall of the ceremonial house platform of Peidoh (#57)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	West enclosure of Peienkitel (#55)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Nihrik (#79)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Dauahpeidak (#81)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Pohn Dake (#82)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Dauahpeidi (#83)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	Usenpehi (#84)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	South-east corner of Sapwohng (#85) from Pereilap (#90)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North corner of Likinpei (#88)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Sakapes (#89)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	North-west wall of Parailap (#90) from Sapwohng (#85)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North wall of Usenamw (#91)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North-east wall of Dapahu (#93) facing Peilapalap (#98)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North-west wall of Parakatuhke (#95) from Dapahu (#93)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Peilapalap (#98) and Rasalap (#99)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	West wall of Peilaplap (#98) from the channel of Dapahu side	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	East wall of Pwulak (#100)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North wall of Peinerig (#101)	2012	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	East wall of Pwulak (#100)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North-west wall with entrance of Peinerig (#101)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Inside view of Peinior (#102)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	The border of Paseid (#103) and Usendau (#104)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	East wall of Usendau (#104) from Dau (#111)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Sapwuhtohr (#105)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	South wall of Pwallahng (#106) from Dau (#111)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Pahndouwas (#110) from Nandouwas (#113)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes

AB	D	Nandowas (#113)	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
AB	D	West wall with the entrance way of Nandowas (#113)	2009	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Main entrance of Nandowas (#113)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	South-west corner of Pahndowas (#114) from west channel	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	South-east corner of Kenderek B	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	The islet of Kenderek (#115) viewed from the top of north west corner of Nandowas (#115)	2005	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	View of breakwater wall of Pohnmweirak (#116)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Stone structure of Peiniot (#117)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	The islet of Peiniot (#118) viewed from the corridor of Pohnmweirok (#120)	2005	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	South-east wall of Peiniot B (#118)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	The great seawall of Nanmwoluhsei (#119)	2005	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Double stone alignments of Lelou (#120)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	View of the islet of Karian (#122)	2011	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Seawall of the islet of Lukopen Karian (#123)	2009	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Wall enclosure of burial tomb of Sapwutik (#126)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Seawall of Likiangeir (#127)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	Breakwater wall of Pahn Mwasangapw (#128) with Lemenkau (#129)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes
AB	D	North-east wall of Lemenkau (#129) from Pahn Mwasangapw (#128)	2014	Osamu Kataoka	Osamu Kataoka	kataoka@kasnsaigaidai.ac.jp	Yes

¹ C=Cover page, ES=Executive Summary, AB=Appendix B. ² D = digital image. ³ (#) = islet number of Nan Madol by Hambruch (1936).

7.b. TEXTS RELATING TO PROTECTIVE DESIGNATION, COPIES OF PROPERTY MANAGEMENT PLANS OR DOCUMENTED MANAGEMENT SYSTEMS AND EXTRACTS OF OTHER PLANS RELEVANT TO THE PROPERTY

1. The Nan Madol Preservation and Management Plan (1992)
2. Pohnpei Historic and Cultural Preservation Act (2002)
3. Draft Management Plan for Nan Madol (Appendix A)
4. Strategic Sustainable Tourism Plan and Ecosystem Plan (Appendix D)

7.c. FORM AND DATE OF MOST RECENT RECORDS OR INVENTORY OF PROPERTY

The most recent inventory of Nan Madol islets, which include both results from past archaeological investigations and Pohnpeian oral traditions, was compiled in 2013 and is attached in this nomination file as Appendix B.

7.d. ADDRESS WHERE INVENTORY, RECORDS AND ARCHIVES ARE HELD

The FSM Office of the National Archives, Culture, and Historic Preservation
P.O. Box PS 175
Palikir, Pohnpei, FM 96941
Federated States of Micronesia
Tel: (691) 320-2343
Fax: (691) 320-5634
Email: hpo@mail.fm

7.e. BIBLIOGRAPHY

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- 1990 Nan Madol pottery, Pohnpei. In R.L. Hunter-Anderson (ed.) Recent Advances in Micronesian Archaeology. *Micronesica* Supplement 2: 17-31.
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8. CONTACT INFORMATION

8.a. PREPARER

FSM Office of National Archives, Culture and Historic Preservation
PO Box PS 175, Palikir, Pohnpei FM 96941, Federated States of Micronesia
Tel: (691) 320-2343/ (691) 320-6922
Fax: (691) 320-5634
E-mail: hpo@mail.fm; kusgoose@hotmail.com

8.b. OFFICIAL LOCAL INSTITUTION/AGENCY

FSM Office of National Archives, Culture and Historic Preservation
PO Box PS 175, Palikir, Pohnpei FM 96941, Federated States of Micronesia
Tel: (691) 320-2343/ (691) 320-6922
Fax: (691) 320-5634
E-mail: hpo@mail.fm; kusgoose@hotmail.com

8.c. OTHER LOCAL INSTITUTIONS

Division of Historic Preservation, Cultural Affairs and Tourism
Department of Land and Natural Resources
Pohnpei State Government
PO Box 158, Kolonia, Pohnpei FM 96941, Federated States of Micronesia
Tel: (691) 320-2652
Fax: (691) 320-6019
E-mail: nahnsehleng@mail.fm

Madolenihmw Municipal Government

PO Box 1131, Kolonia, Pohnpei FM 96941, Federated States of Micronesia

Tel: (691) 320-8432

Fax: (691) 320-4457

Pohnpei Visitors Bureau

PO Box 1949, Kolonia, Pohnpei FM 96941, Federated States of Micronesia

Tel: (691) 320-4851/ (691) 320-4823

E-mail: pohnpeivisitorsbureau@gmail.com

Nan Madol En Ihmw, Inc.

PO Box 1018, Kolonia, Pohnpei FM 96941, Federated States of Micronesia

8.d. OFFICIAL WEB SITE

Website: <http://www.fsmgov.org/>

Contact Name: Augustine Kohler

E-mail: hpo@mail.fm; kusgoose@hotmail.com

9. SIGNATURE ON BEHALF OF THE STATE PARTY

Augustine Kohler

Secretary-General

FSM National Commission for UNESCO

Date

REPORTING ON THE CURRENT STATUS OF THE DEVELOPMENT OF A MANAGEMENT PLAN FOR NAN MADOL WORLD HERITAGE LISTING

Draft Outline Management Plan for Nan Madol

Prepared by Stefan M. Krause & Adam Thompson—Anthropologists, FSM HPO

Introduction

The following draft was prepared based upon the insights, conclusions and agreements that were developed during the Fall 2012 Nan Madol Capacity Building Workshop facilitated by Dr. Anita Smith, and attended by numerous stakeholders representing a wide range of interests in the site's management, protection, preservation, and promotion through acceptance to UNESCO's World Heritage List. Much of what follows has already been summed up in a draft outline provided by Dr. Smith. This draft plan below also includes information and documents that we at the FSM HPO have taken the liberty to address, despite official agreement of all the stakeholders. As discussed during the workshop, more collaboration and participation is required to produce an equitable, well-designed management plan which can then be submitted within the UNESCO World Heritage List nomination application. As such, it was decided during the workshop that a community workshop/meeting in Temwen be conducted in January 2013 to facilitate a more inclusive process. While it will most likely be a starting point toward an agreement amongst all, the workshop should hopefully be a catalyst for improved action and implementation of goals and processes needed to finalize a proper management plan. Again, the following is thus a draft and is meant to be a possible model that can be introduced to all stakeholders in the coming months with the goal of reaching agreement on what a final plan will consist of.

Draft Framework for Nan Madol Management Plan

I. A vision for Nan Madol in 2030

- To have the values of the site protected through customary and non-customary (legal) processes
- To have the traditional values of the site respected
- To have the site managed through preservation, rehabilitation and restoration of the tangible cultural heritage
- To have the values of the site promoted through education and tourism

II. Principles guiding management and tourism at Nan Madol

- Management and tourism at Nan Madol should incorporate a trusting balance between the model of traditional, customary leadership and custodianship and the various governmental agencies and structures

- The benefits and responsibilities for tourism to and management of the Nan Madol site should be equitably shared
- Tourism and management plans should not disrupt in any way the present day practices of locals residents (such as farming and fishing) around the site who depend on certain economic modes to sustain their lives
- The sacred nature of Nan Madol to local residents should always be recognized, respected, and not infringed upon
- The wishes, concerns, and leadership of the Nahmwarki of Madolenihmw (the traditional steward of Nan Madol) should be recognized and respected at all times.

[subject to additions and modifications upon consultations during upcoming workshops/ meetings]

III. Nan Madol World Heritage Site Management System

Draft Management System:

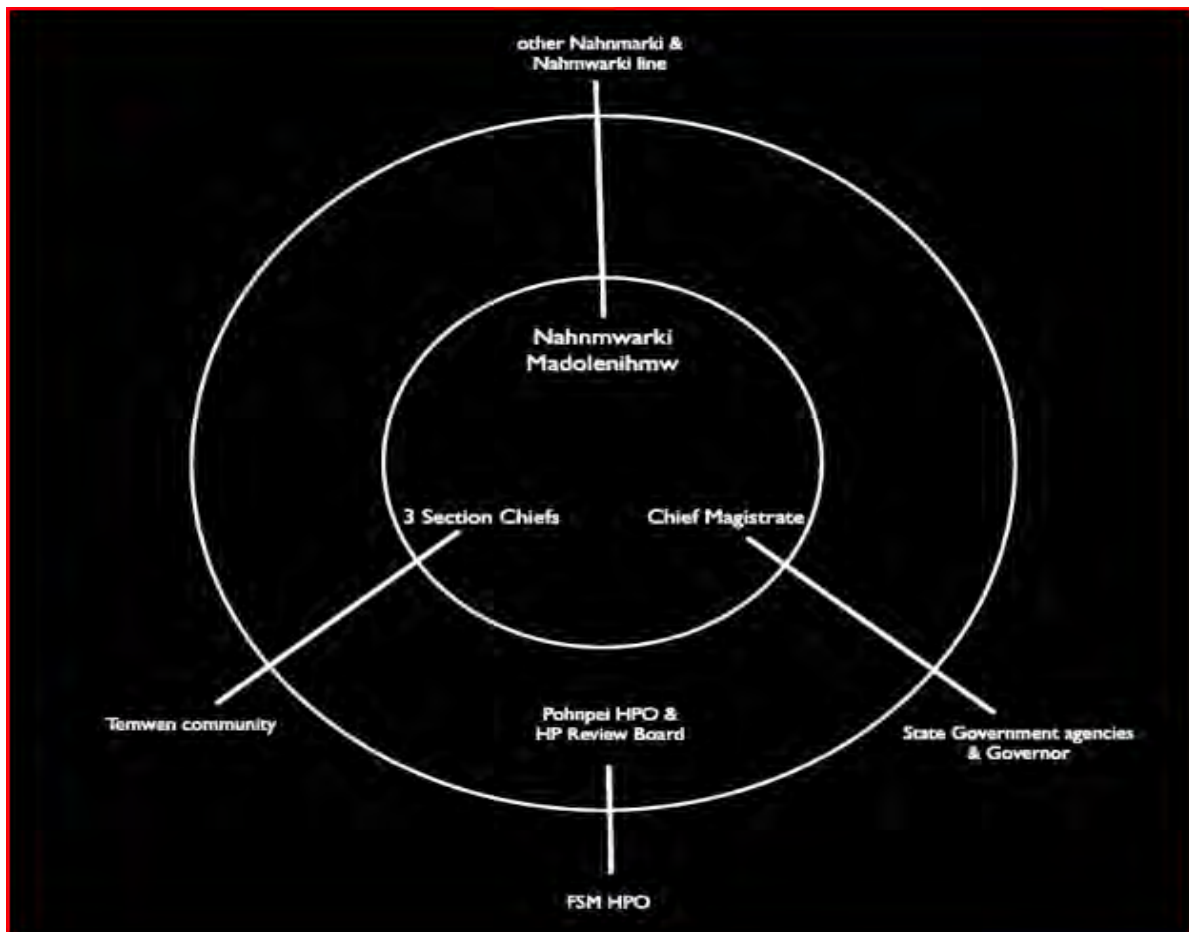


Figure 1: Proposed Management Model

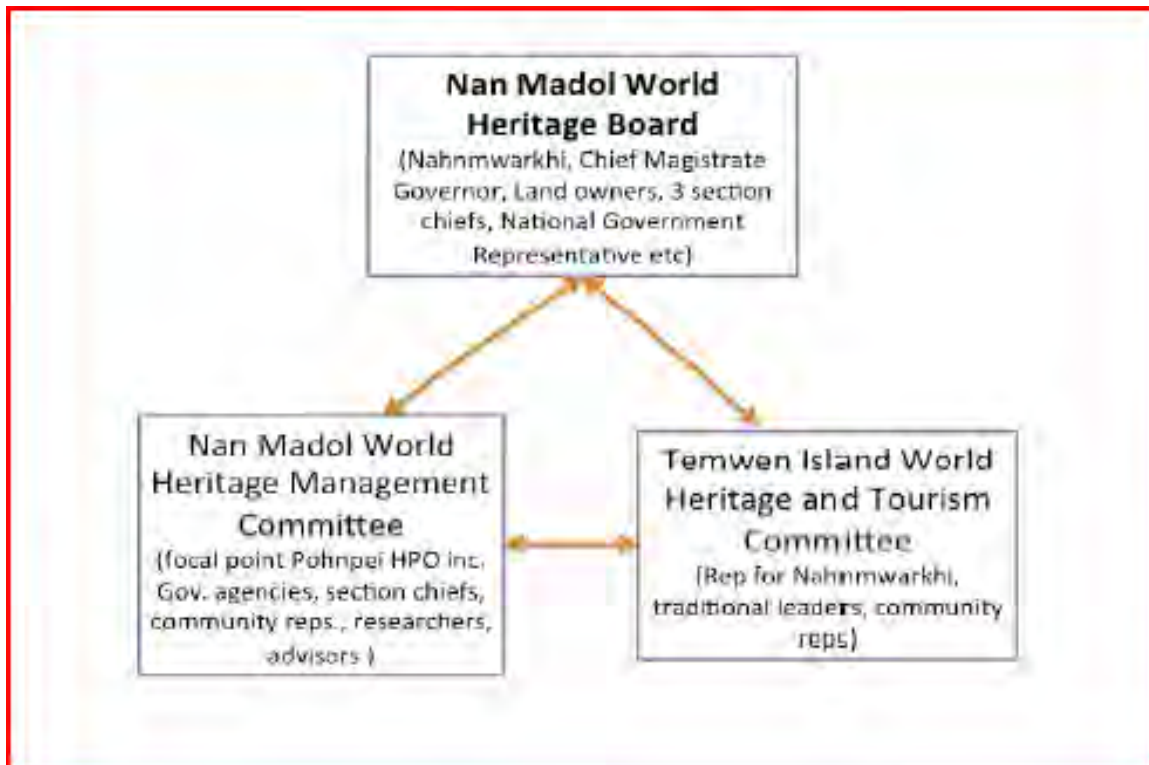


Figure 2: Proposed Management Structure

Nan Madol World Heritage Board

The *Nan Madol World Heritage Board* would have overarching responsibility for the management of the property, being charged with high-level decision making.

It was envisioned by participants at the workshop that the Board would meet perhaps twice per year or as required.

The *Nan Madol World Heritage Board* could consist of the following:

- Nahmwarki of Madolenihmw
- Municipal Government—Chief Magistrate
- State Government—Governor of Pohnpei State
- Land owners adjacent to site
- 3 section chiefs from Temwen
- National Government Representative (UNESCO Focal Point)
- + others as recommended from government and traditional leaders
- +technical advisors as required

Nan Madol World Heritage Management Committee

A *Nan Madol World Heritage Management Committee* would be responsible for implementing decisions of the *Nan Madol World Heritage Board*, reporting to the Board and

overseeing day-to-day management of the property. The Pohnpeian State Historic Preservation Office would be the focal point for the *Nan Madol World Heritage Management Committee* that would include representatives of the government agencies involved in management of the property, researchers, representatives of traditional leaders and local community representatives.

The *Nan Madol World Heritage Management Committee* could consist of the following:

- HPO representative
- Tourism representative
- Pohnpeian researchers
- Municipal government representative
- Traditional leaders representative
- Education Department representative
- Tourism industry representative
- Local community representative

+ others: Public safety, EPA, CSP, marine, National Emergency Management

Temwen Island WH and Tourism Committee

The Nan Madol World Heritage Management Committee would work in association with a *Temwen Island World Heritage and Tourism Committee* comprised of local community representatives overseeing the maintenance and protection of the Nan Madol site and coordinating the Nan Madol Community Tourism Project.

The *Temwen Island World Heritage and Tourism Committee* would include:

- Traditional Leaders
- Local Community Representatives

[All of the above needs to be further developed through consultations during workshops and meetings with all the stakeholders. This aspect of the management plan is the most crucial at this point and agreement of the organizational structure of the above entities is needed before further details can be provided]

IV. Description of Site

The core of the Nan Madol ritual and residential area - which according to considerable ethnographic and ethnohistoric data (e.g., Riesenbergs 1968, Bernart 1977; and see bibliography) served as the seat of the ruling Saudeleur dynasty in prehistoric times--is itself a complex archeological district covering approximately 1.3 sq km (321 acres) of the tidal reef flat adjacent to Temwen Island . It contains more than 90 major architectural units (stone and coral filled platforms creating artificial islets). Some of these are up to 115 by 100 m (377 by 328 ft), built above the tide level. Post holes found in the surface of raised stone platforms document the existence of thatch roofed wooden structures on top of the islets and platforms,

and these are similar to ones reported in historic times. The name Nan Madol translates roughly into English as "between the intervals" and refers to the intricate network of tidal canals and waterways which border the islets and provided a means of travel and communication for their occupants. Most of these canals have long been overgrown with mangrove and altered due to silt accumulation resulting from this growth. The major one remaining in use today is that called Dewen Nankieilmwahu ("Channels of the Good Lizard") which transects the entire site on a NE/SW axis.

The roughly rectangular enclosing wall of Nan Madol Central is formed by twelve "seawall" islets framing the entire complex on the northeast, southeast, and southwest sides (Temwen Island forms the NW side). The foundations of these islets were all constructed of columnar basalt and large boulders, the latter particularly common in outer wall facings. Inside the foundation walls, the surfaces of the islets have been raised above sea level by the addition of coral rubble fill acquired from the reef flat. The interior islets exhibit a considerable range of dimensional variations, construction styles, and surface architectural complexity. Those located in the seaward (SE) one-third of the complex are larger than the rest, while along the Temwen coast and extending on the inside of the SW segment of the seawall is a strip of mostly small, low islets presently subject to partial tidal inundation. This strip of islets contains nearly one-half of those within the core of the complex.

Oral traditions separate Nan Madol Central into two sections. Madol Powe (upper Nan Madol) consists of the northeast half of the complex. Significant ritual context and ritual uses are associated with many of the islets in this section. Nandowas, located in Madol Powe at the eastern extremity of the complex, is the best known of the islets in the entire district because the megalithic architectural style characteristic of Nan Madol is most impressively expressed in its construction. The 50 by 60 m (165 by 195ft) islet is constructed of long, naturally pentagonal-shaped columns of basalt used in the walls built up over a foundation of large basalt boulders. Some of these boulders are estimated to weigh in excess of twenty tons. The walls were erected utilizing the basalt columns in a technique of systematic criss-cross or a "header and stretcher" technique such that the columns are alternately stacked along and across the length of the wall (see, for instance, Athens 1980, Ayres and Haun n.d., Ayres, Haun and Mauricio n.d., Ayres 1983). This creates an inner and outer wall face of columnar basalt with a core between filled with boulders, cobbles, coral rubble, and column fragments. At Nandowas the walls reached 8.1 m (26.5 ft), the maximum height for a free standing wall anywhere in the complex, and contain prisms which in some cases are nearly a meter (39 in) across and several meters long. According to oral traditions, Nandowas was a ritual and burial center for the paramount chiefs of Pohnpei, known as the Saudeleurs. Reports of human bones and grave goods collected from the substantial central tomb located within the inner set of enclosing walls confirm this claim.

Madol Pah (lower Nan Madol) consists of islets in the southwestern half of the complex which are ethnohistorically known for their secular use. Of these, the L-shaped islet of Pahnkedira, covering an area of 12,770 square m (15,273 sq yards) as recently mapped (Ayres et al n.d.), is perhaps the most important and is traditionally considered to have been the residence of the Saudeleur chief. With 39 architecturally significant features and 98 sub-features, it is also one of the most complex sites in Nan Madol. The same type of construction

noted for Nandowas, but on a lesser scale, was also used at Pahnkedira with its greatest elaboration demonstrated at the four cardinaly-oriented and traditionally named corners of the islet. According to oral histories, each of these corners was constructed by specialized stone-fitters from the districts for which they were named (Sokehs, Madolenihmw, Kiti, and Kosrae). The largest stone structure (excepting the islet's circumferential wall) is a traditional house platform referred to as the Temple of Nankieilmwahu (Temple of the good lizard) situated in the center of Pahnkedira.

The platform has three clearly defined steps on the SE and SW sides which lead to the rectangular top level with dimensions of about 19 by 37 m (62 by 120 ft). Regularly spaced postholes on this top level indicate the former presence of a large pole and thatch wooden structure there. Four other house platforms on Pahnkedira are surrounded by enclosing walls constructed in the familiar header and stretcher fashion. The most important of these, as reflected in the elaboration of the walls and its size, is located adjacent to the west (Madolenihmw) corner and is traditionally thought to have been the actual residence of a high chief, the Saudeleur. A southwest extension attached to the roughly rectangular main portion of Pahnkedira and outside its primary enclosing wall contains a large number of small, unelaborated house and cooking platforms thought to have housed the chief's attendants.

While the two sections of Nan Madol Central tend to cluster around Nandowas (Madol Powe) and Pahnkedira (Madol Pah) and these islets are the best described in oral traditions, a growing body of data, both archeological and ethnohistorical, is being assembled concerning other islets in the complex, particularly for Usendau in the upper portion and Wasahu and Pahnwi in the lower portion. The header and stretcher style of architecture utilizing walls of columnar basalt with coral rubble core-fill is a uniform construction technique characteristic of each of the islets in Nan Madol Central, and much of the outlying portion of the district as a whole. As noted above, considerable variation exists in the layout and architectural complexity of individual islets; this includes differences in the quantity and size of basalt columns and boulders used which most likely represents differential use and status of the occupants.

Artifacts recovered from Nan Madol vary in both type and quantity from one islet to another. Major distinctions in artifact assemblages have naturally resulted from the time period of the individual islets--i.e., of their construction and use--but altogether they represent a sequence of construction and occupation from at least AD 400 up to about AD 1500. Occupation and use spans that time frame and use with modification of the older architecture extended up until ca. 1945. The collections of prehistoric artifacts described by the various researchers who have worked at Nan Madol represent the typical Micronesian tool kit with its predominant reliance on shell for adzes, fishhooks, scrapers and similar tools instead of stone which was used in a quite limited way (see, for instance, Ayres, Haun and Mauricio n. d., Athens 1980, Ayres 1983, Hambruch 1932). The early extensive use of pottery is evident from several Nan Madol excavations and poses very important questions, as yet unresolved, about the connection of Micronesian colonization to that of the rest of the Pacific. Historic period artifacts collected from various islets include a range of objects relating mostly to the early historic era (ca. 1830-1860) and the later Japanese occupation of Pohnpei (1914-1945).

V. Heritage Values and Statement of Significance

The early ceremonial center of Nan Madol represents an exceptional example of the solidification of power in the Pacific that produced one of the most remarkable specimens of monumental architecture found in the world. The construction of Nan Madol required the unification of the entire island population--a feat not usually seen in Pacific cultures. There is no doubt that Nan Madol is thus a globally significant masterpiece of creative genius (criterion i). The exact means of engineering with which the massive stones were moved from their distant quarries, over land and water, and erected on the reef complexes is still unknown. There is little promise that the world will ever know, but one look is all that is needed to appreciate the accomplishment. Though there are other examples of similar structures on the island of Pohnpei, none are nearly as grand as the monumental Nan Madol complex.

The initial settlement of the area where Nan Madol came to be built occurred roughly two thousand years ago by a sea-faring people from island Melanesia who lived off the rich reef resources. Traditional Pohnpeian society depended on the resources of the sea, hence the location of the site by reef channels. The site also represents a location for the traditional system of tribute and exchange managed by and controlled by the chiefly offices (thus addressing criterion v). This system ensured that all resources were distributed according to a strict hierarchy of respect.

Over time the small settlements that were initially developed there would grow into arguably the most elaborately built chiefly center in the entire Pacific. Nan Madol thus represents an achieved transition from separate tribal organizations to a small state-like organization, which controlled the whole of the island area. In their current form they exhibit the most perfectly preserved habitation, leadership and ceremonial plan of an architectural ensemble of the Pacific region (criterion iv). The site also represents two distinct phases in the development of Pohnpeian society that covers roughly 700 years of history. Very few examples exist in the prehistory of the Pacific region with which to compare this state-like organization. Most other examples wherein an island population becomes unified behind one leader occurred in the historic period and the effects of guns and disease may be accounted for as major contributing factors along with the European influence. The population once reduced by disease falls under the control of a village that has been supplied with guns by Europeans so that they may gain control of trading and governance. In Pohnpei the unification of the island's population instead formed around a prehistoric system of respect which still exists today in the form of the Nahmwarki system, albeit in a decentralized form.

Therefore, Nan Madol bears exceptional testimony to the founding ideologies of modern Pohnpeian social and cultural practice (criterion iii). The Nahmwarki system of carefully ranked inherited leadership that still exists today is a direct product of the centralized Saudeleur system of governance that first created Nan Madol. In Pohnpei this traditional system is still very much alive--an exceptional testimonies to a culture that is both living and disappearing. Furthermore, Nan Madol remains a profound emblem for the identity of the people of Pohnpei (criterion vi). It is a symbol of their unique heritage, which is constantly threatened by modern cultural fusion. The site is associated with the traditional chiefly institution, which today engages in a constant dialogue with the administrative and

constitutional realities of the modern state apparatus. Ensuring the preservation of this monumental and extraordinary traditional ceremonial center shall thus help ensure the preservation of the traditional identity of contemporary Pohnpeians.

VI. Legal and Customary Protection for the Property

The legal framework for management and protection of Nan Madol is based upon 40 year old legislation (see below) that needs to be updated. It is hoped that the UNESCO inscription process and the necessity to move forward with an agreed upon management plan will catalyze the cooperation and political will necessary to engage the legal particularities surrounding Nan Madol. In short, it has been written into the constitution that Nan Madol is a public space. This stipulation has, however, led to tensions over the years between the various Nahmwarkis of Madolenihmw and their contemporary state government counterparts.

The following is the legislation that has been on the books for over four decades:

National Legislation for Nan Madol

§3-106. Nan Madol ruins; authorization for appropriation; administration.

(1) *Revocation of private interests.* The ruins of Nan Madol in Madolenihmw, Pohnpei, with the land on which they stand are hereby declared to be property of Pohnpei, and are placed in the custody of the local government of Madolenihmw. Any private interest which there may be in the islands of Nan Madol, as defined by the German Government, and any improvement thereon, such as food trees and plants, are hereby revoked.

(2) *Responsibility for preservation.* The local government of Madolenihmw is directed to keep the stonework clear of any kind of tree with large roots that might damage the ruins, and also to keep undergrowth out, so that anyone desiring may come and inspect the ruins. The Madolenihmw Government may cause coconut palms to be planted on any of the islands of Nan Madol except the central island of Nan Douwas.

(3) *Rights of Madolenihmw Government.* In return for caring for Nan Madol, the Madolenihmw Government is authorized to harvest copra there. Profits from this copra shall be used for the care and maintenance of the ruins, as needed. Any profits not needed for this purpose shall be entered into the local government general fund. The Madolenihmw Government may use its discretion in allowing individuals to harvest copra on Nan Madol in return for at least fifty percent (50%) of the net profits, or may cause the copra to be harvested by any form of public labor it may devise.

(4) *Maintenance and improvement program.* There is hereby authorized for appropriation from the general fund of Pohnpei Treasury a sum to help repair, preserve, and maintain the Nan Madol ruins. All sums herein authorized for appropriation shall be expended by the Governor solely for the purposes specified in this section. This program shall be administered by the Governor, who shall make a progress report at each regular session of the Legislature.

Source: PDC §13-6, 3/71; D.L. No. 3L-58-73 §34, 5/29/73

[more information needs to be collected on the customary stewardship and protection roles of traditional leaders and communities members. Appendix A provides an initial development in this regard—A Memorandum of Understanding for Nan Madol]

VII. State of conservation

[Archaeologist Adam Thompson and colleagues from the University of Otago are currently engaged in collecting an updated inventory, survey, and mapping of all of Nan Madol's islets which will include measures of assessment that will be used to identify each islets state of conservation. This project should be complete by the end of 2012 and will be added to this draft immediately upon completion to provide a baseline for monitoring and protecting the site into the future]

VIII. Threats to the values of the site

The following is a list of threats and activities that were collected during our workshop. There will need to be much more work done to identify more during future workshops and meetings. One thing that should be mentioned is that there is very little traffic from locals to the site due to their respect of the spirits and the heightened sense of fear that disturbing the site will lead to spirit sickness or other illnesses or misfortune.

Current activities at Nan Madol

Visitors:

- School visits (once or twice a week)
- Researchers (2-3 per year)
- Tourists (20 per week? We have created an exit survey for tourists to help determine
- this)

Local people: fishing, harvesting breadfruit, other community activities

Current Maintenance:

- 2 people from the Office of Tourism visit the site daily to clean (4 hours a day)
- Path maintained by local landowner
- Otherwise project based activities associated with research or special events

Immediate threats to the structures include but are not limited to:

- Lack of maintenance and cleaning to provide access to the site
- Tree roots and other planting on the site disturbing the structures
- Channels blocked leading to increase mangrove cover

Long term (and ongoing) threats to the property include but are not limited to:

- Lack of a coordinated approach to the management between community and different levels

- Global sea level rise and associated climatic events
- Lack of resources for maintenance
- Lack of sustainable tourism strategy and plan for the property

IX. Action Plan to address threats to the property

While no formal action plan addressing these issues will be ready until more threats are identified and the community meets to discuss the various roles and responsibilities of all the stakeholders, the following provides a draft understanding of the threats identified in the previous item that can be engaged and attended to at present and who may possibly be responsible in addressing them:

Immediate threats to the structures include but are not limited to:

- Lack of maintenance and cleaning to provide access to the site
 - § *This could be addressed by providing more oversight and assistance to those who already charged with these tasks. The Office of Tourism and the local residents near the site should be consulted in order to organize their actions and put in place a monitoring program to ensure that maintenance and cleaning are occurring properly*
- Tree roots and other planting on the site disturbing the structures
 - § *For the most part this is a natural occurrence—locals are not planting trees on the islets. With regularly scheduled maintenance, new growth can be prevented and old growth can be removed where possible.*
- Channels blocked leading to increase mangrove cover
 - § *The Department of Land will have to be consulted on this, if it is agreed upon that cleaning and dredging the channels is acceptable to all*

Long term (and ongoing) threats to the property include but are not limited to:

- Lack of a coordinated approach to the management between community and different levels
 - § *This will hopefully be helped through events such as the community meeting/workshop scheduled for January 2013. We(the Pohnpei HPO) are also completing a promotional video to be shared with every stakeholder and community that encourages cooperation and participation in the UNESCO Inscription process and the management of Nan Madol.*
- Global sea level rise and associated climatic events
 - § *Really the only thing that can be done here is to monitor the local effects of sea-rise and buttress the site or consult with outside engineers with experience on such matters to see if we can provide protection. We cannot stop sea-rise, and are limited in how we can actually protect the site from its effects. One of the best natural ways protection is ironically the mangrove system which is actually protecting the shore, but is destructive to the site at the same time.*
- Lack of resources for maintenance

- § *This will need to be discussed during meetings so that maybe an appropriate strategy would be to ask that the State government provide economic aid for this in return for more of a stake in how the site is managed. Another strategy would be to solicit funding from local companies and agencies that often look for ways to help local communities. And finally, NGO's and perhaps the US National Park Service can all be contacted to help donate funds for maintenance.*
- Lack of sustainable tourism strategy and plan for the property
 - § *A state-wide tourism strategy is currently under development (see below)*

X. Tourism Management Plan

This is an important element of Nan Madol's future that will need to be developed through consultation with all stakeholders, especially the local community in Temwen that will likely be most involved with welcoming tourists.

Currently, a plan is being discussed to provide a vision for tourism in Pohnpei in the years to come. A central feature of this will be a state welcoming center and cultural heritage museum that is currently being sought. If funding is received for this center, then tourism to Nan Madol and elsewhere will be funneled through the offices there so that the tourism experience can be optimized. We are also currently in the process of registering numerous historical sites on the island that can be protected and promoted through tourism as well and to be offered to visitors.

The HPO and the Office of Tourism will surely have a large role in developing the tourism management plan. However, NGO's should also be sought to help with the process. The Japan Consortium for International Cooperation in Cultural Heritage, for instance, has been instrumental in assisting with the UNESCO process and has even expressed interest in helping to establish a Nan Madol welcoming center. The Japanese participation in tourism planning to the site will be vital going forward. Indeed, if tourism to Pohnpei is to ever generate substantial growth, it will likely be from those arriving from Japan if a direct flight from the nation (as is being discussed) becomes a reality. Unfortunately, expecting tourism growth from Western sources is unlikely due to the extremely expensive flight costs at present.

Presently, we have designed a tourism survey that will be given to visitors at the airport upon departure in order to generate data on Nan Madol visits. This questionnaire is included as Appendix B and will be administered by the Office of Tourism.

XI. Resources to implement management plan

At present, the idea is that a portion of revenue generated from tourism to the island will be used to assist in implementing the management plan. We are also planning to introduce a tourism fee such as the "Green Tax" the Republic of Palau recently introduced in order to generate more revenue for Nan Madol and other tourism related activities. Besides these

sustainable practices, we will also be soliciting aid from NGO's and the state and national governments to augment the resources available to care for and manage Nan Madol.

Like much of the above, more details on this aspect of the management of Nan Madol will be further developed with the planned meetings/workshops with all interested stakeholders.

XII. Monitoring and review of the plan

This final requirement will need to be developed after the management plan is finalized. As mentioned, a more inclusive consultation process is being planned so that all stakeholders can provide input on the process and come to an agreement of numerous elements outlined above. Our first meeting is planned for January 2013, after which an equitable, participatory and collaborative management plan can begin to be developed in earnest. Along with the video promoting the UNESCO process, updates on current developments will also be provided at this meeting and subsequent consultations. Appendix C provides an action plan already distributed to the Chief of the Pohnpei State HPO and the Acting Director of Land detailing many of the urgent activities agreed to during the latest UNESCO workshop that can be addressed immediately.

Appendix A

Memorandum of Understanding for Nan Madol

Audepen Wie Kupwur

Communique`

Wiekupwur en kapehse oh ehupene me pid epwelpen Nan Madol oh kaminin en doadoahk pwe en kak mweidehng Nan Madol en kak iang patohlong nan Pwuhk en pilipil en UNESCO ohng Wasahkan me Kesemwpwal Nan Sampah

Consultation on the Safeguarding of Nan Madol and to Reach Consensus to Place Nan Madol on the Nomination List of places to be considered for World Heritage Status

November 23-26 2011

Ni menseng en ni esil November 23, 2011 Wasa Lapalap Isipahu, Nahnmwarki en Wein Madolenihmw tapwiher wie kupwur en kapehse ehu me iangahki weliepehkan en United Nations Educational, Scientific and Cultural Organization (UNESCO), Japanese Funds-in-Trust to UNESCO, Japan Consortium for International Cooperation in Cultural Heritage (JCIC-Heritage), Embassy en United States, Department en Resource and Development en FSM National Government, Office en National Archives en FSM National Government, Ohpis en Kepina en Wein Pohnpei, Meninkeder Lapalap en Wein Madolenihmw, Boardkan en Nan Madol Non-Profit Corporation, Ohpis en Environment Protection Agency en Pohnpei State Government, Ohpis en Visitors Bureau en Pohnpei State, Mr. Masao Silbanuz, de Oaron Maka Madolenihmw, oh irail tohn doadoahkkan en palipwukat. Ketdiwet wiawihier nin duen sakarada riau eh wiawihier pahn kupwuren Wasa Lapalap Isipahu, pwe en kapehse duen ineng en sawas me mie sang palien UNESCO oh Government en Japan, me pil apwalih mwohni me sowese ketdiwet pwe doadoahk en kak doula ohng ni epweldahn Nan Madol en kak iang pwukepwukdieng nan pwuhk en UNESCO oh patehng wasa kesemwpwal oh poadoapoadakan nan sampah.

In the Morning of November 23, 2011 His Majesty Wasa Lapalap Isipahu, Nahnmwarki of Madolenihmw, presided over a consultation for the safeguarding and preservation of Nan Madol. In attendance were representatives from United Nations Educational, Scientific and Cultural Organization (UNESCO), Japanese Funds-in-Trust to UNESCO, Japan Consortium for International Cooperation in Cultural Heritage (JCIC-Heritage), Japan Foundation, Embassy of the United States, Department of Resource and Development for the FSM National Government, Office of National Archives of the FSM National Government, Office of the Governor of Pohnpei, Chief Magistrate of Madolenihmw, Board members of the Nan Madol Non-Profit Corporation, Office of the Environment Protection Agency for Pohnpei State Government, Visitors Bureau of Pohnpei State, Mr. Masao Silbanuz or, Oaron Maka Madolenihmw-land owner, and staff from these various entities and agencies. This consultation has been made possible as a

result of two pre-consultation before His Majesty, Wasa Lapalap Isipahu, that were done in order to inform him about the intentions of UNESCO, that is also providing the funds for the consultation and to support the work necessary to allow Nan Madol to be recognized as a World Heritage site.

Loulou ieu me ritingadahr wie kupwurwet wiawihier sang Nahmadau en Idehd Madolenihmw. Nahnsahuririn Madolenihmw ni duen eh patohwen wia sounkaweid nan wie kupwurwet ritingadahr wie kupwurwet oh sekerehier Wasa Lapalap Isipahu oh irailakan me patehng ketdiwet oaralap en wie kupwurwet. Nahnsahuririn pil doula oh sakarkihda me doadoahkwet inenin kesempwal pwehki eh utuht pahn kupwur en Wasa Lapalap oh ni duen eh kadokepeneier palihkan me pahn anahne ehupene pwe doadoahk en kapidelong ohng Nan Madol nan pwhk en UNESCO pwe en kak iang kileledi ni duen eh wia kisehn wasa kesempwal oh poadoadakan nan sampah.

The meeting commenced with an opening prayer by Nahmadau en Idehd Madolenihmw. Nahnsahuririn Madolenihmw followed with the keynote address informing His Majesty, Wasa Lapalap Isipahu and participants about the purpose and objective of the meeting. He further reported that the meeting was a milestone due to the blessing that it has received from His Majesty, Wasa Lapalap Isipahu, and recognizing the collective support and effort by those involved to ensure that Nan Madol is placed on the World Heritage nomination list and to be considered as a historic and natural site for all humanity.

Sakarada wiawihier sang irail semen kan me iangahki weliepekan sang UNESCO, JCIC-Heritage, Department en Resource and Development en FSM National Government, Office en National Archives en FSM National Government, Meninkeder Lapalap en Wein Madolenihmw, Weliepen Boardkan en Nan Madol En Ihmw Non-Profit Corporation, Micronesia Conservation Trust, Secretariat for Pacific Communities (SPC). Audepen sakarada pwukat pwukepwudier oh wialahr kisehn audepen wie kupwurwet.

Presentations were delivered from experts representing the various agencies including UNESCO, JCIC-Heritage, Department of Resource and Development and FSM National Government, Office en National Archives en FSM National Government, Meninkeder Lapalap en Wein Madolenihmw, Weliepen Board kan en Nan Madol Non-Profit Corporation, Micronesia Conservation Trust, Secreteriat for Pacific Communities (SPC). All the presentations have been recorded, transcribed and made part of the records of the consultation.

Ni alem November 25, 2011 towehkan en wie kupwurwet patohier pahn kupwuren Wasa Lapalap Isipahu pwe ren patohwan Nan Madol. Mwurin irail towehkan arail dawihier oh patowanehr wasahkan Nan Madol, wie koanoat wiawihier pwe en kak kawawih saih me miehier oh irail towehkan pil iangehr kepin koanoat.

On Friday, November 25, 2011, the consultation participants visited Wasa Lapalap Isipahu to tour and inspect those islets that make up Nan Madol. After the tour a sakau ceremony took place for His Majesty Wasa Lapalap Isipahu to honor the participants. The participants partook and shared the drinking of the sakau with His Majesty.

Ni kaunop, November 26, 2011 keimwseklahn ketdi en kapehse wiawihier pahn kupwuren Wasa Lapalap Isipahu. Sakaradahn kaweid kan wiawihier ohng me pid doadoahkkan me konehng en wiawi pwe en kak kaunopada dipwisoun doadoahk me pahn kapidelong ohng World Heritage, pwe Nan Madol en kak iang wia mehn pilipil pwe en kak patehngala wasahkan me sansal nan pwhuken World Heritage me e wia kisehn wasahkan me kesemwpwal oh poadoapoad en sampah, me iangahki kokoudahn pwihn en doadoahk (working group) me pahn ehupene oh kaunopada dipwisoun doadoahk me pahn anahn ohng Nan Madol en kaiang wiahla mehn pilipil ohng World Heritage.

On Saturday, November 26, 2011 the consultation was concluded in the presence of His Majesty, Wasa Lapalap Isipahu. Recommendations were presented before Wasa Lapalap Isipahu for the work that is necessary to include Nan Madol on the nomination list of World Heritage sites. It was agreed that a working group will be assembled to undertake the work needed to include Nan Madol for consideration as a World Heritage site.

Pwehki irehkan me sansalehr ni duen kupwur eh pil sansalehr, Wasa Lapalap nin lemedahr kaweidkan me sang palihkan koaros oh kupwuredahr doadoahkkan koaros me anahnen wiawi en tiala pwe Nan Madol en kak patohla oh wiahla kisehn wasahkan me poadoapoad, kesemwpwal oh wahun nan sampah.

Whereas, Wasa Lapalap Isipahu has conferred his blessing to the recommendations presented and have consented that all work necessary to place Nan Madol, because of its historical, cultural, natural, significant and sacred qualities, as a World Heritage site to proceed.

Ihme kahrehda, Wasa Lapalap Isipahu kupwuredahr kaweidkan koaros me mie oh ketkidier mengin nin limahr, oh irail palihkan me patohwan sainkiher mengin pehrail pwe en kasalehda arail miniminkihpene oh loaloapwoatkihpene arail utung doadoahkwet sang met oh pahn pil sipele ahnsou me Nan Madol pahn wialahr kisehn wasahkan me poadoapoad, kesemwpwal oh wahun en sampah.

Therefore, His Majesty Wasa Lapalap Isipahu has conferred his support by virtue of his signature, and we, the participants, hereby reflect our collective determination to ensure that our support of this work will continue until and beyond the nomination and placing of Nan Madol as a World Heritage site.

Wiawihier Ni Wahu:

Respectfully Concluded:

Wasa Lapalap Isipahu, Kerpet Hebel
Nahnmwarki en Wein Madolenihmw

TH Petrick Ringlen
Meninkeder Lapalap
Madolenihmw Municipal Government

Masao Silbanuz
Community Stakeholders

TH Ernet Hadley
Director
Department of Land and Natural Resources
Pohnpei State Government

TH Marion Henry
Secretary
Department of R&D
FSM National Government

TH Dr. Rufino Mauricio
Secretary
Department of Education
FSM National Government

Mr. Augustine Kohler
Acting Director
National Archives
FSM National Government

Appendix B

Tourism Exit Survey

Please help us manage and protect the famous Nan Madol site here on our island by taking a few minutes to answer the following questions before you leave the departure area. Once complete, please place this form in the designated box located (*wherever decided*). Thank you!

1. Did you come to the island for vacation, business, or both?
Vacation () Business () Both ()
 2. What country are you from? _____
 3. What is your approximate age?
Under 20 () 20-40 () 40-60 () 60+ ()
 4. How many times have you been to Pohnpei (including this visit)?
First time () 2 times () 3 times () 4 or more times ()
 5. Did you visit Nan Madol? Yes () No ()
- (If you did not visit Nan Madol, the remaining questions will not apply and should not be answered)**
6. Including this trip, how many times have you been to Nan Madol?
Just once () 2 times () 3 times () 4 or more times ()
 7. Please check all that apply:
You drove to the site yourself ()
Your hotel arranged the trip to the site ()
You walked to the site (through the residential entrance) ()
You went by boat or canoe to the site ()
You had a tour guide to explain the site ()
You were informed about culturally appropriate behavior at the site ()
You knew about the site before your trip to Pohnpei ()
You felt that the experience was NOT worth the amount you paid ()
 8. How much money in total did you pay to enter the site, and whom did you pay?

-
9. On a scale of 1 to 10, with 10 being the best, how would you rate your experience at Nan Madol?
1() 2() 3() 4() 5() 6() 7() 8() 9() 10()

10. Please tell us how you first heard about Nan Madol:

-
11. Were you able to learn as much information as you wanted about the history and story behind Nan Madol? If so, how (from hotel staff, tourism officials, locals, brochures, etc...)?
-
-
-

12. Please tell us how your experience at Nan Madol could have been better and provide any other comments you think could be helpful such as what you enjoyed about the visit or what you may not have liked:
-
-
-
-

Appendix C

Action Plan: 2012 UNESCO Workshop Outcomes

The following action plan was designed in accordance with the September 2012 UNESCO Workshop goals that attendees agreed upon.

Needs	Action	Goal	Agency/ Personnel Responsible	Completion Target Date	Monitoring/Tracking Process
Education/ Public Awareness	Facebook page to promote Nan Madol and provide updates on inscription process	Keeping public up-to-date on the UNESCO WH inscription process for the site and to educate the public on the officially recognized history, research findings, and other matters concerning Nan Madol	Pohnpei State HPO Public Educator	A live Facebook page should be ready by February 2013	Once up, the site should be continually updated to include news on how the UNESCO process is going as well as information on the significance and history of the site.
	Organize and gain support for Community Participation Meeting—Scheduled for January 2013	Through participation and collaboration, gather, educate, and engage local community in Temwen on the UNESCO process—what to expect, vision, what they will be asked to do, what the government (local, state, national) will be doing, etc...	This meeting should be organized and supported by both the Nahmwarki and the Chief Magistrate	Before December holiday period	The meeting/workshop should be recorded by video in its entirety so that a record is preserved of what was discussed and agreed upon by all.
	Create a standard protocol for visitors to the site that honors traditional beliefs. This should be available at the site and through various tourism outlets	Ensure that visitors are respecting local customs and behaviors at the sacred site of Nan Madol	Pohnpei State HPO should collaborate with traditional knowledge holders to create a standard information form that is agreed upon by all.	December 2012—this should be complete and ready to present at the above community workshop/meeting planned for January 2013	Should be complete before meeting so that it can be presented to all stakeholders as something already completed.
	Educational DVD on UNESCO—What it stands for, service, process...	Get everyone onboard and on the same page about what is happening—this is for communities (easy to understand)	Pohnpei State HPO (FSM Staff Archaeologist and Anthropologist)	December 2012	Complete by end of 2012, and have ready for January Community Participation Meeting—Produce multiple copies to be distributed
Needs	Action	Goal	Agency/ Personnel Responsible	Completion Target Date	Monitoring/Tracking Process
Management of Nan Madol— Preparation, presentation, protection, monitoring & maintenance	Inventory status of islets	This inventory of the various states of preservation for all of the islets at the site will be done in order to provide a baseline going forward for monitoring purposes. It can also be used to compare to previous data collected in order to understand which areas are in need of immediate attention	Pohnpei State HPO (FSM Staff Archaeologist)	December 2012	A database will be created with a standard measurement protocol that can be used to track the state of preservation from the various islets. Once this first baseline study is completed, it can be used to longitudinally compare future inventories in order to more fully understand the pace of which islets are experiencing decay, overgrowth or other forms of natural destruction.

	Collect Oral Histories on the changes to Nan Madol over time—What is changing and how fast?	Oral histories and stories of the state of Nan Madol over the years will help to compliment the above archaeological inventory. It will also help to provide stories that may be useful in generating public awareness (i.e., videos, articles, Facebook page)	Pohnpei State HPO Field Researcher	February 2013	This can be done as key informants become available. It should accompany reports on the inventory project above.
	Collect oral histories and archival data on neighboring cemetery to possibly be included as a core site related to Nan Madol	Understand the significance of the cemetery to the story of Nan Madol in order to determine how it will fit within the Nan Madol narrative	Pohnpei State HPO Field Researcher	December 2012	Should be done before January meeting so that information can be completed and presented to community for their assessment.
	Collect several oral histories of Nan Madol—perhaps from the Nahnmwarki and other leaders who have abundant knowledge.	These stories will be used in the nomination. Direct quotes, in the native language, supporting the history and significance of the site are vital and need to be included in the application.	Pohnpei State HPO Field Researcher	March 2013	Needs hurry on this. Just needs to be completed before the actual application process begins—which will not occur until at least March 2013.
Needs	Action	Goal	Agency/ Personnel Responsible	Completion Target Date	Monitoring/Tracking Process
Tourism planning and management	Training program for Nan Madol guides	To provide a standard training framework to ensure that guides to the site professional present the same interpretive stories that is agreed upon. This training will also include aspects of customer service, as well as important teachings of traditional protocol to be presented.	Pohnpei State Office of Tourism	???	???
	Tourism video for Nan Madol and also traditional protocols that can be shown to visitors on the plane (modeled after Hawaii's video)	Promote awareness and knowledge for Nan Madol and local customs, traditions, and protocols that would be helpful to communicate to visitors/tourists.	Pohnpei State Office of Tourism/ Pohnpei State HPO/ FSM HPO	???	???
	Tourism exit survey to be provided at airport upon departure	Questionnaire for tourists asking about information on visiting Nan Madol and other general tourism information. Needed for the collection of accurate data on visitors to site, as well as understanding how the experience was.	Pohnpei State HPO (FSM Staff Anthropologist)/ Pohnpei Office of Tourism/ World Park	Questions already prepared and sent forward to State government and Office of Tourism. Target date for implementation (placement in Airport): November 2012	Office of Tourism will replenish surveys and input data onto spreadsheet every week. This information will be shared with and made available to various stakeholders.

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Appendix B: Inventory of the Islets of Nan Madol



An Inventory of the Islets of Nan Madol

An Appendix to the World Heritage nomination of
Nan Madol: A Ceremonial Center of East Micronesia

Compiled by:

Adam Thompson
Helen Alderson
and Osamu Kataoka

2015

Acknowledgements

As a show of respect, much of the work by Pohnpeian historians has been included near verbatim from the references listed, particularly for Masao Hadley, grandson of Luellen Bernart, who provided the best description of the islets functions (Hadley 1981, 1987, 2014). His small maps though lacking detail provide the clearest and easiest understanding of the major features on each of the islets and have also been included in full. Archaeological reports being more tedious have been summarized in the best intention of the authors. We especially thank Steve Athens who kindly allowed us to include his maps of Nan Madol islets from his unpublished report (Athens 1985) in this inventory.

The map created by Hambruch in 1910 is used as a common reference as has been common practice for archaeologists since its conception. Like many archaeologists before we have continued to use the numbering system that he first created. However, at the end of 2012 a project to create a completely new map of Nan Madol with modern GPS technology was launched. The cover shows a photo of an initial projection of that map. The completed version of this map will be released soon and accessible to the public as a GIS file (McCoy, Alderson and Thompson in prep.). We are very grateful that permission was granted to use copies of this map within this inventory. They may be seen on the following page.

All photos were taken by Adam Thompson and Osamu Kataoka.

Peirahni

Before they began organizing the work of Nan Madol they erected a rock and surveyed the four cardinal directions: East, West, North, and South. Once they had located the four directions they could set the alignment of the city of Nan Madol. This was the stone which they used to survey the height of the islands and the height of the walls. They called this rock Peirahni.

Mweiden Kiti (6) (The Kiti Opening)

This place is where the people of Kiti used to enter. Long ago a channel existed which people entered at the Kiti Opening and arrive at Pahnkedira and continue to Temwen.

Mweiden Weliwel (11)

“The opening of the yellow fin tuna” is a channel through which the yellow fin tuna used to enter. It is said that the bird (known as) “kutoahr” used to enter here.

Mweiden Nahn Sapwe (13) (The opening of Nahn Sapwe)

When Nahnsapwe fell to the punishment of the Saudeleur and when he was weakened under the sun, the spirit Isohpau appeared at Pahnkedira and took Nahn Sapwe outside and went to Nahr en Nahnsapwe. This is where he put Nahnsapwe down and a triton shell appeared before Nahn Sapwe and decided to help him to go upwind to Katau. But he was unable to do so. So Isohpau took an earring from his ear and they cast a spell which is called Serek en Dak. The earring was transformed into a needle fish. It was this needle fish which helped Nahn Sapwe and carried him to Katau.

Mweidalap (15) (The Great Opening)

This was another entrance.



5 Pohnkeimw

Alternative names: Pon-Kaim (Christian 1899), pōn kaim (Hambruch 1936), Ponkaim (Bernart 1977; Morgan 1988), Pohnkeimw (Ayres *et al.* 1983; Hanlon 1988), Pohnkeimwpaiei (Hanlon 1988; Panholzer and Mauricio 2003)

Area: 20 x 265m (Hambruch)

Current Status of Conservation: wave deposited sand accumulation, heavy mangrove encroachment, strand vegetation. The islet is almost entirely covered in mangrove and is difficult to land on except at the western corner. Some of the stones have clearly moved as well.

Brief Description: This is a very long islet that acts as a seawall for the western portion of Nan Madol. The swell is not so powerful here but the tide change can still be strong. Thus it was a very important islet for the protection of the site and ends at a large channel that provides easy access. It seems likely that guards would oversee who entered and exited as the royal residence at Pahnkedira could be accessed from here.

References

Ayres *et al.* 1983
Bernart 1977
Christian 1899
Hambruch 1936
Hanlon 1988
Morgan 1988
Panholzer and Mauricio 2003



7 Pahnmweid

Alternative names: Pan mueit (Christian 1899), mŭéit en kiti (Hambruch 1936), Panmuek (Bernart 1977), Panmueit (Bernart 1977, Morgan 1988)

Area: 67x75 (Hambruch)

Current Status of Conservation: wave deposited sand accumulation, heavy mangrove encroachment, strand vegetation

Brief Description: This islet is rather low to the water and is a very unique shape. It appears to mark a special entrance to the site and could be a place for visitor's to first stop when entering from this side.

References

Ayres *et al.* 1983
Bernart 1977
Christian 1899
Hambruch 1936
Morgan 1988



8 Mweid

Alternative names: mŭéit (Hambruch 1936), Mweidalap (Hanlon 1988), Mueit (Morgan 1988).

Area: 45x50 (Hambruch)

Current Status of Conservation: wave deposited sand accumulation, heavy mangrove encroachment, strand vegetation

Brief Description: This islet at time is low to the water but grows very large as it approaches Panwhi. One can therefore see a transition between two sides of the site moving into a much more sacred area.

Associated Oral Tradition: The name mweid means “passage” (Morgan 1988:66)

References

Ayres *et al.* 1983

Hambruch 1936

Hanlon 1988

Morgan 1988



9 Pahnwi A and 10 Pahnwi B

Alternative names: Panui (Christian 1899), pān ūi (Hambruch 1936), Pan ui (Athens 1980b), Pahn Wi (Hadley 1981, Jencks 1970)

Area: Panwhi A - 100x96m (Hambruch); 99x78 (Ayles), Panwhi B - 20x97 (Hambruch)

Major Features: complex burial chamber, house foundations, sakau stones

Radiocarbon Dates: AD 1250 (Ayles 1990, 2002)

Current Status of Conservation: Portions of the lower elevations on the north side of Pahnwi have been taken over by mangroves. The southern wall has suffered a wall collapse since its last recording in the 1980s. The enclosure is filled with trees and vines and creepers dominate the rest of the island.

Brief Description: Excavation at Pahnwi recovered remains from 6 burials as well as 10,000 artifacts including pearl shell fishing lure shanks, spondylus shell pendants, conus ring arm bands, perforated shark teeth, and 9000 beads.

Associated Oral Tradition: The name Pahnwi means “under the wih tree” referring to the *Barringtonia asiatica* tree. It is said that the fruit of one of these trees beached on a sandbar here and began to grow and caused the land to form.

A woman named Likonpahnwi lived at this place. This woman was the leader of a game which pregnant women played there, at low tide in the morning and the evening. There is a

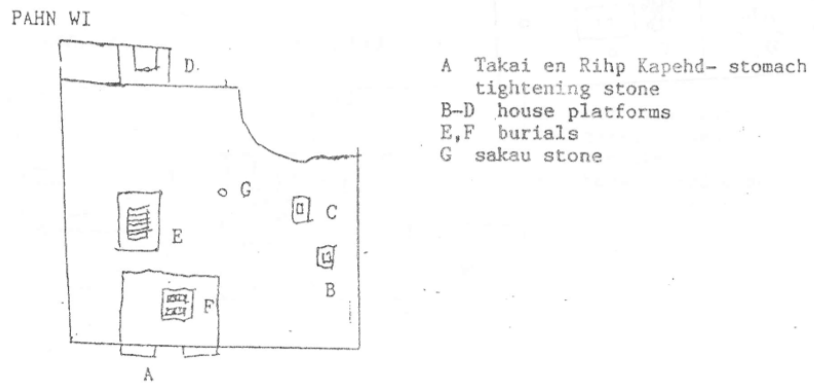
rock called the Takai en Rihp Kapehd (The Rock of Tightening Stomach). Women climbed on this rock and if one could traverse it and touch a stone which is at the edge on the left side, she had succeeded and climbed the rock. When she was to give birth her child would be born beautiful, strong, and brave.

There are three residential house foundations and two stone burial vaults inside. Several priests were buried in these vaults. And Pahn Wi has a high wall and the largest rocks built it. There is also one sakau stone inside.

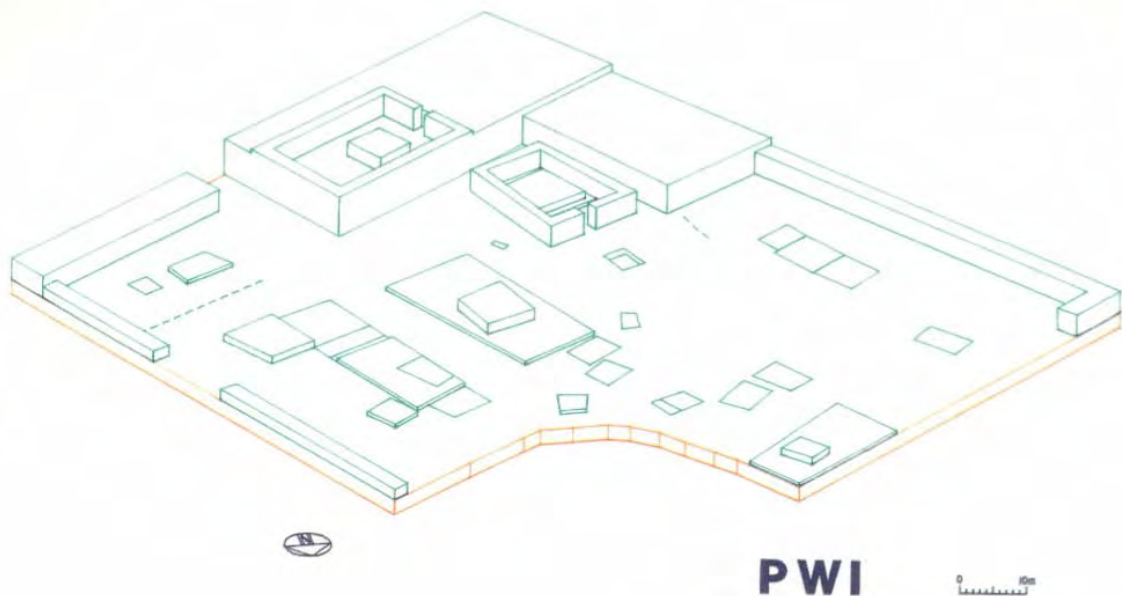
Traditions refer to priests having been buried on this islet (Hadley 1981; Seikel 2011)

References

- Ayres 1990, 1993, 2002
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Jencks 1970
- Mauricio 1986
- Narasaki 1986
- Tasa 1988



Sketch of Pahnwi (Hadley 1981)



Computer generated view of Panwhi (Ayres 1993)



12 Kapinet

Alternative names: Kapenot (Christian 1899) kap en not (Hambruch 1936), Kepinehd (Ayres 1983; Hanlon 1988; Panholzer and Mauricio 2003), Kapennot (Morgan 1988).

Area: 21x158m (Hambruch)

Major Features: three house platforms, large coral wall enclosure (Hadley 1981:113; Panholzer and Mauricio 2003:28)

Current Status of Conservation: wave deposited sand accumulation, heavy mangrove encroachment, strand vegetation

Brief Description: This is a very long outer seawall islet with numerous features along its length including a wall made of large pieces of coral that is quite unique and small foundation made of small pieces of columnar basalt.

Associated Oral Tradition: Two women once lived on Kapinet, two women of the Dipwinwai (foreign clan) who were related to the highest ranking sub-clan of the Dipwinwai, Epweden Uht (the highest, newest leaf of a banana tree). Their work was to make Ponapean sails. But their materials for weaving sails became so numerous that supposedly these cluttered the island everywhere. The High Chief heard about it, became angry, and ordered them to leave. so they left and lived with a Liet (a female cannibal) in the jungle. And the Liet took them inas her own. These two women gave birth to many children and created the Sou Liet lineage. On Kapinet there are two large house foundations and a small house foundation, as well as two stone enclosures. Only a few places are walled.

References

Ayres *et al.* 1983

Christian 1899

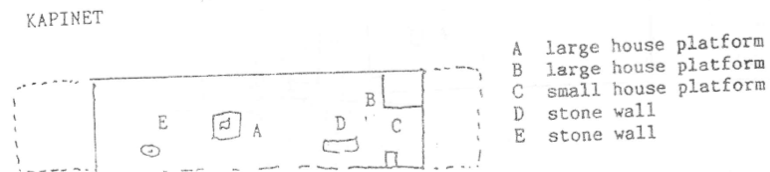
Hadley 1981

Hambruch 1936

Hanlon 1988

Panholzer and Mauricio
2003

Morgan 1988



Sketch of Kapinet (Hadley 1981)



14 Pikalap

Alternative names: Nanpulak (Kubary 1874), pik a lap (Hambruch 1936), Pikalap (Morgan 1988).

Area: 21x37 (Hambruch)

Major Features: canoe landing

Current Status of Conservation: wave deposited sand accumulation, heavy mangrove encroachment, strand vegetation, wall falling into the sea

Brief Description: There is a very clear canoe landing on the northeastern interior side of the islet just as Hambruch drew in his map. This canoe landing would allow the islet of Lemensai (15-16) to be easily accessed from here.

References

Ayres *et al.* 1983

Hambruch 1936

Kubary 1874



15-16 Lemensei

Alternative names: lem en šei (Hambruch 1936), Lem en Sei (Athens 1980b), Lemensei (Morgan 1988), Lemensai (Seikel 2011)

Area: 25x25m (Hambruch)

Major Features: burial tomb (16), house foundation (15)

Current Status of Conservation: wave deposited sand accumulation, heavy mangrove encroachment, strand vegetation

Brief Description: This islet has a low wall to the south-west side (15) that rises into a much higher wall on the north-east side (16) at a specific point. There is therefore a clear demarcation between the two halves of the islet. The larger of these two is believed to be a tomb while the lower area would be the resting place for visitor's to the islet.

References

Ayres *et al.* 1983

Hambruch 1936

Morgan 1988

Seikel 2011



17 Peinmet

Alternative names: péi en mët (Hambruch 1936)

Area: 30x31m (Hambruch)

Major Features: ceremonial house foundation

Current Status of Conservation: strand vegetation, hibiscus

Brief Description: This is a fairly large islet next to the large channel into Nan Madol along the western shore. It is tucked back against Temwen Island and can be hard to find. It has a sense of being separate from the main area of the site and was likely built later.

Associated Oral Tradition: This is the islet where Nahlapenien was crowned as the first Nahnken at the ceremonial house shown above. Nahlapenien was born of Isokelekel's nephew who became the Nahmwarki after him. He told his wife if she had a male child to kill it but she disobeyed and gave the child to her brother. Later when the child had grown he was a great spearfisherman. The Nahmwarki's canoe came alongside, the boy when he was fishing and asked him to spear some fish for the Nahmwarki. The boy did but failed to show the usual respect of bowing to the high chief and climbed right on top of the canoe. The Nahmwarki saw that the boy was special and was his own and told him to come to Peinmet the next day for a feast. The next day the boy was richly decorated and rode upon the center of the Nahmwarki's royal canoe and went straight to the highest platform of the ceremonial house. He was crowned as Nahnken and from then on served as the intermediary between the commoners and the high chief.

References

Ayres *et al.* 1983

Bernart 1977

Hadley 1981

Hambruch 1936

Hanlon 1988

18 Likinsau

Alternative names: li kin šau (Hambruch 1936), Likinsou (Hanlon 1988; Panholzer and Mauricio 2003)

Area: 20x38 (Hambruch)

Current Status of Conservation: thick vegetation, erosion and siltification

References

Hambruch 1936

Hanlon 1988

Panholzer and Mauricio 2003

19 Sapwei

Alternative names: tšap ůei (Hambruch 1936), Sapw wei (Hanlon 1988), Sapuei (Morgan 1988).

Area: 33x34 (Hambruch)

Current Status of Conservation: thick vegetation, erosion and siltification from the main island.

Associated Oral Tradition: Traditionally the residence of a paramount head of a clan (Hambruch 1936:29). It is here that the Pohnpeian hero Tip en uei committed suicide to escape further punishments from the Saudeleur (Hambruch 1936:29).

Brief Description: This islet is small and low-lying and difficult to outline due to its proximity to the main island of Temwen.

References

Hambruch 1936

Hanlon 1988

Morgan 1988

Panholzer and Mauricio 2003



20 Sapwenleng

Alternative names: tšap ũ en lăñ (Hambruch 1936), Sapenlan (Morgan 1988).

Area: 63x35m (Hambruch)

Current Status of Conservation: Mangrove is well established in this area.

References

Hambruch 1936

Morgan 1988

21 Pedenleng

Alternative names: bat en lăñ (Hambruch 1936), Batenlan (Morgan 1988).

Area: 28x20m (Hambruch)

Current Status of Conservation: Mangrove is well established in this area. So much so that the trees grow large with abundant shade in a more permanent condition than elsewhere

Brief Description: These islets have well established walls and sit well above the mangrove muck. At low-tide they are easily accessible and the mangrove harbors a rich variety of birds. They appear to be rarely visited by people with little none about them

References

Hambruch 1936

Morgan 1988



22 Pilenleng

Alternative names: pil en lăñ (Hambruch 1936), Pilenlan (Morgan 1988).

Area: 46x33m (Hambruch)

Current Status of Conservation: Severely overgrown

Brief Description: This islet is in the transitional zone between the thick mangrove vegetation and the more established older growth mangrove. It is part of the same array of islets as those above.

References

Hambruch 1936

Morgan 1988

23 Pahndipap

Alternative names: Pan-Tipop (Christian 1899), pān ti bob (Hambruch 1936), Pantibob (Morgan 1988).

Area: 45m x 50m, 1.5m high

Major Features: three house foundations and one burial platform

Current Status of Conservation: deflated by rock removal and tidal action, covered by sediment build-up. Previous archaeological studies have speculated that stones were removed from this islet for re-use elsewhere (Ayres *et al.* 1989; Ayres 1993).

Brief Description: Pahndipap is an early islet with considerable surface pottery. It is roughly rectangular and has four architecture platform features on its surface. One of these contained burials. Shell net sinkers and shell adzes have been collected from here.

References

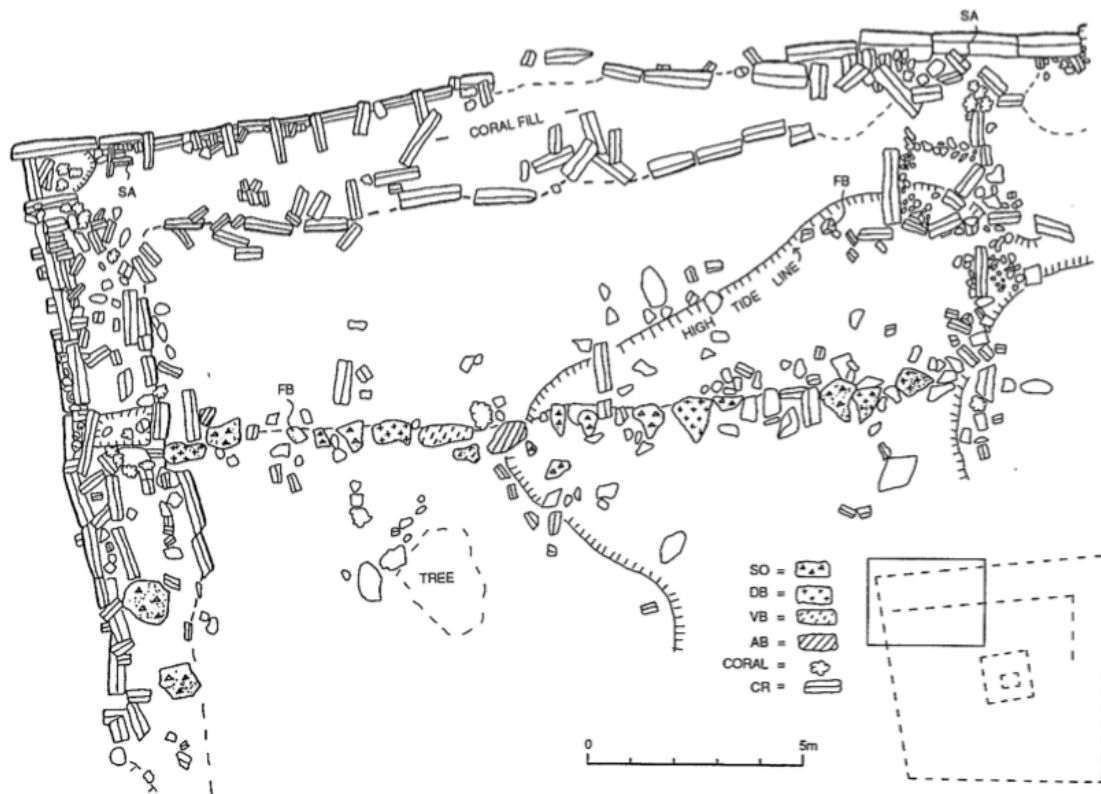
Ayres 1993a, 1993b

Ayres *et al.* 1989

Christian 1899

Hambruch 1936

Morgan 1988



Distribution of stone building materials in the Northwest corner of Pahndipap islet (Ayres 1993)

24 Pedeped

Alternative names: b̄eteb̄et̄e (Hambruch 1936), Betebete (Morgan 1988).

Area: 30x26m (Hambruch)

Current Status of Conservation: heavy mangrove encroachment

References

Hambruch 1936

Morgan 1988

25 Peinpwe

Alternative names: péi en ap̄ue (Hambruch 1936), Peienapue (Morgan 1988).

Area: 25x24m (Hambruch)

Current Status of Conservation: heavy mangrove encroachment

Brief Description: This is a small islets next to larger ones and probably fulfill a common role though their exact function is unknown at the time.

References

Ayres *et al.* 1983

Hambruch 1936

Morgan 1988



26 Nihkonok

Alternative names: ni konok (Hambruch 1936), Nikonok (Christian 1899; Ayres 1985; Morgan 1988).

Area: 82x35 (Hambruch)

Current Status of Conservation: mangrove encroachment, wall fall

Brief Description: This is a larger islet surrounded by smaller islets that serviced the high chiefs and so may have been the center for such activity. It also border the Kiti opening and could service people entering the site.

References

Ayres 1985
Ayres *et al.* 1983
Christian 1899
Hambruch 1936
Morgan 1988

27 Reilap

Alternative names: réi lap (Hambruch 1936).

Area: 54x42m (Hambruch), 45x42 (Ayres)

Major Features: two house foundations and a burial vault

Current Status of Conservation: Heavily covered in mangrove and thick silt surrounds it.

Brief Description: This is a largish square islet but by no means the biggest. Shell adzes and shell net sinkers have been collected from here. There is a residential structure bordered by high walls and divided in two by a low wall (Hambruch 1936). Another house foundation is referred to as Wasahu (“that place”), as people were tortured there (Hadley 1981), and a burial (Seikel 2011).

Associated Oral Tradition: The name of this islet may be translated as referring to the “great length” of the islet, from reirei meaning length and lapalap meaning great.

References

Ayres 1993b

Hambruch 1936

Hadley 1981

Mauricio 1986

Seikel 2011

28 Dolewe

Alternative names: löle éüe (Hambruch 1936), Loleeue (Morgan 1988).

Area: 54x41 (Hambruch), 45x42m (Ayres)

Current Status of Conservation: heavy mangrove encroachment, low-lying and partially inundated at high tide.

Brief Description: This islet borders the channel called Mweiden Kiti (6), the entrance for the people of Kiti and so possibly serviced such people entering the Nan Madol.

References

Ayres *et al.* 1983

Hambruch 1936

Morgan 1988

29 Peinieng

Alternative names: péi iañ (Hambruch 1936), Peiniang (Hanlon 1988; Ayres 1983; Ayres 1985), Peiian (Morgan 1988), Peilam (Panholzer and Mauricio 2003)

Area: 22x50 (Hambruch), 21x15 (Ayres)

Current Status of Conservation: Deep mangrove silt surrounds the islet making access difficult and supporting plentiful vegetation around it.

Brief Description: This is a small square islet in a chain of islets running from Kelepwel to the outer wall.

Associated Oral Tradition: The name Peinieng may be broken into its constituent parts: pehi (altar), en (of), oang (tumeric). The name indicates that the processing of the tumeric plant for curing and ceremonial purposes was performed on the island. Tumeric would be mixed with coconut oil and applied to the body.

References

Ayres 1993b

Hambruch 1936

Mauricio 1986

Morgan 1988

Panholzer and Mauricio 2003

30 Reitik

Alternative names: péi tik (Hambruch 1936), Rei Tik (Athens 1980b), Retik (Morgan 1988).

Area: 28m x 40m (Ayres 1993)

Major Features: large house foundation and remnants of smaller foundations

Current Status of Conservation: Heavily covered in mangrove

Brief Description: Reitik consists of a large walled platform enclosed by a stone wall of stacked columnar basalt. The enclosing wall had an entryway preserved in the inland side of the islet. In the first stage the islet may not have had stone foundations in the interior for structures, but later, several house foundations appear inside; many of these used stone taken from the original enclosing wall, suggesting a change of islet function. At the time it was surveyed in 1987 the enclosing wall had been entirely removed in several sections. Complex, multi-tiered foundations suggest a high social status for some later islet residents. Adjacent to Reitik lie the important Pahnkedira and Wasahu islets. One adze was found on Reitik that is a Duff Type 2C Polynesian adze that is similar to the Type I/III from Samoa (Ayres and Mauricio 1987). Pottery, stone tools, and cowrie shell bases have also been collected from here.

Associated Oral Tradition: Traditions refer to executions having taken place at a house called Reilap, where a large platform is found today ().

References

Ayres 1993a, 1993b

Ayres and Mauricio 1987

Hadley 1981

Hambruch 1936

Morgan 1988

Panholzer and Mauricio 2003



Archaeological map of Reitik islet (Ayres 1993)



31 Wasahu

Alternative names: ũa šaũ (Hambruch 1936), Uajao (Bernart 1977), Ua Sau (Athens 1980a, 1980b), Wasahu (Ayres 1983:14), Wasau (Ayres 1985, 1990; Ayres 1993; Panholzer and Mauricio 2003; Seikel 2011), Wasaw (Hanlon 1988), Wasao (Jencks 1970; Hadley 1981)

Area: 50x60m (Ayres)

Major Features: 1 large house foundation

Radiocarbon Dates: AD 500 (Ayres 1990)

Current Status of Conservation: The site is somewhat overgrown with mangroves

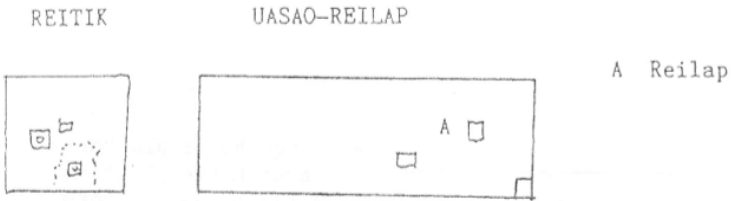
Brief Description: An abundant amount of pottery was found on this islet showing that it was heavily occupied in the earliest period when a pottery-producing culture first constructed the islets. Pottery use ended with the construction of the stone structures and the new culture that came to occupy Nan Madol. Pottery, stone tools, shell adzes, and perforated shark and dog tooth decorations have been collected from here.

Associated Oral Tradition: A huge house foundation exists on Reilap which is called Wasahu. This is where people who were punished were killed. It is because of the fear of that place that they no longer said Reilap, they called it “that place” (Wasahu or Wasao). Severe punishments were said to have been carried out against those unable to supply the necessary tribute for the prestige economy system. This punishment occurred on Pahnkedira at a torture area next to the main central temple. Those who did not survive the torture were disposed of on Wasahu. Saudeleur, Reipwenlako, was said to have practiced cannibalism as well and that Wasahu served as the disposal ground for the remnants of cannibalistic feasts.

References

- Athens 1980a, 1980b
- Ayres 1983, 1985, 1990, 1993a, 1993b
- Bernart 1977
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- Jencks 1970
- Kataoka 1985, 1991
- Mauricio 1986
- Morgan 1988

Panholzer and Mauricio 2003
Seikel 2011
Tasa 1988



Sketch of Reitik and Wasahu (Hadley 1981)



Archaeological map of Wasahu (Ayles 1990)



32 Kelepwel

Alternative names: Peitek, (Christian 1899), kal a püel (Hambruch 1936), Kelepual (Bernart 1977), Kalapuel (Morgan 1988), Kal a Puel (Athens 1980b).

Area: 61x55m (Hambruch), 51x60m (Ayres)

Major Features: historic house foundation

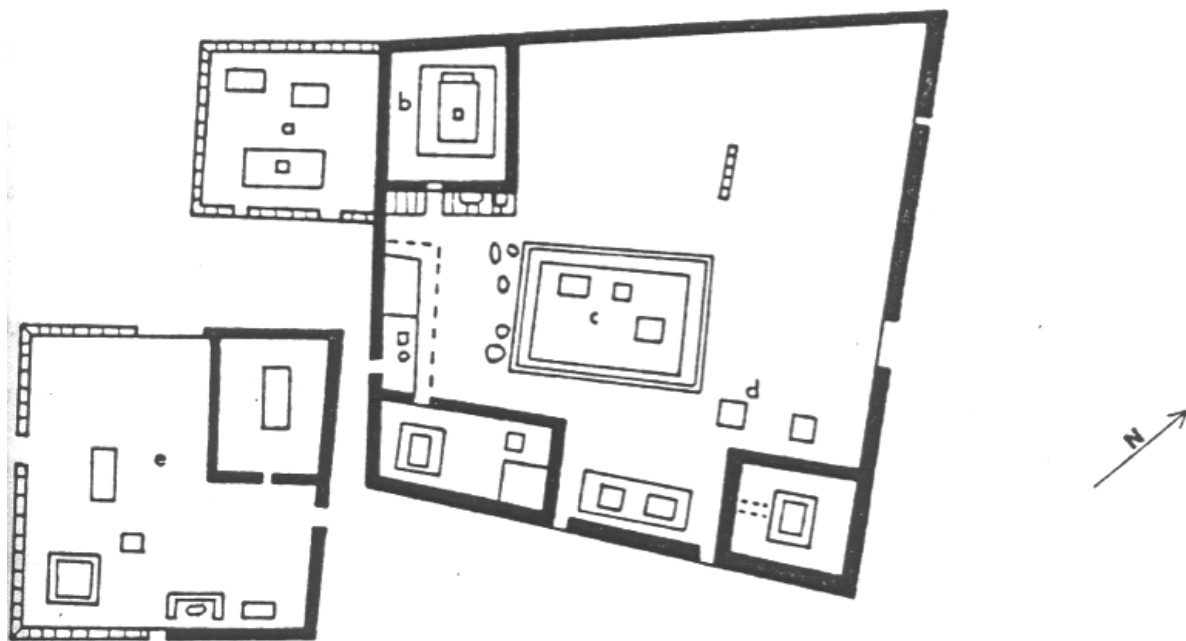
Current Status of Conservation: major wall collapse

Brief Description: A historic house foundation is located on Kelepwel measuring 7 x 6 meters and 0.5 meters high. Artifacts from a European occupation dating to the late 1800s, including clay tobacco pipe fragments, a lead ball, flint for firearms, porcelain sherds, bone buttons, and iron were found in heavy concentrations around this foundation on the surface and in excavation. Stone tools, shells adzes and net sinkers have been collected from here.

Associated Oral Tradition: The name Kelepwel suggests that the islet once contained much soil as the name can be broken down into: kele (to fence) and pwehl (soil). The island of Kelepwel was another which serviced the work of Pahnkedira. This was a place where the Saudeleur housed and fed visitors who appeared before him. It was also here that the Saudeleur fed Isohkelekel and his followers when they came to Pohnpei long ago. Though relations between Isohkelekel and the Saudeleur began favorably they eventually devolved until Isohkelekel took over. There is a ceremonial house foundation on Kelepwel, and four house foundations. There is also a place where they played a game in which they threw stones into holes. They called this game Peid Loal. There is also a place where the royal canoes and the stone canoe Luhsus en Iap were stored.

References

Athens 1980b
Ayres 1993b, Ayres *et al.* 1983
Bernart 1977
Christian 1899
Hadley 1981
Hambruch 1936
Mauricio 1986
Morgan 1988



Hambruch's map of Pahnkedira and Kelepwel (Hambruch 1936)



33-37 Pahnkedira

Alternative names: Nangutra (Kubary 1874), Pan-Katara (Christian 1899), Pan-Gothra (Christian 1899), pān katera (Hambruch 1936), Pankatira (Bernart 1977), Pahnkadira (Morgan 1988; Athens 1983, 1984; Hanlon 1988; Panholzer and Mauricio 2003), Pan Katera (Athens 1980b), Pahn Kadira (Ayres 1983, 1985, 1990; Ayres *et al.* 1989; Ayres 1993; Hanlon 1988), Pahnkedira (Bath and Athens 1990; Kolb 2012), Pahn Kedira (Hadley 1981)

Area: 93x93m and 35x45m (Hambruch), 113x87 and 45x45m (Ayres)

Major Features: 4-5 meter high enclosing wall,

Radiocarbon Dates: 950-980 AD (islet construction), 1250-1290 AD (initial expansion phase), 1460-1480 AD (major expansion phase), (Ayres *et al.* 1983)

Major Risks: wall collapse, overgrown vegetation

Current Status of Conservation: Mangrove surrounds the north and northwest sides of Pahnkedira. Preservation is good though many of the walls are covered in moss and creepers. There are crab burrows in some areas. Thick hibiscus trees make access difficult. In the 1960s the entire site was completely cleared. The hibiscus is what has grown back as a result of that clearing.

Brief Description: Pahnkedira lies at the center of Madol pah, the secular portion, lower Nan Madol. Its name is believed to mean “place of proclamation” or “sending forth of messengers.” It may be divided into two areas: the Saudeleur’s residence marked by a wall that once reached 4-5 meters according to Hambruch’s 1910 photographs. These walls were found to no longer be standing to such heights in 1981. The residence of his attendants marked by lower walls. His informants also referred to the large three-stepped platform as the place where the sacred place of Nan Sapwe (sacred eel) or the Temple of Kieil Mwhu formerly stood.

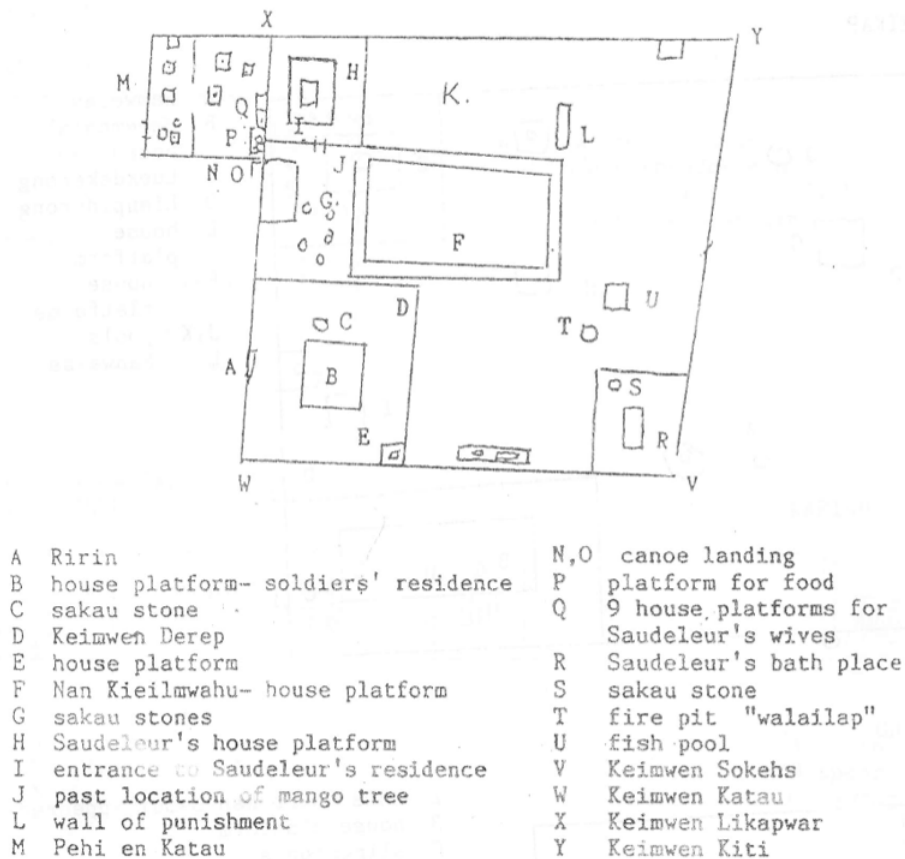
Kubary documents that religious dance, sakau drinking, singing and boat racing occurred around Pahnkedira during the annual celebration of the feeding of the sacred eel. He writes that the king would plant his spear at a certain place at the entrance and everyone would gather in front of the god's house in the middle space, with the commoners to one side and the food offering heaped to the other.

The paved rectangular area jutting off of the islet at the west corner was found to have a large number of sakau stones (14) and it was reported that even more may have been there before and were removed. In the south corner is the guard's residence. In the northern part of the islet is the area that was used as the Saudeleur's garden. Nearby is a platform that was said to be used for torture. In the east corner is the bathing area, firepit, and fish pool.

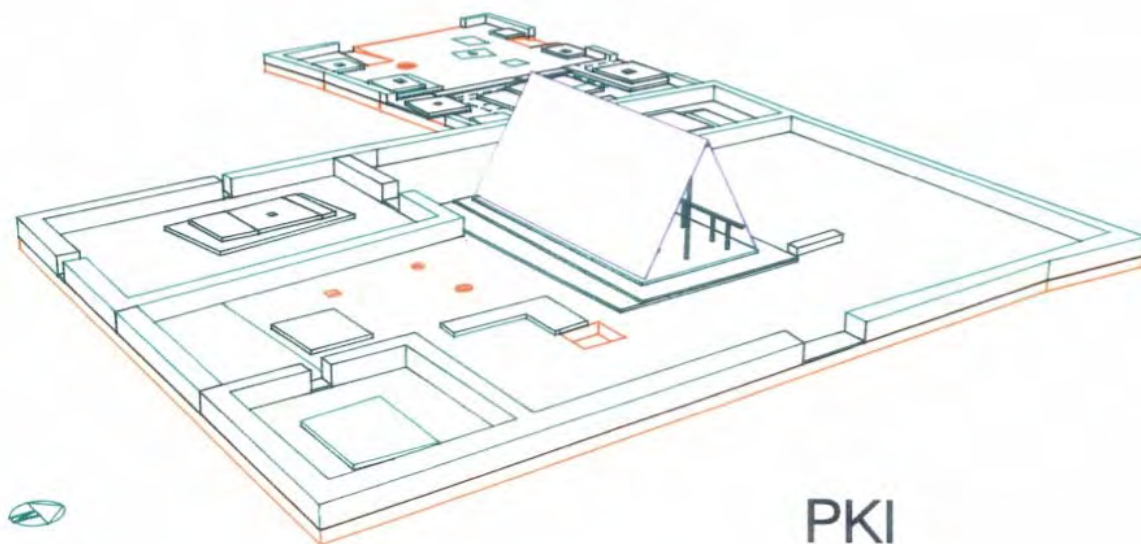
A large amount of artifacts from Pahnkedira are stored at the Smithsonian Institute including hundreds of fishhooks, spondylus shell decorations, and thousands of beads. These artifacts seem to have come from the Saudeleur's house platform. Given the size of the collection there is little need for more excavation.

A bridge seems to have once connected Pahnkedira to Peikapw.

PAHN KEDIRA



Sketch of Pahnkedira (Hadley 1981)



Computer-generated view of Pahnkedira (Ayres 1993:58, Figure 19).

Associated Oral Tradition

When they began to build Pahnkedira, four master builders came from four areas: one from Madolenihmw, one from Kiti, one from Sokehs, and one from Katau. The only one whose name is clear among them is Kideumanien, the assistant from Sokehs. There are four corners in that place (Pahnkedira). The assistants divided the work of these four corners. As they began to pile stones on these corners they founded them on certain kinds of spiritual power; and they said to one another that should any corner crumble, the area which it represented would come upon hard times or be destroyed. This is what they decided when they undertook the work.

In the German period in September 1910, the Sokehs corner crumbled for no apparent reason. And in the following month on October 18, the people of Sokehs killed the German governor, Gustav Boeder. This produced a time of trouble: a war took place between the people of Sokehs and the Germans. Sokehs was defeated by the Germans and fifteen people were executed and four hundred twenty-six were exiled to Yap and Palau.

So the words of the master builders came to pass according to what they decided long ago. Sokehs was destroyed and had no more inhabitants. Outsiders have inhabited Sokehs ever since.

The work of Pahnkedira was extremely important and different from the work on other islands because this place was built to become the residence of the High Chiefs, the home of the leader of Pohnpei. This is how important this place was.

There was only one place of entrance into Pahnkedira; this place was named Ririn (ladder). The man who stood and guarded this place had the title Kous (who art thou). He asked the identity of those who paddled and came to that place. All the high titles which concern Ririn were the ones who directed the work at that spot. There is a house foundation there. This was their residence, and also that of the warriors who guarded all of Pahnkedira, whom the man

Pwekin Deleur commanded. There is a sakau stone in front of the ceremonial house foundation. Whenever the Saudeleur or the Nahnmwarki came to that place, they used that sakau stone.

In the same enclosure there is a corner named Keimwen Derep in commemoration of the legendary hero Sotokawai who presented the feather of a rare bird known as Derepeiso to the Saudeleur. In yet another corner is a small house foundation in which one or two persons lived.

In the center of Pahnkedira is a huge ceremonial house foundation which they named Nankieilmwahu. In this ceremonial house are two pits. Outside the ceremonial house, in the stone oven area, is the place where the sakau stones were. And next to the sakau stones was a large house foundation; this place was where the Saudeleur performed his own prayers. There is a large sleeping house which sits on a high altar: this large house was the royal residence of the Saudeleur. There was only one place for entering this residence. Long ago a Ponapean mango tree stood next to the entrance to the residence, and two birds which resembled parrots lived in it and guarded the place.

Next to the royal residence was a place where the Saudeleur planted dry land taro and sugar cane, his own farm.

Outside the ceremonial house in line with the farm was a stone wall. This was a place for punishment for those people who committed great crimes. People had to stay there in the sun and rain and later they found one of two things: reprieve or death.

There is a place, an island, which is attached to Pahnkedira which has the name Pehi en Katau. This was also part of Pahnkedira. A cluster of houses existed; these were houses of pleasure, nine houses (homes of the Saudeleur's wives). There are also two canoe landings at this place. Another place exists in the corner abreast of Ririn; this is the place called Rasalap. This is where all food which came from various places on Pohnpei was left, and this was food for the High Chiefs. Sou Kampul, the chief lieutenant to the Saudeleur, had a house beside Rasalap. The Saudeleur's other wives lived in the houses of pleasure. One Saudeleur had forty wives. On the northeast side of Pahnkedira was a bathing place. This was where the Saudeleurs bathed and was where their food was stored.

A sakau stone also exists. Sakau was pounded whenever he went there. Next to that location is where they usually built a fire for Pahnkedira, which they called Walailap.

And there is still a spot in which they placed live fish, to be kept alive and used for food for the Saudeleur. The varieties of fish were always changed there.

There was also a small house foundation and a few walls along with two holes, the purposes of which are not clear.

The Sokehs corner is on the northeast side. the Madolenihmw corner is on the southwest side. The Katau corner is in the southeast and the Kiti corner is on the northwest side of this location. There is another name for the Madolenihmw corner, Keimwen Likapwar. Likapwar means there was no one who went there because this was where the Saudeleur's residence was.

The Katau corner, which is believed to represent Kosrae, collapsed in the mid-19th century at the same time as disease introduced by contact with European whalers and missionaries led to the near collapse of the entire population to less than 300.

References

- Athens 1980b, 1983, 1984
- Ayres 1983, 1985, 1990, 1993
- Ayres *et al.* 1989
- Ayres and Haun 1981
- Ayres, Haun, and Mauricio 1983
- Ayres, Levin and Seikel 2012
- Bath and Athens 1990
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- Kolb 2012
- Kubary 1874
- Morgan 1988
- Panholzer and Mauricio 2003



38 Peinmwek

Alternative names: Pein Maik (Christian 1899), péi en müéik (Hambruch 1936), Pei en Mueik (Athens 1980b), Pein Mwek (Ayes 1983), Peinmwek (Ayes 1983; Hanlon 1988; Mauricio 1986); Peienmueik (Morgan 1988), Peinmwehk (Ayes 1985)

Area: 27x25m (Hambruch), 27x27m (Ayes)

Major Features: two house foundations

Current Status of Conservation: wall collapse due to settling

Brief Description: There are two house foundations: one is large, one is small. It appears that an important person lived there because the large house foundation is very nice and somewhat elevated. Shell net sinkers and shell adzes have been collected from here.

Associated Oral Tradition: The name of this islet may be translated as “the altar of the mwehk tree” referring to the tree *Glochidion ramiflorum* that is found in flat coastal areas. The Ethnobotany of Pohnpei describes the usefulness of the plant. Leaf tips of the plant were used to bath in to be fresh. It was used to make medicine taste good. Eight young leaves are used to cure a woman’s nervousness about leaving the house. It could be used to stimulate the appetite and cure infection. Sometime it would be placed on a new born’s belly button. Depression, abdominal pain, asthma, conjunctivitis and to cleanse the uterus. It was a very valuable plant.

References

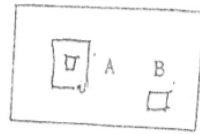
Athens 1980b

Ayes 1983, 1985, 1993b

Balick *et al.* 2009

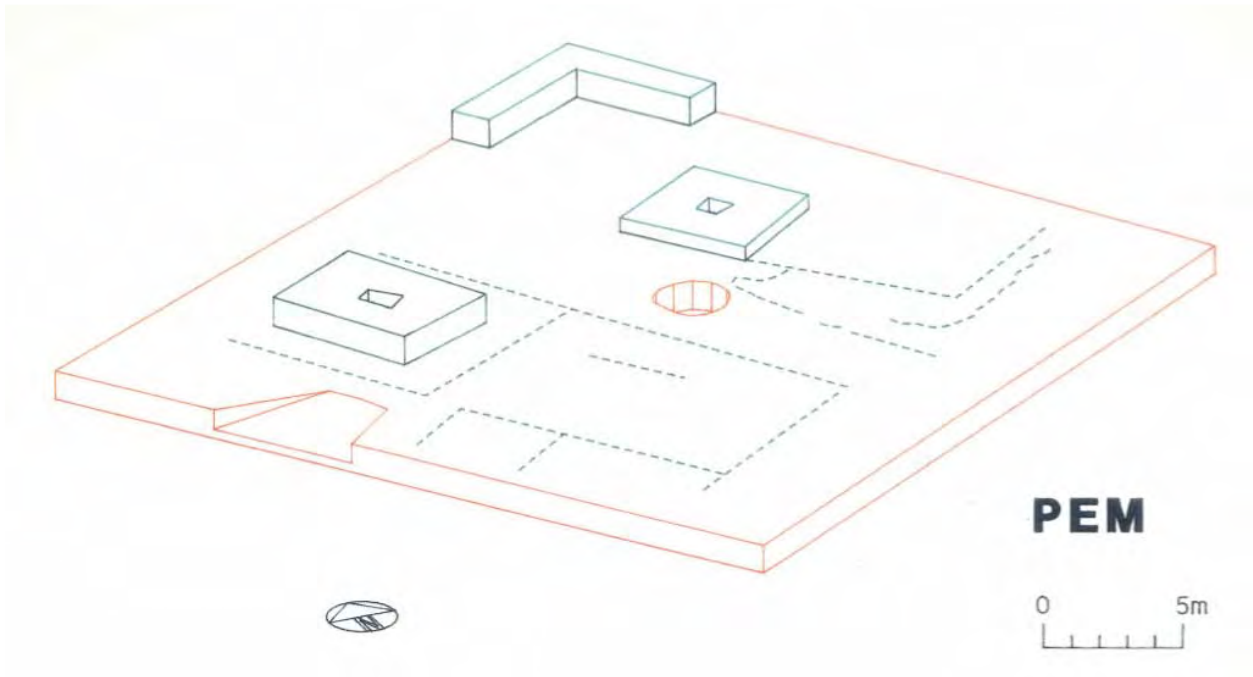
Christian 1899
Hadley 1981
Hambruch 1936
Hanlon 1988
Mauricio 1986
Morgan 1988

PEHI EN MWEIK



A large house platform
B small house platform

Sketch of Peimweik (Hadley 1981)



Model view of Peimweik (Ayres 1993)



39 Peikapw

Alternative names: Pei kap (Kubary 1874), Pei-Kap (Christian 1899), péi kăp (Hambruch 1936), Peikap (Bernart 1977; Hadley 1981; Morgan 1988), Pei Kap (Athens 1980b), Paikapw (Ayres 1983), Pei Kapw (Ayres 1983)

Area: 115x113m (Hambruch), 113x113m (Ayres), 110x112 (Morgan)

Major Features: several pools and house platforms

Current Status of Conservation: wall collapse due to settling

Brief Description: Peikapw islet is of an impressive size and holds a central position within the Pahnkedira complex

Associated Oral Tradition: Peikap serviced the Saudeleurs' residence on Pahnkedira. Many things which exist on this island were important to their health and their pleasure. This was the place where the high priests usually stayed at the time of the Great Ceremony called the Prayer to Nahnisohnsapw. This was where the high priests came together when they were going to pray. And as for the Saudeleurs and the Nahnmwarkis this was the place where they stayed, on the day of that prayer.

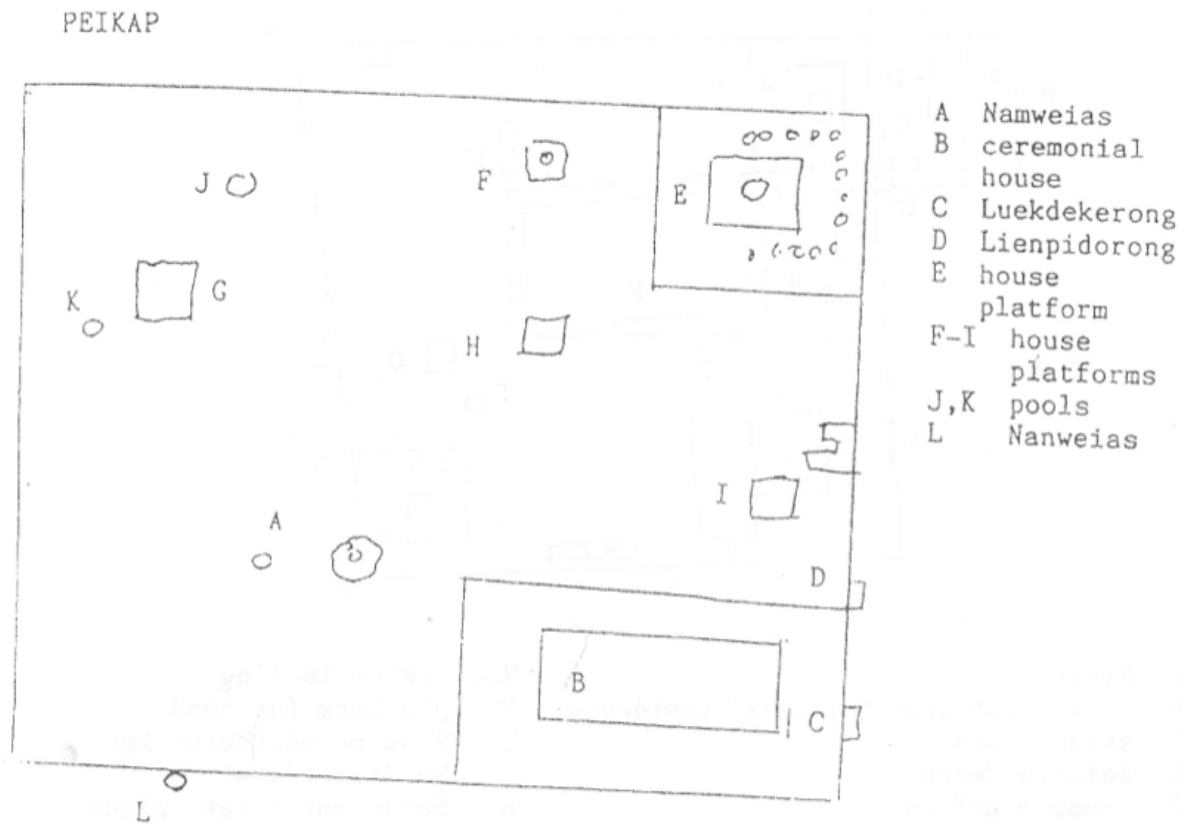
There is a pool there called Namweias. This was where they viewed their bodies. They saw themselves or their spirits in that pool. A pool named Peirot exists beside it. Here they viewed and knew what was happening both and beyond Pohnpei. These two pools had guards, two men whose titles were Oun Namweias and Oaron Namweias: because no people were to appear there, only the High Chiefs. There is a ceremonial house foundation on Peikapw and a rock for the hand dance outside of that ceremonial house foundation. This is where beautiful women came together and performed the Sapei. At such times the High Chiefs viewed the pretty women and chose from them those whom they desired, and took them for wives.

There are two stones upon the wall of that island. Two beautiful women became those rocks. Their names were Luekdekerong and Lienpidorong. There were several women who became

rocks which are in a stone burial vault there. Their names are unclear. There are also four house foundations and two pools or holes. A rock is located in the channel. Its name is Nanweias and it is a turtle. This is where the priests carried the sacred turtle and put it on the turtle stone four times. After this they took this turtle to Idehd and used it for prayers.

References

- Athens 1980b
- Ayres 1983, 1993
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Kubary 1874
- Morgan 1988
- Seikel 2011



Sketch of Peikapw (Hadley 1981)



43 Idehd

Alternative names: itet (Hambruch 1936), Iteet (Bernart 1977), Itet (Athens 1980a, 1980b; Kubary 1874), Ideht (Bath and Athens 1990)

Area: 42x30 meters

Major Features: ash pile, house platform

Radiocarbon Dates: AD 1320-1445, 1269-1386, 1211-1285 (Smithsonian 1965, Athens 2007); AD 1468-1631, 1301-1405, 1271-1376 (Athens 2007)

Current Status of Conservation: The area around the footpath marked on Athens' map is still largely clear. The enclosure walls are coated in creepers and even with the trees and vegetation growing on the midden mound it is largely intact. Mangrove grows just off the southeast side and most of the trees grow on the west side of the islet.

Brief Description: This is a small square islet with an internal wall of medium height. A path extends from the channel inward but this is likely of more recent construction. The inner wall divides the cooking area marked by large water-worn cobbles from the large pile of ash from where the major dates for the site were taken.

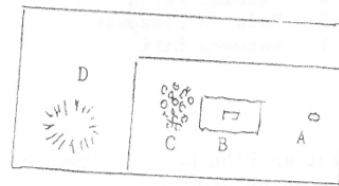
Associated Oral Tradition: This was the island named Idehd. The man who took care of this had the title Nahnmadau en Idehd. This is where the great religious ritual took place once every year. This was a religious ceremony named Pwong Lapalap. When this ceremony began, they called it the Prayer of Nahnsohnsapw, which they performed for the Great Spirit. But the symbol of this prayers was a salt water eel whose name was Nan Samol. Nan Samol lived under the island of Idehd, and there is a hole where it used to appear and was visible. This was

the place where the respect and power of the High Chiefs originated. Nan Samol was the visible symbol for the Great Spirit. A small house foundation exists in the center of an altar, as well as three hundred thirty three slingstones. It is said that Isokelekel and his compatriots used these slingstones when they took Pohnpei. Beside the altar is a small hill; this was where the stone oven for the turtle was made at times of prayer. Ashes and small stones created that small hill. They called that hill the Hill of Idehd.

References

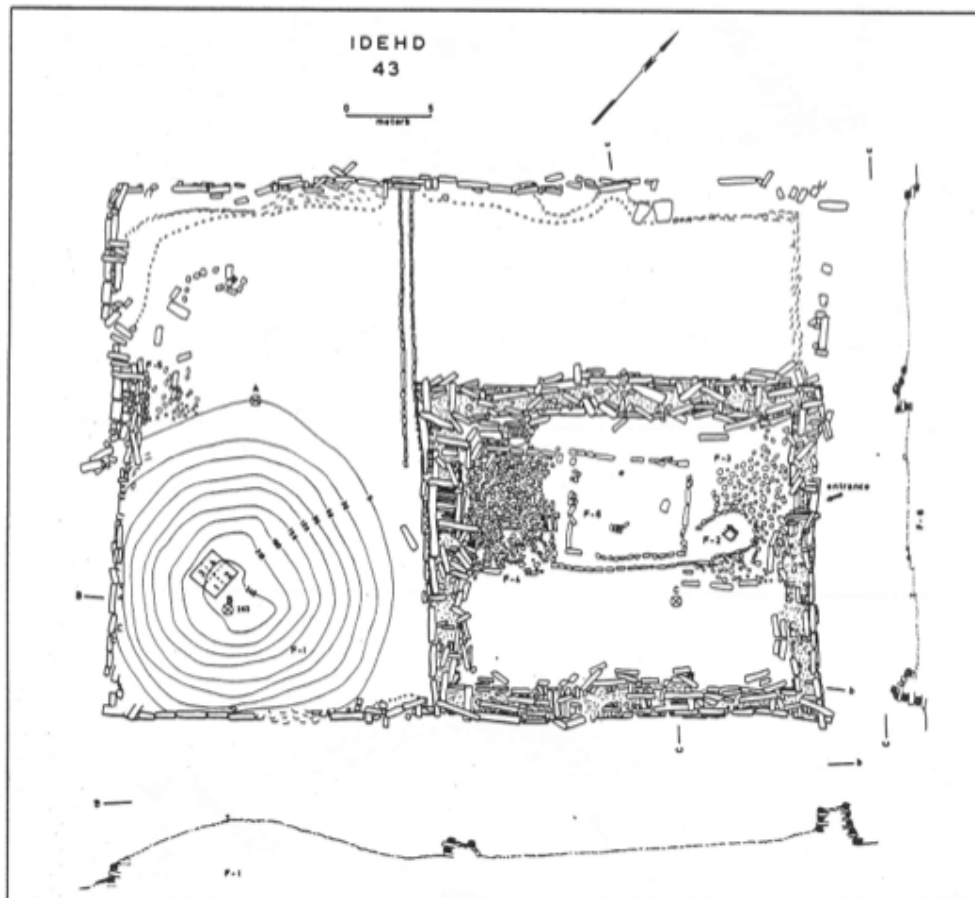
- Athens 1980, 1985, 2007
- Ayres, Levin and Seikel 2012
- Bath and Athens 1990
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Kubary 1874
- Smithsonian 1965

IDEHD



- A hole where Nan Samol appeared
- B house platform
- C slingstones
- D Dol en Idehd, ash pile

Sketch of Idehd (Hadley 1981)



Archaeological map of Idehd (Athens 1985)



44 Peitaup

Alternative names: réi táüb (Hambruch 1936), Reitaub (Ayres 1983; Morgan 1988).

Area: 32x31m (Hambruch)

Current Status of Conservation: heavy mangrove encroachment

Brief Description: This islet was reported to have been occupied in the early 20th century (Hambruch 1936).

References

Ayres *et al.* 1983
Hambruch 1936
Morgan 1988

45 Dekehtik

Alternative names: take tĭk, Dekehtik (Athens 1984), Take tik (Hambruch 1936), Taketik (Morgan 1988).

Current Status of Conservation: heavy mangrove encroachment

Brief Description: Dekehtik means “small island” (Panholzer and Mauricio 2003).

References

Ayres *et al.* 1983
Athens 1984
Hambruch 1936
Morgan 1988



46 Pahnisou

Alternative names: pān išo (Hambruch 1936), Pahniso (Ayres 1983; Hanlon 1988), Paniso (Morgan 1988), Pahnisou (Mauricio 1986)

Area: 36x17 (Hambruch)

Current Status of Conservation: heavy mangrove encroachment, wall fall

References

Ayres 1983
Hambruch 1936
Hanlon 1988
Mauricio 1986
Morgan 1988



47 Peinieir

Alternative names: pen i éir (Hambruch 1936), Peinair (Ayes 1983; Hanlon 1988; Ayres 1985; Ayres *et al.* 1989; Ayres 1993).

Area: 28x35m (Hambruch), 15x30m (Ayes)

Major Features: house platforms (Ayes *et al.* 1989)

Current Status of Conservation: heavy mangrove encroachment, inundated at high tide

Brief Description: This islet is deep in old mangroves. Few islets are found around it making it hard to locate. Stone pounders, a shell adze, and shell net sinkers have been collected from here.

Associated Oral Tradition: The name Peinair may be translated as “the altar in the south” likely referring to it as lying south of Pahnkedira.

References

Ayes 1983, 1985, 1993

Ayes *et al.* 1989

Hambruch 1936

Hanlon 1988

Mauricio 1986

Morgan 1988



48 Mand

Alternative names: Mant (Christian 1899; Morgan 1988), mant (Hambruch 1936)

Area: 65x33m (Hambruch)

Current Status of Conservation: This islet is rather clear. While some of the stones are out of place it is relatively well preserved.

Brief Description: This islet seems to be separate from the others and out on its own and is thus rather interesting in its location. It is also at an odd angle to others. Its exact function is unknown.

References

Christian 1899
Hambruch 1936
Morgan 1988

49 Palakapw

Alternative names: Pal-akap (Christian 1899), pēl a kāp (Hambruch 1936), Palakap (Bernart 1977; Bath and Athens 1990), Pel Akapw (Hadley 1981), Pelakapw (Hanlon 1988)

Area: 105x90m (Hambruch), 89x96m (Ayres), 97x100 (Morgan)

Major Features: ceremonial house foundation, house foundations, one stone burial vault

Radiocarbon Dates: AD 1350-1495 (Athens 1990)

Current Status of Conservation: wall collapse due to settling

Brief Description: This is a large islet very similar in design to Torong and may well have been built at the same time, though its use at that early time could have been much different than at later times

Associated Oral Tradition: A ceremonial house foundation exists on the island of Pel Akapw; this was the first ceremonial house in the Nahmwarki Period which had the appearance of the ceremonial houses of the modern day. In the Saudeleur period the appearance of the ceremonial house was different than that of today. In the Saudeleur period they pounded sakau outside of the ceremonial house. But the ceremonial house which they built at Pel Akapw had sakau stones inside as they do today. This is the kind of ceremonial house which is named Koupahleng.

Outside the ceremonial house are several house foundations, one stone burial vault and certain kinds of house foundations about which the uses are unknown.

References

- Ayres *et al.* 1983;
- Athens 1985;
- Athens 1990
- Bath and Athens 1990
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Hanlon 1988



Archaeological map of Palakapw (Athens 1985)

50 Dorong

Alternative names: torōn (Hambruch 1936), Toron (Athens 1980a, 1980b), Dorong (Ayres 1983; Athens 1983, 1984; Hanlon 1988; Morgan 1988; Ayres 1993; Panholzer and Mauricio 2003; McCoy and Athens 2012), Derong (Panholzer and Mauricio 2003)

Area: 96x102m (Hambruch, Morgan), 90x104 (Athens)

Major Features: 6 stone platforms, 1 U-shaped nahs, walls, enclosures, tunnel cavities, and large reef pool

Major Risks: wave action

Current Status of Conservation: Dorong is surrounded by mangrove that has penetrated portions of the islet interior. The islet is covered in trees and vines, which prevent cerepers from growing for the most part. Sediment accumulation within a meter of the lake edge was found to be 30cm in depth but is likely deeper in the middle. In general Dorong seems to be in good condition.

Brief Description: The interior is made near exclusively of basalt cobbles. One platform (Feature 3) is composed of double wall header and stretcher construction as is the northeast corner showing special significance of these features. The reef pool, called Le en Kai, is nearly rectangular measuring 70 x 56 meters (3920 square meters). Oysters were said to be harvested from the pool. Hambruch noted that there were two entrances one on the west side (2m) and one on the north side (5m) 91 artifacts were found by Athens on the surface of the islet in the late 1970s most of which were common shell tools. More notable were 9 small conus shell rings with beveled edges and the fact that no historic period artifacts were found. A lot of anadara (*lipwei*) clam shell was found supporting the oral traditions that the islet was used to produce clams.

Many tunnel cavities were observed. Many of these functioned to allow freshwater to feed into the reef pool. One large one in particular was said to be for the sacred eel, saleng iaia. One platform (Feature 3) was said to be a place of worship and two platforms (Features 4 and 6) were said to be for the Saudeleurs.

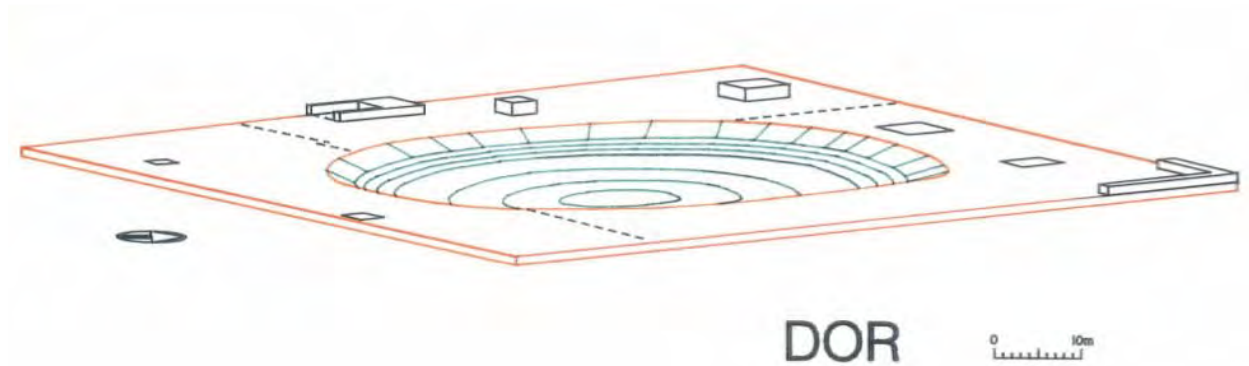
Associated Oral Tradition: Leh means pool and kei is similar to bite. In this pool, people fished for clams. They fished for this shellfish in the following manner: they took coconut fronds and set them into the pool for awhile. The clams came and closed onto the fronds; people dove and got the fronds, brought them to the surface and placed them together somewhere at the edge of Lehnkei. Many clams bit and held tightly and people removed the clams from the fronds and placed them in baskets. These they took to the high chiefs who then distributed them among all the people.

There are several holes beneath the land that run from the channel outside of Lehnkei. But there is one hole in the center. It is said that it goes underground and appears far away in the harbor of Pahn Nakapw. At times when the tide ebbed they could put a piece of wood in the hole and it would appear in a hole at Pahn Nakapw. The other holes were places where salt water entered and exited at high and low tides.

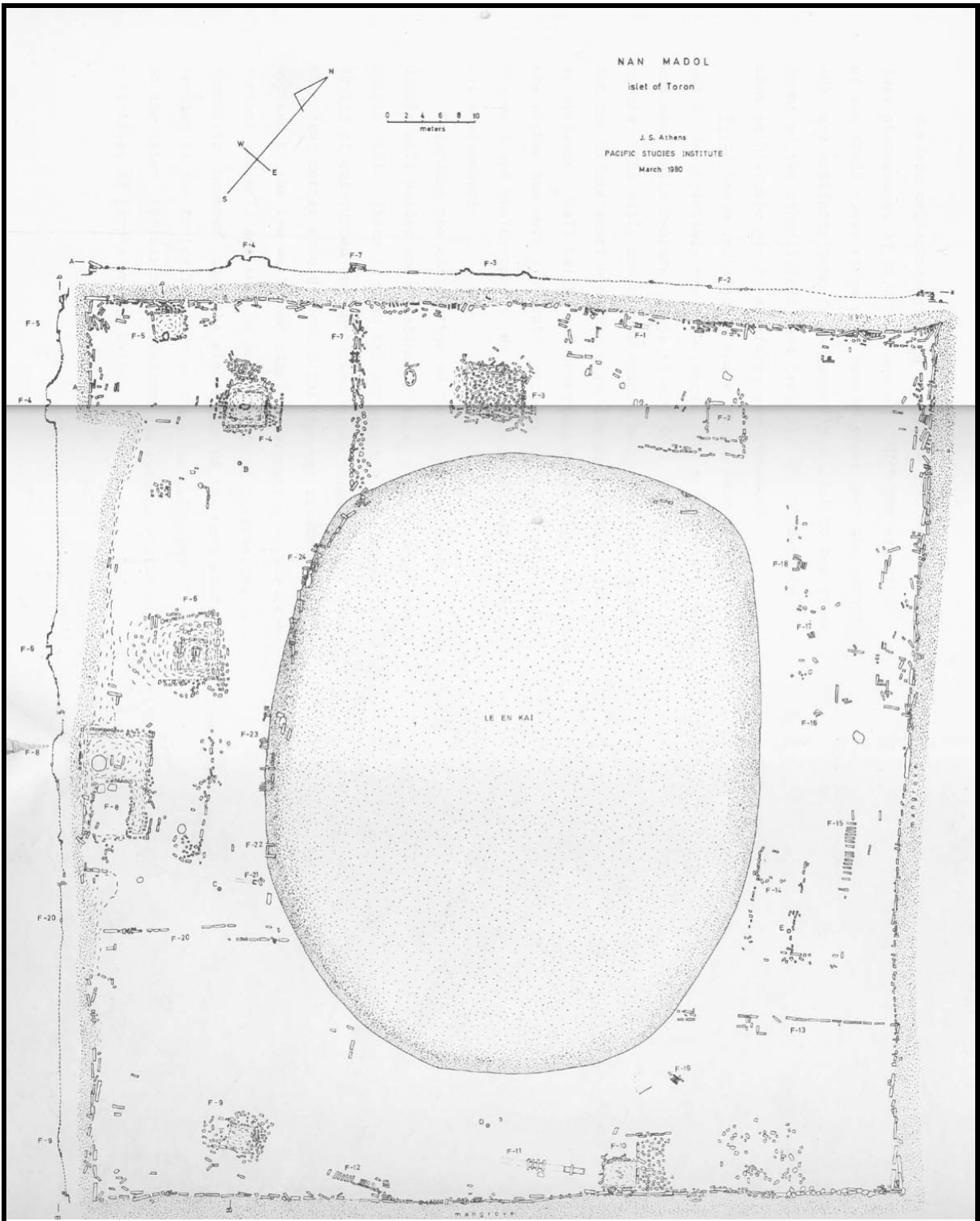
There are several house foundations at Dorong. These places were residences for the High Chief whenever he went there during clam fishing. The other foundations were places which people maintained and resided within. There is one sakau stone which was used when High Chiefs went there. Priests also used this sakau stone when they performed prayers for this (clam) fishing at that place.

References

- Athens 1980a, 1980b, 1983, 1984
- Ayres 1983, 1993
- Ayres, Levin and Seikel 2012
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- Jencks 1970
- McCoy and Athens 2012
- Morgan 1988
- Panholzer and Mauricio 2003



Computer view of Dorong (Ayres 1993)



Archaeological map of Dorong (Athens 1980b)



55 Peinkitel

Alternative names: péi en pān kitel (Hambruch 1936), Pehi en Pan Kitel (Athens 1980b), Peinkitel (Ayres 1983; Ayres 1985; Hanlon 1988; Morgan 1988; Rainbird 2004; McCoy and Athens 2012), Pein Kitel (Ayres *et al.* 1989; Ayres 1993:28; Mauricio 1993; Seikel 2011), Peien Kitel (Jencks 1970)

Area: 48x130m (Hambruch), 63x143m (Athens)

Major Features: three large burial chambers, internal walls

Current Status of Conservation: Some dense hibiscus trees cover portions of Peinkitel but most of it is very clear and in good condition.

Brief Description: This is one of the few structures to be constructed on land. Half of it extends into the water while half is on land. Its outer wall is very impressive and is the first part of the site to be seen when entering from the main path. The style of the tomb is quite different from those elsewhere and is one of the few to show a shared similarity with tombs at Lelu in Kosrae.

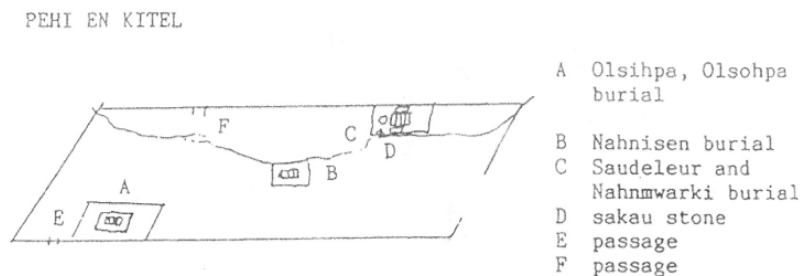
Associated Oral Tradition: Peinkitel is a very important place because it was consecrated as a dwelling of the Saudeleurs when they died. Because of this, no one may enter this place without a specific purpose. This altar contains a special burial vault where the two important men Olsihpa and Olsohpa were buried.

When the Saudeleur or Nahmwarki died nobody knew. Attendants placed the body in a large sleeping mat and tied it together with coir twine and carried and buried the royal body in a burial vault at Peinkitel at night, so that it would not be visible to the people. And afterwards they would elevate the successor to the High Chief, a Saudeleur or a Nahmwarki. After that they would make an announcement of death on the drum or triton shell trumpet. This was when all the people would know that a high chief had died. In the year 1907 the German governor, Viktor Berg, dug up a grave in the High Chiefs' burial vault, and that night the sound of the triton blew. All the people heard it and went into action. They ran to Temwen to the High Chief, but they found that no person had blown the triton. The following day the governor became ill and died in Madolenimw and was taken to Kolonia.

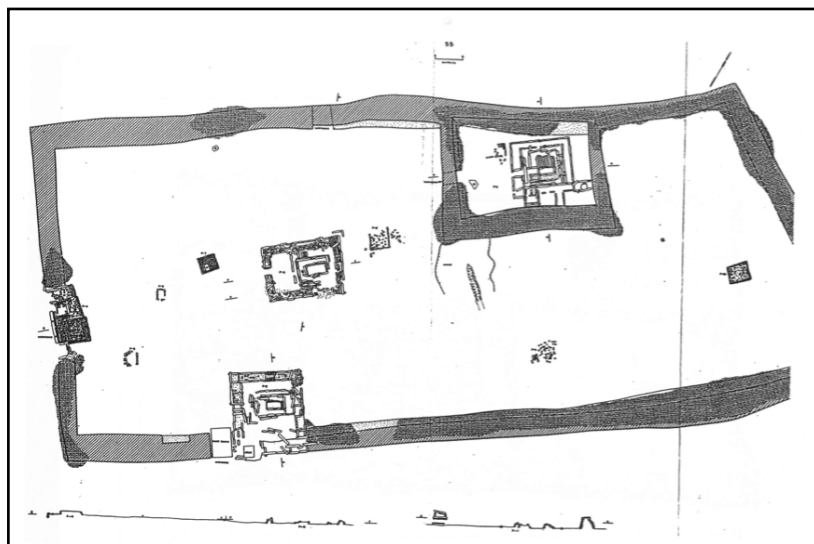
It is said that Governor Berg found several artifacts and the bones of very large people. On Peinkitel are three burial vaults. One is the vault of Olsihpa and Olsihpa. There is also a burial vault for Nahnsen, a man of the Nahniek clan; he was an important man to the Nahmwarki(s). The largest stone burial vault is the most important because it is the grave of the Saudeleurs and Nahmwarkis of the past.

References

- Athens 1980b, 1985
- Ayres 1983, 1985, 1993
- Ayres *et al.* 1989
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- Jencks 1970
- Mauricio 1993
- McCoy and Athens 2012
- Morgan 1988
- Rainbird 2004
- Seikel 2011



Sketch of Peinkitel (Hadley 1981)



Archaeological map of Peinkitel (Athens 1985)



57 Peidoh

Alternative names: Peilo (Christian 1899), péi to (Hambruch 1936), Peitoo (Bernart 1977), Peito (Morgan 1988).

Area: 48 x 64m (Ayres)

Major Features: ceremonial house platform, two enclosures, sakau stone

Current Status of Conservation: deflated soils have left the interior side just barely above the mangrove mud, modern walkway Major Risks

Brief Description: Peidoh consists of a large platform built up with a retaining wall of lava boulders and some superimposed columnar basalt in header and stretcher style. No enclosing wall was evident as is common with other older islets on the inland side. In the first stage the islet may not have had stone foundations for structures in its interior but in late prehistoric and early historic times several house foundations appeared with many constructed of stone taken from the original wall. The filled in area next to a recent walkway was used for constructing two historic house platforms, one of which has imported clay brick incorporated into the foundation. These and two other complexes, multi-tiered stone foundations suggest a high social status for some later islet residents. A large nahs in the southern corner is associated with the historically known Nahnken from the late 1800s. These impressive structures stand up to 3.5 meters above the tidal mud flat. Pottery and stone pounders have been found here

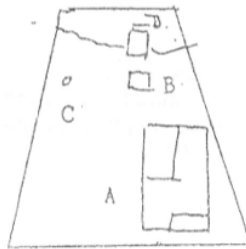
Associated Oral Tradition: There was a Nahnmwarki who lived at Peidoh after they deserted Pahnkedira. This was the High Chief whose burial name was Luhk en Peidoh. This was the

High Chief who, it is said, banished the spirit Isohpau from Nan Madol. A ceremonial house foundation is there, also an enclosure, a sakau stone, and one small enclosure as well

References

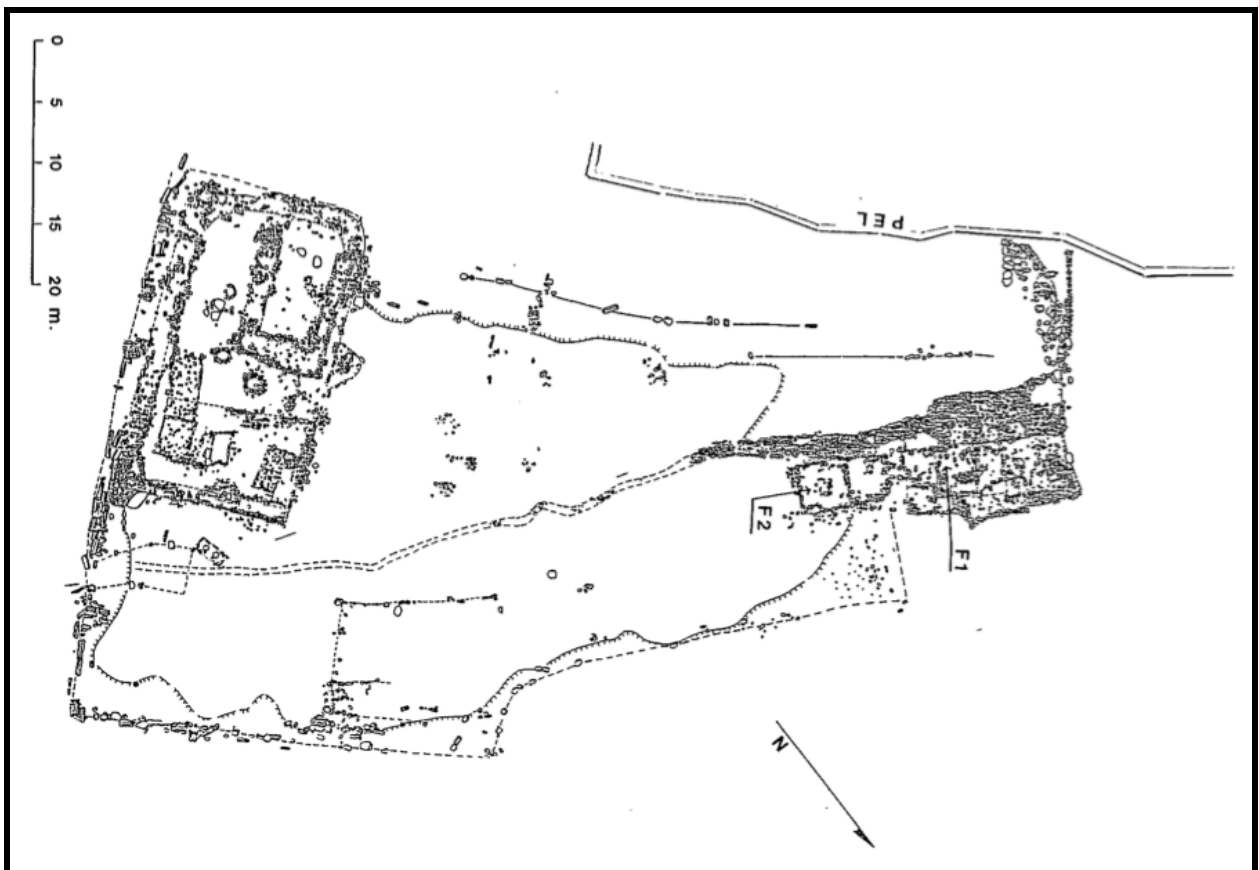
- Ayres 1993a, 1993b
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Morgan 1988

PEIDOH



- A ceremonial house platform
- B enclosure
- C sakau stone
- D small enclosure

Sketch of Peidoh (Hadley 1981)



Archaeological map of Peidoh (Ayres 1993)

58 Pwilel

Alternative names: pūilél (Hambruch 1936), Puilele (Morgan 1988)

Area: 40x50m (Ayres)

Major Features: two house foundations

Current Status of Conservation: This islet is deep in the mangroves and can be difficult to get to. It is somewhat inundated at high tide.

Brief Description: The large islet of Pwilel lies roughly parallel to Dauahdpeidi 10-12 meters away across what would have been a water canal at one time. It is believed to be contemporaneous with Dauahdpeidi and Dauahdpeidak. Only one clearly defined house foundation and one disturbed house foundation were evident at the time of survey in 1987. The surface architecture was simple compared to the more complex architecture of Pahnkedira and others (Ayres 1993).

Associated Oral Tradition: Traditions suggest this islet was the home of priests.

References

Ayres 1993

Hambruch 1936

Morgan 1988

59 Reidipap

Alternative names: réitibob (Hambruch 1936), Reitipup (Bernart 1977), Reitibob (Morgan 1988)

Area: 27x45m, 8x28m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Bernart 1977

Hambruch 1936

Morgan 1988

60 Sapwereirei

Alternative names: tšăp réiréi (Hambruch 1936), Sapreirei (Morgan 1988)

Area: 26x35m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Hambruch 1936

Morgan 1988

61 Peinmei

Alternative names: péi méi (Hambruch 1936), Peimei (Ayres 1983), Paimei (Morgan 1988)

Area: 30x27m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Ayres 1983

Hambruch 1936

Morgan 1988

62 Likindalok

Alternative names: liki tolok (Hambruch 1936), Likindaloke (Hanlon 1988), Likitolok (Morgan 1988)

Area: 53x27m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Hambruch 1936

Hanlon 1988

Morgan 1988

63 Imwiniap

Alternative names: imüin a lap (Hambruch 1936), Imwinahlap (Hanlon 1988), Imuinalap (Morgan 1988)

Area: 30x67m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Hambruch 1936

Hanlon 1988

Morgan 1988

64 Peinuht

Alternative names: péi en üt (Hambruch 1936), Peienut (Morgan 1988).

Area: 19x40m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Hambruch 1936

Morgan 1988

65 Sapwenluhk

Alternative names: tšăp en lük (Hambruch 1936), Sapenluk (Morgan 1988).

Area: 19x35m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936)

References

Hambruch 1936

Morgan 1988

67 Imwinmap

Alternative names: imūin map (Hambruch 1936), Imuinmap (Bernart 1977), Imuin en map (Hambruch 1936), Imwinmah (Morgan 1988), Imwiniap (Mauricio 2003)

Area: 13x25m (Hambruch), 28x30 (Athens)

Current Status of Conservation: This is a low-lying islet and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

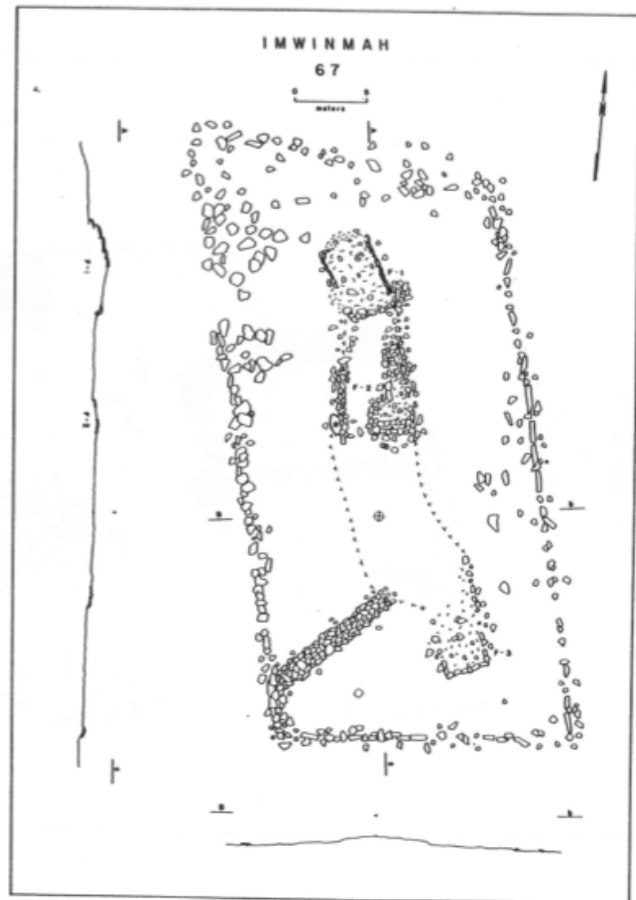
Athens 1985

Bernart 1977

Hambruch 1936

Morgan 1988

Panholzer and Mauricio 2003



Archaeological map of Imwinmap (Athens 1985)

68 Map

Alternative names: map (Hambruch 1936), Pohnmah (Morgan 1988).

Area: 25x19m (Hambruch), 18x21m (Athens)

Current Status of Conservation: This is a low-lying islet and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1985

Hambruch 1936

Morgan 1988

69 Sapwengei

Alternative names: tšáp ueñâi (Hambruch 1936), Tip en ai (Hambruch 1936).

Area: 12x18m (Hambruch, Athens)

Current Status of Conservation: This low-lying islet has partially eroded external walls (Morgan 1988) and is threatened by tidal erosion.

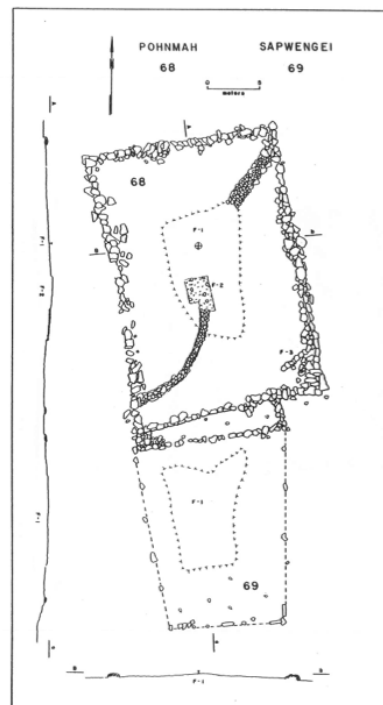
Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1985

Hambruch 1936

Morgan 1988



Archaeological map of Map and Sapwengei (Athens 1985)

70 Sapwolos

Alternative names include: tšáp a loš (Hambruch 1936)

Area: 36x48m (Hambruch), 27x57m (Athens)

Current Status of Conservation: This low-lying islet has partially eroded external walls (Morgan 1988) and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1985

Hambruch 1936

Morgan 1988

Panholzer and Mauricio 2003



Archaeological map of Sapwolos (Athens 1985)

71 Ainiar

Alternative names include: âi ni ār (Hambruch 1936).

Area: 42x35m (Hambruch)

Current Status of Conservation: This is a low-lying islet and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Hambruch 1936

Morgan 1988

Panholzer and Mauricio 2003

72 Sapwenpwe

Alternative names: tšăp ũen pŭe (Hambruch 1936).

Area: 34x57m (Hambruch), 24x66m (Athens)

Major Features: burial feature

Radiocarbon Dates: AD 150-510, AD 1045-1340 (Athens 1990)

Current Status of Conservation: The islet is covered in a scatter of trees and vines, and tidal flooding is a major issue. Flooding seems to have deposited silt on the islet surface. There is a thicket growing in an area, which was likely constructed to connect the two islets that became Sapwenpwe. In some areas the islet edge isn't clearly defined, which is also noted in Athens' map.

Brief Description: This islet has a high percentage of CST pottery supporting a very early construction (Athens 1990). It is an islet that is remembered as a residence of priests (Hambruch 1936:33), and a burial feature has been reported (Seikel 2011:449).

References

Athens 1990

Athens 1985

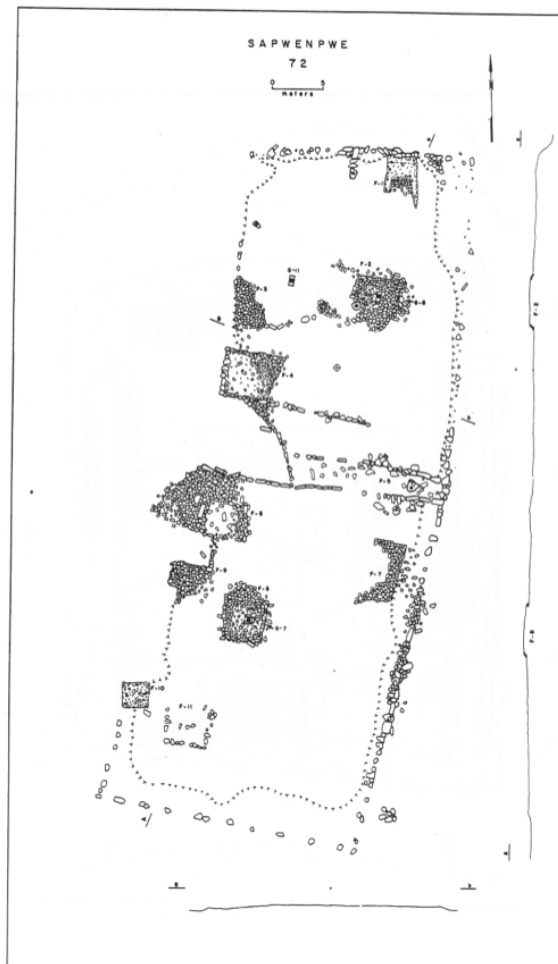
Ayres, Levin and Seikel 2012

Hambruch 1936

Morgan 1988

Pietruszewsky and Douglas 1985

Seikel 2011



Archaeological map of Sapwenpwe (Athens 1985)

73 Peiniap

Alternative names: péi ni āp (Hambruch 1936).

Area: 34x12m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Hambruch 1936

74 Sapwakaṗw

Alternative names: tšāp a kap (Hambruch 1936), Sapwakaṗw (Hanlon 1988), Sapakaṗ (Morgan 1988).

Area: 29x15m (Hambruch)

Current Status of Conservation: There are trees and vines scattered across this islet and mangrove encroaching along its edges, particularly the east side. The vegetation is thicker on the northwest side of the islet. The islet floods during high tide (Ayres, Levin and Seikel 2012).

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Ayres, Levin and Seikel 2012

Hambruch 1936

Hanlon 1988

Morgan 1988

Panholzer and Mauricio 2003

75 Sapwendau

Alternative names: tšāp en taũ (Hambruch 1936), Sapentau (Morgan 1988).

Area: 40x34m (Hambruch), 42x42m (Ayres)

Current Status of Conservation: There are a number of large trees growing on the islet surface (Ayres, Levin and Seikel 2012)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Ayres, Levin and Seikel 2012

Hambruch 1936

Morgan 1988

76 Sapwuhtik A

Alternative names: tšáp ů tik (Hambruch 1936).

Area: 14x20 (Hambruch)

Current Status of Conservation: This low-lying islet has partially eroded external walls (Morgan 1988) and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1985

Hambruch 1936

Morgan 1988

Panholzer and Mauricio 2003



Archaeological map of Sapwuhtik (Athens 1985)

77 Sapwuhdir

Alternative names: tšāp a tūr (Hambruch 1936), Sepedir (Morgan 1988).

Area: 33x34m+31x35m (Hambruch), 30x36m+33x57m (Athens)

Current Status of Conservation: Sapwuhdir is impacted by tidal flooding and mangrove encroachment. There is a large tree which has taken over a portion of the southeast side of the islet. Even with the flooding and vegetation growth, most of the structures seem to be in similar condition to the map produced by Athens. (Ayres, Levin and Seikel 2012)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

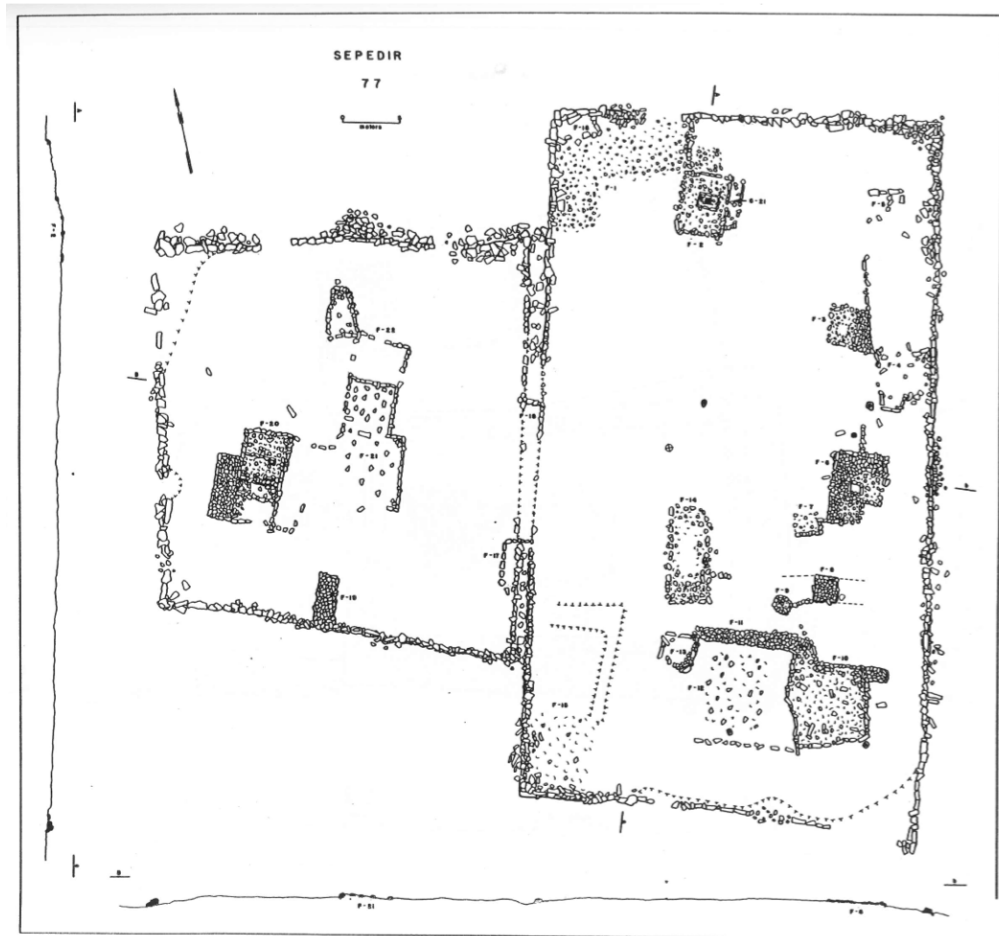
Athens 1985

Hambruch 1936

Morgan 1988

Pietruszewsky and Douglas 1985

Panholzer and Mauricio 2003



Archaeological map of Sapwuhdir (Athens 1985)

78 Nihmokemok

Alternative names: ni mögemög (Hambruch 1936).

Area: 35x28 (Hambruch)

Current Status of Conservation: There are more trees and vines located on the east side of the islet than the west, which is largely clear aside from some encroaching mangrove spikes. There is evidence of tidal flooding, which is more marked on the west side of the islet. The small washed-out area on the northeast corner of the Nihmokemok seems more pronounced than noted on Athens' map. There is a fallen tree on the southeast side of the islet near the sakau stone. (Ayres, Levin and Seikel 2012)

Brief Description: This islet is at the edge where the thick mangroves begin. There are several platforms at its center.

Associated Oral Tradition: The word mokemok refers to the arrowroot plant the root of which was ground to produce a starch. It is possible that this plant was produced on the islet. This islet was home to priests (Hambruch 1936).

References

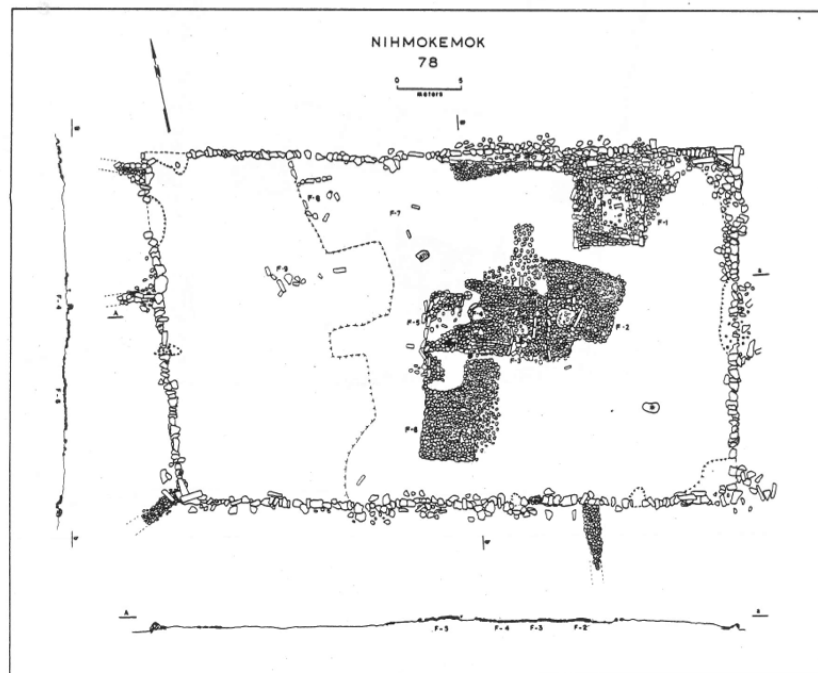
Athens 1985

Ayres, Levin and Seikel 2012

Hambruch 1936

Morgan 1988

Panholzer and Mauricio 2003



Archaeological map of Nihmokemok (Athens 1985)



79 Nihrik

Alternative names: ni rik (Hambruch 1936), Nirik (Morgan 1988).

Area: 24x23 (Hambruch)

Major Features:

Current Status of Conservation: Heavily inundated at high tide with coral fill spilling out.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

Referenes

Hambruch 1936

Morgan 1988

80 Nihdor Reidipap

Alternative names include: ni tōr (Hambruch 1936), Nihdor (Hanlon 1988; Panholzer and Mauricio 2003), Nitor (Morgan 1988).

Area: 16x25m (Hambruch)

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Hambruch 1936

Hanlon 1988

Morgan 1988

Panholzer and Mauricio 2003



81 Dauahdpeidak

Alternative names: Paupeikaloma (Christian 1899), taũ at péitāk (Hambruch 1936), Jauatpeitak (Bernart 1977), Tauuipeitak (Morgan 1988).

Area: 28x21m (Hambruch), 30x19m (Ayes)

Major Features: one burial platform and one house foundation

Radiocarbon Dates: 1950 BP (Ayes 1993)

Current Status of Conservation: Tidal action has moved the stones around and weakened the walls, mangrove grows thickly in places.

Brief Description: This islet is located in Upper Nan Madol (Madol Powe) near the Temwen shoreline and stands one meter above the surrounding mangrove mud. The construction is different from many islets in that large boulders rather than basalt columns were used primarily for walls and foundations. This pattern can be seen elsewhere in Nan Madol though. One high stone platform was probably used for burial, and a lower, more typical, house foundations are the only major architectural features on the old islet surface (Ayes 1993). The presence of faunal remains from large fish, dog, and turtle are indicative of ritual and status feasting (Ayes 1992). The very early radiocarbon date suggests there should be intermixing of the early pottery-producing culture. Pottery, stone tools, shell adzes, net sinkers, and perforated teeth for decoration have all been collected from the islet.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

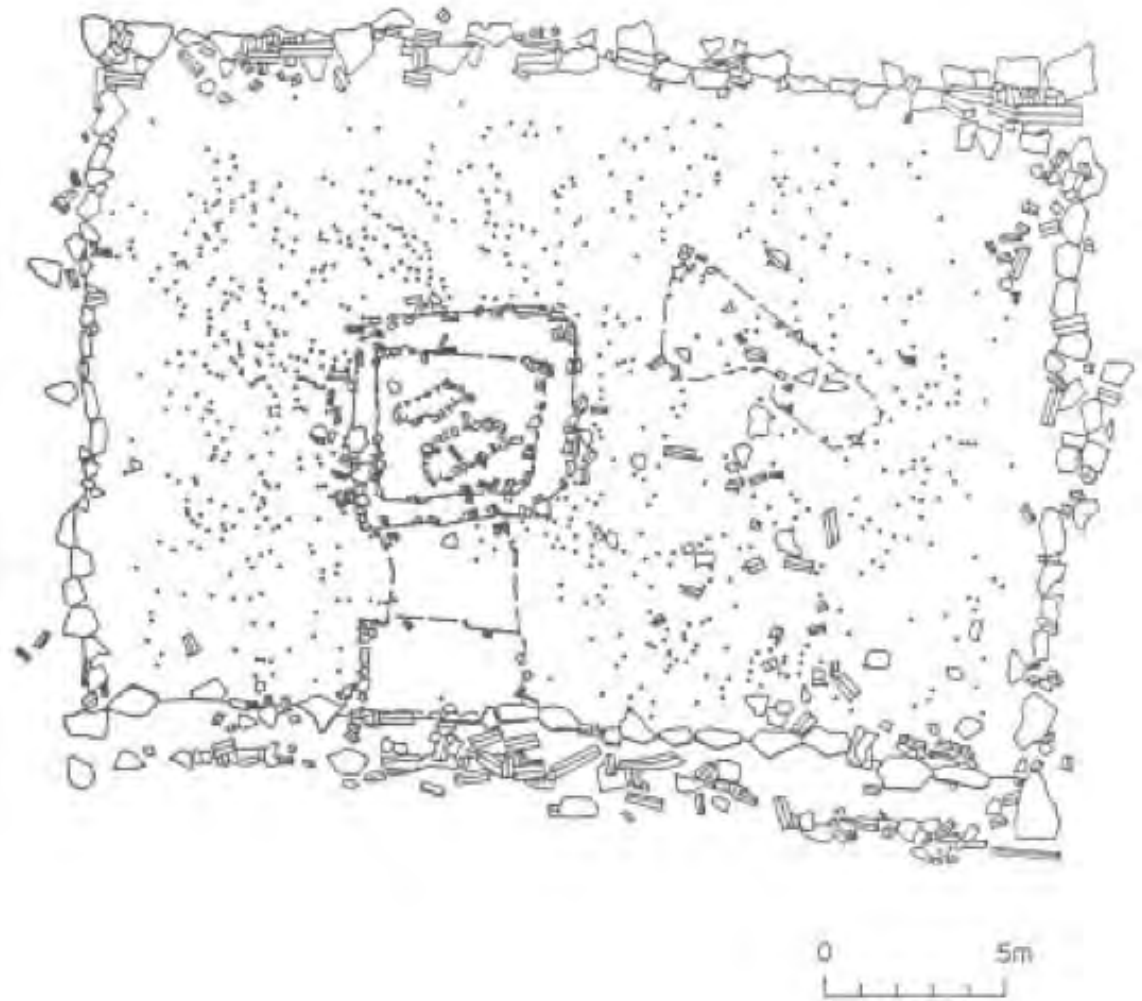
Ayes 1992, 1993a, 1993b

Bernart 1977

Christian 1899

Hambruch 1936

Morgan 1988



Dauhpeidak islet map (Ayres 1992)



82 Pohndake

Alternative names: pon take (Hambruch 1936), Pohndake (Hanlon 1988; Ayres 1993), Pon Take (Morgan 1988).

Area: 25x26m (Hambruch), 36x21m (Ayres)

Major Features: two house foundations

Current Status of Conservation: The conservation of this islet is good considering its location within the mangroves. It is easy to walk around and the surface is visible throughout.

Brief Description: Pohndake consists of two small islets linked together to form one larger one of double the size. Only two small house foundations were recorded on the islet surface in 1987 and both appear to be constructed late. However, no historic artifacts were found to suggest that these houses were in use as late as the AD 1800s (Ayres 1993). Several artifacts have been found on this islet including several grinding stones suggesting medicine may have been produced here .

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Ayres 1993
Hambruch 1936
Hanlon 1988
Morgan 1988



83 Dauahdpeidi

Alternative names: taū at péiti (Hambruch 1936), Jauatpaiti (Bernart 1977), Tau at peiti (Athens 1980a), Tauatpeiti (Morgan 1988).

Area: 35x25 (Hambruch), 45mx25m (Ayres)

Major Features: several small house foundations and one large one (Ayres 1993)

Current Status of Conservation: There are many fallen trees and dead vegetation that needs to be removed. The islet is inundated at high tide.

Brief Description: The construction of this islet is very similar to Dauahdpeidak lying three meters away. The two are believed to have been contemporaneous. Neither has an enclosing wall. Several small house platforms and one large, elevated house platform make up the internal architecture of the islet. The platforms, like at Reitik, are believed to post-date the time of initial islet construction and no specific architectural features may be associated with the initial islet use. Pottery, stone tools, and a shell adze have been collected from here (Ayres 1993).

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1980a

Ayres 1993a, 1993b

Bernart 1977

Hambruch 1936

Morgan 1988



84 Usenpei

Alternative names: ũš en péi (Hambruch 1936), Usenpei (Hanlon 1988; Morgan 1988).

Area: 38x20m (Hambruch)

Major Features: one small foundation

Current Status of Conservation: There is heavy foot traffic across the islet as the path bisects its middle from one corner to another.

Brief Description: The islet is rectangular in shape and is next to one of the main channels. Some artifacts were found on the island including a few small pieces of pottery showing the islet to be quite old.

Associated Oral Tradition: The name of the islet refers it being an extension of Peilapalap and therefore suggests it was built at the same time or shortly after (Masao Silbanus).

References

Hambruch 1936

Hanlon 1988

Morgan 1988

Panholzer and Mauricio 2003



85 Sapwohng

Alternative names: tšap on (Hambruch 1936), Tsap on (Athens 1980a), Sapon (Morgan 1988).

Area: 15x24m (Athens)

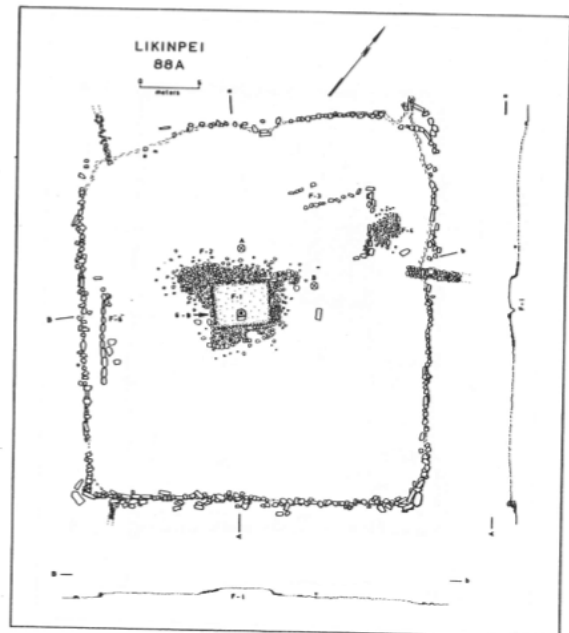
It is mistakenly designated Likinpei B by Athens (1985) and Morgan (1988:63).

Current Status of Conservation: Sapwohng is partly overgrown by trees and vines and floods during high tide. The platform is almost completely overgrown. The footpath heading towards Likinpei on Athens' map is still in place though part has been covered by silt and sand from tidal shifts. (Ayes, Levin and Seikel 2012).

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1980a, 1985
 Ayres, Levin and Seikel 2012
 Hambruch 1936
 Morgan 1988



Archaeological map of Sapwohng (Athens 1985)



86 Sapwenpei

Alternative names: tšap en péi (Hambruch 1936), Sapenpei (Morgan 1988).

Area: 38x20m (Hambruch), 39x54m (Athens)

Current Status of Conservation: This is a low-lying islet and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Hambruch 1936

Morgan 1988

87 Sakapeilong

Alternative names: šak a péilon (Hambruch 1936), Sakakpeilong (Hanlon 1988; Panholzer and Mauricio 2003:93), Sakapeilon (Morgan 1988).

Area: 35x56m (Hambruch), 33x60m (Athens)

Current Status of Conservation: This is a low-lying islet and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Hambruch 1936

Hanlon 1988

Morgan 1988

Panholzer and Mauricio 2003



88 Likinpei

Alternative names: lik in péi (Hambruch 1936).

Area: 29x34m (Hambruch), 24x45m (Athens)

Radiocarbon Dates: AD 900-1200 (Athens 1990)

Athens (1985) and Morgan (1988:63) mistakenly designate this islet as Likinpei A and Sapwohng as Likinpei A.

Current Status of Conservation: Likinpei, designated Likinpei B by Athens, is mostly clear of vegetation and is generally well preserved. The only major difference between the 1984 map and [the] survey in 2011 is that there is a footpath along portions of the northeast side of the islet. There is some mangrove growing on the islet and it floods at high tide. (Ayres, Levin and Seikel 2012)

Brief Description: The islet contained abundant pottery.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

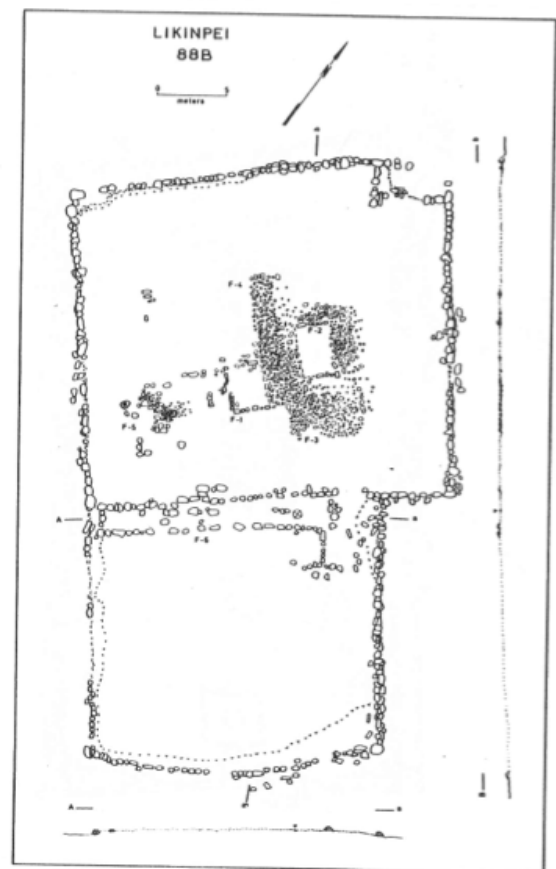
References

Athens 1985, 1990

Ayres, Levin and Seikel 2012

Hambruch 1936

Pietruszewsky and Douglas 1985



Archaeological map of Likinpei (Athens 1985)



89 Sakapas

Alternative names: šak a peš (Hambruch 1936), Sakahpas (Hanlon 1988).

Area: 30x23m (Hambruch), 30x21m (Athens)

Current Status of Conservation: The islet is fairly clear compared to other islets.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Hambruch 1936

Hanlon 1988

Panholzer and Mauricio 2003



90 Parailap

Alternative names: peréi lap (Hambruch 1936), Pereilap (Hanlon 1988; Morgan 1988).

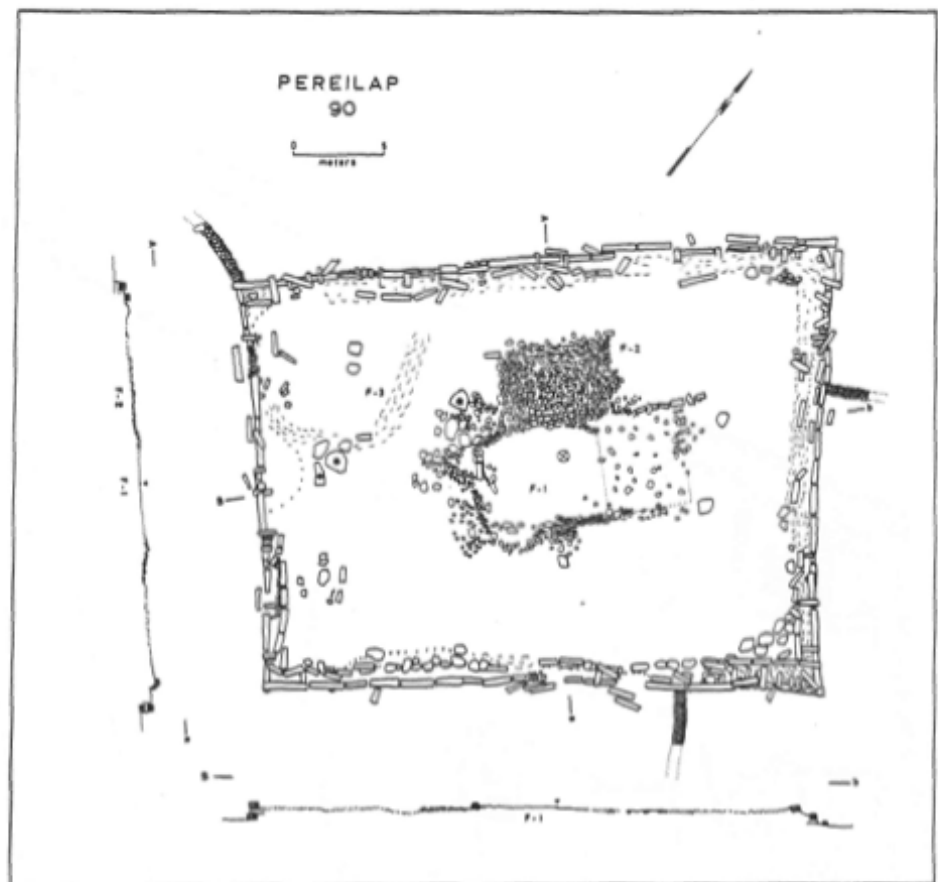
Area: 31x23m (Hambruch), 30x24m (Athens)

Current Status of Conservation: This is a low-lying islet and is threatened by tidal erosion.

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1985
Hambruch 1936
Hanlon 1988
Morgan 1988



Archaeological map of Parailap (Athens 1985)



91 Usenamw

Alternative names: ũš en nām (Hambruch 1936), Usenamw (Ayres *et al.* 1989; Ayres 1993)

Area: 57x68m+30x27m+20x35m (Hambruch), 63x66m+36x24m+9x33m (Athens)

Major Features: several house platforms and a large two-tiered meeting house foundation (Bath and Athens 1990; Morgan 1988)

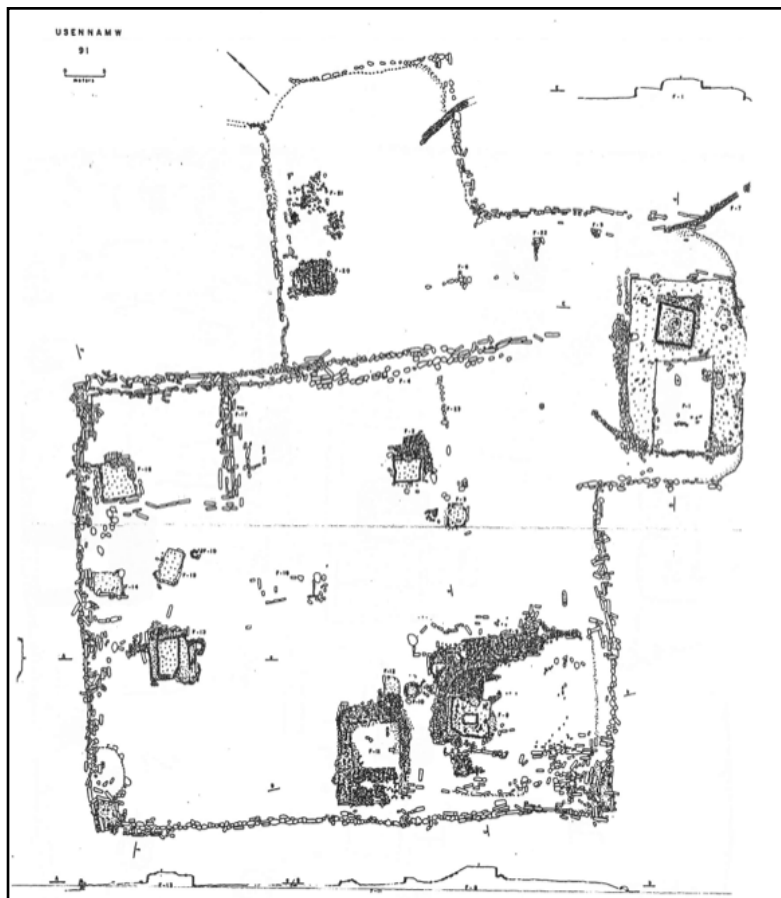
Current Status of Conservation: Though some lower areas around the wall are inundated at high tide, overall the islet is in good condition.

Brief Description: This islet is irregular in shape – it is in the shape of three squares, a focal area and two slightly smaller ‘annexes.’

Associated Oral Tradition: Informants to Hambruch stated that this islet served as the kitchen for the Saudeleurs and later the Nahmwarki.

References

Athens 1985
 Ayres 1993
 Ayres *et al.* 1989
 Bath and Athens 1990
 Hambruch 1936
 Morgan 1988



Archaeological map of Usenamw (Athens 1985)



93 Dapahu

Alternative names: tapau (Hambruch 1936), Tapau (Christian 1899; Athens 1980a, 1980b)

Area: 76x59m (Hambruch), 77x59m (Athens)

Major Features: 3 stone platforms, 1 canoe landing, 1 large rectangular enclosure, umu stones
Radiocarbon Dates: 20-445 AD (Athens 1984, 1990), 5 BC-AD 240, AD 650-920, AD 820-1060 (Athens 1990)

Current Status of Conservation: islet subsidence

Brief Description: Several features noted on Tapau were believed to be of relatively recent historic age (Features 6-10) which are concentrated mostly on the northern portion of the islet. Surface collection by Athens collected 604 artifacts with high concentrations of pottery sherds suggesting the islet was heavily utilized in the earliest phases. A deep layer of calcareous temper pottery and dates suggest the islet was constructed by the first settlers of Ponape well before the construction of Nan Madol. A high concentration of broken *Tridacna* lip adzes supports the oral history account that states the island was a place for building canoes. Athens (1984) felt these shell artifacts to be of a later period associated with Nan Madol as their distribution is much different from that of the pottery. Recent historic artifacts were relatively common.

There is no elaboration to the basalt walls as seen on the other islets. A modern house stood on the islet in the 1980s but no longer remains.

Associated Oral Tradition: Dapahu was a place for canoe building (Bernart 1977, Hadley 1987). Two boys lived here in the past, Oun Dapahu and Oaron Dapahu. They made one canoe from stone, and when it was finished, they sailed it around Pohnpei. When they

returned, the people in heaven came down, took the canoe, and carried it up to heaven. This is why they named Dapahu a place for making canoes. There are two house foundations and canoe landings. There are also several stone walls about which the stories are not clear.

References

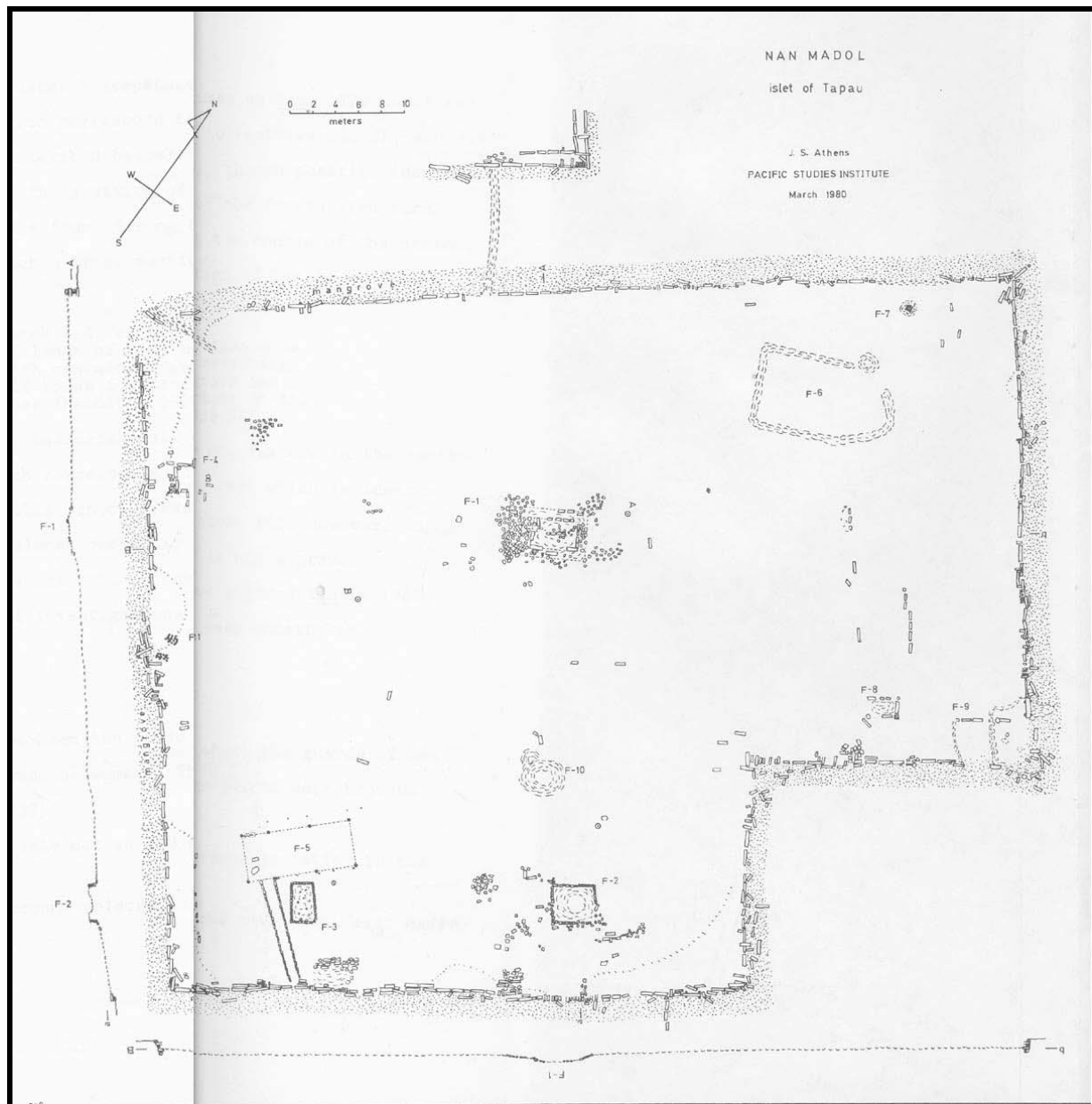
Athens 1980b, 1984, 1990

Bernart 1977

Christian 1899

Hadley 1981

Hambruch 1936



Archaeological map of Dapahu (Athens 1980b)

94 Pahn Katau

Alternative names: Pen-ilel (Christian 1899), pan kataü (Hambruch 1936), Pahnkatau (Ayles 1983; Hanlon 1988; Morgan 1988)

Area: 35x18m (Hambruch), 54x20m (Athens)

Major Features: three tombs (Morgan 1988)

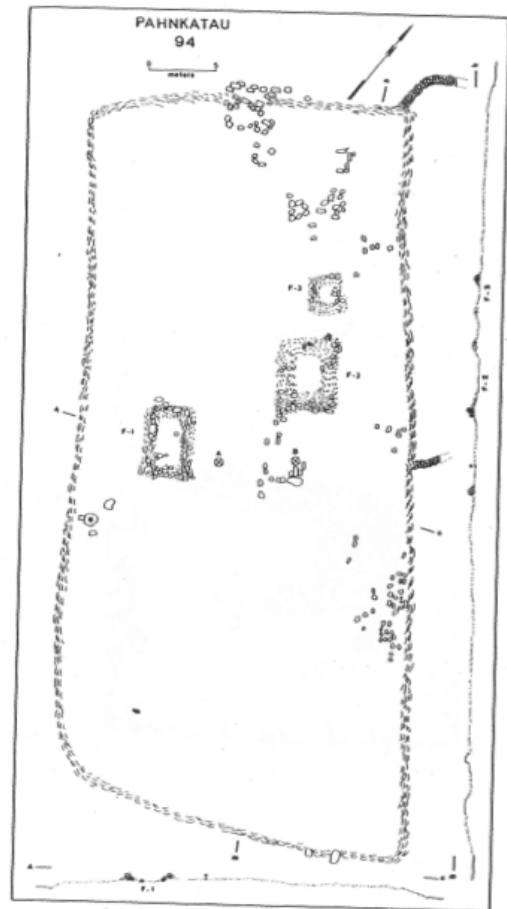
Current Status of Conservation: heavy mangrove encroachment

Brief Description: Unlike most islets at Nan Madol, no retaining wall is present today and coral fill simply terminates at the edge of the water (Morgan 1988)

Associated Oral Tradition: This islet is associated with ancient religious worship (Hambruch 1936)

References

Ayles 1983
Athens 1985
Christian 1899
Hambruch 1936
Hanlon 1988
Morgan 1988



Archaeological map of Pahn Katau (Athens 1985)



95 Paraktuhke

Alternative names: Chaok (Christian 1899), paraka tšuka (Hambruch 1936), Paraktuka (Ayres 1983; Hanlon 1988), Paratuka (Morgan 1988)

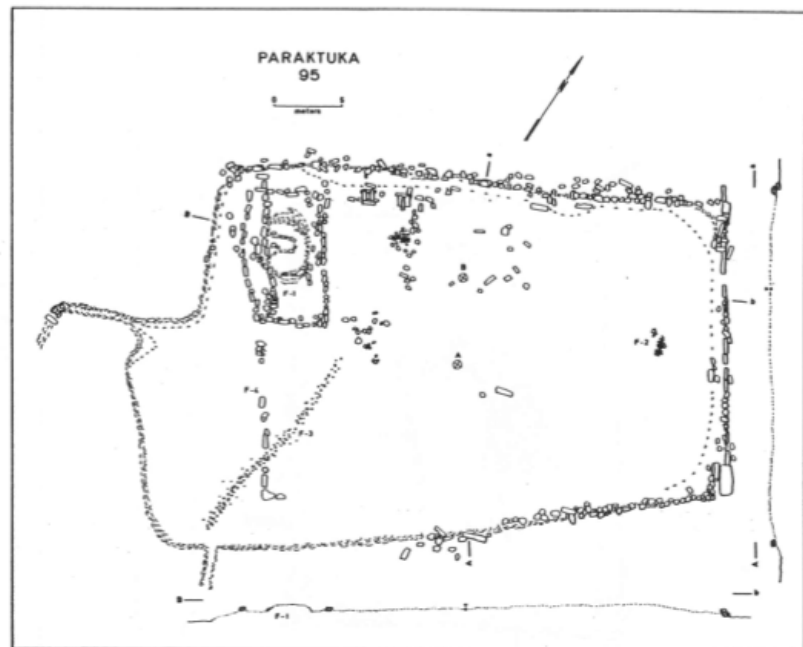
Area: 28x41m (Hambruch), 18x42m (Athens)

Brief Description: This is a low-lying islet.

Associated Oral Tradition: This islet is associated with ancient religious worship (Hambruch 1936)

References

Athens 1985
Ayres 1983
Christian 1899
Hambruch 1936
Hanlon 1988
Morgan 1988



Archaeological map of Paraktuhke (Athens 1985)



98 Peilapalap and 99 Rasalap

Alternative names: péi lāpalāp (Hambruch 1936)

Alternative names: raš a lāp (Hambruch 1936), Rassalap (Panholzer and Mauricio 2003)

Area: 99x99m (Hambruch)

Major Features: ceremonial house foundation, three houses foundation, and one burial vault

Current Status of Conservation: The islet is covered in veracious hibiscus trees which make foot travel difficult. This is the most obnoxious vegetation within the site. It is most easily removed with fire as the inside branches die and are quite dry as it grows outward.

Brief Description: This is the largest islet. It has a substantial retaining wall around its perimeter. The current walking trail runs along one side of it and bends around its corner and so is easily accessed.

Associated Oral Tradition: Peilapalap means ‘the great stone structure.’ It was the largest of the islands of Nan Madol, but was split creating Peilapalap and Rasalap. This was where Satokawai, his mother, and their clansmen lived here long ago. It is the place where the Soun Temwen lineage lived. Satokawai brought on the wrath of the Saudeleur when he and his mother ate a yellow fin tuna that he had found stranded on the reef because these tuna were the food of the Saudeleur. To amend for his wrong Satokawai had to pay the Saudeleur one malpur shell. To acquire the shell Satokawai needed many magic spells to allow him to hold his breath for a long time and make the ocean calm. He went on a long journey and received help from a fish. He traveled inside the fish back to Nan Madol and the fish stranded itself on the reef. The people of Nan Madol came to the large fish along with Satokawai’s mother. His mother approached the fish and the people told her to leave it alone because it was the fish of the Saudeleur and not to defile it like last time. But she went right up to it and whacked it on the gills and its mouth opened and out walked Satokawai and the fish returned to the sea. Satokawai then gave the malpur shell to the Saudeleur and repaid his debt.

References

- Bernart 1977
- Hadley 1981
- Hambruch 1936
- Panholzer and Mauricio 2003





100 Pwulak

Alternative names: Pulak (Kubary 1874, Christian 1899; Morgan 1988), pŭlāk (Hambruch 1936), Pwilak (Ayres 1983; Hanlon 1988)

Area: 54x57m (Hambruch)

Major Features: one house foundation and a sakau stone

Current Status of Conservation : This islet is densely covered with trees and mangrove is beginning to take hold. It is lower to the water than peilapalap, but is still rather solid.

Brief Description: The islet is not as large as peilapalap but still expansive compared to other islets. It is very similar to peilapalap and therefore may well have been constructed around the same time.

Associated Oral Tradition: The island Pwulak was the dwelling of the spirit Sahngoro. There is one house foundation and a sakau stone. Prayers were made to Sahngoro here. People pounded sakau and the priest took the cup and raised it in offering to Sahngoro. No one lived on Pwulak. The house foundation was the home of Sahngoro.

References

Ayres 1983
Christian 1899
Hadley 1981
Hambruch 1936
Hanlon 1988
Kubary 1874
Morgan 1988



101 Peinering

Alternative names: Pein-Aring (Christian 1899), péi en arüñ (Hambruch 1936), Peinariñ (Bernart 1977), Pei en Arun (Athens 1980b)

Area: 44x26m (Hambruch), 27x24m (Athens), 29x46m (Morgan)

Major Features: house platform (Panholzer and Mauricio 2003) and a burial tomb (Hadley 1987, Morgan 1988, Seikel 2011)

Current Status of Conservation: The islet of Peinering is located in an area with consistent water flow and is little impacted by mangrove growth compared with other areas at Nan Madol. Local residents say that birds nest at Peinering and nearby islets. The platform located on the eastern side of the islet is well preserved and looks to be cemented together to prevent deterioration; it is clear of vegetation. The central platform does not seem to have been significantly impacted since it was mapped though there is some vegetation growing along one side of the structure. The western platform was not examined in detail, but there is significantly more vegetation on the western side of the enclosure. The islet enclosing wall seems to be much in the same condition as in 1984, though the areas designated as washed out may have expanded a bit in recent years. (Ayres, Levin and Seikel 2012)

Brief Description: Peinering is one of the most picturesque islets as it is mostly clear of vegetation around its perimeter except for a few mangroves and a couple trees at its center. It is recommended as the prototypical site type as what an average islet should look like. Its external walls are up to two meters thick in sections and have upswept corners (Athens 1980b; Morgan 1988)

Associated Oral Tradition: This island is where they made oil. There is one house platform, two stone burial vaults, and a place for heating stones. Ripe coconuts were gathered here and the women grated and squeezed it into bowls. After this they put it into calabashes and placed heated stones into each calabash and hung them in a house. When the oil was made, it was taken to the high chiefs and then distributed to all the residences in Nan Madol.

References

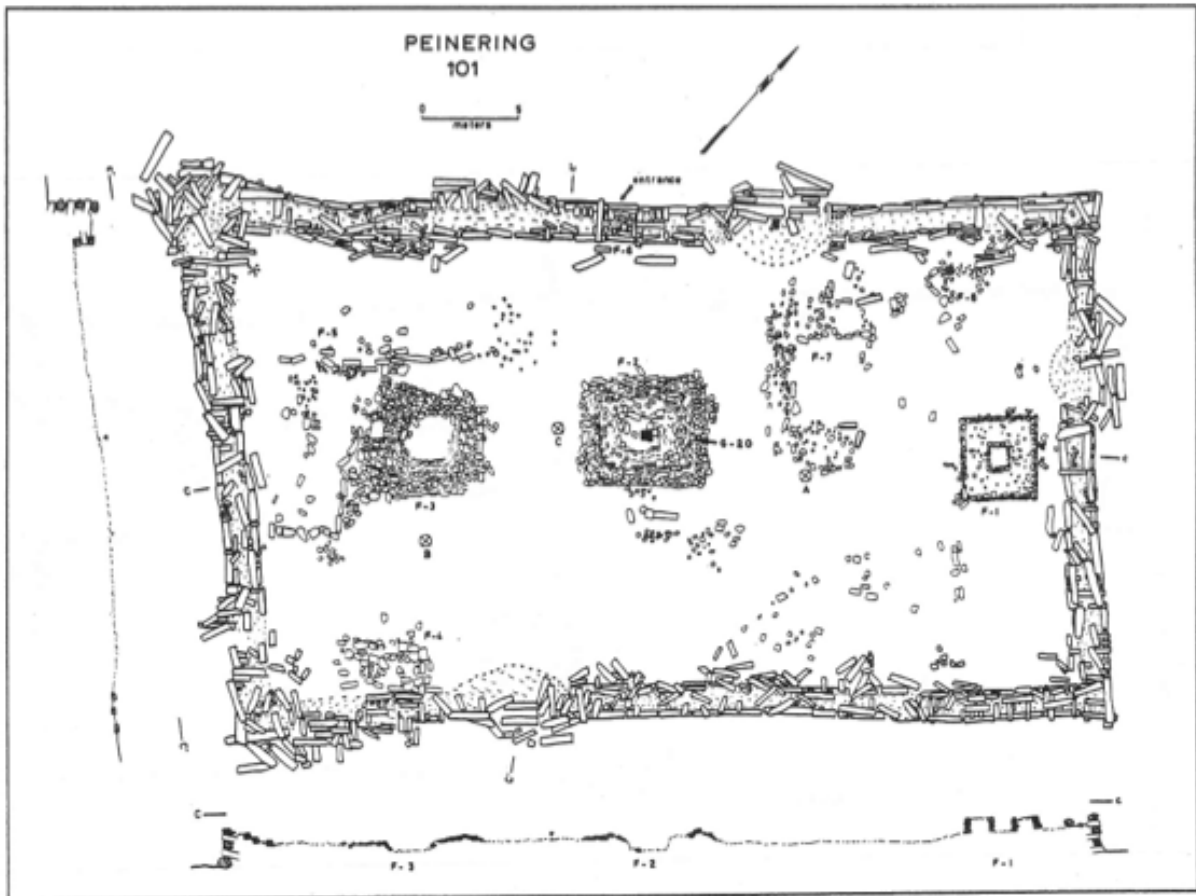
Athens 1980b, 1985

Ayres, Levin and Seikel 2012

Bernart 1977

Christian 1899

Hadley 1981
Hambruch 1936
Pietruszewsky and Douglas 1985



Archaeological map of Peinering (Athens 1985)



102 Peinior

Alternative names: Paneor (Kubary 1874), Peinoir (Christian 1899), péi ni ōr (Hambruch 1936), Panior (Bernart 1977), Peinioar (Hanlon 1988; Morgan 1988; Seikel 2011)

Area: 35x26m (Hambruch), 38x27m (Athens)

Major Features: one house foundation

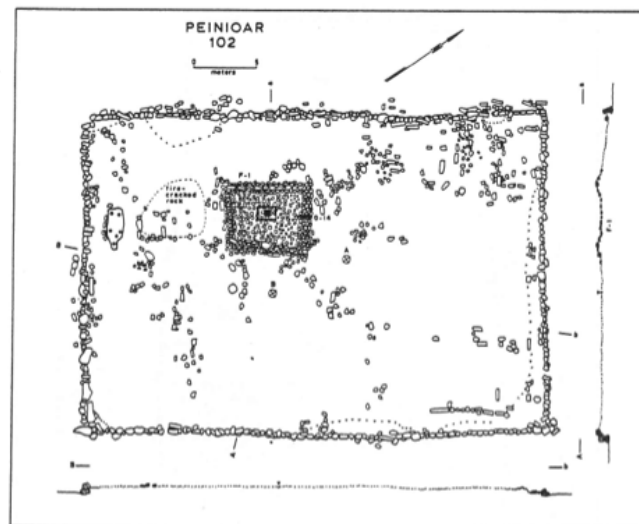
Current Status of Conservation: Mangroves are located around the periphery of Peinioar and are taking over the north/northeast side of the islet. Being a low lying islet, Peinioar is regularly flooded at high tide, though the southern side seems to be less impacted by the flooding. The features designated by Athens are still intact and are preserved, though further mangrove growth may pose an issue in the coming years. (Ayres, Levin and Seikel 2012)

Brief Description: This islet is small and low-lying and not so impressive as others. This islet was used for a range of purposes, as a residence, burial, and ritual (Morgan 1988; Seikel 2011).

Associated Oral Tradition: Peinior is a small island which is near Pwulak. It has a house foundation and a rock for the women's sitting dance (Sapei). Women gathered here to learn the sitting dance, to practice so their hands would be limber. Limber hands appeared best in this type of dance.

References

Athens 1985
 Ayres, Levin and Seikel 2012
 Bernart 1977
 Christian 1899
 Hadley 1981
 Hambruch 1936
 Hanlon 1988
 Kubary 1874
 Morgan 1988
 Pietruszewsky and Douglas 1985
 Seikel 2011



Archaeological map of Peinior (Athens 1985)

103 Paseid

Alternative names: pāšēt (Hambruch 1936), Paset (Kubary 1874; Morgan 1988), Pahseid (Hadley 1981; Hanlon 1988; Ayres 1983, 1985, 1993).

Area: 92x35m (Ayres)

Major Features: a small structure on the islet

Current Status of Conservation: The main footpath runs across part of this islet and so foot traffic occurs regularly. There is a noticeable distinction when crossing to this islet as the soil is more lacking.

Brief Description: Paseid is composed of the southern end of the earlier, underlying islet which was later separated by a cross-cutting stone wall to form the north enclosure called Usendau. Pottery, a stone pounder and net sinkers have been collected from here (Ayres 1993).



Associated Oral Tradition: Pahseid is a pen in the lagoon between Usendau and Rasalap. People caught turtles and put them in the water inside this pen, to prepare for the worship of Nahnisohnsapw. This was the prayer to Nan Samol. The people who lived on Rasalap took care of many turtles. The end of the year (in June and July) was when this ceremony occurred, and this was when the fishermen caught turtles to place in the pen at Pahseid.

References

Ayres 1983, 1985, 1993
Hadley 1981
Hambruch 1936
Hanlon 1988
Kubary 1874
Morgan 1988



104 Usendau

Alternative names: Uchendau (Christian 1899), ũš en taũ (Hambruch 1936), Us en Tau (Kubary 1874), Ujantau (Bernart 1977), Usen Dau (Hadley 1981), Usendau (Athens 1983, 1984; Ayres 1983, 1985, 1990, 1993; Hanlon 1988; Morgan 1988), Usedau (Morgan 1988).

Area: 75x85m (Hambruch), 76m x 95m (Ayres)

Major Features: U-shaped naahs, low enclosing wall, two small sakau stones (peitehl), upright stone and coral, sacred platform (pei), four graves

Radiocarbon Dates: 760 AD for islet construction (Ayres and Haun 1982)

Current Status of Conservation: wall collapse (east and north corners especially)

Brief Description: Usendau lies at the center of Madol Powe (upper Nan Madol). Several features including the U-shaped naahs (Nahlaimw of Madolenihmw) and the bridge connecting it to Pwalang are relatively recent historic features within the past one to two hundred years. Many of the prehistoric features were dismantled in the construction of these more recent features. The Japanese established a police station in the late 1930s - its foundation still exists. It is from here that the bridge extends

Associated Oral Tradition: Peikap Sapwawas (108), Usendau (104), and Pwallahng (106) worked together in one job, the task of information. Soulik en Sapwawas directed this work. Announcements which they made were carried by the sounds of the triton trumpet and drums. This began at Peikap Sapwawas; Usendau heard it and passed it on to Pwallahng, and from there the news was sent everywhere. The news was understood according to the blowing of the triton and the beating of the drum. The reason for this was to announce important news or information which was proper for everyone to know. Usendau has one ceremonial house foundation and two large house foundations. During the Nahnmwarki period, one Nahnmwarki resided at Usendau. This was Luhk en Usendau. It was later occupied by Nahnken en Madolenihmw Salomon, whose relatives planted most of the coconut and

breadfruit trees. Later it was occupied by Luhk en Peidoh and Nahnken Alexander (aka Nahnken en Poaroas). One grave is believed to contain Luhk en Mwer Uh, the mother of Nahnken Salomon. The channel between Usendau and Sapwuhtohr and Nihmokemok is known as Dewen Poaros.

References

- Athens 1983, 1984
- Ayres 1983, 1985, 1990, 1993
- Ayres and Haun 1982
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- Kubary 1874
- Morgan 1988
- Saxe *et al.* 1980



U-shaped nahs at Usendau (Ayres and Haun 1982)



105 Sapwuhtohr

Alternative names: tšap ũ tor (Hambruch 1936)

Area: 24x32m (Hambruch)

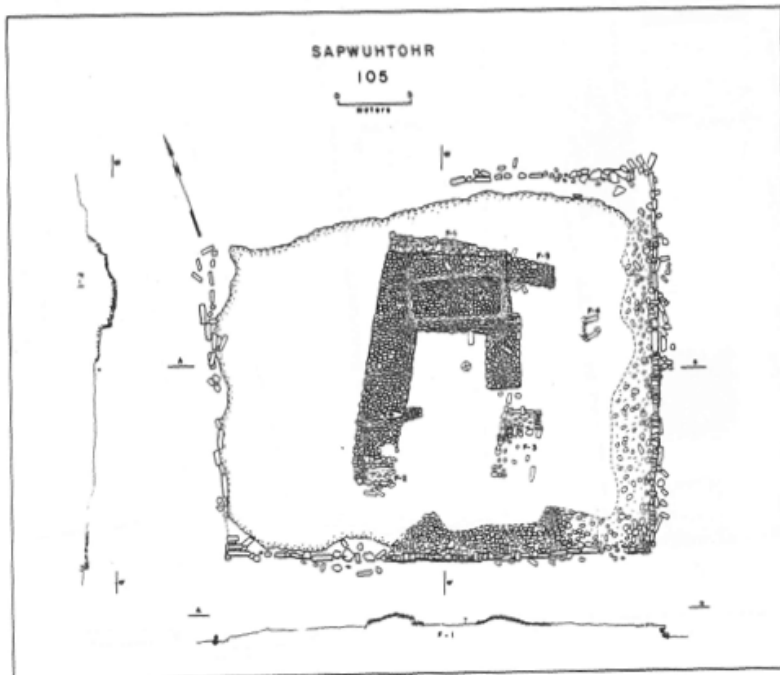
Current Status of Conservation: Inundated at high tide

Brief Description: This is a low islet that contains pottery and the foundation of a meeting house (Morgan 1988).

Associated Oral Tradition: This islet was home to priests (Hambruch 1936).

References

Athens 1985
Hambruch 1936
Morgan 1988



Archaeological map of Sapwuhtohr (Athens 1985)



106 Pwallahng

Alternative names: pŭa lăñ (Hambruch 1936), Pualan (Christian 1899; Bernart 1977; Morgan 1988), Pwalahng (Ayres 1983; Hanlon 1988)

Area: 25x28m (Hambruch), 27x24m (Ayres)

Current Status of Conservation: heavy mangrove encroachment

Brief Description: A small bridge runs from a modern house on Dau to this islet which was made in more recent times. The islet itself is rather flat with only a few alignments of stone to suggest any previous features.

Associated Oral Tradition: Peikap Sapwawas (108), Usendau (104), and Pwallahng (106) worked together in one job, the task of information. Soulik en Sapwawas directed this work. Announcements which they made were carried by the sounds of the triton trumpet and drums. This began at Peikap Sapwawas; Usendau heard it and passed it on to Pwallahng, and from there the news was sent everywhere. The news was understood according to the blowing of the triton and the beating of the drum. The reason for this was to announce important news or information which was proper for everyone to know.

References

Ayres 1983
Bernart 1977
Christian 1899
Hadley 1981
Hambruch 1936
Hanlon 1988
Morgan 1988

108 Peikap Sapwawas

Alternative names: Chaponach (Christian 1899), péi kǎp tšǎp ũǎš (Hambruch 1936), Pehikapw sapwawas (Jencks 1970), Peikapwsapwawas (Ayres 1983), Pei Kapw Sapwawas (Ayres 1983), Peikapw Sapwawas (Hanlon 1988; Panholzer and Mauricio 2003), Peikapsapuas (Morgan 1988).

Area: 70x65m (Hambruch)

Major Features: 1 large house foundation, 1 burial vault, some small foundations

Current Status of Conservation: heavy mangrove encroachment

Brief Description: This islet is low to the water line and heavily vegetated and so can be difficult to find at times.

Associated Oral Tradition: Peikap Sapwawas (108), Usendau (104), and Pwallahng (106) worked together in one job, the task of information. Soulik en Sapwawas directed this work. Announcements which they made were carried by the sounds of the triton trumpet and drums. This began at Peikap Sapwawas; Usendau heard it and passed it on to Pwallahng, and from there the news was sent everywhere. The news was understood according to the blowing of the triton and the beating of the drum. The reason for this was to announce important news or information which was proper for everyone to know. On Peikap Sapwawas is a house foundation. This is where Soulik en Sapwawas lived and announced important information. Some house foundations and one burial vault are visible.

References

Ayres 1983
Hadley 1981
Hanlon 1988
Hambruch 1936
Morgan 1988
Panholzer and Mauricio 2003

109 Narukep

Alternative names: naru kăp (Hambruch 1936), Narulap (Morgan 1988).

Area: 12x31m (Hambruch)

Major Features: 1 stone burial vault

Current Status of Conservation: heavy mangrove encroachment

Brief Description: This is a small rectangular islet that comprises a continuous breakwater feature with Nahn Mwoluhsei (119). On the east side of and beyond this island is one stone burial vault, only that.

References

Ayres 1983

Hadley 1981

Hambruch 1936

Morgan 1988



110 Pahndowas

Alternative names: Nan-Tauach (Christian 1899), pān taūāš (Hambruch 1936), Pan Tauas (Athens 1980b), Pahn Dawas (Hadley 1981), Pahndauwas (Ayres 1983; Hanlon 1988; Morgan 1988; Athens 1990; Seikel 2011; McCoy and Athens 2012).

Area: 65x16m (Hambruch), 63x15m (Athens)

Major Features: five house foundations

Radiocarbon Dates: AD 1025-1320, AD 1230-1510 (Athens 1990)

Current Status of Conservation: Much like Pohndowas (114), Pahndowas is also significantly impacted by tidal flooding and the same concerns for long term preservation apply (Ayres, Levin and Seikel 2012). Tourist traffic is the major risk for the islet.

Brief Description: This islet is found to the side of Nandowas (113). It has a massive stone at one side that is somewhat unexplainable.

Associated Oral Tradition: There are five house foundations on Pahn Dawas. These were dwellings of those who worked at Nandowas and were their places of rest (sleep).

References

Athens 1980b, 1985, 1990

Ayres 1983

Ayres, Levin and Seikel 2012

Christian 1899

Hadley 1981

Hambruch 1936

Hanlon 1988

McCoy and Athens 2012

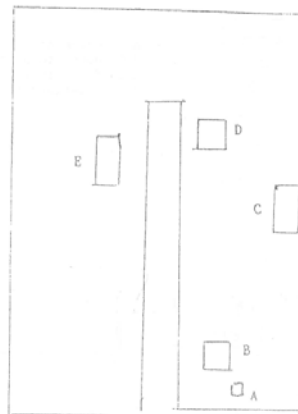
Morgan 1988

Panholzer and Mauricio 2003

Pietrusewsky and Douglas 1985

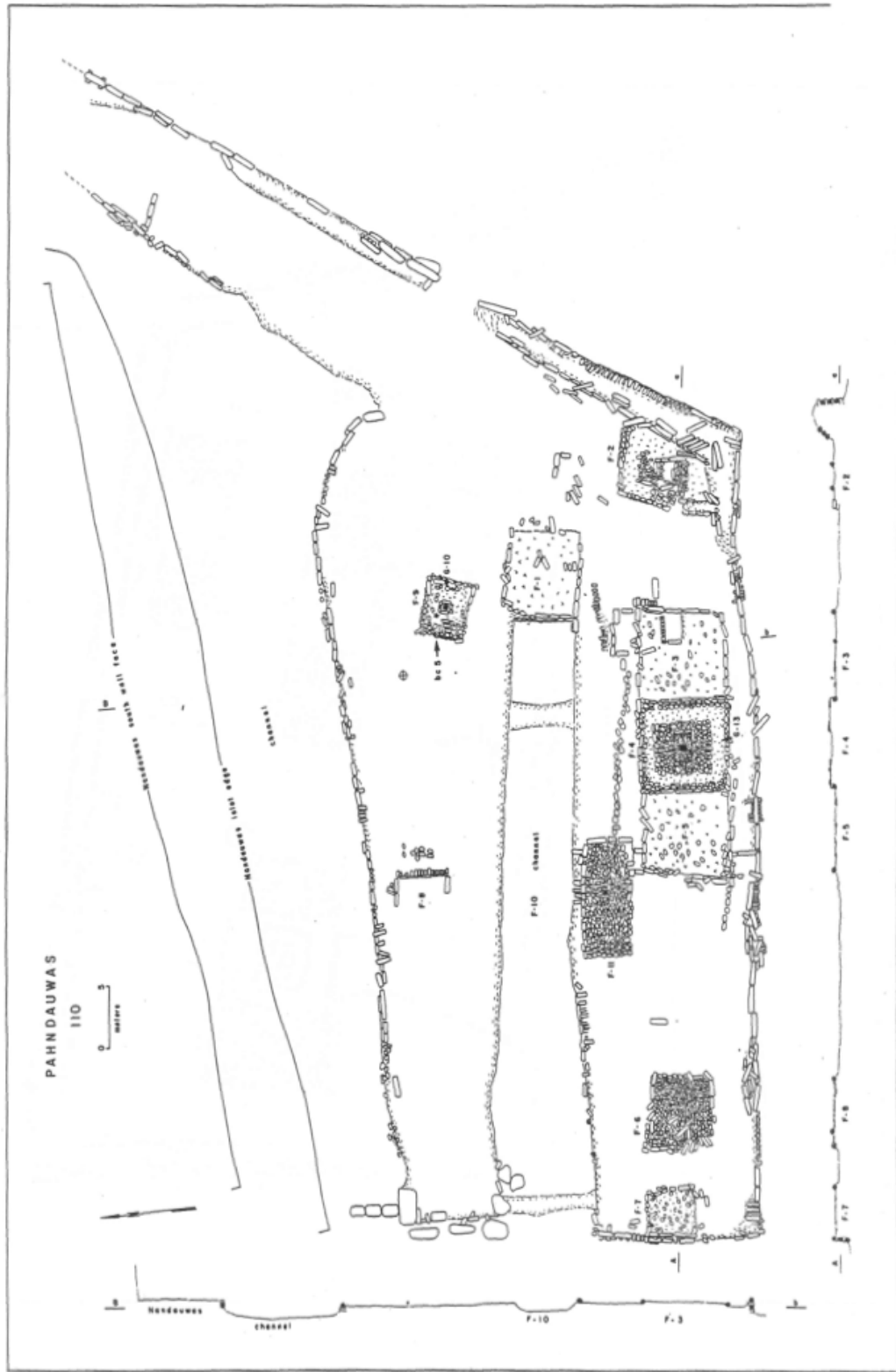
Seikel 2011

Pahn Dawas



A-E house foundations

Sketch of Pahndowas (Hadley 1981)



Archaeological map of Pahndowas (Athens 1985)



111 Dau

Alternative names: Dziou (Kubary 1874), taŭ (Hambruch 1936), Tau (Christian 1899, Bernart 1977; Athens 1980a, 1980b)

Area: 56x59 (Hambruch), 58x62m (Athens)

Major Features: 6 house foundations, 1 sakau stone, 1 canoe landing, tunnel structures, an enclosure, uhmw stones, several alignments.

Radiocarbon Dates: AD 880-1300 (Kataoka 2005, 2006, 2007)

Current Status of Conservation: This islet is planted in coconuts and yam. Part of the wall has collapsed. Heavy tourist traffic could also affect the area.

Brief Description: Double header and stretcher construction may be found only on the east side of the islet facing Nandowas. A foundation for a house dating to the recent historic period was found. Its upright stones suggest that a reed floor was raised up on the uprights. This design is believed to have been learned from the Spanish or whalers. Ponapeans lived on Dau during the whaling and Spanish period.

Associated Oral Tradition: Dau, Pohndowas and Pahndowas were all islands which serviced the work at Nandowas. On Dau there are six house foundations and one sakau stone. There is also a stone for sharpening shell axes. A hole exists inside of which they placed a salt water eel which they revered and which was named Saleng Iahia. When they built Dau they placed Slend Iahia inside. There is also one canoe landing. Dau was the islet where the guards of Nan Madol resided. No women were allowed on the islet. Special people sharpened the guard's axes and spears.

References

Athens 1980a, 19080b

Ayres *et al.* 1983

Bernart 1977

Christian 1899

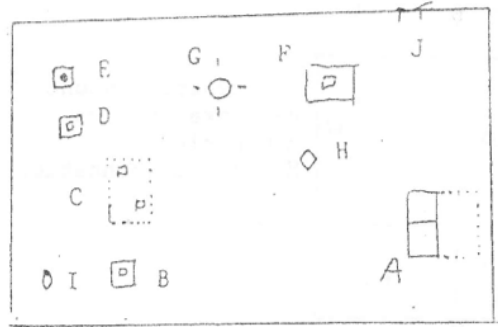
Hadley 1981

Hambruch 1936

Kataoka 2005, 2006, 2007

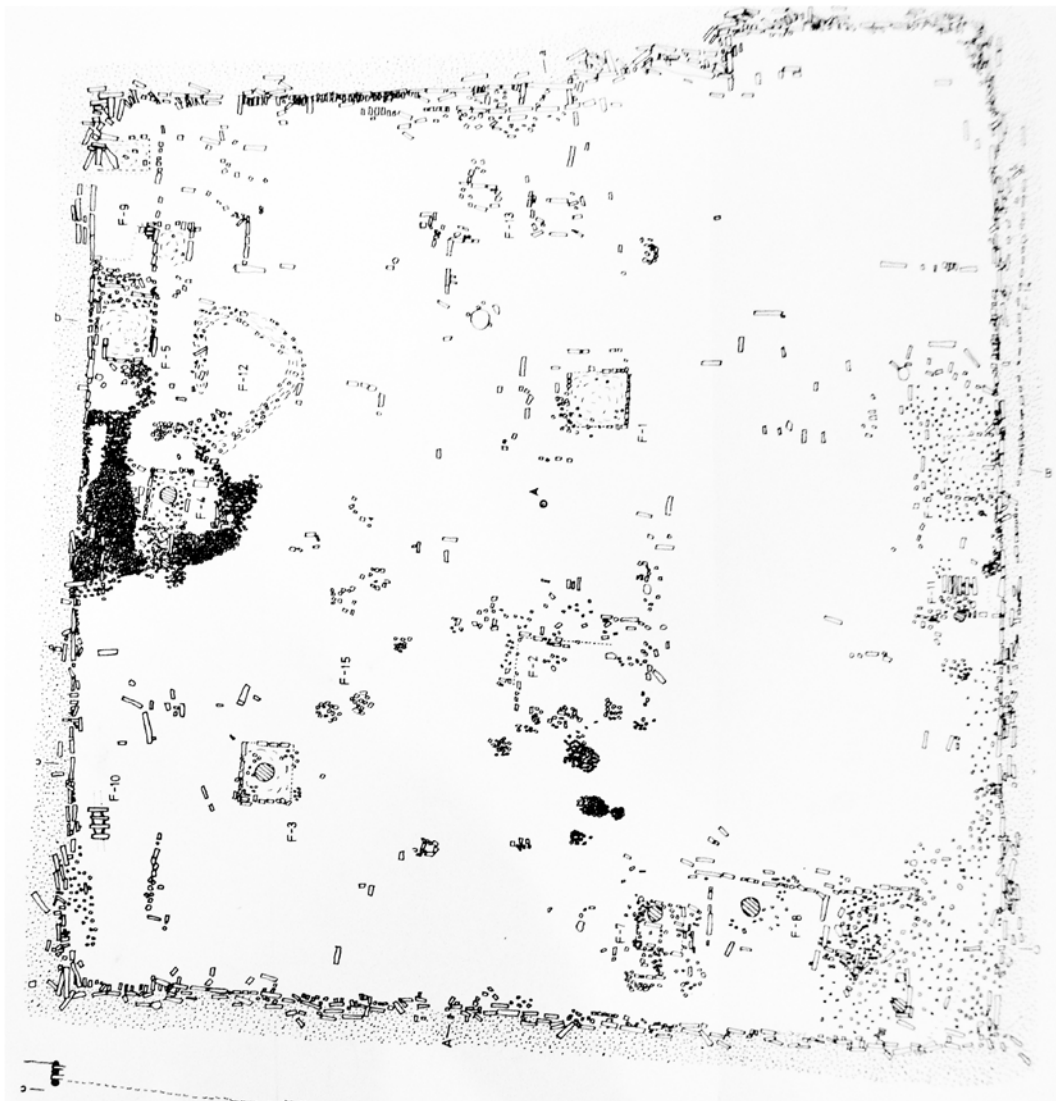
Kubary 1874

DAU



- A-F house foundations
- G sakau stone
- H sharpening stone
- I hole of Saleng Iahia
- J canoe landing

Sketch of Dau (Hadley 1981)



Archaeological map of Dau (Athens 1980b)



113 Nandowas

Alternative names: Nan Tauacz (Kubary 1874), Nan-Tauach (Christian 1899), Nan-Tauas (Christian 1899), nān taūāš (Hambruch 1936), Nantauaj (Bernart 1977), Nan Tauas (Ayres 1979; Athens 1980b), Nan Dauwas (Ayres 1983), Nandauwas (Ayres 1983; Athens 1983, 1984; Hanlon 1988; Morgan 1988; Bath and Athens 1990; Seikel 2011; McCoy and Athens 2012; Kolb 2012), Nan Dauas (Ayres 1983; Ayres 1985), Nan Douwas (Ayres *et al.* 1989; Ayres 1993; Ayres *et al.* 1997; Ayres 2002; Rainbird 1999, 2004; Panholzer and Mauricio 2003), Nan Dowas (Jencks 1970).

Area: 68x60m (Hambruch), 66x51m (Athens)

Major Features: 3 stone burial chambers, 1 stone chamber (hole in the courtyard), 2 sakau stones, double enclosure walls

Radiocarbon Dates: 1150 AD (Ayres 1993)

Current Status of Conservation: cleared vegetation except some large trees, some walls are inclined inwards. Major Risks include the collapse of walls, overgrowth of vegetation, tourist traffic

Brief Description

Nan Dauwas is the best known of the islets in the entire district because the megalithic architectural style characteristic of Nan Madol is the most impressively expressed in its construction. The 50 x 50 meter islet is constructed of long, naturally pentagonal-shaped columns of basalt used in the walls built up over a foundation of large basalt boulders. At Nan Dauwas the walls reached 8.1 meters. According to oral traditions, Nan Dauwas was a ritual and burial center for the paramount chiefs of Pohnpei, known as the Saudeleurs.

There is a huge stone burial vault in the center of the second enclosure. Two stone burial vaults exist outside the enclosure where the huge burial vault is located. There is a hole in the courtyard within this outer wall. This was a place which held people who broke the law or were defeated in battle.

The skeletal material from the burials has mostly all been removed by successive explorers and archaeologists particularly Kubary (1870s), Christensen (1890s), and Japanese archaeologist (1930s). Of these only Christensen's material remains at the Pitt-Rivers Museum in Oxford. Other material is held at the Smithsonian from Cliff Evans 1963 fieldwork and with Dr. Stephen Athens from his work in the early 1980s. Some grave goods, specifically beads and other personal decor still remain in at least one of the burial chambers and is being left there out of respect.

Associated Oral Tradition

Nandowas means "in the mouth" of the high chief. No one knew what was in the mouth of the high chief. No one knew what he did inside. No one understood what was inside Nandowas. Nandowas was a place of war. This is why it had the highest wall and it was somewhat difficult for people to climb inside.

Sau Pohndowas was the leader at Nandowas in the ancient past: he was the leader of the high chiefs of Nandowas. People guarded Nandowas but none slept there. The warriors slept on other islands (Pohndowas and Pahndowas).

There are two sakau stones at the entrance (to Nandowas) which still have the marks of pounding. They made sakau for prayers to the Great Spirit in time of war. They pounded sakau and took it to the high priest who held it up with both hands and prayed for assistance from the Great Spirit.

There is a huge stone burial vault in the center of the second enclosure. This is the place where they carried the Saudeleur and later the Nahnmwarki. In that hole are bones of sacred people whom they buried inside. (In their prayers) they would request aid from ancestors, sacred people whose bones are buried in the stone burial vault.

Two stone burial vaults exist outside the enclosure where they huge burial vault is located. One is on the North, and one is on the South side of Nandowas. Lower ranking priests

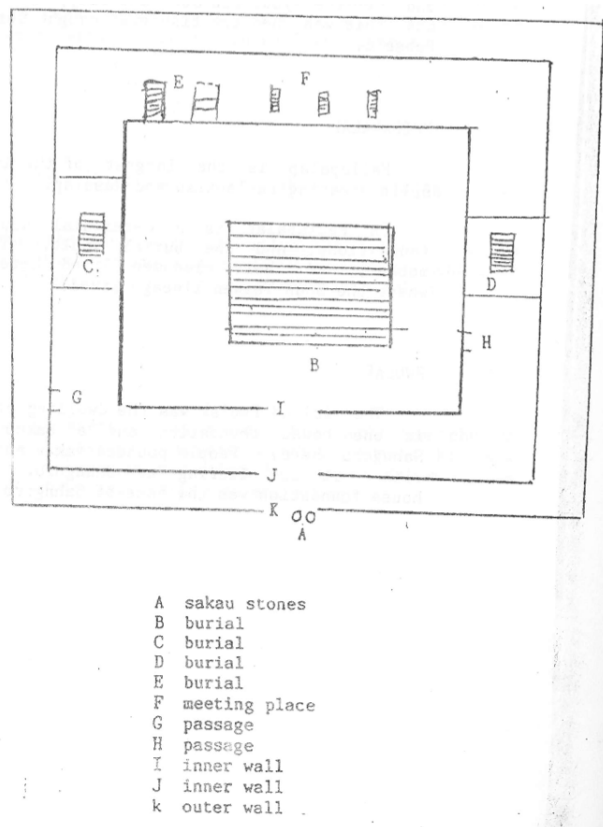
(Samworou Leiap) prayed to the Great Spirit and also sought the assistance of the sacred people whose bones are buried in those vaults.

Inside the outer wall on the eastern side was a meeting place for all kinds (of events) which were called “honored meeting of the chiefdom.” There is a hole (in the courtyard) within this outer wall. This was a place which held people who broke the law or were defeated in battle. Atop the outer and inner walls certain formations were built so people would not climb. In time of war the rocks on top were lined up and extended outward in order to make it difficult to bring the conflict within the walls.

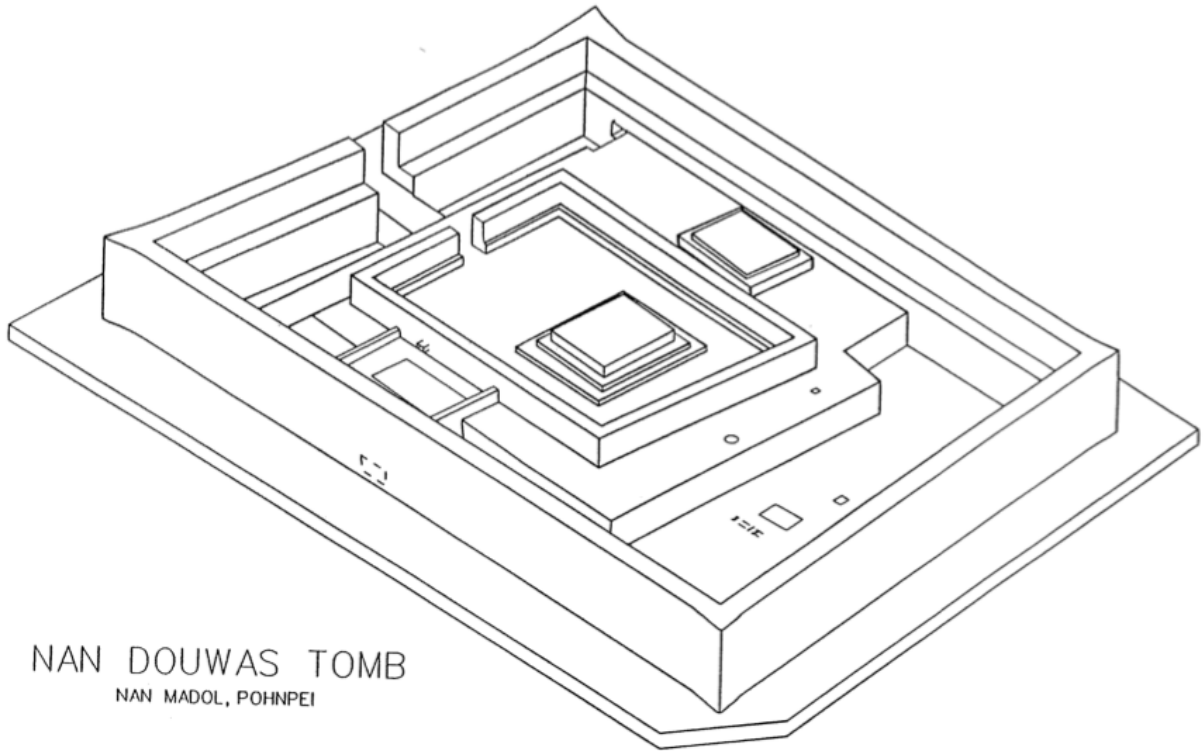
The soldiers of Nandowas slept at Pohndowas, Pahndowas, and Dau. There are still house foundations on those islands. The priests slept on Peikap and Peilapalap. These were places for the priests. The highest ranking priests lived on Peikap.

References

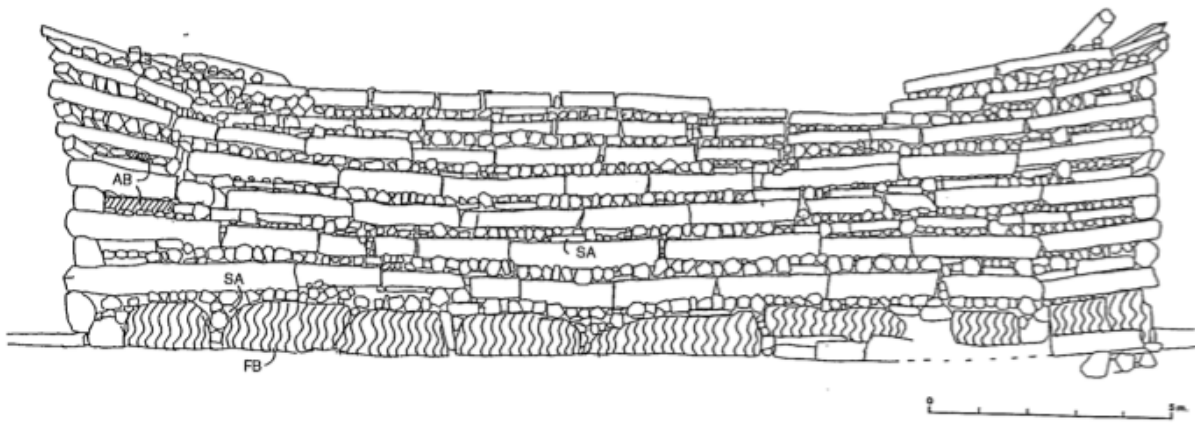
- Athens 1980b, 1983, 1984, 1985
 Ayres 1979, 1983, 1985, 1989, 1993, 2002
 Ayres *et al.* 1989, 1997
 Bath and Athens 1990
 Bernart 1977
 Christian 1899
 Hadley 1981
 Hambruch 1936
 Hanlon 1988
 Kolb 2012
 Mauricio 1985, 2003
 McCoy and Athens 2012
 Morgan 1988
 Panholzer and Mauricio 2003
 Pietruszewsky and Douglas 1985
 Rainbird 1999
 Seikel 2011



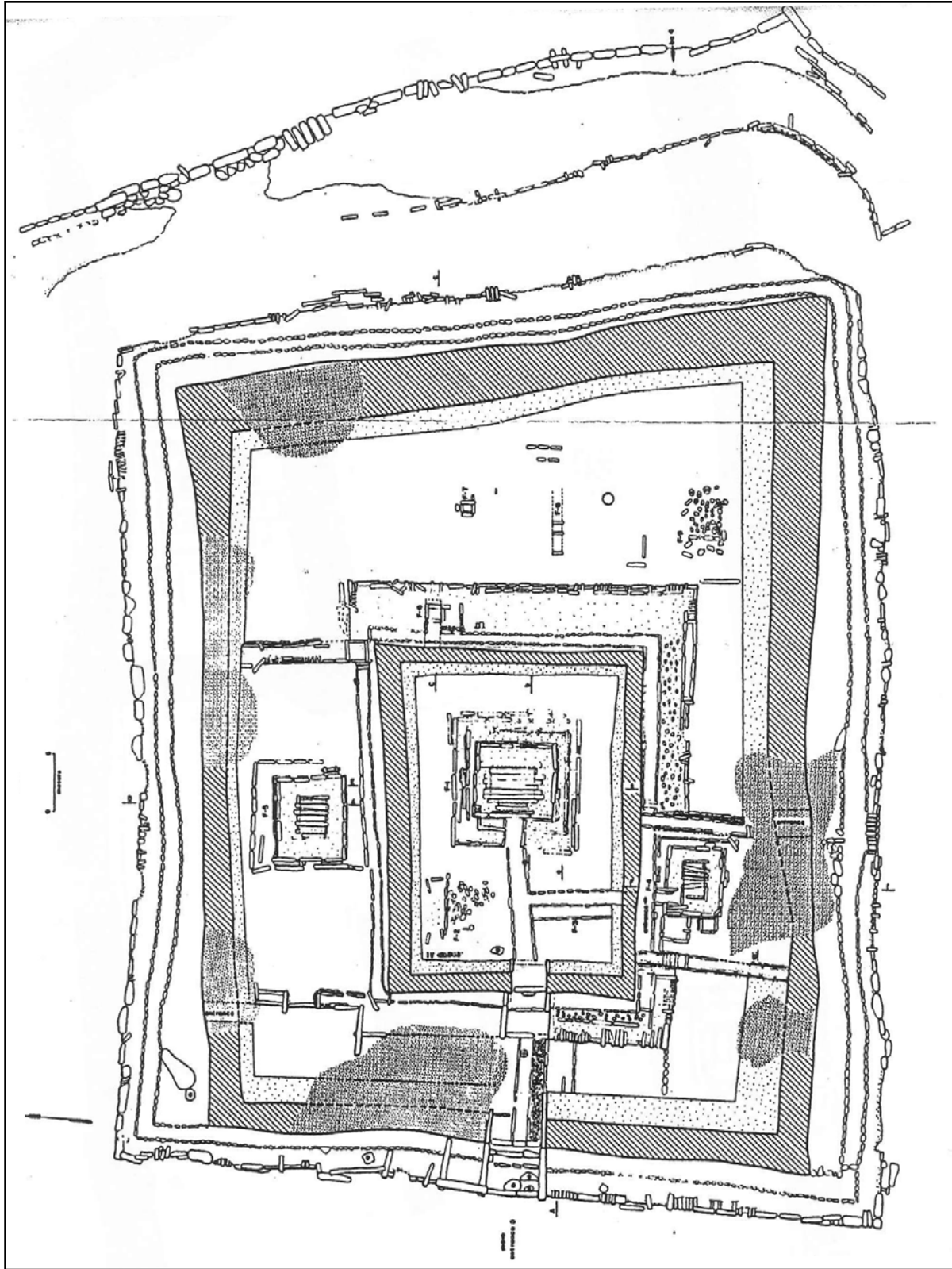
Sketch of Nandowas (Hadley 1981)



3D computer recreation of Nandowas (Ayres 1989)



Columnar construction of southwest side of main entry (Ayres 1993)



Archaeological map of Nandowas (Athens 1985)



114 Pahndowas

Alternative names: Panachau (Christian 1899), pān tauāš (Hambruch 1936), Pon Tauas (Athens 1980b), Pohn Dawas (Hadley 1981); Pohndauwas (Hanlon 1988; Morgan 1988; Bath and Athens 1990, Mauricio 1985), Pohndowas (Panholzer and Mauricio 2003; Seikel 2011)

Area: 70x52m (Hambruch), 69x39 (Athens)

Major Features: 1 burial chamber, 2 house foundations, 3 stone ovens

Current Status of Conservation: The proximity of Pohndauwas to Nahndauwas, the most visited islet at Nan Madol, has meant that it has been more regularly visited and cleared than other islets. Preservation is good, but rising tide levels has the low areas, particularly around the southern side of the islet, flooded at high tide. Though the structures are currently stable, they may need to be stabilized in the future as these higher tide levels may degrade the coral rubble fill material comprising the islet base. (Ayres, Levin and Seikel 2012)

Brief Description: This islet now has a nice park-like atmosphere. A small walkway has been constructed in recent times. Its outer wall would be rather impressive, but mangroves grow around its perimeter.

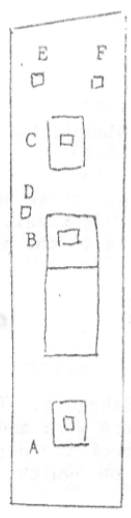
Associated Oral Tradition: This is another location which they built early on to assist in the gathering of food which came from everywhere (on Pohnpei). This was the food which fed the workers (who built Nan Madol) at that time. After the work was complete they decided that this place would support those people who worked at, and were responsible for Nandowas. This was one of the living areas for the warriors who worked at Nandowas. There are three places at Pohndowas which they made for preparing stone ovens for jellyfish and sea anemone. Such places look like this: four long (basalt) rocks surrounded what appear to be ashes, a fire pit. Inside of this they would lay taro leaves, and afterwards full it with the jellyfish. Then they heated the stones. Once those stones were red hot or very hot, they placed these among the jellyfish, and then covered it all with taro leaves. When it was cooked they

opened it up and could use it as a fine meat compliment to the meal. There are also two old house foundations which are somewhat large and one stone burial chamber at Pohndowas.

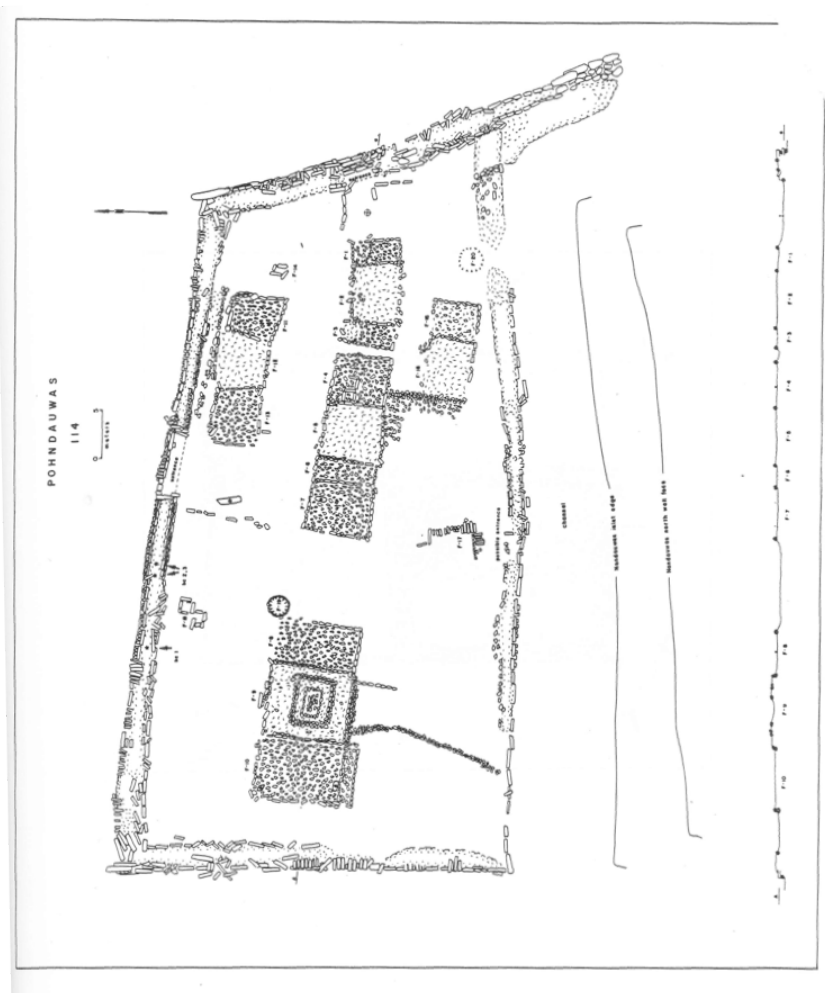
References

Athens 1980b, 1985
 Ayres, Levin and Seikel 2012
 Bath and Athens 1990
 Christian 1899
 Hadley 1981
 Hambruch 1936
 Hanlon 1988
 Morgan 1988
 Panholzer and Mauricio 2003
 Pietrusewsky and Douglas 1985
 Seikel 2011

POHN DAWAS



- A burial
- B house foundation
- C house foundation
- D stone oven
- E stone oven
- F stone oven



Archaeological map of Pahndowas (Athens 1985)

Sketch of Pahndowas (Hadley 1981)



115 Kohnderek

Alternative names: Kontaraka (Christian 1899), kōnterek (Hambruch 1936), Konderek (Jencks 1970), Kontarok (Bernart 1977); Konterek (Athens 1980a, 1980b), Kohnderek (Ayles 1983; Athens 1983; Hanlon 1988; Morgan 1988; Panholzer and Mauricio 2003), Kandorok (Ayles 1983; Hanlon 1988), Kantorok (Panholzer and Mauricio 2003)

Area: 40x68m (Hambruch), 45x70m (Athens)

Major Features: 1 ceremonial house foundation, 6 small foundations, 2 firepits, 1 platform, double canoe landing

Radiocarbon Dates: AD 1291-1465 (Kataoka 2005, 2006, 2007, in prep)

Current Status of Conservation: Some minor wall collapse has occurred around the perimeter of the islet. This is one of the more common forms of deterioration which could be addressed with reconstruction as most of the stones of only fallen a short ways.

Brief Description: Several unique artifacts were found by Athens included pounding stones specifically for medicine, a small stone disk and a pearl shell lure blank (both of which may be a form of traditional money). There is no elaboration to the wall design. In the 1980s a traditional thatched house stood on the islet. In the 1980s a modern traditional house stood on the islet. Prior to its construction the foundation of a U-shaped nahs was located where the modern structure was built.

Associated Oral Tradition: When people died this was the place where they (the workers) carried them (the bodies) and performed the Wen en Darak (the dance of death) in order to entertain and cheer up the family of the deceased. In times of war, warriors performed the Wen en Darka to make people happy, to free their thoughts and to make them brave. The Wen en Darak was performed in a ceremonial house. In addition there are six house foundations where people who guarded the place lived. Stone ovens for jellyfish were made at two locations which are evident today. One spot seems to be a house foundation but it is not clear what was done inside. One man with the title Sou Pwarik lived here and led the Wen en Darak.

References

Athens 1980a, 1980b, 1983

Ayres 1983

Bernart 1977

Christian 1899

Hadley 1981

Hambruch 1936

Hanlon 1988

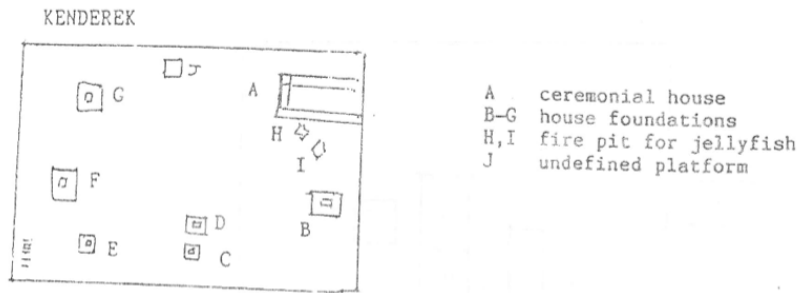
Jencks 1970

Kataoka 2005, 2006, 2007

Mauricio 2003

Morgan 1988

Panholzer and Mauricio 2003



Sketch of Kenderex (Hadley 1981)



Archaeological map of Konterek (Athens 1980b)



116 Pohnmweirak

Alternative names: pōn mūirāk (Hambruch 1936), Pohnmweirok (Hanlon 1988)

Brief Description: This series of breakwater walls extends from Nanmwoluhsei (119) out to Peiniot A (117) and Peiniot B (118).

References

Hambruch 1936

Hanlon 1988

Panholzer and Mauricio 2003



117-118 Peiniot A and B

Alternative names: péi ni òt (Hambruch 1936), Peinot (Hanlon 1988)

Area: Peiniot A 8x20m (Hambruch), Peiniot B 34x34m (Hambruch)

Major Features: 1 platform, low enclosing wall

Current Status of Conservation: heavily overgrown in mangrove, wave deposited sand accumulation

Brief Description: Peiniot A is a small artificial islet between the breakwater Pohnmweirak, and the natural island Peiniot B. This is one of the most distantly separated islets of Nan Madol. A low seawall runs from the Nandowas complex to it. It is possible that this represents the beginning of an expansion of Nan Madol that was never completed. Being separated from the main site it is also possible that the islet was used for star-gazing in order to teach navigation.

Associated Oral Tradition: Peiniot means bringing together things which concern food. This place was built for the preparation of food to aid in feeding all the people who were to work on Nan Madol. However this particular plan did not succeed at Peiniot because work on a path which the Dipwinwai (foreign clan) built was not successful; and that place (Peiniot) was too far from the work place. So they moved to a new location on the island of Pohndowas.

References

Ayres 1983
Hadley 1981
Hambruch 1936
Hanlon 1988



119 Nanmwoluhsei

Alternative names: Naumorosaj (Kubary 1874), Nan-Moluchai (Christian 1899), Nan-moluchai (Christian 1899), nan molūšai (Hambruch 1936), Nanmolujai (Bernart 1977), Nan Molusai (Athens 1980b), Nanmwoluhsei (Mauricio 1985; Hanlon 1988; McCoy and Athens 2012), Nanmwoluhsei (Panholzer and Mauricio 2003)

Major Features: Large walled seawall

Current Status of Conservation: There has been substantial wall collapse though the most impressive part of the site still stand. Wave deposited sand has accumulated. The biggest risks are from continued wave erosion.

Brief Description: Nanmwoluhsei is a massive wall approximately 275 meters long, eight meters wide and 4-6 meters high that forms an L-shaped configuration south and east of Nan Dowas tomb. It acts as a seawall for the substantial waves. The wall has an opening for a canoe of 6 meters. The wall was once much higher but has collapsed in places. The wall foundations boulders lie directly on the natural reef. Two groups of coral columns were located which may have provided the basis for the mythology of an underwater city inhabited by spirits.

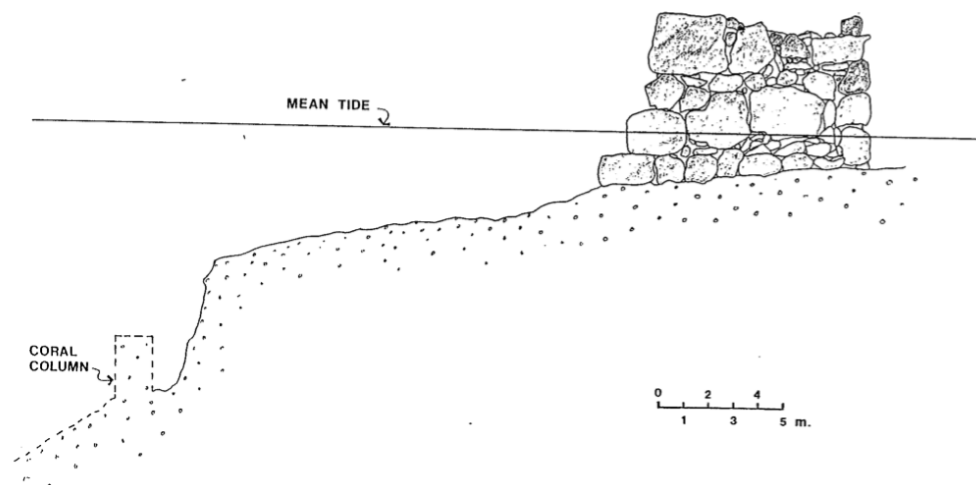
Associated Oral Tradition: This was a place for jumping; it was also an entrance to the honored city, Kanimweiso. Two sharks live there, a married couple who guard Nanmwoluhsei. Their names are Oun Mwoluhsei and Lioun Mwoluhsei. Everyone who visited this place for the first time had to jump into the sea. This demonstrated the person's bravery. Before people jumped they usually cast a spell on a stone and threw the stone into the sea. The sharks usually went, saw the stone, and left. After this the person jumped and the sharks did not come. The kind of person who jumped and returned from the sea, and had good luck, became famous.

Some stories also say that this place is a door to a path which leads to the Honored City under the sea. The sharks, Oun Mwoluhsei and Lioun Mwoluhsei, guard the door to this path so people will not enter the Honored City.

There is one rock at Nanmwoluhsei which is the foundation for the work of that location. This is the rock which founded and held firm the stone wall so it would not crumble. When they began building this place their stone walls could not succeed due to the currents and large waves. A man named Kideumanien who came from Sokehs, rode aboard a stone. He placed that stone there and cast a spell which is called Kindaken Mwoluhsei. After that the stone wall was stable and no longer crumbled apart. It was this act which held the wall and made it successful at that location. Pahn Asang is part of the wall which protected the early work on Nan Madol from waves, as did Nanmwoluhsei.

References

- Athens 1980b
- Ayres 1993
- Ayres and Scheller 2002
- Bernart 1977
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- McCoy and Athens 2012
- Panholzer and Mauricio 2003
- Saxe *et al.* 1980



Section View of Nan Mwoluhsei Seawall and Reef Floor (Ayres 1993)



120 Lelou

Alternative names include: lëlóũ (Hambruch 1936).

Brief Description: These two breakwater walls, built from massive boulders, primarily protected the islets Karian (121) and Karian (122), but also, to a less immediate degree, the rest of Nan Madol.

References

Hambruch 1936



121 Karian and 122 Karian

Alternative names: Karrian (Christian 1899), kariän (Hambruch 1936), Kariahn (Jencks 1970), Darian (Ayres 1983), Karian (Hanlon 1988), Kerian, Kariahn, Keriahn (Panholzer and Mauricio 2003)

Area: Karian 36x16m (Hambruch), 33x9m (Athens); Karian 32x26m (Hambruch), 48x24m (Athens)

Major Features: high wall enclosure, 2 burial chambers, 3 platforms

Current Status of Conservation: The outer enclosure wall facing the northeast has collapsed though it seems unchanged since it was mapped in 1984. The lower part of the islet floods at high tide. Tidal fluctuations impact this islet more than others. Mangrove is encroaching along the edges of the islet. Wave erosion is the major risk to these islets

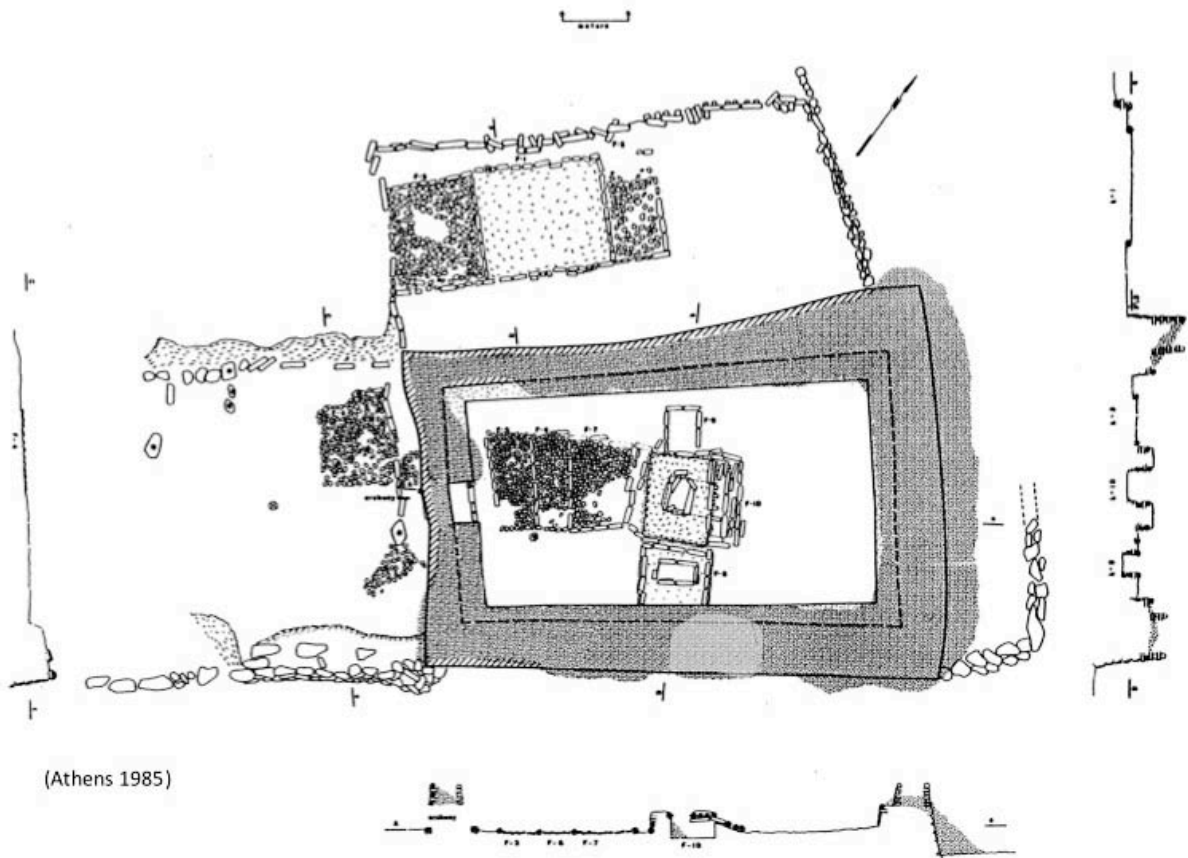
Brief Description: There is a distinctive offset entry portal to the internal tombs, with a lintel supporting four courses of basalt (Athens 1980b:18; Morgan 1988:73).

Associated Oral Tradition: Karian has a high and outstanding wall. There is a burial vault within and high priests were buried inside. In a corner of this enclosure is a tree of the high jungle, ketieu (*Ixora casei*). This tree is used for making spears. This tree has been there from ancient times to the present. The tree still flowers and bears fruit. It is said that on one

occasion a man with the title Kirou Mair (who lived in the jungle in the center of Pohnpei) baked some food for the Saudeleur. He came (to Nan Madol) and met a fresh water eel. The eel took from his head a royal head wreath, and Kirou Mair made one from the spear tree flower. This is the head wreath which Kirou Mair wore when he arrived at Pahnkedira before the Saudeleur. And this he gave to a woman. The woman placed this head wreath there (in Karian), and this grew and became the spear tree which still exists today.

References

- Athens 1985
- Ayres 1983
- Ayres, Seikel and Levin 2008
- Ayres, Levin and Seikel 2012
- Christian 1899
- Hadley 1981
- Hambruch 1936
- Hanlon 1988
- Jencks 1970
- Panholzer and Mauricio 2003



(Athens 1985)

Archaeological map of Karian (Athens 1985)



123 Lukopen Karian

Alternative names: Lukoporin (Kubary 1874), Likop (Christian 1899), lukop kariān (Hambruch 1936), Lukapankarian (Bernart 1977), Luhkepenkarian (Ayres 1983), Lukepenkarian (Hanlon 1988; Seikel 2011)

Area: 26x360m (Hambruch), 24x382m (Athens)
Major Features: Radiocarbon Dates: Major Risks

Current Status of Conservation:

Tides and wave action pose a major long-term threat to Lukepen Karian through coral degradation. The thicket grows quickly as well. (Ayres, Levin and Seikel 2012)

Brief Description: This islet has *lolong* style burials (Seikel 2011).

Associated Oral Tradition: Priests were buried here.

References

Athens 1985
Ayres 1983
Ayres, Seikel, Levin 2008
Ayres, Levin and Seikel 2012
Bernart 1977
Christian 1899

Hadley 1981
Hambruch 1936
Hanlon 1988
Kubary 1874
Seikel 2011

125 Piken Nahn Sapwe

Alternative names: Pik en nan zapue (Hambruch 1936), Pikennahnsapwe (Mauricio 1985)

Associated Oral Tradition

This is supposedly part of the events when Nahn Sapwe was weak and leaving for Katau. He is said to have gone to Pik en Nahn Sapwe, rested a bit and then returned to Mweid en Nahn Sapwe to exit.

References

Hadley 1981
Hambruch 1936



126 Sapwuhtik B

Alternative names: tšap u tik (Hambruch 1936), Sapwitik (Hadley 1981), Sapwuhtile (Ayres 1983), Sapwtik (Mauricio 1985), Saputik (Morgan 1988), Sapwuhtik (Panholzer and Mauricio 2003; Seikel 2011).

Area: 110x58m (Hambruch)

Major Features: burial tomb with wall enclosure

Current Status of Conservation: Stabilization of the underlying islet surface is the primary concern for the preservation of the islet. Tidal inundation and wave action are the culprits of coral degradation though the degradation is slow. Tides and storms have washed sand into the channel between Sapwuhtik and Lukepenkarian.

Brief Description: This is one of the outer sea wall islets.

Associated Oral Tradition: There is one burial vault here, grave of priests. (These places are on the outer wall southwest of Karian.)

References

Ayres 1983
Ayres, Seikel and Levin 2008
Ayres, Levin and Seikel 2012
Hadley 1981
Hambruch 1936
Morgan 1988
Panholzer and Mauricio 2003
Seikel 2011



Archaeological map of Sapwutik and Angeir (Ayres, Seikel and Levin 2008)



127 Angeir Likiangeir

Alternative names: Legineongair (Kubary 1874), ãnéir (Hambruch 1936), Likiangeir (Hadley 1981), Angier (Ayres 1983:244; Hanlon 1988; Panholzer and Mauricio 2003; Seikel 2011)

Major Features: 1 platform, 1 single-tomb burial chamber, 1 double-tomb burial chamber

Current Status of Conservation: Angeir has the same issues with the other islets on the seawall. Its lower elevation causes more significant flooding during high tide. The mangrove is encroaching around the islet and there are some large trees which have had significant impact on the islet, one of which has taken a large sakau stone into its roots.

Brief Description: Skeletal material can still be found at the single-tomb burial chamber.

Associated Oral Tradition: This is where lower ranked priests were buried.

References

Ayres 1983
 Ayres, Seikel and Levin 2008
 Ayres, Levin and Seikel 2012
 Hadley 1981
 Hambruch 1936
 Hanlon 1988
 Kubary 1874
 Panholzer and Mauricio 2003
 Seikel 2011

PoC3-1-ANG
 Feature 1

2 m
 1:100 scale



Archaeological map of structure at Angeir-Likiangeir (Ayres 1983)



128 Pahn Mwasangapw

Alternative names: pan müaş ānap (Hambruch 1936), Pahnmwasangap (Ayres 1983), Pahnmwasangap (Hanlon 1988).

Major Features: Breakwater walls

Brief Description: These series of breakwater walls are laid out in a fashion that suggests it may have been an islet. Morgan (1988) reports it as a breakwater as it has stones that are aligned presumably to let boats through, without internal fill. Hadley's (1987:118) sketch map of Karian-Likin Angeir mistakenly includes the name "Pahn Mwasangapw," which is not included in it.

Associated Oral Tradition: This was a burial vault of the lowest ranking priests.

References

Ayres 1983
Ayres, Seikel and Levin 2008
Hadley 1987
Hambruch 1936
Hanlon 1988
Morgan 1988



129 Lemenkau

Alternative names: Limenekau (Kubary 1874), Lemankau (Christian 1899), lēm en kau (Hambruch 1936), Lamenkau (Bernart 1977), Lemenkou (Morgan 1988; Bath and Athens 1990; Seikel 2011; McCoy and Athens 2012), Lem en Kau (Hadley 1981:101; Athens 1980b).

Area: 51x99m (Athens)

Major Features: 3 burial vaults, 3 sakau stones, 1 elevated house foundation

Major Risks: wave erosion

Current Status of Conservation: The exterior/seaward side of Lemenkau has numerous washouts as noted in Athens' 1984 map. [the burial in the southern corner] was significantly impacted by a washout on the south side of the islet. The structures on Lemenkau are generally well preserved, though those along the exterior side are more likely to have been impacted by wave action. Mangrove grows along the western side of the islet. The souther/southeast areas of Lemenkau are covered in trees and vines. [The medicine stone] enclosure is partially covered in thicket and creepers as [is the house foundation in the west corner]. The northwest side of the islet is mostly clear of vegetation.

Brief Description: There are three burial vaults and three sakau stones and a house foundation which is somewhat elevated.

Associated Oral Tradition: Lemenkau was a place for medicine and curing illness, all kinds of illness and harmful magic. *Kau* means illness from an act which is magical. Those who worked there included some from the priestly side, and some male healers and female healers. The priests performed prayers for the ill and the men and women healers made medicines. There was a rock upon which medicine was pounded. When the work on victims of sorcery was finished, the weak patients bathed in the Pool of Harmful Magic (Namwen Kau). This was a pool beside Lemenkau. All illnesses would leave the body of the weak ones, and they became strong again.

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Athens 1980b, 1985

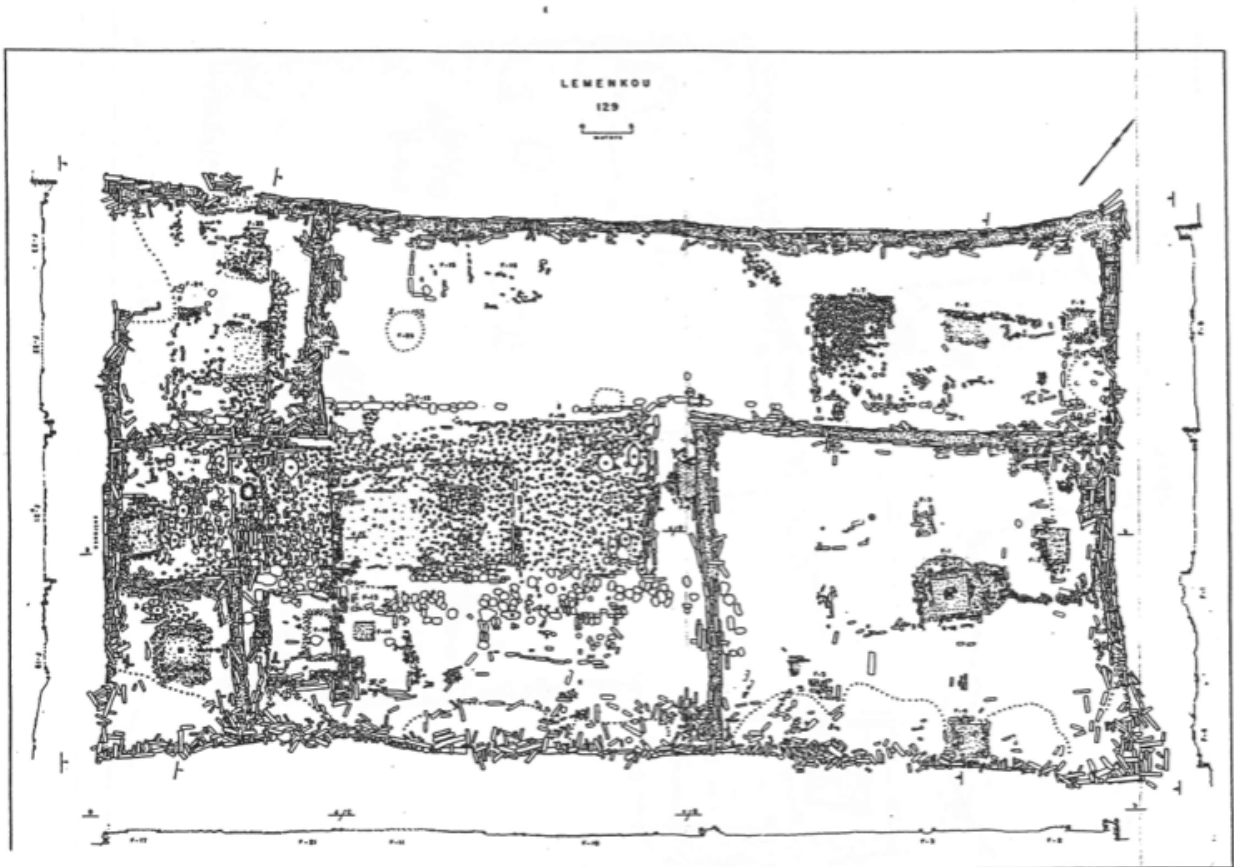
Ayres *et al.* 1983

Ayres, Levin and Seikel 2012

Bath and Athens 1990
 Bernart 1977
 Christian 1899
 Hadley 1981
 Hambruch 1936
 McCoy and Athens 2012
 Morgan 1988
 Pietruszewsky and Douglas 1985
 Seikel 2011



Sketch of Lemenkau (Hadley 1981)



Archaeological map of Lemenkau (Athens 1985)

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JCIC-Heritage

2010 Survey for International Cooperation
Japan Consortium for International Cooperation in Cultural Heritage

**Survey Report on the Present State of Nan Madol,
Federated States of Micronesia**



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Survey Report on the Present State of Nan Madol, Federated States of Micronesia

March 2012
Japan Consortium for International Cooperation
in Cultural Heritage

Foreword

1. This is a report on the fiscal 2010 survey conducted by the Japan Consortium for International Cooperation in Cultural Heritage in regard to the archaeological site of Nan Madol in the Federated States of Micronesia.

2. The following members were responsible for writing each of the chapters of this report.

Writers: Chapters 1, 4, 6 – Tomomi Haramoto

Chapters 2, 3 – Osamu Kataoka

Chapter 5 – Tomo Ishimura

Editor: Tomomi Haramoto, Japan Consortium for International Cooperation in Cultural Heritage

Preface

The Japan Consortium for International Cooperation in Cultural Heritage (JCIC-Heritage) collects information in various forms to promote Japan's international cooperation on cultural heritage. Under this scheme of information collection, a cooperation partner country survey was conducted in the Federated States of Micronesia (FSM) in fiscal 2010, as presented in this report. It was conducted in response to a request from the UNESCO Apia Office, to provide a foundation of information that would facilitate the first steps toward protecting Nan Madol, the largest cultural heritage site in FSM.

Cooperation partner country surveys are one of the primary activities of JCIC-Heritage's initiatives for international cooperation. They particularly focus on collecting basic information to identify fields of cooperation and their feasibility in a relevant partner country. As of fiscal 2011, cooperation surveys have been conducted in Laos, Mongolia, Yemen, Bhutan, Armenia, Bahrain, and Myanmar, and have effectively assisted Japan's role in international cooperation. The recent survey in Micronesia is also already being linked to international cooperation efforts, with local workshops being held and resulting in historical achievements based on proposals derived from the survey.

We hope this report will help promote Japan's international cooperation on cultural heritage in the future, as well as help promote initiatives for protection of Nan Madol.

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1. Overview of the Survey

1-1 Survey period

February 17 – 25, 2011 (actual stay in Micronesia: Feb. 18 – 23)

1-2 Survey members

Osamu Kataoka (Professor, Kansai Gaidai University)

Tomo Ishimura (Researcher, Nara National Research Institute for Cultural Properties)

Tomomi Haramoto (Research Fellow, Japan Consortium for International Cooperation in Cultural Heritage)

1-3 Survey background

Nan Madol belongs to the island of Pohnpei in the Federated States of Micronesia (FSM). It is the ruins of a megalithic culture, composed of 95 small to large artificial islets made of basalt and spread over a rectangular area approximately 1.5 km by 0.7 km. Its construction is said to have begun around 500 A.D. and continued to around 1600 A.D., with royal palaces, temples, royal tombs, and residential districts integrally forming a city complex. Gradually created over a long period of time in history, Nan Madol is considered an important reference for unraveling the history of the Pacific region, and is said to have high academic value. As the largest cultural heritage site in FSM, it is also a precious tourist resource. However, notwithstanding its extremely high significance in terms of academic value and as a tourism resource, no full-scale initiatives have been implemented to date to protect the ruins.

Within the Oceanic region, to which FSM belongs, there are only five UNESCO cultural heritage sites as of 2011 (including one that is a mixed site). Even among the countries in the region, FSM is particularly eager to have Nan Madol inscribed on the World Heritage List, as it has no sites on the list at present. The UNESCO Regional Office in Asia and the Pacific, acknowledging that international support is needed to protect and inscribe the site on the World Heritage List, approached the Japan Consortium for International Cooperation in Cultural Heritage (JCIC-Heritage) regarding the possibility of its cooperation in sending a Japanese survey team to assess the present state of the Nan Madol, as no surveys have so far been conducted regarding its condition and the framework required for its protection. In response to this request, JCIC-Heritage sent a survey team to Micronesia to conduct a survey of Nan Madol in fiscal 2010.

1-4 Survey objective

Assessment of the present state of Nan Madol, including its preservation condition and the status of policy framework

1-5 Survey agenda

There were two main agenda items in the recent survey: (1) inspection of the present state of Nan Madol—overall inspection and survey of the present state of each artificial islet; and (2) interviews with relevant parties.

(1) Survey of the present state of Nan Madol

- Overall inspection of the entire ruins
- Survey of the present state of each artificial islet (detailed documentation using diagrams, videos

and photos)

- A. Structure of the artificial islets (inner, outer, surface structures, etc.)
- B. State of damage (collapse, weathering, etc.) and identification of causes (kinetic load, vegetation, reutilization, human damage, etc.)

(2) Interviews with relevant parties

Interviews were held with various institutions in FSM, government institutions in Pohnpei, and local residents.

1-6 Record of activities

Date	Venue	Action	Name of interviewee or islet surveyed
Feb. 18 (Fri.)	Colonia	Interview	• FSM Historic Preservation Office (HPO)
Feb. 19 (Sat.)	Madolenihmw	Interview	• Nahnmwarki • Representative of a local NGO (Nan Madol En Inmw Incorporated)
		Islet inspection	• Inspection only of Nan Dawas and a few other islets due to rain
Feb. 20 (Sun.)	Madolenihmw	Islet survey	• Nan Dawas • Pahnwi • Other Survey of the islets on the open ocean side using a boat
Feb. 21 (Mon.)	Madolenihmw	Islet survey	• Pein en Kitel • Karian • Pahn Kedira • Idehd • Other
Feb. 22 (Tue.)	Colonia	Interview	• Pohnpei Tourist Bureau • JICA Micronesia Office • Japanese embassy in Micronesia
		Information collection	• Micronesian seminar
Feb. 23 (Wed.)	Madolenihmw	Islet survey	• Final confirmation survey of the entire site
		Debriefing session	• FSM HPO

1-7 Reason for conducting a survey of Nan Madol

FSM and Japan have a historical relationship that dates back to 1914, when Japan governed FSM as part of the southern islands under the League of Nations Mandate until 1945. For this reason, there are many Japanese descendants in FSM, and Japanese influence can be seen in the food culture and language in Micronesia. In the context of this relationship between the two countries, there is a strong expectation of cooperation from Japan, and assistance has been provided on numerous occasions for FSM's nation-building and economic development efforts. A wide range of sectors have benefited from Japan's cooperation, namely the environment, education, economic infrastructure development, health and hygiene, and marine processing sectors, but there had been no opportunity to provide cooperation for cultural heritage conservation. However, Nan Madol has not only been recognized as an important part of the historical heritage that the citizens of FSM inherited from their ancestors, but it has also been recognized as the largest tourism resource in the islands and an important aspect for future tourism development. Furthermore, since Japanese researchers, including survey team member Mr. Osamu Kataoka, have accumulated a significant number of studies on Nan Madol, there was an awareness that if there was any country capable of efficiently preserving the ruins, it would be Japan. As a result, JCIC-Heritage agreed to send a survey team to Nan Madol based on the understanding that Nan Madol is a site that merits future cooperation, and that it could make a meaningful contribution to protecting the ruins by conducting a survey.

2. Overview and Present State of Nan Madol

Introduction

The ancient city centre of Nan Madol is a precious asset not only to Pohnpei and Micronesia, but to all of humanity as it possesses a unique history and significant built heritage. To this end, UNESCO has recently assessed its worth by placing it on its tentative list of World Heritage sites. Aside from its singularly important heritage value, it fits firmly within the definition of a site complex, and is the largest in Micronesia. The centre has an intricate and multivocal history, as it was built continuously over a period of roughly 500 years, through the establishment, glory and finally, the collapse of the Saudeleur Dynasty, that ruled the islands for centuries until it was invaded by competing political elements from elsewhere on Pohnpei, or from nearby Kosrae island. After the disintegration of the dynasty some 500 years ago, the city fell to ruin, and was thereafter exposed to a multiplicity of natural and cultural influences, transforming it into the unique historical, and legendary, monument it is known as today.

The objectives of this survey were: (1) to assess the state of preservation of the ruins and identify the nature of any damage and other problems through careful observation of the structures and surrounding environment; (2) to clarify future issues toward proper preservation of the ruins and the local environment; and (3) to contemplate creating a conservation organization and a system for the establishment and implementation of short and long-term preservation measures.

2-1 Geography and environment of Pohnpei

Pohnpei is home to the ancient city of Nan Madol that lies within the Caroline Islands in Micronesia at 6°54' north latitude and 158°15' east longitude. Along with the state of Yap and Chuuk to its west, and the state of Kosrae to its east, the four states including Pohnpei make up the Federated States of Micronesia, with the capital city of Palikir located on Pohnpei Island. Pohnpei itself is divided into five municipalities, namely Sokehs, Nett, U, Madolenihmw and Kitti (Figs. 1 and 2), and also governs eight neighboring atolls including the Pakin and Ant Atolls.

Pohnpei is the third largest volcanic island in Micronesia, after Guam and the Babeldaob Island of Palau. Mount Nahnalaud, the highest mountain on Pohnpei, that soars to an elevation of 789 meters above sea level, is the second highest peak after Agrihan among the Northern Mariana Islands. The mountainous island also boasts eleven mountains that rise to elevations over 600 meters, including the 700-meter-class Ngihneni Mountain and DolenWelik Mountain. Geologically, the island is located east of the Andesite line, and is mainly formed of basalt.

The pentagon-shaped island measures 23 kilometers at its widest and has an area of 334.2 km², of which 81% is occupied by mountains, 14% by mangrove swamps, and a mere 5% by flat terrains (Office of Planning and Statistics, 1979). The inland area is characterized by dense forests, rugged mountains, and as many as 42 rivers that flow into the fringing reefs, including the Kiepw, Senipehn, and Kitti Rivers that flow northward, eastward, and southwestward, respectively through Mount Nahnalaud's ridges and extend to the coast. A barrier reef with channels in twenty locations and an extensive lagoon with 23 small islands almost completely surround Pohnpei except around the island of Temwen. Pohnpei has a tropical rainforest climate, characterized by high temperatures (annual average: 27°C), high humidity (annual average: 85%) and abundant rainfall (annual: 4,875mm). Northeast or east trade winds become prominent during the months from December to May (NOAA, 1990).

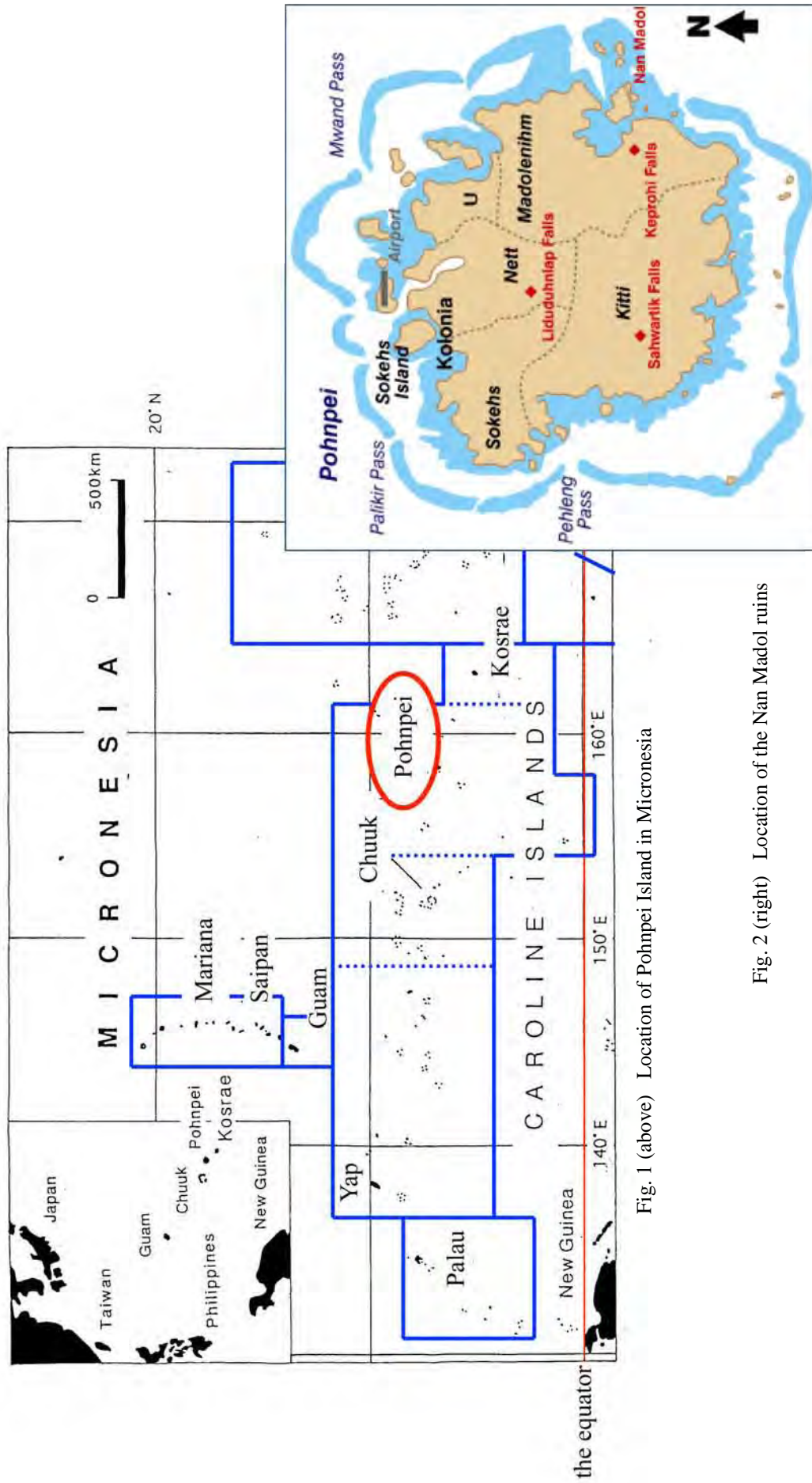


Fig. 1 (above) Location of Pohnpei Island in Micronesia

Fig. 2 (right) Location of the Nan Madol ruins

2-2 Brief history of Pohnpei

The first peopling of Pohnpei occurred at least 2000 years ago. The history of Pohnpei's discovery by Europeans is said to date back to the voyage made by a Spanish explorer named Pedro Fernandez de Quiros in 1595, who also discovered the Ant Atoll at the same time (Hezel, 1979), although another Spanish explorer, Alvaro de Saavedra, may have spotted the island in 1529. Thereafter, records show sporadic "rediscoveries" of Pohnpei, including the discovery by James F. O'Connell (1836), who drifted to the island after a shipwreck accident in 1826 and stayed until 1833, and by Pyedor Petrovich Lutke (1971), a Russian captain of the *Senyavin* who landed on the island in 1828. The actual year in which O'Connell claims to have landed on Pohnpei, however, poses many uncertainties, and the credibility of his account has been questioned and debated (Riesenburg, 1968). Western contact with Pohnpei increased rapidly from around 1830, accompanying an increase in whaling activities, and in 1852, the Honolulu Branch of the Boston Mission began sending Christian missionaries, preachers and doctors to the island. The mid-1880s saw an intensification of colonization policies by major powers, and in 1886, Pohnpei and the expansive Caroline Islands were colonized by Spain. In 1899, Spain ceded the Micronesian islands to Germany after its defeat in the Spanish-American War, and the islands remained under German rule until 1914. After the First World War, German colonies above the equator were confiscated under a League of Nations Mandate, and Japan assumed control of the Micronesian islands. After the Second World War, they became part of the Trust Territory of the Pacific Islands under U.S. administration in 1947. Thereafter, in 1979 the islands were named the Federated States of Micronesia and became an autonomous nation in free association with the United States in 1986, thus putting an end to the trusteeship, and finally developing into the independent nation that it remains today.

2-3 Overview of the Nan Madol

The Nan Madol site complex lies in the intertidal zone of a reef flat along the shores of Temwen Island located in the southeastern part of Pohnpei (Fig. 3; Photo 1), and refers to the ruins of a megalithic city complex composed of 95 small to large artificial islets in a rectangular area approximately 1.5 km by 0.7 km (Fig. 3). The vast area of Nan Madol is divided into the northeastern area named "upper" Nan Madol (MadolPowe), where priests resided, and the southwestern area of "lower" Nan Madol (MadolPah), where the paramount chiefs, the Saudeleur, lived and conducted rituals and political affairs (Hambruch, 1936: Fig. 4).

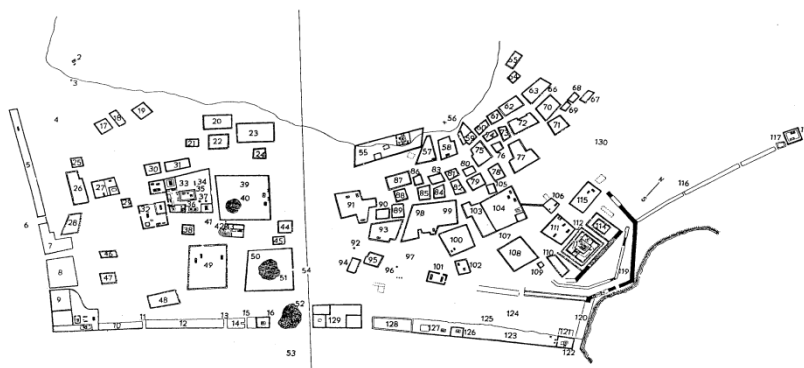


Fig. 4 . Sketch map of Nan Madol by Hambruch (1936)



Fig. 3 The Nan Madol ruins at the foot of Temwen Island



Photo 1 Satellite photo of Nan Madol and surrounding area

The artificial islets of Nan Madol range in area from 160 to 12,700 m² (Hambruch, 1936; Ayres, 1993), and were commonly composed of a lower part, made by creating a wall of 0.5 to 5-ton basalt columns stacked to a height of 1 to 2 meters, and an upper part comprising structures such as houses and tombs (Fig. 5). On some islands, the inside of the enclosure surrounding the island is filled with tons of coral and covered with soil, while on other islands, the coral masses remain exposed. On Pahnwi islet, for example, massive basalt boulders measuring almost 3.5 meters in diameter, some weighing up to 90 tons, are stacked to a height of roughly 10 meters in the southwest corner of the island with enclosures that are filled with huge amounts of coral.

The names, functions, and purposes of each artificial islet have been passed down through oral history among Pohnpei's traditional inhabitants and have been recorded by various researchers (Bernart, 1977; Hadley, 1987; Panholzer and Mauricio, 2003). For example, according to oral tradition, the islet of UsenDau in upper Nan Madol served as a residential sector for priests and the Nahnmwarki who ruled after the Saudeleur Dynasty. Nan Dawas islet is composed of three burial facilities within a double enclosure of basalt columns stacked to a height of roughly 8 meters. This area served as the burial ground for successive chiefs of the Saudeleur Dynasty. Meanwhile, the islet location of PahnKedira in lower Nan Madol was the residence of the saudeleur chiefs who ruled the islands, as well as the seat of religion and politics.

Archaeological studies to date (Athens, 1980; Ayres, 1985, 1990) have found that the location of Nan Madol has been inhabited from as early as 2000 years ago, and that construction of the artificial islets began around 500 A.D. Judging by the commencement of construction using basalt columns (Ayres *et al.*, 1983) and the beginning of religious rituals in Idehd islet (Athens, 2007), it is believed that the Saudeleur system was formed sometime between 1000 to 1200 A.D. According to oral tradition, the Saudeleur Dynasty was conquered by Isokelekel, a legendary warrior from Kosrae Island located 480 kilometers east of Nan Madol, around 1500 to 1600 A.D. (Ayres, 1990; Bath and Athens, 1990). Isokelekel established a new political system that was presided over by a chief called Nahnmwarki, who became the first Nahnmwarki, (the subsequent word for "chief" in Pohnpei due to his legendary status). After the collapse of the Saudeleur Dynasty, Nan Madol steadily fell into ruin, but some of the artificial islets were occasionally reused, a practice that probably helped contribute to its relatively adequate preservation into the modern era.

2-4 Research history

Centuries of history have witnessed the tides of change in this remote region, marked primarily by increasing whaling activities near the island of Pohnpei, Christian missionary activities, and colonial rule by Spain, Germany, Japan and the United States. As a result, visitors and researchers from these countries have provided records, relating directly to Nan Madol, in the form of travelogues and ethnographies. This has created both positive and negative consequences, as Nan Dawas islet, in particular, became a popular excavation destination, as well as a popular looting site.

Early antiquarian and, later, more stringent archaeological work began with Gulick (1857) whose initial work documented the ruins, followed mainly by Kubary (1874), Sarfert (1913), Christian (1899) and then to Hambruch (1936), who vigorously conducted archaeological excavations of burial places and collected artifacts. Hambruch, in particular, documented all collected artifacts in great detail, and drew a sketch map of the entire Nan Madol city, that is still frequently used today. During the period under Japanese Mandate, Hasebe (1915), Yawata (1932, 1959), and Muranushi (1942) conducted excavations at Nan Madol, although only mere fragments of their findings were disclosed. In-toh (1999) compiled a database of all artifacts deposited in universities and research institutions collected by Japanese researchers from archaeological sites in Micronesia, along with any documentation of shell artifacts collected from Nan Madol.

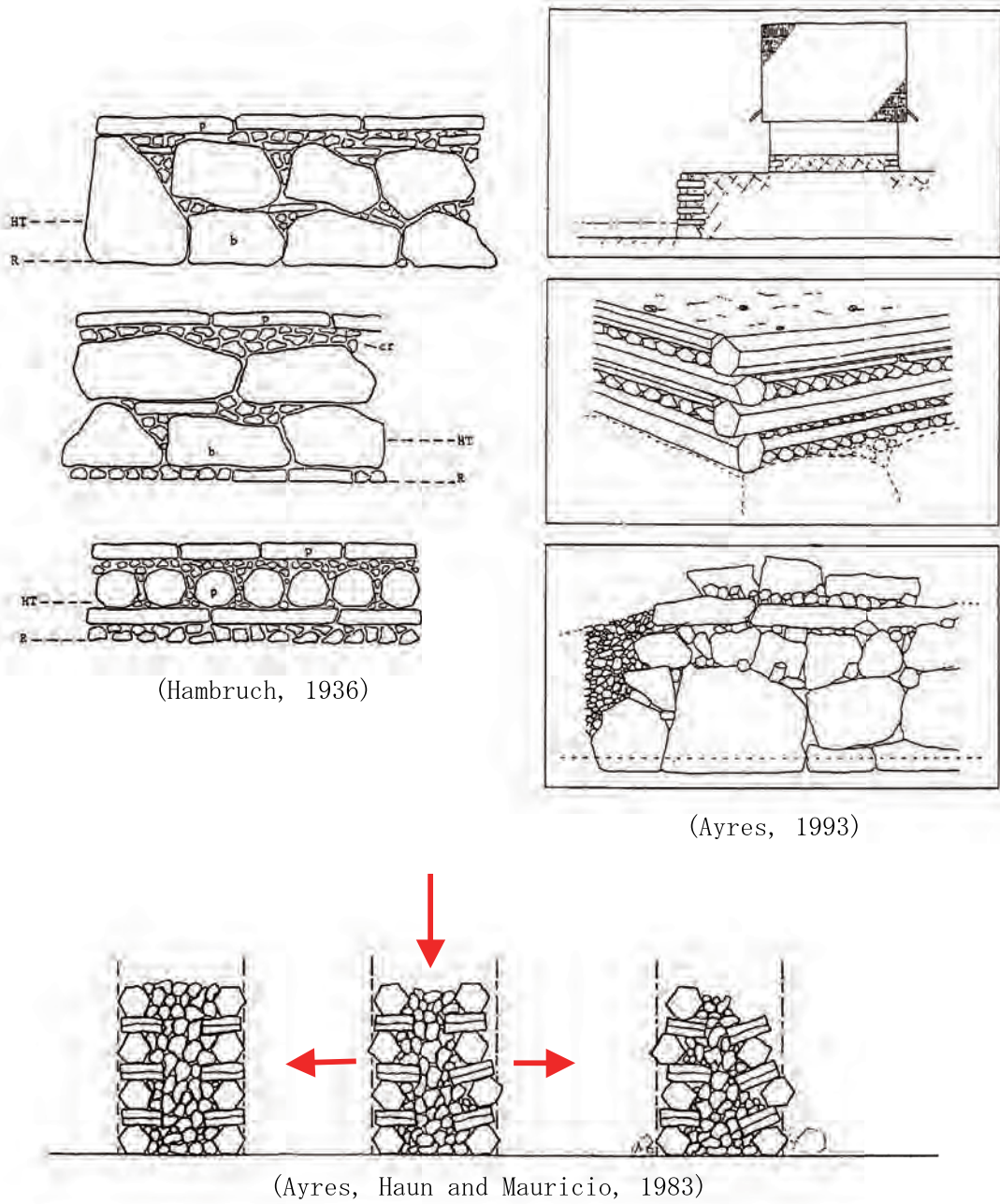


Fig. 5 Structure of the artificial islets and typical example of collapsed perimeter wall, showing part of the pattern of natural deterioration and change.

During the period under the trusteeship of the United States, the Smithsonian Institute was the first to conduct an archaeological excavation at Idehd in 1963, and announced several radiocarbon dates (Radiocarbon, 1968). After the latter half of the 1970s, studies of Nan Madol advanced as part of the United States' cultural property protection policy. Saxe, Allenson and Loughridge (1980) conducted a verification survey in 1978 of the scope of the Nan Madol site after its registration as a designated monument in 1974. In addition, they surveyed not only Temwen, but also a larger area included in the Madolenihmw Municipality. In their report, they discussed specific preservation measures for the Nan Madol site and measures for improving access for visitors, and emphasized the need for immediate restoration and archaeological surveys of Nan Dawas and UsenDau (Saxe *et al.*, 1980). Meanwhile, Ayres *et al.* (Ayres, Haun and Severence, 1981; Ayres and Haun, 1980) conducted archaeological excavation and survey on the islands, including the Awak region of the U Municipality and the Ant Atoll of Kitti Municipality, in order to gain knowledge about prehistoric settlement and subsistence patterns.

The years from 1980 to 1990 were marked by full-scale archaeological studies of Nan Madol, conducted mainly by Athens (Athens, 1980, 1985; Bath and Athens, 1990) and Ayres (Ayres, 1993; Ayres, Haun and Mauricio, 1983) in order to shed light on the early settlements of Nan Madol and the rise and fall of the chiefdom system. Ayres *et al.* (1983), who conducted reconnaissance of the 71 artificial islets of Nan Madol, indicated that the early settlements and the chiefdom system were intricately related to the collapse of the ancient city, and called for the urgent preservation and improvement of Pahnkedira and UsenDau. At the same time, Bath (1984) conducted comparative studies of the Sapwtakai site in inland Kitti, and Ayres and Mauricio (1997) of the Salapwuk site complex.

After the 1990s, an archaeological excavation was conducted in the Ant Atoll located roughly 9 km southwest of Nan Madol (Gapilaud, 2001), but Nan Madol itself was not excavated at this time. The excavation of Nan Madol by Kataoka (2005, 2006, 2007; Kataoka, Ono and Nagaoka, in prep.) in 2005 was the first in fifteen years since the excavations by Athens and Ayres, and the first in 75 years to be conducted by the Japanese. During the latter half of the 2000s, an archaeological survey was conducted at Metipw and Dolopwail situated 4 km north of Nan Madol across Madolenihmw Harbour, to gain a better understanding of the Saudeleur Dynasty, that ruled the entire island of Pohnpei from Nan Madol, as well as the structure of the local community (Kataoka, 2009, 2010, 2011; Kataoka, in prep.; Kataoka and Nagaoka, in prep.).

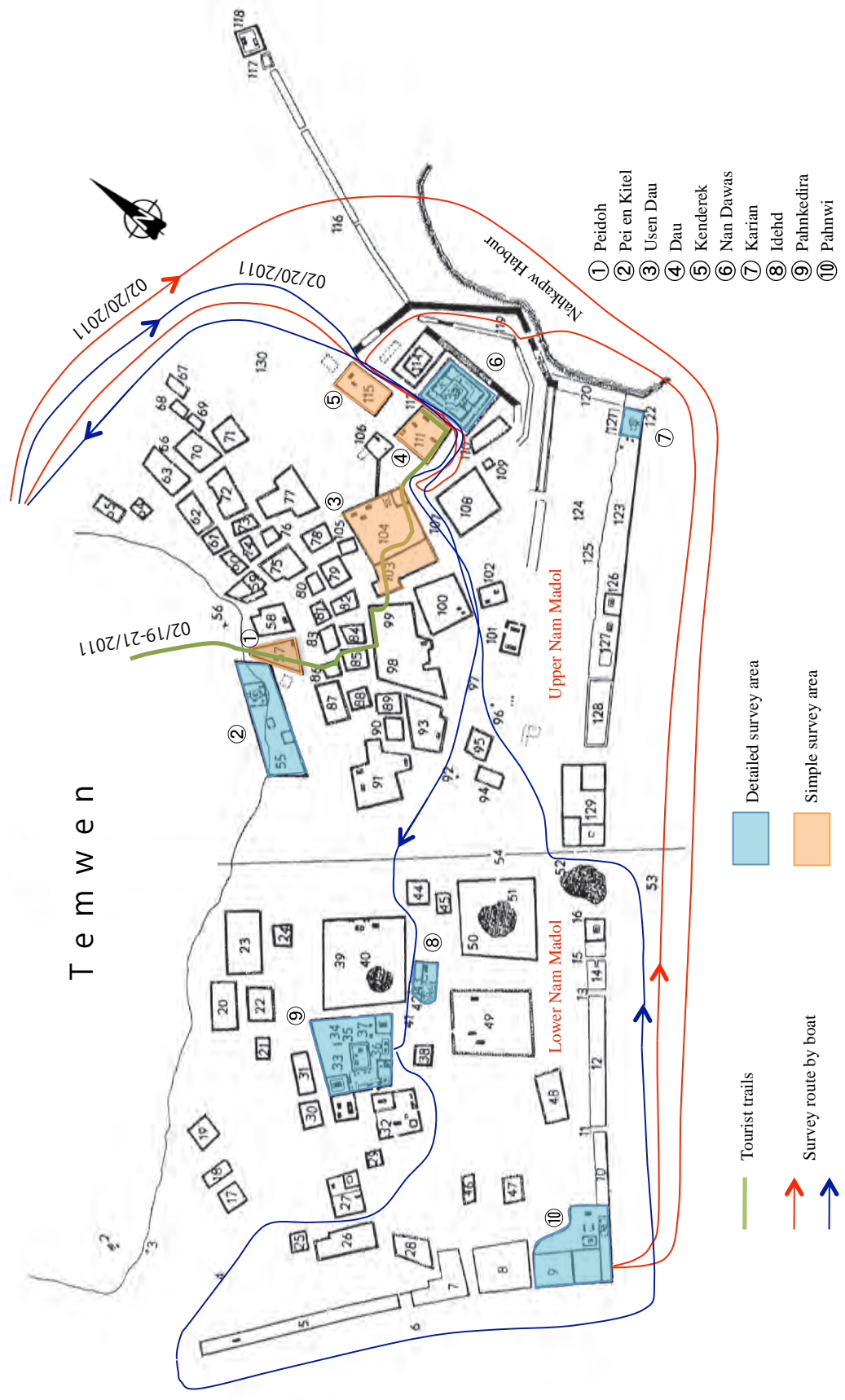


Fig. 6 Survey areas and routes

3. Present State of Nan Madol

3-1 Survey method

Our recent visit to Pohnpei only allowed us a limited time to survey the present state of Nan Madol, because our agenda also included joint briefings and meetings with the federal and state historic preservation offices and with NPO Nan Madol En Ihmw Incorporated, whose objective is to preserve the traditional Nahnmwarki chief system and the ancient city of Nan Madol. To make the best use of our limited time, we selected a number of islets from among the 95 artificial islets of Nan Madol that we judged were most important based on oral tradition and existing archaeological study reports. During low tide, we traveled along tourist trails, and at high tide, we traveled by boat. At the selected islets, we carried out detailed surveys, and while traveling along the trails or by boat, we carried out simple surveys as was reasonably possible (Fig. 6). Relying mainly on visual observation, we recorded the present state of the islets on copies of the same ground plan created by Athens (1980, 1985) and Ayres (1985, 1993; Ayres *et al.*, 1983), and recorded details on digital camera and video.

3-2 Survey result

Based on the objectives of this survey, Nan Madol can be roughly divided into four areas: (1) the artificial islets from Nahkapw Bay along the reef on the open ocean side (from Nan Mwoluhseito Pahnwi); (2) the group of artificial islets bounded by the artificial islets mentioned in (1), and up to Temwen Island; (3) the channels intersecting the artificial islets; and (4) the group of artificial islets along the coast of Temwen (the group of northwestern islets of upper Nan Madol, including Peidoh).

Area (1) is directly susceptible to the ebb and flow of the tide, as well as to the waves and the wind. For this reason, the bottom sand of the reef has accumulated along the seawall, and many parts of the islets display signs of collapse caused by waves and dense vegetation. Furthermore, large trees on the islands that have fallen due to strong winds and dry weather have caused the stone elements of the islets to collapse or loosen. In Area (2), almost all islets are covered by a dense growth of vegetation including trees of various sizes. The roots of the trees are causing the stone elements to loosen, and trees that have withered and fallen are causing the basalt boulders of the perimeter wall to collapse or are otherwise causing serious damage to the islets. In Area (3), climate changes that have occurred after construction of the islets and the tourist trails created in recent years have changed the water level and flow of the waterways, and have turned the soil to silt in many places, thus allowing mangrove trees to flourish and their roots to inflict adverse effects on the ruins. In some waterways, withered mangrove trees are causing silt and sand to accumulate and are creating a vicious cycle of destruction. In Area (4), soil and sand that are running off from Temwen Island due to tide action and rainwater are accumulating around the islets, choking the flow of water in the waterways and forming mud lakes and swamps.

Below, we discuss the present state of the ruins that were surveyed and the main factors causing damage.

① Peidoh (Figs. 7 & 8 / Photo 2)

Peidoh is the first set of ruins along the tourist trail that begins at the foot of the slope of Temwen leading from the site of the Silbanus residence. It is 2,350 m² in area. The tourist trail that passes through the ruins was converted from a community road that the residents of Temwen previously used in their daily activities. The channel between Pei en Kitel to the west and Pwilelto to the east has turned into swamps and mud lakes due to the runoff of soil and sand from Temwen originally caused by rain and tidal action.



Fig. 7 Location of Peidoh and Pei en Kitel



Photo 2 Expansion of swamp lands on Peidoh



Fig. 8 Present state of Peidoh

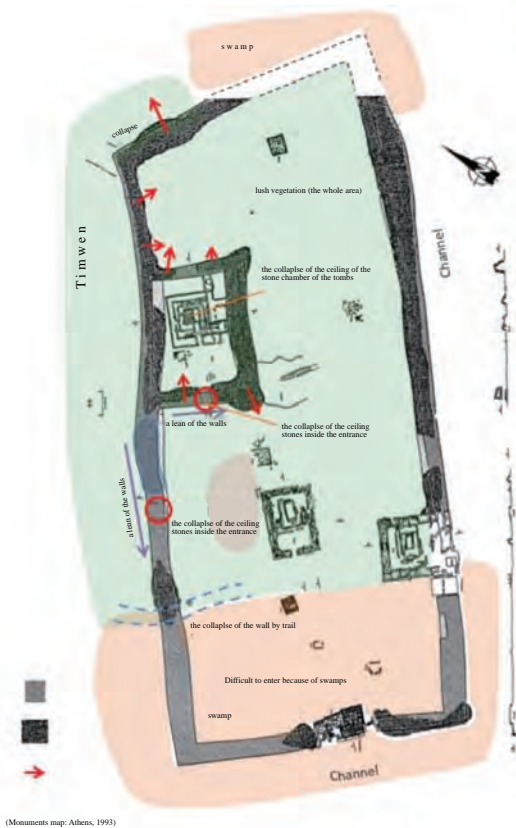


Fig. 9 Present state of Pei en Kitel



Photo 3 Collapse of the northeast outer wall



Photo 4 Ground subsidence around the entrance in the northwest outer wall

According to an informant, the U-shaped structure (meeting house) standing on a high peak in the southwest corner of the islet was constructed sometime around the 1900s. As it was apparently made using the original basalt boulders of the ruins, the displacement of the basalt boulders might have been a factor in the damage of the prehistoric ruins that are seen today.

② Pei en Kitel (Figs. 7 & 9 / Photos 3 & 4)

Pei en Kitel is characterized by an enclosed burial place occupying the center of a 9,000-m² area. According to oral tradition, Isokelekel, who is said to have conquered the Saudeleur Dynasty and became the first Nahmwarki, is buried here. Among the 95 artificial islets of Nan Madol, it is the only islet that was created half on Temwen Island and half on the fringing reef. The islet and its surrounding area are covered by lush vegetation, including large trees, and the southwestern area is a vast wetland. The outer wall has collapsed in many places, with the northeast wall displaying an especially serious state of collapse.

In addition to the bowing, distorting, and collapse of the outer wall due to deadloading (structural stress applied under its own weight), the weakening of the ground has caused the northwest enclosure to lean heavily to the southwest where the ground has turned into a swamp, while the southwest wall of the tomb leans heavily to the southeast. The southwestern part of the northwest wall is also partially damaged due to a community trail built by the residents. In addition to the above, the inside of the tunnel-like entrance created in the centre of the northwest wall and part of the ceiling of the stone chamber of the tomb have also collapsed.

③ Pahseid and UsenDau

A boundary wall made of basalt columns separates the two areas, but it has been partly dismantled where the tourist trail was built to cut across the wall. Pahseid is 3,200 m² and UsenDau is 7,200 m² in area, and are both covered by lush vegetation. A dating of 760 A.D. has been reported based on the carbon dating of the bottom carbide layer of UsenDau (Ayres *et al.*, 1983).

④ Dau (Figs. 10 & 11 / Photos 5 – 7)

Dau, which dates back to 1000-1250 A.D., encompasses an area of 5,100 m² (Kataoka, Ono and Nagaoka, in prep.), and is covered by lush vegetation. A tourist trail, apparently built using the stone elements of the ruins in some places, runs around the margin of the entire islet. The basalt columns of the stonewall has collapsed. The east side of the islet, in particular, has severely collapsed, not only due to deadloading, but also because the main tourist route to Nandauwas passes through this area. Large trees that have recently fallen lie abandoned on the north side of the stonewall.

The paved stone structure occupying the centre of the north end of the ruins was said to be built during the period of Spanish rule, with a high probability that large quantities of stone elements of the prehistoric ruins were diverted for its construction.

⑤ Kenderek (Figs. 10 & 12 / Photo 8)

Built in 1400 A.D. (Kataoka, Ono and Nagaoka, in prep.), Kenderek has an area of 3,300 m², that is entirely covered by a jungle with large trees and lush vegetation. Based on visual observation made as reasonably as possible from the boat, the northern area along the northeast wall was found to be submerged. The paved stone structure occupying the centre of the north end of the ruins was built during the period of Spanish rule, and like at Dau, large quantities of stone elements of the ruins were probably diverted for its construction.



Fig. 10 Location of Dau and Kenderek



Photo 5 Visitors on the artificial islet of Dau seen from Nan Dawas

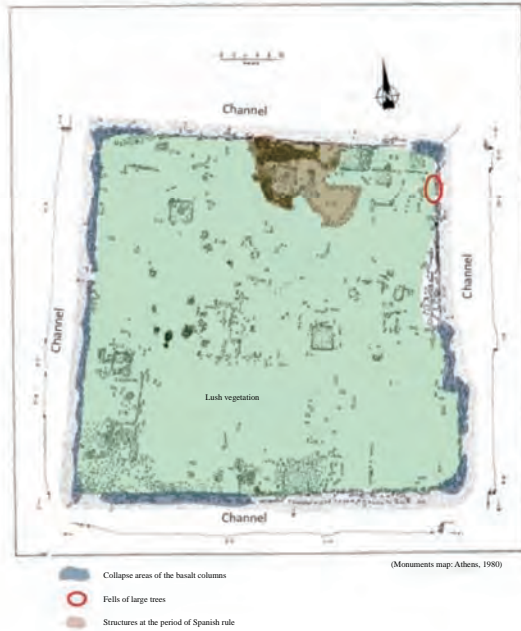


Fig. 11 Present state of Dau



Photo 6 Felled trees abandoned near the east stonewall



Photo 7 Collapse of the northeast corner of the stonewall on Dau



Fig. 12 Present state of Kenderek



Photo 8 Dense trees and shrubs on Kenderek

⑥ Nan Dawas (Figs. 13 & 14 / Photos 9 – 19)

Nan Dawas was built 800 years ago (Ayres, 1993) with an area of 3,400 m². It receives the largest numbers of tourists as it is one of the most representative ruins of Nan Madol, and is regularly weeded, beautified, and cared for by the Visitors Board. There are seven places in the outer wall of the double wall enclosure stacked to a height of eight meters that display severe collapse and crumbling toward the inside of the enclosure. In particular, the severe collapse of the south side of the outer wall near the southern stone chamber is attributed to the growth of banyan trees (*Ficus microcarpa*) (Saxe *et al.*, 1980).

The massive basalt boulder at the bottommost layer of the outer wall in the southeast corner shows prominent cracks caused due to deadloading and weathering. Meanwhile at the top, the long basalt columns at the four corners are in danger of falling, causing them to accompany the collapse of the surrounding elements, because they are placed in a way that makes them project outward. Of the terrace structures built along the inside of the inner and outer walls, the southeast corner of the outer wall and the southwest corner of the inner wall were found to be bowed and distorted from deadloading. The central stone chamber and northern stone chamber are in a state of relatively good preservation, but the ceiling of the southern stone chamber is partially collapsed. The inside of the central stone chamber has been excavated by Hambruch and Yawata, and does not retain its original appearance.

⑦ Karian (Figs. 15 & 16 / Photos 20 – 22)

Karian occupies an area of 1,150 m², and has a tomb surrounded by high walls in the centre of the islet. Due to its close proximity to Nahkapw Bay, it is directly affected by the waves, and the perimeter wall on the open ocean side has also been severely damaged. The waves have adversely affected not only the basalt columns of the perimeter wall, but also the corals inside it, leaving them exposed and subject to collapse. The basalt columns in the southeast corner, in particular, are projected outward as a result of the collapse, and are in imminent danger of falling. Additionally, the coral-paved structure on the northeast side is strewn with drifted rubbish that is spoiling the scenery, but there are also concerns about the huge standing dead tree near the centre of the northeast wall, that could collapse and destroy the ruins.

On the southwest side of the enclosure, the ceiling of the tunnel-like entrance is partially collapsed. The inside of the perimeter wall is full of vegetation, and the roots of large trees are tangled within and around the stone elements of the two stone chambers in such a way that they may “strangle” the structures to destruction. Part of a rusted shipwreck is found on the south side of the ruins, and a drifted oil tank remains abandoned on the south side of the islet.

⑧ Idehd (Figs. 15 & 17 / Photo 23)

Built between 1200 and 1300 A.D. (Athens, 1985), Idehd occupies an area of 1,310 m². Because of its relative low elevation, the area around the stone wall on the north side of the ruins is submerged in the waterway. Athens (2007) noted that part of the basalt columns of the stonewall are missing because the ruins were left unfinished. The walkway, constructed in recent years, was made by laying down parallel basalt columns and stretching roughly 15 meters inland from the existing dock.

The western half of the islet is covered by trees and other vegetation, and the summit of the mound measuring about 15 meters in diameter and rising to a height of 2.6 meters is a forest of large trees. Soil and coral gravel from the mound have run off into the waterway on the south side, fully covering the stone wall and turning the water in the waterway to silt. This could be attributed to the effluent over time, to the construction of the mound, or to the excavation of the mound by Saxe (Saxe *et al.*, 1980) and Athens (2007).

The perimeter wall made of stacked basalt columns on the southeast side of the ruins has completely collapsed.

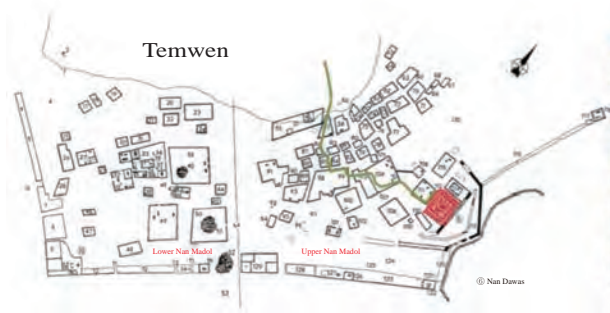


Fig. 13 Location of Nan Dawas



Photo 9 Entrance to Nan Dawas

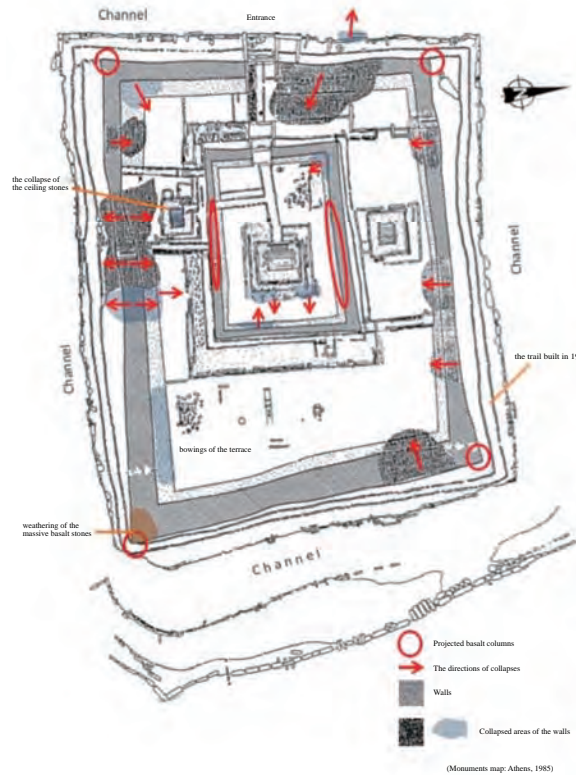


Fig. 14 Present state of Nan Dawas



Photo 10 Nan Dawas seen from Dau



Photo 11 Dense trees and shrubs around the northwestern area



Photo 12 Northwest corner of the outer wall



Photo 13 Northeast corner of the outer wall



Photo 14 Southeast corner of the outer wall

The north side of the entrance built in the east wall has also collapsed, and the peak of the southern half is covered with dense vegetation. The inside of the enclosure on the south side is rather low, and is now occupied by a mud lake. As the ground in this area was prepared using filling soil, the load of many years and effects of the tide and rain have probably caused the ground to subside and eventually give way to mud lakes.

⑨ Pahnkedira (Figs. 18 & 19 / Photos 24 & 25)

Pahnkadira is one of Nan Madol's most important ruins along with Nandauwas. It leaves behind a rich oral tradition as the place of residence of the chiefs of the Saudeleur Dynasty and as its centre of politics and religion. The main scope of our survey included the 9,830-m² area of the artificial islet where structures that served as temples and the residences of the chiefs were built, excluding the annex (2,020 m²) on the southwest side. Ayres *et al.* (1983) believe the islet was constructed in two phases, the first from 900-1100 A.D. and the second from 1300-1500 A.D.

The corners of both ends of the stone wall facing the south waterway have largely collapsed, and large trees and lush vegetation cover the entire ruins. In fact, the central area on the north side is so dense with withered trees that even walking through the area is a laborious task. Moreover, thick vegetation has taken over the ruins of what is believed to be a temple in the centre of the islet, making it impossible to enter the ruins, not to mention delineate the outline of the structure.

The walls around each structure are bowed, distorted or collapsed under its own weight. Basalt columns at the tops of the north and west walls around the residential ward in the northwest corner of the islet are missing. However, since they are nowhere to be found in the vicinity, they may have been reused to build other islets and structures. The unfinished stone wall standing in an area adjacent to the northwest side of a temple ruins may have been one of the diversion destinations. Both sides of the entrance in the south wall and the top of the southeast corner of the east wall display rampant growth of birds' nest ferns.

⑩ Pahnwi (Figs. 18 & 20 / Photos 26 – 30)

Pahnwi, built in 1250 A.D. (Ayres, 1985), is composed of a square-shaped artificial islet and a rectangular artificial islet facing the open ocean in the southwest corner of Nan Madol. Our survey focused on the square islet that occupies an area of 7,700 m². Massive basalt boulders are stacked to a height of 10 meters in the southwest corner of the islet. Those facing the reef have clearly collapsed and are crumbling due to the effects of vegetation and wave action. Because large amounts of sand are deposited along the wall due to the ebb and flow of the tide, the local residents have taken to removing the sand. As this removal of sand is considered one of the causes of the wall's collapse, the Nahnmwarki prohibits any collection of sand in this area today.

The inland area of the islet is lush with trees and vegetation, including sea poison trees (*Barringtonia asiatica*, or *wi* in the local Pohnpei language), whose roots are so intricately tangled with the stone elements of the structures that they are loosening the elements out of alignment. Incidentally, the name of the islet, Pahnwi, means "under the *wi* tree" (Ayres *et al.*, 1983). In our survey, we verified the provenience of a row of basalt columns excavated by Ayres in 1984 (1985), as well as the remains of residences centred on a fire pit and the remains of tombs, and examined the state of preservation of the ruins. As a result, we found severe crumbling of the tomb enclosure toward its interior.

⑪ Land bridges between the artificial islets (Fig. 21 / Photos 31 – 36)

Land bridges connecting the artificial islets were made using basalt boulders diverted from the ruins, and extend over the waterway like a jetty. Due to their structural design, they have caused changes to the original water flow and volume, and are seriously impacting not only the surrounding environment, but also the waterways around all islets.



Photo 15 Collapse of the perimeter wall on the north side of the entrance



Photo 16 Collapse of the entrance and perimeter wall seen from the inside



Photo 17 Collapse of the north perimeter wall seen from the inside



Photo 18 Crack in the massive basalt boulder in the southeast corner of the outer wall



Photo 19 Collapse of the basalt column around the opening of the central stone chamber

There is a strong possibility that these changes are causing silt accumulation throughout the islets and promoting the growth of mangrove trees and other vegetation that are ultimately damaging the ruins and spoiling the scenery.

⑫ Artificial islets on the open ocean side (Photos 37 – 41)

The artificial islets in Nahkapw Bay and on the open ocean side have suffered the impacts of wave and wind damage over many years. Sediment in fill from land subsidence, and the movement of coral gravel from the islets by wave and tidal action have contributed to the collapse of the basalt boulder walls. The mangrove trees growing inside and outside the islets, and the collapse of standing dead trees and other large trees due to strong winds are also factors related to the collapse of the stone walls, enclosure walls and the ruins themselves.

Summary

The survey of the present state of Nan Madol was designed as a primary survey aimed at gaining an understanding of the state of preservation and the causes of damage of the major ruins through visual observation, and to identify future issues and directions for their preservation.

The results of the survey indicated that damage to the ruins was mainly caused by a combination of factors, that include:

- (1) the diversion of soil and stone elements of the ruins for other purposes (i.e. natural movement; cultural reuse) over a long period of time up to the present;
- (2) dense tree growth;
- (3) destruction of structures to accommodate the construction of tourist trails, and the growth of mangrove forests as a result of increased silt in the waterways caused by changes in water flow;
- (4) trampling and movement of stone elements by visitors; and
- (5) sheerweight (dead load) of the ruins themselves over time.

As shown in Fig. 22, the Nan Madol ruins as we know them today are a product of the complex impacts of diverse natural, cultural and artificial factors that have affected the islets since their construction 1500 years ago. The construction of the islets took some 1000 years, slowly spreading from the foot of Temwen Island toward the fringing reefs in the direction of the open ocean. Additions and modifications were made to some of the islets, probably by diverting the stone elements of the original structures. Because the ancient city fell to ruin and was left abandoned for years after the fall of the dynasty, the structures on many of the islets have been subject to extensive damage from various natural factors, such as the rampant growth of vegetation, the accumulated load of the structures over time, and changes in water level, tide, water flow, rain and wind caused by climate changes. In addition to natural vegetation, coconut trees (*Cocosmucifera*), breadfruit trees (*Artocarpusatilis*) and other such fruit trees were grown on large islets such as Pei en Kitel, Dau, and Pahnkedira, where the ground was prepared using filling soil (Ayres *et al.*, 1983).

Ayres *et al.* (1983) report that the collapse and crumbling of the ruins are mainly the result of (1) accumulated load



Fig. 15 Location of Karian and Idehd



Photo 20 Southeast corner of the perimeter wall

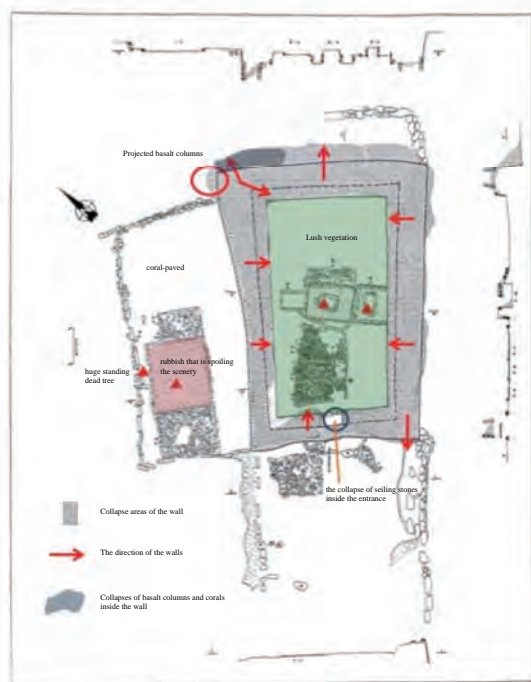


Fig. 16 Present state of Karian



Photo 21 Collapse of the ceiling above the entrance in the enclosure around the burial ground



Photo 22 Standing dead tree at a justing structure in the northeastern area of Karian



Fig. 17 Present state of Idehd



Photo 23 Collapse of the southwest corner of the perimeter wall and lush vegetation on Idehd

over the years, (2) changes in waves and tidal levels, (3) the dense growth of vegetation, and particularly large trees, (4) human action and activities, and (5) the effects of marine organisms and terrestrial animals. However, at the time of their survey, the tourist trails had not yet been constructed, so no mention is made about that issue. There is no question that the tourist trails that were constructed in recent years to connect the artificial islets are bringing serious cultural and natural impacts to the ruins. In other words, not only did the diversion of stone elements and soil that were used in the initial construction of the ancient city lead to the destruction of the ruins, but the construction of land bridges across the islets clogged the waterways, caused changes in the water flow, accelerated the accumulation of silt, and promoted the secondary growth of mangrove forests and other trees. Furthermore, because the trails made it possible for visitors to travel to multiple islets from Temwen Island by land, visitors to the islets increased and brought an entirely new set of problems resulting in the collapse, bowing and distortion of the ruins by trampling on the enclosure walls, terraces and other structures and by moving the stone elements.

Based on the findings of this survey, an essential part of ensuing tasks will be to create an overall map of Nan Madol and an accurate ground plan of all artificial islets as a priority, and to plot the following conditions on the maps as basic reference for future preservation of the ruins:

(1) Present state of the ruins (damage, etc.):

-establish measures for urgent restoration and improvement of danger areas and measures for the permanent preservation, protection, and restoration of the ruins through detailed observation of each artificial islet.

(2) Soil and vegetation on the islets, in the channels, and the surrounding areas:

-clarify the relationship between the soil and vegetative growth and the necessity and methods of deforestation.

(3) Waves and the water flow during the rise and fall of the tide around the ruins and in the channels (water volume, direction, and force).

Assess the state of damage of the ruins on the open ocean side, the impacts of the accumulation of silt in the channels and the growth of mangrove trees and other vegetation on the ruins, and in particular, shed light on the changes in the water flow mechanism caused by the tourist trails.

(4) Annual rainfall, winds, and light:

-assess the past and present state of weathering of the basalt boulders and corals composing the ruins.

In terms of taking steps toward full inscription on the UNESCO World (cultural) Heritage List, it is necessary to formulate phased and specific short-term, medium-term, and long-term survey schedules based on a master plan. Needless to say, the cooperation of the local Historic Preservation Offices, NPOs, and local communities are indispensable to achieving this objective.



Fig. 18 Location of Pahnkedira and Pahnwi



Photo 24 Withered trees in the southwestern area of Pahnkedira

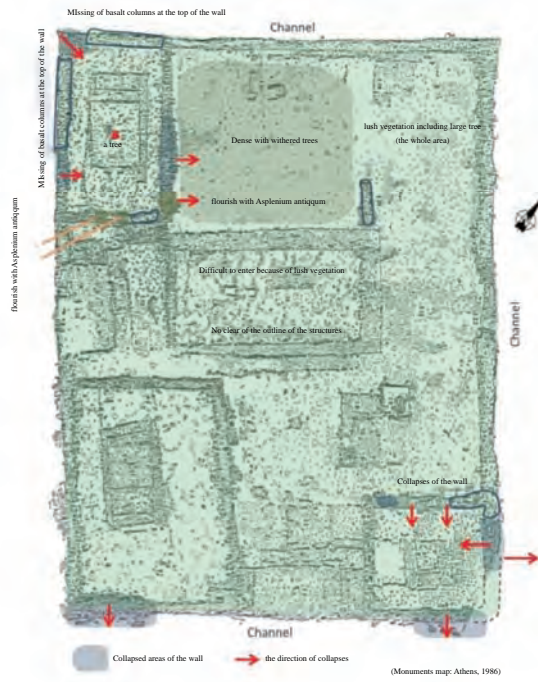


Fig. 19 Present state of Pahnkedira



Photo 25 Withered trees on a structure made of stacked basalt columns



Fig. 20 Present state of the tomb area on Pahnwi



Photo 26 Stonework in the southwest corner of Pahnwi

Micronesia



Photo 27 Dense growth of trees around the stonewall facing the open ocean



Photo 28 Collapse of the stonewall and the sedimentation of sand



Photo 29 Collapse of the stonewall and the sedimentation of sand



Photo 30 Dense shrubs around the burial grounds

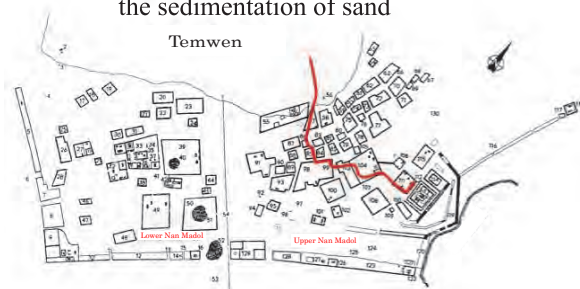


Fig. 21 Location of tourist trails



Photo 31 A trail and land bridge between the artificial islets



Photo 32 Accumulation of silt near a land bridge



Photo 33 A trail and land bridge between the artificial islets



Photo 34 A land bridge jetty between the artificial islets



Photo 35 Mangrove trees in the waterway



Photo 36 Mangrove trees in the waterway



Photo 37 Entrance to Nan Madol and a grove of trees



Photo 38 Entrance to Nan Madol and a grove of trees



Photo 39 Stonewall and lush vegetation on the artificial islets facing the open ocean

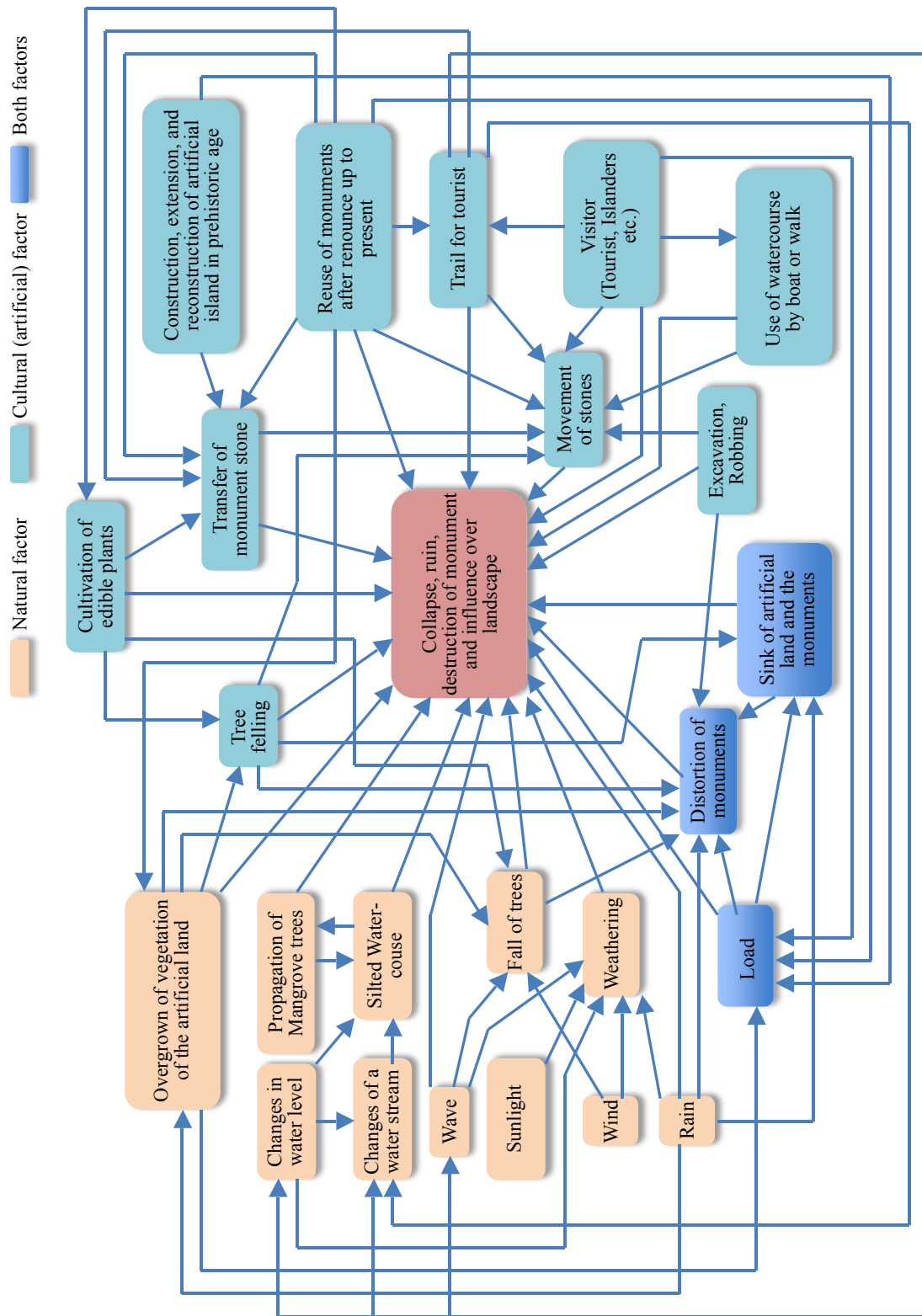


Photo 40 Lush vegetation on the artificial islets facing the open ocean



Photo 41 Lush vegetation on the artificial islets facing the open ocean

Micronesia



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4. Protection Framework

4-1 Local survey results

Cultural heritage protection framework

The government of FSM is composed of three independent branches of power under the president, who is the head of state: judicial (supreme court), legislative (FSM government assembly), and administrative (executive body). The FSM Constitution acknowledges the customary interests of the traditional chief known as the Nahmwarki, adopts a governing system that grants administrative power not only to the federal government but also to the state and community governments, and stipulates that states shall have their own constitution. Under this system, Nan Madol is administratively protected by the federal government and the state government of Pohnpei, as well as customarily protected by the Nahmwarki.

(1) Government

The Office of National Archives, Culture and Historic Preservation (NACH) is an administrative institution of the federal government in charge of supervising legal and administrative activities relating to the protection of cultural heritage, culture and history, and the Historic Preservation Office under it is responsible for cultural heritage protection (FSM HPO). There are also Historic Preservation Offices (HPO) at the state level, which coordinate the protection of cultural heritage in each state. The FSM HPO and the HPO in Pohnpei, where Nan Madol is located, work in close cooperation with each other, as was observed throughout the course of this survey, but both HPOs are in need of more manpower. NACH, on the other hand, receives a budget from the FSM government, as well as receiving financial aid and human support from the US National Park Service. At the time of this survey, two experts from the US National Park Service were working at NACH. In regard to artifacts excavated from Nan Madol, there were no museums to preserve, exhibit and disclose them to the public.

Other institutions are involved in the preservation of Nan Madol as a tourism resource, including the FSM Department of Resources and Development and the Pohnpei Department of Land and Natural Resources.

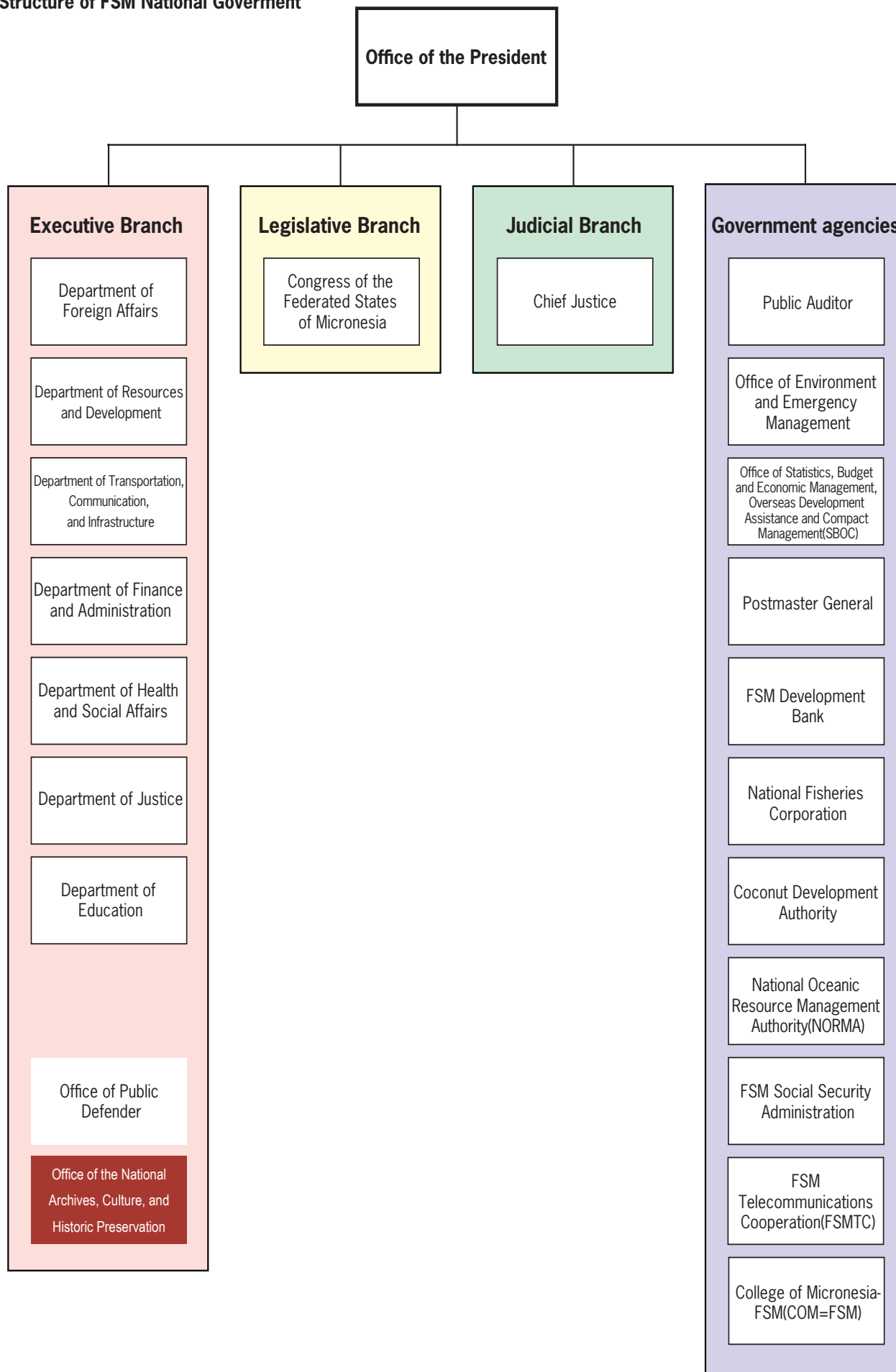
(2) The Nahmwarki and local residents

Nan Madol is not only significant as a cultural heritage, but it has religious significance as well. In this region where numerous oral traditions have been handed down through the generations, local residents who have inherited and carry on those traditions today continue to preserve places that served as centers of political administration and religious worship in ancient times. It is the local residents, not the government, who collect admission fees from tourists to the islets at present.

Locally, the Nahmwarki and Nan Madol En Ihmw Incorporated, an NGO composed of local residents, are involved in the protection of Nan Madol. For instance, when conducting an excavation or other types of surveys at Nan Madol, it is still today necessary to follow tradition and provide details of the survey to the Nahmwarki in the Madolinehmw district and obtain his permission. In this survey as well, we met with the Nahmwarki and members of Nan Madol En Ihmw Incorporated prior to entering the site to explain the overview of our survey and obtain their permission.

There are a number of individuals who were granted permission to own part of the land on the islets by the government at the time of German rule in the early 20th century. In fact, the land around Pei en Kitel is still owned by

Structure of FSM National Government



Mr. Masao Hadley, and the entrance to the trail used for tourism purposes is located on the Mr. Hadley's land. To access the islet by land and explore it on foot, visitors need to pay a three-dollar admission fee (trail usage fee) to Mr. Hadley.

(3) International cooperation

With respect to international cooperation in general, the United States is FSM's greatest benefactor, because FSM had been under the mandate of the United States for some time in the past. Japan also has a strong relationship with FSM and is the country's second largest benefactor after the United States, as it had ruled FSM for thirty years until 1954. In recent years, Japan launched a project for expansion of Pohnpei International Airport and aided the development of other important infrastructure. Following closely behind Japan are Australia and China. China, in particular, has been keen to provide aid to FSM in recent years, because of the rich fishing ground within FSM's exclusive economic zone.

Micronesia and Japan have a deep historical relationship, such that the Japanese language and Japanese food can be found throughout the country and there even exist shrines built during Japan's rule. Most of the people have a friendly attitude toward Japan, having received Japanese language education during Japan's rule or having relatives in Japan. JICA's cooperation activities are also highly appreciated, and trust in Japan's international cooperation runs high.

Regarding cooperation on the cultural heritage at Nan Madol, as mentioned earlier, the US National Park Service provides financial and human support. In FSM, where human resources are few, foreign archaeologists dispatched to the FSM HPO play an extremely important role. Japan, for its part, provides cooperation through the Asia/Pacific Cultural Centre for UNESCO (ACCU) by inviting a number of individuals to Japan to receive individual training in order to cultivate specialists in the protection of ruins. In the tourism sector, tourism experts and other specialists from JICA are dispatched to the Department of Resources and Development and the Tourism Department. However, no cooperation from any country has been provided for preservation of Nan Madol, as the local framework for preservation cooperation had yet to be established. In view of FSM's historical relationship with Japan and Japan's assistance to date, requests for assistance in the protection of Nan Madol and for tourism promotion can be expected to increase in the future.

(4) Tourism development

Some 20,000 foreigners visit FSM every year. American visitors account for the largest segment at roughly 40%, followed by Japanese visitors, who account for approximately 20%. A significant number of visitors also come from European and Asian countries. In addition to tourists, many visitors are people in the marine products industry who come to FSM on business. Many people in the fishing industry who fish bonito, tuna, and other species, also come to FSM lured by the rich fishing grounds surrounding the islands. Among Japanese tourists, almost half visit the surrounding islands to commemorate the war dead. To most tourists, FSM is an ideal destination for marine activities such as diving and surfing. Eco-tourism is also becoming a feature attraction in recent years. There are no major sight-seeing spots other than Nan Madol at present, but the country is hoping to increase the number of tourists from Japan and other countries by developing the site and having it inscribed on the World Heritage List. In this respect, it also expects to see increased usage of Pohnpei International Airport, which was expanded with aid from Japan.

4-2 Future issues

There are roughly three groups of stakeholders in the protection of Nan Madol: the government, the Nahmwarki

and NGOs, and partial landowners. As matters stand, each group acts independently of the others in collecting fees, cleaning the site, constructing trails, and otherwise managing the ruins. This situation poses certain issues for promoting systematic protection of the site, as discussed below.

(1) Information sharing among stakeholders

With each stakeholder acting independently of the others, there seems to be a lack of sufficient sharing of information among the groups. Possibly due to this lack of information sharing, some local residents harbor a sense of distrust toward the government and are concerned that the government will deprive them of their stake in the land and the ruins. The absence of a framework for sharing information among the three parties and consolidating their efforts to protect the site as one is perhaps the greatest issue in considering future protection measures. Cooperation among the government, the Nahmwarki and landowners is indispensable to developing and attracting more tourists to the site.

(2) Establishment of an admission fee collecting system

The admission fee system is confusing to most tourists, because it is not something that has been established based on discussion and agreement between the government and local residents. Tourists must pay three dollars to the Nahmwarki to enter the site by boat, three dollars to Mr. Masao Hadley to use the tourist trail that begins on his land, and a host of other admission fees to local residents in various places. Local residents seem to have concerns that the government will deprive them of their right to collect admission fees and take away their earnings. To protect this site and draw more tourists in the future, it is necessary to establish a proper admission fee system and appropriately distribute and utilize the earnings for the benefit of protection activities.

(3) Explanation to local residents

Nan Madol has been excavated by many archaeologists from foreign countries to date, and many of its artifacts have been taken away from the site. For this reason, local residents are extremely leery of foreigners excavating and making off with artifacts from a site that is the resting place of their ancestors. In fact, prior to this survey, the Nahmwarki said he would grant us permission for the survey as long as no excavation would be performed. The fact that the results of most surveys conducted by foreign excavation teams have not been properly passed on to local residents seems to have planted the seed of distrust toward foreign excavation teams in local residents. In effect, they have been deprived of the opportunity to complement the history that they know through oral tradition with history based on scientific research. In light of this understanding, it is necessary to make sure local residents are given sufficient advance explanation even in cases of international cooperation when some type of task is required for protection of the site.

It appears that the FSM HPO has plans to organize the study results that have already been submitted to the FSM government by foreign excavation teams. Therefore, after organization, such materials should perhaps be made available to local residents in some form in the future, so that residents could use them to learn more about their history.

(4) Personnel shortage

With a population a little under 36,000, Pohnpei has extremely few people who engage in cultural heritage protection and conservation. Both the federal and state HPOs have few members on staff, and are incapable of undertaking large-scale conservation and restoration projects as matters stand. To develop human resources in cultural heritage protection, many personnel have been offered training in Japan and other foreign countries, but some have taken em-

ployment in a different occupation after returning to FSM. Under this situation, gathering the necessary personnel is expected to become a major issue before international cooperation can be provided for protection of Nan Madol.

(5) Development of tourism infrastructures

At present, no large hotels or lodging facilities exist near Nan Madol that could accommodate a large number of tourists at once. Moreover, since there are neither guides, official pamphlets nor information panels to provide tourists with appropriate descriptions about the history and value of Nan Madol and its traditions, most tourists simply take a tour around Nan Dawas, the central ruins of the site, and do not take the time to visit the other islands. To prevent confusion arising from an increase in tourists and to accurately communicate the true value of Nan Madol, it is urgently necessary to develop tourism infrastructures.

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5. Proposal

Based on this survey, we have presented an overview of the present state of the Nan Madol ruins, and have discussed the framework of the Federated States of Micronesia for preserving the site, as well as the results of interviews with relevant stakeholders. When considering the ruins as cultural heritage that is intimately associated with the history and traditional culture of the island of Pohnpei, it is extremely important to avoid development for the sake of tourism, but to promote measures for maintaining this heritage in a sustainable manner while respecting the living culture of the local residents. Such preservation initiatives will not bear fruit overnight, but require a long-term perspective. They must also be backed by the voluntary cooperation and approval of each local resident, in addition to receiving economic and political support from the national and local governments.

A serious concern regarding the preservation of the Nan Madol site is that, despite its outstanding value, no proper management plan exists for their protection. Having a proper management plan is not only an important prerequisite to having the site inscribed on the UNESCO World Heritage List as expected in the future, but it is also indispensable as a foundation for receiving international aid for its preservation. Based on this awareness, Japan could provide effective international aid for preservation of the Nan Madol ruins by offering counsel and cooperation in the formulation of the management plan.

The management plan for preservation of the ruins should include considerations for the following items:

- legislative, regulatory and contractual measures for protection;
- boundaries for effective protection;
- the buffer zone;
- management systems;
- sustainable use.

For the first item, Japan could cooperate by consulting with the national or local governments that are legally responsible for management of the ruins in order to confirm the state of existing legislative measures and provide advice regarding any correction or supplement that may be needed.

For the second item, an accurate map of the ruins must be drafted to establish the scope of the ruins that needs to be protected. Toward this end, Japan might consider offering technical transfers of survey and documentation methods (e.g. traverse survey and plane-table benchmarks, and total station equipment [theodolite; EDM]), and providing other relevant technologies (e.g. establishment of reference points according to the GPS geodetic reference system).

For the third item, a buffer zone needs to be established around the ruins to restrict any development initiatives that may adversely affect the ruins. Toward this end, it would be necessary to conduct an environmental survey of surrounding areas to assess the state of forests, mangrove trees, and rivers, and evaluate the potential impacts that development initiatives in the surrounding areas could have on the ruins.

The fourth item refers to the establishment of management systems that would specifically define measures for

protection of the ruins. It should be noted, however, that circumstances surrounding each islet vary according to its cultural and environmental contexts, such that in many cases, management systems are not only the responsibility of relevant government officers, but are also closely associated with voluntary protection activities of local residents and their long-standing cultural customs. The formulation of management systems must therefore take this diversity into consideration and include the following elements at the very least:

- a) agreement among all stakeholders;
- b) establishment of a planning–execution–monitoring–evaluation–feedback cycle;
- c) involvement of collaborators and stakeholders;
- d) necessary funds;
- e) capacity building measures;
- f) a clear and transparent plan document.

Japan could consider providing advice and cooperation for the above items toward the establishment of proper management systems.

The fifth item refers to the need to consider methods for the culturally and environmentally sustainable utilization of the ruins. Japan could provide advice and cooperation in preparing a sustainable tourism plan that takes into consideration the cultural and environmental aspects of the ruins.

Formulating a management plan that satisfies the above requirements may be an ambitious goal, but input and support from Japanese cultural heritage specialists and archaeologists can help to achieve these recognizable goals through a practical approach, as proposed below.

Implementation of a management plan formulation workshop

In order to formulate a proper management plan, it is necessary to create a consensus across all stakeholders concerned with the ruins. Through the recent survey, we were able to verify that all stakeholders, including the national and local governments, landowners, and local community, acknowledge the outstanding value of the ruins and wish to protect them. At the same time, however, it also became evident that communication channels and cooperative relationships among the stakeholders have yet to be established. Therefore, we propose to invite all stakeholders to take part in a workshop oriented toward formulating a management plan based on consensus-building efforts.

The workshop would focus on the following issues:

- importance of creating a management plan (lecture by a specialist from Japan);
- overview of the UNESCO World Heritage Convention and the inscription process (lecture by a specialist from Japan);
- assessment of the state of conservation of the ruins (all participants);
- sustainable tourism (lecture by a specialist from Japan);
- discussion and preparation of a report (all participants).

Japanese cultural heritage experts would lecture on the first and second issues and explain the necessity of achieving a consensus across all stakeholders.

With regard to the third issue, all participants will make an actual visit to the ruins to document and evaluate their present state of conservation. Through this task, they would be encouraged to mutually share opinions about what is needed to preserve the ruins.

For the fourth issue, an ecotourism and heritage tourism specialist will be invited to give a lecture about sustainable tourism, to increase awareness about the adverse impacts that tourism-related development could have on the ruins. Additionally, the specialist can discuss ways to promote understanding about the importance of protecting the ruins in a sustainable manner through proper distribution of the resources acquired from tourism.

With regard to the fifth issue, the objective of the discussion would be to further strengthen consensus-building efforts among stakeholders. The overall objective of the report would be to acquire feedback from the workshop.

The workshop will be held in a venue in Kolonia or Nan Madol over a period of approximately a week with the attendance of about 5 to 10 participants preferably from each stakeholder group.

This workshop would make a significant contribution to satisfying a number of the requirements needed for the formulation of a management plan. It would also be instrumental in creating a consensus across all stakeholders, this being perhaps the most important of all requirements for the preservation of the Nan Madol ruins.

* Following the proposal above, the workshop entitled "Consultation on the Safeguarding of Nan Madol" was held during the period between 23rd and 26th November, 2011 at Kolonia and the Nan Madol site in Pohnpei State, Federated States of Micronesia. It was supported by the Japan Foundation, Japanese Funds-in-Trust to UNESCO and Japan Consortium for International Cooperation in Cultural Heritage.

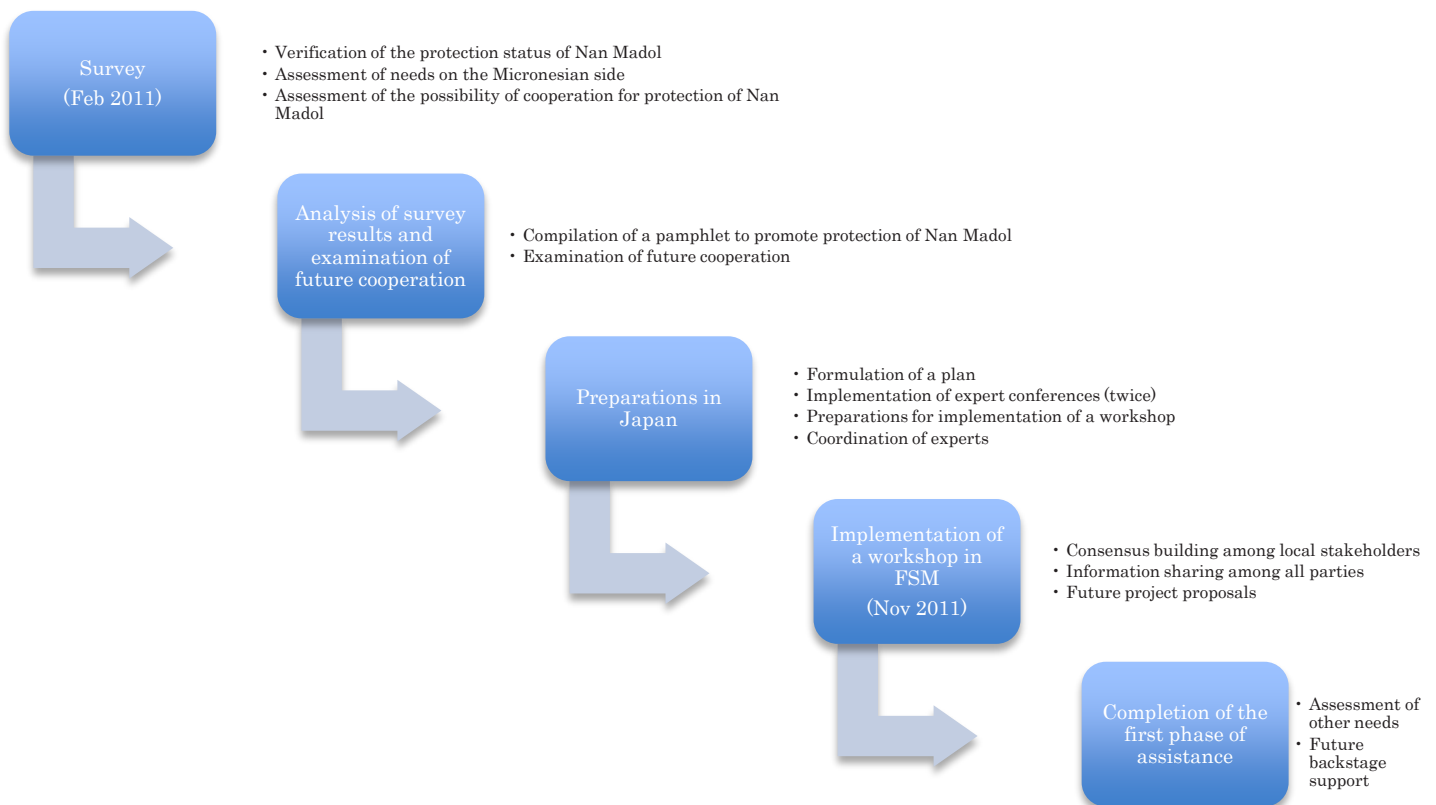
6. Subsequent Cooperation (FY2011)

<Workshop Report>

At JCIC-Heritage, we have continued our cooperation in response to the request of FSM, based on proposals derived from the results of this cooperation partner country survey. As a result, certain achievements have been made, and local initiatives for protection of Nan Madol have made steady progress. As a supplement, we introduce the cooperation we have extended based on the results of the fiscal 2011 partner country survey.

As proposed in light of the survey results, the formulation of a management plan based on a consensus of all local stakeholders is of foremost importance in the effort to protect Nan Madol. To help the stakeholders achieve consensus, we judged that a workshop needed to be held, and hosted expert conferences on two occasions prior to implementation of the workshop in November. Also as part of our cooperation, we compiled pamphlets such as this as requested by UNESCO and FSM, to accurately communicate the present state of Nan Madol to local residents and to acquire international cooperation from other foreign countries.

<FY2011 cooperation by JCIC-Heritage>



The workshop was held from November 23 to 26, 2011, in a conference hall in the Yvonne Hotel, located in Colonia, Pohnpei. It focused on three main objectives: (1) to gather all stakeholders; (2) to share information on the present state of protection of Nan Madol among all stakeholders, and (3) to provide an understanding of future efforts that need to be made by each stakeholder.

In addition to JCIC-Heritage, a Japanese experts team, the FSM HPO and UNESCO (UNESCO/Japan Funds-in-Trust) co-sponsored the workshop and fulfilled their respective tasks. First of all, JCIC-Heritage planned and organized the workshop based on survey results and conclusions drawn from the two expert conferences that were held. We also arranged matters requiring liaison and coordination with FSM and UNESCO. The Japanese experts team was headed by Mr. Tomo Ishimura, who was also one of the survey members in Feb 2011, and included experts on tourism and forestry (mangrove) and a photographer to document the workshop. Their participation in the workshop was funded by the Japan Foundation. The costs for implementing the conference in FSM were covered by a contribution from UNESCO/Japan Funds-in-Trust. UNESCO sent IUCN experts to the workshop to help with getting Nan Madol inscribed on the World Heritage List. The FSM HPO undertook the overall arrangement of the conference and urged the attendance of all stakeholders. JICA experts who had been dispatched to the Department of Resources and Development also attended the workshop as an observer.

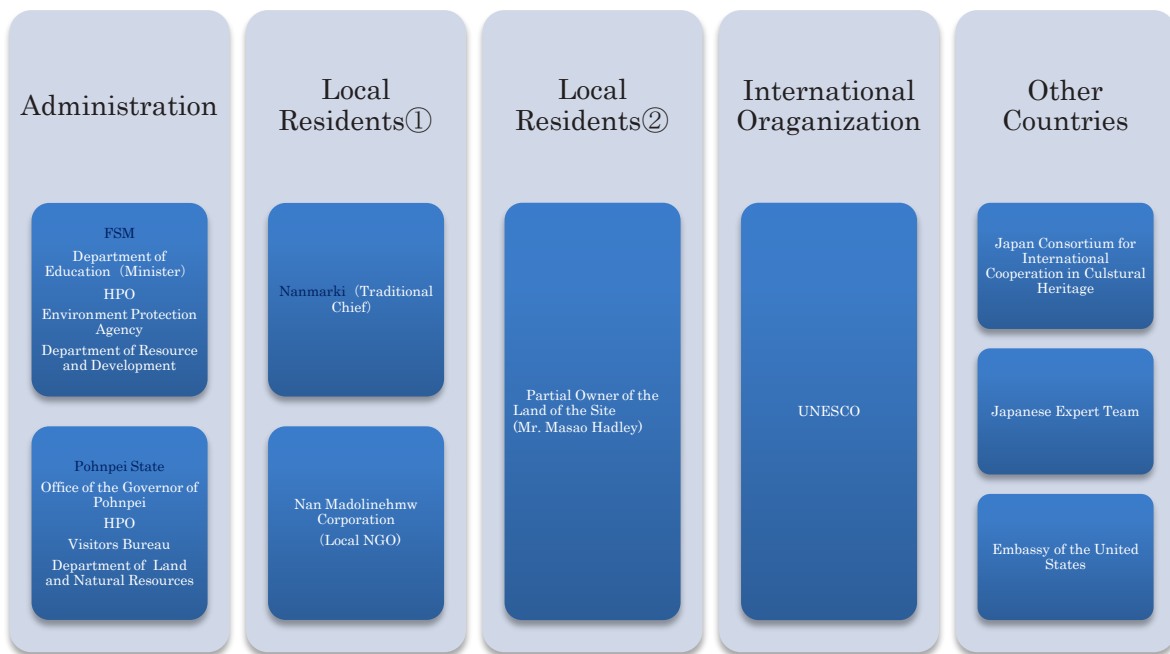
<Workshop sponsors and roles>



Micronesia

<Principal workshop participants>

The workshop was attended by all three principal stakeholders: the Micronesian side, represented by education ministers and other government officers related to protection of Nan Madol from both the FSM and Pohnpei governments; local residents, represented by the Nahmwarki and NGO leaders; and landowners who own part of the land of the site. Furthermore, UNESCO attended as the principal international institution concerned, and JCIC-Heritage and the Japanese expert team participated as representatives from Japan. The Deputy Chief of the American embassy in FSM also lent his presence and expressed strong interest in protecting Nan Madol.



<Participant>

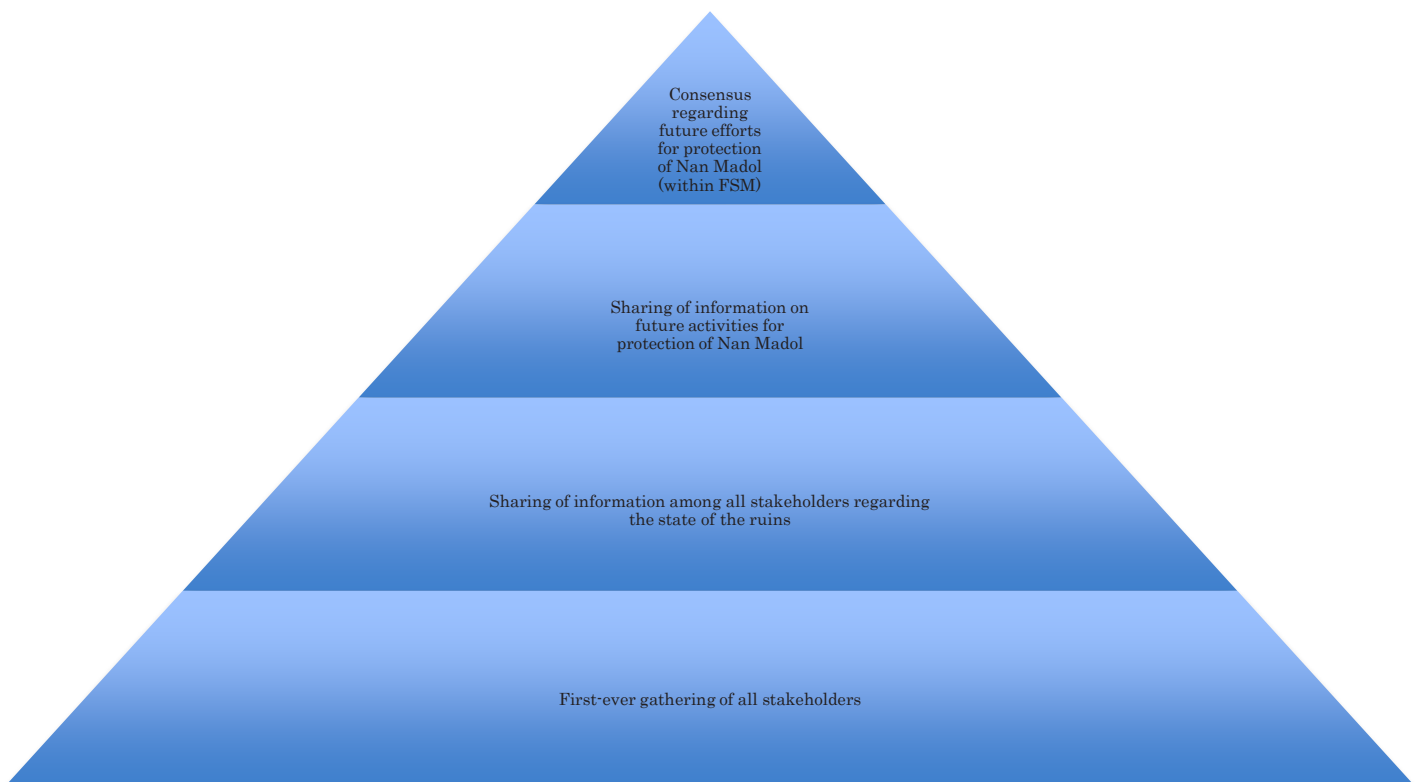


<Content and results of the workshop>

The workshop was held over a period of four days. The first two days were spent in the conference room, where experts and members from relevant institutions explained the state of Nan Madol and the procedures required for protecting the site and inscribing it on the World Heritage List. After sharing the necessary information, all participants made an actual visit to Nan Madol on the third day and verified the state of the ruins. On the final day, the participants discussed the future implementation of activities based on previous discussions, and all stakeholders signed an agreement pledging to cooperate in future activities, before bringing the workshop to a close.

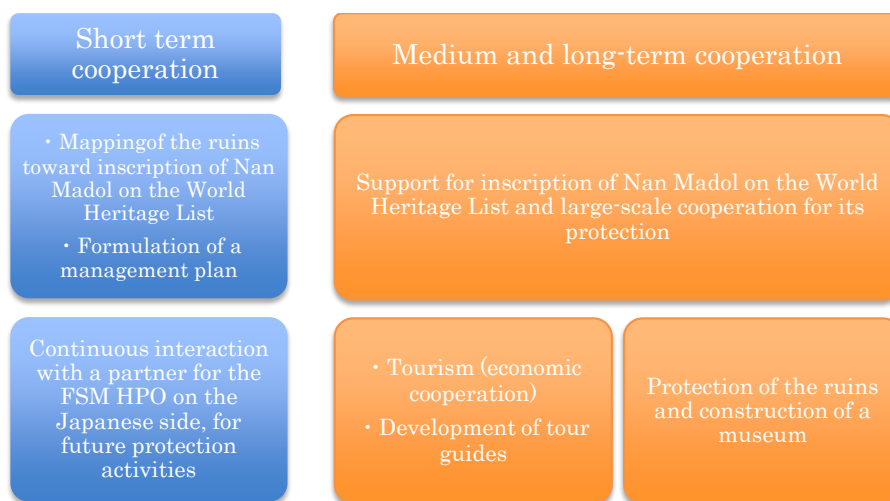
The workshop was extremely meaningful in the sense that by bringing together all stakeholders, it allowed everyone to share information, gain proper understanding of proposals put forth by experts from in and outside FSM as well as tasks needed in future activities, and to mutually verify their concurrent commitment to move forward their initiatives for protection of Nan Madol. The fact that there was no such consensus among the stakeholders had been the greatest impediment to protecting Nan Madol. However, now that a consensus has been achieved, activities for protection of the ruins and inscription of the site on the World Heritage List are expected to advance steadily.

<Results of the workshop>



<Requests from the Micronesian side regarding future activities>

FSM seeks future support from the international community on several issues as it pursues its effort to protect Nan Madol and have the site inscribed on the World Heritage List. First of all, in the short term, FSM needs assistance in making a new, accurate map of Nan Madol, as the map currently in use is extremely old, and it also needs to formulate a management plan for protection of the ruins. At the same time, it needs a partner on the Japanese side to provide continuous advice on such activities. Over the medium to long term, it is seeking cooperation with regard to protecting the ruins, constructing a museum for the safekeeping of excavated artifacts, and developing tour guides for Nan Madol.



Conclusion

This cooperation partner country survey conducted in the Federated States of Micronesia specifically aimed to assess the state of protection of Nan Madol in terms of its present condition and institutional aspects, and consisted of a status survey by archaeologists and interviews with relevant institutions and local residents. Based on the results of the survey, the current state of the ruins and impediments to implementing protection activities were analyzed, and various proposals were presented to the local authorities. While the site itself exhibits a number of problems, such as the collapse of buildings and overgrowth of vegetation, it was considered particularly necessary to share information and reach a consensus among the multiple stakeholders before any activities could be implemented to address these problems. This proposal was readily accepted by the FSM and UNESCO sides and promptly implemented, indicating that this survey has fulfilled its role to a significant extent.

Traditional customs are deeply rooted in Micronesian society, as can be seen in the special authority granted to the traditional chief called Nahnmwarki. Without an understanding of this culture, no survey activities could have been efficiently implemented. In this regard, we owe the successful completion of this survey to the cooperation of Mr. Kataoka, who has been studying Nan Madol for more than twenty years.

Even before this survey, each of the local stakeholders was aware of the need to cooperate with the others to protect Nan Madol, but their mutual distrust prevented them doing so. JCIC-Heritage and UNESCO's involvement just when the stakeholders were feeling that their mutual distrust was itself a problem facilitated a discussion among the stakeholders at the ideal timing. In this sense as well, it can be said that this survey was extremely timely.

This survey achieved a certain measure of success, judging by subsequent progress that has been made. The Japan Consortium for International Cooperation in Cultural Heritage hopes to continue to be of assistance to international cooperation by Japan by implementing surveys as one of its priority activities for promotion of Japan's international cooperation for cultural heritage.

Federated States of Micronesia Strategic Sustainable Tourism & Ecosystem Development Plan

By

KnowledgeWell Inc. NGO

For more information contact info@knowledgewell.org

Abstract

The purpose of the Strategic Sustainable Tourism & Ecosystem Plan is to view the selection process of the ceremonial cities within the overall business environment or referred to by concept creator and expert J. F. Moore as a business ecosystem. Viewing this document within each market's ecosystem increases the odds of initial success and long-term sustainability. The goal is to maximize new economic opportunities created by the UNESCO World Heritage nomination process in order to not only lessen its impact on the environment, but also to celebrate and preserve each unique culture. Public and Private sector initiatives are critical within the Ecosystem. In the Public sector, Infrastructure with terrestrial and marine resource management as well as cultural and historic preservation strategies are to be incorporated into a future Master Ecosystem Plan. Such private sector development focuses on capital and training needed to enable sustainable new venture creation for Federated States of Micronesia citizens. Existing and future proposals are recommended for implementation and a future study in order to create the most sustainable future possible.

Keywords: Federated States of Micronesia, Micronesia, Sustainable, Strategy, Tourism, UNESCO, Pohnpei, Kosrae, FSM, Lelu, Nan Madol

Introduction

The Federated States of Micronesia (FSM) is currently in the process of nominating a serial cultural property with two component parts as a United Nations Educational Scientific and Cultural Organization (UNESCO) World Heritage site. The serial cultural property consists of Lelu, which is located in the state of Kosrae (N5 15 E163 25) and served as the historic capital of the island beginning around 1400 A.D.; and Nan Madol, which is located in the island state of Pohnpei (N6 50 21 E158 19 42) and was the seat of the Saudeleur dynasty until the early part of the seventeenth century. This document serves as the most recent addition to the nomination files for this serial cultural property and provides a preliminary and associated sustainable tourism development management plan for Kosrae and Pohnpei. While this document focuses on these two FSM states, general information for the entire FSM is presented to provide better context for understanding the broader

geographic, economic, social, cultural, and environmental conditions of the two island states. The drafting and inclusion of the preliminary management plan is based on recognition of the pitfalls and

difficulties experienced by other administering governments upon the

designation of a property as a World Heritage site and is meant to serve as a framework to develop management and organizational consistency once designation is achieved.



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Branding

Consideration by UNESCO for the respective ceremonial cities in Pohnpei and Kosrae States through the nomination process as World Heritage Sites firmly establishes immediate brand

equity. As the cities are a 45 minute flight from each other, each market has differing natural and cultural assets which offer specific return opportunities in each market. The markets are Pohnpei State and Kosrae State. As a result, the specific strategies for each market are expected to differ accordingly.

General Background of the Federated States of Micronesia (FSM)

The FSM is composed of 607 islands that are divided between its four states of Yap, Chuuk, Pohnpei and Kosrae. It is located in the western portion of the Pacific Ocean, approximately 4,600 km southwest of Tokyo, Japan, 4,200 km northwest of Sydney, Australia, and 4,750 km southeast of the U.S. Hawaiian Islands. The islands comprising FSM are widely scattered and extend from 135° to 165° east longitude and 10° south to 140° north latitude. They range in elevation from sea level to approximately 760 m and their tropical climates are strongly influenced by northeast trade winds. The entire region is prone to tropical storms and typhoons, and the higher elevation islands of Kosrae, Pohnpei and Chuuk regularly receive high levels of rainfall.

Historically part of the archipelago designated by the West as the Caroline Islands, FSM became a self-governing entity and ratified a constitution in 1979. Some seven years later, following over a century of successive Spanish, German, Japanese and American colonial and imperial rule or administration, FSM then achieved political independence on November 3, 1986. On November 13, 1986, U.S. President Ronald Reagan signed into law a Compact of Free Association following its approval by the U.S. Congress on the day of FSM Independence and a plebiscite of FSM

citizens in 1983. The purpose of this Compact was to economically assist the FSM in exchange for certain territorial defense and operating privileges. The Compact also proved significant because its acknowledgment by the United Nations was de facto recognition by the international community of the national and political sovereignty of the FSM. The



Compact of Free Association was amended and renewed in 2003/2004 and is set to expire in 2023.

Each FSM state has both unique and shared cultural characteristics formed through centuries of island occupation and cultural hybridization resulting from Spanish, German, Japanese and American influences. The most prominent cultural similarities between the islands are traditional social systems based on the extended family and the clan as well as adherence to the Christian faith. In the most recent census (2000), at least 83% of the population of each FSM state identified as Catholic and/or Protestant. Other faith based churches active on the islands include Baha'i, Salvation Army, Seventh Day Adventist, Assembly of God and Mormon, and United Church of Christ. Eight major indigenous languages of the Malayo-Polynesian family are also found throughout the islands, though English is widely spoken and is the official national language of FSM. The 2005 FSM Statistical Bulletin placed the country's total population at approximately 110,400, with roughly half that number (54,650) living in the State of Chuuk. The national capital, Pohnpei, had the next highest population at about 35,700. Significantly less people live on the islands of Yap and Kosrae, with populations estimated to be in the area of 11,850 and 8,100 respectively. The overall population of FSM is relatively young, with the median age in the four States ranging from 18.5 to 20.9 years old in the year 2000.

Sustainable Tourism Development

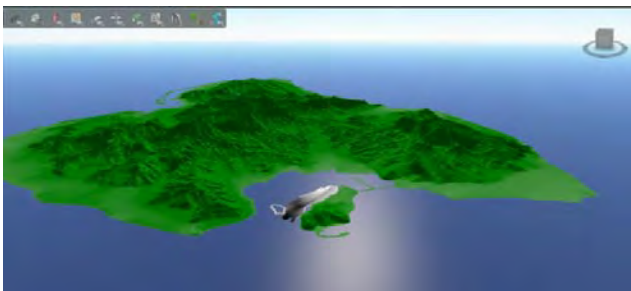
The government of the FSM has sought for the last several years to diversify its economy and become less dependent on foreign aid. A move toward economic self-sufficiency is especially pressing with a young population ready to enter the workforce and the expiration of the Compact less than a decade away. As part of FSM economic diversification and self-sufficiency strategies, tourism has been one of two sectors identified with the highest potential for near-term income generation and one of three of the most important and productive sectors overall for the nation. While designation of Lelu and Nan Madol as a serial cultural property UNESCO World Heritage site would certainly promote tourism to the FSM islands, in order for FSM to effectively maximize its near-term income potential as well as to make tourism to the islands economically productive and viable over the long-term, tenets of sustainable tourism and Community Based

Tourism (CBT) must be integrated, adopted, and adapted to local contexts and implemented through the broad-based collective efforts of multiple stakeholders, including paramount and village chiefs, landowners, rural residents, and other community members in Kosrae and Pohnpei.

Though there are many definitions of sustainable tourism, perhaps the mostly widely accepted is the one put forward by the World Tourism Organisation (WTO) describing it as “tourism which leads to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems.” As this definition suggests, sustainable tourism balances economic growth activities with the values and interests of local communities while also taking into account the distinct characteristics and capacities of local ecosystems. The following provides an outline of various factors that will need to be considered and managed for in this context once UNESCO World Heritage designation is achieved for Lelu and Nan Madol.

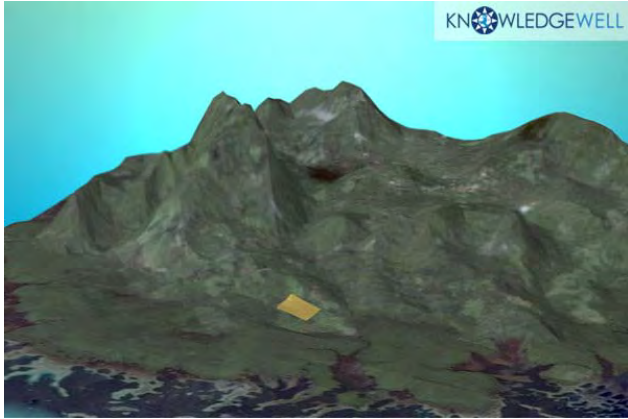
Sustainable Tourism Management Plan for Kosrae and Pohnpei

For the past decade, nonprofit volunteers have delivered expertise related to new technologies which address limited resources unique to island communities. Most requests from the FSM are related to private sector & infrastructure development, as well as environmental, natural resources & community preservation. KnowledgeWell's strategy to address all of these needs is to create terrestrial and marine 3D models of the islands which incorporate environmental, infrastructure, natural resources, cultural and historic preservation data.



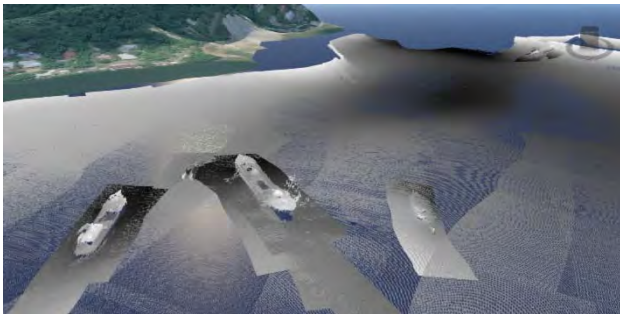
KOSRAE FSM TERRESTRIAL 3D MODEL WITH LELU HARBOR INSET

COURTESY KNOWLEDGEWELL.ORG BY PETE KELSEY



FSM POHNPEI TERRESTRIAL 3D MODEL WITH LANDFILL INSET

COURTESY KNOWLEDGEWELL.ORG BY DANA PROBERT



FSM LELU HAVOR 3D MARINE MODEL

COURTESY KNOWLEDGEWELL.ORG BY PETE KELSEY

The designation of Lelu and Nan Madol as part of a serial cultural property UNESCO World Heritage site will almost assuredly result in increased tourism to the FSM island states. This increase in people visiting the islands can strain preservation and conservation initiatives as well as local infrastructure. Factors that must be considered and managed for include, but are not limited to, impacts and strains on ecological systems, cultural sites and practices, roads, buildings, sewage systems, parking, food and water supplies, power supplies, accommodations, and other facilities. There will also be the need to train local guides and tour operators, provide increased foreign language training, develop infrastructure, create cooperative agreements with transportation and tourism industries, raise public awareness around tourism and natural and

cultural sites, promote partnerships with industries that cater to eco-, cultural-, and heritage tourism, and establish data collection and monitoring systems that can assess tourism traffic and its positive and negative effects. Vital for the sound implementation and successful long-term management of sustainable tourism to Kosrae and Pohnpei is the ability to quickly assess successes and flexibly identify and activate solutions to problems.

The steps to accomplish these tasks must be formulated and outlined during a planning phase with all of the identified factors in mind. In this phase, clear actionable objectives and enforceable monitoring activities should be developed by a team of multi-disciplinary specialists in collaboration with community leaders and stakeholders with special knowledge of and vested interests in the social, cultural, economic and environmental health of FSM in general and Kosrae



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and Pohnpei in particular. Clear and transparent mechanisms for funnelling funds from increased tourism should also be established during this phase to support natural conservation efforts, preservation of Lelu, Nan Madol, and other complementary

cultural sites, as well as local infrastructure, transportation, and facilities. As part of this process, the benefits and costs of tourism on the different cultural and natural features of the islands of Kosrae and Pohnpei should be identified, assessed and balanced with one another to ensure the implementation of best sustainable practices for each local market.

Kosrae Tourism

The volcanic island of Kosrae covers roughly 111 km² and is the only FSM State that consists of a single island. Kosrae land is both privately and state owned and its aquatic areas are state-managed as public trusts. Important natural resources associated with Kosrae tourism include a fringing reef, rich mangrove forests and mountaintop trekking areas. Protected ecological areas include Trochus Sanctuary, Blue Hole Clam Sanctuary, Utwe - Walung Marine Park, Utwe - Walung Biosphere Reserve, Lelu Awane Marine Park, and the pilot Marine Protected Area (MPA) of Okat Channel associated with the

village of Tafunsak. While it does not yet enjoy official protection, Yela Forest is an ecologically vital feature on Kosrae and is home to a rare stand of Ka (*Terminalia carolinensis*) trees. A management plan for the Yela Forest is currently being developed by landowners and the area has been opened to visitors. Significant

historical and cultural resources that may be attractive to tourists besides the Lelu Sites include the Menka Sites—a traditional sacred site associated with the Goddess *Sinlaku*—Japanese colonial-era and whaling shipwreck sites, and Japanese and German colonial-era buildings and structures. Recent efforts to increase travel to Kosrae have predominantly focused on eco-tourism.



LELU ISLAND WITH HISTORIC MAP OVERLAY

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Pohnpei Tourism

Pohnpei consists of a large volcanic island and six atolls spread across some 344 km². Land ownership and management of Pohnpei's aquatic areas mirror those of Kosrae. Tourist destinations include a well-developed barrier reef and lagoon found within the Pohnpei island cluster and a number of historical sites from the Spanish/German/Japanese colonial periods as well as the Nan Madol Sites on the volcanic island's eastern shore.

There are 11 legally protected MPAs in Pohnpei: Nahtik Marine Sanctuary, Kehpara Marine Sanctuary, Pwudoi Mangrove Reserve, and Enipein Mangrove Reserve in Kitti; Dehpek-Takaieu Marine Sanctuary and Mwand (Dekehos) Marine Sanctuary in U; Namwen Na Stingray Sanctuary, Namwen Nahnningi Stingray Sanctuary, Nanwap Marine Sanctuary, and Senpehn Mangrove Reserve in Madolenihmw; and the Sapwtik Marine Sanctuary in Nett. To date, Pohnpei's tourism efforts have largely focused on business travelers associated with government agencies. Its grand waterfalls, scuba diving, snorkeling and hiking areas have contributed to it being the most visited FSM State.

As these brief overviews of Kosrae and Pohnpei illustrate, opportunities exist in both FSM states to join cultural and natural resources to sustainable tourism development through sound environmental protection, preservation and management strategies. There is the possibility of integrating tourism with fishery programs (the second sector identified for highest potential near-term income generation in FSM) which will create small charter fishing fleets that can benefit local communities, sustain traditional fishing practices, and help contribute to a sustainable economy and environment. It is important to note that this has cultural implications that would need to be accounted for in the planning stages. Women have traditionally dominated fishing (at least in Kosrae) and culturally appropriate gender roles and relationships must be considered.

While the focus of tourism of both island states has stressed elements of eco-tourism to date, there is tremendous potential for cultural heritage sites such as Lelu and Nan Madol to attract visitors. Upon UNESCO World Heritage designation, these properties can be key drivers of cultural heritage tourism and promote the integration of eco-tourism and cultural-tourism. Undeveloped environments are key points of attraction for eco- and nature tourists. The islands have rich reef life and mangrove forests and their protection, preservation and programmatic integration with traditional cultural sites may prove more economically profitable and viable over the long-term than development and "high growth" projects that would irreversibly change their character and capacities. The possibilities of developing systems of payments for environmental services (PES) attached to sustainable forms of tourism (such eco-tourism and cultural-tourism) to provide sources of income generation that are both environmentally and culturally beneficial should also be investigated. A possible conflict that may exist and that may need to be accounted for in

management plans if PES is pursued, however, is the fact that some of the worst direct polluters may be the farmers who are also the fishermen.

Next Steps

Sustainable business practices are inseparable from cultural-environmental relations and their successful implementation and management can be greatly aided through the incorporation of local ecological knowledge. For these reasons, it will be both practical and productive to integrate participatory planning activities with community-based development approaches for sustainable tourism development on Kosrae and Pohnpei.

Review and Synthesis of Relevant Documents and Guidelines

The first step that needs to be taken in this process is a review and synthesis of previously published reports covering global, regional, state, and local contexts associated with cultural and natural resources management and/or broad-based community engagement. The management guidelines and community engagement frameworks presented by the following reports are among those that should be consulted and considered:

- Federated States of Micronesia 2005: Economic Report toward a Self-Sustainable Economy
- FSM National Biodiversity Strategy and Action Plan (NBSAP)
- Strategic Development Plan (2004-2023)
- Climate Change National Communication
- National Assessment Report supporting the National Sustainable Development Strategy in the Pacific Small Island Developing States
- Into the Deep: Launching Culture and Policy in the Federated States of Micronesia

There also must be a review, adoption, and adaptation of the appropriate and relevant protocols, recommendations, regulations, and procedures put forward by the following agencies:

- Pohnpei Community Natural Resource Management Program

- Pohnpei Council for a Sustainable Future
- Kosrae Island Resource Management Authority (KIRMA)
- UNESCO World Heritage and Sustainable Tourism Programme
- The Micronesia Conservation Trust (MCT) and its “Micronesia Challenge”

Ongoing FSM renewable energy (RE) strategies should also be incorporated into any sustainable tourism development activities.

Stakeholder Engagement and Development of Sustainable Tourism Plan

Following a review and synthesis of all appropriate and relevant recommendations, guidelines, protocols, and regulations, the second step is to implement coordinated stakeholder meetings to ensure local participation and input. Developing a community-based action plan that works through the tenets of sustainable tourism and Community Based Tourism (CBT) and which is integrated, adopted, and adapted to local Kosraen and Pohnpeian contexts must be an integral part of the tourism development plan. Implementation of this plan should also be achieved through the broad-based collective efforts of stakeholders on the islands, including paramount and village chiefs, landowners, business associations, rural residents, and other interested and vested community members. Because Lelu and Nan Madol are two parts of a single serial property shared between the states of Kosrae and Pohnpei, inter-state cooperation and shared capacity building must also be central components of the sustainable tourism development plan.

Accounting for and working through the complexities and dilemmas of different land-use issues, including private ownership of cultural resources, must be considered, confronted, negotiated, and managed. Moreover, as each FSM state holds high degrees of autonomy under the national Constitution in their decision-making and governance and state leaders and citizens often perceive federal involvement as an intrusion, it is vital that each component of the planning phase include the development of institutional linkages among and between national and state agencies for the purposes of developing and flexibly monitoring and assessing the progress of implemented sustainable tourism programs. This step should include adaptive capacities for collaborative and decisive actions in the event that any future problems arise.

It should be noted that the nomination of Lelu and Nan Model as a UNESCO World Heritage site has elevated interest in reviving and recording traditional knowledge and cultural practices among Kosraens and Pohnpeians. As such, there is a unique and important opportunity to develop and capitalize on educational and historic preservation programs that can better prepare communities to integrate sustainable tourism development with local values, socio-cultural practices and economic needs.

Pohnpei State

As the capital of the Federated States of Micronesia is located in Pohnpei State, this market differs from the other States as it is the political center of the nation. The market draws international guests as well as citizens from other States as these individuals are free to live in Pohnpei without visas. The resulting demographic shift over the past years impacts the island's ecosystem and infrastructure. The work of volunteer non-profit efforts have created solutions for infrastructure. Wise infrastructure planning is key to meet the expected demand of the nomination and to preserve Pohnpei's culture and environment.

Federated States of Micronesia

The Federated States of Micronesia (FSM) is a sovereign nation made up of over 600 islands located in the western Pacific Ocean consisting of four states – Yap, Chuuk, Kosrae, and Pohnpei.

The total population of the islands, based on 2009 estimates, is 110,000 and the total GDP based on 2009 estimates is \$341 million for a per capita GDP of \$2,664. The economy is driven mostly through fishing and subsistence agriculture with the fishing comprising almost 30% of domestic budgetary revenue. Additionally, exports of fish to Japan account for almost 85% of export revenue. FSM is currently involved in a Compact of Free Association with the United States in which the US provides \$130 million annually in direct assistance, including federal grants and services that will continue until 2023.

Tourism has been seen as a viable opportunity for increased economic development, especially with the increase in popularity of culture and eco-based tourism. However, consideration must be taken when considering the impact on cultural and historic as well as ecosystem preservation.

Kosrae and Pohnpei

The state of Kosrae has a population of 6,616, based on the 2010 census and a land area of almost 42 square miles. Because of steep mountains and thick vegetation, much of the island remains undeveloped. Tourism has been increasing though as Kosrae's coral reefs are attracting scuba divers and the dense forests and mountains are attracting more hikers. Tourism remains a relatively small industry

on the island though, with fishing and farming still the main form of subsistence among residents. Within Kosrae is the Lelu municipality, containing the small near-shore island of Lelu. On Lelu



KOSRAE FSM LELU ISLAND COURTESY KNOWLEDGEWELL.ORG

Island are the historic Lelu Sites. The state of Pohnpei is considerably larger than Kosrae, with a land area of 133 square miles and a population of 34,685. The island is mainly mountainous rainforest and is surrounded by coral reef. Much of the Pohnpei economy is driven by financial assistance from the US provided under the Compact of Free

Association, while most of the employment on the island is in the private sector through areas such as wholesale and retail, fishing, hotels and restaurants, and construction. However, a considerable amount of the economic activity is driven by government employment. Located within Pohnpei are the historic Nan Madol Sites, a ruined city off the eastern shore of the island.

Historic Sites of Nan Madol and Lelu

Within Kosrae are the historic Lelu Sites. The Sites date back over 500 years and were at one time the ruling center of the island of Kosrae. The walled compound housed the king and high chiefs of the island and consisted of over 100 dwellings, 16 sacred compounds, and two burial grounds. Currently, some of the high chiefs' dwelling compounds, both burial grounds, and a few sacred compounds are still intact.

On the island of Pohnpei are the historic Sites of the city Nan Madol, the former capital of the Saudeleur dynasty. The Sites consist of a series of canals that connect multiple small, man-made islands. The islands served as the political and ceremonial seat of the Saudeleur dynasty until sometime around 1628. Very little is known about the construction of the city and many believe that builders of the Lelu compound migrated to Nan Madol to build a more impressive city although this is thought to be untrue as radiocarbon dating shows Nan Madol to predate Lelu. Archaeologists claim that the islands provided dwellings for priests and nobility as well as food preparation and canoe construction. Work related to the original city of Lelu can be found at:

2006, Restoration of Traditional Knowledge to Enhance Self-Sufficiency. In *Micronesian Journal of the Humanities and Social Sciences* <http://micronesia.csu.edu.au/MJHSS/>

2008, Stone Figures from the Finol Tokosra Site, Kosrae, Eastern Micronesia. On-line Project Gallery, Antiquity, <http://antiquity.ac.uk/>
<http://laverne.edu/laverne-magazine/2011/05/felicia-beardsley-traveling-in-search-of-a-king/>

Sustainable Tourism

The aim of sustainable tourism practices is to preserve cultural and environmental resources while providing income to the local economy and employment for the local people. As tourism expands, especially in developing countries, both local resources and culture are often compromised in favor of economic development.

In order to preserve both cultural and natural resources, it is important that programs and facilities designed to support tourism do not compromise the local community. This involves planning infrastructure and programs with minimal environmental impact and little to no cultural impact. In

order to do this, every decision must be considered with respect to the impact on the local population and environment. Careful planning must be made to ensure that the increased needs to tourists will not have any negative impact on the way of life for locals. Additionally, these plans must be able to be maintained indefinitely without detriment to the local population.

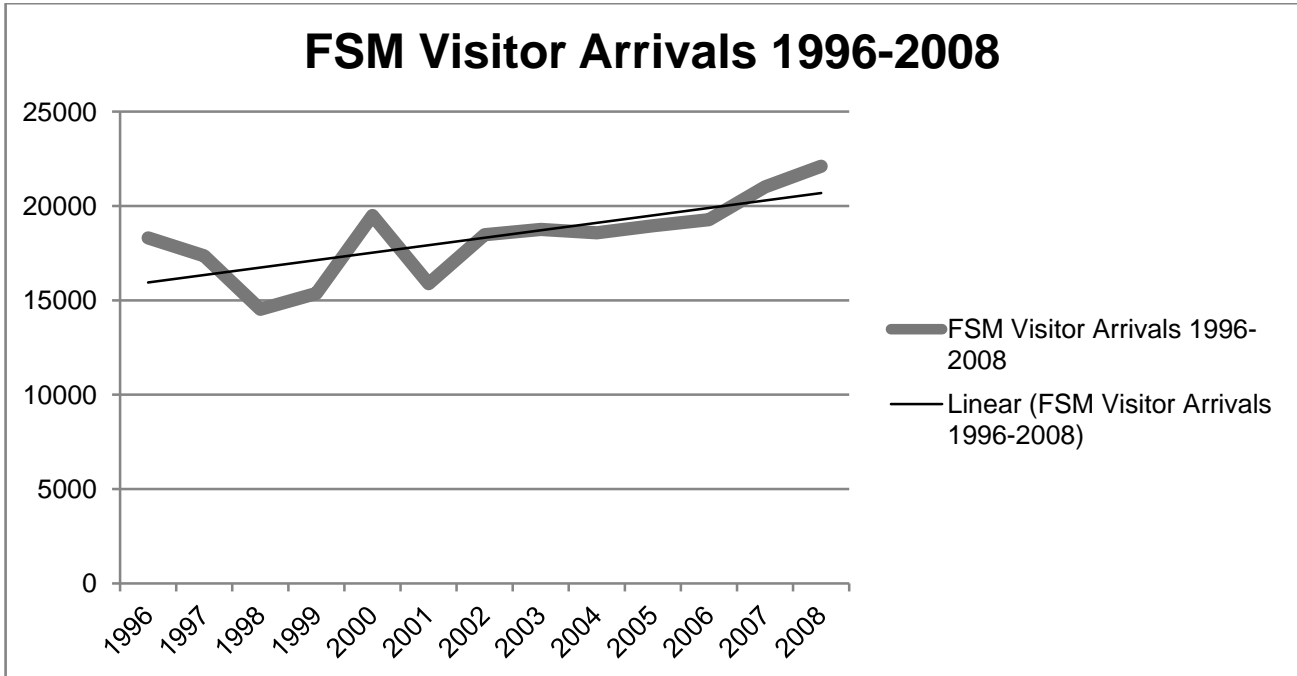
One great benefit of sustainable tourism practices is that tourists bring financial gain to the area through local spending, but impart no negative impact on the culture or resources. This allows the local population to maintain its way of living and enjoy economic growth. Local customs and traditions are maintained and resources unaffected for future generations.

Market Analysis

Market Definition

The Federated States of Micronesia

The following chart shows annual visitor arrivals to FSM from 1996 to 2008. According to the Kosrae Visitors Bureau, statistics past 2008 are not available due to a lack of available labor in the national office of Statistics. This absence of available labor in Kosrae also most likely extends to other parts of FSM, leading to an overall shortage of statistical data on visitors. Using data from the FSM Division of Statistics website, annual visitor arrivals from 1996 to 2008 show a general upward trend. Based on this trend, it can be expected that annual visitor arrivals have continued to increase past 2008.



In 2007, the US Department of the Interior updated their FSM Business Opportunities Report and listed tourism as one of the top three contributors to income, along with agricultural exports and fishing licenses. However, despite a lack of statistical data, there is no way to determine the percentage of FSM’s GDP attributed to tourism revenue. Additionally, there is no way to determine average tourism income per visitor. There are no statistics to divide arrivals into specific islands, nor are there statistics on current visitation numbers specifically to the Nan Madol and Lelu sites. Nonetheless, even with shortfall of financial statistics, the FSM Business Opportunities Report did consider tourism the industry with the highest potential growth due to recent government focuses on promotion of eco-tourism. Also, because of its centralized location in the Pacific, FSM has the opportunity to become a regional conference destination for US and east-Asian businesses and governments.

This potential increase in tourism also provides an opportunity to invest in developing infrastructure such as roads, utilities, health care facilities, and waste management.

Below are the key points in defining the market segments for visitation to the FSM historical Sites:

	Lelu Sites	Nan Madol Sites
Features	Historical Sites access for tourists Research reports	Historical Sites access for tourists Guided canoe tours Guided SCUBA tours Merchandising Research reports
Lifestyle of Customers	Tourists to Kosrae Couples and families Researchers SCUBA enthusiasts	Tourists to Pohnpei Couples and families SCUBA enthusiasts Researchers
Target Market Based on Geographical Location	Mostly Asians and Americans	Mostly Asians and Americans
Seasonality	Little to no seasonality due to limited climate variation	Little to no seasonality due to limited climate variation

Analysis of Political, Economic, Social, and Technological (PEST) Factors

<p>Political Factors</p> <ul style="list-style-type: none"> - Government policy on funding - Taxation policies - Environmental protection laws 	<p>Economic Factors</p> <ul style="list-style-type: none"> - Costs of storm damage - Rising fuel costs - Funding
<p>Social Factors</p> <ul style="list-style-type: none"> - Cultural impact of increased tourism 	<p>Technological</p> <ul style="list-style-type: none"> - Increasing energy efficiencies

Customer Profile

Customer type: Visiting Tourist to FSM

Factor	Description
Demographic	<p>Mostly Americans and Asian Couples and families</p> <p>Average age range 30-60</p> <p>Educated and environmentally conscious</p>
Economic	Middle to upper incomes
Customer Adoption Process	Innovators and early adopters seeking non-commercialized tourism
Psychographics	<p>Motivated by non-commercialized getaway</p> <p>Interested in history and environment</p> <p>Seeking adventure</p>

Competition

Key Competitors

Competitor	Features
Easter Island	<p>Popular and heavily commercialized historic Sites</p>
Fiji	Coral reefs for SCUBA diving
Guam	<p>Huge tourism industry</p> <p>Scenic beaches</p>

Strategic Options

FSM has both the scenery and historical significance to attract wealthy Asians and Americans looking for a peaceful Pacific Island getaway.

Because of accessibility, Lelu Sites could be positioned as a historic destination for Kosrae visitors interested in spending a half to full day touring the historic site. Using signs and pamphlets to provide information should be sufficient for visitors looking for a quick detour while local resorts and tourism shops could provide guided historical tours for visitors looking for a more in-depth experience in the historical significance of the Sites.

Nan Madol Sites could be positioned similarly with signs and pamphlets, but implementing an entrance fee for foot travelers would help cover preservation and infrastructure costs. For infrastructure, the historic site would include a visitor center where visitors could stop in for maps, information, and site-related merchandise such as t-shirts, post cards, and souvenirs as well as restrooms and snacks. Additionally, government employed guides would be available at the visitor center to provide guided boat and SCUBA tours for visitors wishing to see the Sites from the water. Income from SCUBA gear and kayak rentals would be managed at the visitor center and could also be a source of revenue.

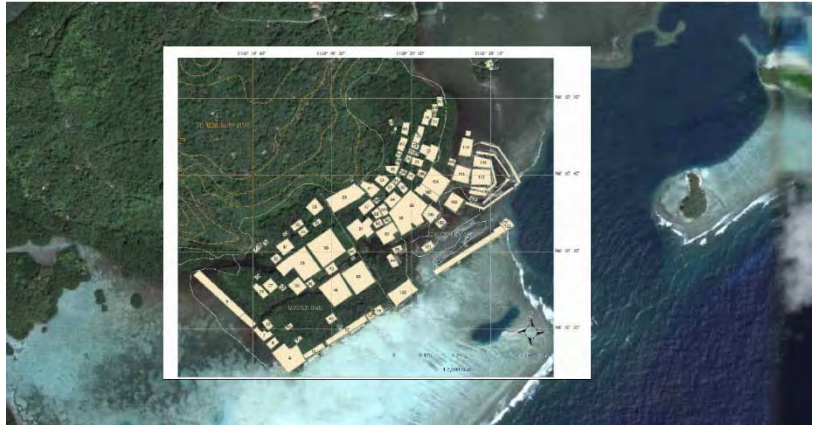
Marketing Plan

The Product: Micronesian Tourism

To the locals of FSM, Chuuk, Kosrae, Pohnpei, and Yap are known as “The Four Corners of Paradise.” If you ask the average person to locate this fantastically named area on a map, however, most would not be able to. The average person is not aware that that the islands states of FSM have over one thousand years of unique cultural histories while also having the modern day conveniences that many of us enjoy today. The rich history of this stunning region can be shared with a variety of tourists, and with proper planning tourism can be maximized while the environmental impact is reduced. FSM marketing should note the rich heritage, culture and

beautiful landscape as something that should be preserved to share for generations, making its sustainability a necessity.

The Nan Madol Sites on the island of Pohnpei provide an immersive experience with additional travel and experience options. Visitors may view the Sites by hiking to the historic destination to view the scenery from land or they may choose to rent a kayak or canoe and explore the Sites from the water. Those looking for a more informative experience can spend the day on a guided tour with mapped routes and destinations, where they will be



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presented with detailed explanations of the Sites' historical significance as well as information on local customs and wildlife. In addition to kayak and canoe tours, visitors can view the submerged scenery through guided snorkeling or scuba expeditions. Given the scenery, variety of activities and experiences, and unique atmosphere it is easy to see why tourists want to add a visit to the Nan Madol Sites to their itinerary during their vacation

In an effort to increase tourism to the historic ruin sites, the multiple attractions offered by FSM as a desirable tourist destination must be advertised and promoted. FSM has the capacity to attract history buffs who may be interested in the early Micronesian Sites and maritime advancements; nature enthusiasts who want to explore the tropical forests and beautiful natural reefs; and people who simply desire an island getaway with all-inclusive resorts and the modern conveniences of everyday life. For these reasons, the marketing strategy must be all encompassing and focus on embodying all the attractions that Micronesia has to offer.

The Micronesian tourism strategy has four main positioning aspects:

A remote island with modern day conveniences and infrastructure.	Ideal weather for year around exploration and fun.
Over 1,000 years of distinct history and culture.	Ease of access to all 4 island states.

Strategy 1: A remote island with modern day conveniences and infrastructure.

FSM exists as a unique island group in the southwestern part of the Pacific Ocean. Even though the islands are remote and only accessible by plane or by boat, they have modern day conveniences and access to technology. To start, there is a modern telecommunication system that is operated by FSM Telecommunications Corporation. The company offers a variety of television, fax and internet services. Continuing, there are no major health problems associated with any of the islands and each has a major health system that provides access to quality healthcare. Furthermore, there is also access to major television networks, such as CNN and ESPN. All of these are major marketing opportunities because people can come to Micronesia and stay as connected, or disconnected, to their everyday lives as they choose. The communications infrastructure in particular is crucial as access to modern day conveniences are major considerations when people decide on their tourism destinations.

Strategy 2: Ideal weather for year around exploration and fun.

Micronesia offers visitors a stable and predictable tropical climate. Temperatures year round fluctuate roughly between seventy and eighty degrees Fahrenheit. Precipitation is highly predictable, as summer is the rainy season. The Micronesian climate would not prevent visitors from experiencing all that Micronesia has to offer, as its uniformity will potentially aid in travel planning and predicting peak seasons.

Strategy 3: Over 1,000 years of unique history and culture.

Micronesia was originally settled by ancient people sailing from Asia and Polynesia and was later explored and settled by the Japanese, Spanish, and Germans. As a result of the region's heritage, there are many historical landmarks and Sites that visitors enjoy. For example, Lelu Sites in Kosrae and the region's role in World War II are major attractions.

The region's diverse history also has given way to a unique modern culture that adds to its desirability as a travel destination. While English is the national language of the region, there are indigenous dialects that are unique to each island. This area also has a unique musical heritage. Travelers may recognize traditional western pop music that is played in the region but will also be able to hear traditional Micronesian music including Micronesian pop enjoyed that is enjoyed locally. Each island has its own distinct customs as well. Learning about different cultures and customs is a major attraction for those who wish to experience cultural worlds that differ from their own.

Strategy 4: Ease of access to all 4 island states.

The last major part of the marketing strategy is to focus on the ease of access. Micronesia itself is not an easy region to readily access as visitors can only get to the region via plane from Hawaii or Asia or by boat. However, the FSM government has made it easy for visitors to enter the islands once they do arrive. Visitor permits and tourist visas are not needed if visits last for less than thirty days. Visitors should note that if they plan to visit for more than thirty days, they have to apply for a permit through the Micronesian government's website. This is attractive for someone trying to pick a travel destination due to the fact that other destinations such as Australia, China, Hong Kong, Malaysia, and Macau require visas or permits to visit. With these requirements the Micronesian government has set the stage for simplified legal entry into the country.

Promotion

Currently, the Micronesian government has launched a website as a way to attract and educate potential visitors to the region. This website features a welcome letter from the Micronesian

president and information on the region's customs, culture, history, and environment. The marketing strategy will extend the government website and focus on the rich Micronesian history while providing insight and educating potential tourists about the modern infrastructure and the region's many conveniences. Each pillar of the marketing strategy is a Micronesian strength and can be marketed to groups around the world.

In order to be effective a variety of marketing mediums should be implemented to ensure that the message is seen by multiple demographics. More conventional means of advertisement including print ads, television commercials, and Internet banner ads aid visibility. Informational material distributed to travel agents and material focused to travel sites should supplement this initial campaign. The campaign needs to appeal to those who are knowledgeable about sustainability and environmental impact, as well as both cultural and natural preservation.

If Micronesia is going to differentiate itself from competing tourist destinations a robust social media campaign can provide an immediate advantage. Television, print and radio components of the campaign can provide a means of exposure that works in tandem with and further promotes the social media aspect of the advertisement.

Operational Plan

Overview

This section of the plan provides high-level detail of the day-to-day operations of the Lelu and Nan Madol Sites. This includes information on procuring equipment and materials to keep the sites operational and accessible, establishing contractual agreements with suppliers, financing the operation of the sites, health and safety for both those working at and visiting the Sites, and performing preventative maintenance on the site. The sections below provide more detail.

Procurement

It is essential that clear procurement responsibilities are communicated and delegated by the FSM government to the appropriate parties that will operate the sites. Tasks such as who will manage the procurement process, who will receive and inspect goods upon arrival, and who will manage the site's inventory are very important to its operation. In order to operate most efficiently, it is key that as few suppliers as possible are utilized in order to sufficiently meet the needs of the sites.

It is also crucial for the government to choose suppliers that maintain policies and standards in their basic business functions extending down to human rights and environmental standards in the operation of their business. By establishing procurement policies and standards, the government can make sure that they are operating ethically and efficiently as well as protecting the sensitive cultural and environmental nature of the Sites.

The government should also implement a procurement strategy that includes the standards and policies mentioned above. This strategy will be followed at each site and should include, at minimum, the following topics:

- Selection process for suppliers
- Inquiry preparation and bid administration
- Human rights and environmental standards
- Process for working and negotiating with suppliers
- Reporting process for procurement activities so that contracts and related costs are monitored and upheld

When equipment or materials are brought onto the sites, an inventory system should be implemented so that there is transparency and a record of materials leased or owned by the government that have been used to maintain, repair, or enhance natural state of the sites and their surrounding land on the sites. This system should include detail on the items brought to the sites, the date ordered, date received, and date consumed.

Contractual Agreements

A contractual agreement policy should be implemented to clearly establish the roles of both the government as well as the suppliers. The policy should address issues related to:

- To what the contract pertains and entails
- Roles and responsibilities of the parties named in the contract
- Single point of contact and responsibility for each contract
- Contracting process based on what provides the lowest cost to the government over the lifetime of the project
- Human rights, environmental, and safety standards of contractors to ensure no negative impact or harm will come to the Sites or surrounding communities
- Understanding of legal implications of contracts and when to seek legal advice to amend contracts
- Any type of reward system to encourage contractor meet the expectations stated in the contract

The government also needs to define the different types of contracts they will utilize for what they procure: services, equipment, supplies, and so on. These contracts should be transparent and have explicitly stated standards by which bids will be evaluated.

Sustainable Financing

Generating funds for the management and operation of the sites can take many shapes. The government can find funding through grants, donors, and appeal campaigns. By appealing to or partnering with international conservation and archaeological organizations can provide funding opportunities that can be spread worldwide to not only generate potential tourism interest, but also general interest and concern for the conservation of the Sites in their current state. The government could also appeal to larger, more economically developed neighbors in the region that may have an interest in preventing the ecological ramifications of development on or near these sites. These include nations who have a marine-based economy and an interest in maintaining or improving the overall health of marine habitats located throughout the Pacific Ocean. Because of

the importance of strong and reliable financing to successfully managing these sites, it is imperative that a funding plan and strategy be instituted early on. It is also important to establish relationships with potential funding organizations and ensure that their standards for granting funds are thoroughly understood before seeking those funds out.

Fundraising through grants and donations is highly competitive, so the more information that is known from the beginning about the different funding sources being targeted, the higher the chance of success in procuring those funds. Once funds have been obtained, the government must be transparent in the use of those funds as they can be subject to an audit by the funding organization. Many times, donors or funding organizations will grant money to be used for specific actions or items. By accepting the funds, the government will be contractually required to fulfill the duties outlined by the funding organization.

Preventative Maintenance

With potential investment in infrastructure as well as machinery and equipment to maintain the site and any infrastructure installed, the government must ensure that their investments remain operational. Existing infrastructure that must be maintained include any trails to enter and move through the site as well as any docking structures or apparatus for those visiting by water. Potential infrastructure investments include additional trails through the site as well as any roads or new entrances. Also, any new water access facilities such as a kayak or canoe launch or dock for SCUBA diving and snorkeling tours will require maintenance. A preventative maintenance system will help to keep equipment, vehicles, and machinery operating over time and extend their useful life. The equipment should be maintained to the manufacturer's specifications and routine maintenance should be done as recommended by the manufacturer. A maintenance log should be kept for each piece of equipment and should be audited to ensure that the proper maintenance has been performed at the time required. By keeping the equipment and infrastructure functioning as it should, the organization is ensuring that the workers and visitors to the Sites are entering a safe environment.

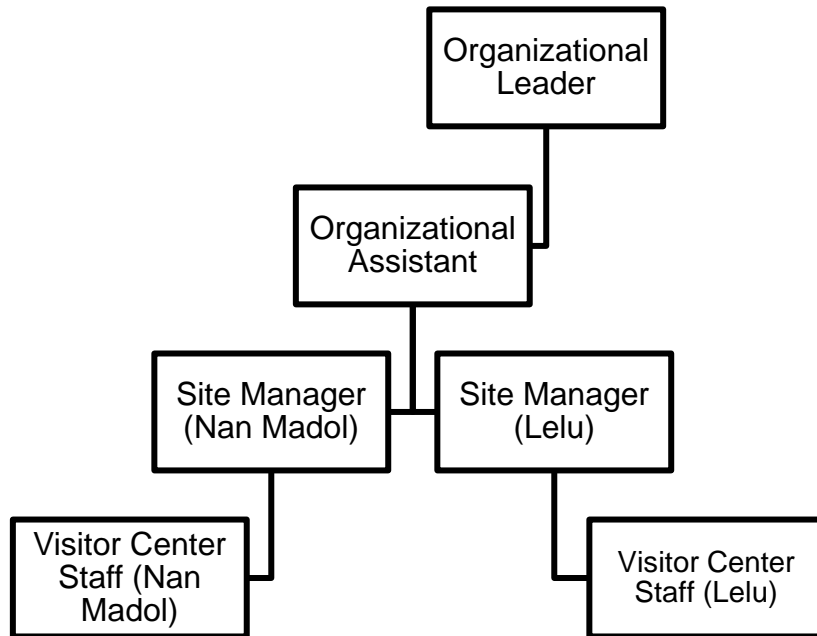
Human Resources Plan

Overview

An organization's human capital is probably its best resource, especially when that capital contains the wealth of knowledge, skills and experience retained by its people. Supporting and nurturing their development should be seen as an investment in them and in the organization itself. This section will include issues such as organizational structure, staff profile, future organizational needs and gaps, training needs and performance appraisal.

Organizational Structure

The organizations structure for the Lelu and Nan Madol historic sites will be as follows:



Staff Profile

As mentioned above, human capital is one of the greatest assets to an organization. This becomes even more valuable when building on the sustainability side of these heritage sites. The organizational structure and staff profiles will help provide risk management and quality

assurance. Transparency in this environment is key; we would recommend having a profile and picture section listed at the visitor center at each site. This would allow visitors to help connect with the heritage site staff, enriching the visitor's experience and knowledge. Compensation will be based on comparable government rates. As part of sustainable tourism efforts, all employees will be current FSM citizens.

Organizational Leader

- Responsible for overall management of both Lelu and Nan Madol historic sites.
- Interfaces with government to secure funding. Manages overall finances for both sites.
- Determines and maintains sustainable strategic plan.
- Works with Organizational Assistant to implement plan and marketing strategies.

Organizational Assistant

- Works with Organizational Leader to carry out strategic plan.
- Interfaces with Site Managers on strategic and marketing plans.
- Manages procurement for Visitor Centers and Sites.
- Manages hiring of new employees.

Site Managers

- Manage daily operations of historic sites.
- Manage inventory levels of merchandise in stores.
- Quality control on all SCUBA and kayak equipment.
- Determines scheduling for employee work hours at Visitor Center.

Visitor Center Staff

- Interfaces with visitors to answer questions and give information.
- Lead guided tours of historic sites.
- Daily maintenance of historic sites.
- Manage sales of merchandise and tours at Visitor Center.

- * Required for Nan Madol: One SCUBA certified guide to lead SCUBA lessons and tours.

Future Organizational Needs and Gaps

Communication and training will be needed to help build the staff's knowledge and discover any gaps and/or needs between the heritage sites. This can be anything from sharing resources and knowledge, to mitigating risk and improving visitor's experiences. The gap and need analysis leads right into the final section, training and performance appraisals.

Training Needs and Performance Appraisals

As with the gap analysis, communication and training is extremely important to an organization. To run a successful sustainable heritage site, all of the staff must fit into this same embedded mindset.

Performance appraisals will be conducted once a year in a *360 degree feedback* format, where peers, superiors, and subordinates all provide an appraisal and feedback on the individual under review. This allows team members to see multiple views of their performance.

The environmental portion of the ceremonial city ecosystem goal is to enhance sea level change adaption and landscape management in the coastal areas of Pohnpei and Kosrae through an increased application of geospatial analysis timely terrestrial, marine and in the ribbon observations with forecasting models for managing resource risk, visualizing, infrastructure, shoreline and landscape level change, and can greatly create great value for the decision-makers related to long-term sustainable development.

The primary objective is to build and institutionalize the public sectors' technical capacity to integrate geospatial analysis into planning and awareness and support of the each ceremonial city's ecosystem. Success is based upon the level of which training technologies, dialogues and tools to the State and National governments lead to making sound natural resource management decisions with real-world impact on the overall ecosystem in both markets.

Each public sector entity Kosrae and Pohnpei must develop and implement existing plans into a Sustainable Ecosystem Plan to ensure the data, tools, applications and models developed through



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the plan are accessed by primary stakeholders. The objective is to enable each state to develop the sustainability roadmap centered on each ceremonial city respective ceremonial city. It will include stakeholder network and revenue

generation strategy. As a result of the nomination process, the states of Pohnpei and Kosrae benefit most

while planning for public and private sector growth in terms of the new sustainable ecosystems created with Nan Madol and Lelu as the epicenters. Specifically, the marked buffer zones surrounding each site becomes the centerpiece of strategic plans which aligned to address complementary initiatives which comprise each ecosystem. The two external initiatives in support of each site highlighted are deemed to be the most strategic stakeholder groups in support of a successful implementation of the strategic sustainable tourism plan. One falls to the public sector and the other to the private sector. In the public sector, infrastructure and resource development are considered key contributions by government to create the greatest returns and opportunities around the respective ceremonial cities.

Infrastructure strategies should support tourism while promoting sustainability. Key infrastructure related initiatives are already underway in both states related to land management, land reform, transportation and utilities. Related resource management initiatives include solid waste, water and wastewater.

Sustainable private sector development is highlighted as the key to maximizing the opportunity presented by the nomination process. It is expected that private sector development strategies will align with the goal of increased financial resources for both states while minimizing environmental impact and preserving culture.

It is recommended that each State create a cultural branding marketing plan with the respective ceremonial city as the centerpiece. Furthermore, each State should build into its plan other offerings of cultural and historic significance.

Within the private sector the balanced approach towards the growth of hospitality related industries should include training programs as well as access to capital for Federated States of Micronesia citizens. It is recommended that initiatives be created that benefit and create entrepreneurship opportunities exclusively for citizens. These programs would include apprenticeships, internships, training and education locally and abroad in order to create and sustain new businesses. It is expected that the College of Micronesia sites in Pohnpei and Kosrae as well as nonprofit organizations will serve as primary stakeholders in the education, training and learning process. It is also expected that existing corporate social responsibility partners who have already been committing resources to the States will expand their contributions in order to meet the demand resulting from the ceremonial cities selection.

Markets – Kosrae and Pohnpei

FSM Aviation

As the submission of the ceremonial cities of Nan Madol and Lelu are being considered jointly, marketing and branding initiatives are expected to be collective with a separate focus on each market segment. The two market segments- Kosrae and Pohnpei. Current aviation initiatives will help meet expected demand.

Pohnpei State Market

As the capital of the Federated States of Micronesia is located in Pohnpei, the Nan Madol market holds an advantage in that the State continually hosts guests from other states and nations. In addition to recreational activities previously mentioned that deliver value and opportunities for visitors exploring Nan Madol, Pohnpei has five outer islands which can be experienced. Ecotourism in the private sector can be developed to take advantage of the unique offerings these

five islands deliver – boasting one of the original Pacific stick dances (Pingalap) as well as other cultural and scientific discoveries.

One opportunity identified is the aviation industry. Presently, UNITED serves as the only commercial carrier to the States. However, there are no daily flights between both Kosrae and Pohnpei. A round trip between the Sites takes two to three days.

A private sector opportunity exists as a result of the designation for small private carrier service between Pohnpei, Kosrae, and Pohnpei’s five outer islands. More research needs to be conducted regarding the profitability of such services. Transportation and other



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infrastructure related demand such as electrical, water, and other

utilities must be studied in order to prepare the positive impact for the designation. Other infrastructure related solutions are currently under discussion to meet the expected demand. The first relates to Pohnpei State’s landfill, water and wastewater, and land reform initiatives. Pohnpei State currently has a plan reviewed by outside experts to help resolve ownership concerns which currently strangle and severely limit the opportunity to attract investors to Pohnpei State. This is due to the inability to affirm ownership and title concerns related to land. The existing proposal also includes standards for development as well as the use of technology and education of FSM citizen to implement the plan. This initiative is expected to address and solve current water related issues which also prevents the needed sustainable growth within the private sector to support the nomination long term. The second area of concern related to infrastructure and resources includes demand for freshwater. The present system, designed decades ago often fails to meet current demand. Water, however, is an abundant resource for Pohnpei and Kosrae. To meet future requirements, studies should be conducted in order to align infrastructure development in such a manner as to capture the resources needed to support new visitor demand.

Kosrae

Unlike Pohnpei, Kosrae has no outer islands except Lelu which is connected by a causeway. Unique to Kosrae's history is the Emperor's line, pirate history and prehistoric finds such as the legends around the bird cave, the ancient canoe landing add value to the Kosrae experience and the support of Lelu. Like Pohnpei, Kosrae has the abundant resource of water. Infrastructure related plans to support the Lelu nomination should include existing green energy testing, diminished dependency on fossil fuels, and transportation, which are key to meet the anticipated growth in tourism and land management. Related to opportunities in land management, Kosrae is currently surveying what is called the Emperor's line or Japanese line which contributes to the brand of Kosrae as the "Jewel of the Pacific." These public sector lands are critical assets and strategic plans for sustainable growth are needed as a result of the nomination. Furthermore, the lack of infrastructure in the Yela Forest contributes significant value in support of Lelu in that visitors can experience one of the world's last remaining undisturbed watersheds.

Pohnpei and Kosrae possess unique opportunities to maximize their respective brands centered on each ceremonial city. To support the ecosystem of business environment and culture, existing plans and future plans centered on infrastructure and private sector development should be conducted under the direction of Pohnpeian and Kosraean professionals. These plans would include land management, coastal and sea level related management and all aspects of marine and terrestrial environmental management. Plans would also include training components, education and learning in the private sector as well as in the public sector. Plans for cultural preservation and related recommendations are found in related documents.

These efforts related to sustainable infrastructure development, environmental and cultural preservation, create a rich and valuable ecosystem for the private sector development related to each respective ceremonial city.

Authored by Knowledge Well NGO Volunteers

Ethnography Program Manager
Dr. Christopher M. Moreno
Ethnography Project Director
Dr. Giorgio H. Curti
HDR Inc.

Edward Jones MBA
Nicholas Clevenger MBA
Jeffrey Behrens MBA
Donavon Boykin MBA
North Carolina State University
Jenkins School of Business

Aaron Smith MBA PLS
University of North Carolina
Kenan-Flagler Business School
Center for Entrepreneurial Studies Instructor & Kaufman Global Scholars Lecturer

Mapping and Graphics by
Joe Travis GISP
Autodesk

Grammar Edits
Cheryl Olive

EXECUTIVE SUMMARY

State party

Federated States of Micronesia

State, province or region

Lelu Municipality, Lelu Island, Kosrae State

Name of property

Ceremonial Centers of the Eastern Micronesia

Geographical coordinates to the nearest second

N 5° 20' 04", E 163° 01' 21"

Textual description of the boundaries of the nominated property

The nominated serial property includes two Ceremonial Centers of Eastern Micronesia – Nan Madol and Lelu. The property consists of four components, the site of Nan Madol on Pohnpei Island and three separate but interrelated components of the site of Lelu on Kosrae Island.

Archaeological features are associated with all components and ceremonial centers are included in the nominated property. At Lelu the buffer zone extends around the entirety of Lelu Island and includes the three components: Lelu Core (Area 1) of the nominated property as well as the associated islets of Yenar (Area2)

and Yen Yen (Area 3) of the nominated property. The Lelu buffer zone surrounds the entire artificial island of Lelu, which is both the historic site and modern development just beyond the site core, and is integral to creating the space around the key components in order to protect the OUV.

Criteria under which property is nominated

Criteria iii, iv and vi

Draft statement of Outstanding Universal Value

a. Brief synthesis

The Ceremonial Centers of Eastern Micronesia in the Federated States of Micronesia is a serial property of four components - Nan Madol on Pohnpei Island and three separate but interrelated components of Lelu on Kosrae Island. The Ceremonial Centers of Eastern Micronesia are large megalithic complexes of artificial islets built over reefs that were constructed as centers of chiefly power from around 1000 years ago, reaching their present extent by around AD 1600. The massive prismatic basalt constructions on over 100 artificial islets at Nan Madol are separated by waterways navigable by canoe. At Lelu the complex includes more than 30 compounds built on an extensive artificial island, with compounds separated by canals and paved promenades. At both Centers the complexes include residential, religious, ritual and mortuary structures, some with surrounding walls up to seven meters high. These Ceremonial Centers served as dwellings and the seats of power for the ruling chiefs.

The Ceremonial Centers of Eastern Micronesia are of outstanding examples of monumental architecture associated with the emergence of social complexity, long-distance maritime interaction and trading networks, and chiefly societies in many Pacific Islands from around 1000 years ago. Following initial colonization, increasing island populations, intensification of agricultural systems and expansion of maritime

trade across the region underpin the appearance of complex or stratified societies. The inherited authority of the chief to command the labor to build these structures as symbols of this power is reflected in megalithic architecture in different parts of the Pacific such as the Marae of East Polynesia and the Tombs of the Tongan Kings in West Polynesia. The Nan Madol and Lelu complexes are a representative Eastern Micronesian expression of this regional phenomenon. They are also unique in being located on artificial offshore islands and in the complexity of their structures, functions and overall form. Together they illustrate the historical connections that link the settlement, survival and flourishing of Pacific Island societies and reflect the similarities and local distinctiveness of the unique architectural form and construction developed in Eastern Micronesia using prismatic basalt.

The evolution and continuity of these chiefly systems continues to be evident in Micronesian societies and systems of governance and land tenure. In Pohnpei the Nahnmwarki chiefly system has its origins in the fall of Nan Madol around 1600 AD. In Kosrae, Lelu remains the center of government and commerce, while mainland villages, familial lines and governing officials reference their ranking based on physical and lineage proximity to Lelu and the Tokosra (paramount chief).

b. Justification for criteria

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared

The Ceremonial Centers of Eastern Micronesia bear exceptional testimony to the development of chiefly societies in the Pacific Islands and the cultural connections of island societies across vast stretches of the Pacific Ocean. The huge scale, technical sophistication and concentration of elaborate megalithic structures of Nan Madol and Lelu bear testimony to complex social and religious practices of these island societies that persisted for over 500 years.

Criterion (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

The Ceremonial Centers of Eastern Micronesia are an outstanding small island example of monumental architecture associated with the appearance of stratified societies and centralization of power that is evidenced in many parts of the world.

Criterion (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

The Ceremonial Centers of Eastern Micronesia are an expression of the origin and development of traditional chiefly institutions and systems of governance in the Pacific Islands which continue into the present in the form of the Nahnmwarki system under which Nan Madol is traditionally owned and managed. For Kosrae, the former chiefdom structure persists in cultural references to physical and familial distance to Lelu and the Tokosra; Christianization and colonial occupation disrupted and replaced the traditional governance system.

c. Statement of integrity

The integrity of the Ceremonial Centers of Eastern Micronesia is ensured by the inclusion within the boundaries of the nominated property all the key structures that demonstrate the architectural forms and diversity of construction techniques and materials in both components of the property. The boundary of Nan Madol includes all islets listed by Hambruch (1910) in the first full survey and recording of the complex. The boundary of Lelu includes the surviving intact administrative and sacred core of the site (Area 1) as identified by Cordy (1993) and the extension of the core to the adjacent and intact islets of Yenasr (Area 2) and Yen Yen (Area 3).

The inclusion of both the Nan Madol and Lelu components of the property as a series is essential to the integrity of the property. Nan Madol and Lelu are the outstanding examples of megalithic structures in Eastern Micronesia. There are no other sites in the region that are of the extent and complexity of these sites.

d. Statement of authenticity

The Ceremonial Centers of Eastern Micronesia have a high level of authenticity, which is held in the setting, interrelationships, forms and variety of the structures and canals of both components. Archaeological research, historical documentation and oral histories clearly demonstrate the significance and the interpretation of functions of the property as traditional indigenous Pacific ceremonial centers that functioned for over 400 years.

There has not been any reconstruction of the archaeological features at Nan Madol or Lelu. In Nan Madol the inner islets have become somewhat degraded over the years but the outline of the islets and channels is still distinct. In Lelu structures have similarly degraded though they remain sufficiently intact to reflect their design and construction values, as well as their ascribed functions.

At Nan Madol, development has remained well outside the nominated property, which was included on the US Heritage Sites Register in 1980. A single small path has been constructed with removable wooden bridges providing access for tourists, and vegetation and siltation on the site are compromising its conservation and the visual and aesthetic appreciation of property.

At Lelu continuous occupation has been confined to the area beyond the chiefly and sacred core; the nominated property is contained and is definitively separated from the current town, and was listed on the US Historic Sites Register in 1984. The property consists of the chiefly compounds and the mortuary areas. There has been some reconstruction of paved areas but the compound walls and the rubble-walled semi-pyramidal mortuary compounds are largely intact. The prismatic basalt walls of many of the ancient compounds still stand to full height. The nominated areas of Lelu still retain the authenticity and values sufficient to demonstrate the construction techniques and functions and like Nan Madol, vegetation and siltation from tidal flows remain constant challenges.

Archaeological research over the past 30 years in both Nan Madol and Lelu has provided evidence of the origin, development and construction of the megalithic complexes and the activities at each site. Much of that research has focused on mapping and surface collection, leaving much of the archaeological deposit at both

sites intact and potentially offering further information about the specific functions of various islets and the social systems reflected in both components

Some archaeological features extend beyond the boundary of the nominated property into the buffer zones of both components. At Nan Madol these features include areas on the small surrounding islands that would have been used in the transportation of stone. At Lelu housing for commoners extended out into areas that are now under modern development. Much of the original commoners' settlement area towards the modern lagoon edge has been developed as a housing area, including household cemeteries (some dating back to the early twentieth century), a commercial district and roads of the modern Lelu municipality. In both components of the property these features have been excluded from the proposed nomination. They do not add significantly to the outstanding value of the site.

Oral traditions and historical records provide extensive and detailed knowledge of the history, development and functions of the property, as well as insights into the social history of Nan Madol and Lelu and the centrality of Nan Madol in establishing the Pohnpeian system of traditional governance through the Nahmwarki system.

In Kosrae depopulation and missionization had a greater impact on traditional systems of governance. However Lelu has the advantage of direct historical observations from skilled nineteenth- and twentieth-century recorders such as Duperrey and Dumont D'Urville (1824). These observations provide documentation of everyday life and the system of rule at Lelu at the time of European contact. They also detail the post-Contact Christianization of Kosrae, abandonment of the Tokosra's rule and development of Lelu as a center of commerce, governance and Kosrae's capital. Yet modern development has remained outside the traditional administrative and sacred core of Lelu, leaving it intact and untouched, a reflection of cultural respect and recognition of its highest status.

e. Requirements for protection and management

A management system to coordinate the management of the two components of the nominated property is yet to be finalized. The Interim FSM World Heritage

Board is meeting in April 2014 with the participation of representatives from Pohnpei State and from Kosrae State to start discussing an outline of a comprehensive management plan. This meeting will establish the Ceremonial Centers of Eastern Micronesian World Heritage Management Committee to coordinate the management of Nan Madol and Lelu by their respective State governments, traditional leaders and local community. This Committee will include representatives of the FSM government, the Nan Madol World Heritage Board and the Lelu World Heritage Board.

A detailed management plan is urgently needed for both Nan Madol and Lelu. The development of management plans for the two components of the property should be coordinated through the Pohnpei and Kosrae State governments with consultation and engagement of local communities.

Nan Madol is included on the US National Register of Historic Places (19741219 74002226) and is on the Pohnpei State Register of Historic Properties and protected under the Pohnpei Historic and Cultural Preservation Act 2002. Proposed protection mechanisms for Nan Madol, which include a Pohnpei State law and draft management system, are adequate to ensure the Outstanding Universal Value of Nan Madol to be maintained for a longer term. The property is also protected through customary protocol and respect. This has been maintained through traditional leadership and stewardship of the Nahnmwarki of Madolenihmw and the sacred nature of Nan Madol to local residents.

A draft management system for Nan Madol was developed based on agreements during the 2012 Nan Madol Capacity Building Workshop, which was attended by stakeholders from government agencies and community. Proposed organizational structure consists of the Nan Madol World Heritage Board, the Nan Madol World Heritage Management Committee, and the Temwen Island World Heritage and Tourism Committee, in which different types of stakeholders, such as national, state, and local government representation, traditional authority and community will be involved.

There is no management system or management plan for Lelu. The landowners manage the ruins through the Lelu Ruins Association. The Historic Preservation Office contracts them to keep vegetation growth in check and to

maintain the canals and pathways although this has not taken place in the last few years. A meeting of the new leaders of the Lelu Ruins Association has agreed that maintenance work would recommence at the site. Discussion also supported the construction of a buffer zone by removing modern development that is too close to the site. The site is also on the U.S. National Register (since 1984) and on the state register where it will be more fully protected under the new Kosrae Historic Preservation Bill, not yet passed but before the legislature.

1. IDENTIFICATION OF THE PROPERTY

1.a. COUNTRY

Federated States of Micronesia

1.b. STATE

Kosrae State

1.c. NAME OF THE PROPERTY

Ceremonial Centers of the Eastern Micronesia

1.d. GEOGRAPHICAL COORDINATES TO THE NEAREST SECOND

N 5° 20' 04", E 163° 01' 21"

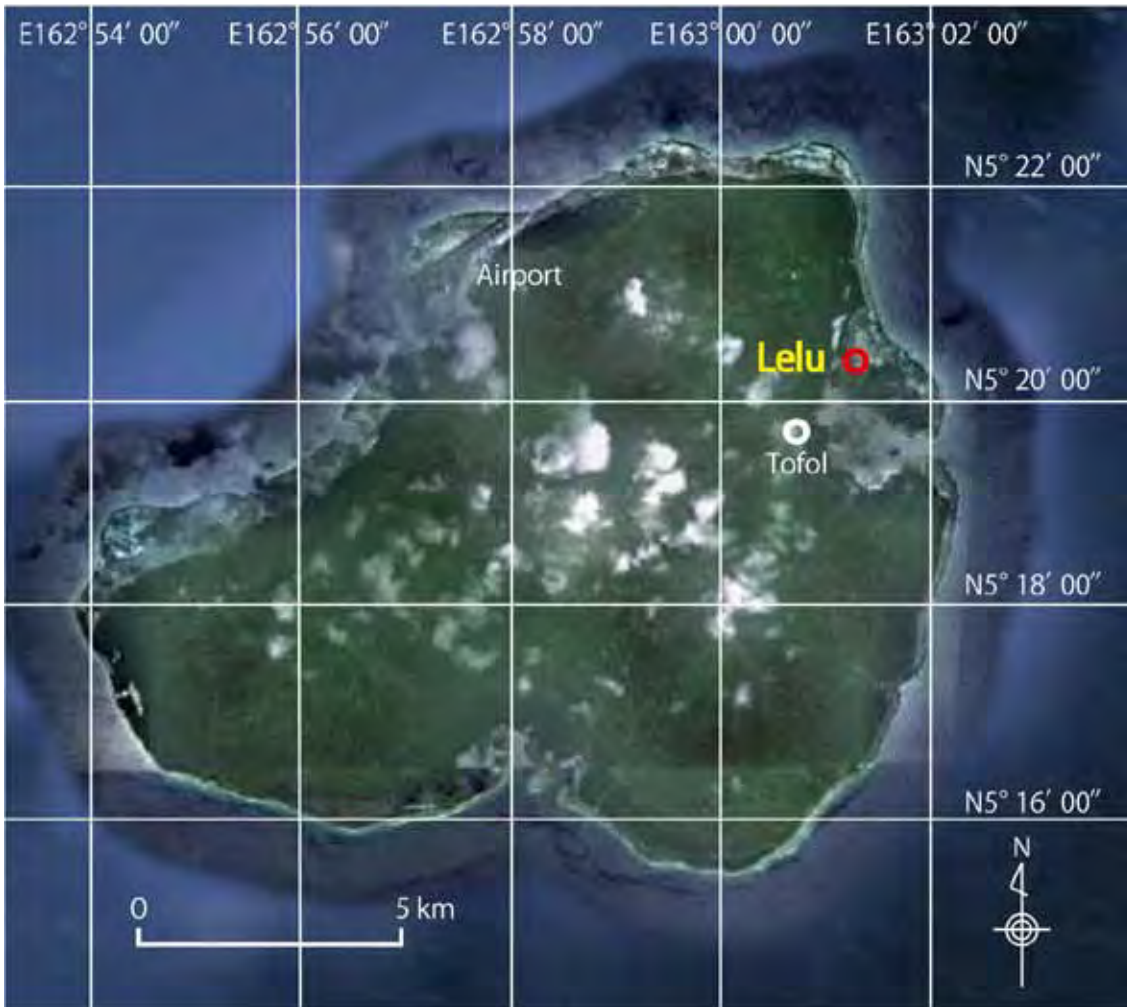


Figure 1.1. The location of component 2. Lelu of the nominated property on the Island of Kosrae.

1.e. MAPS AND PLANS, SHOWING THE BOUNDARIES OF THE NOMINATED PROPERTY AND BUFFER ZONE

Maps and plans showing the locations and boundaries of the nominated property and the buffer zone as well as legal protective designations are shown below:



Figure 1.2. Satellite map of Component 2. Lelu showing the proposed buffer zone and original site area (blue line), the overall setting and geographical context related to the main island of Kosrae (yellow line) and 3 areas of the nominated property (red lines). Source is Google Earth Pro satellite imagery.

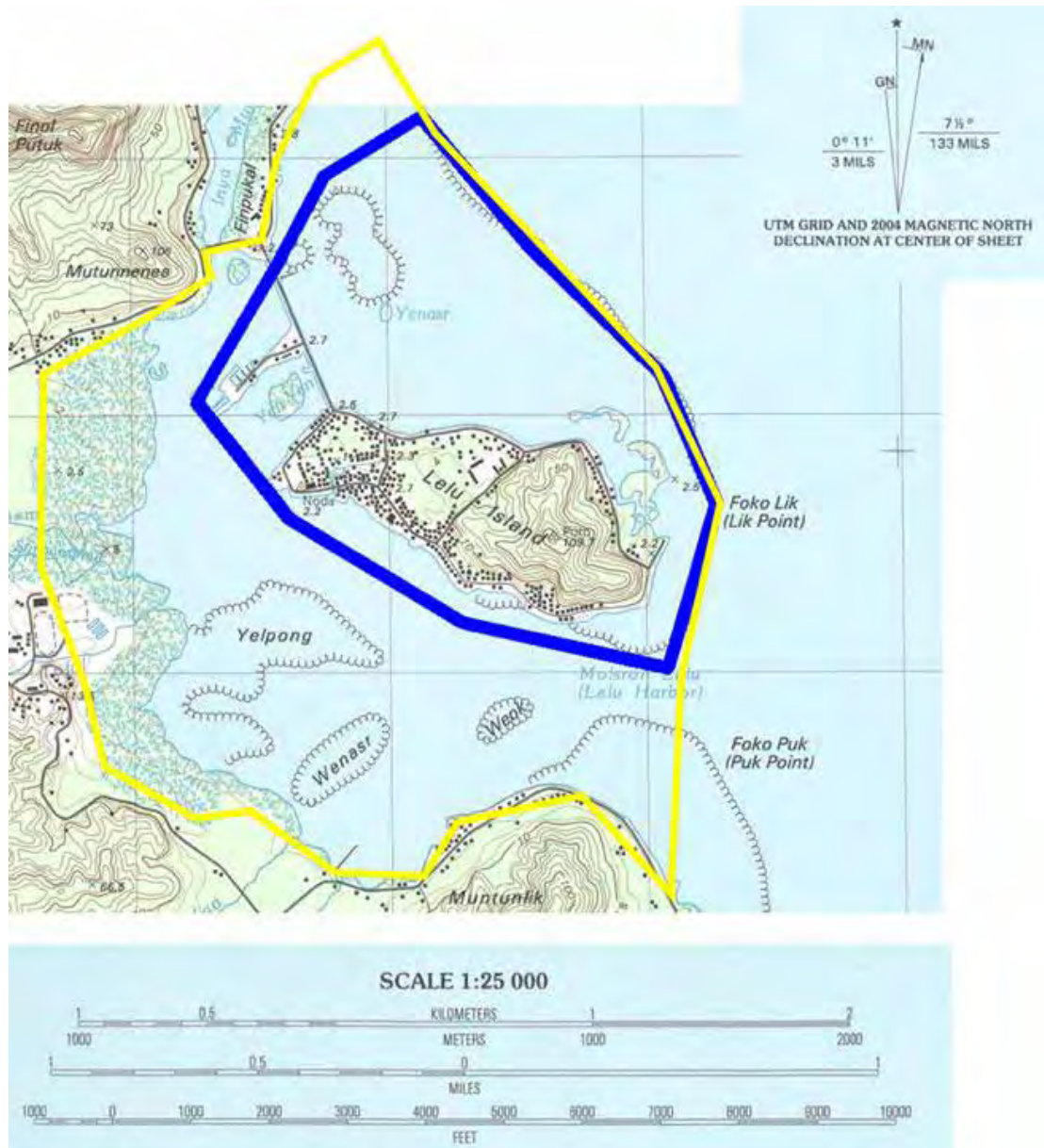


Figure 1.3. USDA topographic map of Kosrae showing a detail of Lelu; the blue line indicates the site area and proposed buffer zone, the yellow line indicates the extent of Lelu Harbor and places the site of Lelu and its three nominated areas into a context on Kosrae. Yenasr and Yen Yen islets are labelled; on Lelu island proper, the “empty” area surrounded by building symbols represents the core megalithic area of the site. Both scale and north arrow are included on the map.

The blue line demarcating the proposed buffer zone at Lelu (Figure 1.2) traces the original boundaries Lelu, once a major traditional political and ritual center. This area has been continuously occupied since is construction. Today, three areas (red outline) of the Lelu component have remained intact, unoccupied and devoid of

development owing to their high status; social custom prohibits occupation of these areas by all but the highest ranking with close familial ties to the Tokosra (paramount chief). All three areas comprise the traditional administrative and sacred core of Lelu and retain the architectural qualities of the original planners, engineers and builders of the site. The in situ archaeological record of the succession of site occupants since the first Tokosra remains intact within the boundaries of these three areas, each of which is defined by a red boundary on the accompanying satellite map. All archaeological work on Lelu has been confined to these three areas.

- Area 1, Core, located in the center of the artificially constructed Lelu Island. This is the site of the megalithic architecture that defines the largest compounds, described as the Royal compounds and includes the royal tombs.
- Area 2. Yenasr Islet, a small islet to the north of the primary Lelu Island, was the site of the final funereal rituals reserved for the Tokosra. Yenasr is located at the southern end of the Blue Hole, the final resting place of the remains of every Tokosra, or high chief of Kosrae. The last funeral rites and feasting activity on Yenasr occurred sometime in the 19th century.
- Area 3. Yen Yen Islet, to the west of Lelu Island, which has become the home of nesting birds. Yen Yen's function remains unknown, although modern development of the islet has been off limits by custom.

The buffer zone for the Lelu component and its associated lagoon islets follows the fringing reef to its opening, then cuts west toward the main island of Kosrae and follows a course through the lagoon that parallels the southern line of Lelu Island, at the modern man-made islet the buffer turns northeast and cuts across the Trust Territory era causeway to follow the outer edge of the mangrove vegetation until it meets the fringing reef formation, closing the loop. A blue line defines the buffer zone boundary.

The buffer zone encompasses the entirety of the historic site of Lelu, including the core area defined in the original United States National Register of Historic Places nomination in 1983.

Coordinates for each Area of the Lelu component of the nominated property and its buffer zone:

	Northing	Easting	Hectares
Area 1: Core			5.0
NW	5° 19' 56.45"	163° 01' 31.11"	
NE	5° 20' 00.03"	163° 01' 33.41"	
SW	5° 19' 51.41"	163° 01' 29.67"	
SE	5° 19' 55.76"	163° 01' 36.50"	
Coordinates of the central point	5° 19' 56.07"	163° 01' 31.14"	
Area 2: Yenasr			9.7 with Blue Hole (0.2, islet only)
NW	5° 20' 29.86"	163° 01' 16.62"	
NE	5° 20' 32.20"	163° 01' 23.84"	
SW	5° 20' 18.47"	163° 01' 22.52"	
SE	5° 20' 20.40"	163° 01' 27.20"	
S	5° 20' 16.66"	163° 01' 25.48"	
Coordinates of the central point	5° 20' 25.20"	163° 01' 22.62"	
Area 3:Yen Yen			1.8
NW	5° 20' 07.84"	163° 01' 10.58"	
NE	5° 20' 10.12"	163° 01' 14.17"	
SW	5° 20' 04.00"	163° 01' 11.68"	
SE	5° 20' 06.49"	163° 01' 15.23"	
Coordinates of the central point	5° 20' 07.00"	163° 01' 12.72"	
Buffer zone			242.0
NW	5° 20' 05.71"	163° 01' 00.41"	
NE	5° 20' 43.31"	163° 01' 28.19"	
SW	5° 19' 36.83"	163° 01' 43.33"	
SE	5° 19' 48.14"	163° 02' 04.61"	
Total area			258.5

1.f. AREA OF THE NOMINATED PROPERTY AND PROPOSED BUFFER ZONE

The total area of the nominated property and that of the buffer zone are given below:

Area of nominated property: 16.5 ha

Buffer zone: 242 ha

Total: 258.5 ha

2. DESCRIPTION

2.a. DESCRIPTION OF PROPERTY

The nominated property of the Ceremonial sites of the Eastern Micronesia is a serial property of two components Nan Madol on Pohnpei Island and Lelu on Kosrae Island in the Federated States of Micronesia (FSM) (Figure 1.1) FSM is a federation of four small island groups in the north west Pacific Ocean spread over approximately 2,900 km between latitudes 137° and 163°. The four island groups, from west to east are Yap, Chuuk, Pohnpei and Kosrae, the latter two formally known as the Eastern Caroline Islands. The four components that make up the serial property are located at Nan Madol and Lelu – on the southeast coast of Pohnpei and the northeast coast of Kosrae respectively, separated by approximately 550 km of open sea.

Nan Madol and Lelu are described as the twin capitals in the Eastern Micronesian Islands, monumental stone cities that exemplify a mastery of stone masonry and its climax in the planning, technology and construction of extensive stone architectural complexes. They were mainly constructed between the 13th and 17th centuries and each played a principle role in the political and religious structures of their respective island cultures, and share similarities in placement, location, architecture, material culture, and even dates and oral histories. Each is an entire off-shore settlement complex built atop artificial, man-made islands extended across a shallow reef platform within the fringing reef of the respective islands. Both Lelu and Nan Madol expand the land area of small coastal and lagoon islets, and incorporate canals into their layout. Both contain islets and compounds defined by core-filled monumental walls some 6 to 7 meters tall made of basalt and coral boulders topped by lengths of prismatic/columnar basalt place in header and stretcher patterns that surround tombs, residential complexes, and sites for sacred or ceremonial activities.

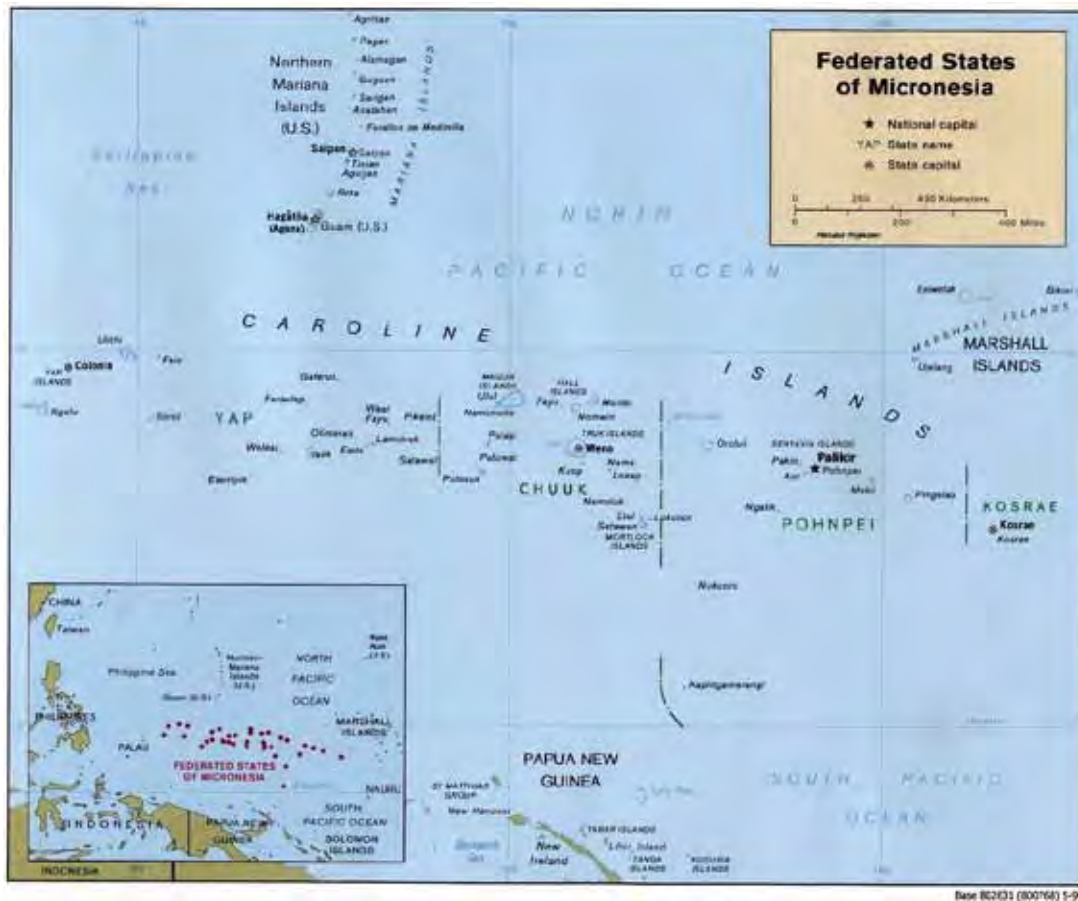


Figure 2.1. Pohnpei and Kosrae in Federated States of Micronesia (University of Texas Libraries 2014).

The majority of construction at both Nan Madol and Lelu took place between the 13th and 17th centuries, with development of the megalithic core of both sites occurring by the 15th century. The construction of both these Micronesian complexes involved the small island populations mining, moving and manoeuvring more than 2,000 tons of volcanic rock every year for at least four centuries without the benefit of pulleys, levels, metal tools or wheels. The overall physical form, architectural style and dates associated with the major periods of construction at both Nan Madol and Lelu indicate a similar history, cultural tradition and contact between the two centers.

Both Nan Madol and Lelu are described separately below in sufficient detail to understand the nature of each site and the course of their respective histories that bring them to their current state.

2.a.1. Setting of Lelu

Kosrae is the easternmost high island at the end of the Caroline archipelago, one of three high islands (including Pohnpei) in the central Pacific. It is small, roughly 110 sq km in area, and removed from the other two high islands by several hundred kilometers of open water. To the south, east and north lay the coral islands of Kiribati, Tuvalu and the Marshalls. Historically, the island was described as an imposing landscape with a steep mountainous interior shrouded by impenetrable vegetation, abundant streams, and a murderously hot and humid climate (Ritter & Ritter 1982).

Just 5° north of the equator (5.3° N latitude, 163.0° E longitude), Kosrae lies in the region dubbed the 'doldrums' or the inter-tropical convergence zone, where the northern and southern trade winds meet and seem to cancel out one another. Here, the warm waters of the tropical ocean surround Kosrae and its narrow reef. It is a small, isolated island with no outer islands of its own. Kosrae bears the roughly circular shape of a newly extinct oceanic volcano, but with a deeply eroded surface that reflects the ravages of time and a moist climate.



Figure 2.2. USGS map of Kosrae showing location of Lelu.

Kosrae greeted the world as a cluster of stark and barren black rocks soon populated by an assortment of life forms, including small spiders that floated in on strands of silken thread. They were joined by other organisms including a variety of microbes, spores, lichens and mosses, each of which set the stage for the arrival and colonization by still larger, more complex biota such as ferns and flowers, then forests, insects, birds, bats, and reptiles but no large animals or carnivorous beasts, until the arrival of the first human settlers. In the oceans, the coral reefs began to form, growing with the island and fluctuating sea levels. Fish, attracted to the coral, spawned and took up residence, as did other marine organisms; the waters were soon teeming with all variety of marine life, both vertebrate and invertebrate included.

It is this environment, a lush tropical forest supporting a rich and varied biota, upon which the founding human population took up residence 2500 to 2000 years ago (Bath *et al.* 1983, Athens 1995) by a population bearing a culture similar to the low islands of the region, the main features of which are a general lack of pottery, a dependence on woven materials, the use of earth ovens, and subsistence practices dominated by breadfruit and marine fauna. The settlement pattern consisted of semi-autonomous polities occupying a strip of land from the reef to the interior (Sarfert 1919, Cordy 1993, Athens 1995), and a culture dominated by a dual political structure with a secular and religious authority (Sarfert 1919).

Known as the “Gem of Micronesia,” Kosrae was considered a remarkable exception in the middle of a sea of low coral islands. According to the early 19th century explorers (Ritter & Ritter 1982), this singular island was, in historic times, strategically located at the midway point in the shipping lanes between New Holland (Australia) and China. It provided a welcome respite with good anchorages, fresh water, food, and a generous and peaceful people.

Kosrae was one of the last islands in the Carolines to be explored by westerners, with accounts that directly benefited from the circumstances of late Contact. Gone were the fantastic and often romantic descriptions of initial encounters penned in centuries past about contacts made in other parts of the Pacific; in their place were matter-of-fact accounts rendered by a wiser, more experienced body of observers that reflected a new awareness of the world around them (Beardsley 2006).

Kosrae is uniformly hot and humid, with little intra-annual variation and few major storms. Overall, the climate is characterized by high rainfall, high temperatures and high humidity. Rainfall on average hovers around 500 cm in the footslopes and along the narrow coastal strand with higher elevations receiving an estimated 750 cm annually (Cordy 1993). The average annual temperature for Kosrae is about 27° C (81° F) and varies roughly one degree from one month to the next. Generally, there are only two 'seasons' on the island, a dry season and a wet season, each influenced by shifting wind patterns. January marks the onset of the dry season, as the wind pattern is dominated by the northeast tradewinds. In July, the winds gradually shift to the west, marking the onset of the wet season. As a transition month, July experiences unpredictable wind patterns, and as the winds change so do the ocean currents. To the locals, July is known as the 'fishless' month (personal communication with Beardsley, fishermen in Walung, July 2001), when neither the weather nor fish patterns can be predicted. When major storms hit the island, they are considered unusual events and become the core of time-reckoning beacons in oral histories, serving as reference points in the island's historical narrative.

2.a.2. Lelu in Kosraean history and oral traditions

As the oral histories state, all roads lead to Lelu. Lelu came to dominate Kosrae's political sphere and became the symbol of island unification and dominance, the point where the early power struggles between the competing island polities ultimately coalesced into a single major political and economic center (Figure 2.2). This is also the Lelu the first Europeans encountered. It was the home of the paramount and the high chiefs, their families and retainers, and it was the location foreign visitors and dignitaries were escorted for an audience with the Tokosra (paramount chief) or 'king' (Ritter and Ritter 1982). To the populace at large, Lelu was power, authority, influence, and unification. Lelu has continued its role as the capital of Kosrae, and in this post-Contact era it remains the center of political and economic activity. Today, cultural practice and social custom acknowledges the high rank and status of familial lineages tied to the former Tokosra lines, although there is no longer a Tokosra.

Lelu was built on a shallow reef platform just off the northeast side of the main island of Kosrae (Figures 2.3 and 2.4), and like Nan Madol it is a monumental stone complex built over several centuries. As artificial man-made land, it was considered both no man's land and at the same time every man's land without ties to place and time. The land tenure system on Kosrae is rooted in a settlement pattern established by the earliest lineages where discretely identified territories are defined by geographic features, with polities running from the coast inland. But Lelu is different, as made land it doesn't fit the traditional land tenure pattern. This puts it outside



Figure 2.3. USGS map of Kosrae with detail of Lelu within buffer zone boundary.

cultural rules, norms and expectations; neither subject to the traditional rules of inheritance, the landed privileges tied to deep ancestral lineages, nor the struggles for position, alliance and ranking. Who built the site and how it was built are the subject of three oral histories collected by Sarfert in 1910, and transcribed by Cordy (1993). In each version, the construction of Lelu begins with a sandbank that is augmented by coral, stone, and magic.

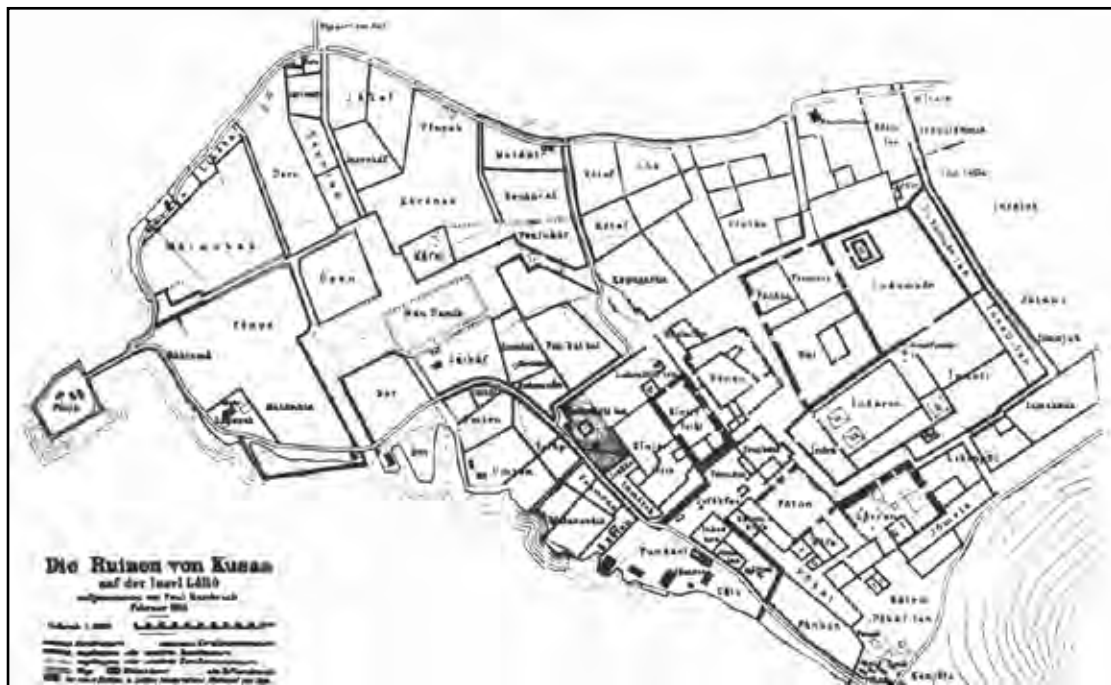


Figure 2.4. Plan of Lelu made by the German Anthropologist Hambruch in 1910 (Hambruch 1936).

The Start of West Lelu

A hurricane threw up a sand-bank on the reef . . . To make their new possession more enduring, they [Kosraeans on Lelu] fortified and elevated the sandbank by coral plates and additional sand. [Sarfert 1919, Cordy 1993]

The Story of Sataf

A king summoned all the people of Kosrae, forcing them to prepare to build the walls in Lelu. He ordered Sataf to take part in the building of the walls, and also Lopankosa from Yewal. When all the people of Kosrae were finished with the preparations, they came together to Lelu, in order to build the walls. Sataf alone kept waiting. The king said he should come on the next day; the walls would be built on the next day. He answered that he would come on the day after, because he was waiting for the return of his two sons; as soon as they came he answered that he would come. When he however did not come

on the following day, people began the wall building.

When Sataf heard of that, he quickly built himself a small wall in order to destroy the walls of Lelu. As soon as he pulled out just one stone, the walls of Lelu collapsed. Still people rebuilt them again. When they were perfect again, Sataf again pulled a stone from his wall; thus, breaking down the walls of Lelu again.

Then the king sent Sataf a message that he should come as soon as possible. Sataf brought his raft forth and consulted with Lopankosa from Yewal, about the trip. Lopankosa wanted to travel to Yemnuena; Sataf however did not. Thus Lopankosa traveled alone to Yemnuena.

When Sataf had his raft ready, he commanded the stones to hurry on it. When the raft was loaded, he walked on the shore and said the following:
Outside of Tauesmo // of Tauesmo, of Tauesmo // Outside of Tauesmo//
Stands alone a coconut tree // Slanting stands the trunk // Held from a staff //
It bends near // And turns again high. // Spirit Soap! Soap! // Leave the small
waves // Send me great waves! // Take for it this luo! // Take this fae! // Spirit
Soap, Soap!

Then came the high tide, the ocean storm, and the waves; the raft rose high and was taken out to sea. Sataf guided the ocean storm. On the raft he made an earth oven, prepared fafa and caught fish.

When Saraf came to Lelu, he landed in Yat and made an appointment with the king. The king told him, "When the work was complete, the walls collapsed again completely."

After the end of the festivities, Sataf began his work. He went and spoke; then the stones quickly piled themselves on top of each other, til the building was finished.

Since his two sons still had not returned upon his departure from Taf, he had left two stones out, for them to bring to Lelu. They took a walking stick and carried them high; but it was very difficult. Their mother laughed at them and they put the stick away. They made baskets out of wild cane leaves to carry the stones. When the sons made the last, however, the stones slid out of the baskets. Now the woman told her sons to go ahead; then the stones ran after them.

When the two youths came to Lelu, Sataf asked them why they had come so late. They told him. Sataf told them to lay down the two stones, which they brought, for the people.

When Sataf passed through Yemnuena on his return home, he met Lopankosa. He was in Matanol where low tide had stranded him. Sataf asked and he told him that he had to remain there because of the low tides. Then Sataf summoned him to throw away his stones and come with him. Lopankosa followed the advice, and they returned to Taf. [Sarfert 1919; Cordy 1993]

The Building of Pisin Islet

The small island Pisin was once a small sandbank, according to the king in 1910. A low chief of Tofol, one of the wealthier fal in Lelu Harbor on Welung, decided to build an islet on the sandbank, so the people of Tofol formed a

long chain across the reef and passed coral pieces from hand to hand to the small sandbank. The scientific character of Pisin speaks itself still in its orderly polygon shape and its beach walls. [Sarfert 1919, Cordy 1993]

All three of these oral traditions suggest different periods in Lelu's construction. The stories also allude to the different materials (coral, stone) used in the construction, their source, and how they were transported to the site. Additional histories describe the residents of Lelu, including the paramount chief, or Tokosra, the high chiefs from each of the polities on the main island (a political move to squelch rebellion; following the adage that it is best to keep your friends close and enemies closer), a host of lesser chiefs, priests and their initiates, and the commoners and servants necessary to insure a seamless continuity of life, ceremonial practice, and grand receptions and feasts in honor of guests, invited dignitaries and foreign visitors. All were in service to the Tokosra and the political and economic needs of the empire.

According to Cordy (1985, 1993), life on Lelu at European contact was infused with pomp and ceremony, where the architectural grandeur of this city-sized site reinforced its position in Kosraean social order:



Figure 2.5. Lelu, header-stretcher detail of Foton compound corner.

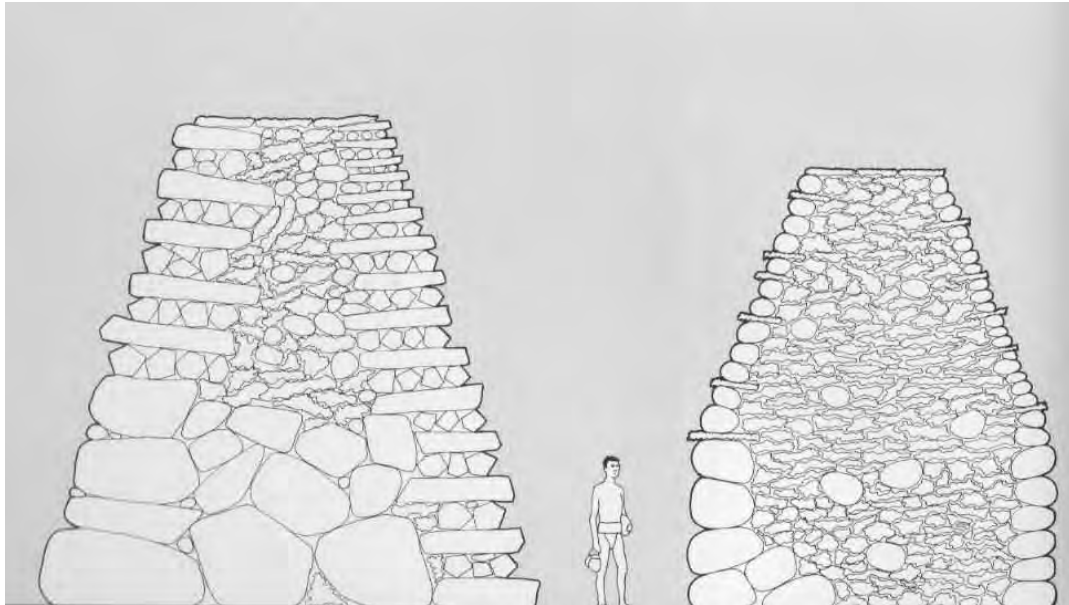


Figure 2.6. Lelu, rendering of wall construction sections by Morgan (1988), showing cross-section of Lurun and Kinyeir Fulat on left, and Bat, Fananan Sremuta and Insruum on right.

The ruler and the high chiefs lived on Lelu along with commoners and servants. These servants (commoners) evidently performed fairly specialized tasks, such as infant care or food preparation. Lelu served as the political and sacred center of the Kosraean society. It covered about 40 ha and held 1200 to 1700 people. Lelu consisted of about 100 walled compounds (dwellings, two royal burial compounds, and 17 sacred compounds) connected by sea piers, an internal canal system, and a paved network of streets. The dwelling compounds of the four social strata differed greatly. The ruler's and high chiefs' dwelling compounds were clustered in central Lelu and had massive basalt walls as high as 6 m. Within were multiple houses, with a large feast-house near the main entrance. Here the ruler entertained his visitors and retinue. Earthen ovens were located near this feast house, and numerous food-pounding and *seka* (*Piper methysticum*)-pounding stones were present within the house. Behind the feast-house, a fence separated the private portion of the compound, comprised of several smaller houses—one for infants, one for servants, others for the wives of the ruler or lord, and one for the lord himself. The cemetery for the household was also usually located here... ([though the ruler was buried] in a special royal burial compound). In contrast, commoners' compounds had no walls or very small walls, no feast-house, no servants, and only one to three dwellings with a few food- and *seka*-pounding stones...On the main island, all households seem to have had one to three dwellings with small cemetery areas nearby. [Cordy 1985]

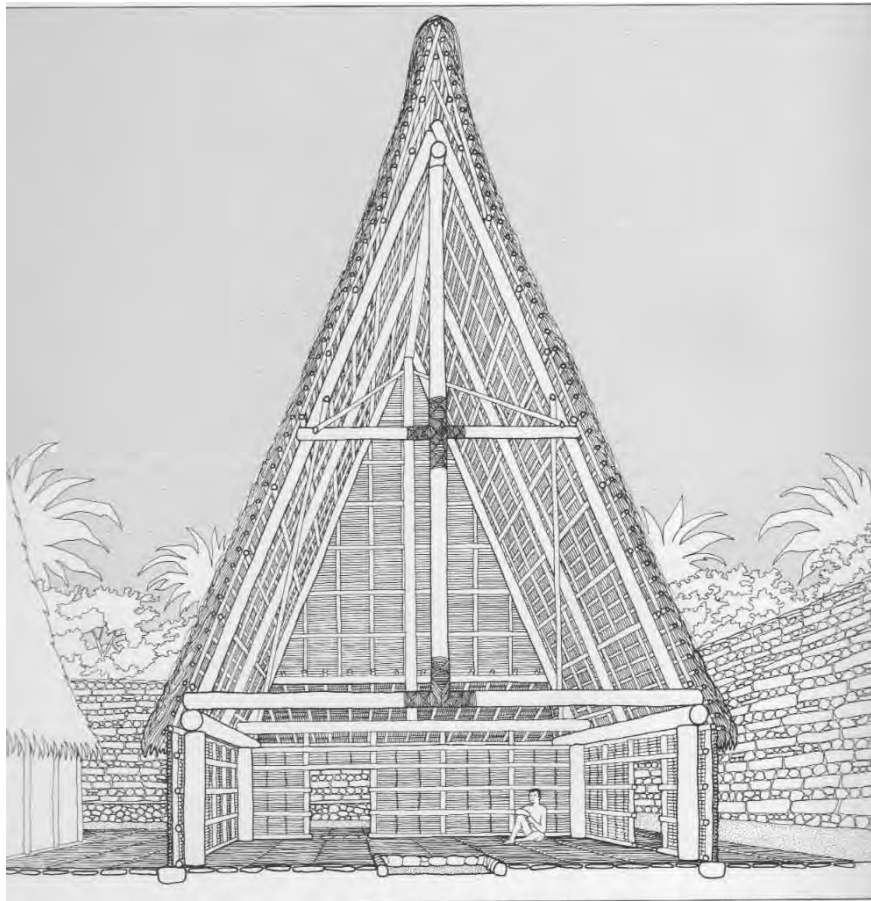


Figure 2.7. Lelu, reconstructed house within a Lelu compound (Morgan 1988).



Figure 2.8. Lelu, wall of Foton compound.

2.a.3. Lelu description and archaeology

The Lelu component of the Ceremonial Sites of Eastern Micronesia comprises three Areas on the man-made island of Lelu. The island is built on an artificial base of coral rubble atop the shallow reef platform on the east side of Kosrae. Lelu extends westward from the shoreline of an existing lagoon islet of the same name. At the height of its occupation, around AD 1400, the site of Lelu consisted of all the flat, made land of Lelu Island (the natural lagoon islet) and three tiny off-shore islets: Pisin, Yen Yen (Area 3), and Yenasr (Area 2)—all of which are artificially-filled islets extending from still smaller lagoon islets. The total land area of the original Lelu site covered 60 to 80 hectares, with about 28 of those hectares comprising the made land, and supported a population of about 1500. Today, the megalithic core (Area 1) of the Lelu site remains intact and covers a continuous area roughly 250 by 250 meters in size, or about 5 hectares. The off-shore islets of Yenasr (Area 2) and Yen Yen (Area 3) are also intact, and are directly associated to the megalithic core—connected through similar architectural (funerary and feasting features); neither has been developed nor incorporated into the modern community of Lelu. The third off-shore islet, Pisin, has been connected to modern Lelu and now supports the Congregationalist church.

At the height of its occupation between the 15th and 17th centuries the island supported over 100 walled compounds built from basalt boulders and prismatic/columnar fragments, and coral. All compounds were connected by coral paved pathways nearly 6 meters wide, with a tidal canal serving as a central artery through the island and sea piers allowing for access to the sea. The compounds included dwelling sites, administrative structures, and mortuary and sacred complexes. The islets of Pisin and Yen Yen are just off-shore, to the west and southwest of Lelu; they supported residential compounds, although the restricted access and isolation of Yen Yen indicates controlled, prohibited or special use according to social custom. Roughly 300 meters to the north of Lelu is the smaller artificial islet of Yenasr, which was directly associated to the sacred and mortuary structures in the megalithic core of Lelu; it was dedicated to the burial ceremonies for the highest chiefs and included feasting activities.

Three types of compounds are identified on Lelu and can be divided into separate categories:

1. Dwelling. Dwelling compounds varied according to social stratum. Commoners generally lived in compounds with no, or very low coral walls along the periphery of Lelu.

Low chiefs occupied compounds with low (1 m high) coral walls at the west end of the island. Their compounds generally contained thatched dwellings and cook houses, with an associated feasting house.

High chiefs and paramount rulers lived in compounds with high walls (about 6-7 m high), thick walls (6-7 m) of huge columnar and rounded basalt boulders in the core/central area of Lelu. These compounds supported up to eight houses, including a public feasting house at the entrances, burial areas, gardens with medicinal plants; private houses for servants, wives and the residential chief/paramount were in a walled off area at the back of the compound (Cordy 1993, Morgan 1988).

2. Mortuary, Royal. Two areas within the core of Lelu, just beyond the living compounds of the high chiefs/paramount, contain the royal mortuary compounds named Insru/Inol (four tombs) and Insruun (one twin tomb). Funeral feast houses were associated with the tombs. The mortuary compounds are accessible from the open sea through the arterial canal.

The tombs are surrounded by basalt walls with coral caps. The Lelu tomb architecture is unique to the Pacific, and consists of truncated pyramids (3 m high) with columnar basalt cores and a flat coral facing. A single crypt drops straight down from the flat top of the tomb. The crypt is composed of a cribbing of columnar basalt.

The funeral process included public display for several days; the high chief/paramount's body was then placed in the crypt, along with burial goods, for several months; the remains would then be removed to Yenasr islet, honored with a special ceremony and deposited in the adjoining "blue hole" or hole in the reef as their final resting place (Cordy 1993, Morgan 1988).

3. Sacred. The sacred compounds are within the core of Lelu, have high basalt walls, and surround the high chiefs/paramount's compounds. At least 17 sacred compounds have been identified. Each contains a spirit house and priest's house, and were only used for specific ceremonies involving the major deities of Kosrae's pantheon (Cordy 1993, Morgan 1988).

Over the last 100 or so years, a number of compounds and walls have been dismantled, with materials scavenged for use as fill, building materials, and road construction. Lelu was connected to mainland Kosrae by a causeway built during the post-war Trust Territory era. Today about 30 compounds remain intact and are confined to the megalithic core (Area 1) of the original site, and include the large and impressive compounds, the sacred compounds, and mortuary complexes; two of the three off-shore islets, Yen Yen (Area 3) and Yenasr (Area 2), are extensions of the megalithic core of Area 1 and support dwelling, feasting and funerary structures. The third off-shore islet, Pisin, is now connected to Lelu by fill and a roadway, and supports the Congregationalist church. Unlike Nan Madol, Lelu was a flourishing center at the time of European visits in the 19th century; all but its megalithic core continues to be occupied today by the descendants of the early site inhabitants. Yen Yen remains intact, unoccupied and off-limits; today it supports nesting birds. Yenasr, too, remains isolated and unoccupied; it is the resting place of fishermen, recreationists, snorklers and reef-walkers exploring the lagoon.

The architectural planning and construction of Lelu are best observed in the standing walls, which are all double-walled, multi-course constructions with a filled core of coral rubble, built with roughly to finely fitted basalt, columnar basalt and coral, in a variety of styles: a) high walls with lower courses of large block basalt, upper courses of columnar basalt placed in a header-stretcher pattern; b) high walls of rounded basalt; c) high walls of block basalt; d) moderately tall walls of header-stretcher columnar basalt capped with flat coral; e) moderately tall walls of rounded basalt and rounded coral; f) low walls of flat coral.

The timing associated with the construction of Lelu indicates a massive undertaking with much labor and planning. Sometime around AD 340, pottery was

deposited in or around Lelu; it was identified just off-shore of the original lagoon islet of Lelu during archaeological work just prior to major infrastructure construction activity; this is the only pottery identified in Kosrae's archaeological record. Associated with this occupation are minimal traces of settlement indicated by shell midden. By AD 1250, construction of the artificial extension of Lelu was well underway and is associated with a purposely filled foundation that extends the shoreline of the original lagoonal islet and construction of the large stone walls in the site core. For the next few centuries, through the 17th century, Lelu is extended westward toward the main island of Kosrae. The number of compounds expands, along with the site population. Lelu becomes the center of political, economic and social activity, supporting the paramount ruler, or Tokosra, and his retinue of high chiefs, along with their families, retainers, and servants.

Cordy (1993) has divided the construction sequence of Lelu into six principal eras, based on his archaeological work. This sequence has been supported and supplemented with additional information and details informed by the work of Athens and others (e.g., Athens 1987, 1995, Athens *et al.* 1983, Bath 1986, Bath *et al.* 1982).

Pre-AD 1250. Prior to the expansion of the lagoon islet of Lelu, the western shore retained evidence of a sandy beach, a freshwater swamp suitable for taro cultivation, shell middens, and at least a brief appearance of pottery by AD 340 (which disappears by roughly AD 500).

AD 1250-1400. Initial expansion. Fill of sand and coral is added to the western beach of Lelu island, across the shallow reef platform. Foundations, retaining walls, small compounds were completed. Coral appears to dominate construction materials. By the end of this period much of the main island of Kosrae was united under Lelu, which enabled the rapid expansion of this island city (Cordy 1981).

AD 1400-1600. The monumental core. The largest and most impressive compound walls within the core of the site are built during this period, including Lurun and Kinyeir Fulat. These walls reached heights of 6-7 meters. The sacred and royal tomb complexes date to this period as well. Lelu continued to be expanded westward. According to Hambruch (in Sarfert 1919), Kinyeir Fulat marked the edge of the island and projected into a shallow bay created by the perimeter of the island. By the end of this period, the three basic elements of the city plan were now present: compounds enclosed by walls, a canal through the center, and streets interconnecting the compounds and boat landings (Morgan 1988). Basalt boulders and

AD 1600-1650. Central Lelu. The shallow bay of the former period is filled in and the central area of Lelu is expanded. Construction of the high walled compounds are consolidated. New dwelling compounds are added in the areas surrounding the monumental site core. No new high walled or sacred/burial compounds are constructed. Basalt dominates construction materials, with greater use of corals included in the wall facades.

AD 1650-1800. Completion. Described as the final phase of construction, at this point the island's full extent had been reached; additions are to existing compounds. Lelu reached its pinnacle of development with more than 100 walled compounds that included 17 sacred compounds, 3 royal tomb complexes, and an unknown number of unwalled areas where commoners lived.

AD 1800-1850. The decline. Around 1800, a severe typhoon hit Kosrae. The damage described on the main island—trees leveled, taro swamps flooded, great famine and death—suggests it may have been a super typhoon. The western edge of Lelu was heavily damaged. No additional construction occurred, as the population was recovering from the damage of the typhoon only to be further decimated by the arrival of the Europeans—pirates, traders, missionaries and colonizers. Lelu remains the center of political and economic activity, but the system of royal succession rapidly collapsed.

Lelu Today. Today, Area 1, the megalithic core of Lelu, remains intact and contains the remains of several large royal and/or chiefly compounds, sacred compounds and the royal mortuary complex, including:

Kinyer Fulat has seven entrances through its large compound wall, a feasting house and several internal low walls that divide the compound into four courtyards which define four household areas. The walls are core-filled walls with facades of coral, prismatic/columnar basalt and small basalt boulders. The compound is paved in flat corals.

Foton has two principal entries, a feast house and at least two houses. Most of the compound is paved with flat corals, but one house is paved with basalt. The house foundations are defined by prismatic/columnar basalt.

Lurun has seven entrances through its large compound wall. The compound was paved with flat corals and contained a feast house and at least six house areas; four houses are defined by basalt alignments. According to Hambruch (1910, in Sarfert 1919), a walled rectangular area against the east wall of the compound was likely a cemetery; three graves were visible in 1910, one of which contained the remains of the last titled chief to occupy the compound.



Figure 2.10. Lelu, wall of Kinyeir Fulat showing header-stretcher pattern of columnar basalt lengths

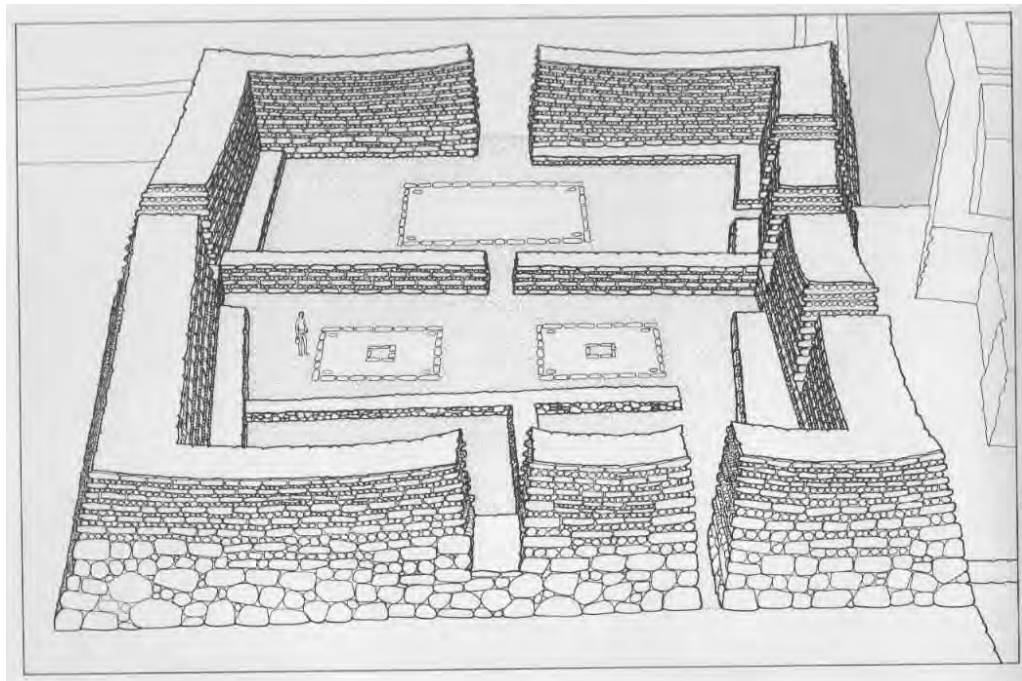


Figure 2.11. Lelu, reconstruction of Kinyeir Fulat by Morgan (1988).



Figure 2.12. Lelu, wall extending from Foton compound.

Bat has two main entrances and a pavement of flat coral. The remnants of a feast house and at two houses are visible within the compound walls. The houses are defined by walls over a meter in height.

Fanana Sremuta has four entrances and is paved with flat corals. A small coral platform is located in the center of the compound; it is about 0.5 meters high.

Finlas consists of three compounds that are paved in flat coral. Finlas 3 contains a cemetery and the remains of a platform built from large prismatic/columnar basalt fragments topped by small branch coral.

Pensa Complex consists of at least four compounds defined by core-filled walls. Pensa 1 was unpaved, though appears to be associated with feasting activities and at least two houses. Pensa 2 has at least five entrances and was paved with flat corals. It has the remains of a feast house and at least two house features outlined by prismatic/columnar basalt fragments. Pensa 3 has two entrances, one of which extends to a landing on the central arterial canal. Much of the compound is paved with flat coral, and two possible house features have been identified. Pensa 4 is an L-shaped compound with four entrances and a pavement of flat coral. It retains the remnants of a feast house and at least one house enclosed by a low wall.

Insruun has at least three entrances and a floor of coarse sand. One possible house foundation is included within this compound, as well as a feasting house and one of the largest tombs identified on Lelu. The tomb is a

truncated pyramidal style structure and is surrounded by an enclosing wall with a single entrance.



Figure 2.13. Lelu, Insruun tomb, with crypt visible in center of truncated pyramidal structure.



Figure 2.14. Lelu, looking into the cribbed crypt in the truncated pyramidal tomb of Insruun.

Insru Complex includes a small compound (Insru 1) with a feast house paved in flat coral and at least two internal courtyards. A priest's house is said to be present in this compound. The compound of Insru 2 is unique in Lelu because it contains twin royal tombs, both of which are best described as truncated pyramids surrounding rectangular cribbed crypts. Insru 3 is a small compound with a coral pavement. It contained two spirit houses and a priest's house.

Inol Compound contains two truncated pyramidal style tombs, each surrounded by low coral walls.

Central tidal canal contains landings into the various compounds of Lelu. It was at one time nearly 800 meters long, extending the full length of the artificial island. It was navigable at high tide and provided access to many of the compounds and numerous boat landings.

The two extant islets associated with historic site of Lelu include:

Yenasr (Area 2) is a small man-made islet extending from a much smaller lagoon islet at the south end of the "Blue Hole." Yenasr is heavily eroded, but it was once rectangular in shape, roughly 20 by 30 meters in size. It has a low internal coral walls and a coral pavement. According to local oral histories, this was the islet from which the remains of the Tokosra (paramount chief) would be deposited into the Blue Hole as his final resting place; his final departure was accompanied by a funereal ritual and feast.



Figure 2.15. Lelu, Yenasr islet from the lagoon.



Figure 2.16. Lelu, Yenast islet, feasting house entry and wall.

Yen Yen (Area 3) is an artificially made islet extending westward from a small steep natural hill. The islet has a foundation of basalt and coral, roughly 30 by 40 meters in size. Several low walls subdivide Yen Yen into three courtyards; the walls are made of coral. Today it is primarily the home of nesting birds.

2.b. HISTORY AND DEVELOPMENT OF THE CEREMONIAL CENTERS OF EASTERN MICRONESIA

Information derived from oral traditions, the historical record, and archaeological studies, provide the following story of the history and development of the Ceremonial Centers of Eastern Micronesia.

Both Pohnpei and Kosrae were initially settled at least 2,000 years ago although the people and their origin are not clear. The generally accepted theory is that these islands were settled from the south, by people from eastern Melanesia perhaps during the latter Lapita era. Where the founding settlements may have occurred is subject to debate, although oral histories suggest they may have been on the off-shore reef islands or strategically defended shoreline locales—a pattern common throughout the low islands of this region, island Melanesia and western Polynesia. On Kosrae, this was the southwestern shoreline known as Walung; on

Pohnpei, it may have been the reef areas off of Temwen Island.

Pottery appears in the archaeological record of both islands only briefly in the period before about AD 500 however at European contact, neither island had any indigenous pottery or pottery-making industry. Other information vital to the outline of the past of these islands includes the appearance of breadfruit and three aroid cultigens (*Colocasia*, *Cyrtosperma* and *Alocasia*) at least on Kosrae some 2,000 years ago (Athens 1995). All these cultigens needed the intercession of a human hand to introduce them. Other changes in the early archaeological record include a in the regular exploitation of shellfish from an initial emphasis on bivalves before AD 500 to gastropods after that date (Athens 1995).

In general the material culture inventory of the high islands of Eastern Micronesia parallels that of the region's low islands. There is a lack of pottery except in the early period, a dependence on woven materials, the use of earth ovens, and subsistence dominated by breadfruit, yams and marine fauna. The settlement patterns consistently indicate semi-autonomous polities occupying a slice of land from the reef to the interior.

Across the Pacific, following an initial colonization period, island populations gradually expanded, semi-autonomous polities emerged to compete for resources, alliances and the struggle for the power to reign supreme. Populations became rooted in their political and economic boundaries, creating a depth of generational links tied to the land and sea, lineages received ranks based on landed tied, and settlements increased their sedentary reliance on cultivated foods. Environmental and economic pressures associated with the development of an increasing political stratification ultimately led to the appearance of complex chiefly societies. The rise of the Ceremonial Centers of Eastern Micronesia - Nan Madol and Lelu - are the tangible evidence of this increasing social-, political-, and economic stratification; in each the symbol of the power of the chiefs to command the labor to build these monumental sites is expressed and reinforced.

On Kosrae, the semi-autonomous polities organized across the island exchanged alliances and enmities over generations until the rise of a single, powerful ruler or ruling family that united the island under a tense, through fragile allegiance

held in check under a tyrannical command (Beardsley 2005c, 2006a). Described as the tyrant king of Lelu, the position of Tokosra was inherited, though each new Tokosra was 'elected' by a council of high chiefs. According to Cordy (1993), early Kosraean society was a two- to three-tier chiefly structure comprise of commoners, local/lower chiefs and high chiefs. By the time of island unification, sometime around AD 1400, a fourth chiefly stratum was added—the paramount chief, or Tokosra. This coincided with the rise and intensification of construction at Lelu. Athens' work across Kosrae supports this scenario, suggesting that Kosrae saw a significant population growth at about AD 500, with an increasing intensification of resource use indicated by AD 800 and continuing for at least another four centuries.

While on Pohnpei, sometime around AD 1100 and possible before that according to oral history, a culture (in the oral history, it is referred to as two brothers, Olosohpa and Olosihpa) from Katau Peidi, an unnamed faraway land to the west, settled at Sokehs island and eventually moved around Pohnpei to Temwen island. Here they built Nan Madol as a religious center dedicated to the richness of the reef resources. The oral histories credit the brothers with establishment of the Saudeleur dynasty, which united the island. It is here that the culture/brothers blended with local customs to create uniquely Pohnpeian practices, such as the feeding of the sacred eel. Over time, the Saudeleurs grew powerful, abusive and authoritarian, and reigned as the paramount chief until AD 1638, or at least the early 1600s (Rainbird 2004).

The downfall of the Saudeleur dynasty came from the east (Katau Peidak), likely Kosrae as oral histories on both Pohnpei and Kosrae attest. This was the homeland of the legendary Isokelekel (known as Nanparatak on Kosrae), who arrived on Pohnpei with an army of 333 men (a number drawn from the oral histories). The hero Isokelekel defeats the Saudeleurs and establishes a new political order that continues to exist today. He installed at its head a high chief called the Nahnmwarki, who took up residence at Nan Madol. The Pohnpeian legend says that Isokelekel served as the first Nahnmwarki; the Kosraean story has several versions of the fate of the hero, ranging from living out his life quietly on Pohnpei or dying after the war or returning to Kosrae to give up fighting, throwing away his spears and settling down to live a quiet life. The modern Pohnpeian paramount chiefs Nahnmwarki of

Madolenihmw, where Nan Madol is located, according to oral histories, trace their lineage to Isokelekel. As the site of the new governing system, Nan Madol was in use and remained the home of the Nahnmwarki until sometime in the 1700s. By the 19th century, however, Nan Madol was all but abandoned, though it continued to be used for periodic religious observances. The site of Sawptakai eventually developed as a new secondary center of governance.

Lelu remained the political and economic center on Kosrae through the historic period. It was the site that served as point of first contact for foreigners, traders, whalers, missionaries, pirates, and eventually the colonizing settlers from Europe, Japan and America. By Contact, Kosrae's population was already stressed owing to environmental perturbations, famine and destruction from a super typhoon in the early 1800s. The arrival of foreigners brought with them disease and more death, which caused Kosrae's population to crash. Subjugation was not far off; by the 1870s, the Tokosra was essentially a figurehead who acquiesced to the missionaries, allowing Christianity to become fully installed on the island.

By the 1890s foreign governments established colonial offices on-island, first economically exploiting the island resources (Spain, Germany and then America) and then ultimately exploiting the population (Japan). Throughout these various iterations of governance, Lelu remained the political and economic capital of the island until the post-war Trust Territory era, when the government offices were eventually moved to Tofol, on mainland Kosrae.

Both Nan Madol and Lelu remain central to the full cultural history of Pohnpei and Kosrae, from initial settlement up to the modern era. In both sites the rise of a high complex stratified culture that once dominated the Eastern Caroline Islands is reflected, and can be detailed. Their stories are the stories of the shifting political, economic, social and religious changes that took place on both islands. In effect, the contrast in the two cultures that exist today on these islands can be explained in the comparative history of these two places. Though they had a similar culture at the time of settlement, the course of history followed by each place has led to the different states of these two modern cultures.

2.b.1. History of research of the ceremonial centers of Eastern Micronesia

Archaeological work on Kosrae is divided into two eras, the first covering the visit of the German South Seas Expedition in 1910, the Early Years, and the second, a more robust period of investigation under the auspices of the Trust Territory administration, Trust Territory and Cultural Resource Management. Leading up to the systematic archaeological investigations, historic contacts with Kosrae and Lelu were limited. The first records of contact come from the French, the first expedition led by Captain Louis de Freycinet in 1817, followed by members of Captain Luis-Isidore Duperrey's French expedition on the ship *La Coquille* in 1824. Duperrey's men mapped the local waters, visited Loal Village, and travelled to Lelu; though their observations were limited.

Three years later, a Russian expedition arrived on Kosrae, under the command of Captain Fedor Petrovitch Lutke, arriving on the ship *Seniavine*. They too made similar scientific observations as the French, and like the French, they also anchored in Okat Bay, off the northern shore of the island. They also paid visits to Lelu, although their encounter was perhaps more significant in that one of Lutke's party managed to upset the high chiefs by taking shelter in the king's canoe shed during a rain shower; a local custom was violated. From this point, the arrival of outsiders on island brought with it a change in the attitude of the high chiefs, shifting to one of manipulation for prestige and western goods. No other scientific expeditions arrived until the latter decades of the century.

Between the 1830s and the 1880s, contact with the outside world increased, but not for scientific purposes; rather, they arrived for rest, fresh water and reprovisioning. Kosrae became a popular leisure port for whalers and others in the Pacific owing to its location, its benign weather and its agreeable environment. But the arrival of outsiders also had its effect on the population with the introduction of venereal diseases and small epidemics. Whalers, missionaries and even the pirate Bully Hayes called on the island—Bully Hayes took refuge on the island, hiding from those who were in his pursuit. His ship, the *Leonora*, was caught in a storm and now rests off the southern shore of the island, just outside Utwe Harbor, in what is now the Utwe-Walung Marine Park.

Next to the early French and Russian expeditions intent on making scientific observations, the only other early scientific visits we know of to Lelu were confined to last decades of the 19th century, when Franze Hensheim (a German trader and government official in the Marshall islands), Otto Finsch (a German naturalist) and F.W. Christian (an English gentleman scientist) arrived. Hensheim's accounts are essentially travelogues, and offer little insight into Kosraean culture or Lelu in the 1880s (Ritter and Ritter 1981). Finsch described the natural environment, birds, Kosraean material culture, and limited observations of the ruins at Lelu (Ritter and Ritter 1981). Christian (1899) drew a map of the compound Kinyeir Fulat in Lelu, although he did no excavation but like those before him, he did collect a number of artifacts (provenance unknown). With the turn of the century, a new era of systematic, scientific work began on the island.

The early years to World War II

In 1910, the German South Seas Expedition landed on Kosrae to continue their scientific survey of Micronesian culture. These scientists produced the first maps of Lelu, gathered artifacts from the site, and recorded the legends and recollections of the residents of the site who still remembered the specific features and practices of this ancient city. The plan for the Expedition's exploration was for Ernst Sarfert to remain on-island for three months to complete an ethnographic investigation, while Paul Hambruch, an archaeologist with the Expedition, would remain only as long as the Expedition ship was in port, roughly two weeks. Hambruch coordinated the first systematic archaeological project on the island. It focused exclusively on the historical site of Lelu, the 'other' monumental architectural site in this part of the Pacific, a rival to Pohnpei's Nan Madol. He had already gathered some information on Lelu from adventurers such as Christian (1899). Together, in what can only be described as a monumental effort stretching over a two-week period, Hambruch and members of the Expedition began their work on Lelu.

At the time, Lelu supported a limited population beyond the megalithic core of the island, but was most mostly abandoned by the time Hambruch *et al.* began work.

Lelu was overrun with dense jungle and the canals through the islet were silted-in and choked with an impenetrable thicket of hibiscus. The meters high walls of the compounds, according to Hambruch (Sarfert 1919), were virtually invisible; you could not locate them either simply or easily. And it rained, almost continuously, with hours of long down pours during which no work could be completed. In addition to the mapping effort, Hambruch excavated three tombs (in Insru, Inol and Kefal), and completed an extensive surface collection across the site. Other members of his team excavated in the compounds of Lurun and Kinyear Fulat. Hambruch found striking similarities in the material culture from Lelu and Nan Madol, in both the surface collections and the grave goods (trolling lures, shell armrings, pendants, basalt pounders, shell beads). He kept his observations to the archaeological record, leaving out the speculation that had colored the notes and journals of the earlier explorers.

The final result of this effort was an exceptionally thorough account of Lelu; it was a major achievement of value and interest (Sarfert 1919). Subsequent archaeological work on Lelu has merely added additional, qualitative information, changing little from the first descriptions and interpretations of Hambruch and Sarfert. Even the map produced from this first effort remains virtually intact, with only minor changes made by later investigations. The German Expedition established in what is truly an unsurpassed and unprecedented effort a foundation of knowledge for understanding Lelu, as well as the rest of Kosraean traditional culture.

Between 1914 and World War II, the Japanese government took on administration of Kosrae, along with the rest of Micronesia, as part of their expanded territory. Each of the major islands in this new territory was the recipient of Japanese curiosity, and the subject of a limited series of archaeological investigations (Yawata 1930, 1932a, 1932b). Their scientists swarmed throughout Micronesia, documenting archaeological sites, collecting artifacts, and speculating on the origin of the peoples, often with attempts to link Japan to the islands as the point of cultural origin. Few of these studies, however, have been translated and remain inaccessible to those who cannot read Japanese. In 1915 Hasebe performed limited excavations in one tomb (Hasebe 1915). Yawata excavated two tombs (in Inol and Insruun) in 1929 (Yawata 1930, 1932a, 1932b), and in 1936 Muranushi made a few final collections (Muranushi

1943).

The outbreak of World War II brought an end to the Japanese investigations, and to all their archaeological and scientific inquiries throughout the region. The Japanese turned their energy to focus on war-readiness; Micronesia was now the frontlines for their part in the Pacific conflict. Lelu became the site of a Japanese military installation, while Malem hosted most of the Japanese soldiers who were stationed on Kosrae in defense of the Japanese Empire. Various military facilities were constructed around the island, including a whole network of hand-dug caves; many of these facilities have become a part of the archaeological record. It was not until establishment of the Trust Territory administration after the war, when the United States assumed trusteeship of Kosrae and the rest of Micronesia north of the equator, that archaeological work began anew and with a new emphasis.

Mid-20th century to the present

Modern archaeological research on Kosrae began in the 1970s as part of the regional programs administered by the Historic Preservation Office of the United States Trust Territory of the Pacific Islands. A number of archaeological projects were carried out under the direction of Ross Cordy, territorial archaeologist. Many of these projects were generated by major infrastructure development on the island, including road building, waterline installation, the construction of wastewater facilities, and other capital improvement projects. With each, a series of small, directed and systematic archaeological surveys were conducted, some of which required testing and excavation. Numerous historic sites were recorded, several radiocarbon dates were calculated, and a variety of other data needed to fill in the large gaps within the developing cultural outline for the island were documented. Much of the cultural timeline focused on the later part of the pre-Contact era with Lelu as the principal reference point.

Cordy's work at Lelu included a reconnaissance survey to determine which compounds still remained. He mapped 19 compounds and corrected the maps of Hambruch as he found them to be inaccurate in some places, which is not unusual

considering the circumstances under which Hambruch was working. Cordy is credited with developing the construction sequence of Lelu, and his excavations have added significantly to our understanding of life at Lelu. His efforts were comprehensive and bring together all the previous work at the site, and even withstand critics such as Graves (1986) who questioned the provenance of the dates recorded by Cordy. Given the dynamic nature of islet construction, the mixing of fill materials, the reconstruction and renovations of compounds over the life and occupation of Lelu, many of the stratigraphic layers were mixed, making it difficult to be certain that samples are not from secondary contexts and therefore not directly associated with the occupation of Lelu. However, similar dates for the occupation of Lelu have continued to be cited elsewhere (e.g., Swift *et al* 1990).

According to Cordy (1982, 1985, 1995), evidence for the initial landfilling of Lelu begins around AD 1250. A single radiocarbon date of AD 970 provides a timeframe for settlement prior to the landfilling (Cordy 1985), while additional dates for the occurrence of pottery and other occupational evidence suggest active settlement by AD 340 (Athens 1987, 1990, 1995). Thereafter, Cordy's developmental sequence was divided into various phases, from the initial expansion phase (AD 1250-1400), to the intensification and construction of the monumental megalithic core of the site (AD 1400-1600), to the continued expansion and construction of the supportive sectors flanking the monumental core (AD 1600-1650), and finally the completion and degradation phases (AD 1650-1800 and AD 1800-1850, respectively).

Throughout his excavations, the usual Micronesian artifact assemblage was found consisting of shell adzes, shell food peelers, trolling lures, armbands, shell bracelets and *Spondylus* shell money, and *seka* (kava) pounding stones (Cordy 1995). The presence of stone food pounders was also found; these are unique to the Kosraean assemblage and consist of a conical shape topped by a flat brim and knob. Other than the trolling lures, a general lack of fishhooks was noted, which was thought to support Leach *et al*'s theory that fish poison and/or nets were used. However, later, Beardsley (2000, 2005c) would identify a fishhook industry on the island that focused on coral rather than shell.

Other work at Lelu, such as the large-scale investigations by Athens (1995),

focused on excavation in four particular compounds of Lelu looking specifically at the geomorphology and subsequent human modification to the island. A natural sandbar was identified beneath the Finpea and Katem compounds that extended out from the small volcanic hill, and reinforced the artificial infilling of the island as well as a prior occupation of the natural islet. It was in this deposit that pottery was found, as well as a swampy area just off the sandbar.

Historic preservation projects at Lelu by Bath (1982) and Bath and Shun (1986) were performed in order to address compliance standards for a waterline corridor. Here, 54 test units were excavated though the result of these showed mostly modern fill on the western margins of Lelu; an expectation given the destruction to this area by the typhoon of 1800 and subsequent rebuilding in the modern era. Morgan (1988) provided a look at Lelu in terms of prehistoric architecture. His work provides detailed reconstructions of many of the larger compounds as well as a sequence for the construction of the compounds.

The other principal archaeological projects in the Trust Territory Times consisted of both surveys and data recoveries for infrastructure development (Craib 1978, Cordy 1981, 1983, Sinoto 1982). Other projects during this era included a major intensive survey, mapping and testing effort directed at Lelu, in effect redoing the work of Hambruch *et al.* some 70 years prior (Cordy 1982a, 1982b, 1985, 1993, Morgan 1988). Other archaeological work at Lelu included more infrastructure related projects by Bath (1986), Bath and Shun (1982), and Athens (1995). Additionally, extra-Lelu archaeological work was concentrated on the island's coastal plain, and included efforts in Okat, Innem, Loal (Lacl), Utwe, Likinlulem, and Malem (Bath, Shun and Cordy 1983, Cordy 1983, Cordy *et al.* 1985, Athens *et al.* 1983, Welch *et al.* 1990, Swift *et al.* 1990).

One of the extra-Lelu investigations of particular relevance to the early part of Kosrae's history was the archaeological survey and excavation of Likinlulem (Bath, Shun and Cordy 1983), one of the most significant historical sites on Kosrae according to oral histories. Next to Lelu, it was the one site on the island that appeared regularly (and in a key role) in legendary histories, including the mythical stories detailing the formation of various geographical features that make up the

island. It was the place from which traditional titles originated, and is said to have housed the island's highest chiefs with the oldest lineages, at least until roughly AD 1400 when the rival site of Lelu began to amass the political will and strength to conquer and unify the island, ultimately becoming the seat of the paramountcy and ushering in a new era of political complexity.

Likinlulem is frequently described as having been occupied 'before time began' or 'before the before.' Its importance in the history of Kosrae is present in every major event or undertaking recorded in oral history, chants, myths, and legendary stories. In particular, its architecture and layout form the model of virtually every other site so far recorded on the island; here you can find the nascent ideas embedded in the island's architectural climax that would become Lelu. According to the archaeological record, Likinlulem was occupied by about AD 1000 (and likely even earlier), with its peak period of occupation between about AD 1200 and 1600—a time frame that is becoming increasingly important in the history of Kosrae, as this is the era of independent polities, political rivalries, intra- and interisland conflicts and alliances, the struggle to control resources or access to major resources, and the rise of Lelu.

In 1987 the Trust Territory era ended. Kosrae became one of four states within the newly independent Federated States of Micronesia. However, independence from U.S. administration did not stem the effort of historic preservation or archaeological research. It continues today, with much of the work now conducted by the direct ancestors of the earliest settlers to the island. This work has focused on the historical sites around the main island, all of which aid in the understanding of the early eras of Kosrae's history and the dynamics that shaped the political and economic environment that led to the rise and dominance of Lelu. With the protections afforded by the listing of Lelu on the U.S. National Register of Historic Places, little additional archaeological work has been conducted within the site other than a limited study of the conservation needs of the Lelu Ruins (Beardsley 2004b, 2006e) and some additional dating work focusing on the corals used in site construction.

Precious little is known or has been tied to tangible evidence of life during the prehistoric/early/traditional era of Kosrae's occupation. Little information on the habits of the population, on the establishment and spread of communities, on the division of

the island into regional districts, or on their increasingly complex social, political, and economic systems. Thus far, only the late period, the Contact-era Kosrae has been portrayed fully described using historical texts as reference. For those earlier eras, the human factor remains an abstract element in the total cultural equation. Yet, it was the prime contributor to the creation of the archaeological record.

What we do know about the pre-Contact, prehistoric era of Kosrae is that the founding population likely settled on the southwestern shores of the island. This area retains the densest settlement pattern and number of archaeological sites, and it also referred to in oral histories as the area with the deepest settlement and oldest lineages. From there, the island was settled to the south, to the north, and into the mountainous interior. Safonfok remains as one of the semi-autonomous administrative sites on the southwest coast (Beardsley 2000, 2002a, 2002b, 2005c) with an occupation that was fully established by AD 1000, and in full power by AD 1200. It retained a surrounding core-filled compound wall built of multiple courses of locally gathered coral boulders, with corner constructions of a header-stretcher pattern using short lengths of prismatic/columnar basalt. Inside the compound were several house foundations, a feasting house and a workshop area with the coral fishhooks and their manufacturing debris. Additional tool working areas included a reduction area for the hinges of the giant *Tridacna* clamshell. High status food remains, including turtle bones were recovered. The overall plan of the site, however, was comparable to the plans found at virtually all historic sites examined across the island.

Excavations at Likinlulem (Bath, Shun and Cordy 1983), inland from Safonfok, but still at the southern end of the island, demonstrated an occupation by about AD 1000 (and likely even earlier), with its peak period of occupation between about AD 1200 and 1600. The site consists of low core-filled walls built from basalt boulders and prismatic/columnar lengths, with corner constructions exhibiting the header-stretcher pattern visible in Safonfok, Lelu and archaeological sites across the island. Raised house platforms were identified within the surrounding compound wall. What Likinlulem establishes is that the architectural style of construction seen in later sites, including Lelu, was not new or different. It was a home-grown pattern reflecting the

Kosraean ideals of what a settlement should look like. It relied on the use of locally obtained materials, from the nearby rivers and mountains. It exploited the neighborhood resources, and as a consequence provided the mechanism to identify larger deposits of precious stone and mineral sources that would be used again and again in high status dwellings (Beardsley 2013).

The Tofol excavations (Beardsley 2004c, 2006a, 2007, 2008) reinforced the semi-autonomous political organization of the island in the pre-AD 1400 era of Kosrae. Tofol valley retained evidence of border walls along its defining its environs, and reinforcing the treacherous conditions in which the inhabitants were living—this was a time of shifting alliances, of battling enemies, and of grasping for power to control the island or at least large swaths of the island. Tofol valley is also important in another respect. While Likinlulem set the stage for the architectural legacy of Kosrae, Tofol demonstrated that early on, by at least AD 650, the Kosraeans were adept at stone working. The site of Finol Tokosra, within Tofol valley, was a stone statue working site, complete with a litter of stone working tools, large boulders in the process of being whittled down to size and shapes useful in the further reduction into figures such as turtle and eel heads, crabs, fish, manta rays, anthropomorphic heads, and even standing statues that included head, arms, torsos and hands. Statues of these natures have been identified in other sites across the island (Beardsley 2008, 2012a, 2012b, 2013).

At the end of the Tofol valley archaeological investigations, a clear pattern of settlement around the island was established: by AD 1200, traditional era sites were distributed along the waterways (principally, the river terraces and stream flats) and included enclosures with and without pavements; they were found on gradual slopes, stream flats/river terraces in virtually every valley system on the island, and ridgelines. Architectural patterns did not vary from those already encountered and exhibited at places such as Likinlulem; the sites of Safonfok, Loal, Wiya and Utwe, Finol Tokosra, and Malem all exhibited comparable compound constructions. None of the sites, however, retained the high, monumental walls that were found in Lelu. Construction of Lelu was different in that regard; it was the point at which all the architectural talents of planning and knowledge of stone masonry coalesced in a vision of what-

could-be-possible.

The tomb construction at Lelu has become a major contribution to the architectural history of the island: it was new, and had not been seen at any of the other sites on the island. The Lelu tombs are truncated pyramidal structures that surround a rectangular, cribbed crypt. No similar structure has been reported in the Pacific either; this is a wholly unique development on-island. Even Nan Madol's tombs are not of this nature; rather, they consist of rectangular platforms with large rectangular crypts.

And, what of the hierarchical social organization of Kosrae's pre-Contact population? The pre-AD 1200 sites suggest that the island was organized in at least a two-to three-tiered system with commoners, local section chiefs and a high chief within a valley system. Oral histories suggest a parallel development of a religious system, with a high priest who worked as the intermediary between the earthly world and the spiritual. It was up to the high priest to arrange the timing and performances of the various rituals and ceremonies dedicated to the pantheon of nature deities, particularly Sinlaku, known variously as the prophet goddess, the breadfruit goddess and the storm goddess. And, upon the ascension of a new king, the priestly societies would erect a new house for the goddess and from there plan and direct the procession to take place in advance of the coronation, prepare a feast for the day of the coronation, instruct their followers in stick fighting, and provide offerings to the goddess over kava (or *seka*). By the time Sarfert arrived on-island, obligations of the priestly societies were virtually unknown, except one in particular, the procession and rituals involved with the breadfruit harvest:

The various varieties of breadfruit do not yield a uniformly abundant harvest year after year. They are supposed to bear very heavily every three years. When this large harvest was imminent, Sinlaka came, as the natives put it. According to the story of an old man in Uia, the following arrangements were made in Uia. The priests built a new house and in it prepared a *tan*es (breadfruit picker). Then they went to a breadfruit tree and seated themselves underneath it, while one of the priests climbed the tree and pulled off breadfruit, that is, only for the various titular chiefs in Lolo; as he did so, with each fruit he loudly cried, "For the king! For Kanko!" etc. They took the fruit into the goddess' house and prepared *furo* out of it. Only then could the population of Uia, Sialat, Matante, and Tafonsak, the districts on the northern

coast of Ualang, also harvest breadfruit and prepare furo. It took about fourteen days before this was ready. During this period, the priests stayed in the house of the goddess and drank kava morning and evening, during which the chief priest Kaijen recited a prayer. The people of the aforementioned districts had to bring a portion of the prepared furo to the priests, who then staged a big feast. For this, the priests' wives went fishing out on the reef with masa nets; they went to a certain large rock, which they moved. Beforehand the priest Losa had placed four sugarcane leaves, which had been crushed in his hand, underneath this rock to serve as fish food. This fishing expedition was a formality. Without catching any fish, the women went home and ate the feast consisting of furo. [Sarfert 1919]

With the rise of Lelu and establishment of the paramount chief, the Tokosra, there was a concomitant establishment of a fourth-tier of social-political organization. Ueki (1984) has analyzed this development in detail, describing not just the abundance of dates during this later period, but also to the growing population. Athens' work also showed the early introduction of *Cyrtosperma* and *Colocasia taro*, along with *Thespesia populnea*, *Cordyline fruticosa*, and possibly *Morinda citrifolia*. Early colonizers also depended on bivalves, but around AD 500 gastropods dominate the subsistence record, along with near-shore or shallow water reef fish. Abundant charcoal in a thick layer of sediment overlying a prehistoric swamp attests to forest clearance aided by burning at about AD 500, again considered a clue to a growing population on the island. Dog, too, appears on the island with an AMS dating of dog teeth providing an early date of AD 1000 (Athens 1995); though European explorers did not report seeing dogs so they may have been extirpated prehistorically.

In 1824 Europeans first documented their impressions of Lelu. At the time the site still thrived and the explorers could walk the streets of the small urban center alongside the nobility. This was in stark contrast to the long-dead, abandoned Nan Madol. The early explorers recorded a population of about 500 to 800 people (Lutke 1835, Lesson 1839, D'Urville 1835). Although this may only be half the usual number due to a typhoon in 1800 that resulted in famine after it destroyed much of the food crops (Morgan 1988). The arrival of whalers, missionaries, traders and pirates from the 1830s onward opened Kosrae to the world, placing it into the global economy of the 19th century. It also opened the population to the devastating effects of disease, reducing the population to a mere 300 or so souls. Some of the key temporal

benchmarks include the 1852 arrival of the Reverend Benjamin Snow, who, according to the oral histories, prompted the goddess Sinlaku to flee the island, marking the death of the old religion and beginning of a new religion (Buck 2005).

Christianity and its missionaries held a delicate truce with the Tokosra, who was fighting the tides of change—he wanted to retain the traditional titular system, but his population was dwindling and his high chiefs were competing with one another for access to the arriving foreigners. Ultimately, by the 1870s, with the conversion of the Tokosra's wife and establishment of a theocratic democracy where the populace elected their first 'king' (though still within the hereditary clan eligible to take the seat of throne), the island saw a mass conversion to Christianity. At this time, much of Lelu became abandoned and the feudal system all but collapsed (Cordy 1985:257).

In 1890 John Victor Melander arrived in Kosrae to establish copra plantations in Tofol, Innem, and Pukusrik on the main island. He bought land in the western compounds of Lelu: Finsrael, Yeme, and Bot, and then set about dismantling walls of Fimpuk, Karinse, and Motonte to build up the low lying areas of Bot and Finsrael (Ehrlich 1981:17). In Finsrael, Melander built a concrete store, which still existed in the 1980s. During this same decade, the Spanish administration of the Caroline Islands had little presence in Kosrae and in 1899 Kosrae was transferred to Germany.

In 1910 John Sigrah, who became known as Palikna and also known as King John, ruler of Kosrae, began collecting taxes along with the German administration, and collected two days of service from each man. Eventually, his authority would wain as well. It was at this time that the concept of private property became strong and the administrative center of Lelu declined.

In the pre-World War II years, Japan's colonial government set up its main headquarters on Lelu. And, in the post-war era, the United States, as the Trust Territory administrator set up its government offices on Lelu. By the 1980s, however, the government offices were transferred to Tofol, on mainland Kosrae. Lelu has continued to support a residential and commercial population, with many of the same families who had held land claims to the island during the early days of the successive Tokosras remaining.

3. JUSTIFICATION FOR INSCRIPTION

3.1.a. *Brief synthesis*

The Ceremonial Centers of Eastern Micronesia are the monumental stone complexes of Nan Madol on the island of Pohnpei and Lelu on the island of Kosrae in the Federated States of Micronesia. These were the centers of complex political, religious and social systems that developed on the two islands separated by 550 km of open ocean. They attest to the emergence of chiefly systems of social organization and governance that took place in many islands and archipelagos of the Pacific from around 1000 years ago.

Each complex is a megalithic off-shore settlement complex constructed on artificial, man-made islands that extended across a shallow reef platform within the fringing reefs of the Pohnpei and Kosrae respectively. In both sites, the islets are separated by canals navigable by canoe and defined by monumental walls reaching up to seven meters in height. The islets of basalt and coral boulders are topped by massive lengths of prismatic/columnar basalt placed in header and stretcher patterns that surround tombs, residential complexes, and sites for sacred-, ceremonial-, and mortuary activities.

Construction of the massive elaborate architecture of Nan Madol began around 1200 AD on the reef adjacent to Temwen Island, a small island off the southeast coast of Pohnpei. More than ninety artificial islets separated by navigable channels provide the foundation on which megalithic basalt structures rest. Construction of Nan Madol is the culmination of a millennial-long development of an increasingly complex governance system. Pohnpei was initially around 2000 years ago. In the following millennium, as population and settlements grew alongside an increasingly reliance on agriculture, chiefly societies emerged eventually to be unified across Pohnpei under a paramount chief, the Saudeleur. Nan Madol became the place of residence, administration and ritual for the Saudeleur and their elite. The consolidation of chiefly power under the Saudeleur Dynasty is associated with the major phase of

construction of the massive stone structures of Nan Madol. Existing islets were expanded and new islets and structures were built using huge blocks of stacked prismatic basalt mined elsewhere on Pohnpei and transported to the site. Dwellings existed on many of the islets while others had special purposes including food preparation and canoe making. Oral traditions link the downfall of the Saudeleur around 1600 AD when Isokelekel, son of the Pohnpeian thunder god who, having overthrown the Saudeleur established a new political order with himself as the high chief or Nahnmwarki of Madolenihmw, the chiefdom of Nan Madol. By the 1820s people no longer lived at Nan Madol but it continues to retain a religious and traditional significance. The Nahnmwarki system continues into the present as the traditional system of governance in Pohnpei. Ownership of Nan Madol is held by the Nahnmwarki title and transferred to each successive Nahnmwarki. This is a traditional system passed down since the end of the Saudeleur dynasty around 1500-1600 AD.

The megalithic site of Lelu, some 550 km southeast of Pohnpei, is off the northeast coast of Kosrae and also consists of artificially constructed islets. Lelu consists of a larger, more expansive islet supporting a series of adjoining compounds as well as several smaller off-shore, constructed islets. A tidal canal provides access to the megalithic core of Lelu; it is over 1000 meters long and runs through the center of the site, and sea piers allow access to the sea. Paved streets connected compounds and boat landings. Initial construction dates for Lelu begin about the same time as the start of construction Nan Madol, with the major period of construction perhaps slightly later than that of Nan Madol. The largest of the massive structures of basalt boulders and prismatic/columnar fragments and coral were constructed from 1400 to 1600 AD. Lelu was the residence of the king and high chiefs and the administrative center of Kosrae. The megalithic structures served as dwellings, sacred compounds and tombs; at the height of its occupation Lelu supported over 100 walled compounds. Immediately to the north of Lelu is the smaller artificial islet of Yenasr, which was dedicated to the burial ceremonies for the highest chiefs, an extension of the funeral rites that began in the mortuary complexes in the megalithic core of Lelu. Construction across Lelu continued over the next two centuries and by European contact in the early 19th century as many as 1500 people

may have been living in Lelu.

Across the Pacific, following an initial colonization period, island populations gradually expanded, semi-autonomous polities emerged to compete for resources, alliances and the struggle for the power to reign supreme. Populations became rooted in their political and economic boundaries, creating a depth of generational links tied to the land and sea, lineages received ranks based on landed tied, and settlements increased their reliance on cultivated foods. The archaeological evidence, oral histories and genealogies of the Pacific islands confirm that the millennium prior to European contact was a time of great social change throughout the Pacific. Environmental and economic pressures associated with the development of an increasing political stratification led to the appearance of complex chiefly societies that became the systems of traditional or customary governance encountered by Europeans from the 16th century; these customary governance systems continue to structure present-day Pacific Island societies.

This development of the very distinctive chiefly social structures of the Pacific is a phenomenon associated with the appearance of monumental architecture in many parts of the Pacific from around 1000 years ago, including Eastern Polynesia, Tonga and Samoa, and across Micronesia. The Ceremonial Centers of Eastern Micronesia are a Micronesian expression of this pan-Pacific phenomenon. Nan Madol and Lelu are the tangible evidence of this increasing social, political and economic stratification, each being a symbol of the power of the chiefs to command the labor to build these monumental sites. Through their monumentality and megalithic architecture these complexes welcomed and impressed visitors from afar and were formidable symbols of power. They reflected an administration that could rally the resources to build magnificent places and by extension could easily rally the same resources as a warring army.

Nan Madol and Lelu appear to have developed independently yet both retain sufficient connections in oral histories, and similarities in their location, construction and form to be historically linked to one another. Differences between Lelu and Nan Madol also exist, but these are more in the nature of the local architectural knowledge and accomplishments, and suggest independent planning and construction with the

sites constructed by the local cultures rather than by migrations from one island to the other. Yet, their similarities too indicate a common ancestral culture that appears to have split and subsequently followed their own parallel paths of development. The oral histories attest that Nan Madol and Lelu were known to each other and trade goods from the larger Pacific area also suggest regional interaction and connections. The chronology of the sites suggests parallel development with the two sites being built concurrently.

The outstanding universal value of Nan Madol and Lelu – the Ceremonial Centers of Eastern Micronesia – lies in their being a unique Pacific Island expression of the global association of monumental architecture with the emergence of social complexity in a region and the development of elaborate political hierarchies that have the capacity to create impressive, monumental structures as emblems of power and authority.

3.1.b. Criteria under which inscription is proposed

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

The Ceremonial Centers of Eastern Micronesia bear exceptional testimony to the development of chiefly societies in the Pacific Islands and the cultural connections of island societies across vast stretches of the Pacific Ocean. The huge scale, technical sophistication and concentration of elaborate megalithic structures of Nan Madol and Lelu bear testimony to complex social and religious practices of these island societies that persisted for over 500 years.

Criterion (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

The Ceremonial Centers of Eastern Micronesia are an outstanding small island example of monumental architecture associated with the appearance of stratified societies and centralization of power that is evidenced in many parts of the world. The megalithic stone complexes of Nan Madol and Lelu include chiefly dwellings, funerary

places, burial tombs and domestic sites that bear unique testimony to the origin and development of chiefly societies across the Pacific Islands from around 1000 years ago and associated with increasing island populations and intensification of agricultural production.

Criterion (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

The Ceremonial Centers of Eastern Micronesia are an expression of the origin and development of traditional chiefly institutions and systems of governance in the Pacific Islands that continue into the present in the form of the Nahmwarki system under which Nan Madol is traditionally owned and managed. For Kosrae, the former chiefdom structure persists in cultural reference to physical and familial distance to Lelu and the Tokosra; Christianization and colonial occupation disrupted and replaced the traditional governance system.

3.1.c. Statement of integrity

The international significance of Nan Madol and Lelu – the Ceremonial Centers of eastern Micronesia - is centered on their standing as a unique Pacific Island expression of the global association of monumental architecture with the initial appearance of social complexity along with the development of elaborate political hierarchies that have the capacity to create impressive, monumental structures as emblems of power and authority.

The inclusion of both components as a series is essential to the integrity of the property. Nan Madol and Lelu are the outstanding examples of megalithic structures in Eastern Micronesia. There are no other sites in the region that are of the extent and complexity of these sites. Together they illustrate the historical connections that underpin the settlement, survival and flourishing of Pacific Island societies and the similarities and local distinctiveness of the unique architectural form and construction developed in Eastern Micronesia using prismatic basalt.

The integrity of the Ceremonial Centers of Eastern Micronesia is ensured by

the inclusion within the boundaries of the nominated property all the key structures that demonstrate the architectural forms and diversity of construction techniques and materials in both components of the property. The boundary of Nan Madol includes all islets listed by Hambruch (1910) in the first full survey and recording of the complex. The boundary of Lelu includes the surviving intact administrative and sacred core of the site (Area 1) as identified by Cordy (1993) and the extension of the core to the adjacent and intact islets of Yenasr (Area 2) and Yen Yen (Area 3).

There has not been any reconstruction of the archaeological features of Nan Madol or Lelu. In Nan Madol the inner islets have become somewhat degraded over the years but the outline of the islets and channels is still distinct. In Lelu structures have similarly degraded, though they remain sufficiently intact to reflect their design and construction values, as well as their ascribed functions.

The purpose of each of the islets has been passed down by oral tradition. Minimal archaeological excavation has occurred within Nan Madol and Lelu. Instead, research has focused on mapping and surface collection. At Nan Madol, development has remained well outside the nominated property which was included on the US Heritage Sites Register in 1980. A single small path has been constructed with removable wooden bridges providing access for tourists. At Lelu continuous occupation has been confined to the area beyond the chiefly and sacred core; the nominated property is contained but is distinct from the current town, and was listed on the US Historic Sites Register in 1984. The property consists of the compounds of the chiefs and the mortuary areas. There has been some reconstruction of paved areas but the compound walls and the rubble-walled semi-pyramidal mortuary compounds are largely intact. The prismatic basalt walls of many of the ancient compounds still stand to full height.

Some archaeological features extend beyond the boundary of the nominated property into the buffer zones of both components. At Nan Madol these features include areas on the small surrounding islands that would have been used in the transportation of stone. At Lelu housing for the lesser chiefs and commoners extended into areas that are now under modern development as the capital of Kosrae. Much of this original housing settlement has been developed into modern households,

including family cemeteries (some dating back to the early twentieth century), a commercial district and roads into the modern Lelu municipality. In both components of the property these features have been excluded from the proposed nomination. They do not add significantly to the outstanding value of the site.

3.1.d. Statement of authenticity

The authenticity of the Ceremonial Centers of Eastern Micronesia is held in the setting, interrelationships, forms and variety of the structures and canals of both components. There has not been any reconstruction of the structures apart from minor repairs. Nan Madol has not been impacted by major developments although vegetation and siltation on the site are compromising its conservation and the visual and aesthetic appreciation of property. The Lelu complex outside the nominated administrative, sacred and funerary core has been significantly impacted by development of Lelu as the capital of Kosrae; the nominated areas, however, have not been affected by this development and retain the values sufficient to demonstrate the construction techniques and functions of the property and to retain their authenticity.

Archaeological research over the past 30 years in both Nan Madol and Lelu has provided evidence of the origin, development and construction of the megalithic complexes and the activities at each site. Oral traditions and historical records provide insight into the social history of Nan Madol and Lelu and the centrality of Nan Madol in establishing the Pohnpeian system of traditional governance through the Nahnmwarki system.

Archaeological excavation has been limited, with most of the research focused on mapping and surface collection. This has left much of the archaeological deposit at both sites remains intact, with the potential to offers further information about the specific functions of various islets and the social systems reflected in both components. Reliance on oral traditions, on the other hand, has provided more information on the purpose of the islets and features at each site.

In Kosrae depopulation and missionization was both a curse and a benefit -

western occupation, through the auspices of the Church, had a greater impact on the traditional systems of governance than in Pohnpei. However, the advantage Lelu has within the Ceremonial Centers of Eastern Micronesia is that of direct historical observations from skilled nineteenth - and twentieth-century recorders such as Duperrey and Dumont D'Urville (1824). These observations provide documentation of everyday life and the system of rule at Lelu at the time of European contact.

3.1.e. Protection and management requirements

A management system to coordinate the management of the two components of the nominated property is yet to be finalized. The Interim FSM World Heritage Board is meeting in April 2014 with the participation of representatives from Pohnpei State and from Kosrae State to start discussions about a comprehensive management plan. This meeting will establish the Ceremonial Centers of Eastern Micronesian World Heritage Management Committee to coordinate the management of Nan Madol and Lelu under the supervision of their respective State governments, traditional leaders and local community. This Committee will include representatives from the FSM government, the Nan Madol World Heritage Board and the Lelu World Heritage Board.

The government of FSM is composed of three independent branches of power under the president, who is the head of state: judicial (supreme court), legislative (FSM government assembly), and administrative (executive body). The FSM Constitution acknowledges the customary interests of the traditional chiefs and adopts a governing system that grants administrative power not only to the federal government but also to the state and community governments, and stipulates that states shall have their own constitutions.

Protection and management of Lelu

Lelu is also on the U.S. National Register (since 1984) and is also listed on the state register, where it will be more fully protected under the new Historic

Preservation Bill, not yet passed but before the legislature.

The Lelu Property Owners Association, together with the Kosrae Historic Preservation Office currently manages the Lelu Ruins Association. The Historic Preservation Office contracts with the Lelu Property Owners Association to keep the vegetation cut back, tree growth trimmed, and to clear and maintain the channel and pathways. A recent visit to the site showed that this work has slowed; however, a meeting with the leaders of the Lelu Property Owners Association promised that this work would recommence now that the Association is under new leadership.

Formation of a Lelu World Heritage and Tourism Committee is still under discussion. Planning was placed on hiatus earlier in this year (2014) with the death of the key organizer, the Historic Preservation Officer for the island.

Personnel and funding

For Lelu implementation of a World Heritage and Tourism Management System will include the Lelu Property Owners Association and Kosrae Historic Preservation Office, as well as representatives from other governmental and civic agencies and organizations, as well as community members. The protection and management of the site will be overseen by this group.

FSM National and Kosrae State Governments are committed to financially assist the Kosrae HPO in its effort for nominating Lelu as part of the World Heritage Ceremonial Centers of Eastern Micronesia. Additional funding has been secured from the Federal Historic Preservation Fund grant administered by the U.S. National Park Service; no other country has provided funding toward the preservation of Lelu.

Just as with Nan Madol, additional financial and human support in cultural heritage management, conservation, tourism, and other relevant economic, social and political areas are needed to insure the protection and management of the site, as well as its associated educational and research programs.

Interpretation

Education about the Ceremonial Centers of Eastern Micronesia is important for public awareness, not only for tourist but also for the locals at both Nan Madol and Lelu. The following media have been discussed as possible tools to further understanding about the sites: (1) production of educational DVDs, pamphlets, website and interpretation panels at the site, and (2) establishment of a State museum in Pohnpei, enhancement of the existing museum on Kosrae and on-site display centers at each site, all of which requires external funding.

Monitoring

Monitoring the state of conservation at Lelu has been conducted periodically by personnel from the Kosrae Historic Preservation Office, by members of the Lelu Property Owners Association, and by tour guides from the local hotels. Technical advisors and HPO staff from the soon-to-be Lelu World Heritage and Tourism Management Committee will play the central role in monitoring, evaluation and feedback on the conservation state. Monitoring will be carried out in different periods depending on individual indicators such as stability of monuments, marine environment, overgrowth of vegetation, navigable channels, climate change, disasters, visitor and tourism pressure, social mapping and land use, and scientific and technical evaluation. The timing for systematic monitoring has yet to be established.

Threats the property

Long-term threats to the heritage values of Nan Madol and Lelu, are elaborated in Section 4, and include development pressures, environmental pressures and natural disasters. Proper monitoring and mitigation measures can control most threats.

There is no management plan for Lelu other than a cultural obligation to care for the site and oversee its preservation and conservation. This is seen as an obligation to custom and a responsibility to act as steward to insure the site is

maintained for future Kosraeans and the world. When the site was entered onto the U.S. National Register of Historic Places in 1983, all the landowners (members of the Lelu Property Owners Association) agreed that it represented a significant part of their history, one they wanted to share with future generations and the world. It became a place of pride and they worked together to clean up the site—removing a pigpen that had been built against one of the walls and clearing vegetation. The Kosrae HPO installed signage and prepared a guided pathway system through the site to control the flow of visitors. They also built a bridge across the canal, cleared vegetation, and restored one of the compound walls that was collapsing. In addition, a small museum was established with exhibits and artifacts on Lelu and the history of Kosrae.

Many of these same threats and challenges also affect Lelu; however, to date, potential mitigation measures have not been fully established but those developed for Nan Madol present an appropriate model that can easily be adopted at Lelu.

3.2. COMPARATIVE ANALYSIS

To demonstrate the Outstanding Universal Value of the Ceremonial Centers of Eastern Micronesia comprising the components of Nan Madol and Lelu, a systematic comparative analysis has been completed. During World War II, Nan Madol was referred to as the ‘Venice of the Pacific,’ a reference attached to it by allied pilots who flew over this part of the Pacific. They were drawing from their own knowledge of the medieval city of Venice in Europe and based their reference solely on similarities between the islet/canal configuration. However, for a comparative study on ceremonial centers in the Pacific, this reference is irrelevant since there is neither cultural connection nor common function between Venice and Nan Madol.

Three different approaches have been taken in the comparative analysis. The first is to compare the property to other properties that exist in the region of Austronesian speaking peoples across the Pacific. The peoples of Austronesia, including the indigenous population of Pohnpei and Lelu, share a common ancestry and cultural background. The second approach is to compare Nan Madol and Lelu

with other ceremonial centers within the region of the Federated States of Micronesia, to demonstrate why the two are a serial candidate for the World Heritage list as an outstanding example of ceremonial centers in this region. The third approach is to compare Nan Madol and Lelu with other ceremonial centers around the world, including those inscribed on the World Heritage List. Through these three approaches, a more comprehensive understanding of the universal and specific characteristics of the site will emerge.

As demonstrated below Nan Madol and Lelu represent the social complexity evident in 'early state' or 'incipient state' societies. A comparison to similar sites in similar ancient social and political economies around the world will clearly demonstrate the universality and distinctiveness of the two sites on the world stage.

Comparison to properties of similar values in the Pacific Islands

The builders of Nan Madol and Lelu belong to the large group of Austronesian-speaking peoples. Archaeological and linguistic studies indicate that the Austronesians originated somewhere in the area of present day South China, Taiwan and Islands Southeast Asia, and dispersed into the islands of Melanesia and Western Polynesia through Papua New Guinea around 1500 BC leaving an archaeological signature known as the Lapita Cultural Complex. The descendants of these people subsequently migrated across and colonized the rest of Oceania including Micronesia, Central and Eastern Polynesia. Eastern Micronesia, including Pohnpei and Kosrae, was initially settled by the Austronesian sometime around 500 BC.

Although the Austronesians span vast geographical extent, there are many commonalities in their culture and societies, which are attributed to their shared ancestral culture and heritage. These commonalities include an arboriculture based principally on root crops and animal husbandry including pigs, dogs and chickens, but they lacked a metal-working technology. To varying degrees their societies were politically stratified and led by hereditary chiefs. These societies are categorized by anthropologists as 'chiefdoms,' a stage in political complexity or economy between a 'segmentary society' and a 'state' (Renfrew and Bahn 2008) (Table 3.2). The

appearance of chiefdoms is sometimes associated with the construction of large-scale monuments that reflect the prestige of the chief and provide a space in which rituals symbolizing and maintaining the power of the chiefs and elites are performed. More complicated and stratified societies are often categorized as ‘early states’ (Claessen and Oosten 1996), embryonic of a ‘state-organized’ society. In the Pacific, the traditional societies of Hawai’i and Tonga have been categorized as early state societies. It is probable that the political economy of Saudeleur Dynasty on Pohnpei as well as the governance structure of the Tokosra on Kosrae could also be considered early states (See section 2).

The following section provides a comparative base for the discussion on the significant values inherent in Nan Madol and Lelu. It will present a description of some of the prominent and monumental properties associated with the Austronesians in the Pacific. Many of these properties are listed or tentatively listed on the World Heritage list, each represents an example of the range of megalithic cultures found in the Pacific.

[SEE THE RELEVANT PART IN THE NOMINATION DOSSIER]

The following table summarizes the indicators for each property.

Table 3.1. Comparison between Nan Madol/Lelu and Similar Properties in the Pacific in the Scale of Monuments and Their Societies.

No.	Name of property	Date	Site size	Population size	Urbanization	Level of technology
1	<i>Ahu</i> and <i>moai</i> of Rapa Nui	AD 1100-1500	C	B	Absent	Stone tools
2	<i>Marae</i> in East Polynesia	AD 1000-1800	C	B	Absent	Stone tools
3	<i>Heiau</i> in Hawaii	AD 1000-1800	C	A	Absent	Stone tools
4	The ancient capitals of the Kingdom of Tonga	AD 900-1800	A	A	Present	Stone tools
5	<i>Latte</i> stones in Mariana Islands	AD 800-1600	C	B	Absent	Stone tools
6	Yapese stone money sites	AD 1000-1800	C	B	Absent	Stone tools
7	Nan Madol and Lelu	AD 500-1600	A	A	Present	Stone tools

- Regarding date: most of the properties fall into the second millennium AD; Nan Madol and Lelu date to the same time range as the other properties.
- Regarding size of the site: Nan Madol and Lelu are larger in extent than the other properties, including the Ancient Capitals of Tonga (even though they fall into the same size category as Nan Madol and Lelu); the artificial islets of Nan Madol cover an area approximately 1.5 km by 0.8 km. It is among the largest monuments in the Pacific. Lelu is not as large as Nan Madol, but it is still larger than the other properties.
- Regarding population size: Pohnpei, Kosrae, Tonga and the Hawaiian Islands had large populations, enough to support the construction of prominent monuments.
- Regarding urbanization: only the ancient capitals in the Kingdom of Tonga, Nan Madol and Lelu were large enough to be considered nascent state-level organizations established before European contact in the Pacific.
- Regarding the level of technology: all the prehistoric societies in the Pacific relied on stone tool technology; they had no metal tools: there is no difference between them in terms of technology.

From the list of indicators, Nan Madol and Lelu share the same level of technology as the other Pacific properties discussed; however, in all other indicators, they rival only the level and extent of development in the Kingdom of Tonga, yet even in comparison to the ancient capitals of Tonga the two are still larger and more expansive. In terms of scale of monumentality and extent of a population base needed to support construction, Nan Madol and Lelu truly are outstanding examples of the effort involved in constructing and maintaining such a site.

There are a variety of megalithic monuments in the Pacific Islands, each of which was closely associated with the ceremonies, rites and rituals involving chiefs and the high ranking members of society. Their appearance, design, setting, architectural expertise inherent in their planning and execution, procurement of the raw materials used, and overall expense reflect an increasing level of social complexity within the region, even though there is no direct evidence of cultural influence or interaction between their populations. Nan Madol, Lelu and the other Pacific Island monuments described here bear silent witness to a much larger and

deeper cultural affinity, the kind that comes from historical connections that are part of the Austronesian dispersal across the Pacific. In this sense, the scale, location and construction of Nan Madol and Lelu represent a unique endeavor in the Pacific—both of these sites are an exception in the Pacific, as there are no other examples of a network of artificial islets built in an off-shore locale, and used as a high ranking administrative/ residential/ceremonial/mortuary center. The other Pacific Island examples of monumentality are confined to landed areas on main islands, and generally consisted of site complexes with a limited range of features and associated functions.

Origin of population in Pohnpei and Kosrae and their ancestral society

According to archaeological and linguistic studies, the eastern end of the Caroline Islands, including Chuuk, Pohnpei and Kosrae, was colonized sometime around 500 BC or so, by Austronesian speakers from the south, from the region of Melanesia (Kirch 2000). Melanesia has a deep history of colonization, with the Bismarck Archipelago and Solomon Island settled more than 20,000 years ago. However, sometime around 1500 to 1000 BC, a maritime culture of Austronesian speakers began to colonize the coastal and off-shore islands throughout the region of Melanesia; these were the Lapita peoples (Kirch 1997). It is highly probable that the first colonizers of Pohnpei and Kosrae derived from this southern region, by a maritime population from the islands of Melanesia who were direct successors of the Lapita peoples.

Many archaeologists believe that the Lapita society was politically stratified and ruled by hereditary chiefs. It is likely their social system was reinforced through a trading network focused on the acquisition and redistribution of prestige goods, with exotic items obtained in long-distance interactions controlled by high ranking lineages, or elites (Friedman 1982, Green and Kirch 1997). However, the existence of monumental ceremonial centers, whether built of stone or wood, within the Lapita settlements has never been identified archaeologically. Both Pohnpei's and Kosrae's chiefly political system and the foundations of its cultural tradition are thought to have

originated in the ancestral Lapita cultural complex, but the form and shape of ceremonial centers like Nan Madol and Lelu does not seem to be directly associated with this ancestral population.

What the Lapita cultural complex does offer toward the distinctive characteristics of Nan Madol and Lelu is artificially constructed islets in sheltered off-shore areas along island coastlines. At the Talepakemalai site in the Mussau Islands, Bismarck Archipelago, archaeologists discovered the remains of stilt houses in the shallow lagoon (Kirch 1997). The tradition of stilt houses built in off-shore locations is still widely practiced throughout the Bismarck Archipelago and Solomon Islands today. Additionally, the lagoons of both Malaita and Langalanga in Solomon Islands support a group of artificial islets. These artificial islets are made of coral limestone, and are used by the local population as the foundations for their villages. It is estimated that the oldest examples date to before the 18th century, while newer islands continue to be built even today. It has been suggested that the purpose of these constructions is to avoid the mosquitoes that cause malaria, for the convenience of exchange, for access to marine resources, and for defense against enemies. Although the artificial islets in the Solomon Islands are not directly associated with the complexes of either Nan Madol or Lelu, the tradition of off-shore settlements may be traced back to a common ancestral culture.

Linkage with Polynesian Culture

The ceremonial centers in Polynesia, such as *marae* in the Society Islands, *heiau* in Hawaii and *ahu* in Easter Island, are similar in their form and function; however, their relationship to the form and function of Nan Madol and Lelu has not been sufficiently established. One traditional practice, the existence of a kava (*sakau/seka*) drinking culture throughout Polynesia, suggests possible cultural interactions with Pohnpei and/or Lelu or an even deeper history of practice founded in the ancestral populations of Austronesian speakers. Pohnpei and Kosrae are alone in Micronesia in having a history of using kava. On Pohnpei, according to ethnographic sources, the use of kava follows a strict protocol controlled by elites and used in

prescribed social circumstances. Using a variety of botanical, genetic and chemical evidence, northern Vanuatu has been identified as the most likely area for the domestication and initial dispersal of the kava plant (*Piper methysticum*) (Lebot *et al.* 1992). In the many parts of Polynesia, especially western Polynesia, including Tonga and Samoa, kava drinking is closely related to rituals and ceremonies controlled by chiefs. Linguistic studies suggest that kava drinking was introduced to Pohnpei through contact with Polynesians (Crowley 1994). Oral histories on Kosrae suggest a different scenario, that the kava on Pohnpei was originally cultivated on Kosrae and introduced from there. This may imply direct contact and possibly influence between Kosrae, Pohnpei and Polynesia before European contact.

Linkage with Mariana Islands and the Eastern Caroline Islands

Historical and cultural contact between the eastern Caroline Islands, including Pohnpei and Kosrae, the Mariana Islands, including Guam and Saipan, and the western Caroline Islands, including Palau and Yap, has not been fully clarified or understood. Archaeological and linguistic data suggests that the Mariana Islands were colonized by a group of Austronesian speakers around 1500 BC from Southeast Asia, in the area of the South China Sea (Spoehr 1957), Palau was colonized by an Austronesian group from Island Southeast Asia or Melanesia around 1000 BC (Clark 2005), and Yap and the Caroline atolls were settled by a settled group from Palau and possibly Island Southeast Asia sometime during the first millennium BC (Intoh and Leach 1985, Intoh 1997). One possibility hypothesized for contact across the region rests in the ethnographically recorded *sawei* interaction sphere, a long distance exchange network that spanned the Caroline Islands and possibly other islands in the western Pacific (Alkire 1965). The *sawei* was characterized as a bicultural system of tribute, gift exchange, and disaster relief initiated by the Yapese Empire, which was simultaneously a system of areal integration and a prestige-good exchange network where certain elite groups on Yap controlled the flow of goods necessary for social reproduction. The major participants in the *sawei* system were the islanders of Yap and the Carolinian atolls such as Fais, Lamotrek, Satawal and

Puluwat; however, the extent of interaction also reached northward to the Mariana Islands, south to Palau and as far east as Namonuito and Chuuk (Hage and Harary 1991). So it is possible that some interaction between the eastern and western Caroline Islands took place prior to European contact. Linguistic data indicates that there are a number of shared loan words in the languages of Yap and the Carolinian atolls, further solidifying direct interaction among the western Caroline Islands (Ross 1996), with the possibility of an extended linguistic network of root and loan words filtering into the eastern Carolines.

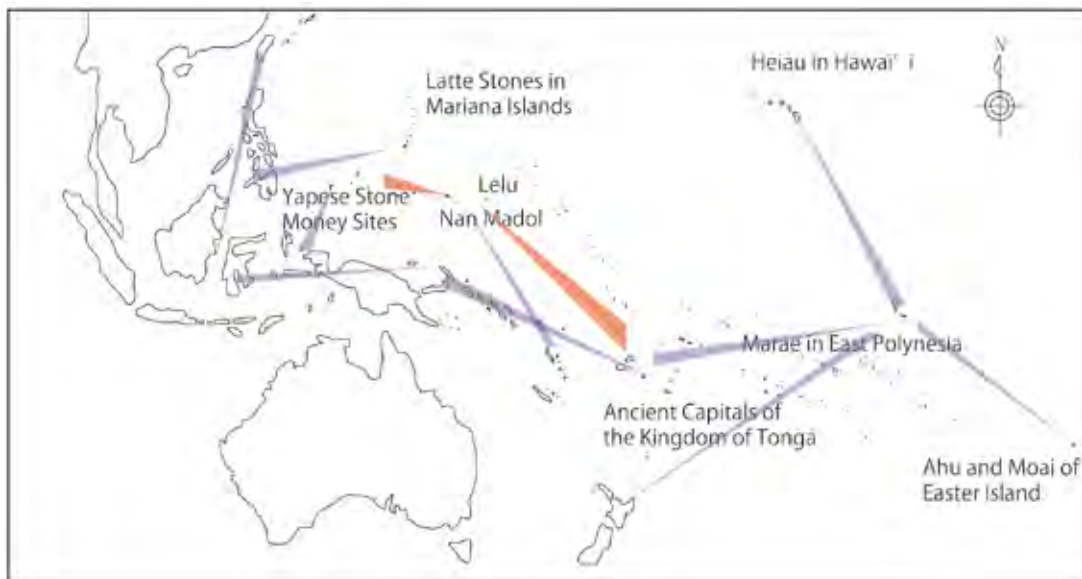


Figure 3.1. Map of Oceania showing distribution of the similar properties. Blue lines indicate supposed routes of Austronesians' migration. Red lines indicate supposed cultural contact around Pohnpei/Kosrae region.

In sum, the people and culture of Pohnpei and Kosrae are part of a larger interrelated and shared network that spans the Caroline Islands and extends into other parts of the Pacific, and is rooted in an ancestral population of Austronesian speakers. Commonalities are seen in linguistic roots, including loan words, participation in a long-distance trade and interaction network, cultural practices such as kava drinking, and monumental architecture marking a place of ceremony, power and prestige. The monumental sites of Nan Madol and Lelu are a reflection of this shared common historical and cultural background (see map below). The uniqueness

of both Nan Madol and Lelu as the Ceremonial Centers of Eastern Micronesia lies in their integrity, size, and multiplicity of functions; both are the only sites where the full function of an administrative center, ceremonial site and mortuary locale are drawn into one place, constructed as a network of off-shore artificial islets and dressed with megalithic architecture. Within the region, Nan Madol and Lelu exhibit Outstanding Universal Value as a representative of the Austronesian cultures in the Pacific.

Comparison to properties of similar ceremonial centers within the Federated States of Micronesia

In the Federated States of Micronesia, there are other megalithic structures similar to those within the ceremonial centers of Nan Madol and Lelu. Many are located on Pohnpei Island, but are smaller in scale than those at Nan Madol. Tables 3.5 and 3.6 summarize the structure and stone size used in the construction of three different sites (including Nan Madol) on Pohnpei (Ayers 2002). In this comparison, the magnitude of construction at Nan Madol is evident. A site such as Awak, for example, likely served as a center of sociopolitical organization; it supported tombs, meeting houses, and residential complexes that were built in a style comparable to Nan Madol. A second site, Sapwtakai, a late prehistoric-early historic center in Kiti, on the island's south coast, dates to about AD 1400; it is among the largest complexes on the main island of Pohnpei and consists of many small structures also built in the same style as structures at Nan Madol. Yet, both of these sites are dwarfed by comparison to Nan Madol. What such a comparison does do is suggest that the architectural style and construction techniques present at Nan Madol were a local phenomena, with indigenous cultural roots.

The only comparable example of a large-scale ceremonial center in the Federated States of Micronesia similar to Nan Madol is the ruins of Lelu on Kosrae Island. The site of Lelu consists of a group of artificial islets built on a shallow reef platform just off the northeast coast of Kosrae. Like Nan Madol it is a monumental stone complex built over several centuries and served as a combined administrative, ceremonial and mortuary center, the point from which the paramount chief, Tokosra,

Table 3.5. Comparison of structural sizes of three chiefly centers on Pohnpei.¹

	Awak (local chiefdom)	Sapwtakai (regional center)	Nan Madol (paramount)
Area of complex	0.6 ha	1.1 ha	75 ha
Total construction volume	3,000 m ³	3,500 m ³	300,000 m ³
Total mass of complex	8,000 m tons	10,000 m tons (est.)	500,000-750,000 m tons
Large single tomb feature (area/vol)	285 m ² /220 m ³	230 m ² /345 m ³	3,000 m ² /18,000 m ³
Large single transported stone	2 m tons	5 m tons	60 m tons

¹ Calculations for Lelu have not been completed; however, size and mass rival that of Nan Madol.

Table 3.6. Comparison of stone sizes per types transported for construction in three levels of chiefly centers on Pohnpei.

Stone type	Awak (local chiefdom)	Sapwtakai (regional center)	Nan Madol (paramount)
Largest stone type transported	Volcanic boulder/ column	Volcanic boulder	Volcanic boulder
Type 1. Columnar lava rock: size (mass) range of natural local columns ¹	Range: 0.02-0.5 m tons Upper limit: 0.5	none known	none known
Type 1. Size (mass) range of construction columns moved	Range: 0.02-2 m tons	Range: 0.05-1.5 m tons	Range: 0.04-10 m tons
Type 2. Boulder rock: upper mass limit of natural local boulders	45 m tons	60 m tons	130 m tons
Type 2. Largest construction boulder moved	1 m tons	5 m tons (est.)	60 m tons
Type 3. Coral boulder from reef	Range: 1-20 kg (Rare)	Range: Very Rare	Range: 5 kg - 0.3 m tons

ruled. Although the area of the Lelu complex is about 24 ha, about one-third the size of Nan Madol, it is larger than either Awak or Sapwtakai on Pohnpei. But, unlike Nan Madol or the other Pohnpeian sites, that part of Lelu outside the ancient administrative and ceremonial core is still occupied. Even with the current occupation of Lelu Town, the site of Lelu remains an important example of a ceremonial center in the region of Eastern Micronesia; therefore the possibility of extending the World Heritage site of Nan Madol to include Lelu will be considered in the future.

Comparison to similar properties in the World Heritage List

Ancient Monumental Ceremonial Centers are characteristically seen in chiefly and incipient state societies throughout the world, often presented in the form of large-scale megalithic monuments. The construction of these megalithic monuments requires a large labor force and a social system more complicated and stratified than that of segmentary society. In a chiefdom, at the very least, a monument's function as a ceremonial center is often highlighted as a visible emblem of power and prestige, where both political and ritual activities are equally emphasized in the social reproduction of the chiefly or incipient state hierarchy. A true state society would encompass a much higher degree of complexity, with an administrative and religious organizational structure that included enactment of laws, a taxation system, a centralized bureaucracy and armies, and an institutionalized religious system with a permanent clergy and canonical convictions.

At Nan Madol and Lelu, a chiefdom or even incipient state designation seems to fit best with the structure of the sites, and is further reinforced by the documented sources of a chief's power, that is the control of prestige goods, rituals and monuments within the society (Earle 1997). This designation also fits well with the political economy identified in the Saudeleur Dynasty that founded Nan Madol, and in the historical accounts of the Tokosra's authority on Kosrae. According to oral histories, a variety of ceremonies were conducted on some of the artificial islets, such as Idehd at Nan Madol and Yenasr at Lelu. The artificial islets within both Nan Madol and Lelu were constructed with a coral base on top of which structures were raised

using massive basalt rocks and columnar fragments, and coral boulders. Both the construction of the islets and acquisition of building materials is testimony to a demonstration of the power and authority wielded by a chiefly class, and positions Nan Madol and Lelu at the centers of the political economies in their societies.

[SEE THE RELEVANT PART IN THE NOMINATION DOSSIER]

Summary of comparison to similar properties on the World Heritage List

In general, megalithic monuments around the world appear to be associated with societies organized as either chiefdoms or early/incipient states. From one example to the next, these monumental sites served as ceremonial centers that encompassed both the sacred and secular; they were, at the same time religious temple and political palace. This condition aptly describes the Saudeleur Dynasty at Nan Madol and the Tokosra authority at Lelu, where the megalithic complex is comparable to the other ceremonial centers in the world.

As above, both Nan Madol and Lelu are compared to similar properties on the World Heritage List or designated as Tentative Listings using the five indicators of date, site size, population size, urbanization, and level of technology in order to assess the magnitude of the monuments and societies that produced the monuments. The following table demonstrates the status of these indicators with respect to these properties.

Table 3.7. Comparison between Nan Madol/Lelu and similar properties on the World Heritage List in the scale of monuments and their societies.

No.	Name of property	Date	Site size ¹	Population size ²	Urbanization	Level of technology
1	Stonehenge, Avebury and associated sites	2500-2000 BC	C	B	Absent	Stone tools
2	Megalithic temples of Malta	4500-2000 BC	C	B	Absent	Stone tools
3	Pyramid of Djoser	2600 BC	C	A	Present	Iron tools
4	Historic center of Oaxaca and Monte Albán	500 BC-AD 800	C	A	Present	Metal tools except iron
5	Sacred city of Caral-Supe	2500 BC	B	A	Present	Metal tools except iron
6	Moju-Furuichi Kofungun	AD 400	C	A	Present	Iron tools
7	Great Zimbabwe National Monument	AD 800	B	A	Present	Iron tools
8	Nan Madol and Lelu	AD 500-1600	A	A	Present	Stone tools

¹ A: over 100 ha, B: 50-100 ha, C: less than 50 ha. ² A: over 20,000, B: 5,000 to 20,000, C: less than 5,000.

- Regarding date: Nan Madol and Lelu are relatively later than these other properties, especially those of Neolithic Europe.
- Regarding size of the site: Nan Madol and Lelu are among the larger examples of these properties. The dimensions of individual monuments, like the Pyramid of Djoser and Moju-Furuichi Kofungun, may be greater than those of either Nan Madol or Lelu, but in terms of the extent of the monuments, Nan Madol and Lelu are more expansive.
- Regarding population size: the island populations of Pohnpei and Kosrae were not necessarily greater than any of the other examples listed above. Yet the limited populations on both islands succeeded in producing large monumental constructions, which implies a high level of organization.
- Regarding urbanization: Nan Madol and Lelu achieved an incipient state level of organization, which controlled the populations on each of the islands. Whether or not an urban landscape was established on either island is a question that has yet to be addressed in the archaeology.

- Regarding level of technology: stone technology dominated the culture of Pohnpei and Kosrae at the time Nan Madol and Lelu were built, similar to the Neolithic Age in Europe.
- Size of Site; A: over 100 ha, B: 50-100 ha, C: less than 50 ha.
- Population Size; A: over 20,000, B: 5,000 to 20,000, C: less than 5,000.

In sum, it is clear that Nan Madol and Lelu are no less outstanding monuments than other similar properties already inscribed on the List of World Heritage. Furthermore, Nan Madol and Lelu are distinctive examples among these properties, owing to the enormity of effort and energy that was needed to construct such monumental undertakings on small remote islands.

The conclusion to be drawn from all these comparisons is that there is an inherent propensity within the human species to build societies with large religious centers for an honored elite. However, this takes on different forms based on the environmental, technological, and cultural differences of people through time and across the world. Only by looking at each of these sites in their own context can we fully understand and appreciate what each of those peoples of the past lived through and created.

Conclusion

Nan Madol and Lelu are extraordinary examples of monumental sites in the Pacific, and the culmination of a long history rooted in the ancestral Austronesian culture. Compared to other monumental sites in the Pacific, both Nan Madol and Lelu are larger and more complex, drawing together the secular and sacred in one place and serving as an administrative, residential, ceremonial and mortuary site. The off-shore locations and network of artificial islets supporting megalithic structures also serves to separate Nan Madol and Lelu from other Pacific Island monumental sites, and elevates the two as unique and unprecedented places that bear witness to the creative and architectural mind of their populations. On the world stage, Nan Madol and Lelu rival any of the monumental sites constructed within chiefdom and incipient/early state level societies. In each example described above, every

monumental site served as a symbol of the power and prestige of the ruling head, whether a king, a head of state, a paramount chief, or a chief, and they testified to the ability of the ruling head to organize and control a labor force as well as the raw materials and resources needed in the constructions.

Like Stonehenge or the Pyramid of Djoser, the stone used as raw material in their construction had to be obtained from off-site quarries and transported to each site. Like the funerary monuments such as Mozu-Furuichi Kofungun, the tombs of Nan Madol and Lelu stood as acknowledgment to the highest ranking among the Pohnpeian and Kosraean populations. However, the overall complexes of Nan Madol and Lelu are most comparable to places like Great Zimbabwe or Monte Alban, as all served a multiplicity of functions that included administrative, ceremonial, residential and/or funerary activities. In this sense, Nan Madol and Lelu are an outstanding example of a complex chiefdom or early/incipient state society and a testament to human creativity in the design and rendering of monumentality at the sites; their Outstanding Universal Value is justified on this evidence alone.

3.3 PROPOSED STATEMENT OF OUTSTANDING UNIVERSAL VALUE

Brief synthesis

The Ceremonial Centers of Eastern Micronesia in the Federated States of Micronesia is a serial property of two components Nan Madol on Pohnpei Island and Lelu on Kosrae Island. These large megalithic complexes consist of artificial islets built over a shallow reef platform adjacent to their main islands. The sites were constructed as centers of chiefly power beginning about 1000 years ago and reaching their present size by around 1600 AD. At Nan Madol, massive prismatic basalt structures were constructed on over 100 islets separated by navigable canals; they included residential, religious, ritual and mortuary structures, and served as the dwellings and seat of power for the ruling chiefs and their elite. At Lelu, massive coral boulder and prismatic basalt structures were raised over one principal artificial islet through which navigable canals were constructed and several more off-shore islets

separated by narrow channels. Elite residences and religious, ritual and mortuary structures were spread across these artificial islets to serve as the center of the ruling power.

Nan Madol and Lelu are of outstanding universal value. They are examples of the monumental architecture associated with the emergence of social complexity and chiefly societies in many Pacific Islands that began around 1000 years ago. Following initial colonization, increasing island populations, expanding maritime networks, and intensification of agricultural systems across the region, the appearance of complex or stratified societies soon emerged. The inherited authority of the chief to command the labor necessary to build these structures was symbolized in the monumentality of the megalithic architecture that was raised in different parts of the Pacific. These structures include the *marae* of East Polynesia and the tombs of the Tongan Kings in West Polynesia. Nan Madol and Lelu are an outstanding Eastern Micronesian expression of this regional phenomenon and remain unique in architectural form and construction; no other monumental site in the Pacific consists of a network of artificial offshore islets.

Traditional chiefly systems of governance and land tenure continue throughout the Pacific Islands. In Pohnpei the present-day chiefly Nahnmwarki system emerged from the dynastic rulers who constructed Nan Madol. On Kosrae, the traditional chiefly system was supplanted by western colonial governments and the Congregationalist Church.

Justification for criteria

Criterion (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared

The Ceremonial Centers of Eastern Micronesia bear exceptional testimony to the development of chiefly societies in the Pacific Islands. The huge scale, technical sophistication and concentration of elaborate megalithic structures of Nan Madol and Lelu bear testimony to complex social and religious practices of these island societies that persisted for over 500 years.

Criterion (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

The Ceremonial Centers of Eastern Micronesia are an outstanding small island example of monumental architecture associated with the appearance of stratified societies and centralization of power that is evidenced in many parts of the world. The megalithic stone complexes of Nan Madol and Lelu include chiefly dwellings, funerary places, burial tombs and domestic sites that bear unique testimony to the origin and development of chiefly societies evidenced across the Pacific Islands from around 1000 years ago and associated with increasing island populations and intensification of agricultural production.

Criterion (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

The Ceremonial Centers of Eastern Micronesia are an expression of the origin and development of traditional chiefly institutions and systems of governance in the Pacific Islands that continue into the present in the form of the Nahmwarki system under which Nan Madol is traditionally owned and managed. While the traditional chiefly governance tradition on Kosrae was transformed by the West, there remains a cultural respect and attitude of honor towards the builders of Lelu, its high status and the descendants of the Tokosra lineage.

Statement of integrity

The integrity of the Eastern Micronesian Ceremonial Centers of Nan Madol and Lelu is ensured by the inclusion within the boundaries of the nominated property all the key structures that demonstrate the architectural forms and diversity of construction techniques and materials in both components of the property. The boundary of Nan Madol includes all islets listed by Hambruch (1910) in the first full survey and recording of the complex. At Lelu, three key areas that represent the administrative, sacred and funerary core are included in the nomination. The

boundary of Lelu includes the surviving intact administrative core of the site (Area 1) and the adjacent and intact islets of Yenasr (Area 2) and Yen Yen (Area 3). Each of these areas retains the architectural forms and diversity of construction techniques and materials, and have been purposely excluded from any development activities that occur in Lelu Town.

There has not been any reconstruction of the archaeological features of Nan Madol or Lelu. Many of the inner islets of Nan Madol have become somewhat degraded over the years but the outlines of these islets and channels are still distinct. The same condition persists in the nominated areas of Lelu.

Oral traditions provide extensive and detailed knowledge of the history, development and functions of the property. Minimal archaeological excavation has occurred within Nan Madol and Lelu; instead, research has focused on mapping and surface collection. At Nan Madol, development has remained well outside the nominated property, which was included on the US Heritage Sites Register in 1980. A single small path has been constructed with removable wooden bridges providing access for tourists.

Some archaeological features extend beyond the boundary of the nominated property into the buffer zones of both components. At Nan Madol these features include areas on the small surrounding islands that would have been used in the transportation of stone. At Lelu the nominated property is contained but is distinct from the current town, having been included on the US Historic Sites Register in 1984. The property consists of the compounds of the chiefs and the mortuary areas. There has been some reconstruction of paved areas but the compound walls and the rubble-wall mortuary compounds are largely intact. The prismatic basalt walls of many of the ancient compounds still stand to full height.

Statement of authenticity

The Ceremonial Centers of Eastern Micronesia have a high level of authenticity. Archaeological research, historical documentation and oral histories clearly demonstrate the significance and the interpretation of functions of the property

as traditional indigenous Pacific ceremonial centers that functioned for over 400 years.

The authenticity of the property is held in the setting, interrelationships, forms and variety of the structures and canals of both components. There has not been any reconstruction of the structures apart from minor repairs. Nan Madol has not been impacted by major developments although vegetation and siltation on the site are compromising its conservation and the visual and aesthetic appreciation of property. With the exception of the three designated areas for nomination, the remaining area of Lelu has been significantly impacted by development—outside the ancient administrative core, the islet has been continuously occupied and has remained the center of political, social, economic activities on Kosrae, and leads island's commerce industries. The nominated areas on Lelu are sufficient to demonstrate the construction techniques and functions of the property and retain their authenticity. The authenticity of the Lelu site is, however, potentially compromised by encroaching development around the periphery of the nominated property, within the buffer zone. Urgent action is needed to halt development and protect the values of the property.

Archaeological research over the past 30 years in both Nan Madol and Lelu has provided evidence of the origin, development and construction of the megalithic complexes and the activities at each site. Oral traditions and historical records provide insight into the social history of Nan Madol and Lelu and the centrality of Nan Madol in establishing the Pohnpeian system of traditional governance through the Nahnmwarki system. In Kosrae depopulation and missionization had a greater impact on traditional systems of governance. However Lelu has the advantage of direct historical observations from skilled nineteenth- and twentieth-century recorders such as Duperrey and Dumont D'Urville (1824). These observations provide documentation of everyday life and the system of rule at Lelu at the time of European contact.

Archaeological excavation has been carried out at both components of the property, but it has been limited. Much of the archaeological deposit at both sites remains intact and potentially offers further information about the specific functions of various islets and the social systems reflected in both components.

Requirements for protection and management

A management system to coordinate the management of the two components of the nominated property is yet to be finalized. The Interim FSM World Heritage Board is meeting in April 2014 with the participation of representatives from Pohnpei State and from Kosrae State to start discussing an outline of a comprehensive management plan. This meeting will establish the Ceremonial Centers of Eastern Micronesian World Heritage Management Committee to coordinate the management of Nan Madol and Lelu by their respective State governments, traditional leaders and local community. This Committee will include representatives of the FSM government, the Nan Madol World Heritage Board and the Lelu World Heritage Board.

A detailed management plan is urgently needed for both Nan Madol and Lelu. The development of management plans for the two components of the property should be coordinated through the Pohnpei and Kosrae State governments with consultation and engagement of local communities.

Nan Madol is included on the US National Register of Historic Places (19741219 74002226) and is on the Pohnpei State Register of Historic Properties and protected under the Pohnpei Historic and Cultural Preservation Act 2002. Proposed protection mechanisms for Nan Madol, which include a Pohnpei State law and draft management system (Appendix A), are adequate to ensure the Outstanding Universal Value of Nan Madol to be maintained for a longer term. The property is also protected through customary protocol and respect.

A draft management system for Nan Madol was developed based on agreements during the 2012 Nan Madol Capacity Building Workshop, which was attended by stakeholders from government agencies and community. Proposed organizational structure consists of the Nan Madol World Heritage Board, the Nan Madol World Heritage Management Committee, and the Temwen Island World Heritage and Tourism Committee, in which different types of stakeholders, such as national, state, and local government representation, traditional authority and community will be involved.

There is no management system or management plan for Lelu. The landowners manage the ruins through the Lelu Property Owners Association. The

Historic Preservation Office contracts them to keep tree growth back and to maintain the channel and pathways although this has not taken place in recent times. A meeting of the new leaders of the Lelu Property Owners Association has agreed that maintenance work would recommence at the site. Discussion also supported the construction of a buffer zone by removing modern development that is too close to the site. The site is also on the U.S. National Register (since 1984) and on the state register where it will be more fully protected under the new Kosrae Historic Preservation Bill, not yet passed but before the legislature.

4. STATE OF CONSERVATION AND FACTORS AFFECTING THE PROPERTY

4.a. PRESENT STATE OF CONSERVATION

All elements of the two components of the Ceremonial Centers of Eastern Micronesia – Nan Madol and Lelu – are in fair physical condition. Nan Madol is not under threat from developmental or tourism pressures but subject to environmental pressures and lack of conservation planning. Local developmental pressures threaten the site of Lelu, in particular urban development surround Area 1, the core of the site. Both Nan Madol and Lelu are subject to threats from natural disasters including cyclones or typhoons, storms and associated storm surge and may be impacted by climate change and associated sea level rise in future.

Lelu

While the primary core of Lelu is more protected from the natural forces of the sea than is Nan Madol, it is more highly threatened by development pressures. This is because in contrast to Nan Madol which was largely abandoned at the fall of the Saudeleur dynasty and was only partially inhabited since, Lelu was still fully inhabited at the time of European contact in the 1820s and has remained continuously inhabited—excluding the three nominated areas within this ancient administrative and high status site. Currently, the descendants of the high chiefs who once lived within the walls of Lelu maintain their own households, which may be found encircling the core of the site. This does not detract from the value of the site, as these descendants represent the link between the ancient site and the present day. However, additional modern development is encroaching on the entrances to the Lelu core, with the potential for increased development following the nomination of the site; this could threaten the site.

4.b. FACTORS AFFECTING THE PROPERTY

(i) Development pressures

The entrance to the Lelu core (Area I) once lay beside the Ace Commercial building. At the end of 2013 Ace expanded their building; it now partially blocks the entrance to the site even though part of the area was left clear to allow for an entrance to the site. At the opposite end of the site core (Area I), at another entrance, the new Lelu elementary school was built in 2012; it too is now blocking easy access to the site and detracting from the view. While both of these buildings are deemed by the community to be necessary developments, their proximity to the site core entrances detracts from the integrity of the site. The islets of Yenasr and Yen Yen (Areas 2 and 3) are sufficiently isolated from the main islet of Lelu, They are not subject to the development pressures faced by Area I, but they are subject to the same natural and cultural elements that affect Nan Madol.

Surrounding Area 1, in addition to the commercial and educational structures, there are also the households of the descendants of the high chiefs who once lived within the Lelu proper. While these buildings, households, family cemeteries, and other structures seem out of place next to the ancient ruins, they also complete the story of site by connecting the past to the present. The homes themselves actually protect the site and, for the people living within those home, Lelu and its ancient administrative and sacred core is a normal part of their lives. It is their backyard; it is their families' property. Accordingly, the homes surrounding the Lelu ruins, the graves behind these homes, and their gardens may be seen as part of the living site that cannot and should not be distinguished from the site.

The question then is to whether this same harmonious relationship between the past and present may be applied to the Ace commercial building and the elementary school. In a way, the Ace commercial building, where imported food and other resources are made available to the community, serves the same function as those areas of the site in the past where food and resource materials from the main island (and imported from abroad) were offered as tribute and re-distributed to the community of Lelu. In this way Ace too may be seen as linking the past to the present.

It is more difficult to make such a connection for the elementary school other than philosophically in terms of training the next generation for service to the community at large.

Nevertheless, the state of the modern development on Lelu creates a potential threat to this ancient place, given the expected increase in foreign investment that will occur following the World Heritage nomination. Many policies are currently in place to protect the site, such as regulations limiting the development on the islet to below the height of the church. These policies, however, do need to be strengthened.

(ii) Environmental pressures (e.g., pollution, climate change, desertification)

Environmental pressures are less severe at Lelu. Area 1, the administrative and sacred core of the site, is heavily overgrown by small creeping vines, which may be easily cleared. Banyan trees grow on top of and within some of the larger walls. They have grown so large as to be impossible to remove and now add an aesthetic appeal to the site. The channel that runs through the site is heavily silted and nipa palms grow abundantly throughout it. While this means the channel is no longer navigable it has not caused major damage to the site.

The islets of Yenasr and Yen Yen (Areas 2 and 3) are more vulnerable to wave and tidal action than the Lelu core, along with other natural forces. Vegetation growth, sand and silt accumulation, as well as crabs and other burrowing fauna are the principal environmental threats to these places.

(iii) Natural disasters and risk preparedness

Kosrae is less susceptible to typhoons, though many large coconuts are present which could damage the site if they were to fall over in a large storm.

(iv) Responsible visitation at World Heritage sites

There are far fewer foreign visitors to Kosrae than Pohnpei. Currently there are

only four hotels on Kosrae to service such tourists, and there is only one hotel on Lelu though it functions more as an apartment complex and does not specialize in tourism to the ancient core. Visitors to the Lelu core typically only stay for a short while. No fees are collected and no services are offered for such visitors.

(v) Number of inhabitants within the property and the buffer zone

Estimated population, as at December 2013, located within:

Area of nominated property	0
Buffer zone	1,000
Total	1,000

5. PROTECTION AND MANAGEMENT OF THE PROPERTY

5.a. OWNERSHIP

In December 2011 a similar consultation on Kosrae with representatives of many landowners of the properties that make up the Lelu site and the surrounding buffer zone, and the Kosrae Historic Preservation Office resulted in the drafting of a similar Memorandum of Understanding for the Lelu site.

5.b. PROTECTIVE DESIGNATION

The government of FSM is composed of three independent branches of power under the president, who is the head of state: judicial (supreme court), legislative (FSM government assembly), and administrative (executive body). The FSM Constitution acknowledges the customary interests of the traditional chiefs and adopts a governing system that grants administrative power not only to the federal government but also to the state and community governments, and stipulates that states shall have their own constitution.

Under this system, Nan Madol is administratively protected by the federal government and the state government of Pohnpei, as well as customarily protected by the Nahmwarki. Lelu is protected by the federal government and the state government of Kosrae and has customary protection through the local community.

5.c. MEANS OF IMPLEMENTING PROTECTIVE MEASURES

The Office of National Archives, Culture and Historic Preservation (NACH) is an administrative institution of the federal government of FSM in charge of supervising legal and administrative activities relating to the protection of cultural heritage, culture and history. The Historic Preservation Office under it is responsible for cultural heritage protection (FSM HPO).

There are also Historic Preservation Offices (HPO) at the state level, which coordinate the protection of cultural heritage in each state. The FSM HPO and the HPO in Pohnpei, where Nan Madol is located, and the HPO in Kosrae where Lelu is located work in close cooperation with each other but all the HPOs are in need of more resources and expertise.

The NACH receives a budget from the FSM government, as well as receiving financial aid and human resources support from the US National Park Service. Two experts funded by the US National Park Service currently work at NACH. There are no museums to preserve, exhibit and display artifacts from Nan Madol. On Kosrae, there is one museum attached to the Historic Preservation Office that has a continuing exhibit and display of artifacts from Lelu.

Other institutions are involved in the preservation of Nan Madol as a tourism resource, including the FSM Department of Resources and Development and the Pohnpei Department of Land and Natural Resources. For Lelu, the Kosrae Island Resources Management Authority and the Kosrae Visitors Bureau are also involved in the preservation of Lelu as a tourism resource.

5.d. EXISTING PLANS RELATED TO MUNICIPALITY AND REGION IN WHICH THE PROPOSED PROPERTY IS LOCATED

The Lelu Property Owners Association, as funded through the Historic Preservation Office, has taken on the responsibility of clearing vegetation, picking up trash, and periodically cleaning the central arterial canal in the megalithic core of the site. The Property Owners Association also maintains the pathways through the site, including effecting repairs caused to the substrate by burrowing crabs and flooding from rain and/or very high tides.

5.e. PROPERTY MANAGEMENT PLAN OR OTHER MANAGEMENT SYSTEM

The management systems in Nan Madol and Lelu will be coordinated through an umbrella Ceremonial Centers of Eastern Micronesia World Heritage Management

Committee comprising representatives of the FSM government, the Nan Madol World Heritage Board and the Lelu World Heritage Board. The Interim FSM World Heritage Board to meet in April 2014 with the participation of two representatives from Pohnpei State and two representatives from Kosrae state to start discussing an outline of a comprehensive management plan.

The management systems in Nan Madol and Lelu will be coordinated through an umbrella Ceremonial Centers of Eastern Micronesian World Heritage Management Committee comprising representatives of the FSM government, the Nan Madol World Heritage Board and the Lelu World Heritage Board. The Interim FSM World Heritage Board to meet in April 2014 with the participation of two representatives from Pohnpei State and two representatives from Kosrae state to start discussing an outline of a comprehensive management plan.

Schedule of action plan for the implementation of the Nan Madol World Heritage site management system

There is no management plan for Lelu other than a cultural obligation to care for the site and oversee its preservation and conservation. This is seen as an obligation to custom and a responsibility to act as steward to insure the site is maintained for future Kosraeans and the world. When the site was entered onto the U.S. National Register of Historic Places in 1983, all the landowners (members of the Lelu Property Owners Association) agreed that it represented a significant part of their history, one they wanted to share with future generations and the world. It became a place of pride and they worked together to clean up the site—removing a pigpen that had been built against one of the walls and clearing vegetation. The Kosrae HPO installed signage and prepared a guided pathway system through the site to control the flow of visitors. They also built a bridge across the canal, cleared vegetation, and restored one of the compound walls that was collapsing. In addition, a small museum was established with exhibits and artifacts on Lelu and the history of Kosrae.

In the initial discussion of a serial nomination for World Heritage listing for the

Ceremonial Centers of Eastern Micronesia, discussions began on the formation of a Lelu World Heritage and Tourism Committee. However, the sudden death in early 2014 of the key organizer for this Committee on Kosrae has placed these discussions on hold.

Draft guiding principles for the management of Lelu

- Preservation of the physical site for the people of Kosrae and the world
- Preservation of the site includes preservation of the cultural values as well as the physical features of the site
- Preservation efforts should be directed toward maintaining access, clearing vegetation, cleaning the canal, stabilization of the site
- As the tangible cultural heritage of the people of Kosrae, site use should be for research, school field trips and tourism
 - ∅ Research should be a means to learn more about the site, while keeping excavations and other damaging activities to a minimum
 - ∅ School field trips, from elementary through college, should be geared toward teaching children and young adults alike about their history and culture, as well as provide an opportunity to educate them on the importance of cultural and historic preservation
 - ∅ Tourism is seen as a revenue-generating activity that includes the employment of tour guides, which means 1) training Kosraeans in the history, legends and traditions of Lelu, as well as the value of cultural preservation; 2) instruction on the activities that took place in Lelu, which enriches the tourist experience; 3) leading tours in designated areas as a way of controlling access and visits to the site; 4) supervision of tourists and elevating site importance means less vandalism and theft of artifacts and building materials; 5) coordinating tours with visits to the local museum
- Cultivation and development of medicinal plants/garden with sufficient signage to educate visitors on the preparation and use of traditional cures
- Regularize fee imposition, with fees used for site maintenance and managed

by the Lelu Property Owners Association

- Establish a single main entrance

At present, different groups of stakeholders act independently of the others in collecting fees, cleaning the site, and otherwise managing the ruins. To ensure the effective implementation of the management plan, coordination and cooperation among the stakeholders is essential.

5.f. SOURCES AND LEVELS OF FINANCE

The Nan Madol En Ihmw Corporation, a non-government and non-profit organization, has been established by the Nahnmwarki (Chair of the corporation) to safeguard Nan Madol. The Lelu Corporation has also been established for the same purpose. It is envisaged that the corporations will manage fees and commissions from tour operators and individual visitors to the respective sites in close association with the Historic Preservation Offices in each state. These funds would then be used to manage and conserve the sites.

Draft guiding principles of the corporations are:

- The benefits from heritage tourism should be distributed across the entire community
- Protection of the cultural integrity of the property
- Recognition of the cultural protocol surrounding the site
- Compliance with international standards for protection of the property as specified in the
- Operational Guidelines for the Implementation of the World Heritage Convention
- Promotion of benefits of World Heritage inscription through a community project of sustainable cultural heritage tourism
- Maintenance of traditional culture with a halting of practices that endanger the site including gardening activities that lead to excavation of the sites and pig pens that pollute the site.
- Each municipality should be represented on the committee

5.j. STAFFING LEVELS (PROFESSIONAL, TECHNICAL, MAINTENANCE)

Like Nan Madol, Kosrae relies on guidance from the FSM National Historic Preservation Office (HPO) (the Office of the National Archives, Culture, and Historic Preservation), whose main duties are to oversee the state historic preservation offices and to administer the Historic Preservation Fund grants, is presently staffed by five employees: Acting Director/National Historic Preservation Officer (1), Administrative Officer (1), Financial Management Specialist (1), and Office Secretary (1).

The Kosrae State HPO, which has been the main institution to oversee the preservation and care of Lelu, is currently staffed by four employees: Chief/State Historic Preservation Office (1), Federal Program Coordinator (1), Field Researcher (1), and Clerk Typist (1). Most staff have many years of work experience in this field; therefore the staff has sufficient skills and knowledge for their duties, although they, understanding the importance of upgrading their skills, actively seek in-house lessons or training and other such opportunities that can help enhance their performance. Training is needed in such areas as program administration, grant management, computer application, and archaeological and anthropological field research.

The Kosrae Visitors Bureau (KVB) is staffed by an administrator (1), a tourism specialist (1) and a clerk (1). The KVB is guided by a Board of five members, all of whom are appointed by the governor. KVB does not have a staff for maintenance of historic sites or other natural sites that draw visitors to the island.

At the College of Micronesia Kosrae campus, students can complete their general education, but must travel to the Pohnpei campus to participate in the Division of Hospitality and Tourism offers associate degree in hospitality and tourism management. This program is designed to enable students to become productive workers, owners and managers in the field of hospitality and tourism, more particularly in the food service, lodging, airline, travel provider and general tourism industries. The Division has five teaching staff, in addition to affiliated staff in the fields of accounting and language (Japanese).

Guides to Lelu are local members of the Lelu Property Owners Association, drawn from the Kosrae HPO, or by Kosraean staff at the local hotels. There are no training courses or tourism instructors, which provide “guides” with knowledge of Lelu.

A plan for the Kosrae HPO staff to offer a workshop for guides has been discussed recently.

Elderly residents of Lelu and from the senior community around the island hold knowledge about Lelu and other traditional landmarks on the island, as well as traditional skills (e.g., weaving, canoe building, medicine, dancing). They play an important role in transmitting their knowledge to younger generations. The Kosrae Visitors Bureau has provided an area for the community seniors to hold workshops and demonstrations of traditional crafts.

6. MONITORING

6.a. KEY INDICATORS FOR MEASURING STATE OF CONSERVATION

It is necessary to recall that conservation is:

- The preservation of a property from any alteration caused by humans (negligence, damage, looting, etc.) or nature (disaster, pollution, weathering, etc.) activity.
- Applied to some portion of a property through legal or physical means, to secure its sustainability.

Preventive conservation aims at:

- Anticipating the risk of degradation or alteration by analyzing the exogenous causes of the said risk (environment, lack of maintenance of the monuments, etc.) or endogenous causes (material weathering, structural instability of the monuments, etc.).
- Delaying the decay of a property by taking measures complying with the conservation protocols that mitigate risks and their consequences.

The nominated property and the buffer zone will be monitored periodically and systematically to measure the conservation of the entire nominated area and its buffer. The objective of the monitoring system is to measure the conservation, identify relevant remedial actions, and ensure the implementation of authorized activities while at the same time keeping the system simple and relevant. The key indicators for measuring state of conservation are listed below:

Table 6.1. Summary of monitoring indicators, periodicity and location of records.

Indicator	Periodicity	Location of records
Stability of monuments	Monthly	All records will be kept at the FSM Office of the National Archives, Culture, and Historic Preservation (NACH)
Marine environment	Biannual	
Overgrowth of vegetation	Biannual	
Navigable channels	Biannual	
Climate change	1 year	
Disasters	1 year	
Visitors and tourism pressure	1 year	
Social mapping and land-use	5 years	
Scientific and technical evaluation	5 years	

Stability of monuments

Since the monuments of Nan Madol and Lelu fell to ruin and were left abandoned for years, the structures on many of the islets have been subject to extensive damage from various natural factors, such as the rampant growth of vegetation, the accumulated load of the structure over time, and changes in water level, tides, water flow, rain and wind caused by climate changes. In order to retain the Outstanding Universal Value of the properties, the stability of each artificial islet is monitored monthly by Pohnpei and Kosrae States HPO, and reported to the FSM Office of the National Archives, Culture, and Historic Preservation (NACH). When a risk of stability is observed, such as stone-fall or collapse of the stone construction, an emergency treatment is to be carried out by the State HPO. When a critical risk to monument stability is identified, a technical intervention, such as restoration and/or anastylosis, is to be implemented by the State HPO and the NACH, after a scientific and technical consultation by the ad hoc experts group commissioned by the Ceremonial Centers of Eastern Micronesia World Heritage Management Committee (see the detail below).

Marine environment

Since the site complex of Nan Madol and Lelu lies in the intertidal zone of a

reef flat, the sea is an important component of the OUV of the properties. To prevent degradation of the sites from the marine environment, including water pollution and inappropriate use of marine resources, Pohnpei and Kosrae State HPOs monitor the marine environment periodically and report it to the NACH biannually. In addition, the State HPO remains alert to the possible existence of underwater cultural heritage in and around the protected area.

Overgrowth of vegetation

A dense growth of vegetation, particularly roots of large trees, is a potential risk for the deterioration of the monuments and archaeological features. In addition, it poses an impediment of visitors' access to the sites. On the other hand, the vegetation on the sites is an important natural component of the properties and it creates a mysterious atmosphere of the sacred places. Additionally, implementation of improper tree clearance may damage the stone structure itself; for example, the rotting stub of a cut tree can create a gap between the stone components of the structure, and set off a collapse. Therefore, Pohnpei and Kosrae State HPOs monitor the extent of the vegetation density periodically, and carry out tree clearing as may be necessary; they report their activities to the NACH biannually.

Navigable channels

An extensive network of channels extends throughout the group of artificial islets of Nan Madol and Lelu, and serves inter-islet passages. However, some of the channels are blocked by silt accumulation and mangrove growth, and are not navigable. For example, the half-opened dikes constructed a couple of decades ago between islets on Nan Madol as tourist trails may have changed the water flow and led to the siltation of the channels. The navigable condition of any channel must be maintained not only to ensure visitors' access but also to retain authentic landscape of the floating cities of Nan Madol and Lelu. Therefore Pohnpei and Kosrae State HPOs monitor the condition of navigable channels periodically and study the water

flow mechanism. They carry out clearance of mangrove and dredge the channels as necessary. In cooperation with specialists, they also evaluate the impact caused by the existing dikes used as tourist trails, and consider their replacement with another method of between-islet passage that will have less impact on the environment. They report their activities biannually to the NACH.

Climate change

Various factors caused by climate change have a negative impact on the properties. Sea level change can cause a total submergence of the artificial islets and accelerate expansion of mangrove. Increasing frequency of storms and the associated tidal wave can damage the stone construction of the sites, especially the artificial islets on the open ocean side. Rising average temperature encourages overgrowth of vegetation. To assess the degree of environmental shift associated with climate change, Pohnpei State and Kosrae State HPOs carry out weather observations including rainfall, temperature, wind, amount of insolation, and tidal level. They report these data to the NACH once a year.

Disasters

The major risks for the group of artificial islets in Nan Madol and Lelu are earthquake and tsunami. Pohnpei and Kosrae State HPOs survey and identify the vulnerabilities of the monuments, and carries out necessary interventions such as the installation of supports and consolidation. Typhoons are also a risk to the conservation of the sites. To prevent the risks caused by typhoon, they identify and clear potentially-hazardous large tree species. They report the current condition of the vulnerable positions to the NACH once a year.

Visitors and tourism pressure

Tourism has a positive impact on the economy of the local community where

the property is situated, but it has also a negative impact on the conservation and preservation of the property itself. Therefore, tourism must be controlled by a proper management plan and its implementation in a sustainable way. In cooperation with their respective Visitors Bureaus, Pohnpei and Kosrae State HPOs keep statistics on the number of visitors to the sites, and monitor impacts caused by tourists, including graffiti, removal of artifacts, and deterioration of the monuments. They also carry out public opinion research in the local community about the tourism impact on the local community periodically. The periodic assessment report on tourism as related to the properties is to be submitted to the NACH once a year.

Social mapping and land-use

The development conducted at a neighboring area of the properties, regardless of whether it is located in a protected zone or not, has impacts on the state of conservation of the property. It must be monitored and assessed with the perspective of safeguarding the heritage and sustainable development in the local communities. Therefore Pohnpei and Kosrae State HPOs, in cooperation with the Department of Land and Natural Resources, the Department of Health and Human Services, the Office of Social Affairs, and other relevant Pohnpei and Kosrae governmental agencies, carry out social mapping in the local communities, including village layout, infrastructure, demography, land use, welfare and economic condition, with the understanding and cooperation of the traditional leaders and local residents. The periodic social mapping report is to be submitted to the NACH every five years.

Scientific and technical evaluation

An assessment of the present state of conservation of the properties is to take place every five years by the Scientific and Technical Committee on Safeguarding Nan Madol and Lelu. The Committee, organized by the NACH, is comprised of the Pohnpei and Kosrae State HPOs, some National and State authorities such as the Pohnpei and Kosrae Visitors Bureaus, the FSM Department of Resources and

Development, etc., as well as the delegates of stakeholders including traditional leaders of local communities and land owners. In addition, the Committee invites international experts, such as researchers in archaeology, architecture and environmental studies, as advisors for scientific and technical consultation. The Committee is to approve recommendations regarding the conservation and management of the properties for the next five years. Emergency monitoring activities in the event of unforeseen threats are to be implemented by the ad hoc experts group commissioned by the Committee.

6.b. ADMINISTRATIVE ARRANGEMENTS FOR MONITORING PROPERTY

The NACH is to oversee, coordinate and facilitate all monitoring activities at the properties. In Nan Madol the Pohnpei State HPO conducts periodic monitoring activities, and in Lelu the Kosrae State HPO conducts periodic monitoring activities, and they report their activities to the NACH periodically. These activities are reviewed and approved by the Nan Madol World Heritage Board, the Lelu World Heritage Board, and the Ceremonial Centers of Eastern Micronesia World Heritage Management Committee respectively.

Figure 6.4 shows the framework of administrative arrangements for monitoring properties.

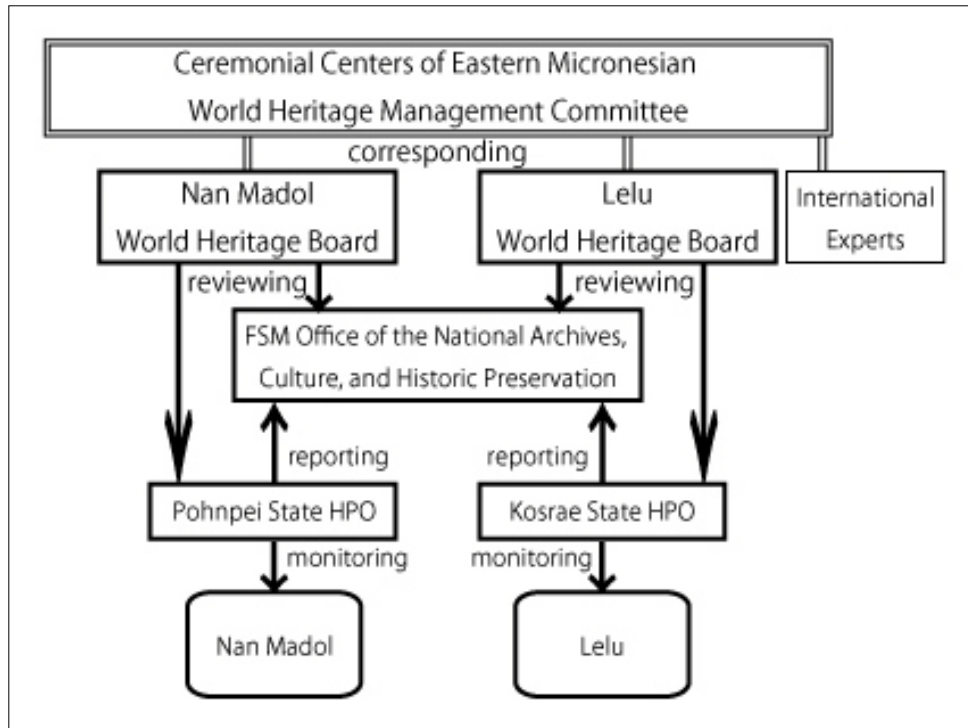


Figure 6.1. Diagram of administrative arrangements for monitoring properties.

Contact Information:

FSM Office of the National Archives, Culture, and Historic Preservation
 P.O. Box PS 175
 Palikir, Pohnpei, FM 96941
 Federated States of Micronesia
 Tel: (691) 320-2343
 Fax: (691) 320-5634
 Email: hpo@mail.fm

6.c. Results of previous reporting exercises

Recent reporting exercise was carried out by experts from Japan Consortium for International Cooperation in Cultural Heritage in February 2011, and the report was published in 2012 (JCIS 2012).

Other results of previous reporting exercises are as follows:

- Reports regarding state of conservation of OUV in Lelu: Athens *et al.* 1983,

Bath 1986, Bath and Shun 1982, Bath *et al.* 1983, Cordy 1983a, 1984a, 1984b, 1984c, 1993, and Cordy and John 1984.

- Report regarding other indicators: overgrowth of vegetation (Stemmerman and Proby 1978), Climate change (NOAA 1990, Ward 1988), and social mapping and land-use (Office of Planning and Statistics 1979).

7. DOCUMENTATION

7.a. PHOTOGRAPHS AND AUDIOVISUAL IMAGE INVENTORY AND AUTHORIZATION FORM

ID No.	Format ¹	Caption ²	Date	Photographer/ Director	Copyright owner	Contact of owner	Non exclusive cession of rights
1.1	D	The location of component 2. Lelu of the nominated property on the Island of Kosrae	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
1.2	D	Satellite map of Component 2	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
1.3	D	USDA topographic map of Kosrae showing a detail of Lelu	1983	U.S. Geological Survey	U.S. Geological Survey		No
2.1	D	Location of the island of Pohnpei in Federated States of Micronesia	2014	University of Texas Libraries	University of Texas Libraries		No
2.2	D	USGS map of Kosrae showing location of Lelu	2001	U.S. Geological Survey	U.S. Geological Survey		No
2.3	D	USGS map of Kosrae with detail of Lelu within buffer zone boundary	2001	U.S. Geological Survey	U.S. Geological Survey		No
2.4	D	Plan of Lelu made by the German Anthropologist Hambruch in 1910	1936	Paul Hambruch	Hambruch		No
2.5	D	Lelu, header-stretcher detail of Foton compound corner	2001	Felicia Beardsley	Felicia Beardsley	fbeardsley@laverne.edu	Yes
2.6	D	Lelu, rendering of wall construction sections by Morgan (1988), showing cross-section of Lurun and Kinyeir Fulat on left, and Bat, Fananan Sremuta and Insrूम on right	1988	William Morgan	William Morgan		No
2.7	D	Lelu, reconstructed house within a Lelu compound	1988	William Morgan	William Morgan		No
2.8	D	Lelu, wall of Foton compound	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
2.9	D	Cordy's (1993:319, Figure 8) map of Lelu, showing megalithic core of ruins outlined in black	1993	Ross Cordy	Ross Cordy		No
2.10	D	Lelu, wall of Kinyeir Fulat showing header-stretcher pattern of columnar basalt lengths	1999	Felicia Beardsley	Felicia Beardsley	fbeardsley@laverne.edu	Yes
2.11	D	Lelu, reconstruction of Kinyeir Fulat	1988	William Morgan	William Morgan		No
2.12	D	Lelu, wall extending from Foton compound	2013	Adam Thompson	Adam Thompson	archaeochronicler@gmail.com	Yes
2.13	D	Lelu, Insrूम tomb, with crypt visible in center of truncated pyramidal structure	2001	Felicia Beardsley	Felicia Beardsley	fbeardsley@laverne.edu	Yes

2.1 4	D	Lelu, looking into the cribbed crypt in the truncated pyramidal tomb of Insruun	2001	Felicia Beardsley	Felicia Beardsley	fbeardsley@laverne.edu	Yes
2.1 5	D	Lelu, Yenast islet from the lagoon	1999	Felicia Beardsley	Felicia Beardsley	fbeardsley@laverne.edu	Yes
2.1 6	D	Lelu, Yenast islet, feasting house entry and wall	1999	Felicia Beardsley	Felicia Beardsley	fbeardsley@laverne.edu	Yes
3.1	D	Map of Oceania showing distribution of the similar properties	2007	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes
6.1	D	Diagram of administrative arrangements for monitoring properties	2013	Tomo Ishimura	Tomo Ishimura	tomoishi@nabunken.go.jp	Yes

¹ D = digital image. ² (#) = islet number of Nan Madol by Hambruch (1936).

7.b. TEXTS RELATING TO PROTECTIVE DESIGNATION, COPIES OF PROPERTY MANAGEMENT PLANS OR DOCUMENTED MANAGEMENT SYSTEMS AND EXTRACTS OF OTHER PLANS RELEVANT TO THE PROPERTY

1. Strategic Sustainable Tourism Plan for Kosrae and Pohnpei (Appendix D)

7.d. ADDRESS WHERE INVENTORY, RECORDS AND ARCHIVES ARE HELD

The FSM Office of the National Archives, Culture, and Historic Preservation

P.O. Box PS 175

Palikir, Pohnpei, FM 96941

Federated States of Micronesia

Tel: (691) 320-2343

Fax: (691) 320-5634

Email: hpo@mail.fm

7.e. BIBLIOGRAPHY

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 1983 *Archaeological Salvage on Water Line 'C,' Lelu, Kosrae.* Manuscript. On file, Trust Territory Historic Preservation Office, Saipan.
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- 2004a *Likinlulem, Kosrae*. U.S. National Register of Historic Places. National Park Service, U.S. Department of the Interior (listed April 14, 2004).
- 2004b *Preliminary Investigation on the Structural Integrity of the Leluh Ruins, Kosrae, Micronesia*. Paper presented at the Fryxell Symposium, Society for American Archaeology annual meeting, Montreal, Canada, March 31 to April 4.
- 2004c *The Search for Finol Tokosra*. Paper presented at the VI Conference on Easter Island and the Pacific, Valparaiso, Chile, 21 to 25 September.
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8. CONTACT INFORMATION

8.c. OTHER LOCAL INSTITUTIONS

Division of Land Management and Preservation

Kosrae Island Resources Management Authority

Kosrae State Government

P.O. Box 82, Tofol, Kosrae, FM 96944, Federated States of Micronesia

Tel: (691) 370-3078

Fax: (691) 370-3767

E-mail: ksahpo@mail.fm

Lelu Municipal Government

PO Box 307, Tofol, Kosrae, FM 96944, Federated States of Micronesia

Tel: (691) 370-3037

Kosrae Visitors Bureau

PO Box 659, Tofol, Kosrae, FM 96944, Federated States of Micronesia

Tel: (691) 370-2228

Fax: (691) 370-3000

E-mail: kosrae.fsm@gmail.com, kosrae@mail.fm

ICOMOS

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МЕЖДУНАРОДНЫЙ СОВЕТ ПО ВОПРОСАМ ПАМЯТНИКОВ И ДОСТОПРИМЕЧАТЕЛЬНЫХ МЕСТ

National Commission for UNESCO of the
Federated States of Micronesia
P.O. Box PS 175
Palikir, Pohnpei FM 96941
Federated States of Micronesia

Our Ref. GB/AS 1503

Charenton-le-Pont, 22 September 2015

World Heritage List 2016

Nan Madol: Ceremonial Center of Eastern Micronesia (Micronesia) - Additional information

Dear Madam, Sir,

ICOMOS is currently assessing the nomination of "Nan Madol: Ceremonial Center of Eastern Micronesia" as a World Heritage site and an ICOMOS evaluation mission has visited the property to consider matters related to protection, management and conservation, as well as issues related to integrity and authenticity.

In order to help with our overall evaluation process, we would be grateful to receive further information to augment what has already been submitted in the nomination dossier.

Therefore we would be pleased if the State Party could consider the following points and kindly provide additional information:

Inventory/map

ICOMOS notes that some numbered sites are missing from the inventory and map in the nomination dossier as compared with the map in the brochure provided to the mission expert. Could the State Party provide a complete map showing the location of all the numbered sites?

Protection and Management regime

ICOMOS notes that new legislation (LB 392 - provided to the mission expert) is proposed to create a Nan Madol Historic Preservation Trust with ownership and management under traditional oversight by the Nahmwarki Chief with a Board of traditional authority. This would replace the protection regime described in the nomination dossier and is expected to solve current issues regarding ownership and management. Could the State Party provide a schedule for the passing and implementation of this legislation?

Buffer zone

ICOMOS notes the information provided to the mission expert regarding the boundary of the buffer zone. Could the State Party clarify whether the buffer zone is protected under the existing legislation and how will it be protected under the proposed new legislation?

Could the State Party provide a map showing the location of the features mentioned on pp.9 and 55 of the nomination dossier as related to the transport of stone?

Management Plan

ICOMOS notes that the Pohnpei Historic Preservation Office is a component of the U.S. National Park Service and follows the Secretary of the Interior's Standards and Guidelines for Archaeological Preservation. Could the State Party clarify how this situation works in terms of FSM sovereignty? ICOMOS also notes that there is no management plan as such for Nam Madol. According to the nomination dossier p.107 work is currently underway to update the Nan Madol Preservation and Management Plan (1992) in the light of provisions of the Pohnpei Historic and Cultural Preservation Act 2002. Could the State Party provide a schedule for completion of this work?

We look forward to your responses to these points, which will be of great help in our evaluation process.

We would be grateful if you could provide ICOMOS and the World Heritage Centre with the above information by **Monday 02 November 2015 at the latest**.

We thank you in advance for your kind cooperation.

Yours faithfully



Gwenaëlle Bourdin
Director
ICOMOS Evaluation Unit

Copy to FSM Office of National Archives, Culture and Historic Preservation
 UNESCO World Heritage Centre

Management plan and structure

Details of when the new legislation LB 392 will be passed and when it will be possible to create a Nan Madol Historic Preservation Trust?

The ICOMOS Panel considers the management system outlines in the nomination dossier is effective. With ICOMOS, we recognize the urgency in passing and implementing the new legislation that will create a Nan Madol Historic Preservation Trust.

The new legislation LB 392 has been drafted. Initial review indicated that the draft will require some amendment in relation to governance mechanisms prior to its passing and becoming law. The FSM Government plans to convene a meeting of the Nan Madol World Heritage Board in March/April 2016 in order to revisit the draft legislation LB 392 to address concerns around governance of the proposed Trust. It is anticipated that the draft legislation will be presented to parliament in October 2016.

This delay will not impact on the management of the Nan Madol site as this is ensured by Nan Madol World Heritage Management System (See page 105 of the nomination file) that is composed of Nan Madol World Heritage Board, Nan Madol World Heritage Management Committee and Temwen Island World Heritage and Tourism Committee. Given the need for urgent action to establish a secure mechanism for administering funds for the conservation and management of Nan Madol the FSM HPO has approached the Director of the Micronesia Conservation Trust (MCT) to discuss the potential for the Trust to provide services to manage funds for a Nan Madol Safeguarding Programme. An Advisory Board headed by the Nahnmwarki will be established to oversee expenditure of funds. The MCT provides services to manage funds (sinking funds, endowments/trusts, etc.) and make grants and/or contracts to others to implement conservation and restoration projects that support and facilitate sustainable development in all five Micronesian jurisdictions under the authority of a Board. For further detail see <http://www.ourmicronesia.org/>. This matter will be presented and discussed at the next FSM World Heritage Committee Meeting in March/April 2016.

Whether a designated property manager trained in cultural resource management might be appointed?

Most of the relevant officers in the FSM National and Pohnpei State Governments have many years of experience in their fields; as such, the staff has sufficient skills and knowledge for their responsibilities, although they actively seek in-house training and other opportunities that can help enhance their performance and upgrade their skills.

A designated property manager will be appointed from these experienced officers. We are planning to provide further training in the field of cultural resource management for the property manager and others involved in the management and conservation of Nan Madol through regional training opportunities such as the annual UNITAR training programs in Japan and through the Pacific Heritage Hub at the University of the South Pacific.

Timeframe for when the management plan will be completed and whether it could include a risk preparedness strategy and a tourism strategy.

It is anticipated that the Nan Madol Management Plan will be completed by October, 2016. The Management Plan will include a risk preparedness strategy and a tourism strategy. A draft “Strategic Sustainable Tourism and Ecosystem Plan,” was included in the nomination dossier as Appendix D. This requires further elaboration and detail with input of community and experts following establishment of a Trust either through the Micronesian Conservation Trust or the Nan Madol Historic Preservation Trust.

A risk management strategy for Nan Madol will be developed based on the FSM National Disaster Risk Policy and National Action Plan that combines disaster risk management and climate change adaptation

(http://www.preventionweb.net/files/28470_fsm_NationalHFAprograss_2011-13.pdf).

Relevant official and site managers will need further training in risk preparedness. Discussions are underway with Ritsumeikan University in Japan for site manager to participate in their cultural heritage risk management course.

Details of the proposed visitor/interpretation centre

Detailed information for either the contents or the design brief for the development of the proposed visitor/interpretation centre or site/national museum; whether these are two separate facilities, and their intended location? If there are to be two facilities, what is the anticipated relationship between the two? The FSM Government is planning to create a visitor/interpretation center in proximity to but not within the boundaries of Nan Madol and National Museum in Pohnpei.

The local visitor/interpretation center is the priority as it will serve visitors to Nan Madol by increasing their understanding of the site. The Japanese Embassy has been approached to provide support for the visitor/interpretation centre. Planning for FSM National Museum is less advanced. The FSM Government plans to create a working group for the FSM National Museum to develop the project and seek donor support. The museum will promote the FSM’s cultural and historical heritage for both its people and visitors.

Lack of conservation and possible Danger listing

The Panel would like to request the support of the State Party for the approach of recommending inscription on the World Heritage List in Danger at the same time as inscription on the WH List.

FSM government thanks the Panel for recognizing the potential of the property to meet OUV and for expressing concern over the current state of conservation of the property. We agree that there is urgency in undertaking conservation works in particular to stabilize the structures, clear the encroaching mangroves and remove siltation to reinstate the waterways around the individual islets of Nan Madol and that the support of donor funding, for works, to bring expertise and build local capacity in conservation will be needed to achieve this.

We appreciate the gravity of inclusion on the List of World Heritage In Danger at the same time as inscription on the World Heritage List. While inclusion on the In Danger List may be a mechanism for raising the profile of the conservation issues and helping to enlist donor support to undertake surveys and studies, such support is not guaranteed to follow In Danger Listing. Notwithstanding this reservation, The FSM Government will support a recommendation for inscription on the World Heritage List in Danger provided that a desired state of conservation for the removal of the property from the List of World Heritage in Danger is clearly articulated at the time of inscription and demonstrably achievable through a programme of corrective measures (Operational Guidelines Paragraph 183).

As the Panel notes, 'detailed assessment needs to be made of the walls as a baseline for setting out a conservation strategy that can be phased and costed and used for approaches to partners and donors'. Such an assessment is needed to provide the baseline data for developing a Desired State of Conservation for Nan Madol prior to inscription on the World Heritage List in Danger List.

We would like to discuss this further with ICOMOS through a Skype call.

Yours Sincerely,

Augustine C. Kohler
Secretary-General, FSM National Commission for UNESCO



FEDERATED STATES OF MICRONESIA

National Tourism Policy Volume I

Final Report
June 2015



The Government of the Federated States of Micronesia acknowledges the support of the Asian Development Bank in the development of the National Tourism Policy.

**The Federated States of Micronesia
National Tourism Policy
Final Report
June 2015**

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Foreword

Tourism is important to the FSM economy. Under the conservative 5% annual growth rate scenario, tourist and visitor arrivals would grow from 12,714 in 2013 to 17,890 at the end of 2020 and would generate an estimated visitor spending of around \$22 million. The growth in tourist and visitor arrivals will undoubtedly lead to increased employment, business incomes, and tax revenues for the national and state governments, and improvement in people's livelihoods and living standards.

To realize the potential of our tourism industry, for the benefit of our nation and its people, we have developed a National Tourism Policy and State Investment Plans with assistance from the Asian Development Bank. The goal of the policy is to halt the decline in visitor arrivals in the immediate terms and progressively develop a sustainable tourism industry with consideration to social and environmental impacts and equitable distribution of its gains. The document highlights the economic significance of tourism, sets out the vision for its future and identifies strategic priorities and investment plans for realistic implementation.

I entrust the National Tourism Policy and State Investment Plans to all of you. I encourage all involved in tourism to put a concerted effort in steering its successful implementation and monitoring. I urge all the state leaders to adopt the policy so we can jointly and resourcefully accelerate tourism growth with recognition that the action plan embodied in the policy will be a living document to be reviewed and updated when necessary.

I wish to thank all those who have contributed to the policy document by providing information and contributing their constructive views from a series of consultations across all the states and validation workshops held with the Project Steering Committee.

Special thanks to Secretary Marion Henry of the Department of Resources and Development (DoRD) and his team in the Tourism Unit for leading this important milestone. A sincere thank you as well to our Project Steering Committee members, and State Governors Sebastian Anefal of Yap, Johnson Ellimo of Chuuk, John Ehsa of Pohnpei, and Lyndon Jackson of Kosrae, for their support and commitment to ensure that this policy document will come into fruition. I would also like to extend my appreciation to the Asian Development Bank for their kind assistance in funding the development of the policy.

I look forward to working with you in the implementation of the policy and plans and to the successful reform of the industry.

Peter M. Christian
President
Federates States of Micronesia

June, 2015

Acronyms

ADB	Asian Development Bank
CC	Climate Change
CoC	Chamber of Commerce
CIA	Caroline Islands Air
CoM	College of Micronesia
CTF	Compact Trust Fund
DEA	Department of Economic Affairs
DoEA	State Department for Economic Affairs
DoRD	National Department of Resources and Development
DSIC	Development Strategists International Consulting, Inc.
DTC&I	Department of Transportation, Communication, and Infrastructure
EA	Executing Agency
EPA	Environmental Protection Agency
EU	European Union
FAA	Federal Airports Association (USA)
FSM	Federated States of Micronesia
FY	Financial Year
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GSTC	Global Sustainable Tourism Council
HRD	Human Resource Development
JEMCO	Joint Economic Management Committee (Compact Funding)
NGO	Nongovernment Organization
NTAC	National Tourism Advisory Council
NTDS	National Tourism Development Strategy
NTO	National Tourism Organization
NTP	National Tourism Plan
NZTRI	New Zealand Tourism Research Institute
PATA	Pacific Asia Travel Association
PMA	Pacific Missionary Airlines
PPP	Public-Private Partnership
R&D	Resources and Development
RMI	Republic of the Marshall Islands
SBOC	Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management
SDP	Strategic Development Plan
SIDS	Small Island Developing States
SME	Small and Medium Enterprise
SPC	Secretariat of the Pacific Community

SPTO	South Pacific Tourism Organization
STAC	State Tourism Advisory Council
SVBs	State Visitors Bureaus
TIA	Tourism Industry Association
TIES	The International Ecotourism Society
TOR	Terms of Reference
UA	United Airlines
US	United States
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	United Nations World Tourism Organization
USP	University of the South Pacific
VFR	Visiting Friends and Relative

Executive Summary

The natural endowments of the Federated States of Micronesia (FSM) are key drivers not only of economic growth, but also of sustainable development. The potential of its water-based tourism, cultural tourism, ecotourism, and multiple destinations for recreational activities is high. Unfortunately, the tourism sector is in disarray. Of the 15 Pacific island countries, the FSM ranks 11th for tourist arrivals. The holiday tourist market in FSM declined by 7.8% since 2009. The average occupancy rate in the 32 mostly 2–3 star hotels was 43% in 2013, which consequently reduced employment in hotels and restaurants to 23% in 2007.

The dismal status can be attributed to limited air transport access into the FSM, the high cost of the service, and the single international service provider. In addition to access constraints, public infrastructure needs upgrading to ensure access, safety, and convenience of visitors. These include roads, jetties, wharves, airport facilities, telecommunications, internet connectivity, waste management, and health and medical services. The tourism workforce is also ill-equipped due to the limited availability of tourism-related courses.

The business enabling environment is challenging. Securing long-term leases is difficult; coordination among states and the private sector on common tourism issues, such as inadequate tourism marketing, is insufficient; and tourism destinations are deteriorating and diversified tourism products are lacking.

Given this scenario, the Government of the FSM sought assistance from the Asian Development Bank (ADB) to develop a national tourism policy and state government tourism investment plans.

The proposed FSM National Tourism Policy, which was developed in a highly participatory manner, intends to “halt the decline in visitor arrivals over the next 3 years, then to progressively develop the FSM tourism sector to become a leading sustainable tourism destination by 2023.”

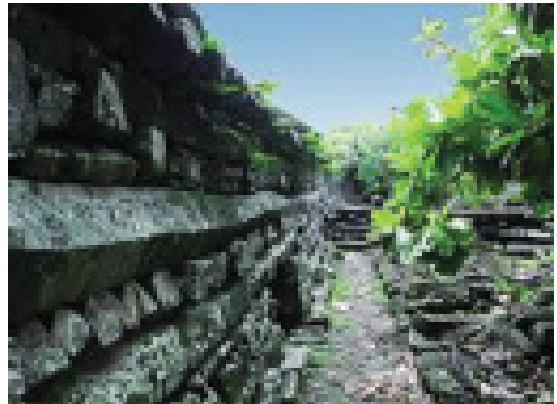
The policy aims to reform the tourism industry through the following policy statements and goals:

Policy statement 1: Provide more effective governance and institutional strengthening to support the growth of the FSM tourism sector through a public–private partnership approach.

Goal 1: Provide more effective governance by restructuring the institutional arrangements to provide more resources and a higher priority for national and state tourism sector planning, organization, coordination, management, promotion, and administration.

- Policy statement 2:** Increase public and private investment to develop the FSM tourism sector.
- Goal 2:** Implement adequate and timely public infrastructure investment and encourage both domestic and foreign private investment to support tourism development, particularly for small- and medium-sized enterprises.
- Policy statement 3:** Improve the overall quality of FSM tourism services by focusing more on human resources capacity development.
- Goal 3:** Strengthen and expand appropriate human resource capacity development through increased and better coordinated tourism training and education programs, public awareness campaigns, and job opportunities.
- Policy statement 4:** Expand tourism product development to increase visitors' length of stay and spending, add value, increase yield, and develop niche market opportunities.
- Goal 4:** Facilitate new sustainable tourism product development and the upgrading of existing products to follow sustainable tourism principles and to continually diversify and differentiate the range of facilities, attractions, activities, and experiences available to FSM visitors.
- Policy statement 5:** Target a more realistic increase in tourist arrivals over the next 3–5 years through more effective destination marketing programs.
- Goal 5:** Establish a new national tourism authority and in conjunction with each of the FSM state visitors' bureaus, develop and implement a national tourism marketing plan that promotes a national brand based on each of the four FSM states as part of a diversified, multiproduct, international destination.
- Policy statement 6:** Make FSM more internationally competitive by improving industry quality standards for sustainable tourism development.
- Goal 6:** Implement improvements in tourism industry quality standards based on sustainable tourism principles and environmentally friendly development guidelines and management practices.

This report presents details of these policy statements and goals, which were translated into an action plan that contains objectives, timing of implementation, lead agencies responsible, and performance indicators. The national and state governments need to strengthen collaboration to effectively implement the national tourism policy. The proposed state-level tourism investment projects to initiate immediate sector reform are contained in Volume 2.



Nan Madol Ruins

Introduction

1. In anticipation of financial independence from the United States (US) by 2023, the Federated States of Micronesia (FSM) has prompted the national and state governments to hasten the development of tourism as a key driver of economic growth.
2. While the country is one of Micronesia's tourist destinations and is naturally endowed with water-based, cultural, and environmental tourism attractions, as well as multiple destinations for recreational activities, it faces several institutional, political, social, cultural, and economic challenges. In this regard, the government formulated a National Tourism Policy with assistance from the Asian Development Bank (ADB). ADB engaged local and international experts from Development Strategists International Consulting and AEC Group.
3. The National Tourism Policy espouses the vision for sustainable tourism development. Its implementation framework, 2015–2020 action plan consists of policy areas, statements, and strategic goals. It also aims to set out the role that tourism plays in increasing the country's revenues, employment, and ensure sound implementation to minimize or eradicate the negative impacts of tourism.
4. The development of the National Tourism Policy was based on an in-depth analysis of the tourism sector, stakeholder participation, and literature review of previous FSM tourism plans and strategies. A highly participatory process between July 2014 and March 2015 provided stakeholder feedback from 150 consultations, workshops in each state, and several Project Steering Committee meetings with representatives from national and state governments. All hotels, other tourist facilities, attractions, and potential project sites were also visited.

Part 1



Strategic Issues¹



Country Context

5. The FSM's geographically unique location between the Philippines and Hawaii is sufficient to make it a tourist attraction. Its four states consist of 607 small islands of which only 65 are inhabited. Though the total land area is small, at 270.8 square miles, the islands are a haven for tourists. Numerous atolls allow scuba diving in coral reefs and wrecks, surfing, and fishing tours. Its rich history, biodiversity, culture, tropical climate, and multiple tourism for adventure, agriculture, community-based and cruise complement as major tourist spots. Its natural, cultural, and heritage attractions therefore warrant the development of the tourism sector.
6. However, the physical isolation of the country from major commercial markets and the distances between the four island states pose particular transportation access challenges. In addition to its small land area, the FSM has a very small economy, sparse population, and a narrow resource base, which create diseconomies of scale. Economic opportunities, institutional capacities, and access to finance are also limited. The country is very vulnerable to external (global) financial shocks and natural disasters.²
7. These characteristics add enormous difficulties for state and national governments in coordinating tourism development, undertaking reforms, and using development partner funding. Adding to these difficulties, tourists may confuse FSM with Micronesia, which consists of Kiribati, the Marshall Islands, the FSM, Nauru, and Palau.

¹ The full report on FSM Tourism Assessment is available upon request.

² ADB. 2012. *Federated States of Micronesia Fact Sheet*. Manila.

8. Various strategies and plans have tried to address these concerns. They include the Pacific Regional Tourism Strategy, 2015–2019³; the FSM National Tourism Development Strategy, 2015–2019⁴; the FSM National Strategic Development Plan, 2004⁵; the Pohnpei Strategic Development Plan, 2014–2023 and Beyond⁶; the Kosrae Strategic Development Plan, 2014–2023⁷; the Yap Five-Year Tourism Development Plan, 2013–2017; and FSM National Tourism Marketing Plan, 2002. Though all these strategies and plans are in place, a more holistic and concerted approach is needed to develop FSM tourism.

FSM Tourism Sector Profile

Tourism Arrivals and Destination

10. FSM ranked 11th of 15 Pacific island countries for tourist arrivals in 2013 (Table 1). The trend in FSM visitor arrivals saw some sharp declines in the late 1990s and early 2000s, and a steady growth between 2002 and 2008 followed again by a sharp decline up to 2012. The peak years of 2007–2008 were the result of strong growth in the business and seafarer traffic as well as a slight uptick in tourist arrivals (Figure 1).

Table 1: Tourist arrivals to Pacific destinations 2013

Destination	Tourist Arrivals	Ranking	% Growth from 2012	Ave. Annual 5-yr Growth Rate (since '09)
Cook Islands	121,237	5	(0.9)	5.1
Fiji	657,706	1	(0.4)	2.7
French Polynesia	164,393	3	(2.7)	(3.1)
Kiribati	4,981	13	1.5	5.6
Marshall Islands	4,601	14	0.2	(4.9)
FSM	12,714	11	1.2	(4.6)
New Caledonia	107,753	7	(4.0)	1
Niue	5,129	12	1.6	3
Papua New Guinea	175,524	2	3.3	8
Samoa	124,579	4	(7.4)	0.5
Solomon Islands	24,431	10	2.1	8.6
Tonga	50,191	9	2.4	0.1
Tuvalu	1,302	15	20	(2.2)
Vanuatu	110,109	6	1.8	4.2
Total	1,551,936		(0.9)	2.2
For Comparison				
Guam	1,334,497			
Palau	105,066	8		

Source: SPTO. 2013. *SPTO Annual Report*. Suva.

Note: Data for Nauru, American Samoa, and Timor Leste are not available.

11. The total number of tourists and visitors visiting FSM in 2013 was 12,714 compared to 16,058 in 1997, representing an average annual decline of 1.4% (Figure 1). The drop in numbers runs contrary to global and regional positive growth trends in visitor arrivals.⁸

³ South Pacific Tourism Organization (SPTO). 2014. *Pacific Regional Tourism Strategy 2015-2019*. Suva.

⁴ SPTO. 2014b. *FSM National Tourism Development Strategy 2015-2019*. Suva.

⁵ Federated States of Micronesia. 2004. *The Next 20 Years: Achieving Economic Growth and Self Reliance. Volume I: Policies and Strategies for Development*. Palikir, Pohnpei.

⁶ Pohnpei State Government. 2013. *Pohnpei Strategic Development Plan—Planning for Pohnpei’s Sustainable Future: 2023 and Beyond*. Palikir, Pohnpei.

⁷ Kosrae State Government, Division of Economic Planning. 2013. *Kosrae Strategic Development Plan 2014-2023*. Tofol, Kosrae.

⁸ Ascertaining the figures for actual tourist arrivals in FSM is difficult in the absence of a systematic data collection procedure. The arrival card that visitors use for immigration purposes only provides options for “tourism and visitors”, “employment” or “others” under the category “purpose of visit”. Hence, the category “tourism and visitors” creates confusion but officially used to describe the purpose of visit for temporary visitors.

Figure 1: FSM Annual Tourist and Visitor Arrivals, 1997-2013



Source: Government of the Federated States of Micronesia, Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management (SBOC). 2014. *2013 Visitor Arrival Data*. Palikir, Pohnpei.

12. The estimated number of visits in FSM solely for holiday purposes declined by 7.8% during 2009–2013 (Table 2). All states showed a decline but the smaller states of Yap and Kosrae suffered major declines of 17.9% and 14.1%, respectively, mainly due to decreased airline schedules in these islands. Chuuk, with its internationally recognized wreck diving, attracts the largest slice of the tourist market. Chuuk accounts for 51% of the total market share followed by Yap (28%), Pohnpei (18%), and Kosrae (5%) in 2013.⁹
13. With an average occupancy rate of 43%, business at the FMS's 32 hotels is poor. The contribution of hotels and restaurants to GDP declined by 3.4% in fiscal year (FY) 2013. Hotels in Pohnpei cater primarily to visitors who come for business and employment rather than to tourists.

Table 2: Visitor Arrivals by Purpose and Market Share (%)

Purpose	2006	2007	2008	2009	2010	2011	2012	2013	Market (%)
Tourism and Visitors	15,662	16,048	15,813	13,334	13,727	12,625	12,565	12,714	62.8
Business and Employment	5,557	6,307	5,347	5,074	5,770	6,247	5,771	5,852	28.9
Volunteer, Religious	668	657	526	507	747	622	681	663	3.3
Seamen and Crew	523	812	678	2,381	1,126	866	838	1,009	4.9
Not Specified	-	194	2,304	3,177	3,052	202	36	13	0.06
Total	22,410	24,018	24,667	24,473	24,422	20,565	19,891	20,251	100%

Source: FSM Department of SBOC. 2014. *2013 Visitor Arrival Data*. Palikir, Pohnpei.

⁹ Based on FSM Division of Immigration and Labor figures estimating actual tourist arrivals.

14. The decline in tourist arrivals was affected by limited local product development, lack of government support, limited promotion campaigns, substandard accommodation and service quality, and reduction in air services.

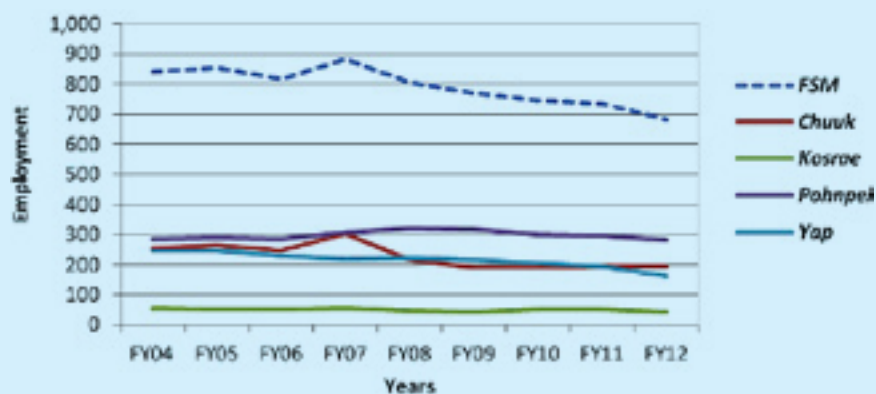
Employment

15. Employment in hotels and restaurants by the four states has declined since 2004 despite the exponential growth in regional and international tourism over the same period. The tourism workforce includes those who are employed in the hotel and resorts; restaurants and bars; state visitors bureaus; retail and wholesale enterprises; handicraft and souvenir shops; tour operators; nature and eco-based activities, including diving, airlines, aviation, immigration; and tourist support businesses and activities. Total employment in FSM hotels and restaurants declined by 19% from 841 in 2004 to 681 in 2012 (Figure 2). This is equivalent to 1% of total national employment in 2012.

Visitor Profiles

16. Tourists and visitors from the US consistently dominated arrivals during 2006–2013, accounting for 36.2% of the total in 2013 (Table 3). Other major source markets were Japan (20%), Europe (15%), and other Pacific Islands (9%). However, visitors from the US have declined significantly compared to the levels reached in mid-2000s. The Japanese market has remained stagnant while the European market has declined overall. The decline in tourist arrivals may be attributed to the Asian currency crisis of 1997, the New York City 9/11 attacks, 2008 global financial crisis, the reduction of air services, and the limitation in air access from major source markets.
17. Visitors from the US dominate tourist arrivals in all states except Chuuk. Visitors to Chuuk are evenly divided between US (27.4%) and Japan (27.9%), and the state attracts the largest slice of the Australian market (13.6%), all reflecting the draw of niche diving. Kosrae attracts the largest share of other Pacific Islanders, possibly indicating a church-based niche market, while Yap has the largest share of the European market (Table 4).

Figure 2: FSM and States Hotels and Restaurant Employment, 2004-2012



Source: Government of the Federated States of Micronesia, Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management (SBOC). 2014. 2013 Visitor Arrival Data. Palikir, Pohnpei.

Table 3: Tourists and Visitor Arrivals by Country of Origin and Market Share, 2006-2013

Origin	2006	2007	2008	2009	2010	2011	2012	2013	Market Share (%)
Other Asia	671	912	137	122	801	674	635	690	5.4
Australia	901	989	2,231	1,379	952	867	991	907	7.1
China	193	306	374	212	313	217	202	246	1.9
Europe	2,581	2,462	2,359	1,507	1,694	1,543	1,709	1,893	14.9
Japan	3,126	3,690	2,547	2,473	2,539	2,467	2,567	2,544	20
Pacific Islands	654	592	697	824	734	1,192	1,048	1,108	8.7
Philippines	403	321	305	788	471	268	226	246	1.9
USA	6,787	6,415	6,208	5,010	5,748	4,944	4,550	4,601	36.2
Other	364	515	1,201	980	560	450	492	479	3.7
Total	15,662	16,048	15,813	13,334	13,727	12,625	12,565	12,714	100.0

Source: Government of the Federated States of Micronesia, Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management (SBOC). 2014. *2013 Visitor Arrival Data*. Palikir, Pohnpei.

Table 4: Main Source Markets by Market Share by State and Overall, 2013 (%)

State	United States	Japan	Europe	Pacific Islands	Australia
FSM	36.2	20	14.9	8.7	7.1
Kosrae	36.9	17.5	6.3	25.9	4.2
Pohnpei	39.7	20.8	8.1	10.5	5.2
Chuuk	27.4	27.9	15.2	4.2	13.6
Yap	43.7	10.5	20.2	6.4	4.3

Source: Federated States of Micronesia Department of Justice, Division of Immigration and Labor. 2013. *Annual International Visitor Arrivals on Non-FSM Citizens by Purpose of Visit, FSM 2008-2013*. Palikir, Pohnpei.

Institutional and Regulatory Environment

18. Each state has its own government, legislature, language, and identity. Hence, in developing the country's tourism, it is necessary to deal with five governments: the national government and the four separate state governments.
19. The FSM Constitution provides for three separate branches of government at the national level—executive, legislative, and

judicial. It contains a Declaration of Rights similar to the US Bill of Rights, specifying basic standards of human rights consistent with international norms. It also contains a provision to protect traditional rights which retain the traditional system governed by municipal councils; traditional village councils and village chiefs.

20. Each inhabited island is divided into municipalities, villages (sections of municipalities), and farmsteads (smallest landholding unit in a village). Special importance is attached to land in FSM because arable land is scarce and land has traditional cultural importance. Families or clans hold many parcels of land. Access to many tourist sites including beaches, lagoons, reefs, forests, and historical and cultural attractions is controlled by village chiefs or land-owning families. Visitors are often only able to access these tourist sites by paying a tithe to the traditional landowners. Sometimes, in order to visit a particular historical site, visitors must make several payments to different customary landowners. Better land use and tourism management arrangements between the landowners and tourism authorities are therefore required.
21. The Tourism Unit in the Department of Resources and Development manages the tourism industry at the national level while each state has its own state visitors bureau or tourism office in the case of Pohnpei. The overall structure of the tourism industry is weak and fragmented, reflecting its inability to organize itself particularly at the national level. This needs to be strengthened to counter the 15-year decline in tourist arrivals and to upgrade the apparent poor state of the industry's products and service.
22. Each inhabited island is divided into municipalities, villages (sections of municipalities), and farmsteads (smallest landholding unit in a village). Special importance is attached to land in FSM because arable land is scarce and land has traditional cultural importance. Families or clans hold many parcels of land. Access to many tourist sites including beaches, lagoons, reefs, forests, and historical and cultural attractions is controlled by village chiefs or land-owning families. Visitors are often only able to access these tourist sites by paying a tithe to the traditional landowners. Sometimes, in order to visit a particular historical site, visitors must make several payments to different customary landowners. Better land use and tourism management arrangements between the landowners and tourism authorities are therefore required.
23. FSM is heavily reliant on aid through the Compact and US Federal grants, which are estimated at \$100 million annually (31% of GDP). It has a very narrow productive economic base that is limited to fisheries, agriculture, and tourism. The public sector dominates the FSM economy, contributing 40% of GDP in 2012. The private sector accounts for 20% and household consumption (supported by annual remittances) 30%.¹¹
24. The US Compact and grants dominate GDP through transfers supporting the public and private sectors as well as household income and expenditure. The country's real productive economy under the control of the private sector is underdeveloped and insufficient to support employment or inject adequate government revenues to sustain the country's oversized public sector. In short, the level of Compact grants received directly shapes the FSM economy and keeps it afloat.
25. From FY2009 to FY2012, the FSM economy grew on the back of infrastructure spending related to the Amended Compact infrastructure grants and Federal Airports Association financed airport upgrades in the four states. In FY2013, the economy experienced a 4% decline in real GDP (Table 5). The main contributors to the decline were the fishing and the construction industry, which contracted by 25.9% in the same year. In addition to Federal Airports Association funded projects drawing to a close, the economy has felt the adverse impact of a resolution taken by the Joint Economic Management Committee in August 2011 to freeze any new infrastructure grant projects.

Economic Environment

22. ADB classifies FSM as a fragile state because of its frail economy, cumbersome government system, aid dependency, and limited resources to sustain its development.¹⁰ Against this backdrop, the country's biggest challenge is to achieve sustainable levels of economic growth to support its aspiration

¹⁰ ADB. 2014. *Asian Development Bank and Federated States of Micronesia-Fact Sheet*. Manila.

¹¹ International Monetary Fund. 2012. *Economic Outlook*. Washington. D.C.

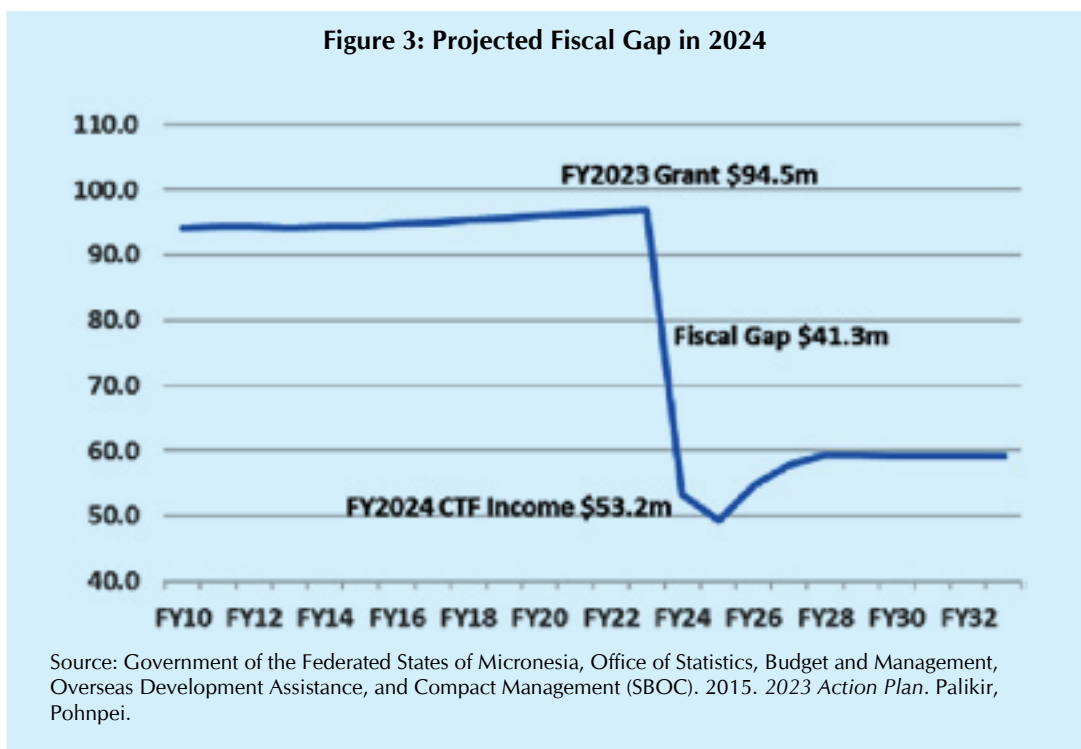
Table 5: Real GDP Growth by Sector (%)

Sector/Subsector	2008	2009	2010	2011	2012	2013
Agriculture, Hunting and Forestry	(0.8)	0.0	0.7	1.7	1.1	0.8
Fisheries	0.8	(2.3)	1.9	7.7	12.5	(14.7)
Manufacturing	1.6	1.0	5.6	1.8	(11.0)	(15.2)
Electricity, Gas and Water Supply	(8.4)	4.9	(0.1)	(5.4)	5.1	2.1
Construction	27.9	60.4	26.6	18.0	(2.7)	(25.9)
Wholesale and Retail Trade and Repairs	(1.3)	(6.4)	3.8	(1.5)	(6.7)	(3.9)
Hotels and Restaurants	(8.4)	(11.0)	(3.2)	(1.7)	(1.8)	(3.4)
Transport, Storage and Communications	(14.3)	0.3	(2.1)	(1.3)	(0.4)	3.7
Financial Intermediation	(10.1)	(18.2)	5.9	5.5	1.1	(5.4)
Real Estate, Renting, Business Activities	(1.1)	(0.1)	2.9	2.2	2.8	1.5
Public Administration	(8.3)	(1.0)	5.3	1.1	0.0	0.0
Education	(0.1)	1.6	(2.1)	(2.4)	(3.4)	(3.1)
Health and Social Work	5.5	2.7	6.4	1.5	3.4	0.5
Other Community, Social, Personal Services	1.0	(2.3)	5.7	(0.6)	(8.5)	2.0
Total GDP	(2.5)	1.0	3.2	1.8	0.1	(4.0)

Source: Government of the Federated States of Micronesia, Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management (SBOC). 2014b. *2013 Visitor Arrival Data*. Palikir, Pohnpei.

26. Fisheries real GDP declined by 14.7% in FY2013 following 3 years of solid growth. This was the result of two of the main fishing companies—Yap Diving Seagull and the Caroline Fisheries Agency—dry docking vessels for a considerable period during the year.
27. In FY2013, the FSM experienced a significant decline in exports from \$44.5 million in 2012 to \$32.8 million in 2013. This was driven by a \$12 million decrease in the export of fish, and was the first year of decline in fish exports since 2009. Fish exports dropped to \$28.3 million in 2013 because of the dry docking of vessels by the two fishing companies. Exports of agriculture goods declined from \$4.4 million in FY2012 to \$3.9 million in FY2013.
28. Hotels and restaurants continued their downward trend with a 3.4% decline in real GDP in FY2013. This was the sixth year the previous 7 years that had seen negative growth in this industry.
29. In 2009, high food and fuel import prices hiked up domestic prices to a peak of 7.8%. Inflation has since moderated and is estimated at 2.0% in 2014 with a projected 1.5% in 2015.

30. During the Amended Compact period, real per capita income rose by one-third from \$2,262 in 2004 to \$3,034 in 2013. However, this increase was mainly due to a 2% contraction in the national population from 105,846 in 2004 to 103,679 in 2013. The overall weak economic performance has also been accompanied by a loss of 1,215 jobs or 7.4% of those employed.
31. The US and the FSM negotiated a second (amended) Compact agreement in 2002–2003 that took effect in 2004. The amended Compact runs for 20 years during which the US will provide about \$2.1 billion or \$80 million per year to the FSM. This funding is not technically classified as foreign aid, but used to cover operational costs (mainly salaries), sector development (particularly education and health) and infrastructure investment, and is included in GDP. The Amended Compact also includes a compact trust fund (CTF) for the people of the FSM.
32. From 2024, the Amended Compact grants will be replaced by investment income from the CTF. This will also be in the form of tagged budget support under the same conditions as the Amended Compact grants. The fiscal challenge stems from the CTF's initial poor performance and inadequate structure. The CTF will not generate sufficient investment returns to replace Amended Compact grants. The projected fiscal gap is \$41.3 million resulting from replacing US Compact grants with CTF income in FY2024 (Figure 3).



33. In this context, the tourism sector is seen not only as a key sector to achieve economic development but also as a possible savior in helping to plug the expected fiscal gap. A resolution is being proposed to Joint Economic Management Committee for the \$30 million unspent sector grant money from earlier years to be used on private sector development projects, with priority to be given to tourism projects.
34. Sector grants in infrastructure and the environment will also have a significant impact on sustainable tourism development in the FSM. The Joint Economic Management Committee froze all new infrastructure projects spending in August 2011 in order for the FSM to update its Infrastructure Development Plan. Many of these infrastructure projects are relevant to tourism development in each of the states. These infrastructures could be considered for funding following the update of the Infrastructure Development Plan.
35. foreign investments, except in the areas of deep ocean fishing, banking, insurance, air travel, and international shipping, which are regulated at the federal level.
37. While the government of FSM publicly expresses interest in finding ways to increase foreign investments, all four states remain somewhat cautious. Past policies and regulations for foreign investment applications required time-consuming, case-by-case review, in which there is limited transparency. This approach arose from a desire to protect local jobs, business opportunities, incomes, and resources. Policy reforms therefore need to be considered to promote FSM as an investment location. The state's foreign investment legislation should consider ways to promote investment in tourism and remove potential risks and uncertainties to foreign investors.
38. Land ownership and leasing issues also limit foreign investment for tourism. Foreign ownership of land is prohibited, and much of the land is owned and passed on within the clan structure. This situation leads to conflicting title claims, the need to negotiate leases with multiple parties, and the possibility of dramatic changes when the original senior lessor dies. There is no system for land title insurance as well.

Investment Climate for Tourism

35. The US 5-Year Review of the Compact of Free Association noted that the potential for private sector development sufficient to support a growing economy during the Amended Compact period (2004–2023) depends on an improved environment for domestic and foreign investment in the FSM.¹²
36. Currently, there is considerable variability across the four states on policy and infrastructure affecting investment decisions. The individual states directly regulate all
39. Assessment of large projects is being done by state governments on a case-by-case basis. Tourism development proposals may not be approved due to land issues related to surrounding landowners who are demanding compensation for access to right of way. While it is understandable that local communities would want to protect local interests and opportunities, this kind of issue bars quality investors, who are bringing their own capital, from investing. National and state governments should find ways to encourage communities and landowners to provide the land for tourism development.

¹² Government of the United States, Office of Insular Affairs, Department of the Interior. 2012. *Report to Congress on the First 5-Year Review of the Compact of Free Association with the Federated States of Micronesia*. Washington, D.C.

Strengths, Opportunities, Constraints, and Risks

40. An assessment of the FSM's current tourism status in terms of strengths, weaknesses, opportunities, and threats (Table 6) is crucial to the development of accurate and sound policies.
41. The national and state governments recognized tourism as the country's potential growth industries. Tourism development could contribute to cross-sector sustainable development, whereby development in other sectors contributes to and is enhanced by tourism sector growth. The opportunity for tourism growth lies with the FSM's highly diverse nature, rich cultural heritage, kind people, excellent surfing and diving points, and limited number of tourists. Its unique and less explored natural endowment is the country's competitive edge.
42. A number of limitations need to be addressed. Air transport into the FSM continues to act as the largest constraint for increasing tourism arrivals. Unreliable, infrequent, and expensive flights are the biggest disincentive for tourists. Except for Pohnpei, airport facilities and services need to improve. Poor roads, transport, hotel accommodation, water facilities such as for safe drinking and daily use, food availability, health risks, and climate change likewise affect the tourism sector and its potential. While the condition of each state's public infrastructure and tourism-related services vary, they need to expand to absorb the desired tourism growth. There are 32 hotels operating actively in FSM with a total of 509 rooms, at a mid-market average price of \$107 (including tax). An average occupancy rate of only 43% indicates low tourist interest and deters airlines from servicing the country. The time-consuming travel particularly from island-hopper arrangements is also a contributing factor to low tourist inflow. This also impacts employment in the tourism industry, discouraging students from taking tourism and hospitality courses. The lack of trained and skilled human resources could also be attributed to the limited program offerings in tourism at the College of Micronesia.
43. Coordination between the national government and the states, and the private sector on common issues such as standards, investment promotion, and destination marketing is weak. Land ownership can also affect the industry since people have rights over their property. The investment policies and the institutional systems could be enhanced to support the productive use of private lands for economic growth and to attract private investment. The FSM lacks local products that tourists can buy and will promote the country's pride. A more diversified range of tourism products and destinations is needed.
44. The FSM can further deepen its existing cooperation with regional organization such as South Pacific Tourism Organization and partnership with tour operators abroad. The People's Republic of China, other Asian countries, and New Zealand are prospective markets that the FSM could tap in addition to existing source markets. Another potential emerging source market is the US military build-up in the neighboring island of Guam, where an expected 5,000 marines and their 1,300 dependents have relocated since 2012.
45. The FSM could also be promoted as a specialist holiday market. The country's numerous outer islands or atolls are extremely beautiful sites that can be explored and developed by providing access to those

Table 6: SWOT Analysis

STRENGTHS	WEAKNESSES
Tourism recognized as key economic industry by the national and state governments.	Limited and expensive international air links and domestic air services.
Diverse nature of states with outstanding cultural, water-based and ecotourism destinations.	Insufficient public infrastructure, services, and financial system.
Warm Pacific climates, isolation and exclusivity from island experience.	Lack of community awareness of tourism advantages.
	Lack of trained human resources (including tour guides and trained hotel staff).
	Deteriorating tourism destination and lack of diversified tourism products.
	Lack of coordination on business and trade investment opportunities including lack of private sector associations.
	Weak institutional set-up and regulatory environment, and limited coordination among states and between national government.
	Challenging business environment to secure long-term leases.
OPPORTUNITIES	THREATS/RISKS
Deepen cooperation with regional organizations and tour operators in major markets such as Japan.	Negative social and environmental impact
Revise private investment policies and guidelines for attracting potential investors.	Increased cost and unreliability of power generation.
Growing interest from Chinese tourists and other countries could be tapped.	Climate change issues--storms, sea level rise.
Growing interest in yacht market.	Continued labor migration (especially the younger generation, school leavers).
Develop island-hopper product.	Inappropriate metrics used to measure tourism performance.
Availability of undeveloped tourism destinations and products.	Continued uncertainty over Compact funding and the FSM economic future.
	Lack of enforcement of environmental standards.

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

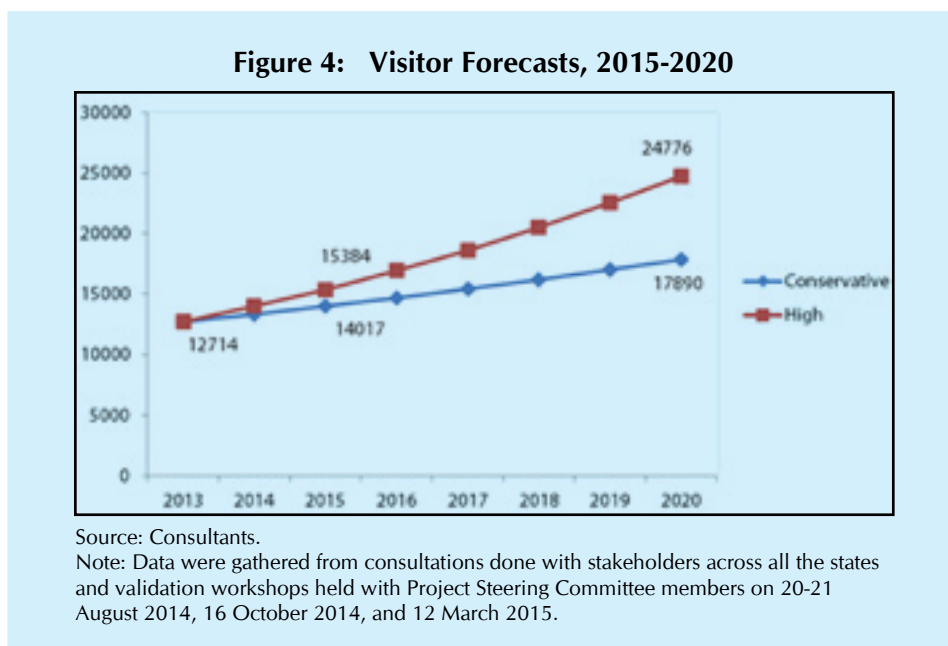
areas. The development of niche markets or one-town, one-product¹³ is a potential business opportunity. Yachting as an added feature of water-based activities is a great attraction. Regattas can also be held along with boating festivals. Since only the rich can afford these kinds of adventure and relaxation, high-end accommodation would need to be constructed by large hotel chains. Such new facilities would increase the country’s marketability as a tourist destination. Conferences and international events for water-based sports may be held in the country as well if facilities are improved.

- 46. With sustainable tourism as a guiding principle, the negative impacts of tourism may be reduced or avoided. The implementation of environmental standards and the rule of

law intended to minimize negative tourism impacts should be strengthened. The lack of tourism industry employees may be corrected if the sector becomes more attractive to potential workers, and jobs may ensue.

Growth Scenarios

- 47. With the low level of current arrivals, it would be realistic to assume a relatively small percentage increase in the short term. Figure 4 presents tourist and visitor forecasts for conservative and high-growth scenarios.¹⁴ The data assumes a 5% annual growth rate for the conservative scenario and 10% annual growth for the high-growth scenarios from 2015 to 2020. Under the 5% annual growth rate scenario,



¹³ Local entrepreneurship initiative promoting local product which could be superior per each town.

¹⁴ These growth targets are working assumptions, adopting the method used in the 2002 FSM National Marketing Plan (Travel Research International, 2002; 56–59).

which is considered more realistic and achievable, tourist and visitor arrivals would grow from 12,714 in 2013 to 14,017 in 2015 to 17,890 at the end of 2020. A 10% annual growth is still possible if there is a stronger global market supply of tourists and if the country were to double its efforts to immediately improve the quality of tourism destinations, infrastructure, and air access, and conduct aggressive international destination marketing. The growth in tourist and visitor arrivals will undoubtedly lead to increased employment, business incomes, and tax revenues for the national and state governments, and improvement in people's livelihoods and living standards.

48. As shown in Table 7, average visitor spending, regardless of origin, is expected at \$250 per day, based on an average stay of 5 days. Spending and the length of stay could still be increased if FSM successfully gears itself toward higher-end tourism, boosts its international marketing and branding, raises the international quality and competitiveness of its tourism products and service, and broadens the range of local tourism attractions and activities including historical and ecocultural tours.

Table 7: Projected Arrivals and Spending, 2015 and 2020

Parameter	Growth Scenario			
	Conservative		High	
	2015	2020	2015	2020
International arrivals	14,017	17,890	15,384	24,776
Average daily spend (\$)	250	250	250	250
Average length of stay (days)	5	5	5	5
Total visitor spend (\$)	17,521,250	22,362,500	19,230,000	30,970,000

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.



Part 2

The Way Forward



Vision Statement

49. After widespread consultation among stakeholders, the National Tourism Policy has adopted a vision that aims—

“To halt the decline in visitor arrivals over the next 3 years, then to progressively develop the FSM tourism sector to become a leading sustainable tourism destination by 2023.”

- adopt a low-volume, high-yield destination management strategy as the sector becomes more competitive and organized;
- adopt a multistakeholder sustainable tourism approach where all parties will protect natural and cultural resources; and
- develop and promote a responsible tourism destination that will help sustain natural and cultural resources.

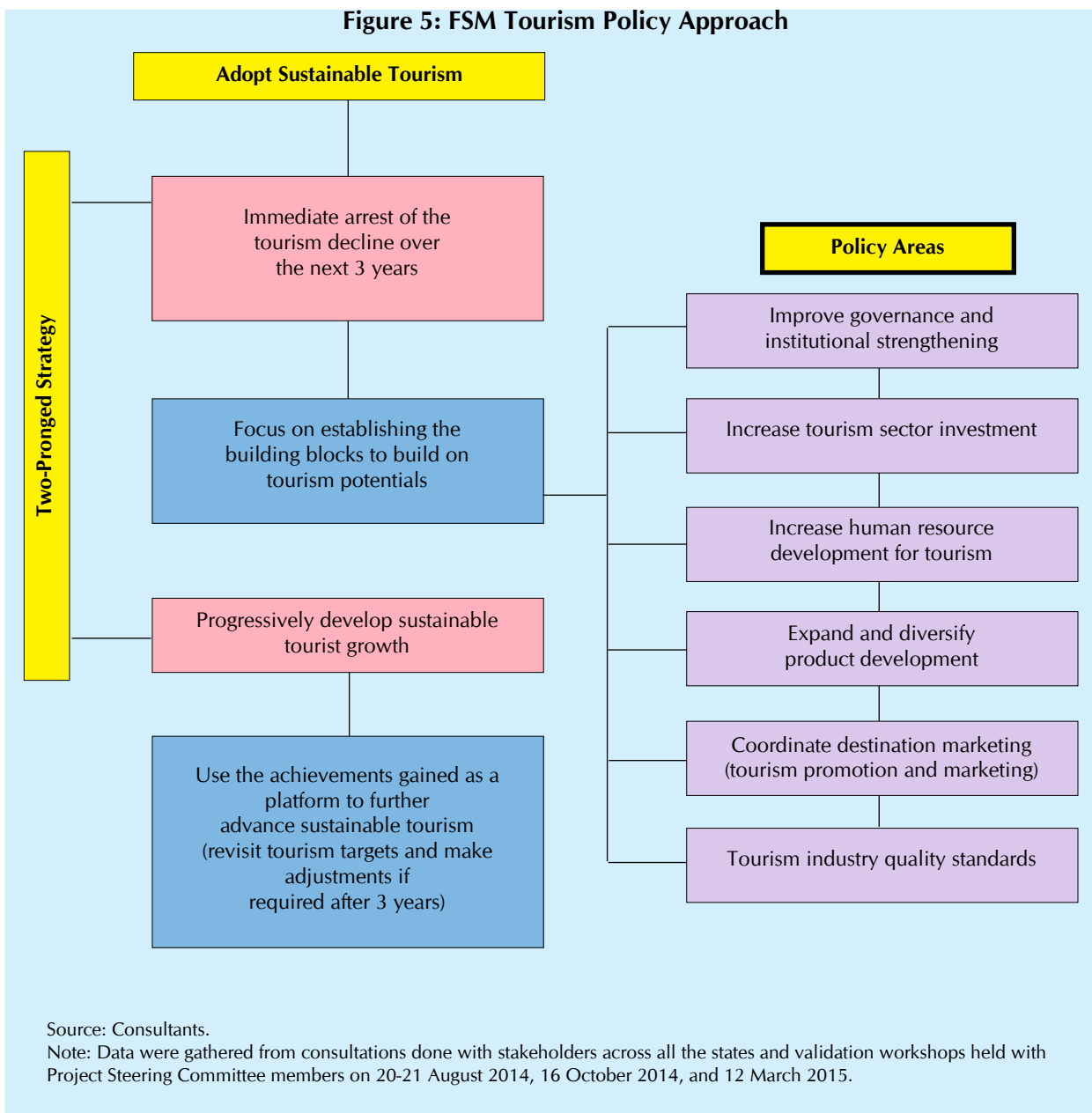
Guiding Principle

50. In realizing the vision, the National Tourism Policy is guided by the principle of sustainable tourism. This means that the tourism industry should take full account of its current and future economic, social, cultural, and environmental impacts, while addressing the needs of visitors, the tourism industry, the natural environment, and host communities. Sustainable tourism is also closely related to and reflects the values of other niche types of tourism like ecotourism, responsible tourism, ethical tourism, and pro-poor tourism. Specifically, the FSM will—

National Tourism Policy Approach

51. A two-pronged strategy serves as framework to improve tourism (Figure 5). The first part of the strategy is to put in place the building blocks and consolidate and reform the FSM’s tourism industry. The second prong is to use this platform to develop future sustained growth. Building blocks refer to the policy areas that need to be in place. These include governance and institutional strengthening, tourism sector investment, human resource development for tourism, product development, destination marketing (tourism promotion and marketing), and tourism industry quality standards.

Figure 5: FSM Tourism Policy Approach



National Tourism Policy, Goals and Objectives

52. Each of the key policies is written as statements with a goal to describe what is to be achieved and objectives to describe how

to achieve the goals. The objectives are more commonly referred to as the tasks that need to be undertaken to implement the National Tourism Policy (Table 8).

Table 8: Policy Statements, Goals and Objectives

Policy 1: Provide more effective governance and institutional strengthening to support and grow the Federated States of Micronesia (FSM) tourism sector through a public-private partnership approach.

Strategic Goal: Provide more effective governance by restructuring the institutional arrangements to provide more resources and a higher priority for national and state tourism sector planning, organization, coordination, management, promotion, and administration.

Objectives:

1. Adopt and implement the National Tourism Policy in accordance with sustainable tourism principles and management practices.
2. Adopt, implement, and support the state tourism investment plans that link with and support the principles of the National Tourism Policy.
3. Upgrade and refocus the role of the National Department of Resources and Development Tourism Division with adequate staff and other resources.
4. Implement the new Institutional Framework and organizational restructure to allow national and state governments, private sector operators, and other key stakeholders to work in partnership.
5. Provide an annual tourism budget to adequately fund and resource the Department of Resources and Development Tourism Division and each of the state visitors bureaus.
6. Organize and conduct a National Annual Tourism Conference to be hosted by each state in rotation, for the benefit of FSM tourism industry stakeholders to network, receive updated information, and review the National Tourism Policy.
7. Ensure that tourism sector development is integrated into all national economic planning, investment, and development.
8. Encourage states to consult with their local communities, and traditional and church leaders in relation to tourism development policies, plans, and projects.

Policy 2: Increase public and private investment to develop the FSM tourism sector.

Strategic Goal: Implement adequate and timely public infrastructure investment and encourage both domestic and foreign private investment to support tourism development, particularly for small- and medium-sized enterprises.

Objectives:

1. Ensure each state's foreign investment legislation is consistent with the National Tourism Policy principles.
2. Develop an incentive package and easier processing to encourage more investment in the tourism sector.
3. Develop and distribute sustainable tourism project development guidelines and criteria to assist the private sector in preparing project proposals.
4. Ensure collaboration between national and state governments in identifying tourism investment opportunities.
5. Submit project profiles to be issued to the investment, financing, and funding communities, both locally and internationally.
6. Prioritize investments to support the infrastructure required for international and domestic airline access and services.
7. Upgrade and improve the domestic airline services for improved access between states and to better service the outer islands.
8. Assess, monitor, and factor-in tourism development needs when planning and implementing public infrastructure projects, including roads, bridges, wharves, and airports.

Policy 3: Improve the overall quality of FSM tourism services by focusing more on human resources capacity development.

Strategic Goal: Strengthen and expand appropriate human resource capacity development through increased and better-coordinated tourism training and education programs, public awareness campaigns, and increased job opportunities.

Objectives:

1. Organize and implement a tourism public awareness campaign to increase understanding; inform; and promote tourism issues, opportunities, and benefits particularly for local communities.
2. Undertake an annual training needs and gap analysis for state visitors bureaus to identify where the industry training needs and skills are required.
3. Implement ongoing mobile, on-site, nontraditional training programs in all FSM states, particularly targeting the existing tourism and hospitality work force. Coordinate with other short-term training providers.
4. Strengthen the traditional hospitality and tourism management courses at the College of Micronesia-FSM, expand across all four FSM states and strengthen coordination and links with industry.
5. Develop tourism-related curriculum for primary and secondary schools to educate students about future job and career opportunities.
6. Implement customer service training programs throughout the FSM tourism industry.

Policy 4: Expand tourism product development to increase visitors' length of stay and spending, increase yield, add value, and take full advantage of niche market opportunities.

Strategic Goal: Facilitate the development of new sustainable tourism products and the upgrading of existing products to follow sustainable tourism principles and continually diversify and differentiate the range of facilities, attractions, activities, and experiences available to FSM visitors.

Objectives:

1. Build value and develop products that promote and strengthen the tourism sector's forward and backward linkages with local villages, industries, and suppliers to increase yield and add value.
2. Link and promote local traditional knowledge, expressions of culture, and traditional livelihood skills to the tourism industry; for example, by developing cultural centers and homestay programs.
3. Develop a tourism information system to meet tourist information needs, including promotional materials, guides, maps, and signs.
4. Undertake an inventory of tourism attractions to assess quality and access.
5. Identify and classify significant historical, natural, cultural, and heritage sites in urban, rural, island, and coastal areas to be developed as tourist attractions.
6. Develop guidelines for site management and development.
7. Undertake an inventory of the current accommodation room stock to assess quality and standards, and provide guidelines and incentives to renovate and upgrade these facilities.
8. Undertake an inventory of transport services and infrastructure to identify gaps and weaknesses, and provide guidelines and incentives for upgrading.

Policy 5: Target a more realistic increase in tourist arrivals over the next 3 to 5 years through more effective destination marketing programs.

Strategic Goal: Through the new National Tourism Marketing Authority and in conjunction with each of the FSM state visitors bureaus, develop and implement a national tourism marketing plan that promotes a national brand based on each of the four FSM states as part of a diversified, multiproduct international destination.

Objectives:

1. Support tourism policy, marketing, business, and investment planning; undertake and update market research in primary and secondary source markets by improving data collection from the visitor arrival surveys, conducting visitor exit surveys, annual accommodation surveys, and economic impact study.
2. In partnership with the private sector, develop an FSM branding strategy with logo, to position and sell the FSM destination as a specialized eco-adventure, dive-, nature-, culture- and heritage-based international tourism destination.
3. Target the identified niche markets of dive, heritage, culture, yachting, cruise expeditions, special events, meetings, conferences and exhibitions, special purpose, ecotourism, and volunteerism;
4. Develop a fresh and revised FSM tourism website, with booking capability, showcasing the four states' tourism products;
5. Develop financially feasible and cost-effective destination, product promotional campaigns, including trade shows.
6. Create, update, and manage electronic DVDs and photo library for destination and product promotion purposes.
7. Contract regional marketing representatives in Japan, Europe, and the US to coordinate FSM destination marketing in these key source markets.

Policy 6: Make FSM more internationally competitive by improving industry quality standards for sustainable tourism development.

Strategic Goal: Implement improvements in tourism industry quality standards, based on sustainable tourism principles, environmentally friendly development guidelines, and professional management practices.

Objectives:

1. Develop and implement an accreditation and licensing system for hotels, tourism operators, and tour guides.
2. Conduct an annual check on all occupational health and safety and maintenance standards for taxis, rental cars, boats, air transport, bicycles, motorbikes, tourist accommodation establishments, restaurants, bars, and tour guides.
3. Introduce a "Made in FSM" local produce certification scheme to promote the sale of local products to tourists and tourism suppliers.
4. In conjunction with the state environmental protection agencies, produce and distribute best practice environmental guidelines for tourism operators and potential investors.
5. Monitor quality standards and environmental impact assessments for tourist sites and establishments.
6. Guide state visitors bureaus and environmental protection agencies, in partnership with local communities, to maintain a healthy, attractive, tourist-friendly environment by conducting annual clean ups, antilittering campaigns, beautification campaigns, management of invasive species, and protection of terrestrial and marine species.
7. Develop and implement an environment-friendly mooring buoy network system for boats and yachts and promote collaboration between the relevant agencies and end users.

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.



Part 3

Liduduhniap Twin Waterfalls

Implementation and Monitoring



Implementation

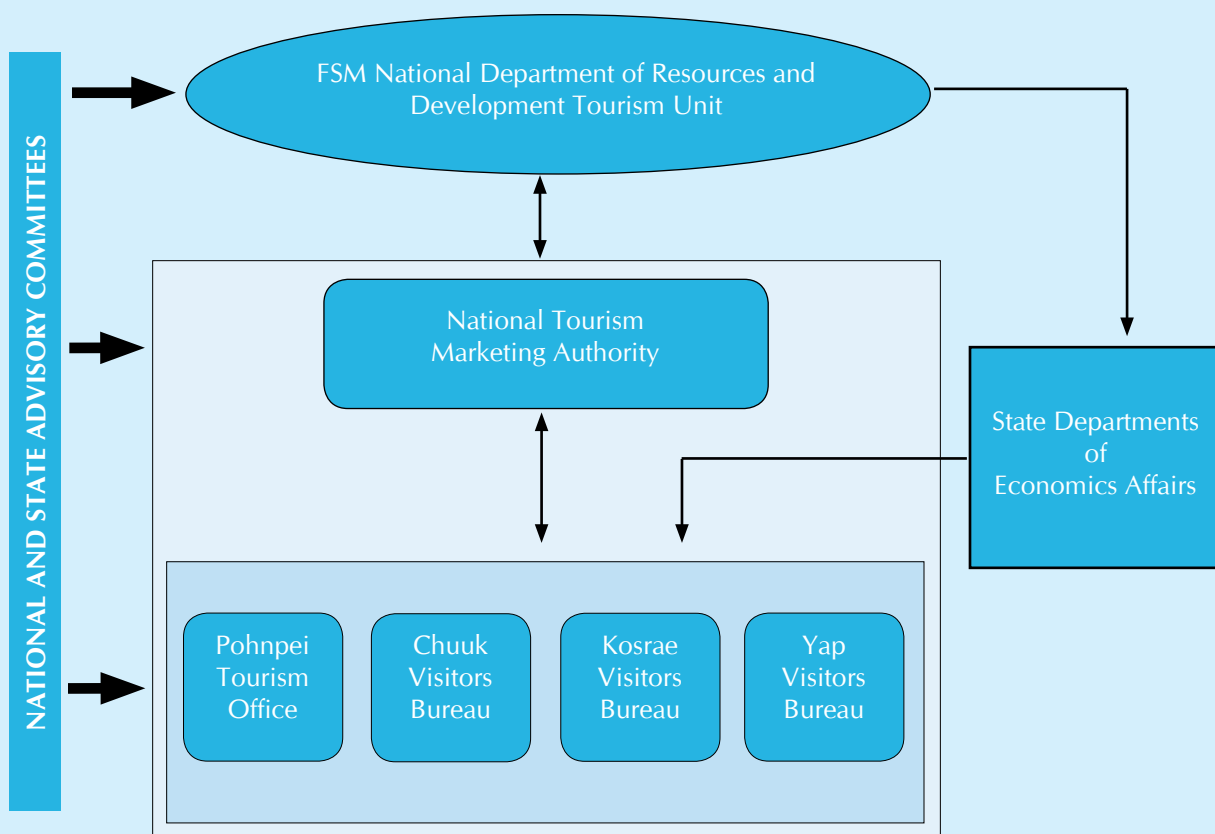
53. The implementation of the National Tourism Policy involves further strengthening of government focal agencies and a possible creation of new agencies or bodies to improve the institutional arrangements needed for tourism development. The National Tourism Unit at the Department of Resources and Development plays the major role in regulatory and policy creation and tourism investment promotion, while the Department of Economic Affairs (DEA) coordinates policy and tourism investment at the state level. The proposed National Tourism Marketing Authority or a similar body may be established to coordinate international destination marketing and promotion in partnership with the state visitors bureaus. A tourism advisory committee at the national and state levels, with representatives from other sectors including the private sector, could be setup, where such a committee does not exist at the state level. The tourism advisory committee will advise on how to make the tourism industry more competitive with strong and essential links with the development and growth of other sectors as well.

54. Figure 6 presents the proposed FSM Tourism Institutional Framework. The arrows show the direction of information flow. Sharing of information among focal agencies will ensure participatory decisionmaking and close coordination and enable a coherent, coordinated, and well-structured approach to tourism development.

Organizational Roles and Responsibilities

55. The roles and responsibilities of the national and state organizations and entities involved in the proposed FSM tourism institutional framework are as follows:
- a. **The Tourism Unit of the Department of Resources and Development** will provide leadership and policy guidance to steer the implementation of the National Tourism Policy. The department will be strengthened through a staffing increase to the extent that the national budget would allow. The department will—
 - coordinate the formulation and implementation of the national tourism policy in partnership with the four state governments,

Figure 6: Proposed FSM Tourism Institutional Framework



Approach:

- Expand the roles of existing institutions and consolidate functions where possible.
- May create National Tourism Marketing Authority at the national level with state visitors bureaus as counterparts at the state level.
- Strengthen the role of the Tourism Unit under the Department of Resources and Development.

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

the tourism industry, and other stakeholders, and other national government departments and agencies;

- oversee the role of the proposed National Tourism Marketing Authority or similar body to fulfill its mandate in partnership with the four states;
- coordinate with the Department of Education on the function of College of Micronesia–FSM to provide for and meet the training needs of the FSM tourism industry;

- coordinate with the four states on the development of tourism related infrastructure and private investment projects including the implementation of the state tourism investment plans;
- assist state visitors bureaus in promoting local tourism awareness among stakeholders and local communities;
- coordinate and promote assistance from international development agencies;

- establish and manage a national tourism website to include national tourism policy updates, tourism data, and statistics;
 - assist with the review of National Tourism Policy to strengthen national tourism-related investment laws and regulations;
 - prepare annual budget submissions for funding the Tourism Division operation as well as for national tourism programs and provide regular implementation reports; and
 - act as the secretariat to the proposed National Tourism Advisory Committee, organizing its meetings and administrative activities.
- b. The **National Tourism Advisory Committee** will provide strategic advice and knowledge on good practices in tourism. It will support decision making by tourism focal agencies and effective implementation of the National Tourism Policy. It will be comprised of representatives from the private sector and other key sectors at the national and state level. Operational funds will mostly be for meetings and coordination. These could be initially funded by the national budget and thereafter funding could be mobilized from the members. The committee will—
- advise the Department of Resources and Development Tourism Unit on the implementation and progress of the new National Tourism Policy, including advice and intelligence on global tourism and issues related to economic, social, and environmental impact of tourism;
 - provide an official forum to represent the state governments and the tourism industry stakeholders' views and inputs into the national government's tourism policy planning and implementation process; and
 - support the institutional links between the national government, the four states, the tourism industry stakeholders, and other sectors such as agriculture, marine and fisheries.
- c. The proposed **National Tourism Marketing Authority** or similar body could be considered to be established by the Government of the FSM. It would serve as the interface between all four states and the international tourism market. It would ensure a well-coordinated approach across all the states to market the FSM as a single destination. It would operate in partnership with regional tourism organizations, national and state governments, and private sector tourism operators. Initial funding could be drawn from Compact grants with the intention of establishing a mechanism to make the proposed body more self-funded. The authority will—
- lead and manage the FSM's international tourism marketing and promotion in coordination with the state visitors bureaus and tourism industry stakeholders;
 - foster collaboration, trust, and partnership among the tourism industry, private sector, and government stakeholders;
 - foster business links between national and international tourism-related enterprises;
 - mobilize resources and co-funding for international marketing and promotion of the tourism industry both nationally and internationally;
 - prepare and implement a national tourism marketing plan

- in collaboration with the four states, and develop and promote a national tourism brand with logo;
 - assist the existing state visitors bureaus on tourism and marketing; and
 - help the Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management (SBOC) collate, analyse, and disseminate tourism statistics and data and produce regular tourism industry reports for distribution to stakeholders.
- d. **The state visitors bureaus** will be further strengthened through skills and capacity building. It is envisaged to work in partnership with the proposed National Tourism Marketing Authority or similar body to coordinate marketing activities at the state level and to complement and support each other. The state visitors bureaus will—
- coordinate tourism marketing and promotion for each state, to be linked into the international tourism marketing and promotion programs;
 - coordinate and implement product development in conjunction with the Department of Resources and Development Tourism Unit and guided by the National Tourism Policy;
 - work with the proposed National Tourism Marketing Authority or similar body to set tourism marketing priorities and programs in conjunction with implementing the national tourism marketing plan at the state level;
 - promote state tourism industry collaboration and networking;
- promote local tourism awareness and community and stakeholders support;
 - foster collaboration, trust, and partnership between the tourism industry, the private sector, and the state governments;
 - liaise with the SBOC to disseminate tourism statistics and data and produce regular state tourism industry reports; and
 - participate in national development forums especially those related to tourism.
- e. **The Department for Economic Affairs** will be responsible for tourism planning, overseeing tourism investment projects, reviewing and implementing the National Tourism Policy at the state level in line with their own state tourism policy formulation. The DEA will—
- coordinate the translation and customization of the national tourism policy at the state level and ensure its effective implementation in partnership with the state tourism industry stakeholders;
 - coordinate with the state visitors bureaus the implementation of the state tourism marketing and product development priorities and plans;
 - review, improve, and streamline state tourism-related investment laws and regulations as part of investment promotion;
 - coordinate the planning and implementation of the state tourism investment projects; and
 - prepare annual budget submissions for the state tourism sector funding, including adequate budgets for the state visitors bureaus.

- f. **Tourism Advisory Committees** could be created at the state level where such a committee does not exist. The advisory committee will act as the advisory body on tourism issues that need to be considered in the overall FSM tourism approach. It will include membership from relevant government agencies and other sectors including the private sector. The committee will—
- advise the DEA on the implementation of the new National Tourism Policy including its proposed state tourism investment plans;
 - provide an official forum to represent the views and opinions of tourism industry stakeholders within each state and to provide inputs into the tourism policy, planning, and implementation process at the national and state levels;
 - provide the institutional link between the state government and the tourism industry stakeholders, representing private, public, community, and civil society and across different industry sectors; and
 - act as the channel for official communication flows between the state government and the state tourism industry stakeholders.

Capacity Development Requirements and Strategic Approaches

56. There is a need to build staff capacities and expand resources to meet the tourism sector's goals and objectives. Capacity development programs are proposed, focusing on tourism-related functions, management, planning, and budgeting (Table 8).

Activities to Facilitate National Tourism Policy Implementation

57. Some activities could be initiated to help facilitate the implementation of the National Tourism Policy sustainably.
- **Identify the priority tourism activities within states** to bring more resources to immediate sector needs.
 - **Raise tourism awareness** among key stakeholders, including community members, to promote concerted efforts to pursue tourism sector reforms. Education about tourism could be a venue to share cultures and create a supportive environment to grow tourist arrivals.
 - **Setup reliable market research** to set realistic targets for tourist arrivals and strengthen forward and backward local tourism industry links.
 - **Educate banks and financial institutions** to be more supportive to companies and businesses in the tourism industry.
 - **Link stakeholder partner organizations**, particularly those active in ecotourism, conservation, small business training, community development, and community awareness programs.
58. Table 9 presents the action plan for implementing the FSM National Tourism Policy. It includes the policy statements, objectives, timelines, lead agencies tasked to carry out the policy objectives, and performance indicators. Each state is expected to lead the implementation of the tasks to carry out the National Tourism Policy at the state level. The action plan will also serve as the monitoring and evaluation template to measure performance.

Table 8: Proposed Capacity Development Programs of Key Tourism Focal Agencies

Organization/Entity	Constraint	Capacity/Capability Development Solution
Department of Resources and Development Tourism Unit	<p>Limited staff and expertise in tourism policy planning, analysis, implementation and monitoring, project planning and implementation, IT and website management, database development, and liaising with the tourism private sector.</p> <p>Inadequate budgetary support</p>	<p>Recruit new professional staff with the right skill sets and experience, and train existing staff based on sector oversight requirements. Recruit external expertise initially, if necessary, to build local capacity. Technical assistance from development organizations could be maximized to improve human resource capacity in the Tourism Unit.</p> <p>Expand funding envelope for tourism from internal government resources or mobilize funding from development partners. Educate leaders on the value and benefits of tourism as one of FSM's economic growth sectors.</p>
State visitors bureaus	<p>Inadequate skills and expertise in tourism marketing and promotion, management, finance, and IT and website management to be able to effectively carry out their roles and responsibilities.</p> <p>Inadequate budgetary funding and technology to fully carry out their roles and responsibilities.</p>	<p>Provide in-house training for existing staff (either government initiated or with the support of regional tourism agencies). Hiring of new people who could mentor or train local counterparts may also be considered as a short-term solution.</p> <p>Ensure strategic planning and priority identification of bureau activities to facilitate provision of adequate funding in the annual state budget. Continue to advocate for political support and appreciation of the value and benefits of tourism in the economy.</p>
State departments responsible for economic affairs	<p>Limited expertise in tourism policy, planning, research, analysis and implementation, database development, project planning and management, and policy coordination with stakeholders.</p> <p>Lack of awareness and understanding of tourism potential gains and benefits.</p>	<p>Appoint a designated officer in the Department of Economic Affairs with qualifications in economics and tourism policy sector planning to be responsible for tourism sector development, or provide capacity building training to existing staff in line with the role of the department in tourism oversight.</p>

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

Table 9. FSM's Tourism Action Plan 2015-2020 (Priority objectives are shaded)

POLICY 1: Improved Governance and Institutional Strengthening			
Statement, Goals, and Objectives	Lead Agencies	Time Frame	Performance Indicators
Policy Statement: Provide more effective governance and institutional Strengthening to support and grow the FSM tourism sector through a PPP approach.	FSM Congress to approve and adopt, FSM R&D	Q1 to Q3 2016	Decree approved through legislation. PPP forged.
Strategic Goal: Provide more effective governance by restructuring the institutional arrangements to provide more resources and a higher priority for national and state tourism sector planning, organization, coordination, management, promotion, and administration.			
Objectives:			
1. Adopt and implement the NTP in accordance with sustainable tourism principles and management practices. ^a	FSM Congress to approve and adopt, FSM R&D Tourism Division, NTAC	Q4 2015 to Q1 2016; Ongoing	NTP adopted.
2. Adopt, implement, and support the state tourism investment plans that link with and support the principles of the National Tourism Policy. ^a	State DEA and SVBs, STAC	Q4 2015 to Q1 2016; Ongoing	Adopted and implemented state tourism investment plans.
3. Upgrade and refocus the role of the FSM R&D Tourism Division with adequate staff and other resources.	FSM R&D	Q4 2015 to Q2 2016	Upgraded and refocused role of R&D tourism division with appropriate staff and other resources.
4. Implement the new institutional framework and organizational restructure to allow national and state governments, private sector operators, and other key stakeholders to work in partnership.	FSM R&D with state governors' offices, DEA, and SVBs	Q1 to Q3 2016	New institutional framework implemented and operationalized.
5. Provide an annual tourism budget to adequately fund and resource the FSM R&D Tourism Division and each of the State Visitors Bureaus. ^{a, b}	FSM R&D, SBOC, NTAC, NTMA	Q3 2016; annually	Budget for tourism provided to SBVs and R&D.
6. Organize and conduct a National Annual Tourism Conference to be hosted by each state in rotation, for the benefit of FSM tourism industry stakeholders to network, receive updated information, and review the National Tourism Policy. ^a	FSM R&D Tourism Division, NTAC	Q2 2017; annually	Organized and conducted national annual tourism conference in each state to review NTP.

continued...

...Continuation of Policy 1

7. Ensure that tourism sector development is integrated into all national economic planning, investment, and development. ^a	FSM R&D, SBOC, DTC&I	Q1 2016; Ongoing	Tourism sector development included in national economic planning, investment, and development.
8. Encourage states to consult with their local communities, traditional and church leaders, in relation to tourism development policies, plans, and projects. ^{a, b}	State DEAs, SVBs, STAC	Q1 2016; annually	Engaged local stakeholders in tourism-related policies, plans, and projects.
POLICY 2: Increased Tourism Sector Investment			
Statement, Goals, and Objectives	Lead Agencies	Time Frame	Performance Indicators
Policy Statement: Increase public and private investment to develop the FSM tourism sector.	DTC&I with FSM R&D, state DEAs	Q1 2016; Ongoing	Invigorated PPP in various states.
Strategic Goal: Implement adequate and timely public infrastructure investment and encourage both domestic and foreign private investment to support tourism development, particularly for small and medium-sized enterprises.			
Objectives:			
1. Ensure that each state's foreign investment legislation is consistent with the NTP principles. Develop an incentive package and easier processing to encourage more investment into the tourism sector. ^a	FSM R&D, state DEAs, liaise with World Bank project	Q2 2016; Ongoing	Incentive package developed for investors. Investor-friendly policies in place.
2. Develop and distribute sustainable tourism project development guidelines and criteria to assist the private sector in preparing project proposals. ^a	FSM R&D and state DEAs	Q2 to Q4 2016	Sustainable tourism project development guidelines developed and distributed to prospective partners.

continued...

...Continuation of Policy 2

3. Ensure collaboration between national and state governments in identifying tourism investment opportunities. Submit project profiles to be issued to the investment, financing, and funding communities, both locally and internationally.	FSM R&D and state DEAs	Q1 2016; annually	Coordination system for identification of tourism investment opportunities established.
4. Prioritize investments to support the infrastructure required for international and domestic airline access and services. ^{a, b}	DTC&I, FSM R&D and state DEAs	Q1 to Q4 2016	Prioritized list of infrastructure investments developed.
5. Upgrade and improve the domestic airline services for improved access between states and to better service the outer Islands. ^{a, b}	DTC&I, state DEAs	Q1 to Q4 2016	Airline services scaled up both locally and internationally.
6. Assess, monitor, and factor in tourism development needs when planning and implementing public infrastructure projects, including roads, bridges, wharves, and airports.	DTC&I, state DEAs	Q1 2016; Ongoing	Monitoring and evaluation system developed as basis for new projects.

POLICY 3: Increased Human Resource Development for Tourism

Statement, Goals, and Objectives	Lead Agencies	Time Frame	Performance Indicators
Policy Statement: Improve the overall quality of FSM tourism services by focusing more on Human Resources Capacity Development	FSM R&D, CoM-FSM	Q1 2016; Ongoing	Comprehensive assessment completed and a national tourism human resource development strategy approved.
Strategic Goal: Strengthen and expand appropriate human resource capacity development through increased and better coordinated tourism training and education programs, public awareness campaigns, and increased job opportunities.			
Objectives:			
1. Organize and implement a tourism public awareness campaign to increase understanding, inform, and promote tourism issues, opportunities, and benefits particularly for local communities. ^{a, b}	FSM R&D, SVBs, NGOs, community based organizations	Q1 2016; annually	Public tourism awareness organized and implemented.

continued...

...Continuation of Policy 3

2. Undertake an annual training needs and gap analysis for SVBs to identify where the industry training needs and skills requirements. ^a	FSM R&D, CoM-FSM, NTAC, STAC	Q2 2016; annually	Training needs assessment of SVBs completed and gaps addressed.
3. Implement ongoing mobile, on-site, nontraditional training programs in all FSM states, particularly targeting the existing tourism and hospitality work force. Coordinate with other training providers. ^a	FSM R&D, CoM-FSM, FSMDB, SBDC, HPO, NGOs	Q2 2016; Ongoing	Nontraditional training programs on tourism implemented in collaboration with training providers.
4. Strengthen the traditional hospitality and tourism management courses at CoM-FSM, expand across all four FSM states and strengthen coordination and links with industry.	CoM-FSM, FSM R&D, NTAC, STAC	Q2 2016 to Q2 2017	Tourism management courses revised and linkages with industry systematized.
5. Develop tourism-related curriculum for primary and secondary schools to educate students about future job and career opportunities. ^a	National Dept. of Education, FSM R&D, CoM-FSM	Q2 2016 to Q2 2017	Tourism-related curriculum infused or integrated in primary and secondary schools.
6. Implement customer service training programs throughout the FSM tourism industry.	FSM R&D, SPTO, PATA, SBDC, CoM-FSM, NTAC	Q1 to Q4 2016	Training programs on customer service implemented.

POLICY 4: Expanded and Diversified Product Development

Statement, Goals, and Objectives	Lead Agencies	Time Frame	Performance Indicators
Policy Statement: Expand tourism product development to increase visitors' length of stay and spending, increase yield, add value, and take full advantage of niche market opportunities.	SVBs, STACs, FSM R&D,	Q1 2016; Ongoing	New local products developed and niche markets identified.

Strategic Goal: Facilitate the development of new sustainable tourism product and the upgrading of existing products to follow sustainable tourism principles and continually diversify and differentiate the range of facilities, attractions, activities, and experiences available to FSM visitors.

continued...

...Continuation of Policy 4

Objectives:			
1. Build value and develop products that promote and strengthen the tourism sector's forward and backward linkages with local villages, industries, and suppliers to increase yield and add value.	SVBs, NGOs, STACs	Q1 2016; Ongoing	One-town one-product identified and developed.
2. Link and promote local traditional knowledge, expressions of culture, and traditional livelihood skills to the tourism industry by developing cultural centers and homestay programs. ^a	SVBs, municipalities, villages, NGOs, STACs	Q1 2016; Ongoing	Cultural centers and homestay programs developed and established.
3. Develop a tourism information system to meet tourist information needs, including promotional materials, guides, maps, and signs. ^a	FSM R&D, SVBs	Q3 2016 to Q3 2017	Tourism information system developed and functional.
4. Undertake an inventory of tourism attractions to assess quality and access. Identify and classify significant historical, natural, cultural, and heritage sites in urban, rural, island and coastal areas to be developed as tourist attractions. Develop guidelines for site management and development. ^a	FSM R&D, SVBs	Q3 2016 to Q3 2017	Inventory of duly classified tourism attractions conducted and guidelines for site management developed.
5. Undertake an inventory of the current accommodation room stock to assess quality and standards; provide guidelines and incentives to renovate and upgrade these facilities. ^{a, b}	FSM R&D, SVBs	Q3 2016 to Q3 2017	Inventory of hotel capacity, standards and quality conducted and guidelines for renovation developed and issued to concerned owners.
6. Undertake an inventory of transport services and its infrastructure to identify gaps and weaknesses, and provide guidelines and incentives for upgrading.	FSM R&D, SVBs	Q3 2016 to Q3 2017	Transport services and infrastructure status assessed and and guidelines for upgrading developed and issued.

POLICY 5: Coordinated Destination Marketing			
Statement, Goals, and Objectives	Lead Agencies	Time Frame	Performance Indicators
Policy Statement: Target a more realistic increase in tourist arrivals over the next 3 to 5 years through more effective destination marketing programs.	NTMA, FSM R&D, NTAC, SVBs, STAC	Q2 2016 to Q2 2017	Location-specific marketing plans developed and implemented.
Strategic Goal: Through the new National Tourism Marketing Authority and in conjunction with each of the FSM state visitors bureaus, develop and implement a national tourism marketing plan that promotes a national brand based on each of the four FSM states as part of a diversified, multiproduct international destination.			
Objectives:			
1. Support tourism policy, marketing, business, and investment planning, undertake and update market research in primary and secondary source markets by improving data collection from the visitor arrival surveys, conducting visitor exit surveys, annual accommodation surveys, and economic impact study. ^a	FSM R&D, NTMA, SVBs, NZTRI	Q2 2016 to Q2 2017; Ongoing	Data collection system developed and implemented.
2. In partnership with the private sector, develop an FSM branding strategy with logo, to position and sell the FSM destination as a specialized eco-adventure, dive-, nature-, culture- and heritage-based international tourism destination. ^{a, b}	NTMA, NTAC, SVBs, STAC	Q3 2016 to Q1 2017	Branding and strategic positioning materials developed and distributed.
3. Target the identified niche markets of dive, heritage, culture, yachting, cruise expeditions, special events, meetings, conferences and exhibitions, special purpose, ecotourism, and volunteerism. ^a	NTMA, SVBs	Q1 2017; On-going	Niche markets for tourism activities identified.

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...Continuation of Policy 5

4. Develop a fresh and revised FSM tourism website, with booking capability, showcasing the four states' tourism products. ^b	NTMA, NTAC, SVBs, STAC	Q2 to Q3 2016	New website with functional capabilities developed and maintained.
5. Develop financially feasible and cost-effective destination, product promotional campaigns, including trade shows. Create, update, and manage electronic DVDS and photo library for destination and product promotion. ^{a, b}	NTMA, SVBs	Q3 2016 to Q3 2017	Promotional materials for tourism developed and distributed widely.
6. Contract regional marketing representatives in Japan, Europe, and the US to coordinate FSM destination marketing in these key source markets. ^b	NTMA	Q3 2017; annually	Links with international tour operators forged and functional.

POLICY 6: Become More Internationally Competitive

Statement, Goals, and Objectives	Lead Agencies	Time Frame	Performance Indicators
Policy Statement: Make the FSM more internationally competitive by improving industry quality standards for sustainable tourism development.			Quality standards for sustainable tourism development and implementation developed and assessed (accreditation).
Strategic Goal: Implement improvements in tourism industry quality standards, based on sustainable tourism principles, environmentally friendly development guidelines, and professional management practices.			
Objectives:			
1. Develop and implement an accreditation and licensing system for hotels, tourism operators, and tour guides. ^a	FSM R&D, SPTO, GSTC, TIES	Q1 2017 to Q4 2017	Accreditation and licensing system for hotels, operators, and tour guides developed. Accrediting bodies identified. Guidelines for accreditation developed and distributed.

continued...

...Continuation of Policy 6

<p>2. Conduct an annual check on all occupational health and safety and maintenance standards for taxis, rental cars, boats, air transport, bicycles, motorbikes, tourist accommodation establishments, restaurants, bars, and tour guides.^{a, b}</p>	<p>FSM R&D, SVBs</p>	<p>Q2 2017 Annually</p>	<p>Annual checks on all occupational health and safety and maintenance standards for tourism-related facilities conducted.</p>
<p>3. Introduce a “Made in FSM” local produce certification scheme to promote the sale of local products to tourists and tourism suppliers.</p>	<p>FSM R&D, NTAC</p>	<p>Q1 to Q4 2017</p>	<p>FSM branding certification scheme developed and implemented.</p>
<p>4. In conjunction with the State EPAs produce and distribute best practice environmental guidelines for tourism operators and potential investors. Monitor quality standards and environmental impact assessments for tourist sites and establishments.^a</p>	<p>State EPAs and SVBs</p>	<p>Q1 to Q4 2017; Ongoing</p>	<p>Knowledge management system developed and implemented.</p>
<p>5. Guide SVBs and EPAs, in partnership with local communities, to maintain a healthy, attractive, tourist-friendly environment by conducting annual clean ups, antilittering campaigns, beautification campaigns, management of invasive species, and protection of terrestrial and marine species.^{a, b}</p>	<p>SVBs and state EPAs</p>	<p>Q1 2016; annually</p>	<p>Regular environmental protection and management activities like clean ups, antilittering campaigns conducted.</p>
<p>6. Develop and implement an environment-friendly mooring buoy network system for boats and yachts and promote collaboration between the relevant agencies and end users.^a</p>	<p>FSM Maritime Authority, SVBs and state EPAs</p>	<p>Q1 2016; Ongoing</p>	<p>Environment-friendly mooring buoy network system developed and implemented.</p>

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

CoM - College of Micronesia; DEA - Department of Economic Affairs; DTC&I - Department of Transportation, Communication, and Infrastructure; EPA - Environmental Protection Agency; FSM - Federated States of Micronesia; GSTC - Global Sustainable Tourism Council; NGO - nongovernment organization; NTAC - National Tourism Advisory Council; NTP - National Tourism Plan; NZRTI - New Zealand Tourism Research Institute; PATA - Pacific Air Travel Association; PPP - public-private partnership; Q - quarter; R&D - Resources and Development (Department); SBOC - Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management; SPTO - South Pacific Tourism Organization; STAC - State Tourism Advisory Council; SVB - state visitors bureau; TIES - The International Ecotourism Society.

^a - Part of the Pohnpei State Development Plan; ^b - Part of the Kosrae State Development Plan.

Monitoring

59. The National Department of Resources and Development will be responsible for monitoring the progress of the implementation of the National Tourism Policy at the national level while the states' DEAs will monitor at the state level. These bodies are expected to prepare a semiannual or annual report to assess progress made against performance indicators and

objectives set out in the action plan. The DEA's report will include monitoring by the state visitors' bureaus. Adjustments can be made to the action plan and state-level tourism investment based on the outcome of the monitoring. Current data will serve as baseline information for the mid-term evaluation in 2018 or endline evaluation in 2020.

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FEDERATED STATES OF MICRONESIA

State Tourism Investment Plans

Volume 2

Final Report
June 2015



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**The Federated States of Micronesia
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Annex 4: Project Profiles of Selected Tourism Projects in Pohnpei

Annex 5: Project Profiles of Selected Tourism Projects in Kosrae

Acronyms

ADB	Asian Development Bank
CAP	Community Action Program
CoM-FSM	College of Micronesia, Federated States of Micronesia
CSP	Conservation Society of Pohnpei
CVB	Chuuk Visitors Bureau
DTC&I	Department of Transportation, Communication and Infrastructure
EPA	Environmental Protection Agency
FSM	Federated States of Micronesia
HPO	Historic Preservation Office
JEMCO	Joint Economic Management Committee
KIRMA	Kosrae Island Resource Management Authority
KVB	Kosrae Visitors Bureau
MRA	Micronesian Registration Advisors
OEA	Pohnpei State Office of Economic Affairs
R&D	Resource and Development (Department)
SBDC	Small Business Development Center
SBOC	Office of Statistics, Budget and Management, Overseas Development Assistance, and Compact Management
SVB	State Visitors Bureau
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
WW2	World War 2
YVB	Yap Visitors Bureau

Executive Summary

The purpose of this report is to present the status of the tourism industry in each state of the Federated States of Micronesia (FSM), followed by an analysis of its enabling environment, existing investment plans, and recommendations on initial projects that could be implemented to help tourism industry.

While all states aim to increase people's income to spur economic growth, certain issues such as landownership can hamper investment plans in the tourism sector. The potential for public-private partnerships is high but without a conducive climate for business, the prospects are nil. Existing policies on foreign investments by state differ, which may hinder prospective investors from venturing into the tourism industry. This condition needs to be dealt with along with identifying and implementing tourism-related investments.

All four states could implement common projects that will help initiate reforms in the tourism sector. These projects include the following:

- (i) improved tourism market research, such as visitor arrival data analysis, visitor exit surveys, accommodation surveys, and economic impact studies and analysis;
- (ii) tourism public awareness campaigns to increase understanding, inform and promote tourism issues, types, markets, opportunities, links, and benefits;
- (iii) tourism industry customer service training for both direct and indirect staff, including all existing employees, utilizing the College of Micronesia-FSM (CoM-FSM) and other agencies; and
- (iv) cost-benefit analysis to determine options to improve international and domestic connectivity, build requisite tourism facilities and infrastructure, and improve tourism governance.

Several potential private and public projects at state-level were also identified and assessed against the parameters of sustainable tourism. Potential tourism projects that could be developed and supported by each state are not limited to the proposed projects.



Stone Money (Rai)

Introduction

I

1. As part of formulating the National Tourism Policy, priority investment projects by state were identified. Preliminary feasibility studies were done to identify tourism-related projects.
2. The four states' tourism investment plans: (i) provide an overview and an assessment of each state's tourism sector development and performance; (ii) describe the state's investment policy and legislation that would influence tourism development; (iii) identify current infrastructure projects that directly support tourism development; and (iv) identify the priority tourism projects to be considered for funding and investment.¹
3. The tourism projects that could be approved or supported by the states are not limited to the ones proposed in this report. State governments have the prerogative to alter, reprioritize, or add new projects, provided they comply with sustainable tourism development principles and are in accordance with the National Tourism Policy.

¹ Details of the project proposals are in the appendices.

II

4. Various methods were used to identify, assess, and select appropriate tourism investment projects in each state. These included two in-country field missions where consultation workshops were held and interviews conducted with a wide array of stakeholders. Site visits to all hotels and selected tourist spots were likewise carried out. A literature review of previous plans and projects, as well as in-depth assessment of the FSM tourism sector, also helped in the identification of tourism investment projects.
5. A set of selection criteria to identify and assess priority tourism development projects was developed through stakeholders consultations. The criteria were also based on sustainable tourism principles as outlined in the National Tourism Policy goals and objectives recommended by the Project Steering Committee.
6. The criteria were phrased as questions, as follows:
 - Does it fit with the National Tourism Policy values, vision, goals, and objectives?
 - Does it enhance the performance of the tourism sector in an environmentally and culturally sustainable and socially inclusive manner?
 - Does it help expand local employment opportunities?
 - Does it promote the use of local tourism products?
 - Will the economic benefits of tourism be shared with host communities?
 - Does it involve a public–private partnership approach?
 - Does the project proponent have previous relevant management experience?
 - What are the indicative resources and implementation requirements in terms of costs, timelines, financing, operations, and institutional arrangements?
 - Will it mitigate potential risk factors in terms of economic, environmental, social and cultural impacts?

Potential Sources of Funding for Tourism Projects

III

7. The proposed tourism projects should be further developed into full project proposals for funding. Organizations that could be approached include the following:
 - The Joint Economic Management Committee (JEMCO). JEMCO was established to strengthen the management and accountability of economic assistance provided under the Amended Compact. It has recently agreed that previous unallocated Compact funds that are in arrears can be used to fund tourism projects. The projects identified in this report would all be eligible, provided they are approved and endorsed by each of the state governors' offices. Funding guidelines and applications are being handled by the Office of Statistics, Budget and Economic Management, Overseas Development Assistance and Compact Management, which will submit the projects to JEMCO.
 - The United Nations Educational, Scientific and Cultural Organization (UNESCO). UNESCO will provide funding for world heritage applications such as Nan Madol (Pohnpei) and Lelu Ruins (Kosrae), and possibly the Yela Ka Forest (Kosrae) site and the Mangyol Stone Money Bank site (Yap). Each site will require a management plan and tour guide training support.
 - The Micronesia Conservation Trust. The Pohnpei-based company had expressed interest in evaluating any funding applications from Kosrae organizations, the Yela Environment Landowners Authority, the Kosrae Conservation and Safety Organisation, and the Kosrae Island Resource Management Authority.
 - The Secretariat of the Pacific Community. The secretariat has expressed interest in assisting with hotel energy audits as part of its ongoing Northrep Energy Project.
 - Investment Development Fund. The fund aims to provide equity capital to private sector investments that have the potential to create employment opportunities for FSM citizens and generate new inflow of revenues to the FSM economy. The fund intends to complement rather than replace loan financing by financial institutions. Private investments in the tourism, fisheries, agriculture, and renewable energy sectors will be given special preference because they are government priorities. Investments in the range of \$0.1–\$5.0 million will be eligible for the fund. However, each project will have its own agreed exit strategy, duly negotiated with the private corporation owners at the time of investment.
 - The FSM Development Bank. The bank could be approached to co-finance many of the projects sponsored by the private sector through the recently formed FSM Investment Development Fund, which it will manage.

Nationally Relevant Tourism Projects

IV

8. Relevant projects common to all states, and therefore considered national projects, are proposed in Table 1.

Table 1: National Projects

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goal 1: More effective governance and institutional strengthening			
Strengthening tourism governance	Revisit roles and responsibilities of focal agencies at national and state level. One option is to create a National Tourism Marketing Authority or similar body if strongly required.	Budget to be determined once specific body to be created is confirmed	FSM Department of R&D, SVBs, and State Economic Affairs
Goal 2: Increase public and private investment to develop the tourism sector			
Cost-benefit analysis for upgrading the domestic airline services	The analysis will help assess options to improve access to FSM, internationally and domestically (including access to outer islands). Concrete recommendations and a project plan will be prepared to improve capacity, scheduling, and links to all four island states.	\$500,000	FSM DTC&I, R&D
Tourism facilities and public infrastructure development projects	The projects will build requisite tourism facilities and supportive infrastructure to improve access and services in tourism destinations. Specific needs and scope will be determined for each state.	Budget to be determined based on each state's demand	FSM Department of R&D, State Department of Economic Affairs, and other concerned government agencies

continued...

...Continuation of Table 1

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goals 3: Improve overall quality of FSM tourism services			
Tourism public awareness campaign	The project seeks to inform and promote tourism opportunities, markets, types, opportunities, and links that would ensure equal benefits for all and increase understanding about the tourism industry.	\$15,000	FSM Department of R&D, SVBs
Tourism industry customer service training	Capacity building project aims to capacitate direct and indirect tourism-related staff in both the private and public sectors, including all existing employees in the tourism service industry.	\$500,000	FSM Department of R&D, SVBs
Goal 4: Expand tourism product development			
Hotel energy audits	The project will undertake an energy audit and review of current energy usage across all four states in FSM hotels with a size of 15 or more rooms. This will not only reduce hotels' overall operating costs but also cut greenhouse gas emissions and fuel imports, thereby assisting in climate change mitigation and national economic growth.	\$15,000	FSM Department of Energy and state utility corporations
Goal 5: More realistic increase in tourist arrivals			
Improved tourism market research	The project aims to develop a more user-friendly arrival card to gather tourism data both nationally and from each state; undertake visitor exit surveys, accommodation surveys; and conduct an economic impact analysis study. The results will be distributed to stakeholders regularly.	\$35,000 per state	FSM Department of R&D, SBOC, and SVBs

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

FSM - Federated States of Micronesia; R&D - Resources and Development; SBOC - Office of Statistics, Budget and Economic Management, Overseas Development Assistance and Compact Management; SVB - State Visitors Bureau; DTC&I = Department of Transportation, Communication and Infrastructure.

Yap State Tourism Investment Plan

V

A. Tourism Development in Yap

9. Located nearer to Guam and Palau, Yap State consists of 138 islands and atolls of which 22 are populated, stretching across more than 100,000 square miles of ocean. The main group of four islands is known as Yap Proper, and accounts for 38.7 (79%) of Yap State's 49.7 square miles of land area. Colonia is the capital and the main commercial, government, supply, and tourist center. Most of the outer islands are coral atolls that stretch almost 600 miles to the east of Yap Island.
10. Yap is known as "The Land of Stone Money" (or rai) and is steeped in ancient traditions and fascinating legends, and peopled by one of the most distinctive cultures in the Pacific. The caste system exists and Yapese village chiefs hold political power. Yap has two councils of traditional leaders, the Council of Pilung is made up of chiefs from Yap Proper, and the Council of Tamol consists of chiefs from the outer islands. The people of Yap have a high regard for their customs and traditions. Their famous stone money serves as symbol of the state's tourism.
11. Yap's prime tourism attraction is scuba diving with the giant manta rays that frequent its waters. It has become well known among the niche scuba diving market as one of the Pacific's prime scuba diving locations, and is often marketed alongside its nearest neighbor, Palau. The 35-room Manta Ray Hotel is the largest in Yap and is dedicated almost exclusively to preserving, developing, and promoting the scuba diving product. Apart from the giant manta rays, there are numerous dive sites that host a variety of marine and coral species, as well as World War 2 (WW2) wrecks. Other marine products and activities, such as game fishing, kayaking, deserted beach picnics, and snorkeling, are also offered.
12. Yap continues to market its strong traditional culture alongside its diving product. The stone money, traditionally built stone pathways, local tribal mores, seafaring traditions, traditional dress, and costumes make Yap distinct from other FSM states and constitute a diverse cultural tourism product and image. Tourism products inspired by Yapese traditional culture include the following:
 - A Living History Museum featuring traditional meetinghouses, with stone money and stone pathways. The meeting houses are used for special festivals, reenactments, making handicrafts, dancing, music, and cooking. They are also used as classrooms to teach young people and tourists about the traditional way of life, folklore, and customs.
 - Outrigger canoe building and tours, featuring carving, sail making, and the teaching of traditional navigation skills.
 - Special events such as Yap Day (Lunar New Year harvest), the Homecoming Festival, and the Canoe Festival (outrigger canoe races).

13. Despite the numerous wonders, Yap received 2,443 tourist arrivals in 2013, representing a 17.9% decline over the previous 5 years. In particular, the Japanese market has declined as they seek easier access and scuba diving mixed with duty-free shopping in nearby Guam and Palau. The largest source of tourists in Yap come from the United States (US) (43.7%) for scuba diving.

14. Yap has 7 active hotels offering a total of 135 rooms. Overall, average occupancy is very low at 35% with an average room rack rate of \$115.

B. Yap Visitors Bureau

15. The Yap Visitors Bureau was created with the intent of ensuring that state's tourism growth is based on optimum tourist satisfaction without compromising the beauty and sustainability of Yap's natural environment and preserving and protecting Yapese heritage, tradition and custom. It is governed by the Board of Directors composed of seven members - with five members called as "appointed directors" appointed by the Governor with consent from the State Legislature, one member called "legislative director" appointed by the Speaker of the Yap State Legislature and the last member selected by all the appointed members. Among the key roles of the Yap Visitors Bureau include (i) promoting tourism including disseminating materials and information to attract tourists; (ii) assisting the government and private entities in developing, implementing and promoting programs related to education, training and employment assistance; (iii) promoting local products and cultural activities for residents; (iii) promoting and assisting in the development of tourist facilities and attractions and (iv) assisting in data collection and analysis of tourist data.

C. State Government Policy on Investment

16. The Yap State foreign investment policy has been developed to encourage investment in Yap and to ensure that such investment is consistent with the needs of this island community. Its policy is to welcome foreign investors and invite them to participate in economic development projects in cooperation with the Yap business community.

17. The state-level Department of Resources and Development manages tourism investment. On their website, the Foreign Investment Guide states: "The Yap State Government is fully committed to promote the development of a healthy private sector and recognizes the importance of private sector investment to achieve sustainable economic growth, employment creation, and development of strategic state and national resources." In recent years, there has been a careful move toward deregulation and liberalization. Yap State foreign investment policies have been significantly simplified and streamlined to attract a variety of foreign investors.

18. Family and clan groups own about 98% of land in Yap, with the majority of state-owned land located in Colonia in the municipalities of Rull and Weloy. Noncitizens cannot own land, but they can lease it for a maximum of 99 years, including options to renew. Leasing of land or making landowners partners or shareholders of projects are therefore viewed as the most appropriate arrangements for land use. Upon request, the state government may act as an intermediary in finding suitable land arrangements. The Yap State Mortgage Law provides the necessary legal framework for land mortgages.

19. The Yap State Economic Planning Group acts as an advisory body to the Governor. Its role is to provide close coordination and cooperation among all branches of the state government and the private sector by acting as an overall

management, evaluation, and advisory body in facilitating the smooth implementation of the state's development plans. In carrying out its purpose, the group:

- (i) provides advice and recommendations on policy and development issues;
- (ii) advises on the implementation of projects and programs;
- (iii) reviews the development objectives and strategies of the state; and
- (iv) recommends appropriate actions, policies, and strategies to the relevant agencies.

D. Legislation Relevant to Tourism Development

20. Yap State Foreign Investment Act, 2006

is administered by the state Department of Resources and Development. The act sets out the guidelines for administering foreign investment permits to non-FSM citizens, including the eligibility of business activities within certain categories of economic sectors. Like other FSM governments, Yap uses a traffic-light system to regulate businesses and investment. Activities are categorized as red for prohibited, amber for restricted, and green for unrestricted, as follows:

Red: Manufacturing of toxic materials, weapons, ammunition, commercial export of reef fish, and activities injurious to the health and welfare of the citizens of Yap.

Amber: None at present.

Green: All others.

21. The act requires all non-citizens engaging in business and any foreign business entities to obtain a foreign investment permit from the state Department of Resources and Development before starting a business. A permit-processing fee of \$250 is required for first-time application, and there is an annual renewal fee of \$100. The permit period is for a year beginning on the date of issuance.

22. The director of the state Department of Resources and Development must also submit an annual report on the number of foreign investments, the types of business entities involved, the number of foreign investors, their shares of ownership in the business entities, and any unusual developments during the year including cancellations or penalties imposed. Provisions are also made for cooperation and coordination with the national government through the FSM Foreign Investment Act and the immigration authorities with regard to expatriate work permits.

23. Like most FSM states, Yap sets limits on foreign ownership of small and medium-size businesses to protect local businesses from foreign competition. Foreign investment is strictly limited by local ownership (51%–60%) or a residency requirement of more than 5 years. Large projects are assessed on a case-by-case basis.

24. All sole proprietorships (owned by one individual or a married couple) are required to register with the Yap State Registrar of Corporations. This includes corporations for profit, nonprofit corporations, general partnerships, limited partnerships, and foreign corporations wishing to do business in the state. All registered corporations and partnerships shall annually file with the Registrar a full and accurate exhibit of their affairs. All businesses operating in Yap State other than those mentioned are subject to the Yap State Business License Act and Regulations.

25. Traditional activities (e.g., agriculture, handicrafts, and fishing) undertaken by citizens are exempted from obtaining a business license. A license-processing fee of \$25 is levied for each business category or activity. A different license is needed for each location, so a single business may be required to obtain more than one business license. The business license is renewed annually on

30 September. Business licenses are issued by the state Department of Resources and Development.

26. Other legislation relevant to tourism development includes the following:

- **Yap Community Development Program Act, 1995** was created to encourage and implement infrastructure and development projects at the community level, while at the same time ensuring that such community-level projects remain consistent with the state's overall development goals and policies. The Yap Community Action Program administers this. An enterprise fund has been created to fund community projects.
- **Yap State Feasibility Study Act, 1997** was established to fund feasibility studies for the public and private sectors.
- **Yap Investment Trust, 1994** seeks to promote and support economic development in Yap State. It serves as a conduit for public funds for start-up development projects, including joint ventures and related activities that are not suitable for investment by the private sector. Yap Economic Development Authority Act 1990 was also created with almost the same function but is now defunct.
- **Yap Small Business Loan Security Act, 1991** aims to establish a loan security program to start or expand feasible, small-scale businesses to stimulate the expansion of existing small businesses and the establishment of new businesses with growth potential. This law protects retirees and Pacific Islands Development Bank customers.

27. The **Environmental Quality Protection Act, 1987** is administered by the Yap Environmental Protection Agency. The act announces a public policy statement declaring the continuing policy of the State of Yap, in cooperation with the national government, municipal governments, and other concerned public and private organizations, "to use all practical means and measures, including financial and technical assistance, to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of the State of Yap."²

28. The act further commits Yap State to improve and coordinate government plans, functions, programs, and resources to:

- (i) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (ii) provide assurance for all Yapese to safe, healthy, productive, with aesthetically and culturally pleasing surroundings;
- (iii) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable or unintended consequences; and
- (iv) preserve important historical, cultural, and natural aspects of Yapese heritage, and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

29. As the most strongly worded environmental policy of all the FSM states, the act encourages and promotes the concept of sustainability.

² Yap State Constitution. 1987. Title 18. Conservation and Resources. Division 4: Environmental Protection. Chapter 15: Environmental Quality Protection. Section 1502. Public Policy. Palikir.

E. Priority Tourism-Related Projects

a. Current Infrastructure Development Projects

30. Yap is pursuing and implementing the following priority tourism-related public infrastructure projects and intends to complete them as soon as is practicable:

- upgrading of the airport terminal;
- upgrading of the North Road in Maap;
- completion of the Wind Turbine Renewable Energy Project;
- completion of fiber-optic cable installation; and

- upgrading and improving access and safety of small-scale tourist attractions.

b. Proposed Tourism Investment Projects

31. Cost estimates for projects in Yap State amount to \$1,125,000, excluding projects common to all states. The proposed projects could be funded privately or publicly, and are expected to initiate immediate reforms in the tourism industry (Table 2). The state could consider other projects as long as they adhere to sustainable tourism principles and align to tourism goals embodied in the National Tourism Policy.

Table 2: Proposed Tourism Investment Projects
(shading denotes private company projects)

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goal 1: More effective governance and institutional strengthening			
Refer to national projects			
Goal 2: Increase public and private investment to develop the tourism sector			
Refer to national projects			
Goals 3: Improve overall quality of FSM tourism services			
Refer to national projects			
Goal 4: Expand tourism product development			
Develop historical sites as tourist attractions (with Mangyol Stone Money Bank as the initial site)	Develop historic and cultural sites such as stone money banks. Mangyol Stone Money Bank is the currently identified site. Improvements will include road improvement to the site, toilet facilities, and clearing of the buffer zones. Other sites to be considered include Bechiyal Cultural Center, Qamin Stonepath, Rull Cultural Center, Buchaq Hill World War 2 site, the Japanese Airfield in Thol, Tagaren Canal, and the old German hospital. Sites require physical upgrading, local management, maintenance, and promotion. It is also recommended that a tour guide training program is designed in partnership with Yap-CAP and CoM-FSM.	\$300,000 (for the initial site)	HPO; YVB; Yap-CAP; CoM-FSM

continued...

...Continuation of Table 2

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Develop canoe hut facilities at the Living History Museum, and outer island tours	This involves the building of special storage sheds for the Waa'gey canoe builders and handicraft carvers to store their tools and artifacts overnight. They are based at the Living History Museum, but this site is not guarded or secured. They also need toilet facilities to be built on-site for their visitors. The toilet facilities can also be used by visitors to the events held intermittently at the Living History Museum. The project will also include support for developing a business and marketing plan and assistance for potential tour companies that can market outer island tourism.	\$70,000	Waa'gey, SBDC
Village View Resort and access road upgrade in Maap	Improve the conditions and quality and all essential aspects of the resort to meet higher standards and enable it to attract high-end international tourists.	\$295,000	Village View Resort; SBDC
O'Keefe's Waterfront Inn expansion	Expand the inn to 10 rooms. This expansion project will use the successful low cost formula that was used to build the first 5 rooms. The new rooms will be built on the completed foundations that were constructed as part of the first phase.	\$160,000	O'Keefe's Waterfront Inn
Yap Marina Bar and Grill for additional rooms	Turn the building into a full-scale resort and expand it to about 20 rooms. The project will use the existing facility that currently houses the Marina Sports Bar and Grill, located in downtown Colonia, capital of Yap, on the waterfront of the harbor channel.	\$250,000	Yap Marina Bar and Grill
Tamil Community Hotel	Initially, five locally made huts will be constructed. Although they will appear to be traditional style, they will be designed for international guests with a good level of comfort.	\$50,000	Tamil Council of Chiefs; YVB; SBDC
Goal 5: More realistic increase in tourist arrivals			
Refer to national projects			

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

CAP - Yap Community Action Program; CoM-FSM - College of Micronesia; FSM - Federated States of Micronesia; HPO - Yap State Historic Preservation Office; SBDC - Small Business Development Center; YVB - Yap Visitors Bureau.

Chuuk State Tourism Investment Plan

VI

A. Tourism Development in Chuuk

32. Chuuk has 290 islands and atolls, 250 of which are uninhabited. There are 14 islands on the surrounding lagoon reef and another 10 islands situated within the lagoon proper. The capital and main tourism center, Weno Island, is home to 16,100 of Chuuk's total population of 54,000. Some 16 islands of Chuuk are beyond the fringing lagoon reef and are referred to as the outer islands.
33. Tourism is one of the key income earners for Chuuk, especially in Weno where divers from all over the world visit the world-famous Truk (Chuuk) Lagoon, the site of the largest concentration of WW2 sunken wrecks in the world. The wrecks of more than 80 vessels sunk in during Operation Hailstorm in February 1944, when the US attacked the Japanese fleet, have transformed the lagoon into a wreck diving hotspot. The site holds the best of the undersea world and maritime history at one easily accessible location for qualified scuba divers.
34. Chuuk's internationally recognized wreck diving attracts the largest slice of the FSM tourist market (50.31%), with 4,414 tourist arrivals in 2013. However, the number of visitors has declined by 2.5% during 2009-2013.
35. Chuuk has five active hotel properties and two functioning liveaboard dive boats, offering a total of 150 rooms—62 fewer rooms than

in 2002. Chuuk is the only FSM state that currently enjoys some degree of international tourism recognition for its wreck diving in Truk Lagoon, attracting a niche scuba diving market, particularly from Japan and the US. This tourism product needs to be sustained.

36. While the overriding reason tourists visit Chuuk is for wreck diving, there are also soft coral diving, some land-based WW2 relics, and small meetings, conferences, and exhibition segment. More importantly, there are other potential tourism products for development, such as outer islands tours, picnics, camping (particularly to Jeep and Pissar islands), historical tour packages, and deep-sea fishing charters.

B. Chuuk Visitors Bureau

37. Chuuk Visitors Bureau was created to encourage the development of the tourism industry and to realize its full potential in Chuuk. The Visitors Bureau is governed by a Board of Directors composed of nine members – five of whom shall be appointed by the Governor with the consent of the State Legislature and four to be appointed by the President and Speaker of the State Legislature. Out of these appointed members, five shall be from the private sector engaged in tourism and four from the people of the State. Among the key roles and responsibilities of the Chuuk Visitors Bureau include (i) attract tourist and conduct programs, advertisement and promotional events to raise awareness

on Chuuk’s tourist attractions; (iii) advise the state government on tourism facilities and recommendations to ensure quality tourism services; (iv) encourage private investment on tourism; (v) promote maintenance of sites through clean-up activities and beautification programs; (vi) conduct analysis on tourist needs and required facilities; and (vii) obtain membership in any regional or international tourist organizations.

**C. State Government
Policy on Investment**

- 38. Foreign investment in Chuuk State that is not subject to the FSM Foreign Investment Act is governed by the **Chuuk State Foreign Investment Act, 2002** and its **Foreign Investment Regulations**. This act requires all noncitizens engaging in business, or any foreign investor, to obtain a foreign investment permit from the Division of Commerce and Industry in the Department of Administrative Services before starting the business. A permit-processing fee of \$250 is required of first-time applications, and there is an annual renewal fee of \$150.
- 39. All sole proprietorships (owned by one individual or a married couple) must register with the Chuuk State Registrar of Corporations. This includes corporations for profit, nonprofit corporations, general partnerships, limited partnerships, and foreign corporations wishing to do business in the state. All other businesses operating in Chuuk State are subject to the **Chuuk State Business License Act and Regulations, 2004**.³
- 40. However, traditional activities (e.g., agriculture, handicrafts, and fishing) carried out by citizens are exempted from obtaining a business license. A license-processing fee is levied based on the business category or activity. The

business license is renewed on 1 July each calendar year.

**D. Legislation Relevant to
Tourism Development**

- 41. The **Chuuk Foreign Investment Act, 1998** was enacted to encourage foreign investment within the territory of Chuuk State “in a manner that serves the economic, social, and cultural interests of Chuuk State.” Ecotourism is defined as “the business of engaging in tourism that is focused on bringing visitors to Chuuk to view its cultures, traditions, land, and marine environment with a minimal negative or intrusive effect”.⁴ However, no special mention, consideration, or incentives were given to encourage investment for tourism development.
- 42. The act also sets out the guidelines for administering foreign investment permits to non-FSM citizens, including the eligibility of business activities in certain subsectors of the economy. Like other FSM governments, Chuuk uses a traffic-light system to regulate businesses and investment, with activities categorized as red for prohibited, amber for restricted, and green for unrestricted. It recognizes the national categories under the FSM Foreign Investment Act, as follows:
 - Red: Arms manufacture, minting of currency, nuclear power, and radioactive goods.
 - Amber: Increased scrutiny before approval for nontraditional banking services and insurance.
 - Green: Banking, fishing, air transport, and international shipping.
- 43. For Chuuk State, the categories are as follows:
 - Red: Determined by director, none codified in the law.

³ Chuuk Small Business Development Center. 2004. *Chuuk State Business Regulations and General Business Resources*. Weno.

⁴ Chuuk State Legislature. 1998. *Act No: 4-47. Second Regular Session. First Special Session, December, 1998*. Weno.

Amber: Casinos, lotteries, industries that pollute the environment, or destroy local culture and tradition, or deplete natural resources.

Green: Ecotourism, professional services, intrastate airline services, and export of local goods.

44. Provisions are also made for cooperation and coordination with the national and other state governments to review each sector and whether it will be removed from the national categories for further regulation of foreign investments.

45. The **Chuuk State Environmental Protection Act, 1994** is based on a statement of public policy that says the State of Chuuk, “in cooperation with the FSM National Government, municipal governments, and other concerned public and private organizations, shall use all practical means and measures, including financial and technical assistance, to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Chuuk State.”⁵ This statement espouses not only cooperation with the national government, but also a sustainable development philosophy.

46. The act also established an independent agency, the Chuuk State Environmental Protection Agency (EPA). The EPA is controlled by a board of directors, composed of five members, one from each of the five senatorial regions of Chuuk State. The governor, with the advice and consent of the Senate, appoints all five members, who are citizens of FSM and residents of Chuuk. The members carry out the policies and purposes of the act over a 4-year term. The EPA has powers and duties to:

- control and prohibit pollution of air, land, and water;
- enter into cooperative arrangements with the national government, municipalities, and other agencies for the protection of the Chuuk State environment; and
- issue subpoenas, apply quasi-judicial powers of contempt, issue orders, and enforce the provisions of the act.

47. Other state-based legislation with a direct or indirect influence on tourism investment and development includes the following:

- **The Economic Development Loan Fund** provides loans to any private citizen of Chuuk State or any Chuukese corporation or cooperative wishing to begin, operate, or improve business operations in Chuuk State. A Chuukese corporation or cooperative is one where Chuuk owns majority of outstanding shares.
- **The Farmers, Fisherfolk, and Handicrafts Fair Fund** is to pay for supplies, materials, prizes, and other expenses incurred in the preparation for and holding of this event, which could be developed as a tourism attraction.
- **Outer Islands Development Authorities**, which were established to identify the development needs of each outer island, promote coordination and cooperation with state and national governments, and private and cooperative enterprises.
- **Littering Control Act, 1994**, which is separate from the EPA Act, helps keep public areas clean and presentable.

E. **Priority Tourism-Related Projects**

a. **Current Infrastructure Development Projects**

48. Priority infrastructure projects for tourism development in Chuuk include:

- upgrading the Weno main road;

⁵ Chuuk State Constitution. 1994. *Title 22. Environmental Protection and Preservation. Chapter 1. Chuuk State Environmental Protection Act. Section 1002. Public Policy.* Weno.

- upgrading the Island Ring Road and bridges, which includes further upgrading the Weno road that connects with the ring road; and
- upgrading the main dock and jetty for small island supply boats (this has not yet been included in the FSM Infrastructure Development Plan).

b. Project Profiles for Selected Tourism Projects

49. The proposed tourism projects in Chuuk are estimated to cost \$4,050,000, excluding projects common to all states (Table 3). These projects have been identified to help initiate an immediate transformation in tourism in Chuuk. They are to be funded privately or publicly. Potential projects are not limited to the list; the state is expected to support other projects that promote sustainable tourism and are in line with the goals of the National Tourism Policy.

Table 3: Proposed Tourism Investment Projects in Chuuk
(shading denotes private company projects)

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/Proponents
Goal 1: More effective governance and institutional strengthening			
Refer to national projects			
Goal 2: Increase public and private investment to develop the tourism sector			
Improvements to Chuuk airport terminal (not part of the US-funded Federal Airports Association Airport Upgrading Program)	Renovation and expansion of existing Chuuk airport terminal to better serve tourists and other visitors. Doubling current size of arrival and departure areas and including food and gift shops for departing travelers. The arrival area should also include a rotating baggage conveyor for ease of baggage handling. The CVB office also needs to be upgraded and an information counter provided for tourists.	\$1.5 million	Chuuk Division of Commerce and Industry; CVB
Goals 3: Improve overall quality of FSM tourism services			
Refer to national projects			
Goal 4: Expand tourism product development			
Develop local handicraft retail sales network	The project involves the development of a local handicraft retail sales network, targeting the tourist market. ATL Handicrafts is the initiator, but support will be extended to other producers and retailers as required. The project is strongly supported by the CVB.	\$30,000 (for the initial project)	ATL Handicrafts, CVB, SBDC

continued...

...Continuation of Table 3

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Develop a lagoon islands ferry service and nine landing jetties for supplies and tours	The project will provide a ferry boat service and system for passengers and supplies between the islands in Chuuk Lagoon. This will also provide better access and safer tourist transport to encourage more visitors to the outer islands. It would also require the construction of a number of landing jetties. Support will also be provided to establish a tourist transport coordinator and operator businesses.	\$2.5 million	Chuuk Division of Commerce and Industry
Develop other sites as alternate to diving (Mount Tonaachaw Legendary Trail as initial site)	Outdoor enthusiasts are recognized as a potential target market. Mount Tonaachaw is earmarked as an initial site for development. This will include establishment of small visitors center, toilets, signage, boardwalk trail and railings, a meetinghouse, and a protective structure for the petroglyphs.	\$20,000 (for the initial site identified)	HPO, CVB
Goal 5: More realistic increase in tourist arrivals			
Refer to national projects			

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

CVB - Chuuk Visitors Bureau; FSM - Federated States of Micronesia; HPO - Chuuk State Historic Preservation Office; SBDC - Small Business Development Center; US - United States.

Pohnpei State Tourism Investment Plan

VII

A. Tourism Development in Pohnpei

50. The main island Pohnpei is divided into five municipalities: Sokehs; Nett; U; Madolenihmw; and Kitti. All of the municipalities have their own local government, which needs to be consulted about any proposed tourism project. There are also 23 islands within its surrounding lagoon. Pohnpei also governs the nine neighboring atolls of Ant, Pakin, Sapwuahfik, Mwoakilloa, Pingelap, Nukuoro, Kapingamarangi, Oroluk, and Minto Reef, which are collectively known as the outer islands. Most of these are inhabited, with a total population of 14,000 people (4% of the total Pohnpei population of 350,000), but they have limited land areas and few other resources.
51. Pohnpei is also the location of the state capital of Kolonia and the federal capital of Palikir. Government and business travel will therefore always be a significant part of the visitor mix, and many of the hotels already cater almost exclusively to this market. Often, this leads to fewer rooms being available for the genuine holiday tourist.
52. Pohnpei boasts many good dive sites, as well as diverse natural and manmade attractions, particularly the Nan Madol Archaeological Site. It also has a pristine lagoon with many islets, outer island atolls, and other historical and cultural sites. All of these provide enormous potential to be developed sustainably. Other

tourism products that Pohnpei could develop and promote are as follows:

- Yachting for multi-island destinations;
- support to the Conservation Society of Pohnpei to develop the Pohnpei Eco-Adventure Maps and Tours series for the 13 regions, featuring hiking, trekking, biking, kayaking, canoeing, swimming, picnicking, historic sites, and village visits;
- special-interest markets in ornithology and botany;
- leveraging of special events such as the Micronesian Games and the meetings, conference and exhibition tourism market; and
- FSM multi-island packages for holiday tourists.

53. In 2013, Pohnpei attracted 1,551 holiday tourists, or about 18% of the FSM market share. However, the number of visitors declined 2.8% during 2009–2013.

B. Pohnpei Visitors Bureau

54. In Pohnpei, the Visitor's Bureau has been recently integrated with Tourism and Parks that is responsible for maintenance of tourism sites. A new office has been created called Tourism Office which is responsible for both tourism marketing and promotion and maintenance of tourism sites. It is under the Office of Economic Affairs.

C. State Government Policy on Investment

55. The intent and purpose of the **Pohnpei Foreign Investment Act, 2011** is “to strengthen Pohnpei’s economy with dynamic, balanced and fair minded policies on investment and to enhance the government’s abilities to encourage, promote and guide investment along productive lines that are urgently needed for the successful development of this state.”⁶ However, there is no special mention of supporting tourism development or any reference to any incentives that could be offered to potential investors.

D. Legislation Relevant to Tourism Development

56. **The Pohnpei Foreign Investment Act, 1986** was updated and amended in 2011. The Registrar of Corporations is responsible for administering the act, ensuring compliance, and implementing the foreign investment permit program. The Foreign Investment Board was canceled as part of the changes, but the Discretionary Review Panel was approved to carry on the investment permit reviews in collaboration with the Registrar of Corporations. Foreign investor permit holders are required to report on an annual basis and have a duty to report changes in documents previously filed.

57. The act also sets out the guidelines for administering foreign investment permits to non-FSM citizens, including the eligibility of business activities within certain categories of economic sectors. Like other FSM governments, Pohnpei uses a traffic-light system to regulate businesses and investment, with activities categorized as red for prohibited, amber for restricted, and green for unrestricted. It recognizes the national categories under the

FSM Foreign Investment Act, as follows:

- Red: Arms manufacture, minting of currency, nuclear power, and radioactive goods.
- Amber: Increased scrutiny before approval for nontraditional banking services and insurance.
- Green: Banking, fishing, air transport, international shipping.

58. For Pohnpei State, the categories are as follows:

- Red: None presently defined, determined by the Discretionary Review Panel from amber candidates.
- Amber: Everything not classified as green.
- Green: Businesses with greater than 60% share owned by FSM citizens, initial capitalization of \$250,000 or more, professional services with capitalization of \$50,000 or more, and “Special Investment Sector” businesses with 51% FSM ownership in retail, trade, and exploration, development, and extraction of land or marine-based mineral resources or naturally occurring timber.

59. **The Pohnpei Environment Act, 1992** established the Pohnpei Environmental Protection Agency, which, through its board of directors, has the authority to create, adopt, amend, and enforce regulations “to safeguard and improve the environmental conditions related to the health and welfare of the people of Pohnpei and their economic development.”⁷ It also ensures standard procedures are complied with for the preparation of an environmental impact assessment statement before any action that may significantly affect the quality of the human environment.

⁶ Pohnpei State Legislature. 2011. *S.L. No. 7L-83-11. Seventh Pohnpei Legislature, Tenth Regular Session, 2011.* Palikir.

⁷ Pohnpei State Legislature. 1992. *S.L. No. 3L-26-92 Pohnpei Environmental Protection Act of 1992.* Palikir.

60. The Pohnpei EPA has a seven-member board of directors appointed by the State Governor, and confirmed by the State Legislature. The main function of the EPA board is to evaluate and monitor development projects proposed through the agency's development project permit process. The board also has the authority to cease development projects that do not comply with permit conditions as issued according to the laws and regulations. However, as stated in the Environmental Impact Assessment Regulations, "It is not the intent of these regulations to require an exhaustive environmental impact assessment of all projects large and small. The degree of environmental assessment detail for a project depends upon the significance of its potential environmental impacts."⁸ This has led to a fairly liberal and loose approach to ensuring sustainability.

61. Strategic actions and outputs of the environment program are financially supported primarily under the environment sector grants under the Compact of Free Association, with additional support from US rural development funding.

E. Priority Tourism-Related Projects

a. Current Infrastructure Development Projects

62. Tourism-related public infrastructure projects that are already underway and need to be completed include the following:

- Seaport development project. The project is being negotiated that will see port improvements including for cruise ship passengers.
- Water treatment and distribution projects. The Pohnpei Utilities Corporation has identified a number of water supply maintenance, rehabilitation, and extension projects included in the FSM Infrastructure Development Plan.

b. Proposed Tourism Projects

63. The proposed tourism projects in Table 4 aim to initiate immediate reforms to the Pohnpei tourism industry. The projects are estimated to cost \$1,175,000, and are expected to be funded from public and private sources. The list excludes nationally relevant projects or projects in common with other states. The state can propose other projects provided they promote sustainable tourism and are aligned with the goals of the National Tourism Policy.

⁸ Pohnpei State Legislature. 1992. *S.L. No. 3L-26-92 Pohnpei Environmental Protection Act of 1992*. Palikir.

Table 4: Proposed Tourism Investment Projects in Pohnpei
(shading denotes private company projects)

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goal 1: More effective governance and institutional strengthening			
Refer to national projects			
Goal 2: Increase public and private investment to develop the tourism sector			
Feasibility study and infrastructure plan to develop a new hotel	World-class 200-room resort hotel built to international standards with a beach frontage. Size and quality of the hotel to be large enough to attract overseas high-end tourists and compel new airline service to the FSM. Land to be reclaimed and therefore government owned with secure title, which would also avoid some of the environmental issues involving mangroves, which surround almost all of Pohnpei.	\$350,000	MRA
Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goals 3: Improve overall quality of FSM tourism services			
Training for ecotourism development	Development of policy and standards leading to training, certification, and licensing of ecotour guides. Policy consultation, policy development, standards development, legislative process consultation, and planning of a proposed 350-hour ecotour guide training program to be developed and implemented with the aim of certifying and (through examination) licensing ecotour guides who will work in the private sector.	\$120,000	HPO, CoM-FSM
Local agriculture and food culinary training program	The aim is to create more menu offerings based on local foods and aimed at the visitor industry. New menu items fusing local ingredients and traditional recipes with other global styles of cooking can create unique Pohnpeian-influenced menus tailored to the discriminating tastes of visitors, thus enhancing the visitor experience while helping to build the agriculture and fishery sectors.	\$65,000	OEA, Department of Agriculture, Pohnpei Farmers' Association

continued...

...Continuation of Table 4

Goal 4: Expand tourism product development			
Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Develop a farmers' supply chain and a farm tours business	The project involves building at least four local fish, fruit, and vegetable market stall facilities, then expanding the number of suppliers and buyers to increase the links between hotels, restaurants, and village farmers and fishers.	\$100,000 (for the initial project)	Pohnpei Farmers' Association, SBDC
Ecotourism and conservation development project (Kitti Six Waterfalls and Enipein Marine Park as initial sites)	Develop Kitti Six Waterfalls and the Enipein Marine Park sites as model projects for ecotourism to help conserve and protect their ecosystems.	\$200,000 (for the initial sites)	OEA, CSP
Develop historical sites as tourist attractions	Provide restroom facilities, improved (safer) trails, and interpretive signage to meet and exceed visitor expectations. Initial sites include Sokehs Ridge, the beach at Nett Point, and numerous waterfall hikes that need improvement in access, safety, and signage.	\$140,000 (for the initial sites)	HPO
Upgrade Nan Madol heritage site	World-class sustainable and eco-friendly system of trails, and fixed and floating boardwalks to make the mysteries of Nan Madol available to high-end tourists. Other facilities, such as restrooms and signage, will be included.	\$200,000	MRA, OEA
Goal 5: More realistic increase in tourist arrivals			
Refer to national projects			

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

CoM-FSM - College of Micronesia; CSP - Conservation Society of Pohnpei; FSM - Federated States of Micronesia; HPO - Historic Preservation Office; MRA - Micronesian Registration Advisors; OEA - Pohnpei State Office of Economic Affairs; SBDC - Small Business Development Center.

Kosrae State Tourism Investment Plan

VIII

A. Tourism Development in Kosrae

64. Unlike the other FSM states, Kosrae is a single island surrounded by a fringing reef. Its 8,000 people live in the five coastal villages. It has steep, rugged mountains covered with a dense, tropical forest. Although Kosrae can offer exceptional dive products and marine park experiences, its other potential ecotourism products need to be developed and promoted. These include the historical and heritage sites, particularly the Lelu archaeological ruins, and the nature-based attractions of the Utwe Biosphere and the Yela Forest, all of which have the potential to be listed as UNESCO World Heritage sites. These three key products need to be carefully nurtured and managed as authentic ecotourism attractions that can provide Kosrae with genuine international recognition, and by extension, an improved image for FSM as a destination.
65. Compared to the other FSM states, Kosrae's tourism sector is less developed. In 2013, it only attracted 316 genuine tourists, which amounted to only 4% of the FSM market share. Five active hotels operate with a total capacity of 51 rooms, but at a very low average occupancy of 33%. The lack of airline access in terms of frequency and capacity do not help. Kosrae attracts the largest share of the Pacific Islands market, which may be a church-related niche market, but most of these visitors tend not to stay in hotels.
66. With its difficult and costly access, Kosrae cannot afford to develop in isolation from the other FSM states. It should therefore try and develop twin or multi-island packages with the other islands, particularly Pohnpei. As a small developing sustainable tourism destination it needs to continue to concentrate more resources on ecotourism community awareness programs, ecotourism industry training programs, and environmental beautification campaigns.
66. Kosrae stakeholders were adamant about preserving their culture and environment, and their strategy will be to control tourism capacity through small-scale, high-yield tourism. Kosrae should be promoted as an exclusive destination with a pristine environment and an intact traditional culture. However, it needs to add to its accommodation capacity, particularly if major ecotourism projects are developed.
67. There is also a major opportunity for Kosrae to develop non-diver marine products such as snorkeling, swimming, kayaking, outrigger canoeing, traditional fishing, and coral reef monitoring. There are also two well-developed and well-managed land tours that include mountain hiking trails, WW2 sites, waterfalls, caves, villages, and rainforests. These all add diversity. The main Kosrae ecotourism products are as follows:
- **Lelu Ruins.** This ancient walled city represented the peak of cultural

development and architectural achievement during the last years of the 15th century.

- **Menke Ruins.** This area was built years before Lelu and is considered a religious site where ancient Kosraens worshipped Singlaku, the goddess of breadfruit, who was believed to have magical powers to produce food during periods of dry weather.
- **James Palsis Marine Park.** The park is a community-based conservation area recognized for its outstanding and sustainable biodiversity. It offers outrigger canoe tours.
- **Utwe-Walung Marine Park.** The park offers visitors an experience of some of Micronesia’s most pristine forests and mangrove ecosystems as part of a community-based conservation area, recognized for its sustainable biodiversity.
- **Yela Ka Forest.** Visitors can view, via an outrigger canoe, the Ka Forest Stand of the endemic *Terminalia Carolinensis*.

B. Kosrae Visitors Bureau

68. Kosrae Visitors Bureau was established as the agency responsible for promoting tourism industry in Kosrae. It is to be governed by the Board of Directors composed of five members appointed by the Governor and with consent from the State Legislature. Three of the board members shall be from the private sector who are involved in the tourism industry. Among the key responsibilities of Kosrae Visitors Bureau include (i) promoting tourism industry including running promotional materials for tourist destinations, developing programs related to tourism trainings, employment assistance and entrepreneurship; (ii) promoting local products and cultural activities for residents; (iii) promoting and assisting in the development of tourist facilities and attractions and (iv) assisting in data collection and analysis of tourist data.

C. State Government Policy on Investment

69. Like Yap, Kosrae has a dedicated website outlining its foreign investment and business licensing guidelines. It states, “The Kosrae State Government welcomes foreign investment, aware that foreign capital, management, and technology are critical to the State’s development.” It also actively and passionately promotes authentic ecotourism and states, “Environmental awareness and sustainability are key words in the economic development of the State.”⁹
70. Provisions are also made for cooperation and coordination with the national government through the **FSM Foreign Investment Act** and the immigration authorities with regard to expatriate work permits. Unlike other FSM states, Kosrae does not place limits on foreign ownership of businesses, and foreign investment is fully encouraged.

D. Legislation Relevant to Tourism Development

71. The **Kosrae State Foreign Investment Act, 1998** is administered by the Department of Commerce and Industry. The act sets out the guidelines for administering foreign investment permits to non-FSM citizens, including the eligibility of business activities within certain subsectors of the economy. Like other FSM governments, Kosrae uses a traffic-light system to regulate businesses and investment. Activities are categorized as red for prohibited, amber for restricted, and green for unrestricted. It recognizes the national categories under the FSM Foreign Investment Act.¹⁰ The categories for Kosrae State are as follows:

⁹ Small Business Development Center. 2011. *Kosrae Foreign Investment Guide*. Tofof.

¹⁰ Kosrae State Government. 1998. *Kosrae State Foreign Investment Act of 1998, S.L. No. 6-163*. Tofof.

Red: Manufacturing of toxic, biohazard materials, gambling, casinos, and fishing using sodium or cyanide compressed air.

Amber: Real estate brokerage, non-ecology-based tourism, trade in reef fish, coral harvesting.

Green: Ecotourism, export of local goods, professional services.

72. For amber permits, an extra condition is that within 12 months after the initial issuance of the permit, and at all times thereafter while the permit remains valid, the holder shall have invested in, and not removed from, Kosrae State at least \$5,000. At least half of that investment shall have been in cash. The remainder may be through the provision of labor or other things of value.

73. Applicants for foreign investment permits have to meet fairly standard character criteria to establish their bona fides and suitability. There is a one-off application fee of \$150. If there are any substantial changes or modifications to the original proposal of the applicant's circumstances, these must be reported to the director and an additional fee may apply. Permit holders are also expected to provide annual reports, which act as a review and monitoring process for the director.

74. The director of the Department of Commerce and Industry must also submit an annual report on the number of foreign investments, types of business entities involved, foreign investors, shares of ownership in the business entities, and any unusual developments during the year including cancellations or penalties imposed.

75. **The Protection of the Environment Act, 2006** is the responsibility of the Development Review Commission. The commission has the power and duty to (i) protect the environment, human health, welfare, and safety; (ii) abate, control, and prevent pollution or contamination of air, land, and water to ensure that economic

and social development is environmentally sustainable; (iii) enforce regulations; (iv) administer a development permit system; (v) act as an agent of the Environmental Protection Board; and (vi) preserve the state's forests and wildlife and regulate activities that affect them. The commission also supervises environmental impact studies and requires that all persons: (i) include in their development proposals an environmental impact assessment study in accordance with regulations established by the commission; and (ii) submit an environmental impact statement to the commission according to specifications, before taking any action that significantly affects the quality of the human environment.

76. Kosrae sets an excellent example in its legislation, management, and approach to sustainable tourism development. It also has a committed and dedicated group of tourism stakeholders in the public, private, civil society, and community sectors willing to work together to develop the island destination at a scale and a pace most suited to its sustainable development. However, to justify much of the investment in the proposed tourism projects, more visitors are required. Kosrae needs better airline access, increased seat capacity, and at least one medium-scale (50-room) hotel development to match its potential growth in world heritage quality ecotourism products.

E. Priority Tourism-Related Projects

a. Current Infrastructure Development Projects

77. Kosrae needs to complete or continue to support the following priority public infrastructure projects:

- upgrading of the airport terminal, including meet-and-greet facilities;
- replacement of the bridge in the airport access road (ongoing);

- improvements to small-scale tourist sites for tours, for example, by adding safety trails, signage, and toilet facilities as part of some of the proposed tourism projects; and
- continued support for the Mooring Buoy Reef Relief Program.

b. Project Profiles for Selected Tourism Projects

78. Cost estimates for Kosrae-based projects, to be financed from public or private sources, amount to \$671,000, excluding projects common to all states. The state can support other projects that will promote sustainable development in line with the goals of the National Tourism Policy.

Table 5: Proposed Tourism Investment Projects in Kosrae
(shading denotes private company projects)

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goal 1: More effective governance and institutional strengthening			
Refer to national projects			
Goal 2: Increase public and private investment to develop the tourism sector			
Upgrade airport terminal	Airport arrival station at the Kosrae International Airport should be repainted. New stainless steel rack displays, benches, luggage karts, ceiling fans, and fluorescent light fixtures should be added. The toilet facilities need to be renovated and a new line of wall decoration made of handicraft tapestries and other local crafts should be provided. Local hotel and tourist businesses can provide new art business signs, and a new sign board can be placed in front of the immigration entrance to the arrival lounge. A new TV should be installed to showcase activities that travelers could do while visiting Kosrae. The Kosrae airport causeway and bridge area should be cleaned up.	\$300,000	Department of Transport and Infrastructure

continued...

...Continuation of Table 5

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Goals 3: Improve overall quality of FSM tourism services			
Protected area conservation and ecotourism program	The project involves the four protected areas as initial sites: Utwe Biosphere Reserve, Olum Watershed Protected Area, Tafunsak Marine Protected Area, and Walung Marine Protected Area. Several components are involved, but the project is mainly focused on raising awareness in municipal governments, local communities, and schools about sustainable ecosystem management, including effective management of marine and terrestrial protected areas. It will also help local communities develop canoe ecotours as an income-generating alternative livelihoods program.	\$70,000 (for the initial identified sites)	Kosrae Conservation and Safety Organisation
Goal 4: Expand tourism product development			
Develop Yela Ka forest canoe ecotours	The project will focus more on the site readiness for ecotourism to improve site facilities and build new structures, providing easy and safe access to visitors. The tour activities will be expanded to include boat rides and canoeing through mangrove channels in the area. It will provide income-generating opportunities to the community and tourism awareness to students and visitors.	\$180,000	Yela Landowners Association, SBDC
Develop historical sites	The project is focusing on developing key historical sites that have already been developed on the island as tourism attractions. Most of the sites are privately owned and have been managed by each individual landowner with the assistance from Kosrae Historic Preservation Office. Three sites initially identified are Wiya bird cave, Lela Ruins, and Safontok as recommended by the KHPO and the KVB tourism office. Major activities required for the project include clearing and clearing access to these sites, collection or management of waste, site promotion and management and the training of tour guides.	\$50,000 (for the initial sites)	HPO, KIRMA

continued...

...Continuation of Table 5

Goal/Project Name	Description	Estimated Cost (\$)	Lead Agencies/ Proponents
Develop alternate tourist destinations Initial site: Upgrade Mount Oma hiking trail	Intends to develop alternate tourist destinations and repackage the tour e.g., "Hemilson's Rainforest Adventure," which includes the Oma Mountain, Skeleton Caves, and cascading waterfall as part of the itinerary. Developing alternate tourist destinations will also promote tours with natural, cultural, and historical values.	\$15,000 (for the initial site)	Kosrae Adventure Tours, KVB
Establish a handicrafts retail outlet	Several handicraft retail outlets could be developed in Kosrae. The initial outlet is to be operated by Kosrae Women's Association for the viewing and sale of Kosraean handicrafts. The idea is to utilize the building next door to the KVB as a retail outlet to display and sell local handicrafts and to increase handicraft stocks to develop an inventory for cataloguing handicrafts with pictures and descriptions.	\$18,000 (for the initial outlet)	Kosrae Women's Association, KVB
Marketing of Peng Wo Beach Camp	Provide a beach-based ecotourism experience in a very private and beautiful beach location. An escape or hideaway for both domestic and international visitors.	\$38,000	Peng Wo Resort Operator, SBDC
Goal 5: More realistic increase in tourist arrivals			
Refer to national projects			

Source: Consultants.

Note: Data were gathered from consultations done with stakeholders across all the states and validation workshops held with Project Steering Committee members on 20-21 August 2014, 16 October 2014, and 12 March 2015.

HPO - Historic Preservation Office; KHPO - Kosrae Historic Preservation Office ; KIRMA - Kosrae Island Resource Management Authority; KVB - Kosrae Visitors Bureau; SBDC - Small Business Development Center.

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- Yap State Constitution. 1995. *Chapter 10. Yap Visitors Bureau. Section 1001. Intent*. Palikir.

Project Profiles of Selected Nationally Relevant Tourism Projects Across All Four FSM States

Annex 1

1	Project Description	Improved Tourism Market Research
2	Type of Project	Research and Planning
3	Category	Public Sector/Planning
4	Name of Proponent	FSM Department of R&D, with SBOC and SVBs
5	Contact Person	Bernance Aldis - Tourism Unit Co-ordinator, Dept of R&D
6	Location/Map Ref.	Across all 4 FSM States
7	Status of Project	Yap Visitors Bureau has successfully applied for Compact funding to undertake this type of project. FSM Dept of R&D has redesigned the visitor arrivals card to simplify the recording and analysis of data.
8	Status of Land Tenure	N/A
9	<p>Project Description</p> <p>As reported in the NZTRI FSM Tourism Study (2013) and fully endorsed by the ADB TA Project Consultants, "A lack of robust tourism related data is a major constraint to the industry's sustainable development. It is difficult to find exact data on tourist arrivals, let alone more in-depth information on visitor spend or satisfaction, two dimensions that lie at the heart of the FSM SDP and State tourism planning. The accurate and timely measurement and evaluation of industry or policy performance is therefore impossible." It is proposed that a more comprehensive tourism market research program be implemented both nationally and across each of the four FSM States, as follows:</p> <ul style="list-style-type: none"> • To develop a more user friendly arrivals card to collect and analyse the visitor data nationally and for each State. The objective is to provide a more accurate and up to date analysis and interpretation of visitor numbers, source markets and seasonality trends. • To undertake visitor departure surveys using on-line techniques and methods developed by NZTRI. This will provide a more comprehensive insight into the levels of satisfaction, problems in meeting expectations, levels of expenditure and feedback to improve customer service. • To undertake accommodation surveys to track occupancy rates, seasonality impacts, room rates, revenue and yield. Such data and information is useful for investment planning but will also allow accommodation operators to benchmark and better understand their business performance. • To undertake a tourism economic impact study and analysis to provide a comprehensive view of tourism-generated sales, production, employment, wages, and taxes. They can also capture the critical secondary benefits, or multiplier effects, to the tourism supply chain and the economic gains through the local spending of tourism wages. It can also identify the leakage factor to the national economy. 	

continued...

...Continuation of the Improved Tourism Market Research Project

10 Project Rationale/Concept		
The lack of reliable visitor data also makes it challenging for potential investors to make informed decisions. If the broader goals of the SDP are to be supported by tourism it is critical that the industry's development be guided by informed decision-making. The SDP states that comprehensive and standardised visitor statistics should be implemented well within the first decade of the century, but at present there is no standardised data being collected beyond visitor arrivals.		
11	Investment Value	USD35,000 per State x 4 States = USD140,000
12	Assistance Required	Compact funding
13	Market Research	Various tourism planning studies have consistently identified the lack of quality market research as a significant problem to the planning of tourism development.
14	Planning Approval Requirements	None
15	EIA Requirements	None
16	Infrastructure Requirements	None
17	Management Experience	It is recommended that the NZTRI and SPTO be fully utilized to assist and implement this program.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	Costing already done by Yap Visitors Bureau
21	Linkages with the Tourism Sector / Other Sectors	Can assist current hotel and tourism operators as well as potential investors to make better informed business and investment decisions.
22	Development Impacts	Potential to attract more investment into the tourism sector.
23	Capacity Building Potential	SBOC statistics staff to use the standardized UNWTO methodology and definitions for collection and analysis of visitor arrival statistics. Will probably also require improvements to more timely reporting and distribution of these reports.

1	Project Description	FSM Public Tourism Awareness Campaign
2	Type of Project	Awareness promotion and public education
3	Category	Public Sector/Education
4	Name of Proponent	FSM Department of R&D, and SVBs
5	Contact Person	Bermance Aldis - Tourism Unit Co-ordinator, Dept of R&D
6	Location/Map Ref.	National outreach covering all four states
7	Status of Project	New
8	Status of Land Tenure	N/A
9	Project Description	
	<p>The project involves a national wide campaign run by the FSM Tourism to raise public awareness and education through a strong message that tourism is good for FSM. It will primarily target people that are directly and indirectly involved with tourism and will train and inform them to appreciate its value and benefits including employment and income generation, skills transfer, investment and business opportunities and tax revenues for the government. The campaign outreach will use several mediums including community visits and meetings, workshops/seminars, media and signboard advertising, print publications, radio programs, village clean up competition and social media. Ultimately, the purpose of the campaign is to foster a “pro-tourism host culture” in FSM that will be conducive for the development and growth of the tourism sector. The project will be implemented over a three year period after which it will be revised to determine the scale and scope of future commitments. The project will be funded by the FSMRD and implemented by the FSM Tourism in conjunction with the four State Tourism Taskforces consisting of the state tourism industry representatives.</p>	
10	Project Rationale/Concept	
	<p>The tourism sector in FSM is in a state of despair and still generally under developed. There are several constraints to the future development of the tourism sector and one of which is the lack of appreciation and support for tourism from the political level right down to the grassroots. For tourism to grow and develop in FSM towards its true potential, an effective tourism awareness campaign is needed to foster a “pro-tourism host culture”.</p>	
11	Investment Value	USD150,000 annually
12	Assistance Required	100% funding through the FSMRD as the implementing agency
13	Market Research	Previous National Tourism Strategy Plan
14	Planning Approval Requirements	None
15	EIA Requirements	None
16	Infrastructure Requirements	None
17	Management Experience	Project will be implemented by the FSM Tourism Unit in conjunction with the SVBs but the staff involved should receive special capacity building training in tourism awareness campaign management.
18	Business Plan Completed	N/A

continued...

...Continuation of the FSM Public Tourism Awareness Campaign Project

19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Linkages with the Tourism Sector / Other Sectors	N/A
22	Development Impacts	This project conforms to the FSM national tourism policy to promote national tourism awareness and understanding among the local people to foster a “pro-tourism host culture”.
23	Capacity Building Potential	Complements and reinforces local community support for national tourism development.
24	Capacity Building Potential	Training of project staff on tourism awareness campaigns, programs and its implementation in addition to familiarization visits to leading Pacific Island tourism destinations such as Fiji.

1	Project Description	FSM Tourism Industry Customer Service Training
2	Type of Project	Mobile short term customer service training
3	Category	Public Sector/ Human Resources Development
4	Name of Proponent	FSM Department of R&D Tourism Unit
5	Contact Person	Bermance Aldis - Tourism Unit Co-ordinator, Department of R&D
6	Location/Map Ref.	National initiative covering all four states
7	Status of Project	New
8	Status of Land Tenure	N/A
9	Project Description	
	<p>The project involves the implementation of a mobile short term training scheme for front-line workers in the FSM tourism industry in need of customer service training including hotels/resorts, restaurants, airports, travel agents, tour operators, dive operators, tour guides, airlines and SVBs. The scheme will make this training available to all the four states and will be provided in two modules: the introductory module and an advanced module as well as a special training for “training the trainers (locals)”. It will cover all key aspects of tourism customer service training and will be ISO certified. The scheme will recruit international customer service training experts who will work with locals to manage and implement the scheme. The scheme will be implemented over two years in partnership with existing training providers including CoM-FSM, State Business Centers, FSM Development Bank and SPTO. It is also intended to build local stated based capacity for customer service training by “training the trainers”. The project will be coordinated by the FSMRD.</p>	
10	Project Rationale/Concept	
	<p>The FSM tourism industry SWOT analysis showed that one of the major weakness of the industry based on customer survey and consultations with tourism stakeholders is the poor quality of service standards. It is damaging FSM’s international profile and attractiveness. The fundamental cause is that over 90% of FSM’s tourism industry employees and including front-line staff have had no formal training in tourism and hospitality including customer service. The project will address this problem and give tourism industry employees to be trained and skilled in customer service training.</p>	
11	Investment Value	USD500,000
12	Assistance Required	100% funding is needed through a combination of external grants (ADB and US Federal) and national and state budgetary contributions.
13	Market Research	A comprehensive training needs analysis will be carried out as a component of the project to provide the baseline for identifying the industry’s employees customer service training needs and designing the training program accordingly.
14	Planning Approval Requirements	None
15	EIA Requirements	N/A

continued...

...Continuation of the FSM Tourism Industry Customer Service Training Project

16	Infrastructure Requirements	The mobile training will utilize the facilities of local hotels and resorts and existing training facilities in the various states including the State Business Development Centers and the FSM Development Bank.
17	Management Experience	International tourism customer service training experts will be recruited as part of the project to work in conjunction with other potential partners such as CoM-FSM, State Business Development Centers, SPTO, and FSM Development Bank.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Expect sector wide improvements.
22	Linkages with the Tourism Sector / Other Sectors	The project is in support of the FSM national tourism policy and will raise the industry's skill levels, productivity and improve the overall quality of service standards and FSM tourism's international image and brand.
23	Development Impacts	The training will improve the quality of tourism service standards which will raise customer satisfaction, improve FSM's international tourism image and generate increased demand and tourism arrivals in future. The skills improvement of staff in customer service will also raise productivity and improve business for the organizations concerned.
24	Capacity Building Potential	This is a capacity building project involving the training and skills improvement of front line employees in the FSM tourism industry to improve the quality of service standards.

1	Project Description	Cost Benefit Analysis to Upgrade the FSM Domestic Airline Services and to Improve International Airline Access
2	Type of Project	Air Transport Services and Access
3	Category	Public Sector/ Transport
4	Name of Proponent	FSM Department of Transportation, Communication, and Infrastructure
5	Contact Person	Secretary Francis Itimai
6	Location/Map Ref.	National initiative covering all four states
7	Status of Project	Congress has allocated funds to improve both the international and domestic airline services. However, a cost benefit analysis is required to determine the affordability of the best option. The Chinese Government has offered to provide some aircraft to upgrade the domestic CIA carrier. An FSM Airline Task Force have studied and reported on some of the options available for Airline Service Agreements with international airlines other than UA.
8	Status of Land Tenure	N/A
9	Project Description	<p>Need to hire an aviation consultant to undertake a cost benefit analysis on the acquisition of larger domestic aircraft to improve capacity, scheduling and linkages to all four island States. Synchronize with UA schedules so that international access problems can be relieved by having connecting domestic flights into the four main FSM islands. This project could also include the upgrade of Caroline Islands Airways (CIA) to service the Outer islands.</p> <p>The FSM Airline Task Force (ATR) report presented at the SNLC in February 2015 suggested that the Chinese Gov't was willing to provide 2 x Y12E aircraft to upgrade the domestic carrier CIA. However, these aircraft have a maximum seat capacity of only 19 seats. It is better to get the Chinese to supply 2 x Q400 aircraft with seat a capacity of 75 each, providing 150 available seats to interconnect with the UA international inbound and outbound flights. Ideally both types of aircraft are needed as the smaller Y12E planes will service the Outer islands with smaller runways.</p>
10	Project Rationale/Concept	<p>Air transport into FSM continues to act as the largest constraint for increasing tourism arrivals. There are two clear issues that arise out of United Airlines (UA) monopoly of air transport into FSM, firstly the low frequency of flights and their untimely scheduling and secondly the expensive cost of air travel, both internationally and domestically.</p> <p>The ATR report has recommended continued negotiations on three international Airline Service Agreements (ASAs) with Micronesia Air, Air Nauru, and Air Niugini. Congress appropriated \$1 million but requires an expert to provide a cost benefit analysis.</p> <p>However, if this analysis shows these deals to be too costly for the FSM Government, then this current project concept of upgrading the domestic airline services to support improved seat capacity and scheduling frequency for the current international access, could provide the solution.</p>

continued...

...Continuation of the Cost Benefit Analysis to Upgrade the FSM Domestic Airline Services and to Improve International Airline Access Project

11	Investment Value	Approximately USD3,000,000
12	Assistance Required	To be determined and negotiated with the Chinese Government.
13	Market Research	Yes, study completed by ATF in March 2014.
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	Airport upgrades to be completed at Chuuk and Kosrea. Some Outer island airstrips need to be assessed and upgraded.
17	Management Experience	Would need to issue an RFP to secure an experienced airline manager.
18	Business Plan Completed	In the process of completion.
19	Marketing Plan completed	In the process of completion.
20	Feasibility Analysis Completed	Cost Benefit Analysis to be undertaken.
21	Market and Sales Potential	If airline schedules and seat capacity can be improved across all four States and linked with the UA international flight schedules, this will improve tourist access and open up markets and hotel bed sales, along with general economic impact of increased visitor spending.
22	Linkages with the Tourism Sector / Other Sectors	Will have a direct impact on reviving the FSM tourism sector. The project supports the goals and objectives of the FSM national tourism policy.
23	Development Impacts	Will have a major influence in stimulating FSM economic growth through increased job opportunities and multiplier affects of increased visitor expenditure in the general economy.
24	Capacity Building Potential	This is a capacity building project involving the training and skills improvement of front line employees in the FSM tourism industry to improve the quality of service standards.

1	Project Description	Conducting Energy Audits in Selected FSM Hotels
2	Type of Project	Hotel Energy Efficiency Program for Sustainable Tourism and Climate Change
3	Category	Public Private Sector Partnership/Energy and Product Development
4	Name of Proponent	FSM Department of Energy and State Utility Corporation, possibly with SPC
5	Contact Person	Mark Waite at CPUC
6	Location/Map Ref.	National initiative covering all four states
7	Status of Project	Preliminary discussions with the Secretariat of the Pacific Community (SPC) suggest that they would be interested in supporting such an energy efficiency program as part of their current North Pacific Energy and Climate Change Program.
8	Status of Land Tenure	N/A
9	Project Description	<p>Undertake an energy audit and review of current energy usage in FSM hotels, across all four States, with a size of 15 or more rooms. The energy audits would be conducted by qualified engineers and technicians and would provide the hotel owner with a report providing:</p> <ul style="list-style-type: none"> • An estimate of the Energy Efficiency (EE) impacts, including potential energy savings, pay back periods, return on investment (ROI), cost benefit analysis (CBA) and a budget for implementation. • Advice on renewable energy (RE) applications for each hotel e.g. solar, wind, biofuels including quotes for implementation. • Information and details on available EE and RE suppliers and products for FSM. <p>The energy audit reports can also be used to develop an energy management plan for each hotel to adopt. This would require a staff training program to implement on an on-going basis.</p>
10	Project Rationale/Concept	<p>By improving the energy efficiency of hotels, who are a key player in the tourism sector, this will not only reduce overall operating costs but it also helps reduce greenhouse gas emissions and fuel imports, thereby assisting in climate change mitigation and national economic growth.</p>
11	Investment Value	USD150,000
12	Assistance Required	100% funding is needed through a combination of external grants (ADB and US Federal) and national and state budgetary contributions.
13	Market Research	Could utilize the methodology used by CPUC in the energy audit conducted at Blue Lagoon Resort in Chuuk.
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	Roof top spaces and structures would need to be checked if solar panels or water heating units are required.

continued...

...Continuation of the Conducting Energy Audits in Selected FSM Hotels Project

17	Management Experience	Need a qualified Project Manager and energy auditors.
18	Business Plan Completed	N/A
19	Marketing Plan completed	EE and RE principles can be utilized by each hotel as part of respective marketing. Good potential for CSR.
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	The project is in support of the FSM national tourism policy vision to contribute to FSM's image as a sustainable tourism destination.
23	Development Impacts	Potential to grow the tourism sector and achieve economic growth
24	Capacity Building Potential	Hotel staff training required

Project Profiles of Selected Tourism Projects in Yap

Annex 2

1	Project Description	Development of Canoe Hut Facilities at the Living History Museum
2	Type of Project	SME Tourism Development
3	Category	Private/Community and Product Development Attraction and Tours
4	Name of Proponent	Waa'gey Inc. (Handicrafts, Souvenirs, Canoe building and sailing)
5	Contact Person	Larry Raigetel, CEO, Waa'gey Inc.
6	Location/Map Ref.	Colonia, Living History Museum
7	Status of Project	Full Project proposal has been discussed but not written up
8	Status of Land Tenure	Business has a lease arrangement with the Yap Living History Museum Board of Directors (YVB, HPO, Traditional Councils) who manage the facility. Living History Museum was built through funding from the French Government.
9	Project Description	
	<p>The project involves the building of special storage sheds for the Waa'gey Canoe builders and handicraft carvers to store their tools and artifacts overnight. They are based at the Living History Museum but this site is not guarded nor secured at night. They also need toilet facilities to be built on-site for their visitors to use. The toilet facilities can also be used by visitors to the events held intermittently at the Living History Museum. Other Project activities will include:</p> <ul style="list-style-type: none"> • Development of a business and marketing plan to include the other on-site Waa'gey business activities that include outrigger canoe tours, outer island village tours, sale of souvenir handicrafts on site each day and cultural activities at special events held at the Living History Museum. • Assistance with developing a tour company that can specialize in tours to visit Outer Island communities based in Yap proper. Could also develop a tour to Ulithi resort, either sailing a canoe, or flying and then canoeing around the islands and atolls. Need to contact the new Manager at Ulithi Resort – old contact is John Rulmal (jrulmal@yahoo.com). • Business management mentoring and training, particularly for the youth involved. 	
10	Project Rationale/Concept	
	<p>The Project supports and enhances the concept of Yap cultural tourism, mixed with ecotourism and special event tourism. Yap continues to market its strong traditional culture alongside its diving product. The stone money, traditionally built stone pathways, local tribal mores, seafaring traditions, traditional dress and costumes serve to provide Yap with a differentiation from the other FSM States and a diverse and unique cultural tourism product and image. This Project represents such a tourism product, inspired by traditional Yapese culture. Potentially, it will also:</p> <ul style="list-style-type: none"> • Improve the livelihood of Outer island local communities who form the core membership of Waa'gey Inc. Handicrafts. • Generate employment and income through ecotourism and other sustainable development activities. 	

continued...

...Continuation of the Development of Canoe Hut Facilities at the Living History Museum Project

11	Investment Value	USD70,000
12	Assistance Required	Funding (It is a registered NGO and cannot afford to borrow from a bank.)
13	Market Research	Have been operating for 6 months and are confident a niche market can be built up and attract visitor-customers.
14	Planning Approval Requirements	Yes, will require planning and building approvals.
15	EIA Requirements	Yes. In the process of checking with EPA.
16	Infrastructure Requirements	Buildings, utilities, fit out.
17	Management Experience	Proponent is Waa'gey Handicrafts who is already well established in operating tourist programs (handicrafts, tours, site attraction) that are based in Yap Proper but also directly benefit the Outer Islands. They have been based at LHM for 3 years. Project is supported by the following partners: <ul style="list-style-type: none"> • Yap Visitors Bureau; • Historic Preservation Office; and • Councils of Tamol/Pilung
18	Business Plan Completed	Not yet.
19	Marketing Plan completed	In the process of completion.
20	Feasibility Analysis Completed	Not required.
21	Market and Sales Potential	Very much dependent on Yap visitor numbers and the effectiveness of the marketing plan.
22	Linkages with the Tourism Sector / Other Sectors	Very strong linkages with Outer Island local communities, landowners, municipal governments, schools, State Government, National Government and other NGOs.
23	Development Impacts	Strengthen conservation and biodiversity protection, create alternative livelihoods through the ecotourism business, sustain natural resources for future use. Could act as a model for other FSM communities to develop.
24	Capacity Building Potential	Excellent, particularly through direct business development and business management training and mentoring programs.

1	Project Description	Develop Historical Sites as Tourism Attractions
2	Type of Project	Historic and Cultural Site - Mangol Stone Money Bank, Proposed UNESCO World Heritage Site
3	Category	Public/Product Development/Attractions
4	Name of Proponent	Chiefs Francis Fithingmow, Thomas Ganang, Steven Mar, John Kadannged and the people of Makiy Village, Gagil Municipality
5	Contact Person	Francis Reg, Officer - Yap State Historic Preservation Office
6	Location/Map Ref.	Makiy Village, Gagil Municipality, Yap State, FSM
7	Status of Project	On-going scientific studies and reports writing, development of management plan and comparative analysis, site restorations, identifications of indigenous plants and uses, survey and inventory of supporting associated historic structures, setting of buffer zones to improve the nomination application pending with the UNESCO World Heritage Foundation.
8	Status of Land Tenure	Communal (site is under the traditional authority of four (4) traditional chiefs on behalf of certain communities in Yap State, FSM)
9	Project Description	
	<p>Mangyol Stone Money Bank site is physically unique in that the site comprised of two dancing grounds intersecting in the middle forming a cross creating four quadrants in the complex. Baleayrech Stone Money Bank extends on an east-west axis which is also the dancing ground as traditional dances were once performed there. Mangyol is the stone money bank or dancing ground on a south-north axis. At the east end of the site is a stone path leading to a men's house site at the sea shore where the stone money were hauled to the Mangyol site. The community meeting houses stone platforms and other traditional structures/objects at the site constitute the core zone with a buffer zone extending outward surrounding the core zone. The site consists of indigenous plants used for traditional medicinal purposes, crops for subsistence/consumption, family stone platforms estates, stone backrests, and serves as an intersection of the foot paths system in the village leading to the various sections or areas of Makiy Village.</p>	
10	Project Rationale/Concept	
	<p>Mangyol Stone Money Bank site best represents the stone money banks in Yap. The four quadrants and the number of historic structures and objects in the area along with the numerous stone money discs displayed at the site illustrate the story of the long trans-oceanic journey and hardships encountered from the quarry sites in Palau to Yap. The nomination of the site to the Work Heritage Foundation for inscription on its prestigious list of places/sites of outstanding universal value is based on its unique shape as the only site in the entire Yap State, FSM where two (2) stone money banks intersect each other in the middle. Further, it is one of the few stone money bank sites with several traditional chiefs having ultimate authority, with limited/minimal authority given to the village or community chief and members where the site is located. Members of this village or community (Makiy Village) perform certain obligation at the instruction of the high chiefs. Typically, in the Yapese cultural context, a stone money bank is under the traditional authority of the chief(s) of the village or community where it is located. Further, the immediate surrounding areas within the designated buffer zones have some historic structures from the Japanese-era and an agro-forestry and pharmaceutical plants used for traditional medicine in the past to the present.</p>	

continued...

...Continuation of the Develop Historical Sites as Tourism Attractions Project

11	Investment Value	<p>There is no actual assessment conducted yet to determine cost. However, the following are estimates for the activities needed to improve the site:</p> <ul style="list-style-type: none"> • Road improvement to site- USD100,000 • Toilet facility - USD50,000 • Cleaning/clearing the core and buffer zones - USD100,000 • Other miscellaneous – USD50,000 <p>Total Financial Position/Assistance required - USD300,000</p>
12	Assistance Required	Funding of USD300,000
13	Market Research	Currently targets UNESCO’s World Heritage Listing - with tourists coming to the site. Further market research should be conducted to determine present and potential income-generating opportunity once the site is listed.
14	Planning Approval Requirements	Community members and traditional Chiefs over at the site must be involved and approve the plan (management, etc.).
15	EIA Requirements	None yet.
16	Infrastructure Requirements	Road improvement, toilet facilities.
17	Management Experience	Since this is a new UNESCO nominated site, there is no management experience accumulated yet. However, it is envisioned as needed that management training for the site is critical in the near future.
18	Business Plan Completed	Not yet since it is not operational even as there are quite a number of tourists visiting the site.
19	Marketing Plan completed	Not yet but the Yap Visitors Bureau will assist in this area to market the site locally and internationally.
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	The site has a potential to be marketed as a cultural/historic site for eco and cultural tourism as well as for academic purposes in social science areas.
22	Linkages with the Tourism Sector / Other Sectors	Local tourism industry, community and certain government entities are now involved. A Mangyol Advisory Council has been recently formed to promote the site.
23	Development Impacts	No major social, cultural or political, environmental impacts are expected to drastically affect the site usage once approved by UNESCO.
24	Capacity Building Potential	Yap Visitors Bureau, Maky community traditional leadership and members, traditional chiefs over at the site, Yap State Historic Preservation Office and other government entities are now addressing capacity building and empowerment for the management of the site.

1	Project Description	Village View Resort Upgrade
2	Type of Project	Accommodation Upgrade and Prevention of Beach Erosion
3	Category	Private/Product Development/Hotel Accommodation
4	Name of Proponent	Alphonso Ganang, landowner and part-owner of the Resort
5	Contact Person	Alphonso Ganang, Manager and part-owner of Village View Resort
6	Location/Map Ref.	Village View Resort is located in Northern Yap on the Northeastern pier of the island of Maap
7	Status of Project	A more detailed Project Proposal had been prepared
8	Status of Land Tenure	Village View Resort is located on a private land that is owned by Alphonso and his two brothers
9	Project Description	
	<p>The continued low turnover of visitor arrivals to Yap over the past few years has had an adverse effect on the hotel businesses in Yap and even more so with the more remotely located, low-end market and smaller hotels like Village View Resort. Consequently there has been no re-investment of any kind to improve or do the needed repair works in the hotel. Such neglect has now impacted on the Resort's structural quality and appearance making the hotel less and less attractive to guests. All five bungalow units, the office/reception building, the restaurant/bar/kitchen building and the dive shop building require renovation and upgrading. There is also a requirement to arrest the beach erosion and improve the access road to the resort.</p>	
10	Project Rationale/Concept	
	<p>The concept of this project is to improve the conditions and quality and all essential aspects of the resort so it can meet the standard to attract high end international tourists.</p>	
11	Investment Value	Total amount needed for the resort facilities upgrade, and to construct a stone pier and jetty walkway is USD295,000.
12	Assistance Required	Village View Resort is an operational business but its current financial position is very poor due to continued low volume of visitors to Yap. It is barely meeting its costs and unable to re-invest in any kind of improvement to the existing (deteriorating) facilities. Funding is sought in the form of grant or low interest loan as the only possible option especially for the size of the investment.
13	Market Research	There has been no research undertaken but during the process of doing business, it is clear that strong outbound market countries have been Japan, South Korea and China. The main obstacle of trying to tap and penetrate these source markets is due to lack of funds. Marketing is difficult due to airline access for these source markets.
14	Planning Approval Requirements	Yes
15	EIA Requirements	In the process of checking with EPA.

continued...

...Continuation of the Village View Resort Upgrade Project

16	Infrastructure Requirements	<ul style="list-style-type: none"> • Renovation for the improvement of the hotel, restaurant and dive shop buildings; • Construct stone pier for beach erosion control; and • Walkway pier over the water.
17	Management Experience	Current owner/operator built the original resort in 1996 and has been managing the property for 17 years and continues to hire his own management team.
18	Business Plan Completed	<p>There is no written business plan. The resort is in business since 1967. A more detailed Village View Resort Project Proposal considers the following two options:</p> <ul style="list-style-type: none"> • Hire a qualified management and marketing team to operate the resort; and • Find a qualified tourism hotel management company to operate the resort on a lease basis.
19	Marketing Plan completed	There is no written marketing plan but the proponent believes that Asian countries such as Japan, South Korea, China should be targeted.
20	Feasibility Analysis Completed	None
21	Market and Sales Potential	Dependent on Yap Visitor market trends, including improving the international airline access to increase visitor numbers and support with a resort management and marketing plan.
22	Linkages with the Tourism Sector / Other Sectors	The success of this project will have a positive effect on the tourism sector and to the economy. It will boost the local fishing and farming industries, local handicraft-making and weaving, entertainment such as traditional dance performances and traditional canoe-making and sailing. It will create income earning jobs both directly and indirectly.
23	Development Impacts	This project, when completed, will have a huge positive impact to the business sector and in the area. Other positive impact this development will have is that it will help start up business development. Good example is the women of the village have always wanted to have a clubhouse where they can do local food catering services, and a place where they can do handicraft and basket-weaving to sell to tourists. This is to name a few development impacts.
24	Capacity Building Potential	Training of staff and employees need to be done on a more regular basis. All staff and employees should know their job well so as to be able to provide quality customer services.

1	Project Description	Upgrade of O'Keefe's Waterfront Inn
2	Type of Project	Extension of Existing Hotel
3	Category	Private/Product Development/ Hotel
4	Name of Proponent	Don Evans, Owner
5	Contact Person	Don Evans, Owner (43 years resident of Yap); donevans@mail.fm
6	Location/Map Ref.	Colonia, Yap
7	Status of Project	Existing, hotel currently operates 5 rooms and wants to add an additional 5 rooms
8	Status of Land Tenure	Current leasehold property from Yap State Government until 2030, and is renewable upon expiration
9	Project Description	
	<p>"O'Keefe's Waterfront Inn" is a small picturesque hotel that was constructed in 2004 and opened in May 2005. It is a part of "Yap Market Square" complex which also consists of space rentals for other businesses and "O'Keefe's Kanteen", a historical pub. The Inn consists of 5 rooms, a lobby, a lounge bar, a small outdoor courtyard, storage and offices. This small Inn is a period piece, reflecting the architectural style of early traders in the late 1800's. The Inn is also "diver friendly", catering to the needs of divers who currently make up the majority of tourists visiting Yap Island. At the time of construction, the infrastructure, foundation and supports were designed to support a second story of 5 additional rooms for future expansion. This project will expand the Inn to a total of 10 rooms.</p>	
10	Project Rationale/Concept	
	<p>This expansion project will use the same successful low cost formula that was utilized in the original construction of the first 5 rooms. It will be built on the completed foundation/infrastructure that was constructed as part of the first phase. A community based business will be initiated using all local construction labor, and utilizing the best local talent and labor available.</p> <p>"O'Keefe's Waterfront Inn" will be a small picturesque six room Inn located on the waterfront adjacent to the existing Market and Public Park, and will utilize part of the second story of the market building. The foundation and infrastructure for this added component was planned as part of the Yap Market Project and is in place. With this addition, the Inn will then have a total of 10 rooms and open up opportunities to book dive groups, which it is not able to do at present.</p>	
11	Investment Value	USD160,000; Full cost estimates provided
12	Assistance Required	As above
13	Market Research	<p>This business will continue to offer unique, creatively designed, clean, and well organized accommodations for visitors to Yap. These rooms will be sold directly over the internet and through travel agents and travel wholesalers. The additional rooms will open the door to additional business of dive club and dive group accommodation. The location of "O'Keefe's Waterfront Inn" is ideal. It is located in the center of Colonia, Yap on prime waterfront property. It borders the water front and a public park. Ocean views are preferred by nearly all visitors, and are often the deciding factor in choosing their accommodation.</p>

continued...

...Continuation of the Upgrade of O'Keefe's Waterfront Inn Project

		There are 4 other hotels currently operating in Colonia, Yap. This facility will offer a unique, well managed, historic and intimate "turn of the century" ambiance not available elsewhere.
14	Planning Approval Requirements	Yes
15	EIA Requirements	In the process of checking with EPA.
16	Infrastructure Requirements	Building construction materials.
17	Management Experience	The management and staff are in place now, and have run the Inn successfully since 2005.
18	Business Plan Completed	Yes, as part of the existing business.
19	Marketing Plan completed	Yes, part of the existing business. The web site (www.okeefesyap.com) will be updated to be more appealing to dive groups as well as to accommodate the growing trend among travelers who make their own arrangements over the internet. In addition, all of the travel wholesalers/agents that send clients to this area will be contacted to promote the property for dive groups. The retail rate for the rooms will be \$155.00 per night as they are now. There will be alternate pricing for government and business rates, as well as special rates if rooms are available. O'Keefe's Waterfront Inn will target visitors to Yap who wish to stay in a unique period setting, instead of a standard or typical hotel setting. The travel industry has changed in recent years with more internet based direct marketing. This project will utilize a good web site with direct bookings over the internet which is growing rapidly in popularity.
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Quite high, particularly for a growing scuba diving and special events market.
22	Linkages with the Tourism Sector / Other Sectors	Already part of the Yap tourism industry.
23	Development Impacts	Will add to quality room stock.
24	Capacity Building Potential	Will require more staff.

1	Project Description	Additional Accommodation in Yap Marina Bar and Grill
2	Type of Project	Hotel Accommodation
3	Category	Private/Product Development/Hotel
4	Name of Proponent	Liyon Sulog, Yap Visitors Bureau
5	Contact Person	Liyon Sulog, Owner - Yap Marina Bar and Grill
6	Location/Map Ref.	Colonia, Yap, FSM
7	Status of Project	Currently in conceptual stage
8	Status of Land Tenure	Land is leased from the Government for a term of 25 years. Owner to request an extension of the lease once the business plan is finalized and funding source identified and secured.
9	Project Description	
	<p>One of the goals when the premises were leased was to eventually add a small hotel to the facility to supplement the restaurant operation. They envisioned turning the building into a full scale resort and expand it to about twenty rooms.</p> <p>The project will utilize the existing facility currently housing the Marina Sports Bar & Grill located in downtown Colonia, Yap on the waterfront of the harbor channel. The building is located ideally in the heart of downtown, within walking distance of all government offices and major businesses in the State and less than 10 minutes from the Airport. The facility has ample space for parking.</p> <p>The building was originally constructed in 1986 to be a dive shop, restaurant and a floating marina for yachts. The building is single storey and constructed of concrete floors and walls with hardwood trusses and tin roof. Although there are obvious signs of wear and tear, the building is still structurally sound.</p> <p>The government leased the building to Yap Cooperative Association (YCA). YCA operated the restaurant and subleased the other spaces to two dive operators. In 2001, YCA did not renew their lease with the government and closed the restaurant.</p> <p>In 2007, the proponent was able to secure a 25 year lease with the government for the Marina and premises. In 2010, they reopened the restaurant and just recently completed an outside open deck bar. Currently, there is an on-going renovation of another space that was recently vacated by one of the dive operators and plan to turn it into a small convenience store.</p> <p>First option is to convert the existing dining area into four deluxe suite rooms, each with individual verandahs over the water. This option is probably the least expensive and can be done with minimal alteration to building structure. Rooms will be approximately 240 square feet excluding the verandahs.</p> <p>The second option is to build a second floor on the eastern end of the building. The second storey will be constructed entirely of local lumber to minimize weight bearing on concrete walls and structure footings. The second floor area should be able to add seven rooms with approximately 200 square feet. Four rooms will have bay view while the other three will have downtown view. All rooms on the second floor will have individual balconies. In the future, the plan is to extend the building over the parking lot to add ten more rooms.</p>	

continued...

...Continuation of the Additional Accommodation in Yap Marina Bar and Grill Project

10 Project Rationale/Concept		
The mission is to attract middle to higher income guests, targeting businessmen, honeymooners, divers, sports fishing, and cultural tourists and provide unparalleled services, comfort and the required amenities that will make the facility the choice of place to stay. Extensive promotional activity, including daily and holiday specials, help to ensure that customers perceive that they are receiving higher quality products and prompt, courteous service in exchange for the slight premium in price.		
11	Investment Value	USD250,000
12	Assistance Required	USD250,000 funding
13	Market Research	N/A
14	Planning Approval Requirements	N/A
15	EIA Requirements	Not done yet, although it is not expected to be a hurdle as very little earth moving and water disturbance is involved.
16	Infrastructure Requirements	Mainly building construction and added utilities.
17	Management Experience	The proponents have previous hotel experience having worked in the hotel industry in management positions.
18	Business Plan Completed	The proponents are still working on the Business plan and anticipate to have it completed within two months.
19	Marketing Plan completed	Will be included in the business plan.
20	Feasibility Analysis Completed	Will be included in the business plan.
21	Market and Sales Potential	Will be included in the business plan.
22	Linkages with the Tourism Sector / Other Sectors	Converting part of the Marina Facility into a hotel is aligned with the FSM's three economic goals of developing Fishing, Agriculture and the Tourism industry. Although visitor volume to Yap is low, the proponents believe that with the right marketing, superior services, and aesthetically designed accommodations that blend local culture and western comforts, they can carve out a niche market.
23	Development Impacts	The project will positively contribute to the strategic goal of developing the private sector for a stronger and sustainable economy in the FSM.
24	Capacity Building Potential	The project offers a great potential to develop and enhance capacity of the local community. It is anticipated that more than 70 percent of the hotel staff will be hired locally. This includes management positions, such as the hotel manager, accountants and an international chef. Service staff such as tour guides, housekeeping, front desk agents and maintenance crew will be trained to be highly efficient and competent in their job.

1	Project Description	Tamil Community Hotel Development
2	Type of Project	Hotel as a Yap Culture Village Stay
3	Category	Community/Product Development/Hotel Accommodation and Eco-Tourism
4	Name of Proponent	Tom Fetan - Businessman and Chairperson of Tamil Council of Chiefs and Tamil Council Resources and Development Committee
5	Contact Person	Tom Fetan - Businessman and Chairperson of Tamil Council of Chiefs and Tamil Council Resources and Development Committee
6	Location/Map Ref.	Tamor, Tomil (Community Center)
7	Status of Project	Community agreement on planning and approvals
8	Status of Land Tenure	Land Tenure Secure (Owned by Tamil Municipality)
9	Project Description	
	<p>Initially five locally made huts will be constructed. Although they will appear to be traditional in style, they will be designed for international guests with a good level of comfort. The longer range plan is to expand the number and location of the huts into other Villages in the municipality. Five locally made huts on the side of the hill in a village setting with a veranda toward the sunset and westward valley views.</p> <p>Community village homes near where the hotel is located will be involved in showing their daily living and culture to interested hotel guests. Other activities for the guests include Tamil Marine Protected Area (MPA) for snorkeling, fishing, local fish traps and other cultural experiences. Other tourism products are handicraft from Tamil villages, local dances, Village day experiences such as taro harvesting and cooking, local garden tour, mangrove forest trips, Tomil Village tour, man house visit and Paramount Chief Sacred burial ground, Gacham, and many other historical sites to visit.</p>	
	10 Project Rationale/Concept	
	<p>Local families will receive income from sharing and providing the cultural activities for the hotel guests. Yapese culture and traditional activities will be the main product sold. These cultural activities will be organized, refined to present a good experience for the hotel guests. The training of community members will also be organized allowing the youth to participate as well as to gain income from the project. Hotel guests may choose what activities they would like to attend for a small fee. These fees will go to the administration, maintenance of the facilities and community members providing the services thus, creating jobs.</p>	
11	Investment Value	USD50,000
12	Assistance Required	Tamil Municipality will require the cash capital, but much of the labor will come from the various segments of the community. The project is modeled to provide income to individuals in the Tamil community. The project will be owned and administered by the Tamil Community.
13	Market Research	N/A
14	Planning Approval Requirements	Yes, at the appropriate stage.

continued...

...Continuation of the Tamil Community Hotel Development Project

15	EIA Requirements	Yes, at the appropriate stage.
16	Infrastructure Requirements	Building construction materials.
17	Management Experience	Tom Fetan is the Chairman of the Council of Pilung which governs the Tamil Municipality and a self-made businessman for the last 30 plus years.
18	Business Plan Completed	Need to discuss with SBDC.
19	Marketing Plan completed	Need to discuss with SBDC.
20	Feasibility Analysis Completed	Need to discuss with SBDC.
21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	Will need to work with some of the more established commercial tourism operators throughout FSM, including the UA airlines.
23	Development Impacts	Preserve Yap Culture, traditions and heritage of the Yapese people. Provide income to poor families, jobless, preserve land and marine environment in the Tamil Municipality and Yap Island.
24	Capacity Building Potential	Hospitality and business training for local villagers.

Project Profiles of Selected Tourism Projects in Chuuk

Annex 3

1	Project Description	SME Business Expansion of ATL Handicrafts
2	Type of Project	SME Business Development
3	Category	Private/Community and Product Development/Handicrafts
4	Name of Proponent	ATL Handicrafts
5	Contact Person	Amboro Alivuis, Owner/Manager
6	Location/Map Ref.	Weno and Fefan Islands
7	Status of Project	Project proposal to expand an existing business has been discussed. Concept and preliminary costs need to be developed further into a business plan.
8	Status of Land Tenure	Proponent utilizes village based manufacturers and suppliers. Would need to lease retail space.
9	Project Description	
	<p>The project involves the development of a Local Handicraft Retail Sales network, targeting the tourist market. Proposed by an existing local, outer island based, tourism operator, ATL Handicrafts. Strongly supported by the CVB. The proposal is to expand the current business from 3 village suppliers and 4 hotel sales outlets to 24 village suppliers and add 2 dedicated retail outlets at the Chuuk market and the Chuuk international airport. Proponent also needs a new boat and truck to transport supplies and these could also be utilised to develop village tours, by transporting tourists from Weno to Fefan island and back again.</p>	
10	Project Rationale/Concept	
	<p>Project supports the concept of developing locally based businesses by adding value to the supply chain that will generate increased employment and income in local Chuuk villages. The project is being supported by the CVB.</p>	
11	Investment Value	USD30,000
12	Assistance Required	Funding (cannot afford to borrow from a bank)
13	Market Research	Proponent already has good knowledge of the market and believes he can increase sales if he can increase the supply of handicrafts.
14	Planning Approval Requirements	Lease agreements for retail outlets.
15	EIA Requirements	N/A
16	Infrastructure Requirements	Required at the proposed two retail outlets but not yet costed.
17	Management Experience	N/A

continued...

...Continuation of the ME Business Expansion of ATL Handicrafts Project

18	Business Plan Completed	No, but required for the business expansion.
19	Marketing Plan completed	Will consult with SBDC.
20	Feasibility Analysis Completed	Will consult with SBDC .
21	Market and Sales Potential	Very much dependent on Chuuk visitor numbers and the effectiveness of the marketing plan.
22	Linkages with the Tourism Sector / Other Sectors	Very strong linkages with local village communities, existing hotels, and State Government.
23	Development Impacts	Spread the direct economic benefits of tourism down the supply chain to local village communities. Strengthen local village economies through increased employment and income opportunities. Could act as a model for other FSM communities to develop.
24	Capacity Building Potential	Develop a local SME. Business management training and mentoring.

1	Project Description	Chuuk Lagoon Islands Ferry Transport System
2	Type of Project	Transport and Infrastructure
3	Category	Public/Community and Product Development/Transport and Tours
4	Name of Proponent	Department of Transportation with assistance from the Division of Commerce and Industry
5	Contact Person	Tosuo Nakayama Jr., Director of Transport; Peter L. Aten, Chief, Department of Industry and Commerce
6	Location/Map Ref.	14 Chuuk Lagoon Islands
7	Status of Project	Preliminary planning stage
8	Status of Land Tenure	N/A
9	Project Description	
	To provide a Ferry boat service and system for passengers and supplies between the islands in Chuuk Lagoon. Would also require the construction of a number of landing jetties.	
10	Project Rationale/Concept	
	Needed improvement of transportation of resources to better serve tourism sector and availability of secure transport system for tourists to visit other islands.	
11	Investment Value	USD2,500,000
12	Assistance Required	Need full funding.
13	Market Research	In the process of completion.
14	Planning Approval Requirements	Yes, through planning and statistics office.
15	EIA Requirements	Yes
16	Infrastructure Requirements	Docking facilities with ferry boats in 9 locations.
17	Management Experience	Need to establish a professional transport operator and coordinator.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	FSM SDP Tourism Goal #3, Outcome 3.
23	Development Impacts	Tourism, community, and economic development.
24	Capacity Building Potential	Technical training.

1	Project Description	Chuuk Airport Terminal Renovation
2	Type of Project	Infrastructure
3	Category	Public/Transport/Infrastructure
4	Name of Proponent	Department of Transportation with assistance of Division of C&I, DAS
5	Contact Person	Tosuo Nakayama Jr., Director; Peter L. Aten, Chief
6	Location/Map Ref.	Chuuk Airport, Weno
7	Status of Project	Preliminary planning stage
8	Status of Land Tenure	N/A
9	Project Description	
	Renovation and expansion of existing Chuuk Airport Terminal to better serve tourists/visitors. Doubling current size of arrival and departure areas and including food/gift shops for departing travelers. Arrival area should also include rotating baggage conveyor for ease of baggage handling. Also need to upgrade the CVB office and provide an information counter for tourists.	
10	Project Rationale/Concept	
	Needed improvement of existing terminal to better serve tourist/visitors arriving into Chuuk.	
11	Investment Value	USD1,500,000
12	Assistance Required	Need full funding
13	Market Research	In the process of completion, as part of State SDP
14	Planning Approval Requirements	Yes, through planning and statistics office.
15	EIA Requirements	N/A
16	Infrastructure Requirements	Construction and renovation work on exterior and interior of current buildings, improvements to utilities, baggage handling, tourist shopping and information services.
17	Management Experience	N/A
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	FSM SDP Tourism Section on transportation.
23	Development Impacts	Tourism, community, and economic development.
24	Capacity Building Potential	Technical training.

1	Project Description	Mount Tonachaw Trail Project
2	Type of Project	Upgrading of Hiking Trail as a Tourism Attraction
3	Category	Public/Product Development/ Attraction
4	Name of Proponent	Chuuk Historical Preservation Office, Chuuk State Division of Commerce and Industry and Chuuk Visitors Bureau Office
5	Contact Person	Mr. Peter Aten, Chief of Commerce and Industry; Mr. Al Betwell, HPO Director
6	Location/Map Ref.	Chuuk, Weno, Iras, Miari area
7	Status of Project	The site is already a preserved site by the State of Chuuk
8	Status of Land Tenure	There are several land owners for the site and the trail leading to the site. Road Easement leading to the trail is already in place.
9	Project Description	<p>Mount Tonachaw is a famous landmark in Chuuk State located on the island of Weno in the village of Iras, Miari. The mountain possesses rich folklore and folktale which many Chuukese are familiar with. The most popular tale is the story of a powerful god that resides on its peak. Supposedly this god has been challenged by many other spirits and powerful forces from the other islands and has come out triumphant. Because of its popularity, various man made trails were created leading to the peak of the mountain. But with the many natural disaster occurrences that devastated the islands in the past, access to Mount Tonachaw has become virtually impassable. Chuuk State wants to capitalize on this popular landmark and make it accessible once again especially to visitors on the island.</p>
10	Project Rationale/Concept	<p>Majority of Chuuk's tourists have been mainly the passionate scuba divers. The main reason is because Chuuk has one of world's largest underwater museums, displaying wrecks of Japanese ships sunk during WWII. But this particular attraction for tourists could soon deteriorate within the next 20 years. Chuuk is currently looking into alternate attractions for its tourist market. Niche markets of outdoor enthusiasts and so forth are being researched as potential target markets.</p>
11	Investment Value	<ul style="list-style-type: none"> • Negotiation \$ 1,500.00 • Awareness and Training \$ 7,500.00 • Clearing and Site Development \$ 3,500.00 • Construction \$ 5,000.00 • Product Development and Promotion \$ <u>2,500.00</u> <p style="text-align: right;">Total = \$20,000.00</p>
12	Assistance Required	No State funds are available for such project. The project requires 100% of funding needed from outside sources.
13	Market Research	N/A
14	Planning Approval Requirements	The existing trail to the site was made when Mt. Tonachaw became a preserved landmark therefore approval requirements are in place.
15	EIA Requirements	According to Chuuk State EPA office, the trail does not pose an impact toward the site. If a physical structure is to be made, then it must meet certain criteria. Currently, a cell tower is in place along the side of the trail.

continued...

...Continuation of the Mount Tonachaw Trail Project

16	Infrastructure Requirements	The project plans to create a small visitors centre with information, heritage and cultural interpretation and possibly toilets and rubbish bins. Some directional signage will also be necessary and some safety ropes, steps, and possibly railings in certain areas.
17	Management Experience	State parks and monuments are under the management of HPO office in Chuuk. The office has been in place for nearly 40 years. May need to train some tour guides.
18	Business Plan Completed	Will consult the Division of Commerce and Industry.
19	Marketing Plan completed	Will consult with Chuuk Visitors Bureau.
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Potential to develop a new niche market segment with outdoor adventure, heritage and cultural tourist attractions.
22	Linkages with the Tourism Sector / Other Sectors	Dive market could also be interested in this type of product once it is made more accessible.
23	Development Impacts	This project is about the development of an already existing historical and cultural preserve site. Can help to diversify and develop tourism.
24	Capacity Building Potential	There is a need to create awareness amongst stakeholders in the project. There is a need to create training for tour guides to be able to receive visitors to such site as well as explain the Chuukese cultural experience to them.

Project Profiles of Selected Tourism Projects in Pohnpei

Annex 4

1	Project Description	Linking Farmers Supply Chain to the Local Tourism Industry
2	Type of Project	SME Tourism Development and Value Chain Development
3	Category	NGO/Product Dev't and Sector Linkages
4	Name of Proponent	Pohnpei Farmers Association
5	Contact Person	Saimon Mix, Director, PNI Farmers Association
6	Location/Map Ref.	Kolonia HO, 4 potential sites, strategically located around Pohnpei Island
7	Status of Project	Full project proposal being planned
8	Status of Land Tenure	Landowners in villages are involved but will need to discuss and negotiate site leases for market complexes.
9	Project Description	
	<p>The project involves the building of at least four locally based fish, fruit and vegetable market stall facilities. Then increase the number of suppliers and buyers to increase the linkages between hotels, restaurants and village farmers and fishers. Project activities will also include:</p> <ul style="list-style-type: none"> • Development of a business and marketing plan to include a supply and value chain analysis. • Assistance with developing a tour company that can specialize in Village Farm Tours. • Business management mentoring and training, particularly for the farmers and fishers involved. 	
10	Project Rationale/Concept	
	<p>The Project supports and enhances the concept of agri-tourism development by supporting the development of locally initiated SME businesses and spreading the benefits of tourism by developing supply and value chains that link local village farmers, fishers and their communities to mainstream hotels and restaurants that service the tourist market. The project has the potential to:</p> <ul style="list-style-type: none"> • Improve the livelihood of local village communities by generating employment and income through increased sales of produce. • Develop a local SME and increase their employment and income opportunities. 	
11	Investment Value	USD100,000
12	Assistance Required	Full funding as above (It is a registered NGO and cannot afford to borrow from a bank.)
13	Market Research	Have been operating for 12 months and are confident a regular market can be developed and sustained.
14	Planning Approval Requirements	Yes, will require planning and building approvals.
15	EIA Requirements	Yes, will need to check with EPA.

continued...

...Continuation of the Linking Farmers Supply Chain to the Local Tourism Industry Project

16	Infrastructure Requirements	Yes, buildings, utilities, fit out.
17	Management Experience	Proponent is already well established and operating a Market Produce (vegetables, fruit and fish) Facility in Kolonia. The project is supported by the following partners: <ul style="list-style-type: none"> • Island Foods Association; and • Pohnpei Visitors Bureau.
18	Business Plan Completed	No, but required for business development purposes.
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	Will form part of the business plan.
21	Market and Sales Potential	Very much dependent on Pohnpei visitor numbers and the effectiveness of the marketing plan.
22	Linkages with the Tourism Sector / Other Sectors	Very strong linkages with local farming and fishing communities and landowners.
23	Development Impacts	Strengthen local village communities. Could act as a model for other FSM communities to develop.
24	Capacity Building Potential	Excellent, particularly through direct business development and business management training and mentoring programs.

1	Project Description	Feasibility Study and Infrastructure Plan to Develop a New Hotel in Pohnpei
2	Type of Project	International Standard Hotel Development
3	Category	Public Private Partnership/Product Development/Hotel/Infrastructure
4	Name of Proponent	Micronesia Registration Advisors, Inc. (MRA)
5	Contact Person	Steven K. Baker, MRA CEO; James Moonier, MRA CCO
6	Location/Map Ref.	Not determined yet. Site selection part of the initial project study.
7	Status of Project	Have spoken to three engineering firms to ascertain baseline estimated costs. May need to utilize both local and foreign firms.
8	Status of Land Tenure	Concept is to reclaim land to build government owned peninsula to be the site of the new hotel. Also to create an artificial beach.
9	Project Description	<p>World class 200 room resort hotel built to international standards with a beach frontage. Size and quality of the hotel to be large enough to attract overseas high end tourists and compel new airline service to the FSM. Land to be reclaimed and therefore government owned with secure title which would also avoid some of the environmental issues involving mangroves which surround virtually all of Pohnpei.</p> <p>Brief for a Feasibility Study to develop a 200 room Hotel in Pohnpei:</p> <ul style="list-style-type: none"> • Identification of a suitable site – clean, clear water, assess the access to services and facilities, topography and coastline conducive to the creation of an artificial island with a beach and scenic views. • Design work and cost estimates for an Infrastructure Plan to construct an artificial island/peninsular with a beach; to provide an access road to the site, to include all utilities, with an energy efficiency and/or a renewable energy focus. • Design work and cost estimates for an Infrastructure Plan to upgrade the Nan Madol heritage site to a world class, sustainable and eco-friendly system of trails, fixed and floating boardwalks to make the mysteries of Nan Madol available to high end tourists. This world class quality experience would further support the building of a new hotel. • Cost estimates and financial projections to construct and operate a 200 room hotel.
10	Project Rationale/Concept	A first class resort destination with sufficient capacity to compel more air flights to the FSM will jump start the local tourist industry, create jobs and complimentary industries and be a catalyst for the development of the human capital of the FSM.
11	Investment Value	USD350,000 for the initial feasibility study and infrastructure planning, including site selection. USD 80-100 million. (USD60 million for hotel construction, with remainder for tourism infrastructure.)

continued...

...Continuation of the Feasibility Study and Infrastructure Plan to Develop a New Hotel in Pohnpei Project

12	Assistance Required	Hotel construction to be privately funded by foreign direct investment, sourced by MRA. Infrastructure to be funded by Government or through a multisectoral development agency. Hotel to be managed by an internationally branded resort hotel management group.
13	Market Research	To be included in the feasibility study.
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	Reclaiming land from lagoon, roads, sewage, electricity, etc.
17	Management Experience	Hotel investor has a long history of early stage investment and real estate projects. Hotel management company has global brand in hotel management business, including many on island communities.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	Have identified a consulting firm to execute feasibility study.
21	Market and Sales Potential	Global market for eco-tourism and adventure travel, including Nan Madol which should become a World Heritage site.
22	Linkages with the Tourism Sector / Other Sectors	World class hotel in Pohnpei becomes the linchpin for both regional business conferences and nationwide tourism. More traffic thru Pohnpei will spur development on other islands. Links to all different tour providers, local merchants and spurs new businesses (such as hotel laundry, handicrafts) and development of human capital and COM.
23	Development Impacts	Massive; felt at all levels of society.
24	Capacity Building Potential	The building of the hotel itself will create employment opportunities. And will encourage the building of human and infrastructure capacity in other areas.

1	Project Description	Infrastructure Plan to Develop Boardwalks at Nan Madol
2	Type of Project	International Standard Ecotourism Development Project
3	Category	Public/Product Development Attraction/Infrastructure
4	Name of Proponent	Micronesia Registration Advisors, Inc. (MRA)
5	Contact Person	Steven K. Baker, CEO, MRA; Jim Moonier, CCO, MRA
6	Location/Map Ref.	Temwen Island, Pohnpei
7	Status of Project	In early stage of implementation
8	Status of Land Tenure	<p>Nan Madol was registered in 1985 by the U.S. National Register of Historic Places as a National Historic Landmark and continues to be a significant heritage site. There are current plans underway to have Nan Madol become a UNESCO World Heritage Site.</p> <p>The name Nan Madol means “spaces between” and is a reference to the canals that crisscross the ruins.</p>
9	Project Description	
	<p>Nan Madol, constructed in a lagoon, consists of a series of small artificial islands linked by a network of canals. The site core with its stone walls encloses an area approximately 1.5 km long by 0.5 km wide (321 acres) and it contains nearly 100 artificial islets—stone and coral fill platforms—bordered by tidal canals. Also known as the Venice of the Pacific.</p> <p>World class sustainable and eco-friendly system of trails, fixed and floating boardwalks to make the mysteries of Nan Madol available to high end tourists. A world class quality experience would further support the building of a new hotel and compel new and/or improved international airline services into FSM.</p> <p>A National Historic Landmark (NHL) is a building, site, structure, or object that is officially recognized by the United States government for its outstanding degree of historical significance. Out of over 85,000 places that have been listed on the country’s National Register of Historic Places only about 2,500 are recognized as National Historic Landmarks.</p> <p>A UNESCO World Heritage Site is a place (such as a forest, mountain, lake, island, desert, monument, building, complex, or city) that is listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as of special cultural or physical significance. As of 2014, 1007 sites are listed: 779 cultural, 197 natural, and 31 mixed properties. The program catalogues, names, and conserves sites of outstanding cultural or natural importance to the common heritage of humanity. Under certain conditions, listed sites can obtain funds from the World Heritage Fund.</p>	
10	Project Rationale/Concept	
	<p>Nan Madol is a ruined city adjacent to the eastern shore of the island of Pohnpei. Its megalithic structures are carbon dated to the 12th century and its origin remains shrouded in mystery. Creating a sustainable and eco-friendly infrastructure for touring this site will be a core pillar of the FSM’s tourist megalithic infrastructure. A world class eco-tourism destination with sufficient capacity for throughput can support traffic to compel more air fights to the FSM and further jump start the local tourist industry, create jobs and complimentary industries. Importantly, it will be a catalyst for the development of the human capital of the FSM.</p>	

continued...

...Continuation of the Infrastructure Plan to Develop Boardwalks at Nan Madol Project

11	Investment Value	USD200,000
12	Assistance Required	Through Compact funding and UNESCO
13	Market Research	UNESCO World Heritage application; Site surveys
14	Planning Approval Requirements	N/A
15	EIA Requirements	Yes
16	Infrastructure Requirements	Yes
17	Management Experience	FSM Government, HPO and Tourism Authorities will need to discuss a Management Plan with the landowners.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	Have identified consulting firms to execute a feasibility study.
21	Market and Sales Potential	Global market for eco-tourism and adventure travel.
22	Linkages with the Tourism Sector / Other Sectors	World class non-diving destination in Pohnpei becomes a perfect complement for water and diving based activities. More tourist traffic for Pohnpei will spur development in other islands. Links to all different tour providers, local merchants and spur new businesses and development of human capital and COM.
23	Development Impacts	Massive; felt at all levels of society.
24	Capacity Building Potential	Would become a core pillar of the FSM tourism industry.

1	Project Description	Development and Rehabilitation of Pohnpei Historic and Tourism Attraction Sites
2	Type of Project	Development and Rehabilitation
3	Category	Public/Product Development/Sites and Tours
4	Name of Proponent	Pohnpei State Historic Preservation Office, Pohnpei State Tourism Office
5	Contact Person	Jason Lebhen
6	Location/Map Ref.	Map of sites in the process of completion
7	Status of Project	HPO and Tourism and Parks Office are responsible for the maintenance of the sites.
8	Status of Land Tenure	N/A
9	Project Description	
	<p>Pohnpei State has significant historic and visitor attractions that are in need of further development and in many cases, rehabilitation. Historic sites such as Nan Madol are in need of restroom facilities, improved (safer) trails and interpretive signage in order to meet and exceed visitor expectations. Other sites such as Sokehs Ridge, the beach at Nett Point and numerous waterfall hikes are in need of improvement in terms of access, safety and interpretive signage. This project is targeted at developing an ongoing plan for site development/rehabilitation and long term management with immediate implementation of critical outputs of the plan in order to upgrade current historic and attraction offerings for immediate impact. The planning phase is scheduled for a three month period and the overall duration of the management scheme will be five years with the aim of continual reassessment and revision of the management plan in order to break the cycle of sporadic improvements that are not durable.</p>	
10	Project Rationale/Concept	
	<p>High quality visitor experiences at historic and attraction sites (beaches, vistas, farm tourism) is a critically important component of a sustainable visitor industry. A longer term management plan with dedicated annual funding must be in place to insure that site investment is managed with a longer view thus insuring viability over time.</p>	
11	Investment Value	USD140,000
12	Assistance Required	Needs to be fully funded.
13	Market Research	Included in HPO work plans.
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	Yes, upgrading of sites, access to sites, signage and safety factors.
17	Management Experience	Local landowners would need management training.
18	Business Plan Completed	N/A

continued...

...Continuation of the Development and Rehabilitation of Pohnpei Historic and Tourism Attraction Sites Project

19	Marketing Plan completed	In the process of completion.
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Improved visitor experiences can create positive word of mouth and visual image depictions of sites thus strengthening the Pohnpei sustainable tourism brand.
22	Linkages with the Tourism Sector / Other Sectors	Tourism, Agriculture, Infrastructure.
23	Development Impacts	Improved historic and attraction sites with a longer term management plan and dedicated funding in place to ensure durability.
24	Capacity Building Potential	Planning holds the potential to develop higher capacity in the HPO and Tourism offices.

1	Project Description	Pohnpei Ecotourism Development Program
2	Type of Project	Ecotourism and Conservation
3	Category	Public/Planning/Ecotourism Product Development/Attractions and Tours
4	Name of Proponent	State Tourism Office and Conservation Society of Pohnpei (CSP)
5	Contact Person	Howard Rice, Office of the State Governor
6	Location/Map Ref.	Municipality of Kitti (initially for two model projects)
7	Status of Project	CSP already working with the local communities for conservation programs
8	Status of Land Tenure	Six Water Falls is a new site for a Protected Area being proposed by the Pohnpei State Legislator. The Enipein Marine Park is part of a mangrove forest reserve.
9	Project Description	
	<p>To develop Kitti Six Water Falls and The Enipein Marine Park sites as model projects for ecotourism as a way of assisting with their conservation and protection of their ecosystems. The objectives are:</p> <ul style="list-style-type: none"> • To conduct a series of community awareness seminars on the importance of the sites and ways to keep and protect them through an ecotourism program. • To assist the local communities to identify the needs to strengthen and preserve their ecosystems and earn an income through ecotourism. • To link the local community in with the Pohnpei tourism industry operators to develop the sites for ecotourism purposes. <p>CSP also possesses the templates for the Pohnpei Eco-Adventure Maps and Tours series for 13 regions in Pohnpei. These feature a range of tourism products including hiking, trekking, biking, kayaking, canoeing, swimming, picnicking, historic sites (in conjunction with the HPO) and village visits. All of these could be developed as part of an overall Pohnpei Ecotourism Program. Opportunities also exist to develop special interest markets in ornithology and botany.</p> <p>Many of the sites will require rehabilitation, interpretation signage, tour guide training, logistics for ecotours and marketing. The program will support local villages to develop their marine protected areas (MPAs) and their forest conservation areas.</p> <p>The development of historical sites can also be included as part of this ecotourism and conservation program. CSP can work and co-ordinate with the HPO and the Tourism and Parks Office to include many of the HPO managed sites into the ecotours program. Many of these sites also require upgrading as tourist attractions or picnic viewing areas. Various sites have been identified and the Tourism and Parks Office is responsible for their on-going maintenance.</p>	
10	Project Rationale/Concept	
	<p>The Ecotourism and Conservation Development Program will support the Pohnpei SDP and the CSP charter of preserving Pohnpei's natural heritage and implementing the National Biodiversity Strategic Action Plan (NBSAP). CSP has identified the need to empower local communities to protect Pohnpei's biodiversity in which networks of community-based protected areas are being established with a long-term goal of self-sustaining sustenance through increased collaboration on biodiversity conservation and management in Pohnpei.</p> <p>CSP aims to improve community access to information and resources to improve land management practices and adopt fresh water regulations. The ecotourism program will act as a catalyst in achieving these objectives and as a income earner to implement conservation programs.</p>	

continued...

...Continuation of the Pohnpei Ecotourism Development Program

11	Investment Value	USD200,000
12	Assistance Required	USD200,000
13	Market Research	Existing networks, previous tours program to learn from.
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	Small scale site rehabilitation, signage, boardwalks.
17	Management Experience	CSP is a well established and respected NGO. It can manage and implement the ecotourism program using its existing network but should recruit a manager to establish an Ecotourism Division within its existing organizational structure. This could become a commercial enterprise and revenue earner to support its conservation programs.
18	Business Plan Completed	The proponents are still working on the business plan.
19	Marketing Plan completed	Will be included in the business plan.
20	Feasibility Analysis Completed	Will be included in the business plan.
21	Market and Sales Potential	If properly managed by CSP utilizing its existing network of local community contacts, the ecotourism program has the potential to attract a growing number of tourists and to spread the benefits of tourism throughout the municipalities of Pohnpei.
22	Linkages with the Tourism Sector / Other Sectors	Community based ecotourism program linking with established commercial tourism operators.
23	Development Impacts	CSP promotes the valuable lesson that community initiatives can never be effective without government legislation and support but also that government sponsored policies and projects would not be successful without community participation. This new initiative will communicate the lessons learned throughout Micronesia.
24	Capacity Building Potential	SME ecotour company could be formed; community awareness seminars and tour guide training programs.

1	Project Description	Eco-Tour Guide Training
2	Type of Project	Training for Ecotourism development
3	Category	Public Sector/Training
4	Name of Proponent	Pohnpei Historic Preservation Office and Tourism and Parks Office
5	Contact Person	Kadalino Lorens - Pohnpei Government Office of Economic Affairs
6	Location/Map Ref.	N/A
7	Status of Project	Tour guide training is a required output project in the Pohnpei State Strategic Development Plan - Tourism Sector, Strategic Goal 6, 6.1, 6.1.1.q, 6.1.1, r, 6.1.1.s
8	Status of Land Tenure	N/A
9	Project Description	
	Development of policy and standards leading to training, certification and licensing of Ecotour Guides. Proposed policy consultation, policy development, standards development, legislative process consultation and planning of a proposed 350 hour Eco Tour Guide training program to be developed and implemented with the aim of certifying and (through examination) licensing of EcoTour Guides who will work in the private sector throughout the State of Pohnpei.	
10	Project Rationale/Concept	
	Tour guide training is a key component of a sustainable tourism system. Guide training is essential if the State is to effectively meet and exceed the expectations of international visitors for activities such as but not limited to, SCUBA diving, kayaking, biking, trekking, swimming, etc while protecting the health and safety of visitors, offering quality tourism services, experiences while protecting the rights of land owners (their lands and waters) and public lands/waters. Working with conservation NGO's in the development of the stewardship aspect of guiding will help assure a unified initiative aimed at environmental monitoring and collaboration about the health of the environments where visitor activities take place. A public policy leading to licensure of EcoTour Guides can go far in helping to create a sustainable tourism system where land owners (attraction owners), guides and visitors will have opportunities for higher quality offerings, better experiences and income potential.	
11	Investment Value	USD120,000
12	Assistance Required	Full funding as above is needed.
13	Market Research	N/A
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	N/A
17	Management Experience	Will use experienced trainers and resource persons.
18	Business Plan Completed	N/A

continued...

...Continuation of the Eco-Tour Guide Training Project

19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	Hotels, tour companies.
23	Development Impacts	Potential to create secure jobs, improve visitor experiences, improve hospitality related offerings (attractions and activities), higher levels of visitor safety and ecologically sensitive use of the environment. Having a licensing system in place and trained guides can help enhance the international reputation of Pohnpei State as a quality visitor destination.
24	Capacity Building Potential	Potential to build skills, increase knowledge of Pohnpei's natural, cultural and historic offerings and improve interpretation.

1	Project Description	Local Agriculture and Food Culinary Training Program
2	Type of Project	Training
3	Category	Public Sector/Training
4	Name of Proponent	Office of Economic Affairs with Pohnpei State Agriculture
5	Contact Person	Kadelino Lorens
6	Location/Map Ref.	N/A
7	Status of Project	N/A
8	Status of Land Tenure	N/A
9	Project Description	
	As detailed in the Agriculture section of the Pohnpei State Strategic Development Plan (Strategic Goal 2, Outcome 2.2, Activity 2.2.1, Outputs 2.2.1.a, 2.2.1.b, 2.2.1.c, 2.2.1.d, 2.2.1.e) that a local agriculture, local foods culinary training be offered to restaurant chefs, managers and owners with the aim of integrating more local agriculture and food items (dishes) into menus. The aim being to create more local food based menu offerings aimed at the visitor industry. New fusion menu items utilizing local ingredients and traditional recipes with other global styles of cooking can create unique Pohnpeian influenced menus tailored to the discriminating tastes of visitors thus enhancing the visitor experience while helping to build the Agriculture and Fishery sectors.	
10	Project Rationale/Concept	
	It is a known fact that visitors travel to not only visit a destination but also to interact with the local culture and to enjoy local cuisine. This project will help integrate local agriculture and food items into daily restaurant fare and at the same time create new business opportunities for farmers, fishermen and hospitality providers.	
11	Investment Value	USD65,000
12	Assistance Required	Full funding as above is needed.
13	Market Research	Identified activity in the SDP.
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	Teaching kitchen facility (COM-FSM) and/or existing restaurant kitchens.
17	Management Experience	Will utilize existing expertise at COM-FSM and other specialist resource people. Could work in with the Pohnpei Farmers Association and Island Foods Community.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A

continued...

...Continuation of the Local Agriculture and Food Culinary Training Program

21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	Direct link with tourism sector, Agriculture and Fisheries, local farmers.
23	Development Impacts	Holds the potential to upgrade visitor experiences thus strengthening the Pohnpei State tourism brand.
24	Capacity Building Potential	Offers the potential to improve culinary staff skills, develop supply chain knowledge and create opportunities for local farmers and fishermen.

Project Profiles of Selected Tourism Projects in Kosrae

Annex 5

1	Project Description	Protected Areas Conservation and Ecotourism Program
2	Type of Project	Ecotourism Awareness and Business Development
3	Category	NGO/Community and Product Development/Eco-Tours
4	Name of Proponent	Kosrae Conservation and Safety Organisation (KCSO), an NGO
5	Contact Person	Andy George, Executive Director, KCSO;
6	Location/Map Ref.	Email: kcsodirector@mail.fm
7	Status of Project	Utwe, Olum, Tafunsak and Walung
8	Status of Land Tenure	Local landowners and their communities are involved and support KCSO
9	Project Description	
	<p>The project involves the four protected areas of: Utwe Biosphere Reserve; Olum Watershed Protected Area; Tafunsak Marine Protected Area (MPA); and Walung MPA. A number of different components are involved but the project is mainly focused on raising awareness in municipal governments, local communities and schools about sustainable ecosystem management, including effective management techniques for marine and terrestrial Protected Areas. It will also assist local communities to develop canoe eco-tours as an income generating alternative livelihoods program. Project activities will include:</p> <ul style="list-style-type: none"> • Pre and post surveys to measure the level of support and understanding communities have towards Protected Areas. • Community workshops and consultations. • Distribution of awareness and informational materials. • Management plans for Walung and Olum Watershed PAs • Classroom visits and presentations. • Student field trips and special incentive competitions. • Train and develop local entrepreneurs to establish an ecotours business. • Provide seed funding into the proposed Kosrae Protected Area Fund – funds can be used as a sinking fund or a revolving fund to support conservation activities in the protected areas. • Hire consultants to develop eco-tours business plan, marketing plan, and project feasibility plan. 	
10	Project Rationale/Concept	
	<p>The KCSO has a mission statement “to sustainably manage and protect Kosrae’s biodiversity and natural heritage through community engagement and partnerships for the benefit of present and future generations.” The project is also based upon the guiding principles of a number of initiatives already in place. These include:</p> <ul style="list-style-type: none"> • The FSM National Biodiversity Strategy and Action Plan (2002). • Micronesia Challenge, a commitment by 5 Governments, including FSM, to set up a regional network of protected areas (2006). • Kosrae Protected Area System Act (2011). • Kosrae Strategic Development Plan (2013). 	

continued...

...Continuation of the Protected Areas Conservation and Ecotourism Program

<p>The objectives of the project are stated as:</p> <ul style="list-style-type: none"> • To empower the local community to support and participate in the effective management of their Protected Areas. • To increase community understanding of their roles in co-managing Kosrae's Protected Areas. • To improve the livelihood of local communities through ecotourism and other sustainable development activities. 		
11	Investment Value	USD70,000
12	Assistance Required	As an NGO, KCSO does not have a separate budget line for any new project initiatives. It needs to seek external funding.
13	Market Research	Yes, the project will incorporate and utilize existing ecotours in the protected areas of Kosrae.
14	Planning Approval Requirements	Business Licence required when appropriate.
15	EIA Requirements	N/A
16	Infrastructure Requirements	N/A
17	Management Experience	<p>KCSO has been operating since 1998 and has a number of project partners that can provide the necessary resources and expertise to implement the project. These include:</p> <ul style="list-style-type: none"> • Kosrae Visitors Bureau; • Yela Landowners Authority; • Tafunsak Resource Management Committee; • Kosrae State Dept. of Education; • Kosrae Island Resource Management Authority (KIRMA); and • Kosrae Dept. of Resources and Economic Affairs.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Very much dependent on Kosrae visitor numbers and the effectiveness of the marketing plan.
22	Linkages with the Tourism Sector / Other Sectors	Very strong linkages with local communities, landowners, municipal governments, schools, State Government, National Government and other NGOs.
23	Development Impacts	Strengthen conservation and biodiversity protection, create alternative livelihoods through the ecotourism business, sustain natural resources for future use. Could act as a model for other FSM communities to develop.
24	Capacity Building Potential	Excellent, particularly through direct education programs, business management training and mentoring.

1	Project Description	Yela Ka Forest Ecotourism Project
2	Type of Project	Protected Area Conservation and Ecotourism Development
3	Category	NGO/Community and Product Development/Eco-Tours
4	Name of Proponent	Yela Environment Landowners Authority
5	Contact Person	William K. William, Project Manager
6	Location/Map Ref.	Kosrae, Federated States of Micronesia
7	Status of Project	The Yela Ka Forest is a protected area and has already started ecotourism activities since 2006, providing tours to the forest to see its uniqueness and biological significances. YELA was able to develop a couple of facilities such as a visitor center, comfort room, and another small hut for visitors to use. As for accessibility, there is no road going to location of the Yela forest, therefore boat is the only main transportation. YELA has a fiber-glass boat that could accommodate 4 to 6 visitors per trip to and back from the Yela forest. A boardwalk is undergoing development which will cut through the mangrove to provide great view for visitors when hiking up to the Ka forest.
8	Status of Land Tenure	Yela Ka Forest is privately owned by 10 families that formed the YELA Organization, a NGO, and is supported by community and local partners.
9	Project Description	
	The Yela Ka Forest Ecotourism project promotes both conservation and ecotourism. The Ka forest is currently a protected area and its beauty attracts increasing number of visitors every year. This project will focus more on the site readiness for ecotourism which will improve site facilities and build new structures to provide easy and good access to visitors with safety measures. The tour activities will be expanded to include boat ride and canoeing through mangrove channels within the area. It will provide income generating opportunities to the community and awareness to students and visitors.	
10	Project Rationale/Concept	
	YELA's goal is "to protect the last remaining Ka forest and ecological wealth so that its biological, historical, cultural, social, and educational values continue to benefit the people, both Kosraeans and visitors".	
	The project has already been supported by community, local and regional partnering agencies such as the Tafunsak Municipal Government (TMG), Kosrae Island Resource Management Authority (KIRMA), Kosrae Conservation and Safety Organizaition (KCSO), Kosrae Visitors Bureau (KVB), and Kosrae Department of Education (DOE). The objectives for this project are:	
	<ul style="list-style-type: none"> • To provide awareness about the biological significances of the Ka forest to visitors (both local and foreign). • To provide alternative livelihoods through ecotourism activities to the community. • To develop capacity of the staff and institution in conservation and ecotourism. 	

continued...

...Continuation of the Yela Ka Forest Ecotourism Project

11	Investment Value	USD180,000. Full cost summary supplied.
12	Assistance Required	YELA, as an NGO, always seeks external funding for new project initiatives. Can provide 'in-kind' assistance for this project worth USD46,000.
13	Market Research	No solid research undertaken by YELA, however the Kosrae Visitors Bureau has provided assistance to identify opportunities and promotion for tourism to the site. Yela Ka Forest, along with other sites in Kosrae, has recently been promoted in Tokyo where interpretative materials (in Japanese) have been distributed.
14	Planning Approval Requirements	Land is privately owned by YELA members, but will work with appropriate agency if mandatory.
15	EIA Requirements	Same as above
16	Infrastructure Requirements	Same as above
17	Management Experience	YELA was registered/chartered with the Kosrae State Government in 2006 and became a legitimate non-government organization with a mission to protect the last Ka forest in the world. The staff have already gone through various project management trainings with regional partners and were able to manage many projects from 2006 till this day.
18	Business Plan Completed	Will be needed for ecotourism business.
19	Marketing Plan completed	Same as above.
20	Feasibility Analysis Completed	Same as above.
21	Market and Sales Potential	Dependent on number of visitors and marketing strategies.
22	Linkages with the Tourism Sector / Other Sectors	YELA works closely with local partners such as Kosrae Visitors Bureau, KIRMA, KCSO, and government agencies to promote both biological conservation and ecotourism.
23	Development Impacts	This project will strongly develop the capacity of the staff, organization, and the community and create alternative livelihood through ecotourism.
24	Capacity Building Potential	Capacity development to the locals in the field of ecotourism is highly needed and recommended, so YELA is always on the look-out for training opportunities to our local staff. Tour guides training in tourism, as well as safety procedures for visitors, and in many other fields that yet to be identified.

1	Project Description	Development of Historical Sites as Tourism Attractions for Kosrae
2	Type of Project	Small-Scale Infrastructure, Site Management
3	Category	Public/Product Development/Attractions
4	Name of Proponent	Kosrae Historic Preservation Office and Kosrae Visitors Bureau
5	Contact Person	Standon T. Andrew, Administrator, KHPO
6	Location/Map Ref.	<ul style="list-style-type: none"> • Wiya Bird Cave- Located north west of Kosrae • Lela Ruins – Located on east of Kosrae • Safonfok – Located northwest of Kosrae
7	Status of Project	These are on-going projects that are managed by the landowners and the KHPO.
8	Status of Land Tenure	All sites are privately owned.
9	Project Description	
	<p>This project is focusing on developing a few key historical sites that have already been developed on the Island as Tourism Attractions. Most of these sites are privately owned and have been managed by each individual landowner with the assistance from Kosrae Historic Preservation Office. These three sites are among those that are visited by visitors and are recommended by the KHPO and the KVB tourism office. Major activities required for the project includes clearing and cleaning of access to these sites, collection or management of waste, site management and promotion and the training of tour guides.</p>	
10	Project Rationale/Concept	
	<p>KHPO and KVB to work in collaboration with local landowners and the Hotel and tourism operators to increase the number of tourists or visitors to Kosrae by improving or upgrading these historical sites and make them more viable as tourism attractions.</p>	
11	Investment Value	USD15,000.00 for 3 sites = USD45,000, plus USD5,000
12	Assistance Required	As above
13	Market Research	N/A
14	Planning Approval Requirements	N/A
15	EIA Requirements	Most of these are ongoing projects that have already been assessed by the Environmental Agency and since they will require minor activities that may have very minimal impacts the project may require an environmental clearance from KIRMA.
16	Infrastructure Requirements	These projects will involve minor activities such as clearing, cleaning, upgrading of access trails, putting up signage.
17	Management Experience	Will be managed under KIRMA, HPO and KVB.
18	Business Plan Completed	N/A
19	Marketing Plan completed	N/A

continued...

...Continuation of the Development of Historical Sites as Tourism Attractions for Kosrae Project

20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Market and Sales potential can be very high. Improving or upgrading existing access to some of the sites and erecting interpretive signs and establish very close collaboration with Hotel operators.
22	Linkages with the Tourism Sector / Other Sectors	This project is linked to the Kosrae Strategic Development Plan, Tourism Sector, under expected Result 8-Tourist infrastructure upgraded and maintained, through: Activity 1, improved access to tourist sites; Activity 2, signage upgraded; Activity 3, tour sites consistently maintained.
23	Development Impacts	No negative development impacts. Potential to diversify the tourism product and increase the positive benefits of tourism.
24	Capacity Building Potential	Local tour guides capacities will be enhance through tour guide trainings. Management capacity of landowners and other partners will be enhance through trainings or scheduled visits.

1	Project Description	Upgrading of Oma Hiking Trail
2	Type of Project	Upgrading a Tourism Attraction
3	Category	Private/Product Development Attractions
4	Name of Proponent	Hemilson Phillip, Owner/Operator, Kosrae Adventure Tours
5	Contact Person	Hemilson Phillip
6	Location/Map Ref.	Olum Valley, Malem
7	Status of Project	Already being used as a tourist attraction but needs upgrading
8	Status of Land Tenure	100% owned by Hemilson Phillip
9	Project Description	
	<p>The tour to Oma ruins operated by Hemilson Phillip for Kosrae Adventure Tours is a quality guided rainforest adventure tour. Located within the Olum valley in Malem, the tour focuses on traditional uses of the forest and the history surrounding some WWII bunkers and ruins, as well as some cascading waterfalls. Hemilson Phillip is a “natural storyteller” and is himself, part of the attraction. The tour is three to five hours, including transport to and from the resorts. Tours are priced at USD25 per person and half price for children under 12 years old and under. Since starting the tours, it is estimated that about 80 people have been guided through the tour per year.</p> <p>Some of things required for an upgrading are safety hand rails to be professionally made, one additional rest stop with a hut that will be a refuge from the rain, non-slippery steps to be made of concrete or other permanent materials, pamphlets, brochures, interpretation signage, welcome signs, upgrading the trail with fine sand, clearing equipments such as chainsaws and weed trimmers.</p> <p>Kosrae Adventure Tours should also produce a management and marketing plan to develop its ecotourism business.</p>	
10	Project Rationale/Concept	
	<p>The product on sale is actually Hemilson himself and a rainforest adventure rather than just a walk to the Oma Mountain. Some of the things to consider is re-naming the tour to something along the lines of “Hemilson’s Rainforest Adventure” and include the Oma Mountain, skeleton caves and cascading waterfall as part of the itinerary. Another underlying reason for this was to avoid having too many “ruins tours” and to refocus many of the tours on the natural, cultural and historical values.</p>	
11	Investment Value	USD15,000.00
12	Assistance Required	5% local contribution/95% grant funding
13	Market Research	Yes
14	Planning Approval Requirements	N/A
15	EIA Requirements	Need to check with the EPA.
16	Infrastructure Requirements	Small scale trail improvements for safety and bad weather, shelter hut.
17	Management Experience	Well established tour operator with 30 years of experience.

continued...

...Continuation of the Upgrading of Oma Hiking Trail Project

18	Business Plan Completed	Needs to be done, can include other tours as well.
19	Marketing Plan completed	Include as above, needs a website.
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	Yes, has the potential to attract more tourists.
22	Linkages with the Tourism Sector / Other Sectors	Strong links between local village communities and mainstream tourism operators.
23	Development Impacts	Low
24	Capacity Building Potential	Hemilson is a specialist resource person who could be utilized as an instructor in an ecotour guide training program.

1	Project Description	Kosrae Handicrafts Retail Outlet
2	Type of Project	SME Business Development
3	Category	NGO/Product Development/Handicrafts/Cultural Tourism Attraction
4	Name of Proponent	Kosrae Womens Association
5	Contact Person	Mary Livaie
6	Location/Map Ref.	Tofol, Kosrae, FSM
7	Status of Project	There is a building situated next door to the Kosrae Visitors Bureau which is currently used as the Kosrae Womens Centre mainly for meetings.
8	Status of Land Tenure	Government owned and land rights agreement in place.
9	Project Description	
	The idea is to find seed money to utilize the building next door to the KVB for a retail outlet to display and sell local handicrafts and to increase handicraft stocks to develop an inventory for cataloguing handicrafts with pictures and descriptions. The Kosrae Womens Association will operate a retail handicrafts business outlet for the sale and viewing of Kosraean handicrafts.	
10	Project Rationale/Concept	
	Kosrae is an island state with a great tradition of making handicrafts from local materials and this provides income generating potential to make money from the making and selling of handicrafts. There are currently no venues for the display of handicrafts (weaving, carving and sewing) products.	
11	Investment Value	USD18,000
12	Assistance Required	N/A
13	Market Research	Yes
14	Planning Approval Requirements	N/A
15	EIA Requirements	N/A
16	Infrastructure Requirements	N/A
17	Management Experience	Many of the KWA members have more than 20 years experience working in women's affairs and with the making and selling of locally produced handicrafts.
18	Business Plan Completed	Need assistance to write this up, will refer to SBDC.
19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A

continued...

...Continuation of the Kosrae Handicrafts Retail Outlet Project

21	Market and Sales Potential	High potential
22	Linkages with the Tourism Sector / Other Sectors	Locally made, authentic handicrafts and souvenirs are in high demand from tourists visiting the island. Also, strong linkages with local village communities.
23	Development Impacts	High economic development impact with low negative impacts. Potential to create income generating opportunities through SME development. Potential to develop stronger cultural impacts.
24	Capacity Building Potential	Can start with capable, experienced staff, who will train others. SME business development and growth. But should establish a business management and marketing program, with assistance from SBDC.

1	Project Description	Upgrade of Kosrae Airport Terminal
2	Type of Project	Infrastructure Upgrade
3	Category	Public Sector/Infrastructure
4	Name of Proponent	Kosrae Department of Transportation and Infrastructure
5	Contact Person	Hairom Livaie
6	Location/Map Ref.	Kosrae Airport
7	Status of Project	Pre-planning has been completed
8	Status of Land Tenure	Public land
9	Project Description	
	<p>Airport arrival station at the Kosrae International Airport to be painted with happy colors or inviting colors to brighten up the room, include new shiny stainless steel rack displays, new benches by the back wall, new push cards for carrying luggage, brand new ceiling fans and fluorescent light fixtures, renovated toilet room, a new line of wall decoration made of handicraft tapestries and other local crafts provided, new art business signs provided by the local hotel and tourist businesses, construct a new sign board in front of the Immigration entrance into the arrival lounge, a new TV needs to be installed to showcase activities that travelers could do while visiting Kosrae. Cleaning up of the Kosrae airport causeway and bridge area.</p> <p>The new departure lounge should include an extra table for luggage checks, installation of an A/C system, more attractive and comfortable furniture. The departure lounge also needs to be painted. The toilet facilities need replacement with additional toilets. A snack bar should be installed in the departure area with alcoholic and non-alcoholic beverages and food. A TV needs should also be installed to entertain travelers while they are waiting for their flights.</p>	
	10 Project Rationale/Concept	
	To improve the comfort, convenience, safety and security of an essential transport access facility. To improve the image of Kosrae as a tourism destination within FSM.	
11	Investment Value	USD300,000
12	Assistance Required	Needs to be fully funded.
13	Market Research	Yes, through airports improvements program.
14	Planning Approval Requirements	Yes, will be required.
15	EIA Requirements	Need to check with EPA.
16	Infrastructure Requirements	Building renovations, all utilities (water, plumbing, electricity), internal fittings, toilet facilities, signage, safety and security features.
17	Management Experience	Yes, experienced airport managers.
18	Business Plan Completed	N/A

continued...

...Continuation of the Upgrade of Kosrae Airport Terminal Project

19	Marketing Plan completed	N/A
20	Feasibility Analysis Completed	N/A
21	Market and Sales Potential	N/A
22	Linkages with the Tourism Sector / Other Sectors	Essential transport facility.
23	Development Impacts	Essential infrastructure to support the tourism sector.
24	Capacity Building Potential	N/A

1	Project Description	Development of Peng Wo Beach Camp												
2	Type of Project	Upgrading of an Eco-lodge/Resort												
3	Category	Private/Product Development/Eco-lodge												
4	Name of Proponent	Timothy Jackson												
5	Contact Person	Timothy Jackson, Primary Owner and Manager												
6	Location/Map Ref.	Walung, Kosrae, FSM												
7	Status of Project	Currently operating a beach camp site with three local huts and a gift/snack shop.												
8	Status of Land Tenure	Gentleman's agreement provided by the co-owner, Mishima Kephass, site can be used without a time limit.												
9	Project Description	There are three local bungalows, each having a private bedroom, shower, and a porch. Needs assistance with a management and marketing plan. Wants to add some rooms and upgrade facilities. Also needs a new boat for transporting guests.												
10	Project Rationale/Concept	To provide a beach based ecotourism experience in a very private and beautiful beach location. An escape or hideaway for both domestic and international visitors. Lots of easily accessible water based activities like swimming, fishing, surfing, snorkeling and kayaking through the mangrove forest.												
11	Investment Value	<table> <tr> <td>1. Management plan</td> <td>\$15,000.00</td> </tr> <tr> <td>2. 2 local huts (\$3,500.00 ea.)</td> <td>\$7,000.00</td> </tr> <tr> <td>3. A multipurpose (open air) shelter</td> <td>\$4,500.00</td> </tr> <tr> <td>4. A shuttle</td> <td>\$5,000.00</td> </tr> <tr> <td>5. A 23-footer fiberglass boat</td> <td>\$6,500.00</td> </tr> <tr> <td style="text-align: right;">Total</td> <td>\$38,000.00</td> </tr> </table>	1. Management plan	\$15,000.00	2. 2 local huts (\$3,500.00 ea.)	\$7,000.00	3. A multipurpose (open air) shelter	\$4,500.00	4. A shuttle	\$5,000.00	5. A 23-footer fiberglass boat	\$6,500.00	Total	\$38,000.00
1. Management plan	\$15,000.00													
2. 2 local huts (\$3,500.00 ea.)	\$7,000.00													
3. A multipurpose (open air) shelter	\$4,500.00													
4. A shuttle	\$5,000.00													
5. A 23-footer fiberglass boat	\$6,500.00													
Total	\$38,000.00													
12	Assistance Required	Same as above												
13	Market Research	Meetings held with KVB Office and hotel representatives. For marketing and upgrading, the name will soon be changed to 'GOOD NEWS RETREAT'												
14	Planning Approval Requirements	N/A												
15	EIA Requirements	Need to check with the EPA.												
16	Infrastructure Requirements	Building renovations and construction of new bungalows.												
17	Management Experience	Has been operating the business for seven years. But requires assistance with a management and marketing plan.												
18	Business Plan Completed	No, as above.												
19	Marketing Plan completed	No, as above.												
20	Feasibility Analysis Completed	No, as above.												

continued...

...Continuation of the Development of Peng Wo Beach Camp Project

21	Market and Sales Potential	Dependent on improvement to visitor numbers in Kosrae.
22	Linkages with the Tourism Sector / Other Sectors	This is a tourism related activity so further linkages will be developed.
23	Development Impacts	Positive growth to the economy, sustaining natural and cultural heritage.
24	Capacity Building Potential	Requires training support programs.