

The Nan Madol Archaeological Site of Pohnpei (Federated States of Micronesia)

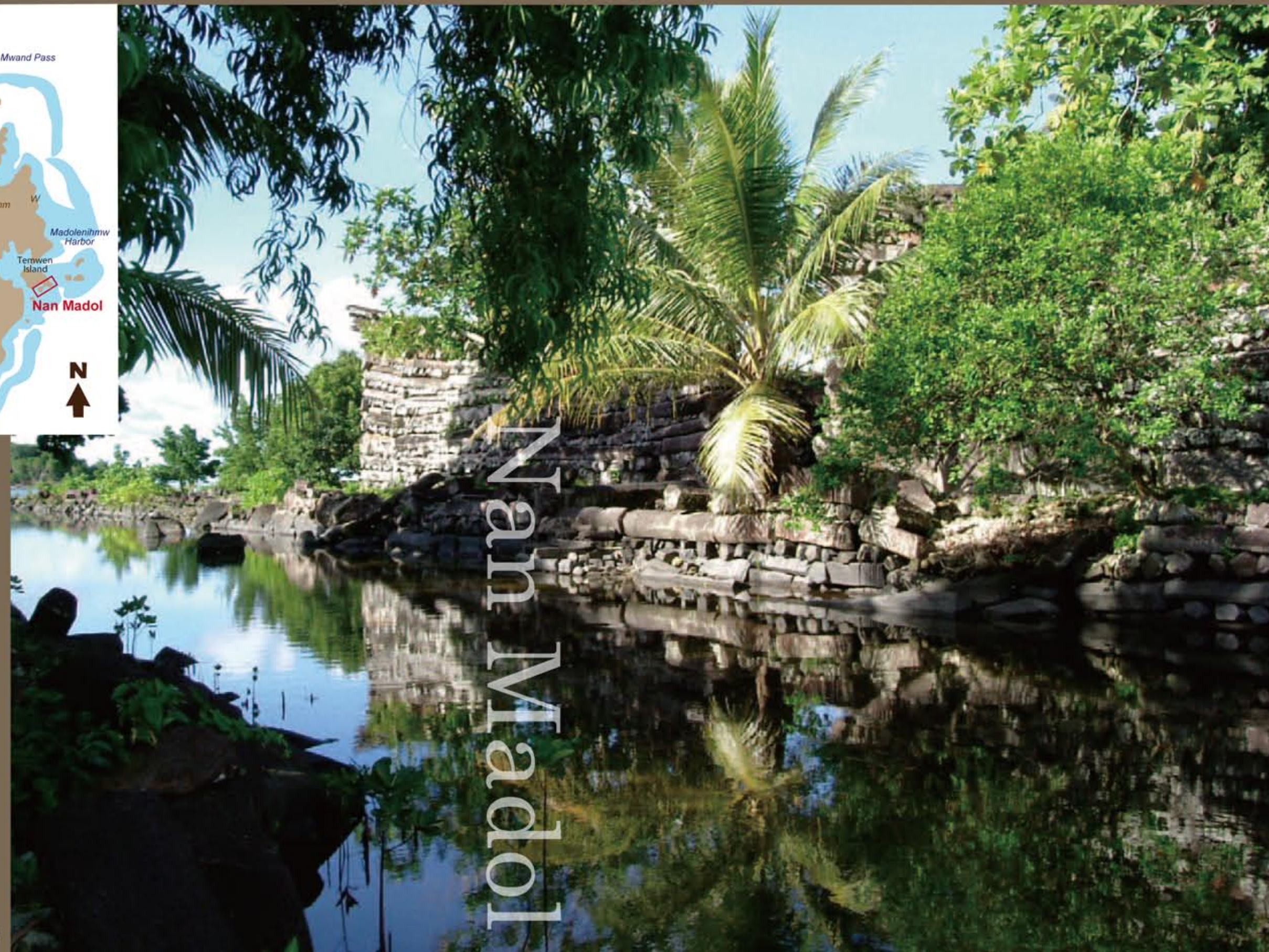
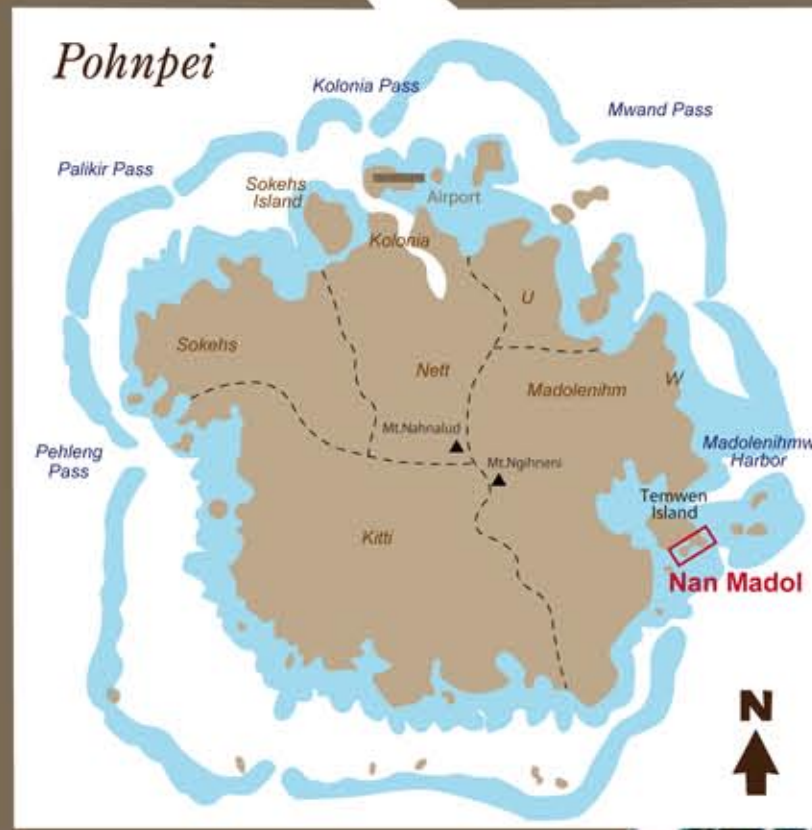
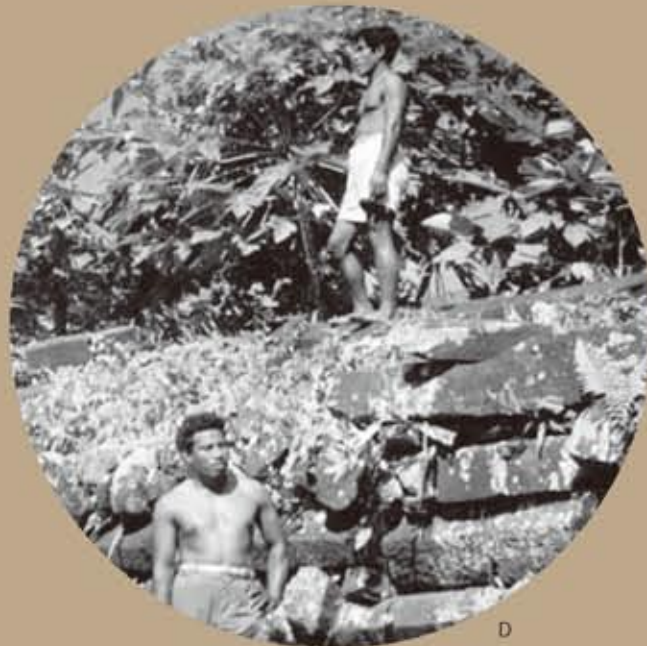


Photo :
A - High Commissioner Midkiff and staff at Nan Madol (N-2360.02)
B - Family with canoe full of breadfruit passing through Nan Madol, UN photo (N-1893c.04)
C - Sakau ceremony, Ponape (N-20a)
D - Ponapeans at Nan Madol, photo by Ted Huggins (N-2377.03)
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Nan Miadol—the Ancient Sea



In the middle of the Pacific Ocean lie the ruins of an ancient city off the shore of the island of Pohnpei in the Federated States of Micronesia. It is Nan Madol, a ruin that is often called the "Venice of the Pacific," and whose unparalleled uniqueness, enormity, and magnificence has continued to intrigue many people.



- | | | |
|---------------------|---------------------------|-------------------|
| 1 Temwen Island | 19 Sapwei | 37 bathing place |
| 2 Sewhiso | 20 Sapwenleng | 38 Pehi en Mweik |
| 3 Likonpalau | 21 Pedenleng | 39 Peikapw |
| 4 Nan Lehn Moak | 22 Pilenleng | 40 Namwenias |
| 5 Pohn kelimw | 23 Pahndipap | 41 Keimwin Sokehs |
| 6 Mweid en Kiti | 24 Pedeped | 42 tortoise |
| 7 Pahnmeid | 25 Peinpwe | 43 idehd |
| 8 Mweid | 26 Nihkonok | 44 Peitaup |
| 9 Pahnwi | 27 Reilap | 45 Dekehtik |
| 10 Pahnwi | 28 Dolewe | 46 Pahnisou |
| 11 Mweiden Welwel | 29 Peilam | 47 Peinieir |
| 12 Kapinet | 30 Reitik | 48 Mand |
| 13 Mweiden Nahsapwe | 31 Uasau | 49 Palakapw |
| 14 Pikalap | 32 Kelepweil | 50 Darong |
| 15 Mweidalap | 33 Pahn kadira | 51 Lehnkei |
| 16 Lemensal | 34 Place of punishment | 52 Namwen Kau |
| 17 Peinmet | 35 Temple of Nankiilmwahu | 53 Pohn Pikalap |
| 18 Likinsau | 36 Keimwin Mandirip | 54 Madol Pah |

City of the Pacific



- | | |
|--------------------|------------------------|
| 55 Pehi en Kitel | 89 Sakapes |
| 56 spring | 90 Paralap |
| 57 Peidoh | 91 Usennamw |
| 58 Pwiel | 92 Lele Katau |
| 59 Reidipap | 93 Dapahu |
| 60 Sapweteirei | 94 Pahn Katau |
| 61 Peinmel | 95 Paraka Tuhke |
| 62 Likindalok | 96 Sarwi |
| 63 Imwiniap | 97 Madol Powe |
| 64 Peinuht | 98 Peilapalap |
| 65 Sapwenluhk | 99 Rasalap |
| 66 Dewenloale | 100 Pwulak |
| 67 Imwinmap | 101 Peinering |
| 68 Map | 102 Peinior |
| 69 Sapwengei | 103 Pahseid |
| 70 Sapwolos | 104 Usen Dau |
| 71 Ainiar | 105 Sapwuhtohr |
| 72 Sapwenpwe | 106 Pwallahng |
| 73 Peiniap | 107 Dewen Nankiilmwahu |
| 74 Sapwakapw | 108 Peikap Sapwawas |
| 75 Sapwendau | 109 Narukep |
| | 110 Pahndouwas |
| | 111 Dau |
| | 112 Dewenkasapal |
| | 113 Nan Dawas |
| | 114 Pohn Dawas |
| | 115 Kenderek |
| | 116 Pohnmeirak |
| | 117 Peiniot |
| | 118 Peiniot |
| | 119 Nan Mwuluhsei |
| | 120 Lelou |
| | 121 Rarian |
| | 122 Karian |
| | 123 Lukop en karian |
| | 124 Lelou |
| | 125 Pik en Nahn Sapwe |
| | 126 Sapwutik |
| | 127 Angeir-Likiangeir |
| | 128 Pahn Mwasangapw |
| | 129 Lemenkau |
| | 130 Pohn Mwudok |
| 76 Sapwuhtik | |
| 77 Sapwuhtir | |
| 78 Nihmokemok | |
| 79 Nihrik | |
| 80 Nihdor-Reidipap | |
| 81 Dauahdpeidak | |
| 82 Pohn Dake | |
| 83 Dauahdpeidi | |
| 84 Usen Pehi | |
| 85 Sapwohng | |
| 86 Sapwenpei | |
| 87 Sakapeilong | |
| 88 Likinpei | |

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Photo credit: Osamu Kataoka

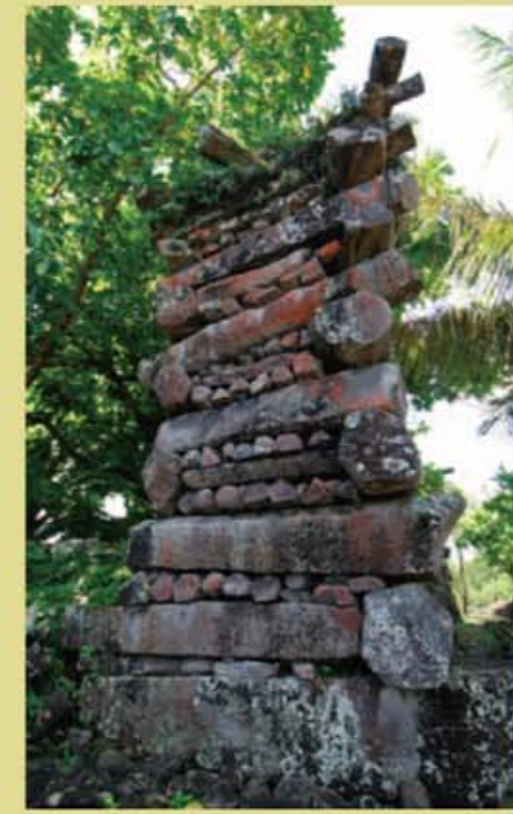
Description of Nan Madol

Nan Madol, the Ancient Sea City of the Pacific

Nan Madol is the ruin of a megalithic civilization composed of 95 small to large artificial islets made mostly of basalt. The islets are scattered over an expanse of ocean covering roughly 1.5 km × 0.7 km off the shore of Pohnpei Island, Micronesia. According to archaeological studies, construction of the islets began around 500 AD, and the Saudeleur Dynasty of chiefs expanded on its initial construction until about 1200 AD. According to oral tradition the Saudeleur Dynasty was conquered by Isokelekel, a young warrior from the island of Kosrae located 480 km east of Nan Madol, sometime around 1500 to 1600 AD.

The complex of ruins is composed of palaces, temples, mortuaries, and residential sectors, with each of the 95 islets having its own name and oral history. The network of canals separating the islets suggests that the residents of Nan Madol traversed the islands across the canals via canoe.

Nan Madol is proof that a mighty, ancient dynasty previously existed in Pohnpei, and it is now regarded as a sacred place by local residents. Furthermore, it is one of the largest and most spectacular ruins in the Pacific Ocean, which covers one-third the Earth's surface, and is an important landmark that displays the pinnacle of Pacific Ocean culture. In these respects, Nan Madol is undeniably a ruin that has prominent universal value to all of humanity.



Entrance in the outer wall of Nandauwas. The wall is built of prismatic basalt piled in alternating header-stretcher courses, and rises to a height of approx. 8 m.

Photo credit : Tomo Ishimura

Column 1: Magnitude of the rocks

Most of the artificial islets of Nan Madol are made of huge basalt prisms, basalt boulders, and coral rocks. On the islet of Nandauwas, a double-walled enclosure of basalt carefully piled with alternating courses of headers and stretchers and rising to a height of 8 meters surrounds a central stone chamber whose ceiling is made of prismatic basalt columns as long as 5 meters. In fact, the ruins are composed of more than 60,000 such prismatic columns of all sizes. On the islet of Pahnwi, huge basalt boulders possibly weighing up to 90 tons are stacked to a height of 10 meters in the southwestern corner of the islet. Through physicochemical studies, it was found that these rocks were originally quarried from the Sokehs and U districts situated on the opposite side of the island from Pahnwi, 25 kilometers away in straight-line distance.

It is yet unknown how such huge rocks were transported to the islet and how they were assembled into structures. In an archaeological experiment performed in the past, a prismatic basalt column was extracted from a quarry by applying heat and rapidly quenching it with water, carried down to the coast, and transported via canoe, but the labor and transportation technology needed to move the single column were considerable.



A rocky mountain in Sokehs, one of the places from which the stones of Nan Madol were quarried.

Column 3: Megalithic culture of Micronesia

Nan Madol is not the only megalithic culture in Micronesia. There are archaeological evidences of a number of other such cultures in the region. For example, in the Mariana Islands such as Guam and Saipan, there are remains of many stone columns called latte stones, which made up the "stilts" that still houses were built on. On Yap Island in the Federated States of Micronesia, stone money is used, made of crystalline limestone quarried and brought from the Palau Islands situated some 400 kilometers from Yap. The Palau Islands also have numerous remains of monoliths, stone faces, stone coffins, and other such monuments. Furthermore, a ruined stone city closely resembling Nan Madol called Lelu exists on Kosrae, another island belonging to the Federated States of Micronesia.

There is still much to learn about the possible relationships among these megalithic cultures, but they are important proof of the migration and interaction of peoples throughout the Pacific.



Latte stones on Guam, Mariana Islands



Yapese stone money

Photo credit : Osamu Kataoka

Column 2: Oral tradition

Each of the 95 islets of Nan Madol has its own name and an oral tradition that tells of its origin.

Legend has it that there were once two brothers named Olosipha and Olosopho, who created the artificial islets, working their way down from "upper" Nan Madol in the northeast to "lower" Nan Madol in the southwest, with the cooperation of the local residents of each area. The center of upper Nan Madol is Nandauwas, and it is where the chiefs of the dynasty that ruled the island lie buried in a central tomb. During indigenous war-times, the people of Nan Madol offered a local brew called sakau (known elsewhere as kava) to the spirits of the great leaders and prayed for victory. Important meetings about the affairs of the dynasty were also held in Nandauwas. Meanwhile, Pahnkadira in lower Nan Madol was the residential sector of the chiefs, and served an important role as the religious and administrative center of Nan Madol.

Top photo: The central stone chamber in Nandauwas that is said to have been a royal tomb

Bottom photo: A network of canals between the artificial islets. The local people probably traversed the islands across these canals via canoe.



Photo credit : Tomo Ishimura

Column 4: Archaeological achievements

Based on studies conducted to date, it is believed that humanity first set foot on Pohnpei Island 2000 years ago, and that the first settlers were people who traveled northward from around Melanesia.

Pohnpei culture did not have metal until the arrival of Europeans after the 1820s. Before that, the prehistoric residents of Pohnpei developed a culture based on the use of seashells and not stone, despite having an abundance of basalt. They created diverse items from seashells, including axes, fish hooks, and ornaments. These have been discovered from archaeological excavations on the ruined islets of Nan Madol.

It is intriguing to think how these people constructed such a monumental architecture as Nan Madol without the use of metal and stone, which are seemingly more useful as tools than seashells.



Shell adzes, fishhooks, ornament

Photo credit : Osamu Kataoka

State of Conservation at the Nan Madol Site

Top photo: Collapsed stones on Karian caused by high waves from the open sea
Bottom photo: Collapsed stones along the exterior wall of Nandauwas



Nan Madol still speaks eloquently of the lost megalithic civilization that it once was, but there are various issues that need to be addressed concerning its preservation.

One of those issues is the risk of physical collapse of the city itself. Some of the structures that were built by stacking huge basalt rocks have already begun to collapse.

For example, the artificial islet of Karian, which faces the open sea, is conspicuously eroded by high waves, and is at risk of suffering even greater wave damage as a result of the recent climate change.



Mangrove trees growing inside a canal interconnecting the islets. They are blocking the flow of water and causing mud to accumulate in the canals.

Another issue is the adverse impact of plants that flourish in the ruins. There are in fact many stone structures that are falling apart due to the extension of tree roots. The growth of mangrove trees inside the canals that interconnect the artificial islets is another concern, as the trees are blocking the flow of water through the canals, causing mud to accumulate in them, and spoiling the beautiful appearance of Nan Madol as a city floating on the sea. The recent climate change might also be affecting the exuberance of plant life in some way.

It goes without saying that further scientific assessment efforts are needed to properly understand and address the risks facing Nan Madol. Foremost in importance is for the international community to cooperate and act as a whole in addressing issues regarding the preservation of the ruins as a heritage of all humanity, and not the sole responsibility of the local residents and authorities concerned.



An overgrowth of plants covering a stone structure on Pahnwi

Photo credit : Tomo Ishimura

Photo credit : Osamu Kataoka

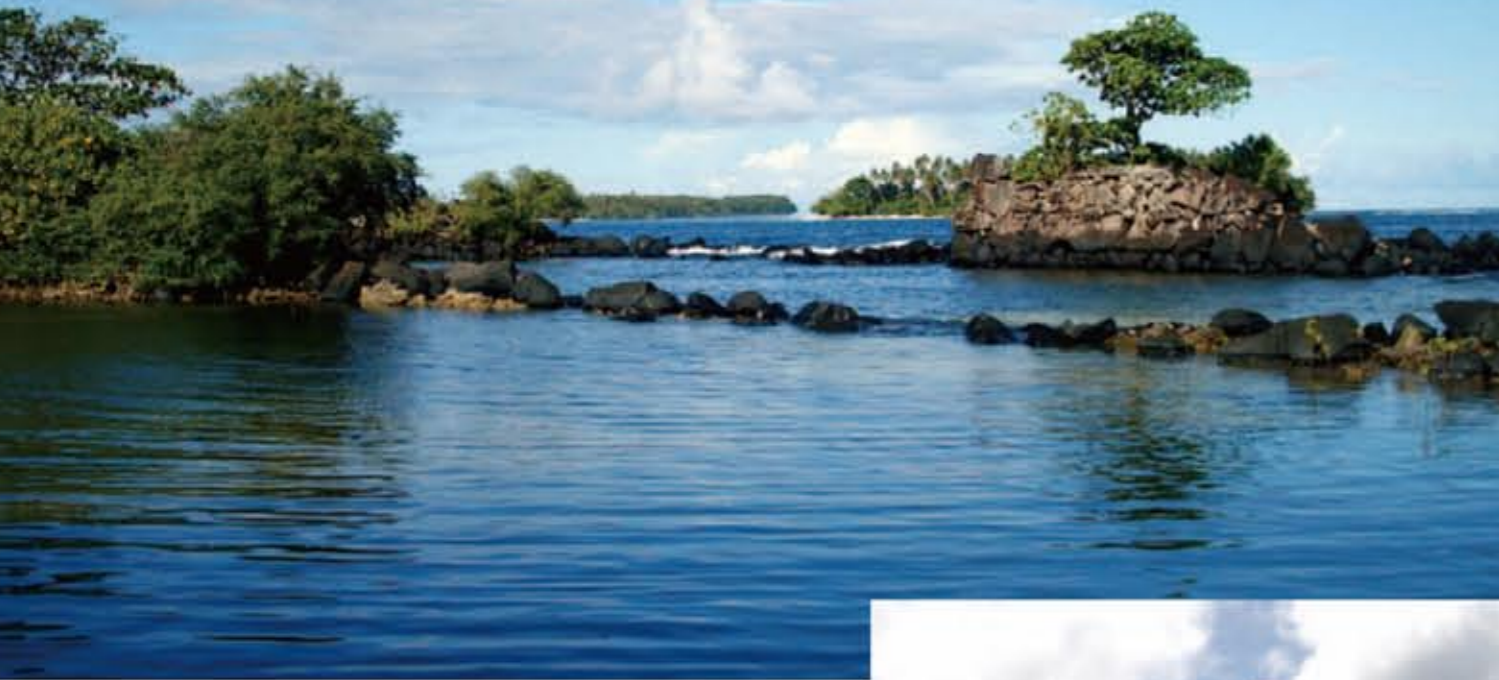


Photo credit : Tomo Ishimura

