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MINISTRY OF INTERNAL AFFAIRS
HISTORIC PRESERVATION OFFICE
ALELE MUSUEM

Anthropological Survey of Wotho Atoll
(Preliminary Report)

Carmen C.H. Petrosian-Husa

HPO Report 2004/2

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Illustrations.[1]

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[1] If not otherwise indicated photographs were taken by Carmen C.H. Petrosian-Husa, ethnographer of the Historic Preservation Office of the Marshall Island during the 2004 field survey and are © of the Historic Preservation Office of the Marshall Island.

Forward.

The following monograph is the result of research conducted January 6-13, 2004 at Wotho Atoll, Republic of the Marshall Islands and of interviews conducted in Majuro, as well as of extensive background research. The research was conducted by the anthropological team of the Historic Preservation Office of the Republic of the Marshall Islands. The projects were all sponsored by the Republic of the Marshall Island's Historic Preservation Office and funded by the Historic Preservation Fund, National Park Service, Department of the Interior.

Our thanks go to our colleagues at the National Park Service, Paula Falk Creech, Mark Rudo, and David Look for their assistance and guidance. We could not have performed the survey without the assistance of many individuals at the Historic Preservation Office, the Alele Museum, on Wotho Atoll and in Majuro:

Hespy John, cameraman of the Alele Museum, filmed on Wotho and translated for the anthropologist;

the team of the archaeology section - Frank R. Thomas, Fred Langmor, and Josepha Maddison-Hill;

Mayor Melvin Majmeto, provided background information concerning the Wotho government;

Rington Jelke and Nijan Joseph were guides and informants on Wotho Atoll;

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Carmen C. H. Petrosian-Husa
Majuro Atoll, Marshall Islands
March 2004

I. INTRODUCTION.

This report represents the results of anthropological research conducted on Wotho[1] Atoll, Marshall Islands January 6-13 2004 by Historic Preservation Office, Majuro, Marshall Islands. No artifacts or food remains were collected. The US National Park Service Historic Preservation Fund grant provided funding.

1.1. Project Objectives.

The purpose of the survey was twofold. The first was to identify, record and evaluate the historic, prehistoric, and traditional sites located on the atoll in accordance with the survey and inventory program area of the Historic Preservation Office (HPO). The second was to educate the inhabitants of the atoll on the importance of protecting and preserving the sites that the team identified. As such the Historic Preservation Office made every effort to include the local population, their elected officials, and traditional chiefs and landowners in every step of the research. Local informants and guides were used throughout the research and in an informal meeting on Wotho, the activities of HPO Staff were presented.

1.2. Evaluation of Research Design and Methods Used.

A) Non Intrusive Reconnaissance Survey.

The research conducted was a non intrusive" reconnaissance survey. The team did not remove any artifacts and/or food remains. The sites were identified with the help of local guides through a walking survey. The sites were recorded using Geographical Position System (GPS) software to generate maps. The sites as well as the survey were documented on digital photographs as well as on video. Informal interviews were conducted during the research either *in situ* or with informants from Wotho Atoll in Majuro. The informants were asked for their consent in order to be mentioned in this report. All field notes, photographs as well as photo and video material of the survey on Wotho Atoll are housed in the Historic Preservation Office, Majuro Atoll, Republic of the Marshall Islands.

Evaluation was classified according to the Republic of the Marshall Islands' site significance levels established by the RMI Historic Preservation legislation in 1992, determining the definition of significance based on the fact whether the site is determined

[1] According to the Marshallese alphabet the letter H does not exist (Abo et al.), nevertheless, according to Marshallese Government publications, as well as the official election list, Wotho is spelled with an H. The old way of writing is Wõtto. In this report we follow the government guideline and write **Wotho**.

to be prehistoric, historic or traditional. All traditional sites are determined as significant. Prehistoric or historic sites can be evaluated as being "very significant", "significant", "less significant", "insignificant", or "undetermined significant" [RMI Historic Preservation Legislation, regulations Governing Land Modification Activities, Section 6.]

A prehistoric site was considered "very significant" if it met at least one of the Marshall Islands' formal criteria:

(i) the resource is the only one of its kind known in the atoll concerned; or
(ii) the resource is part of an ensemble of sites, even if the individual sites as such would not be considered to be very significant; or
(iii) the resource is rich in cultural artifacts and undisturbed by construction activities; or
(iv) the resource is particularly well preserved; or
(v) the resource is connected with oral traditions important beyond the limits of the individual atoll on which the source is located.

A prehistoric site was considered "significant" if it met at least one of the Marshall Islands' formal criteria:

(i) the resource is the only one of its kind known on the islet concerned; or
(ii) the resource is rich in cultural artifacts and undisturbed by construction activities; or
(iii) the resource is well preserved; or
(v) the resource is connected with oral traditions.

A historic site was considered "very significant" if it met at least one of the Marshall Islands' formal criteria:

(i) the resource is the only one of its kind known in the Republic; or
(ii) the resource is part of an ensemble of sites, even if the individual sites as such would not be considered to be very significant; or
(iii) the resource is considered to be a prime example of the workmanship of a particular architect, builder or craftsman; or
(iv) the resource is rich in cultural artifacts and undisturbed by construction activities; or
(v) the resource is particularly well preserved and shows little or no alterations to the original appearance of the structure; or
(vi) the resource is connected with historic events or persons or oral traditions important beyond the limits of the individual atoll on which the source is located.

A historic site was considered " significant" if it met at least one of the Marshall Islands' formal criteria:

(i) the resource is the only one of its kind known in the atoll concerned; or

(ii) the resource is considered to be a good example of the workmanship of a particular architect, builder or craftsman; or

(iii) the resource is rich in cultural artifacts and relatively undisturbed by construction activities; or

(iv) the resource is well preserved and shows only limited alterations to the appearance of the original structure; or

(v) the resource is connected with historic events or persons or oral traditions important for the individual atoll on which the source is located.

The anthropological survey covered all sites, recorded by the archaeological team, as well as others, significant events, and characteristics of the particular atoll. This survey can be used to establish eligibility for inclusion in the RMI National Register. Future researchers can use this information in assessing which sites are deemed significant enough to warrant further research, analysis, interpretation and/or protection and restoration. The survey followed the standards and guidelines of the grantor, the United States Department of Interior National Park Service Historic Preservation Fund.

B) Nomenclature.

In assigning sites, the system used in the Marshall Islands includes three two-letter abbreviations and then a site number. The first abbreviation identifies the site as located in the Marshall Islands (MI), the second is the atoll, Wotho (WO), the third the islet, Wotho (WO). Therefore the site MI-WO-WO-001 is the first site identified on the islet Wotho in Wotho-Atoll.

C) Survey Equipment and Team Members.

Fig.1. Camera

During the survey on Wotho, the anthropological team of the Alele Museum used the following equipment:
1 Panasonic VHS Reporter AG-188,
1 Canon ES8400V, 8mm Video Camcorder,
1 Canon EOS D60,
1 28mm - 135 mm Canon zoom lens,
2 512 MB compact flash cards,
1 generator: Honda EX 350,
notebooks, pens and pencils

Team members: Staff Ethnographer: Carmen C.H. Petrosian-Husa.
Video Technician: Hespy John from the Audio-Video Section of the Alele-Museum, conducted interviews and translated for the ethnographer.
Staff Archaeologist Frank R. Thomas, Assistant Archaeologist Josepha Maddison-Hill, and Administrative Assistant Fred Langmoir;
Historic Preservation Officer: Junior Aini supported the project in Majuro.

D) Informants/Guides.

Fieldwork relied heavily on informants and guides. On Wotho the informants also worked as guides and provided information concerning location and history of sites. Key informants on Wotho Atoll were:


Fig. 2. Nijan Joseph.


Fig. 3. Rington Jelke.


Fig. 4. Tommy Briand.

Tommy Briand,	Health assistant and Air Marshall Islands flight agent on Wotho.
Rington Jelke,	born 1947, Rimejoor *jowi.*
Nijan Joseph	born 1941, principal of the elementary school on Wotho-Atoll.
Aine Emwijwa	former Mayor of Wotho.

Informant in Majuro:

Melvin Majmeto	Mayor of Wotho
Tibonieon Samuel	born 1936, Errübra *jowi.*

All of them provided a never exhausting pool of knowledge to be further investigated ethnographically. Since precisely locating sites on Wotho was essential the use of guides was also necessary.


Fig. 5. Tibonieon Samuel.

Interviews were conducted at the sites as well as after visiting sites and also after the return of the field research on Majuro-Atoll where some people of Wotho Atoll reside. The interviews were conducted according to needs (accompanying site information, historical events, personal experiences, etc.) therefore no specific questionnaire was developed. Informants as well as guides received traditional compensation for their efforts.

E) Survey Method.

Due to transportation problems (no boat was available due to motor problems), the survey concentrated on Wotho Island as the other islands of the atoll could not be reached. Therefore, they are not included in this report. The ethnographer and the video technician accompanied the archaeological survey team in order to gather first hand knowledge of all recorded sites and to document them.

1.3. Limitations of Research.

The ethnographic research gathered information concerning all recorded sites as well as on historical events not related to any site. Nevertheless due to the fact that a large proportion of the population lives on Ebeye as well as on Majuro, the amount of information gathered was limited. Before going to Wotho Atoll, background research was conducted in the libraries and archives of Majuro, as well as on the internet and is included in this report.

Fig. 6. Non functioning *bumbum* boat on the shore of Wotho Islands.

Only upon arrival was it discovered that no inter-atoll transportation was available and accordingly only Wotho Island could be surveyed. This is unfortunate as two more islands had been inhabited in the past and are of prehistoric as well as historic

importance. Considering the time span for the field research no in depth interviews were conducted and this report can only be considered a preliminary one.

During the survey one of the video cameras broke as well as the generator, which affected the video documentation.

At the time of writing a second survey of Wotho Atoll is scheduled later on this year. Its results should complement this report.

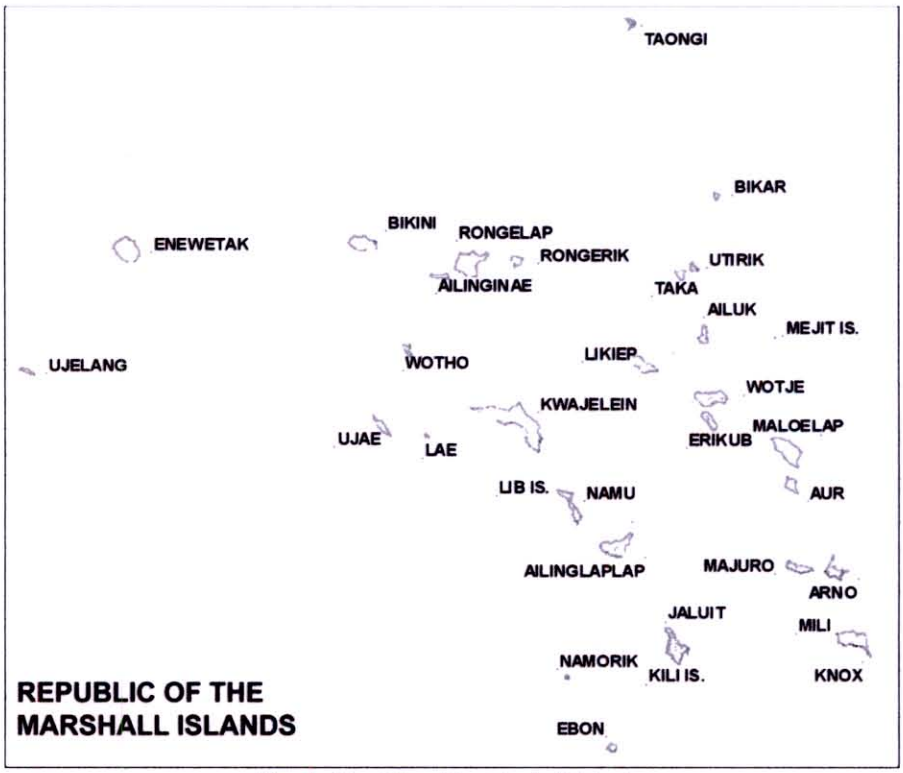
1.4. Previous Research.

In the past some archaeological research has been conducted on Wotho Atoll[2] but no previous ethnographical research had been done.

1.5. Video Documentation.

Hespy John, the cameraman of the Alele Museum, accompanied the survey team. He translated for the ethnographer and documented all the sites of Wotho Islet as well as the survey on video. After editing and cutting the video the final documentation in Marshallese is ca. 35 minutes long. It complements this report.

[2] Rosentahl, 1987; Fosberg, 1990.



Map 1. Republic of the Marshall Islands.

1.6. A Brief History of the Marshall Islands.

The people of the Marshall Islands refer to their parallel-chained archipelago as *Aelon Kein*, "These Atolls." According to folklore the first discoverers and settlers were a handful of wayfarers seeking an uninhabited autonomous area where they could live.[1] What little we know about early Marshallese comes from oral history and early accounts of explorers.

Marshallese autonomy was threatened when the first of eight known Spanish ships passed through the area. The first recorded sighting, probably Bokak Atoll, was made by Alonso de Salazar, commanding the *Santa Maria de la Victoria*, but no contact was made.[2] In 1529 contact was made by Alvaro de Saavedra of the *Florida* which laid anchor to take provisions at Enewetak or Bikini and stayed for eight days. He also discovered Utrõk, Taka, Ujelang, and made landings at Roneglap and Ailinginae. The Spanish flagship *Santiago* and five other ships in the expedition under Ruy Lopez de

[1] Hart, 1992.

[2] Levesque 1992a; Sharp, 1960:12.

Villalobos is credited for the western discovery of Wotje, Erikub, Maloelap, Likiep, Kwajalein, Lae, Ujae, and Wotho. Landings were made on some of the islands.[3]

In 1565, Alonso de Arellano of the Legaspi expedition sighted Likiep, Kwajalein and an island thought to be Lib[4] while Legaspi himself is credited with sighting Mejit, Ailuk and Jemo. Some trading was done at Mejit.

The following year the mutineer Lope Martin commanding the *San Jeronimo* made several sightings and was eventually stranded in the Marshall Islands, probably on Ujelang. Two years later the Spanish ships, *Los Reyes* and *Todos Santos*, under Alvaro de Mendana went ashore at what is probably Ujelang. Namu was also thought to be sighted.[5]

Fifty seven years passed before another vessel is reported to pass through the Marshall Islands' chains. The Dutch ship *Eendracht* and ten other vessels of the Nassau fleet commanded by Admiral Gheen Schapenham sighted Bokak.[6] In spite of Spain's annexation of the Marshall Islands in 1686, the Spanish established no trading post, trade routes, or left any lasting influence.

In 1767 Captain Samuel Wallis of the British ship *Dolphin* sighted what is thought to be Rongerik and Roneglap.[7] Even though the Spanish were the first known westerners to see the Marshall Islands credit is given to Captain William Marshall, commander of the *Scarbough*, and to Thomas Gilbert, commander of the *Charlotte* for the discovery or more appropriately the rediscovery of the Marshall Islands in 1788. Marshall and Gilbert mapped these island groups and traded with the various atolls. They are the first westerners to sight Mili, Arno, Majuro, Aur, and Nadikdik.[8] They also sighted the previously discovered Wotje, Erikub, Maloelap, and Ailuk.

Captain Henry Bond aboard the British merchantman vessel *Royal Admiral*, sighted Namdrik and Namu in 1792. Two years later the British ship *Walpole*, under the command of Captain Thomas Butler, sighted Enewetak. Thomas Dennet was the first westerner to sight Kili as well as reporting on Ailinglaplap, Lib, and doing some trading on Namu in 1797. Other vessels sailed through the area, including the British ship

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[3] Levesque 1992a; Sharp, 1960:28.

[4] Sharp, 1960.

[5] Levesque, 1992a.

[6] Hezel, 1979.

[7] Sharp, 1960:108; Hezel, 1979.

[8] Sharp, 1960:154.

Hunter, the British brig *Nautilus*, the ship *Ann & Hope* of Providence, *Ocean*, *Herald*, and *HMS Cornwallis*, to name a few. These ships sighted atolls and islands that had been previously reported but did not stop and trade. Jaluit was sighted by the *Rolla* in 1803 and again in 1809 by Captain Patterson of the British merchant brig *Elizabeth*, both of which landed and did some trading.[9]

The first scientific exploration of the Marshalls was conducted by a Russian, Otto von Kotzebue, in 1816-17 and 1824. It is during this time that first significant contact between Europeans and Marshallese was made. Von Kotzebue and his crew spent several months in the Ratak Islands in 1817 and 1824, specifically Wotje, Maloelap, and Aur Atolls. [10]

The account left by this expedition provides the first early ethnographic material including an interesting description of how Kotzebue was urged to help Lõmade defeat Latete, a powerful southern Ratak *Irooj*, and become *Irooj* of all Ratak. Although Kotzebue declined the offer, his influence was noted. Traditional warfare practices began to change soon after Kotzebue's first visit. Metal hatchets given as gifts were attached to wooden poles. Lõmade's troops used these new weapons to defeat the powerful *Irooj* and establish control over the Ratak Chain.[11]

Other ethnographic observations come from Lay and Hussey (1828), who survived the *Globe* mutiny at Mili Atoll, and Paulding (1831), a U.S. Navy lieutenant, who helped to retrieve Lay and Hussey. These early observers published accounts, which give us an insight to traditional personal appearance, manners, food, dwellings, and to a lesser extent, facets of political and social organization as reflected by traditional practices.

Prospects of profitable trade lured German entrepreneurs into the Marshall Islands in the latter part of the 19th Century. Subsequent contact with Europeans gradually increased as whalers concentrated their activities in the region. They were hunting to provide lamp oil to meet European and American demands. With disruptive and intolerant whalers as well as English blackbirders, both being in search of cheap labor to work the mines and plantations in the New World and Australia, encounters turned hostile. Numerous ships were attacked by the Marshallese and the crews killed; brutal

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[9] Sharp, 1960:173, 178, 183, 191; Hezel, 1979, 1983.

[10] Kotzebue, 1821; 1830; von Chamisso, [1836] 1986.

[11] Erdland, 1914; Krämer und Nevermann, 1938.

retaliation followed. The mood of contact in the first half of the 19th Century was one of confrontation.[12]

The treacherous reefs, reduced numbers of whales and the new method of distilling of kerosene from crude oil soon put the whalers out of business. The blackbirders however continued their raids until the 1870's.

In 1857 two American missionaries from the American Board of Commissioners for Foreign Missions, Congregationalists from the New England area, succeeded in setting up operations on Ebon (where as recently as 1852 a ship from San Francisco had been attacked and the entire crew killed).[13] The Marshallese *Irooj* opposed the missionaries and the establishment of new congregations throughout the 1860s because it eroded their power. This loss of power was somewhat alleviated by the establishment of permanent trading stations, as the demand for copra rapidly increased. The chiefly power base gradually shifted from control over the land to control over the trade between the Marshallese and the foreigners.[14] Ebon remained the mission center, from which occasional trips were made throughout the southern atolls, until in 1880, when the station was moved to Kosrae in the eastern Carolines.

Changes in the Marshallese way of life had been rapid and extensive. The dominant contact with the outside world had been through missionaries sent or trained by the American Board. Yet virtually no ethnographic description is to be found among the voluminous records kept by the missionaries. Instead they were "not only indifferent, but supremely scornful of the religious beliefs [of the Marshallese]. They tried to extinguish them completely and to destroy every trace of them.[15] The ethnography summarized by the Germans, Erdland (1914) and Krämer and Nevermann (1938), coincided with major structural changes in the Marshallese way of life. Writing in about 1905, the German ethnographer and priest Erdland commented, "the present generation no longer has any exact knowledge of the inner coherence of the ancient traditions.[16]

Other factors also influenced these changes. The copra trade dates from about 1860 in the Marshall Islands and American, Australian and German firms often had

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[12] Hezel, 1979, 1983; Dye, 1987.
[13] Hezel, 1979.
[14] Dye, 1987.
[15] Knappe, 1888.
[16] Erdland, 1914:307.

resident traders on the various atolls. Beachcombers added to the resident white population , often filling the role of trader as well.

In 1885 the Marshall Islands became a protectorate of Germany, as the Marshall Islands were not under the sovereignty of any civilized state".[17] During the German era, which lasted until 1914, the atolls were visited regularly, by traders, missionaries, and administrative officials. Administration of the area was carried out by the German trading company, Jaluit *Gesellschaft*. This firm which resulted from a merger of companies active in the area, Robertson and Hernsheim, and *Deutsche Handels - und Plantagengesellschaft* (D.H.P.G.) (formerly *Johann Godefroy und Sohn*), had exclusive trading rights in the Marshalls. Despite complaints about this monopoly by the Australian firm Burns Philip and Co., the New Zealand company, Henderson and MacFarlane, and others, the German government continued to act on the advice of the Jaluit *Gesellschaft* until 1902 when it assumed direct administration of Micronesia.[18]

Fig.7. German 'Reichsadler'.

This form of administration, with primarily an economic focus, had little impact on the health and educational level of the Marshallese. In this regard, the missionaries were of greater importance. Select groups of Marshallese were educated in the German language to serve as interpreters and the services of a doctor were available on occasion. Copra was the main product of the Marshalls and production was stimulated by taxes assessed through the traditional leaders as well as through the availability of Western goods. This form of indirect rule strengthened the traditional political organization of the Marshallese, while the German administration dealt mostly with conflicts between foreigners and the *Irooj*.[19]

Warfare between the island *Irooj* was eliminated, an act which froze the relative social positions of the *Irooj* and their *jowi* (clan) and created a condition of inflexibility in the social system; in addition it allowed increased trading and missionary activity and

[17] Pauwels, 1936.

[18] Hezel, 1983.

[19] Hiery, 1995.

thus contributed to more rapid cultural change.[20] German ethnographers were active in this period and it is largely through their efforts, especially in the many volumes published on Micronesia by the German Südsee-Expedition of 1908-1910 that much is known of the traditional way of life.[21]

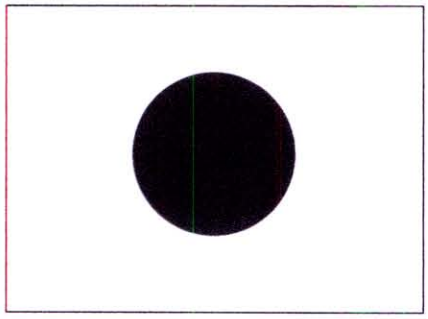

Fig.8. Japanese flag.

In 1914 at the beginning of World War I, the Marshall Islands were taken from Germany by Japan. They shifted to a system of direct rule through a set of community officials and greatly expanded the administrative staff. Traders of other nationalities were excluded and the Japanese attempted to expand copra production. Protestant and Catholic missionary activity was allowed to continue unhampered, and in the general the Marshallese appear to have gotten on well with the Japanese.[22] The Japanese did conduct ethnographic research, however most of this material has not yet been translated into English.

The Japanese military, through the South Seas Defense Corps, governed the Marshalls until 1918. From 1918 until 1920, a combined civilian and military government was in charge. In 1920 Japan was awarded Micronesia as a Class 'C' mandate by the League of Nations (although they continued to submit annual reports through 1937). After 1933, the Japanese considered the Marshalls and the rest of Micronesian mandate, an integral part of the Japanese Empire.[23] During the Japanese era, the administration had several goals; the economic development of Micronesia, the use of the islands as an immigrant settlement for Japan's rapidly increasing population, the Japanization of the islanders through education, language training, and enforced cultural change, and eventually, the use of the islands for military bases in anticipation of World War II.[24]

For the Marshallese improvement in health and sanitation were minimal. The "availability of adequate medical care was directly related to one's ability to pay" and

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[20] Spoehr, 1949.

[21] Krämer and Nevermann, 1938, Ratak - Ralik, is a result of this expedition.

[22] Spoehr, 1949.

[23] Peattie, 1988.

[24] Peattie, 1988.

despite a sliding fee scale, "the poorer and generally unhealthier native received less care".[25]

Education was also segregated and of differential quality. Ethnic Japanese were offered a school system identical to the one in Japan, while the Marshallese received three years of primary education consisting mostly of Japanese language instruction and ethics classes, with an additional two years for the more promising students.[26]

The Japanese administration also attempted to make a number of changes in the Marshallese social and political organization. They appointed non-*Irooj* Marshallese leaders, which was contrary to the existing political structure, thus weakening the position of the traditional leader.[27] The Japanese also attempted to change the Marshallese social organization of matrilineality to conform to the Japanese system of patrilineality, more like their own system, with little success.

In the early 1930s, Japan began to construct fortifications on Kwajalein, Enewetak, Jaluit, Wotje, Mili, and Maloelap. Marshallese were conscripted to labor on these buildings and were resettled.[28] World War II started in 1941. In 1944, U.S. forces concentrated on gaining supremacy in the Pacific. Kwajalein, Majuro, and Enewetak were captured within one month. All of the other atolls except Wotje, Maloelap, Mili, and Jaluit were checked for Japanese in the next two months. In those bypassed atolls, the Marshallese escaped or were removed under cover of night and resettled temporarily on Majuro, Arno, or Aur atolls.[29] The U.S. fortified Enewetak and Kwajalein atolls as military bases.

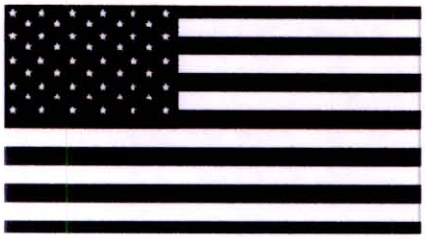

Fig. 9. American flag.

After World War II, the United States took over trusteeship of the Marshall Islands. In this time extensive ethnographic research was conducted in the Marshall Islands. Beginning with Spoehr's work on village life in Majuro (1949), ethnographers have concentrated on community studies. The primary sources are Mason (1947, 1954) whose focus is economic organization; Kiste (1967, 1974) who deals with

[25] Shuster, 1978.
[26] Hezel, 1995.
[27] Bryan, 1972.
[28] Peattie, 1988.
[29] Smith, 1955.

resettlement issues, Davenport (1952, 1953), and Chambers (1969, 1972) who concentrates on oral traditions.

During this period, from June 30. 1946, to August 18. 1958, the United States also conducted 67 underwater surface and atmospheric tests of atomic and thermonuclear weapons in the Marshall Islands. [30]

	Date	Site	Type	Yield (kt.)	Operation	Test
1.	6/30/46	Bikini	Airdrop	21.00	Crossroads	Able
2.	7/24/46	Bikini	Underwater	21.00	Crossroads	Baker
3.	4/14/48	Enewetak	Tower	37.00	Sandstone	Xray
4.	4/30/48	Enewetak	Tower	49.00	Sandstone	Yoke
5.	5/14/48	Enewetak	Tower	18.00	Sandstone	Zebra
6.	4/7/51	Enewetak	Tower	81.00	Greenhouse	Dog
7.	4/20/51	Enewetak	Tower	47.00	Greenhouse	easy
8.	5/8/51	Enewetak	Tower	225.00	Greenhouse	George
9.	5/24/51	Enewetak	Tower	45.50	Greenhouse	Item
10.	10/31/52	Enewetak	Surface	10,400.00	Ivy	Mike
11.	11/15/52	Enewetak	Air Drop	500.00	Ivy	King
12	3/1/54	Bikini	Surface	15,000.00	Castle	Bravo
13.	3/26/54	Bikini	Barge	11,000.00	Castle	Romeo
14.	4/6/54	Bikini	Surface	110.00	Castle	Koon
15.	4/25/54	Bikini	Barge	6,900.00	Castle	Union
16.	5/4/54	Bikini	Barge	13,500.00	Castle	Yankee
17.	5/13/54	Enewetak	Barge	1,690.00	Castle	Nectar
18.	5/2/56	Bikini	Air Drop	3,800.00	Redwing	Cheroke
19.	5/4/56	Bikini	Surface	40.00	Redwing	Lacrosse
20.	5/27/56	Enewetak	Surface	3,500.00	Redwing	Zuni
21.	5/27/56	Bikini	Tower	0.19	Redwing	Yuma
22.	5/30/56	Enewetak	Tower	14.90	Redwing	Erie
23.	6/6/56	Enewetak	Surface	13.70	Redwing	Seminole
24.	6/11/56	Bikini	Barge	365.00	Redwing	Flathead
25.	6/11/56	Enewetak	Tower	8.00	Redwing	Blackfoot
26.	6/13/56	Enewetak	Tower	1.49	Redwing	Kickpoo
27.	6/16/56	Enewetak	Air Drop	1.70	Redwing	Osage
28.	6/21/56	Enewetak	Tower	15.20	Redwing	Inca
29.	6/25/56	Bikini	Barge	1,100.00	Redwing	Dakota
30.	7/2/56	Enewetak	Tower	360.00	Redwing	Mohawk
31.	7/8/56	Enewetak	Barge	1,850.00	Redwing	Apache
32.	7/10/56	Bikini	Barge	4,500.00	Redwing	Navajo
33.	7/20/56	Bikini	Barge	5,000.00	Redwing	Tewa
34.	7/21/56	Enewetak	Barge	250.00	Redwing	Huron

[30] U.S. Department of Energy, United States Nuclear Tests, Nuclear Claims Tribunal.

35.	4/28/58	Nr Enewetak	Ballon	1.70	Hardtacki	Yucca
36.	5/5/58	Enewetak	Surface	18.00	Hardtacki	Cactus
37.	5/11/58	Bikini	Barge	1,360.00	Hardtacki	Fir
38.	5/11/58	Enewetak	Barge	81.00	Hardtacki	Butternut
39.	5/12/58	Enewetak	Surface	1,370.00	Hardtacki	Koa
40.	5/16/58	Enewetak	Underwater	9.00	Hardtacki	Wahoo
41.	5/20/58	Enewetak	Barge	5.90	Hardtacki	Holly
42.	5/21/58	Bikini	Barge	25.10	Hardtacki	Nutmeg
43.	5/26/58	Enewetak	Barge	330.00	Hardtacki	Yellowwd
44.	5/26/58	Enewetak	Barge	57.00	Hardtacki	Magnolia
45.	5/30/58	Enewetak	Barge	11.60	Hardtacki	Tobacco
46.	5/31/58	Bikini	Barge	92.00	Hardtacki	Sycamore
47.	6/2/58	Enewetak	Barge	15.00	Hardtacki	Rose
48.	6/8/58	Enewetak	Underwater	8.00	Hardtacki	Umbrella
49.	6/10/58	Bikini	Barge	213.00	Hardtacki	Maple
50.	6/14/58	Bikini	Barge	319.00	Hardtacki	Aspen
51.	6/14/58	Enewetak	Barge	1,450.00	Hardtacki	Walnut
52.	6/18/58	Enewetak	Barge	11.00	Hardtacki	Linden
53.	6/27/58	Bikini	Barge	412.00	Hardtacki	Redwood
54.	6/27/58	Enewetak	Barge	880.00	Hardtacki	Elder
55.	6/28/58	Enewetak	Barge	8,900.00	Hardtacki	Oak
56.	6/29/58	Bikini	Barge	14.00	Hardtacki	Hickory
57.	7/1/58	Enewetak	Barge	5.20	Hardtacki	Sequoia
58.	7/2/58	Bikini	Barge	220.000	Hardtacki	Cedar
59.	7/5/58	Enewetak	Barge	397.00	Hardtacki	Dogwood
60.	7/12/58	Bikini	Barge	9,300.00	Hardtacki	Poplar
61.	7/14/58	Enewetak	Barge	Low	Hardtacki	Scaevola
62.	7/1/58	Enewetak	Barge	255.00	Hardtacki	Pisonia
63.	7/22/58	Bikini	Barge	65.00	Hardtacki	Juniper
64.	7/22/58	Enewetak	Barge	202.00	Hardtacki	Olive
65.	7/26/58	Enewetak	Barge	2,000.00	Hardtacki	Pine
66.	8/6/58	Enewetak	Surface	Fizz	Hardtacki	Quince
67.	8/18/58	Enewetak	Surface	0.02	Hardtacki	Fig

Table 1. List of atomic tests in the Marshall Islands.

The most powerful of those tests was the "Bravo" shot, a 15 megaton device detonated on March 1, 1954, at Bikini atoll. That test alone was equivalent to 1,000 Hiroshima bombs. While the Bravo test is well known, it should be acknowledged that 17 other tests in the Marshall Islands were in the megaton range and the total yield of the 67 tests was 108 megatons, the equivalent of more than 7,000 Hiroshima bombs. From 1945 to 1988, the U.S. conducted a total of 930 known nuclear tests with a combined yield estimated to be 174 megatons. Approximately 137 megatons of that total was detonated in the atmosphere. In other words, while the number of tests conducted in the Marshall Islands represents only about 14% of all U.S. tests, the yield of the tests in the

Marshalls comprised nearly 80% of the atmospheric total detonated by the U.S.[31] Numerous Marshallese have suffered from cancers, leukemia and other life-threatening diseases directly connected to nuclear radiation poisoning.

Testing of intercontinental missiles continues at Kwajalein, the target lagoon for missiles launched from Vandenberg Air Force Base in California. Under the terms of the Revised Compact of Free Association the United States will retain rights to the Kwajalein atoll until 2066.[32]

Today, as a result of American testing, about twenty percent of the land of the Marshall Islands is unavailable to the people, because of toxic radioactive wastes due to the nuclear testing, and because of continued use, principally at Kwajalein, by the United States.[33]

[31] http://nuclearhistory.tripod.com/testing.html.

[32] http://www.umc-gbcs.org/getinvolved/viewarticle.php?csa_articleId=205.

[33] http://www.umc-gbcs.org/getinvolved/viewarticle.php?csa_articleId=205.

1.7. Important Historical Events for Wotho Atoll.

Names under which the atoll is known in old sources:

Kabhaia[34]
Schantz[35]
Schanz Inseln
Scantz (misspelling)
Schan(t)z
Shanz (mispelling)
Uato
Woddo
Wõtto
Wottho

ca. 2000 BC - 500 BC The first Micronesian navigators arrive in the Marshalls, calling the atolls *Aelon Kein Ad* (our islands). Dates and origins of the settlers are still uncertain. Relatively little is known about the prehistory of the people They are thought, like other Pacific Islanders, to have originated in Southeast Asia and to have established themselves on their scattered islands centuries before European voyagers reached this area. Early accounts depict Marshallese society as having much in common with other Micronesian islands, such as the Carolines. Chieftainship was strong and material culture, given the paucity of natural resources, was relatively advanced. Early Marshallese were regarded as superb canoe builders and sailors.

1494 The treaty of Tordesillas cedes ownership of all Micronesia to Spain.

1527 Three ships under Alavaro de Saavedra, sent from Mexico to seek news in the Moluccas of the Magellan and Loaisa expeditions, are sent to the area of the Marshalls.[36]

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[34] Meinicke, 1883:392, footnote 3: Some maps (as for instance the one in 'Stieler's Atlas') show another island in the east of Wotho, which they call Kabahaia. I cannot say from where this, without any doubt, non-existing island comes from.

[35] Johan Eberhard (Ivan Ivanovitsch) von Schantz. Born Nov. 1, 1802 in Pori, Finland, died Jan. 3, 1880 in St. Petersburg, Russia. Master of the ship "*Amerika*" on a voyage to Kamchatka in 1834-36 when he discovered some unknown coral reefs in the archipelago of Marshall Island. http://www.genealogia.fi/place/placemaie.htm.

[36] Sharp 1960:18, Levesque 1992.

1529	The Spanish flagship *Santiago* and five other ships in the expedition under Ruy Lopez de Villalobos is credited for the western discovery of Wotje, Erikub, Maloelap, Likiep, Kwajalein, Lae, Ujae, and Wotho. Landings are made on some of the islands.[37]
1565 Jan. 12.	The Spanish flagship *San Pedro* and two other vessels in the expedition commanded by Miguel Lopez de Legazpi sight an island still in 10° N and called it "Corrales" -- possibly Wotho.[38]
1788	The *Scarborough* (Captain John Marshall) and *Charlotte* (Captain Thomas Gilbert) sight Mili, Arno, Majuro, Aur, Maloelap, Erikub, and Wotje Atolls while proceeding to China from Botany Bay.[39] The name Marshall Islands is later applied to the group as a whole by Russian hydrogapher A. J. Krusenstern.
1800s	Wotje, Utrõk, Mejit, Maloelap are allied with Aur and *Irooj* Lõmade against Arno, Majuro, etc.[40] Lõmade inherites his position as *Irooj* from his great-great grandmother Litarau matrilineally through Legerinoa, Leom, and Limidjoa.[41]
1817	Kotzebue meets with *Iroojlaplap* Lõmade and is told he is about 30 years old; he is a native of Arno who has gained his power by murdering all of the *Irooj* of Aur, Maloelap, and Uterõk.[42] The Ratak Islands that do not belong to Lõmade (Majuro, Arno, and Mili) belong at that time to the *Irooj* Latete, against whom Lõmade is waging war.[43]
1817	Lõmade, the *Iroojlaplap* over Aur, Maloelap, and Wotje desires to attack his enemies of Arno, and Mili under Latete. Captain von Kotzebue gives him some lances and grappling hooks, for which he receives in turn six bundles of preserved pandanus. The new weapons put an end to the war in six days. Of the several hundred persons engaged only five have fallen.[44]

[37] Levesque, 1992a; Sharp, 1960:28.

[38] http://www.micsem.org/pubs/articles/historical/forships/marshalls.htm.

[39] Sharp, 1960:154.

[40] von Chamisso, [1836] 1986.

[41] Krämer and Nevermann, 1938.

[42] Von Chamisso, [1836] 1986.

[43] Krämer und Nevermann, 1938.

[44] Finsch, 1893.

1820s	American whalers seeking food and water begin visiting the Marshall Islands. Some of these occasionally leave men on shore who become beachcombers and, later, traders.[45]
1823	*Iroojlaplap* Lomade Juen, of the clan Rimwejoor, conqueres all the islands of the Ratak Chain and ultimately conquers Kwajalein, Lae, Ujae, Wotho, Rongelap, Bikini, Enewetak, and Ujelang in the Ralik Chain.[46]
1835 May 30.	Russian transport *America* under Captain Schantz, rediscoveres Wotho Atoll and names it "Schantz Is.".[47]
1840	Kaibõke has become the second-highest chief of the southern Ralik after he married the daughter of the paramount chief. Kaibõke is feared on account of his attacks on foreign ships.[48]
1842	Kaibõke Lobadeo of Ebon assumes power as the *Iroojlaplap* of the Southern part of the Ralik chain.[49]
1850	A typhoon affects the northern Marshalls and decimates or completely wiped out the population of Rongelap and Rongerik Atolls.[50]
1851	70 people of Ebon (including Kaibõke's brother) are killed when an American whale ship fires at their canoes in revenge for a trader's murder. Kaibõke swears to kill all whites in revenge for his brother's murder by the whalers.[51]
1852 Jan. 1.	British man-of-war, *HMS Serpent* under Commander L.U. Hammet, lands at Wotho where officers exchange biscuits for coconuts.[52]
1857	Rev. Hiram Bingham Jr. of the American Board of Commissioners for Foreign Missions (ABCFM) creates a missionary outpost on Ebon. Kaibõke supports their work.[53]
1860s	American and Hawaiian Protestant missionaries arrive, sent by the Hawaiian Evangelical Association, an auxiliary of the American

[45] Hezel, 1983.

[46] Krämer und Nevermann, 1938; RMI Ministery of Education, 1996.

[47] Deutsches Kolonial-Lexikon, 1920, vol. III, p. 729,
Spennemann: http://www.micsem.org/pubs/articles/historical/forships/marshalls.htm.

[48] Krämer und Nevermann, 1938.

[49] Krämer und Nevermann, 1938, RMI Ministry of Education, 1996.

[50] Krämer und Nevermann, 1938:51; 81.

[51] Erdland, 1914.

[52] http://www.micsem.org/pubs/articles/historical/forships/marshalls.htm.

[53] Hezel, 1983.

	Board of Commissioners for Foreign Missions. About this time J.C. Godefrroy und Sohn, of Samoa, establishes trading stations on Mili, Aur, Jaluit, Ebon and Namdrik. A few years later, two other German companies, Hernsheim &Co. and A. Capelle &Co., are also in business there. Copra is their principal interest.[54]
1860	Wotho has 40 inhabitants.[55]
1863	Kaibõke dies of typhoid fever.[56]
1864	Ujelang is deserted after a typhoon has hit the island.[57]
1870	After Kabõke's death, Kabua (Lebon) a *leadakkad* of Rongelap, becomes *Irooj* when he marries Lomokoa, the widow of the Kaibuke of Ebon.[58]
1875	A typhoon hits the northern islands in November.[59]
1876	Loeak and Kabua fight about who should be *Iroojlaplap*. Loeak chases Kabua from Ebon.[60]
1878	Germany enters into a treaty with inhabitants of the Ralik chain, granting special trade privileges. Kabua (Lebon) presents himself to the German government as the *Iroojlaplap*. Kabua, Lagajimi, Nelu, Loeak, and Launa, all sign the treaty.[61]
1880	Loeak goes to Jaluit from Ebon to challenge Kabua in battle. After a bloodless fight, Loeak returns to Ebon.[62]
1880	Wotho has 25 inhabitants.[63]
1881	Witt visits Wotho and cartographs the atoll.
1885	Under mediation of Pope Leo XIII, the German government annexes the Marshall Islands.
1885	Loeak is the chief in the southern Ralik. Murjil, *Irooj* of Aur controls northern Ratak. In northern Ralik and southern Ratak, individual atolls are in most instances ruled by independent local *Irooj*.[64]

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[54] Hezel, 1983.

[55] Gulick, 1886.

[56] Krämer und Nevermann 1938.

[57] Hezel, 1979:125; Ward, 1967: VI 349.

[58] Erdland, 1914; Krämer und Nevermann, 1938.

[59] Young, 1877:152; entry for July 14th 1877.

[60] Krämer und Nevermann, 1938.

[61] Krämer und Nevermann, 1938.

[62] Krämer und Nevermann, 1938.

[63] Krämer und Nevermann, 1938:48, citing Witt.

[64] Krämer und Nevermann, 1938.

1886	By agreement with Great Britain the Marshall Islands become a German protectorate.
1887	Germans form the Jaluit Company (Jaluit *Gesellschaft*), an entity entrusted with governance of the Marshalls. It buys out two foreign competitors based in San Francisco and Aukland. However, Burns, Philip & Co. of Sydney, which has been trading in the group for some years, continues to do so and remains until World War I.[65]
1905	Wotho has 30 inhabitants. [66]
1910	Wotho has 74 inhabitants.[67]
1910	Kabua dies.[68]
1910	The German Station Director approaches Leit to purchase 5 atolls (Bikini, Rongerik, Rongelap, Ailinginae and Wotho) for 18.600 German Mark, but Leit refuses to sell.[69]
1912	Wotho has 51 inhabitants.[70]
1913	Wotho has 50 inhabitants.[71]
1914	The Marshall Islands are taken over from Germany by Japan.
1920	The Marshall Islands are mandated to Japan by the League of Nations, together with the other occupied islands. The group is administered as a separate district. The Marshallese are given little voice in their own government. Copra is exported to Japan at a price fixed by the Japanese.[72]
1921	The Japanese take over the copra industry from the Germans, replacing the Jaluit *Gesellschaft* with the *Nanyo Boeki Kaisha.*[73]
1920s	Japan has a trepang station on Wotho Atoll.[74]
1934	Japan withdraws from the League of Nations, but retains possession of the Marshall Islands Fortification of the islands

[65] Hezel, 1995.
[66] Jeschke,1906.
[67] Merz,1912a.
[68] Krämer und Nevermann, 1938.
[69] Walsh, 2003:175-176.
[70] Merz,1912a.
[71] Südsee-Handbuch, 1913.
[72] Hezel, 1995.
[73] Peattie, 1988.
[74] Krämer und Nevermann, 1938:48.

	begins as Japan prepares for war. The Japanese military begins building airstrips, power plants, and bunkers.[75]
1938	Krämer und Nevermann report 50 inhabitants on Wotho.[76]
1939	World War II begins in Europe.
1944 March 8.	A detachment of about 350 marines from the 1st Battalion, 22d Marines, accompanied by eight amphibian tractors, all loaded aboard an LST, landed unopposed on Wotho Atoll, encounter 12 Japanese who commit suicide.[77]
1945	End of World War II grants effective control of the Marshalls to the U.S.
1946 February	The U.S. establishes the Pacific Nuclear Proving Grounds in the Marshalls beginning with Bikini Atoll and in
1946 December	Eniwetok is also included.[78]
1946 May	As a safety measure, islanders from Rongelap and Wotho atolls are relocated for the duration of Operation Crossroads to Lae.[79]
1946	Operation Crossroads is launched with "Able" (June, 30) and "Baker" (July, 24) nuclear tests at Bikini; both are Hiroshima-size atomic tests.
1946	Population of Wotho Atoll returns home.[80]
1947	The Marshall Islands become part of the United States Trust Territory of the Pacific Islands (TTPI) following three years of American military administration.
1948	Bikinians consider to move to Wotho. Because the atoll is inhabited they decide against it.[81]
1948	Operation Sandstone is conducted at the Pacific Proving Grounds.[82]
1951	US Department of the Interior assumes responsibility within the US government for the Trust Territory of the Pacific Islands (TTPI) from the Department of the Navy.
1951 March 20.-25.	Typhoon Georgia hits Rongerik, Utirõk and Wotho atolls.[83]

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[75] Peattie, 1988.

[76] Krämer und Nevermann, 1938:48.

[77] http://www.ibiblio.org/hyperwar/USA/USA-P-Gilberts/USA-P-Gilberts-20.html.

[78] http://nuclearhistory.tripod.com/testing.html.

[79] Tibonieon Samuel, Feb, 27, 2004, in Majuro.
http://nuclearhistory.tripod.com/testing.html.

[80] Nijan Joseph and Rington Jelke, Jan. 7, 2004, on Wotho Atoll.

[81] http://www.bikiniatoll.com/interviews.html.

[82] http://nuclearhistory.tripod.com/testing.html.

1951 Operation Greenhouse is conducted at the Pacific Proving Grounds.[84]

1952 The first hydrogen device - Operation Ivy - under the US testing program in the Marshalls is fired on Enewetak on March 1st.[85]

Fig. 10. Detonation of Bravo.

1954 March 1. US nuclear testing program detonates Bravo, the most powerful hydrogen bomb ever tested by the U.S., on Bikini atoll. Radiation from the test forces evacuation of Marshallese and U.S. Military personnel on Rongelap, Rongerik, Utirõk, and Ailinginae.[86]

1954 March 2. In a flyover 0.001 R/hr are measured at Wotho Atoll.[87]

1955 Operation Wigwam is conducted at the Pacific Proving Grounds.

1956 February Yacht Acania comes to Wotho bringing Navy personnel. Holmes and Narver Construction Company is building a weather station on Wotho for Operation Redwing[88]

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[83] Fosberg, 1955a; Fosberg, 1956.

[84] http://nuclearhistory.tripod.com/testing.html.

[85] Deines at al., 1990.

[86] Deines at al., 1990.

[87] http://nuclearhistory.tripod.com/testing.html.

[88] http://www.ldolphin.org/rpl/ch3.html.

1958	Operation Hardtack I is conducted at the Pacific Proving Grounds.[89]
1958	Wotho has 71 inhabitants.[90]
1961	Peace Corps is founded and the first volunteers are dispatched to the Marshall Islands.
1963 August	The signing of the 'Limited Test Ban' brings the end of atmospheric testing and therefore the end of testing in the Marshall Islands.[91]
1965	The Congress of Micronesia is formed, with representatives from all the Trust Territory of the Pacific Islands. It is created by the U.S. administration in preparation for greater self governance by Micronesians.
1967	Wotho has 57 inhabitants.[92]
1970	Wotho has 87inhabitants. [93]
1973	Wotho has 61 inhabitants.[94]
1975 April	LRE (Laboratory of Radiation Ecology) and BNL (Brookhaven National Laboratory) staff collect samples from Kwajalein, Bikini, and Wotho atolls for the DOS (Division of Operational Safety) portion of the Pacific Radiological Program.[95]
1978 August	Department of Energy survey of the northern Marshall Islands reveals that Wotho as well as other islands "received intermediate range fallout from one or more of the megaton range tests."
1979	Amata Kabua is selected as the first president of the Marshall Islands.
1979	The government of the Marshall Islands is officially established and the country becomes self governing.
1980	Wotho has 85 inhabitants. [96]
1980	The Airline of the Marshall Islands (AMI) begins operation, serving eight locations; Enewetak, Bikini, Kwajalein, Mili, Likiep, Maloelap, Wotje, and Majuro.

[89] http://nuclearhistory.tripod.com/testing.html.
[90] Nucker, 1958.
[91] http://nuclearhistory.tripod.com/testing.html.
[92] McCoy, 1981.
[93] McCoy ,1981.
[94] Johnston, 1973.
[95] Deines at al., 1990.
[96] McCoy, 1981.

1980s	Airfield on Wotho Islands is constructed and flights to Wotho Atoll start. At the same time a wide path through the island as well a through the taro pits is made.[97]
1982	Official name changes to the Republic of the Marshall Islands (RMI).
1982	Typhoon Pamela hits Wotho.
1983	Amata Kabua is selected a second time as president.
1983	Voters in the RMI approve the Compact of Free Association with the United States.
1986	U.S. Congress approves the Compact, resulting in its entry into force. The Compact grants the RMI its sovereignty and provides for aid and U.S. defense of the islands in exchange for continued U.S. military use of the missile testing range at Kwajalein Atoll.
1986-1996	152 Peacorps volonteers are stationed in the Marshall Islands[98]
1987	In third election, Amata Kabua is elected as president.
1988	The Nuclear Claims Tribunal, which addresses personal injury and property claims resulting from the nuclear testing in the Marshall Islands and which is provided for in the Compact of Free Association, is begun.[99]
1990s	Settlement of compensation claims as a result of the U.S. nuclear testing in the Marshalls still proceeds, and is associated with various agreements being made as part of the Compact of Free Association package. There are also outstanding court cases. Many Marshallese had sought compensation from the Nuclear Claims Tribunal and, up to September 1993, some 380 have been granted compensation totaling about $ 14 million; only a quarter of which has been paid.[100]
1990	U.N. Security Council terminates the RMI's trusteeship status.
1991 28 Nov.-2 Dec.	Typhoon Zelda hits Ujae. [101]
1991	In fourth election Amata Kabua is elected as president.
1991	RMI joins the United Nations.
1991	A photovoltaic-powered freezer unit is installed on Wotho.
1992 15-16 Oct.	Typhoon Brian hits Wotho.[102]

[97] Rington Jelke, Jan.9, 2004, Wotho Island.

[98] Personal correspondence with A. J. Wickenheiser, Peace Corps Office.

[99] http://nuclearhistory.tripod.com/testing.html.

[100] Deines at al., 1990.

[101] JTWC Guam; Slough & Stalberg 1992.

[102] Data provided by JTWC Guam.

1992 17-20 Nov. *Kabin meto*, the northern atolls are destroyed by typhoon Gay.[103] Wotho is badly hit and the photovoltaic-powered freezer unit is washed away.

1993 The Nuclear Claims Tribunal awards compensation to five people from Wotho.[104]

1994 The U.S. Department of Energy begins releasing thousand of previously classified nuclear test era documents, many of which confirm the wider extent of the fallout contamination in the Marshall Islands, which also includes Wotho atoll.

1994 December A five-year study of 432 islands in the Marshall Islands shows that 15 atolls and single islands -almost half of this nation were dusted by radioactive fallout from the U.S. nuclear weapons tests of the 1950s.[105]

1995 February Marshall Islands officials testify before President Clinton's Advisory Committee on Human Radiation Experiments in Washington, D.C. stating that fallout exposed many more than the four atolls acknowledged by the U.S. government, and that islanders were purposefully resettled on contaminated islands so the U.S. could study the long-term effects of radiation.[106]

1996 In fifth election Amata Kabua is elected as president.

1996 Amata Kabua dies.

1997 Plans for radioactive waste storage on Wotho Atoll are developed and given up.[107]

1997 Imata Kabua is selected to finish the late Amata Kabua's term.

Wotho Atoll - Cumulative Doses by Event and Location (Finite Dose to Next Event)--mr						
Bravo	Romeo	Koon	Union	Yankee	Nectar	Total
250	270	110	55	95	4	784
Days between events.						
26	11	19	9	9	10	

Table 2. Wotho Atoll, radio active doses.

[103] Data provided by JTWC Guam.

[104] Nuclear Claims Tribunal, 1993:19.

[105] http://resourcescommittee.house.gov/106cong/fullcomm/99may11/debrumt.htm.

[106] http://resourcescommittee.house.gov/106cong/fullcomm/99may11/debrumt.htm.

[107] http://ishgooda.nativeweb.org/nuclear/nuke5.htm.
http://www.planet.org.nz/pacific_action/issues/wastedump.html.

1999	Atolls such as Mejit, Ailuk, Likiep, Wotho, and Ujelang fall into the category of "the least amount of radioactive atoms." As a result, they are disregarded in any medical care or environmental monitoring programs in the Compact. "The least amount of radioactive atoms" in the Marshall Islands exceeds acceptable radiation exposure levels in the United States hundreds of times. [108]
2000	In sixth election Kessai Hesa Note is elected as president.
2001	First Compact of Free Association expires.
2003	Second Compact of Free Association approved by U.S. Government.
2003	In seventh election Kessai Hesa Note is elected as president.

[108] H.E. Tony A. deBrum, Minister of Finance, Washington, D.C., May 11, 1999. http://resourcescommittee.house.gov/106cong/fullcomm/99may11/debrumt.htm.

II. ENVIRONMENTAL SETTINGS.

2.1. Physiographic and Biological Setting.

Located in the central Pacific between 4° and 15° north latitude and 160° and 173° east longitude, the Republic of the Marshall Islands consists of 29 low lying coral atolls and five coral islands (Map 1). Twenty-two of the atolls and four of the islands are presently inhabited. The atolls and islands are situated in two almost parallel chain-like formations. The eastern group is the Ratak (Sunrise) Chain and the western is the Ralik (Sunset) Chain, which together extend about 700 miles (1,130 km) north to south and approximately 800 miles (1290 km) east to west. Surrounded by ocean, the Republic is more than 2,000 miles (3,230 km) from the nearest trading centers, Honolulu and Tokyo. Its nearest neighbors are Kiribati to the south and the Federated States of Micronesia to the west.

There are approximately 1,2025 islets spread across an area of over 750,000 square miles (1.2 million square km). With a total land area of over 70 square miles (110 square km), a mean height of 7 feet (2 meters) above sea level, and soils that are nutrient poor, the nations agricultural base is limited. The marine resource base, however, is extensive. The combined lagoon area totals 4,037 square miles (6,511 square km). Coral reefs fringe the atolls and serve as the only defense against the ocean surge. The clearance of the reef in the sections that are covered by water is usually no more than a couple of feet.[1]

Generally speaking, an atoll consists of a series of low lying islets and submerged reefs arranged about a central lagoon, which mixes with the open ocean via one or more channels and/or shallow passes. In the Marshall Islands, the islets composing an atoll usually form an oval shape around a central lagoon of 150 feet (45 m) average depth. The surrounding ocean depth plunges to over 5,000 feet (1,525 m) within two miles (3 km), and to 10,000feet (3,050 m) within ten miles (16 km) of the typical atoll.[2]

Dye[3] suggests a probable development history for the Marshall Islands; he states that approximately 70 million years ago the volcanic cores of the Marshall Island atolls erupted forming new volcanic islands. The islands, slowly subsiding but standing above

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[1] Permanent Mission of the Republic of the Marshall Islands to the United Nations, 1992.

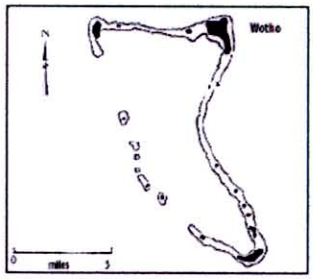
[2] Fosberg 1990; Wiens 1962.

[3] Dye, 1987.

sea level, were colonized by species of reef-building corals, and the process o reef flat construction began approximately 40 million years ago.

Underwater ocean maps show that there is also an abundance of underwater seamounts, some of which reach almost to the surface, such as Keats Bank east of Mili Atoll. Most of these guyots are aligned along the same axes as the Ralik and Ratak Chains, so that these underwater features as a whole have recently been termed Ralik and Ratak Ridge.[4]

Fig. 11. Wotho, seen from space.



Map 2. Wotho Atoll

Fig. 12. Wotho, seen from space.

All atolls and islands in the Marshall Islands have *joorãne*, land signs, as well as *joormeto*, sea signs, which indicate a location on an island or on the ocean, as well as the relationship between the land signs or the land itself and the sea sign. Erdland[5] describes this Marshallese marker system:

> The configuration of these beings, which are on their respective atolls either lifeless objects, birds or fish, which I am going to present might look at first sight as a simple list. Of course some of the names might be without meaning now, because the history of the respective person does no longer live in the memory of the seafaerers. Though many of them allow us a deep glimpse into the beliefs of the Marshall islanders and further on they represent a part of the unwritten history of the islanders. Because these names have a special value for the localization of myths and fairy tales. Some of them are mentioned in the legends therefore they can be considered historic to a certain degree. ... It is remarkable that some of these *äkejab* localized on land have children on sea, ... These children of the *äkejab* are birds or fish or other lifeless drifting objects which stay at a certain distance to the atolls ....

Due to the persistence of these signs they served the old navigators as points of orientation, so that they know – besides the waves, and other indicators – were the atoll is located to which the respective bird or fish belongs. In order to imprint these sea signs

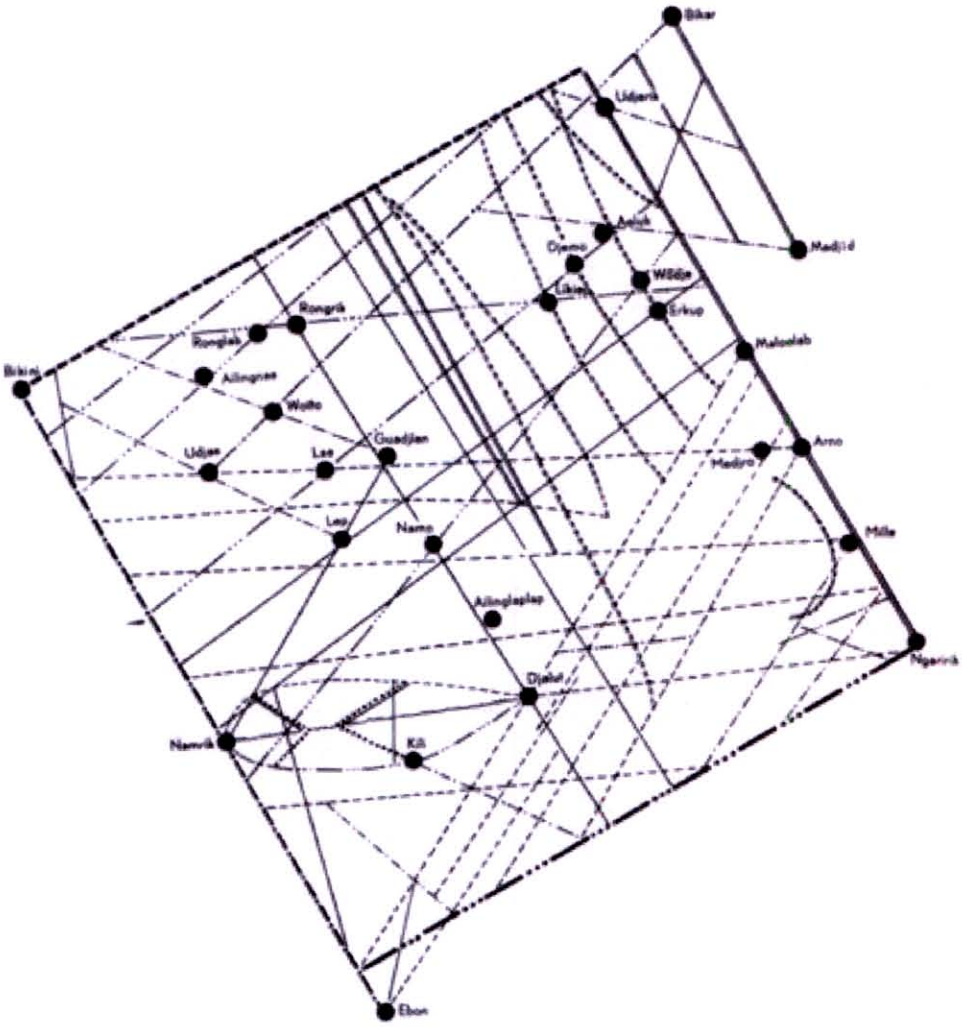
[4] Spennemann, 1993.

[5] Erdland, 1914:346-347.

into the memory of the young navigators, the old ones have composed sayings or rhymes, which show a close connection between the sea sign and the land.

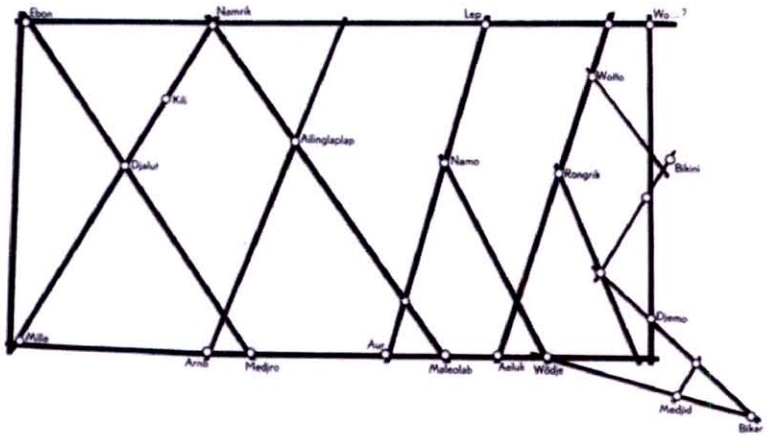
Long before the Atolls of the Marshall Islands have been discovered and charted by European and American ships, Marshallese had already put their archipelago, atolls and waterways 'on the map' indicating them in Marshallese stick charts.

> ...., sea charts are made of straight and curved small mid rips of palm fronds. Small white sea shells (Cypraea or Melampus) indicate the islands The maps do not indicate the exact geographical position of the islands but give information about the condition of the sea between the islands, in particular the condition of the surf besides of other matters of significance for the course. There is no regulated system for the sea charts and one school does not know the teachings of the other. Thus a sea chart can only be interpreted correctly by its maker ....[6]



Map 3. *Meto*, Stick chart of the Marshall Islands.

[6] Krämer und Nevermann, 1938:221.



Map 4. *Meto*, Stick chart of the northern atolls and islands, including Wotho.

In his description of Wotho in 1914, Erdland, a German missionary and ethnographer, depicts the atoll from an indigenous point of view, thus giving a description in the best sense of hi-story, just like an inhabitant of Wotho might have given it a long, long time ago[7]:

1. *Läre*, a hill in the form of a human being.
2. *Läruinwa*, a *sula piscator*, whose "children' are ten porpoises the dorsal fins of which he pulls und 'licks'.
3. *Lojbouk*, a dragon fly which flies far out at sea.
4. *Lababbub*, a butterfly with the same characteristics.
5. *Bogien Limmanman*, the tip of a land.
6. *Bogien Lejur*, tip of Lüodudu, its sea sign is a frigate bird.
7. *Libaie*, the tip of a piece of land, on sea two seagulls.
8. *Bogien Lakine*, a goose in the south of this tip.
9. *Lagueteran*, a coral boulder in the passage. On sea an *äuwilmöro* fish.
10. *Lanberia*, a small very hungry shark, which swims around looking for prey on all sides of Wotto. The inhabitants of Wotho, just like this shark, are known to be always extremely hungry, therefore they do not quite chew their food properly. When the pick fruits and have already enough lying underneath the trees, they do not think if those are already enough, but look immediately for other trees. Therefore the comparison with the shark: *"Kijkan an mane wot bogo en e ar mij im bälok? buk, jer, e rol, tak iaean tak, buk, jer,e rol, tak i liklal tak; buk, jer, e rol, tak i likiej tak; mane niin man in Wotto, mane kumkum; ej okaj bob en a e jetjet; ej kömuij mä en a e jetjet!"* How can this shark, which had been dead and drifted, still eat? He is looking, turns around, turns towards the north, first towards the windward, the weather side; the way to eat for the people of Wotho is to gorge themselves, they harvest pandanus and breadfruit at the same time.

[7] Erdland, 1914:354-355.

11. *Liräjüguk*, a goose on the outer reef side of Bokenaedok. When following the valley and the mountain of the waves in its flight it looks like a woman who covers the the leaves coverd earth oven, that is filled with food, with earth.
12. *Litimerib*, a shiny brown goose, in the west of the Atoll.
13. *Jouilobok*, a seagull (*jui*), which soars high in the sky and then suddenly drops down looking for prey. "*I käbean kueitöb kuon lo jeibo en e jouilobok*", coming to the north, you can see the bird dropping into the sea. (?)
14. *Lalikörkör*, a sickly *sula piscator* in the North of Wotto.

Nijan Joseph[8] indicated the following *joormeto*, "*Joormeto* for Enairik is the smell of fire, even when you do not see the island yet, and even though the island is uninhabited, you will still smell fire." He also referred to the above mentioned two white birds. No land signs were recorded during the survey.

Fig. 13. Seal of Wotho Atoll

In the flag and the seal of Wotho Atoll two *mejo* birds[9] figure very prominently, leading a canoe and nowaday's visitors and travelers safely towards Wotho. They are the two birds mentioned in Erdland's above mentioned description (No. 7). These *joormeto*, sea signs, were once of great importance for navigators sailing their canoes towards Wotho.

In 1886 Carl Hager described Wotho like this[10]:

The atoll stretches in a north south direction about 4 miles and is wider in the north. Only in 1835 had it been discovered by Schanzt. The western reef has hardly any islands. In the northeastern corner lies the main and best island of the group, which also gives it its name. It is very well suitable for planting coconuts. The entire islands is full of depressions, just like waves, which run parallel to the beach. Next to this islands is also anchorage. Besides this islands there are 13 lying on the reef. The next biggest one is Kaben in the southern corner, two channels on the western side offer ships entrance into the lagoon. The southern one lies in-between Eirek and Ombel in the sand and measures 4 fathoms, but there are some stones at the bottom which make it difficult to use. Just like the northern passage, which measures 3 fathoms and is filled with stones. The land area of the atoll is 10 square kilometers and the population is 25.

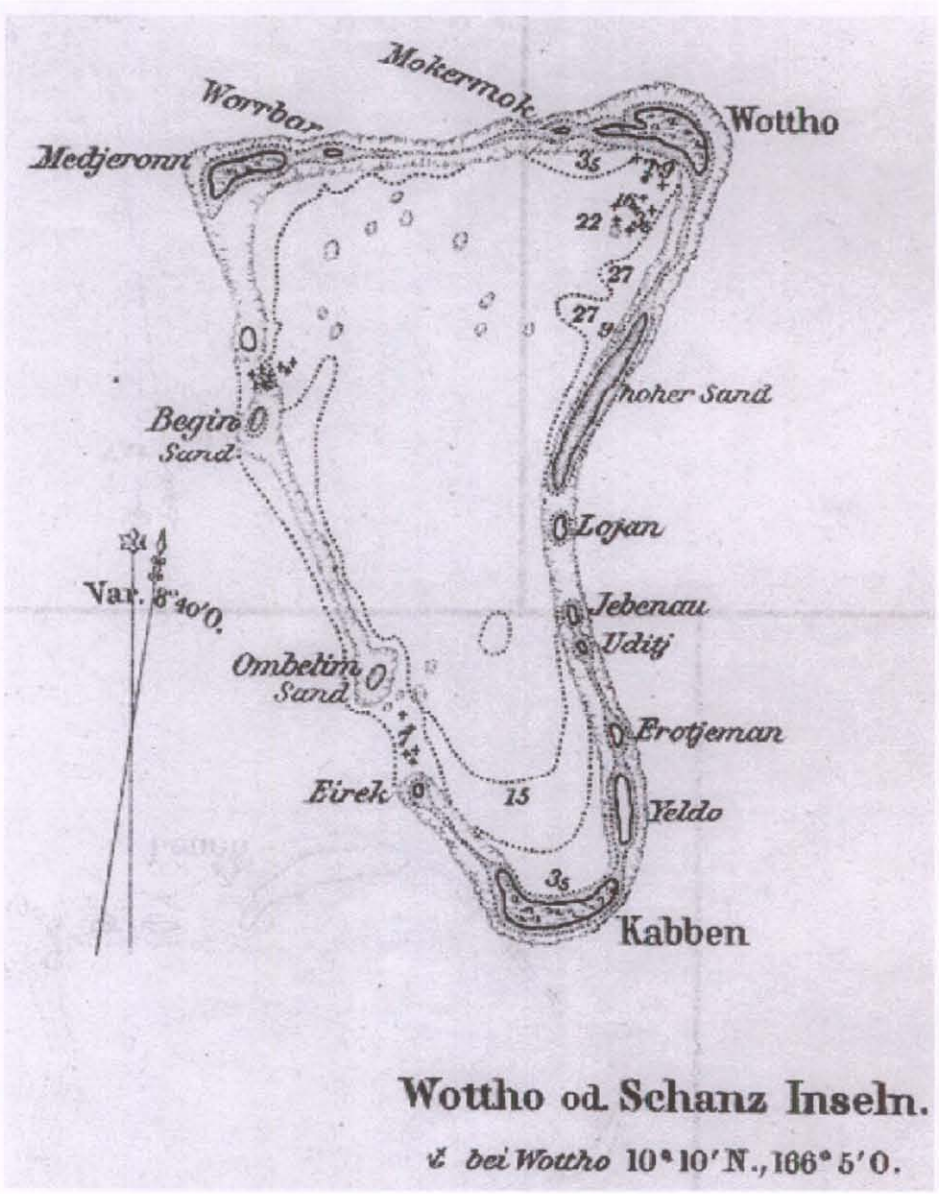
[8] Nijan Joseph January 7, 2004, Wotho Island.

[9] Fairy Tern, Gygis alba, also called *juwi* in the Ralik Chain.

[10] Hager, 1886:49-50, citing Witt, 1881:531.

In 1888 Meinicke writes about Wotho's location:

10° 5' latitude, 166° 4' longitude in the northwest of Kwajalein. It is a lagoon island about 3-4 miles long stretching to NW, and over one mile wide, with 13 wooded islands on its reef, which are difficult to reach.[11]



Map 5. Wotho Atoll, 1881.

Krämer, who had never been on Wotho Atoll, cites other sources when he describes the atoll like giving a virtual tour:[12]

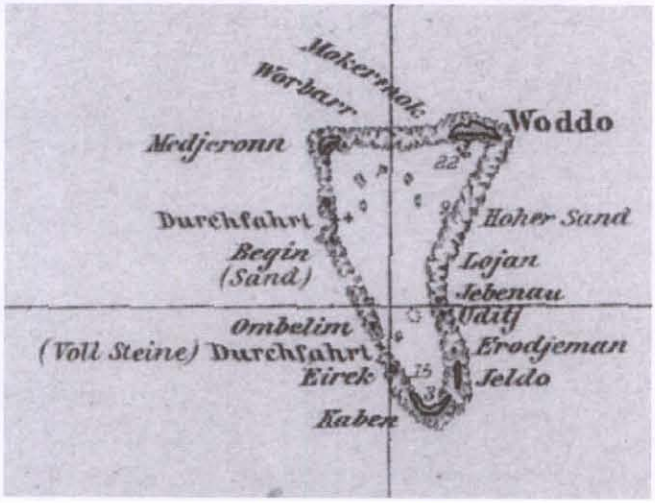
[11] Meinicke, 1888:330.

[12] Krämer und Nevermann, 1938:48.

Situated about 58 sea miles northwest of Kwadjelinn, has a triangular form, tip is in the south, the atoll is 19 sea miles long and 12 sea miles wide. ... Depth of the lagoon 27 m. (Japanese measured in the NW of the lagoon 42 m). Witt reports good drinking water, and soil, but it does have quite some mud flats[13] situated parallel to the beach.

Circular reef and islands:

NE tip	Wottho
Eastern side	reef with a high bank
	Lojan (in the middle)
	Jebenau
	Uditj small
	Erotjeman
	Yeldo
Southern tip	Kabben bent, 4 sea miles long
W-side	Eirek
	— 7 m (Witt: 7,3 m)
	Obelim sand
	Begin-sand, 6 sea miles from Ombelim
	— flatt (Witt: 5,5 m, unclean)
	1 small island
NW corner	Medjeronn, 2 sea miles long (Japan Mexeruen)
	El' 14. S 349: Medjuren).
N side	Worrbarr
	Reef
	Mokermok small
NE	Wottho, 4,3 m high,
	anchorage 10° 10' N., 166° 5'E.



Map 6. Wotho Atoll, 1897.

[13] With this description 'Krämer und Nevermann' obviously mean the depressions called *komlal*, pit, *jikin bōl*, place of taro patch.

According to the Census Wotho is part of the Ralik Chain of the archipelago of the Marshall Islands:[14]

Location: 10 1' - 10 11' latitude north.
165 54' - 165 46' longitude east.
Land area; 1.7 sq. miles, 18 islets.
Lagoon area; 36.7 sq. miles.

2.2. Climate.

The climate of the Marshall Islands is predominantly a trade-wind climate with the trade winds prevailing throughout the year. Minor storms of the easterly wave type are quite common from Marsh to April and October to November. The islands are not generally considered to be in the Typhoon belt, but because they are low with small land masses they are easily subject to flooding during storms. Tropical storms are rare but do occur. The first typhoon recorded for the Marshall Islands happened in the 1840s. It devastated Likiep Atoll and cost the lives of the greatest part of the population. The first typhoon recorded for the Marshall Islands happened in the 1840s. It devastated Likiep Atoll and cost the lives of the greatest part of the population.

Fig. 14. Lomij compound, Wotho Island, destroyed in 1982.

The only atoll for which complete weather data exists is Majuro, where the U.S. National Oceanic and Atmospheric weather station is located. Annual rainfall varies considerably from north to south; the southern atolls receiving 120-170 inches (300-400 cm), and the northern atolls receiving 40-70 inches (100-175 cm).[15] The highest rainfall generally occurs during the *añõn rak* season, also known as breadfruit season (June to October). Precipitation is generally of the shower type; however continuous rain is not uncommon. During the *añõn ean* season, also known as the pandanus season (January to March), the rainfall decreases with February noted to be the driest month of the year.

[14] Economic Policy, Planing and Statistics Office, 2001:6.
[15] NOAA, 1989.

List of typhoons that hit or affected Wotho:[16]

Date	Typhoon	
1850		A typhoon decimated or completely wiped out the population of Rongelap and Rongerik Atolls and probably also affected Wotho.
1864		Ujelang was found deserted, probably after a typhoon, which might also have stuck Wotho.
1870		Ujelang hit by a typhoon, which might also have struck Wotho.
1875, Nov.		Northern islands were destroyed by a typhoon, Kwajalein was swept bare.
1911,16/17 Oct.		Tropical storm on Ujelang, probably also affected Wotho.
1911, 2/3 Nov.		A typhoon struck Ujelang, and probably also affected Wotho.
1951, 20-25 March	Georgia	Wotho was hit.
1977, 23-27 Dec.	Mary	Wotho was hit.
1982, 25-28 Nov.	Pamela	The northern atolls were hit and Wotho suffered damage.
1990, 14-24 Nov.	Owen	Wotho was hit.
1992, 15-16 Oct.	Brian	Wotho was hit.
1992, 17-20 Nov.	Gay	Wotho was hit and severe destruction was caused.

Table 3. List of Typhoons that hit Wotho Atoll.

One of the outstanding features of the climate is the extremely consistent temperature regime. Daily temperatures for both northern and southern atolls fluctuate between the high seventies and mid eighties with no seasonal variation. The range between the coolest and the warmest months averages less than one degree Farenheit. Nighttime temperatures are generally 2-4 degrees warmer than the average daily minimum temperatures, which usually occur during heavy showers in the daytime.

In spite of this the weather is always hot and humid with an average temperature of 81° degrees Farenheit all year round.[17] Wotho Atoll lies in the north of the Marshall islands where the weather the climate is drier than in the southern atolls.

[16] Spennemann and Marschner, 1994.

[17] Permanent Mission of the Republic of the Marshall Islands to the United Nations, 1992.

Fig. 15. View of the interior of Wotho Island.

2.3. Vegetation.

There is no record of the original vegetation of the Marshall Islands. The precise date when plants first occurred in the Marshall Island atolls is still debated.[18] It is possible that 44 species of plants, including various herbaceous species, shrubs, and trees drifted to the southern Marshalls before the arrival of man.[19] The early inhabitants probably altered the vegetation of the atolls by introducing new species. During the twentieth century coconut plantations, developed by German, Japanese and American administrations replaced most of the original vegetation of many atolls.[20] Today as much as 60 per cent of the nation's land area is covered with coconut (*Cocos nucifera*).[21]

Many areas not dedicated to coconut plantations have been put to other uses such as cultivation of taro and other plants. Species that have been introduced are reliant on the presence of humans for propagation.[22]

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[18] Dye, 1987.

[19] Hatheway, 1953.

[20] Fosberg, 1990.

[21] OPS,1991.

[22] Fosberg, 1990.

Fig. 16. Beach vegetation, Wotho Island.

The vegetation that grows in the Marshall Islands include mixed broadleaf forest composed of a small number of tree species (*Tournefortia argentea, Guettarda speciosa, Pisonia grandis, Pandanus tectoris, Allophylus timoriensis, Cordia subcordata, hernandia Sonora*); a few shrubs (*Scaevola serica, Suruana maritama, Pemphis acidula, Tournefortia*); and a layer of ground cover consisting of several species (*Lepturus repens, Thuarea involuta, Fimbristylis cymosa, Polypodium scoloprendria*). Several mono specific forests occur in the Marshall Islands (*Neisosperma, Pisonis grandis, Turnefortia argentea*).[23] Shrubs such as *Pemphis acidula, Suriana maritama*, and *Scaevola sericea* typically grow along shorelines while herbaceous plants occur mainly under forests. Limited strands of mangroves (*Bruguiera*) occur on larger islands of the wet southern atolls[24] and are found in swampy areas containing brackish. Several of the cultivated plants (*Musa, Cocos nucifera, Artocarpus altilus, Cytrosperma chamisonnis, Pandanus tectoris*) are commonly found on the inhabited islets of the Marshalls. These various plants serve as windbreakers, slat spray repellents, food, and are used by Marshallese for plaiting and medicinal purposes.

On most of the islets there is a strip of natural shrub forest along the seaward coast that serves as a windbreak. This mainly consists of mixed broad leaf forest and

[23] Fosberg, 1990.

[24] Stemmerman, 1981.

shrub with Scaevola on its outer edge.[25] There are 81 species of vascular land plants and many exotic plants not found on other atolls.[26]

2.4. Sea Level Changes.

Due to being so low in elevation, the recent sea level rise caused by global warming or "greenhouse effect" is a critical threat to the Marshall Islands. The rising of the sea during the last two decades has devastated the low -lying atolls economically and culturally. It is estimated that the normal trend for sea level rise has been approximately 1.3 inch to 3 inch increase over the span of 100 years. However, it is figured that within the next 50 years there will be a 1.7 inch increase alone. As predicted by scientists (global warming red alert), the islands of the Marshalls are among the Pacific nations that will be affected by the rising of the sea level within the next fifteen to twenty years. Under normal conditions, coral and the other components of the coral reef can maintain a healthy landmass. At present, visibly eroded scrublands are along the coastline and most of the vegetation growing in this area will soon be washed away by the incoming tides. Any archaeological sites that are located within this area will vanish and their significant historical value will be lost to the tides.

For many years the Marshall Islands Government has been concerned with the issue of global change. As the Marshall Islands lie in open ocean and are very close to sea level, the vulnerability to waves and storm surges is, at the best of times, precarious. Although the islands, have by no means been completely free from weather extremes, they are more frequently referred to in folklore as '*jolet jen anij*' (gift from the god), the sense that the Marshall islands are a god given sanctuary, away from the harshness of the other areas, is therefore a notion that is part of the sociocultural identity of the people. When any variation of the weather hits the Marshall Islands, the effects can be severe. When typhoon Paka passed through Ailinglaplap in late 1997, food crops were severely hard hit and outside food had to be brought in. El Niño induced drought brought consequences that caused the entire Marshall Islands to be declared disaster areas, and emergency water making equipment and food supplies were shipped in from outside.

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[25] Fosberg 1990.

[26] National Biodiversity Report, 2000.

Given the physics of wave formation and the increasing frequency and severity of storms, the Marshall Islands will likely be at even greater risk of total inundation. The relative safety that the islands have historically provided is now in jeopardy. The impacts are not limited to the Marshalls and its immediate neighbors. The Marshall islands are often referred to as the "front line state" with regard to the climate change issues. It is important to realize that once the potentially catastrophic effects begin to appear, it is likely too late to prevent further warming that will threaten virtually all of the world's coastal regions.[27]

Fig. 17. View over Wotho lagoon.

[27] Permanent Mission of the Republic of the Marshall Islands to the United Nations.

III. LAND TENURE

Marshallese society is generally matrilineal and is composed of a number of matrilineal clans (*jowi*). The most important descent group is the lineage (*bwij*). The *bwij* is the matrilineal system in which all land rights are passed down through the mother's side. Therefore the whole group is descended, mother to daughter, from a common ancestor or *jowi* (clan). There were at least forty-four clans spread over the atolls and though no one remembers how members of a *jowi* were related by blood, members consider themselves related. The lineage head (*alap*), usually the eldest male of the senior line of the lineage, is steward of the lineage land holdings.

With slightly less than 70 square miles of land in the entire archipelago and prime settlement areas being extremely limited, land has long been the most highly prized possession in the Marshall islands and control of land is the central theme of Marshallese culture. The basic land division of the Marshall Islands, *wãto*, is a strip of land that runs from the lagoon to the ocean side of an island. One or more *wãto* are held and administered by a matrilineage line. Title is divided and shared by several levels of the society. In the pre-Christian era, the Marshallese social system distinguished between two major classes: *irooj* (chiefs) and *kajoor* (commoners). The *irooj* hold title over an island or atoll. Among the *irooj* the *iroojlaplap* (paramount chief) were the ones with the most power while the *iroojiddik* of the lesser chiefs, shared the power and many of the privileges, but to a limited degree. Today the term *kajoor* is not used so often as the class has been divided into the *alap* (land managers) and the *rijerbal* (workers). The alap organizes and directs lineage activities and allots lands for use to different descent lines within the lineage. The *alap* and the *rijerbal* (workers) make up the subjects of the *kajoor* (commoners) and render services to the *Irooj* in exchange for the use of land. The *Irooj* managed the land in a way that not only provided themselves with food but also provided for the *kajur* (*alap* and *rijerbal*) The *kajur* in return cultivated the land, harvested the water surrounding the atoll, and performed *ekkan* (tributes to the *Irooj*. The procedure is a cycle that has been repeating itself for hundreds of years. The common members of a lineage have land rights, although the *alap* and the *rijerbal* change land ownership. The *Iroojlaplap* is the only individual with permanent land rights, unless defeated in war.

Historically one *Iroojlaplap* (paramount chief) was able to extend his control over most of the Ralik Chain (except Enewetak and Ujelang). Periodically the *Irooj* visited these islands to collect tribute. The Ralik Chain was subsequently divided into two districts, one including Namu and the north islands, the other Jabat, Ailinglaplap, and the

islands south. Although all of these islands were owned by the *Iroojlaplap* he rarely visited those further north than Kwajalein and Ujae, because they were isolated and somewhat impoverished.[1] Within the northern atolls, stratification was less elaborate, in comparison to those in the south.

Ratak was likewise structured but far less centralized. The whole chain was never integrated under a single *Iroojlaplap,* although the *Iroojlaplap* of Maloelap was able to put the islands to the north (except for Mejit) under his rule. Majuro and Arno broke away from this union, however, and again became independent political entities. The Ralik and Maloelap associations were unstable and varied in size as local lesser *irooj* tested the strength of their islands against that of the *Iroojlaplap.* This trend towards instability encouraged the *Iroojlaplap* to move his residence from island to island to make his control evident to the local lesser *irooj.*

Today traditional rights of land tenure are unequivocally preserved in the Constitution, and the traditional requirements of consensus decision making, in which all persons with land rights to a certain *wãto* must agree, on questions of land transfer is retained.

The traditional land tenure system confounds Western-style efforts of historic preservation. Public or government land is non existent and private landowners are accustomed to exercising ultimate control over land use and access, and are therefore unaccepting of regulations which might restrict the usage of their property.[2]

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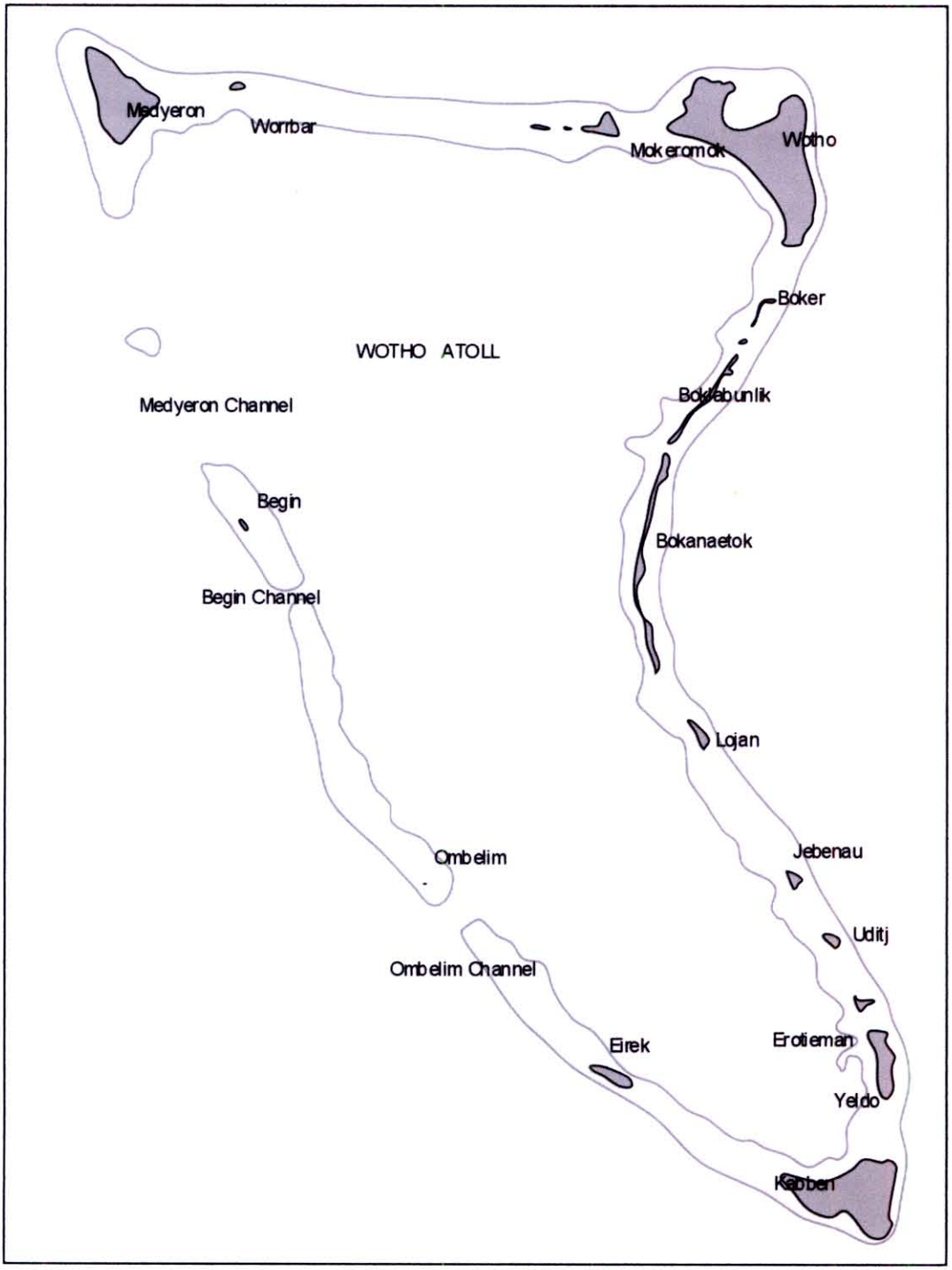
[1] Alkire, 1977.

[2] Williamson, 2001.

IV. FIELD INVESTIGATION.

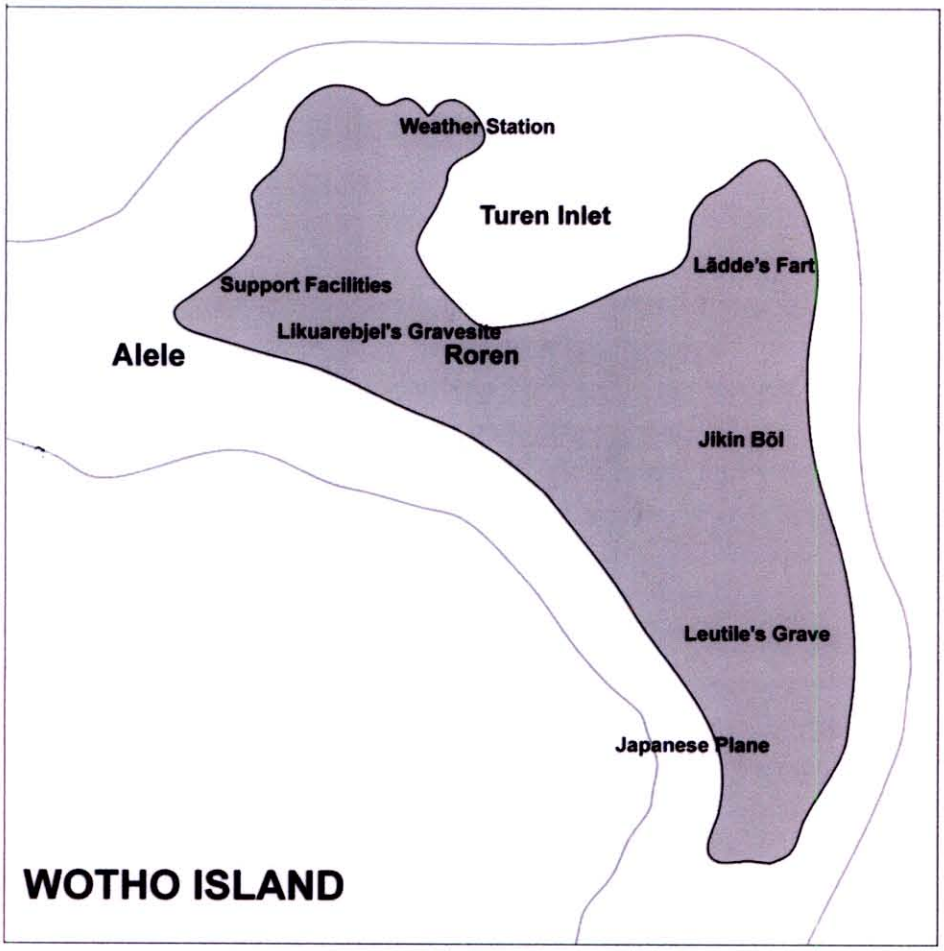


Map. 7. Wotho Atoll.

4.1. Background Information.

Wotho is situated at about 10°.10.18.20 N and 166° E, in the northwestern part of the Marshall Islands, the so-called *kabin meto,* the far reaches of the sea. Krämer wrote, 'The name Wotho means 'Entrance Through the Reef'.[1] No meaning of the name could be recorded during the survey but one informant said, "Wotho got its name from the captain of a Spanish ship who had discovered the island. The Spaniards had come on shore in order to look for water and firewood".[2] The Marshall Islands Journal reported Wotho means 'Island Far Away'.[3] The Atoll consists of 18 islets and has a total land area of 4.33 square km (1.67 square miles) and a lagoon of 94.92 square km (36.65 square miles).[4]

4.2. Site Related Oral Tradition.



Map. 8. Wotho Island, some of the sites are indicate.

[1] Krämer, 1938:48.

[2] Nijan Joseph, January 7, 2004, Wotho Island.

[3] Marshall Island Journal, 2003: Vol. 34, Nr. 28, p. 3.

On Wotho Island in Wotho Atoll the archaeological survey team recorded eleven sites, five prehistoric, three historic sites and one of undetermined age. In addition three traditional sites were recorded by the anthropological survey team. Thus, a total of 14 sites are documented in this report about Wotho Island. All sites and their background stories were documented for this report, they were mapped (GPS), and recorded on video, and photographed.

Due to lack of transport the rest of the atoll was not accessible during the brief survey time. Thus, unfortunately, only Wotho Island and not all the islands and sites of the atoll have been surveyed. Undoubtedly there are many more sites still unrecorded.

Therefore this report can only be seen as a preliminary one. A second survey, which will cover all the other islands of Wotho Atoll, is scheduled to take place in September 2004 and will complement this report.

Fig. 18. Wotho Island seen from space, March 12, 2004.

[4] Bryan, 1971.

Site MI-WO-WO-001.[5] *Jin en an* Lãdde, "Lãdde's Fart"

Monkakwe *wãto*.

GPS Coordinates N: 10°.10.18.20

E: 166°.00.40.57

Fig. 19. Site MI-WO-WO-001. Lãdde's seat at the shore of the ocean lagoon, Wotho Island.

Situated on the shore of Wotho's huge ocean side lagoon, called Turen,[6] is a so-called beach rock. It is situated beyond the high water zone and, distinguished only by this position; it is otherwise not noticeable. Here the following story happened.

A) Story of Lãdde's Fart, told by Rington Jelke.[7]

A long, long time ago the spirit Lukuarebjel lived on Wotho Islands, long before the first people settled there. She was a female demon, a so-called *mejenkwaad* (these women have also eyes in the back of their heads). When she lifted her long hair at the back of her head you could see another pair of flashing eyes. She was very hungry and ate the houses, all the food and also the people of Wotho. Finally there was only one person left and this was the man Lãdde. But in the end she found him sitting on his seat, a beach rock, preparing some fish he had caught. When the demon was about to eat him she sang a *roro*, chant, and Lãdde answered:

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[5] See also Site MI-WO-WO-006. *Lipon Timon* Lukurepjel - Gravesite of the Demon Lukurepjel, p. 60.

[6] See also site MI-WO-WO-0012, p. 74.

[7] Rington Jelke, January 7, 2004, Wotho Island.

Lukurepjel -Lãdde

Lãdde, *kupañ lulu to imij e na*	Lãdde, Lãdde, *kupañ*[8] fish comes towards the rock
badet lulu to imijin bar	*badet*[9] fish comes towards the rock
ejor am it ke le?	How is the fire Lãdde? The demon asked.
Lãdde - *it eo e, ejor am jolok ke?*	Here it is, how about you? Lãdde asked the demon.
jolok eo e.	Here it is, the demon said.
kañ it eo, im kañ Lãdde *tej…*	She ate the fire stick and ate fart …

The demon swallowed Lãdde many times but he would not die on the contrary again and again he left her stomach with one of her farts. Finally Lãdde decided to kill the demon. He went to the ocean and looked for a shell, which he shaped to fashion a blade ready for use.

At that time Lãdde was very angry and wanted the demon to die, because she had eaten all the people and all the things on Wotho Island, all except the man Lãdde. The demon on the other hand was angry that she could not kill Lãdde and that he was still alive.

The demon Lukuarebjel sang the above mentioned song asking Lãdde, "How did you come out?" And Lãdde answered, "With the fart that just came out." Thus, she ate Lãdde once more, but Lãdde had the shell with him and with it cut her stomach until Lukuarebjel fell to the ground and died. Before she took her last breath the demon was wondering, "I ate all the canoes and all the people and nothing had happened to me, but once I ate Lãdde, I felt something terrible in my stomach" - then she died.

Trying to eat Lãdde the demon Lukuarebjel had bitten so vigorously that she not only had swallowed Lãdde, but had also taken a mouthful of Wotho Island thus, forming the Turon inlet.[10]

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[8] Arcanthurus triostegus L., surgeon fish tang, or Hopatus triostegus, convict tang.

[9] Banded sergeant major damsel fish, Abudefduf septemfasciatus.

[10] Nijan Joseph January 7, 2004, Wotho Island.

B) Story of Lãdde's Fart from Kwajalein

This story was told by Jelibor Jam:[11]

Fig. 20: Site MI-WO-WO-001. Lãde's Seat (close up)

On the atoll of Wotto there was a girl, who was born and grew older. When she was a young girl her mother and father died, and she did not listen to one word of advice, but went as she wanted to. One day a bad spirit |lit. 'air'| quickly entered her body and all of her thoughts. She changed from a human being and she took on the spirit of a demon. The name of the demon was Likrabjel.

After some days when the demon was in this body, it could eat canoes, could eat islands, eat people, and eat similar things. One day when she wanted to go to the ocean side, she walked first on the lagoon side of Wotto and she ate all of the people's canoes first. Her thought was to eat the people later.

At this time she, the female *timon* began to go to the ocean side and she ate from the fruit trees of the land parcel named Ãne-ju, she went towards the middle of the islands there. From lagoon to ocean and not one coconut or pandanus or breadfruit or any bush was left standing. She finished eating them. (There was no breadfruit, pandanus, coconut or grass there). It was like sand. (Because the demon ate them.)

When she arrived at the ocean side, she saw a boy, Lãdde. And she saw fish inside a pool, a pool for launching model canoes -- playthings. ..,

[11] Tobin, 2002:106, recorded in 1975.

Lãde looked over and saw the woman and the demon sang (*kajin ek* fish language):

Kupan luluto	*Kupan*[12] swims ahead
Imwiji ña.	from side to side
Badet luluto?	
Imwiji ña-a-a	
Ej je or am it ke le?	

C) Story of Lãdde's Fart from Ujae.

This version of the story was told by Nitwa Jeik:[13]

A man named Lade had pet fish, the *kubañ* and the *baret*. As he sat making fire he would call to his fish so he could feed them.

Kubañ lulu to ilik to.	*Kubañ* come together and come to me,
Badet lulu to imijini na.	*Badet*, you come to me, too.

There lived a demon nearby, the demon woman Likirebjel. She heard Lade calling his fish.

"*Ejoram it ke le?*" the demon woman chanted. "Do you have any fire?"
"*It eo le,*" Lade chanted back. "Yes, I do."
"*Ejoram jolak ke?*" continued the demon woman. "Is the fire already going?"
"*Jolak eo le,*" Lade finished. "The fire is here."

The demon woman called Likirebjel ate both the fire and Lade. She had herself a good cooked meal. When she finished she felt so good she farted.

Kañ it em, kañ Lade.	*Kubañ* come together and come to me,
Rub!	Eat him, I ate Lade.

Phht! She farted Lade right out.
The demon woman called Likirebjellooked back in surprise.
"*Kwalok ie le* Lade?" the demon woman called out.
"Where did you come from Lade?"
"*Ilo jiñeo emot lok,*" answered Lade. "You farted and I came out."

Lade went out to feed his fish.

The demon woman called Likirebjel got really mad. She scooped up half the island, along with some people, canoes and coconut trees. She ate them all. She was preparing, preparing to eat the man Lade.

Lade sat at home building a fire. The demon woman called Likirebjel called to him again.

"*Ejoram it ke le?*" the demon woman chanted. "Do you have any fire?"

---

[12] Arcanthurus triostegus L., surgeon fish tang, or Hopatus triostegus, convict tang.
[13] Kelin, 2003:140.

"*It eo le,*" Lade chanted back. "Yes, I do."
"*Ejoram jolak ke?*" continued the demon woman. "Is the fire already going?"
"*Jolak eo le,*" Lade finished. "The fire is here."

Once again she ate Lade and his fire.

Kañ it em, kañ Lade.	Eat him, I ate Lade.
Rub!	Phht!

She farted Lade right out.

"*Kwalok ie le* Lade*?*" the demon woman called out.
"Where did you come from Lade?"
"*Ilo jiñeo emot lok,*" answered Lade. "You farted and I came out."

Lade laughed and started catching clams at the reef.

The demon woman called Likirebjel ate the entire island preparing to eat Lade. She wanted to block up her stomach to make sure Lade wouldn't pop out again.

Having caught a basket of clams, Lade built a fire. The demon woman called Likirebjel screamed out at him.

"*Ejoram it ke le?*"	Do you have any fire?
"*It eo le,*"	Yes, I do.
"*Ejoram jolak ke?*"	Is the fire already going?
"*Jolak eo le,*"	Lade finished. The fire is here.

She swallowed him. She swallowed the fire. She swallowed his basket of clams. She farted.

Rub!	Phht!

She farted all right, but Lade got stuck with the trees and the land and everything. The little man stayed inside! The demon laughed and danced.

Lade found his basket and grabbed himself a clam. He sliced at the demon woman's belly. As he cut he chanted.

Ikañ ah ane ejab metak lojeo.	She eats the island and her stomach does not hurt.

Maybe the demon woman called Likirebjel looked like she still danced, but she was in a lot of pain. Lade cut and chanted.

Ikañ ah ane ejab metak lojeo.	She eats the canoes and her stomach does not hurt.

With each cut the demon screamed. With each cut Lade chanted.

Ikañ ah ane ejab metak lojeo. She eats the house and her stomach does not hurt.

With each cut the demon's body grew weaker.

Ikañ ah ane ejab metak lojeo. She eats the trees and her stomach does not hurt.

The demon woman grew so weak, she could not even fart. Lãdde finished his chant.

Ikan laidikdik abñeñe le eo Lade *ejkab metak aj-jeiõ.*
When she eats Lade her stomach really starts to hurt.

The demon flopped over, dead. Lãdde climbed out and called to his fish. They were ready to eat.

Jipdip inoñ jidim jedu.
That is the end of the story.

Lãdde was not only active on Wotho Atoll, but on many other islands in the Marshalls. Even today he is remembered all over the Marshalls. When you eat the small nuts, which are in the *mejwaan* breadfruit, then you can see *lãdde* inside the nuts in form of a small transparent skin, just like plastic. When you see this then *kõnaj jin einwot* Lãdde you will fart like Lãdde.

Today the site 'Lãdde's Fart' consists only of the stone, the seat on which Lãdde had been sitting. In former times, though, Lãdde's *it,* his fire stick, was also part of it. It had been a stone, about 1 1/2 yard (135 cm) long and 1 yard (90 cm) wide. At the time when the informant, Nijan Joseph, who is now 63 years old, had been a boy he still had seen it. When it disappeared it not known. Maybe during the last typhoons. In the past also the sitting stone has been damaged when a part of was chipped off.

Site MI-WO-WO-002. Converted taro pit, now used for pandanus.

Mwejej *wãto*.

GPS Coordinates N: 10°.10.01.09

E: 166°.00.40.34

Fig. 21. Site MI-WO-WO-002. Converted taro pit, now used for pandanus.

No oral history or anthropological data in connection with this site could be collected. This taro pit had been in use until one year ago, but roaming pigs devastated it and, thus, pandanus was planted instead, which will be used for handicrafts.

The increasing pig population is a considered problem on Wotho, where the population is divided between those wanting to fence the pigs, and those who want to let them roam freely.[14]

[14] See also site MI-WO-WO-003. *Lem eo an* Tarmelu, and p. 53.

Site MI-WO-WO-003. *Lem eo an* Tarmelu, former taro pit

Mwejej *wãto.*

GPS Coordinates N: 10°10.00.99 N

E: 166°.00.45.92 E

Fig. 22. MI-WO-WO-003. *Lem eo an* Tarmelu, taro pit.

This taro pit is quite deep and had been in use for a long time. When it had been given up could not be established. This place is connected with the mythical figure Litarmelu, a woman from Kwajalein atoll, who lived on Arlap.

A) Story of Litarmelu and the *Lem*, Bailer.

She learned navigation from three strangers. Of her many children she only taught navigation to one son. Then she sailed with seventeen canoes through the Marshall Islands, moving through

> Eanimeto [the northern Atolls], and went to Ujae and remained there for a few months. And sailed from Ujae, coming to Lae. From Lae to Wotto, and did not see Wotto, but they went up north of Wotto into the sky and have been gone to this day. ...
>
> The proof of this story: one man was in this canoe of Litarmelu and was bailing and the bailer fell out. And the man jumped out after the bailer and landed in a thicket of pandanus trees on Wotto[15]
>
> And the man was shocked and said (grunted), "Ummm, why did I think that I was on the ocean? But why am I on the island?"

[15] Tobin, 2000:112-120.

Now the men went to the people and told them that the fleet of Litarmelu had gone away into the sky.

On Wotho the following version of this story was recorded: [16]

B) Story of Tarmelu and the *Lem*, Bailer.

A long, long time ago the woman Tarmelu was sailing in her canoe through the air. She traveled wide and far through the atolls of the Marshall Islands. Once, when she was on the look out for pandanus, and bailing water out of her canoe, her *lem*, bailer, fell down to the island of Wotho where it landed in this taro pit. Here it was found some years later and the taro pit was named accordingly.

Next to this *Lem eo an* Tarmelu, taro pit, a pig trap was found.

Fig. 23: Pig trap next to MI-WO-WO-003, *Lem eo an* Tarmelu, taro pit.

Freely roaming pigs have become a problem on Wotho Island, where at the time of the survey all families had their pigs set loose to wander around the island. These pigs, being omnivores, destroy all plantations, such as taro, pumpkin, tapioca, etc. as well as any shoots of young plants and crabs.[17].

[16] Nijan Joseph, January 8, 2004, Wotho Island.

[17] See also site MI-WO-WO-002, and p. 52.

Site MI-WO-WO-004.[18] Gravesite of Leutile.

Mondroulkan *wãto*.

GPS[19] 166°.00.49.11 E.

10°.09.30.54 N.

Fig. 24. MI-WO-WO-004. Northwestern marker of grave No. 1.

When the survey team reached the gravesite, hidden in dense undergrowth, the Marshallese team members, local guides as well as staff of the Historic Preservation Office, refused to go near the site; out of fear of Leutile, who is buried there. During the survey actually two graves were discovered and there might be even more, because coral pebbles as well as big coral slabs are lying in the dense undergrowth in the vicinity.

A) Story of Leutile and the Lajidik Clan.

Once upon a time, Tilan was the first clan in Wotho and its chiefs ruled the island. This was before Lajidik clan came and fought to gain power.

After the fight was over, the people from the victorious Lajidik clan searched the island for any Tilan clan people still alive. They found Leutile, the only woman of the Tilan clan who had survived, hiding in the bushes. She was also a relative of Lire, the wife of Leituwa, the great fighter of the Lajidik clan. Therefore they brought Leutile to Leituwa and he gave her to one of his sons. The couple stayed on the other part of the

[18] Laine Emejwa, January 12, 2004, Wotho Island.

[19] GPS readings was taken ca. 10 m W. from the site on the lagoon pathway because of vegetation cover.

island until Leutile, the last woman of the Tilan clan was dying. After her death, the people of Wotho, who were afraid of her, buried her far away from the village settlement, because she had been such a bad person.

Bubu, a divination with pandanus leaves has to be made after the death of a person whose reputation during lifetime had been bad. This will indicate where the body

Fig. 25. MI-WO-WO-004. Southeastern marker of grave No.1.

has to be buried. Thus, if the result of the divination shows the body should not be buried in the village the divination has to be repeated until the right place is indicated, and people will do the burial according to the result of the divination. Therefore, Leutile was buried on the other side of the island all by herself.

Leutile was an *anitta*, a person with special inner powers, who has knowledge about magic, medicine etc. *Anitta* are always connected with black magic and are persons who use their powers rather casually.

These powers can be so strong that an *anitta* can kill other people with his spiritual strength. *Anitta* are the kind of people who will say what a beautiful tree you have in front of your house, and the next day the tree will loose all its leaves and will wilt away and die. *Anitta* are the kind of people who bring you food and when you eat it you die, in English you might call them people who have the evil eye.

Fig. 26. MI-WO-WO-004. Northwestern marker, and border of grave No. 2.

Leutile was and still is considerably feared because she already made appearances during her wake and proved to be a night as well as day active spirit[20]. During the survey it could not be established which of the two graves was Leutile's last resting place nor if she was buried in the derelict site next to it.

[20] Rington Jelke January 9, 2004, Wotho Island.

Site MI-WO-WO-005. Japanese plane wreckage. WW II site.[21]

Lokone *wãto*.

GPS Coordinates N: 10°.09.19.28

E: 166°.00.49.45

Fig. 27. MI-WO-WO-005. Japanese airplane crash site on Wotho Island, Juda is taking a picture of it.

On the southern end of Wotho Island some remains of a Japanese plane are lying on the lagoon beach, partly submerged at high tide. According to the informants, some other parts are lying in the lagoon.

A) Crash landing of a Japanese Airplane on Wotho Atoll.

The airplane had been coming from Enewetak and on its way to Kwajalein, with 12 people on board. An US warship shot at the plane and hit it. The plane then tried to return to Enewetak but could not make it. Thus the pilot landed in Wotho, which had no airstrip and also no Japanese military personnel stationed there. The plane landed in the lagoon and skittered along towards the beach where it finally stopped. People from Wotho took care of the Japanese crew, who all survived the landing. The Japanese all lived in Borro, a compound some distance from the main settlement on Wotho Island.

When an American plane circled over the islands obviously looking for the Japanese soldiers and when later on a US warship came all Japanese soldiers fled to

[21] Nijan Joseph, January 7. 2004, Wotho Island.

Enerikkan, a small island of Wotho Atoll. They fled there running over the reef. On Enerikkan they sat down, the captain of the group in the middle and his men around him, in the formation of the Japanese flag. The captain shot all his men. On March 8, 1944, 350 marines from the 1st Battalion, 22d Marines, accompanied by eight amphibian tractors, all loaded aboard an LST, landed unopposed on Wotho Atoll. They tried to convince the Japanese captain to surrender, but he committed suicide. One man from Wotho, his name was Kaia, brought the Americans to Enerikkan. He witnessed the event.[22]

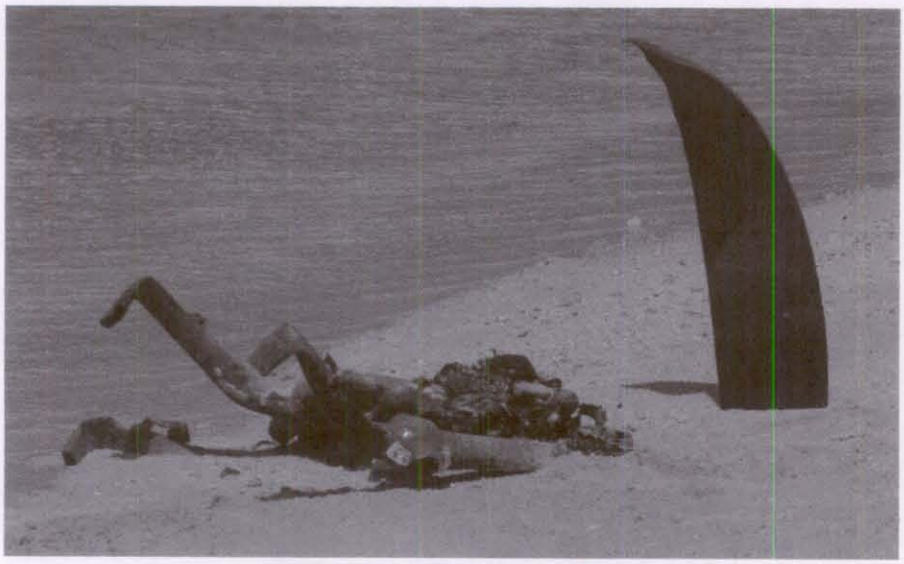

Fig. 28. MI-WO-WO-05. Remains of the Japanese plane.

Later on the Americans buried the Japanese soldiers in the sand of the lagoon beach on Enerikkan. Japan never recovered the bones and today there is no grave as the waves washed the bones away. Despite background research, contacting Japanese and American institutions, it was not possible to identify the type of plane nor to get more detailed information concerning this incident.

Fig. 29. MI-WO-WO-05. Remains of the Japanese plane.

[22] See also: http://www.ibiblio.org/hyperwar/USA/USA-P-Gilberts/USA-P-Gilberts-20.html.

Site MI-WO-WO-006.[23] *Lipon Timon* Lukurepjel - Gravesite of the Demon Lukurepjel.
Ãneju *wãto*.
GPS Coordinates N: 10°.10.09.20
E: 166°.00.10.27

Fig. 30: MI-WO-WO-006. Fred Langmore and Rington Jelke sitting on the 'head' of Lukurepjel.

A) Story How the Demon Lukurepjel Was Killed.

Fig. 31. MI-WO-WO-006. The 'feet' of Lukurepjel covered by dense undergrowth.

After the man Lãdde had killed the female *timon*, she fell to the ground at Ãneju *wãto*, where her body is still lying today, stretching over a considerable area and forming the highest elevation of Wotho. These small hills, formed by the fallen body of Lukurepjel, are about 3 m high.

[23] See also Site MI-WO-WO-001. *Jin en an* Lãdde, p. 46.

Site MI-WO-WO-007.[24] Site of a power plant and facilities to monitor weather conditions during Operation Redwing (May to June 1956).
Ãneju *wãto*.
GPS Coordinates N: 10°.10.14.91
E: 165°.59.55.92

Fig. 32. MI-WO-WO-007. Southern end of the airfield and site of the former support buildings of the weather station built for Operation Redwing.

At the time of nuclear testing in Bikini, Operation Redwing, three buildings stood where today the southern end of the airstrip is. They housed a power plant, a radio station and a warehouse. But the crew stationed here had lived in the village nearby the area where the protestant church is situated today.[25]

In our interviews on Wotho all people interviewed stated that these structures were built for the Operation Bravo in March 1954, but background information from American sources refer to this site in connection with Operation Redwing, which started on May 4th 1956 and continued until June 21st 1956.

[24] See also site MI-WO-WO-008, p. 62.
[25] Rington Jelke, January 9, 2004, Wotho Island.

Robert L. Dowdy, Sr. wrote:[26]

I was a field operating technician in a crew which set up a navigation & tracking system to track & position aircraft in reference to gound zero & time zero as they flew into the blast area to collect air samples, shock info, & other data.

My first months were on Eniwetok installing & maintaining the aircraft equipment, then I was sent to Wotho Atoll to set up a transmitting & receiving station in a remote location to provide the signal for the radio navigation grid. We actually came ashore in small landing craft on the island which was inhabited by a few families, & set up tents, a water plant, cooking facilities, etc. Holmes & Narver personnel cleared a road to the end of the island where I set up the transmitting & receiving station in a tent. After the camp had been established, the H&N personnel left & 4 of us remained to operate the station. We were supplied every 2 weeks by an Air Force SA-16 sea plane.

I was on Wotho when the air drop was made & will never forget the light from that explosion in the night sky some 200 miles away. I left the islands on July 10 with a great appreciation of the beauty of nature & the power of technology.

Keith Kassel., who was also was involved in operation Redwing, reported:[27]

During Operation Redwing I was stationed aboard the USS Catamount LSD-17. AT the time I was a fairly new Ensign and was in charge of the Captain's office and an underway watch officer.

The Catamount's mission was to initially provide logistical support in the construction and eventual removal of weather stations through out the Marshall Islands. During the tests the mission was to provide transportation for personnel, equipment and assembled H-Bombs between Eniwetok and Bikini.

The USS Catamount arrived in the Pacific Proving Ground at Eniwetok on February 2, 1956 with CTG 7.3 Boat Pool and their equipment aboard. One week later we embarked 50 civilian employees of the Holmes and Narver Construction Company and their heavy equipment and began the task of building 4 remote weather stations. First stop, Wotho Atoll, Marshall Islands. There was no place to anchor so for the 10 days to two weeks it took to build a station the Catamount would just steam back and forth at 4 knots off of the atoll. ....

Another American stationed on Wotho on the Yacht Arcania wrote:[28]

... went down to lovely Wotho atoll where we anchored awaiting for our particular bomb tests to come up on the schedule. Trips ashore helped us to appreciate native life on exotic tropical lagoons with native dancing girls.

---

[26] http://www.aracnet.com/~pdxavets/dowdy.htm.

[27] http://www.aracnet.com/~pdxavets/kassel.htm.

[28] http://www.ldolphin.org/rpl/ch3.html.

Site MI-WO-WO-008. Weather station, for Operation Redwing.

Naloj *wãto*.

GPS Coordinates N: 10°.10.34.92

E: 166°.00.17.00

This site was located in dense undergrowth at the northwestern end of today's airfield and consisted of a cement foundation. It is part of the before mentioned site MI-WO-WO-007.

Sites: MI-WO-WO-009. MI-WO-WO-010. MI-WO-WO-011.

***Komelal*, Pits, or *jikin bõl*, Place of Taro Patch.**

Mõnkio *wãto*.	Mõnkio *wãto*.	Mõnkio *wãto*.
GPS Coordinates:		
N: 10°.10.05.01	N: 10°.10.05.02	N: 10°.10.07.06
E: 166°.00.37.96	E: 166°.00.38.04	E: 166°.00.40.65

Fig. 33. MI-WO-WO-011. *Komlal*, Former taro pit; Hespy John filming.

This site consists of 9 *komlal*, deep pits, of these only three have been surveyed. According to local folklore they were formed by *annañ*, a small bird.

A) Story of *Annañ* by Nijan Joseph

Etto im etto ..., a long, long time ago the paramount chief of Wotho, *kako*, the rooster[29], had a canoe built. It was not very long maybe 30 - 40 cm long. He invited the *mejo*[30], the *pejwak*,[31] the *kwõlej*,[32] and the *kõtkõt*[33] to launch the canoe. But as hard as they tried they could not move it. Then the paramount chief was told that one more bird lived on the island and could help. It was the *annañ*, the white-browed rail[34], which is very small and skinny. Nevertheless the chief said: "let us invite it."

When the other birds found the *annañ* and told him that they could not move the boat and needed his help the *annañ* was sniggering and said, "So you cannot manage to move it!" He went to the construction site of the canoe and while singing a *roro* a chant, he alone moved the canoe all the way to the shore of the lagoon. He sang:

neen annañ an eo	The foot of the *annañ*
iao roij i libjaterok	he sings and strongly pushes
e põli e pol o wa	the canoe all the way to the ocean
ebule	moving the canoe.[35]

In doing so the *annañ* bird left his footprints all over this part of the island.[36]

B) Rington Jelke's Version of the *annañ* Story of the *jikin bõl*, the Taro Pit:[37]

Annañ is the name of a small bird that lives in Wotho Atoll. The following is the story how these footprints were created.

The paramount chief had a canoe built and ordered all the men to come and help to launch the canoe. But they could not move the canoe, it was too heavy. The paramount chief asked the men, "are there any other men around, who could help to move the canoe?" The men answered there was only one but he was small as skinny as a bird, like an *annañ*. Nevertheless the skinny man was invited. When he came, he got

---

[29] Red Junglefowl, Gallus gallus.

[30] Fairy Tern -Gygis alba.

[31] Brown Noddy - Anous stolidus.

[32] Lesser Golden Plovern, Pluvialis dominica.

[33] Ruddy Turnstone - Arenaria interpres.

[34] Porzana cinerea.

[35] Translation by Hespy John.

[36] Nijan Joseph, January 10, 2004, Wotho Island.

[37] Rington Jelke, January 10, 2004, Wotho Island.

underneath the canoe and pushed it all the way towards the lagoon. The pits all over this part of the island are his footprints.

C) *Annañ* Story from Kwajalein.

In 1975 Jack Tobin recorded in Kwajalein another version of this folk tale, told by Jelibor.[38]

> Story about living things (animals) in the Marshalls.
>
> On Wotto there was a canoe; these living things tried to see who could launch it into the water. And they began with the *kaalo* |Sula dactylatra, brown booby| |and told him| that he should launch the canoe. And Kaalo could not do it.
>
> And they told the *kowak* |Numenius tahitiensis, brown booby| he should go and launch the canoe. And Kowak said, "The *kaalo* is not strong. He did not try. He is weak."
>
> And Kaalo was very angry with the *kowak*, and said, "Well just continue. Are you tired?" The *kowak* replied when I go all will see, because the canoe will be in the water."
>
> And the *kaalo* said, "If you are lying I will never stay with you again, later on." And *kowak* went to launch the canoe. The canoe did not move even a little bit. And the *kowak*, because he himself trusted the *kaalo*, separated from him and they dislike each other to this day (and as it is today there being together is bad).
>
> And they told the *kako* |Gallus gallus, rooster| that he should go to launch the canoe. And it did not move.
>
> And they told the *ak* |Fregata minor, frigate bird| that he should launch the canoe. And it did not move. They were the largest of the birds, but the canoe did not move.
>
> And they called to each bird, one by one, that each should come to launch the canoe . But it did not move. And some of the living things said, "Is this all of the birds there are?
>
> And they said, "There is one, but he is worthless, for his legs are very thin. And he is very small."
>
> "O-O," some of the birds said, "Who would that be?" And they replied, "The *annañ*.[39] And they said, "Bring him here!"
>
> Some asked, because they did not know him, "Where is he? The very small *annañ*. He should come to launch the canoe!"[40]

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[38] Tobin, 2002:151-154.

[39] Puffinus tenurostris, small slenderbilled shearwater, Tobin, 2002:151.

And some of the birds said, "The rooster should go and look for the *annañ*. For he should hasten here."

And the rooster was angry. And said, "It is useless for me to go and look for the *annañ*, because he cannot move the canoe. Look here when the canoe did not move with those very big birds, how can it truly move with the *annañ*?

Some of the birds said, "Never mind, but go tell him that he should come here!"

And the rooster went. When rooster reached the *annañ*, he said to the *annañ*, "But you are very small—is it true that you can launch that canoe? Please note that you are all covered with soil and are very dirty.[41] "You get up here, we two are going!" (Hurry up!)

And the *annañ* said, "Well you go on ahead quickly!"

And the rooster went quickly. Then, when the *annañ* was leaving his taro patch, he chanted towards the lagoon side and said, "*Kako eo eaariten jōjōiki eō. \(Ej dike eō kōnke ña etton im dik.) Ionni bōli en ao ebōli. \ Ebōli ke wa eo?*"

(This is an ancient chant I do not know what it means.)

When he finished uttering this chant, he stamped his feet (to remove the mud). And when he finished stamping he flew from there and again alighted about twenty feet away. And again said, "*Kako eo eaariten jōjōiki eō. \(Ej dike eō kōnke ña etton im dik.) Ionni bōli en ao ebōli. \ Ebøoli ke wa eo?*"

And he again stamped his feet. When the birds saw the sand of Wotho moving (from the stamping of the *annañ*) they were startled and said, "Why is this island moving?" And they did not know why, for they did not see the *annañ*. And the *annañ* again chanted a third time and said, "*Kako eo eaariten jōjōiki eō. \(Ej dike eō kōnke ña etton im dik.) Ionni bōli en ao ebōli. \ Ebōli ke wa eo?*"

And he again stamped his feet. And they saw him again and were astonished.

And when the *annañ* came to the canoe he said, "*Neenan annañ. Iio likō doore?*" (He was talking to himself in the ancient language, like, "Where is the pounding, pounding place?) And he dragged the canoe and went, went [until] it was in the water.

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[40] In *kajin etto*, the ancient language, *enten* means *iten*, come in order to do something. Tobin, 2002:151.

[41] Because the *annañ* was making a taro patch. Work in the taro patch is traditionally a man's work in the Marshall islands.

When it was in the water he cried out and said, "*Kōbre io bwe iit iunniñ jemenikwol*" (ancient language). And it means, "You did not believe I could launch a canoe, because I am small."

And the birds were surprised because his legs were as thin as coconut sennit |small cord|, and he was very small.

And they said, "It is clear that he alone is the strongest of all the birds.

The *annañ* said, "Everyone come; let us get on board of this canoe."

And all of the birds got aboard. And the hermit crabs (*om*) boarded and went inside the canoe. And the crabs (*baru*).

And they loaded aboard two *wat* |*Tetradon* sp. Puffer (blowfish)| so that they would bail the canoe.

And the canoe went seaward, and sailed. The crabs and the hermit crabs ate the sennit fastenings of the canoe, and the canoe came apart. The birds were very angry with the pufferfish. For they had not cleared out the water within the canoe and thrown it away.

Because there were no fastenings of the canoe it sank and all the birds and living things |animals| there were angry with the hermit crabs and the crabs. And all swam, but the *kitjdik* (rat) did not know how to swim. And he told the pufferfish that it should take him on his back and swim with him.

But the pufferfish did not want to do it (refused). And the rat said to the rooster, "Can you swim with me on your back?"

The rooster replied, " I cannot do it, because I do not know how to swim."

But the *kweet* (octopus) appeared |from within the canoe|. He said to the rat, "Why are you crying, friend?"

The rat replied, " Because I do not know how to swim. And when I told these men that they should take me on their back, they refused!"

And the octopus said, "Well come here friend, I will take you on my back." The rat said, "Thank you very much, friend. I will never forget your kindness to me!"

And the rat went and sat on the octopus' head. And the octopus swam towards the island carrying the rat.

About nine feet from the island he said, "Jump |off| now. And go ashore!"

The rat replied, "Not here, for I am afraid of the *pako* (shark). For the shark is eager to eat me. Go ahead again toward the island a little more |father|." And the octopus replied, "Well, we will go toward the islands a little more."

And when he was six feet from the island, the octopus said, " Jump off my head now, and go ashore!" The rat said, "Friend, a little bit more."

And the octopus again moved slowly toward the island a little |farther|. And the rat said, "Your kindness is extremely great friend. I will never forget this thing that you did for me. Well I will jump now and go ashore."

As the rat jumped from the octopus' head and jumped off and went ashore |Informant laughed|. But the octopus did not know it |that the rat had defecated on him|. And the octopus said, "Good bye friend!"

The rat reached the middle of the sand |beach|. The rat cried out and said, "A-A-A, look at that rat shit on that octopus' head!"

The octopus replied, "What is that you said, friend?"

The rat answered, "I said look at those small fish beside you."

And the octopus again went seaward a little bit.

The rat cried out again, "A-A-A look at that rat shit on that octopus' head!"

And the octopus heard it and was angry with the rat, and went to the island. And the octopus said, "What did you say friend? W'ont you come here?" and the octopus came on the island, and reached the rat, and grabbed him.

And the rat fled, and went inside a *debakut* (a kind of pandanus tree that has many pandanus leaves there—old leaves). And the octopus returned toward the sea and said, "As long as I live, I will never again love this rat, for he deceived me greatly. But my kindness to him was great, and I saved his life."

It is ended.

The meaning of this thing: There are two meanings within it. The first: Because the rat did not return the kindness of the octopus, it was a very bad thing, and people should return kindness to those who are kind to them

When I was a child they told me, "Do not be like that rat that lied."

Second: Because they had no confidence in the *annañ*—it is bad if we do not have confidence in a person.

And you can see that rat shit on this octopus to this day. It is black on its head. And that rat is evil to this day. It steals and destroys for it defecated on the head of a friend.

D) *Annañ* Story from Namdrik Atoll.

Kelin[42] reports another version of this story, told by Jia Hisaiah and Iban Edwin.

Etto im etto … long and long time past …

All the birds of the Marshall Islands lived on the Island of Aelõñilaplap. And the king of all birds was Kako the rooster. More than anything, King Kako loved singing his song while sailing along in his favorite canoe, "Kako! Kako! Kako!"

One day, however, Kako decided his canoe was'nt big enough. "I need a Big canoe," he crowed to all the birds of the island. "Build me one!"

At once every bird began pecking, pawing, poking, and plopping pieces of wood together for the canoe. When they finished, Kako glanced at the canoe and clucked, "Build it bigger!"

So all the birds ran about pecking, pawing, poking, and plopping until they'd built an even bigger canoe. Kako hardly even glanced at it before he shouted, "Bigger, Bigger!"

The birds flew back to work pecking, pawing, poking, and plopping till the canoe was big enough to hold every single bird on the island, with room enough for Kako's house, too.

Kako tilted his head back and forth, clicking and clucking. Every bird held its breath, Kako puffed out his feathery chest and sang, "KAKO! That's the biggest canoe I ever saw!"

The birds leaped and laughed and twirled and twittered. "Kako! Kako! Kako!" They shouted, in praise of their king's brilliance.

King Kako strutted about, making a grand show of climbing aboard his shiny, new, BIG canoe. He stood in the middle of the canoe all puffed and proud and crowed.

Two birds skittered up to the canoe and gave it big push. "*Ebõel loe ke wa in!*" They chanted.

The canoe did not budge one inch.

Kako ruffled his feathers and crowed once more, "*Ebõel li!*" Push the canoe!

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[42] Kelin, 2003:211.

Several more birds jumped to his side. "*Ebõel li ke wa in!*" they chanted, pushing with all their strength.

The canoe settled deeper into the wet sand.

King Kako started dancing about the canoe screaming at the top of his lungs, "*Ebõel li, Ebõel li, Ebõel li!!!* PUSH PUSHPUSHPUSH!!!!

More and more birds flew top the canoe, but no matter how hard they tried, Kako's big canoe just wouldn't move off the sandy beach.

In the middle of all this screaming and chanting a teeny-tiny voice peeped, "This is coconuts."

Every bird fell quiet. Kako cocked his head from side to side. "Who said that?" he whispered.

No one answered.

King Kako strutted from stem to stern. "Is every bird here?"

"Every bird," they answered together.

"Then why isn't my beautiful canoe moving?!" Kako called for more wings to push his big, Big, BIG canoe. The birds pushed. The canoe sat. Kako crowed and crowed until every bird on the island was pushing and shoving and heaving and grunting. But the canoe and the birds just sank deeper and deeper into the sand.

The tiny voice cried out again, "Coconuts. This coconuts!"

Kako beat his wings and shouted till his comb turned blue, "Who Keeps saying that?!?"

All the birds hid their heads under their wings, shaking.

The tiny voice peeped, "It is me. It's Me!"

An empty coconut shell flipped over. There stood a teeny-tiny beach bird with legs no bigger than breadfruit stems. Kako leaned over till his beak almost touched the sand.

"It's you?" asked King Kako. "You have the big mouth?"

"I am Annung. Annung," the tiny bird said, nodding its head. A small wave knocked the tiny bird over and sent him tumbling down the beach. The other birds laughed as he tried to outrun the next wave.

Kako laughed hardest. "Kako Kako Kako Kako!"

Annung covered his tiny ears, "Too much noise, too much noise!"

Kako stopped laughing. He squinted at little Annung.
"I'm the King!" Kako cried. " I can make all the noise I want. KAKO"

"But your noise can't move the canoe," said the tiny beach bird.

"And what can?" Kako asked, laughing. "You?"

That's me, that's me," Annung answered, flapping his tiny wings and strutting about like a king himself.

Every bird stated laughing, but the rooster quieted them with an angry "KAKO!"

"Too much noise," Annung peeped.

"Okay, chief Too-much-noise! Push the canoe," Kako said, and he climbed aboard.

Annung strutted from stem to stern, making fun of King Kako as the waves washed further up the beach.

"Wait," said the king. He gestured for two birds to join him in the canoe. "Now push," Kako ordered.

Again the tiny bird started strutting. "Look at me! I am the king of all birds!" The waves washed closer and closer to the canoe.

"Wait!" Kako cried, and told all the others to jump onto his huge canoe. "Now push!" he said clucking and chuckling at the teeny, tiny bird.

At that moment a wave washed right under that big canoe. And at that moment tiny Annung pushed, "*Ebōel li ke wa in!*

The canoe slipped off the beach. The king and all the birds clucked and crowed in disbelief. The teeny tiny bird had launched the canoe!

Annung laughed and danced on the beach as the waves carried Kako and his BIG canoe out onto the ocean. "High tide. High tide!" Annung sang. "What a coconut he is. He never saw high tide!"

The hero and main character in this story, the *annañ* bird, is considered to be the white-browed rail (possibly Porzana cinerea), a bird that loves to live near wetlands and does not like to fly but prefers to hide in grass and bushes. Therefore it easily became prey to cats and today is considered to be extinct in the Marshall Islands. In the German

colonial time this bird was described by Erdland as small and sweet smelling[43]. The Marshallese dictionary says:[44]

> A bird, small, about the size of a butterfly, lives in rocks around the shores of the Northwest Marshalls, smells sweet.

But the Marshallese dictionary offers also a second translation for *annañ*:[45]

> Shadow; reflection; picture; diagram; plan; shape; silhouette; outline; caricature; image; profile; replica; statue; example.

In conclusion we may assume that the *annañ* was so small that it was just the shadow of a bird. This adds extra charm to the above mentioned story and the huge footprints it left behind. There are eight big and about 3 m deep *kom̧la̧l*, pits or according to the story footprints. Former visitors have noticed them and remarked on it, as for instance Witt[46] who wrote, "the entire island is covered with wave-like trenches, which run parallel to the beach". Their former use as taro pits is deductible from the name *jikin bõl*, as well as from the story as told in Kelan's book 'Tales from the Marshall Islands'.

In former times a small footpath connected all these pits. In the 1980's, in the course of building an airstrip on Wotho Island, a wide path through the interior of the island was cleared and build, as well as the former small footpath widened and leveled in order to allow all *wãto* access to the taro pits.

Today all of these pits except one (MI-WO-WO-011) are overgrown with tall vegetation. About 4-5 years ago, site MI-WO-WO-011 had been cleared and taro, obtained from Ujae, Lae and Pohnpei, had been planted. Especially taro from Pohnpei is considered better than the local varieties, thus, this was a good opportunity to get high quality taro to Wotho and it also did well there. The Marshall Islands government, Ministry of Resources & Development, had planned and organized this project. The taro patch was well maintained and kept by the people living on the Atoll.

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[43] Erdland, 1906:183.

[44] Abo et all., 1976:16.

[45] Abo et all., 1976:16.

[46] Witt, 1881:531.

But in 2003 everybody stopped working in this taro pit because of the freely roaming pigs. "Why should people work hard when the pigs would eat all the taro", was a statement made by several people. Today only one taro plant in the middle of the overgrown taro pit (MI-WO-WO-011) can still be seen - it is probably the 'last' taro plant on Wotho Island.[47]

Fig. 34. MI-WO-WO-011. 'Last' taro plant on Wotho Island.

[47] See also WO-WO-002. Taro pit, page 52, and MI-WO-WO-003 *Lem eo an* Tarmelu, p. 53.

Site MI-WO-WO-012. Turen Inlet for *Riwut* Model Canoe Races.[48]

Monkakwe *wãto*.

Fig. 35. View over Turen inlet, on the seaward side of Wotho Island.

Looking at the map of Wotho Island one of the most distinguished features is the prominent bay on the seaward side, separated from the ocean by a reef. This ocean bay is called Turen or *jikin bwilbwil riwut*. It is the traditional place where *riwut*, the Marshallese small canoes are raced,[49] as well as a renowned place for *noniep* presence. *Noeniep* are famous small people who inhabit the atolls and islands of the Marshall Islands.[50]

Story how the Turen inlet was formed as told by an *alap* on Wotto, 1969:[51]

> *Amejenkwaad* who was the spouse of Lade became angry with him when he tried to run away from her. She pursued him to Wotto, and stretching out her neck a very long way toward him, tried to eat him. She failed to do this, but she bit a big bite of the island instead. Her breath was so hot and so powerful, that it killed the vegetation fronting the beach of the island where she had taken the piece of it with her big bite. This is why the area is sandy and useless for growing things today.

Turen inlet is the biggest inlet in the Marshall Islands where such races are held and therefore reputed. The starting point is a long stretched coral rock, on the western side of the bay; this feature is generally called beach rock. You have to race your canoe in one straight line, to the other side of the bay. The best conditions for such a sailing competition is a northeastern or eastern wind that has to be strong.

Riwut are built from the wood of *l̦o*, hibiscus. This is the best wood for the hull because it is a very light, though other light woods can also be used. The lashing should be done with *armwã*, silver pipiturus, or with imported fishing line. The mast is made of 1x4 or 2x4, and the material for the sail is usually a plastic or trash bag. A skilled canoe

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[48] Nijan Joseph, January 7, and 8, 2004, Wotho Island.

[49] *Riwut* races are held on all the islands of the Marshall Islands.

[50] Tibonieon Samuel, February 27, 2004, Majuro.

[51] Tobin, 2002:112.

builder does not need more than 3-4 hours to build a *riwut*. Adjustments have to be made after an initial try-out. A *riwut* can last for several years.

Several classes of *riwut* participate at a race: Class A – 2 feet long canoes
Class B – 3 feet long canoes
Class C – 4 feet long canoes
Class D – 5 feet long canoes
Class E – 6 feet long canoes
Class F – 7 feet long canoes

Fig. 36. View over Turon inlet, from the beach where the race starts.

At the time of the *riwut* races people like to bet on the canoes. The community also collects price money for the winners.

Site MI-WO-WO-013. *Jikin Alele.*[52]

Ãneju *weto*
Next to Site MI-WO-WO-007
with its GPS Coordinates N: 10°.10.14.91
E: 165°.59.55.92

Fig. 37. *Jikin Alele* beach, Wotho Island.

The *alele* fishing ground is owned by the *Irooj*, chiefs and administered by the *alap*. But *alele* is a also a traditional Marshallese fishing method conducted at an *alele* site where the entire community is catching fish with a *mweo*, moving dragnet, which is made from a rope and palm fronds. This enterprise is usually initiated and overseen by the *Irooj*, chief. The fishing is done only for certain occasions, and, thus, only a few times a year. A specific location is considered *alele*, which is otherwise off limit for fishing. Therefore such fishing trips bring in a lot of fish.

One such fishing venture in the German time was described like this:[53]

> Initially some men sit in the palm trees on the look out for a shoal of fish swimming just under the surface of the water. Once they sight them fishermen, in several canoes, try to get close to the fish, and chase them towards the shore. On the shore people prepare long ropes fringed with palm fronds. They let the fish come close - up to 100 feet. Then the form a chain and encircle the fish from two sides, forming a half circle and driving the fish to the shore. With shouting and splashing the surface of the water the fish is prevented to escape the trap. Finally the chief gives the signal and everyone - young and old, chief and commoner, even the missionary - armed with all sorts of weapons and containers start to chase the fish. The kinds of fish caught with this technique are species that swim in schools such as blue parrotfish (*merâ*). A good time for *alele* is when the tide is going out.

In Wotho *alele* is conducted right at the beach at the end of the airstrip, only a short distance away from site MI-WO-WO-007 (power plant and facilities to monitor weather conditions during Operation Redwing).

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[52] Rington Jelke, January 9, 2004, Wotho Island.

[53] Krämer und Nevermann, 1938:124; Hager, 1886:80-81

The old people said this is a good spot for *alele* and this is the reason why it is used for *alele* fishing. There are many fish at this spot. This is also a chiefly spot. It starts at the coral boulders and covers the entire length of the beach all the way to the sandbank.

Every member of the community produces one part of the big *alele* weir. Such a 'net' can only be used once then you have to leave it rotting at the top of the beach, above the high water mark.

In April 2003, people on Wotho had their last *alele* fishing trip. *Alele* is only done for important events when the people need a lot of fish. Then the *alap* informs the community that an *alele* is planned. After an *alele* there is fish for all the people of Wotho for one day. If there is more fish than that, the fish is salted and dried or smoked.

Fig. 38. View from *Alele* beach over Wotho Island.

Site MI-WO-WO-014. Roren

Ãneju *wãto.*

This site is situated east of the before mentioned site MI-WO-WO-006. *Lipon Timon* Lukuarebjel - Gravesite of the demon Lukuarebjel.

GPS Coordinates N: 10°.10.09.20

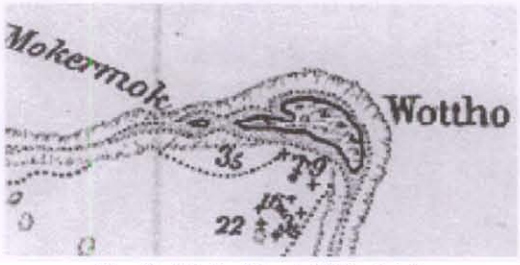
E: 166°.00.10.27

Fig. 39. MI-WO-WO-0014. Former Roren passage, looking towards the east.

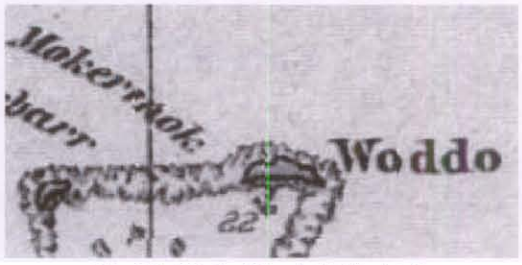
The entire western end of Wotho Island is called Ãneju *wãto.*

ãne = island, *ju* = straight up.

Ãneju *wãto* was formerly a small islet situated next to Wotho Island, separated only by a channel called Roren. This passage disappeared slowly and the former channel silted. *Kiden,* beach heliotrope tree, the beginning of new vegetation, started growing.



Map 9. Wotho Island, 1881, detail.



Map10. Wotho Island, 1897, detail.

When the two islands grew together it made Wotho Island longer. Today, the channel does no longer exist and the former island Ãneju is now the name of the western most *wãto* of Wotho Island.

When the grandfather of the informant was a small boy, he still saw the passage that separated Ãneju from Wotho Island. Looking at the map of Wotho from 1881 there is no longer a passage indicated as well as on the map from 1897

Therefore it can be assumed that this change of topography must have happened in the 70's of the 19th Century

Fig. 40. MI-WO-WO-014 Former Roren passage, looking, towards the west.

4.3. Non Site Related Oral Tradition.

A) Settlements of Wotho.

In former times three islands in Wotho Atoll were inhabited Wotho, Kaben, and Mejurwon. Already during the German colonial time Kaben and Mejurwon had been abandoned.

B) The Story of the Lajidik Clan and why Wotho is *larooj*.[54]

Lajidrik clan is a clan of Wotho. When the Lajidrik clan was victorious over the Tilan clan in a battle on Wotho it became the most important clan on the atoll.

Then the members of the Lajidik clan went all the way to Namu where they killed chief Linidik, who was the *Iroojlaplap*. Thus Lajidik became the most powerful clan. Imata Kabua's mother, who was also Lajidik, got all of Wotho as a present. Since then Wotho is *larooj*, a chiefly food island, because it is owned by the family of the *iroojlaplap*, the paramount chief, and because the Lajidik clan, the chiefly clan of the Marshall Islands originally came from Wotho. All Kabua family members are Lajidik on the mother's side.

At the time, when the Lajidik clan went to war at Namu, three women lived on Wotho and they had many sons. One of these women, her name was Liñi and her husband's name was Manto, accompanied the men to war. She was the one who beat the drum to encourage the men to fight.

> The women form a second line without weapons. Some of them at the leader's bidding beat the drum, first at a slow measured beat (*rinegsipinem*) when the antagonists exchange throw upon throw, then with double rapid beat (*pinneneme*) when man fights against man in hand-to-hand combat.[55]

She also was a sort of sutler, providing food and drink. She poured water over the heads of the warriors so that they could sip it when it was trickling down over their faces without stopping their fight. The woman who accompanied the men was also administering magic on them in order to help them fight.

Normally the chiefs do not stay on Wotho, but one of them did. He stayed in Kaben and planted many coconuts there, big coconuts. Today everything belongs to the people of Wotho, who no longer send food to the chiefs.

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[54] Tibonieon Samuel, February 27, 2004, Majuro, see also MI-WO-WO-004 Gravesite of Leutile, p. 55.
[55] von Chamisso, [1836] 1986:280.

The chief of Wotho is also the chief of Kwajalein and Alingelaplap, where the chiefs are also buried. The chiefs never lived in Wotho. They live on Kwajalein and only come from time to time to Wotho. Wotho is only for the chiefs, it is *larooj*, a chief's food island. The chiefs come for the food. In former times they came to Wotho in order to eat here. But now they come only rarely, maybe once a year. Usually they come for a special occasion, a funeral or after a typhoon. The chief still cares for us …[56]

C) Story About Lõrro.[57]

On Roñlap atoll there were two old people. Their [life] being together was very good. The man was gone one day and the woman was very sad and did not eat and did not drink. And she did not talk with people, but just mediated. After six days people looked around again to go to feed her. She was gone, and they searched for her all day long. But they did not find her.

That night they again searched for her. They searched for almost two weeks. But they did not find her. And they ended their search.

But she was not there because she had flown to Wotto and turned away to where there was a group of people on Wotto.

And the woman appeared to all of the people on Wotto. And the people looked for where she would land there.

But she did not land. And the people on Wotto looked for her but she was gone.

The *lõrro,*[58], the depressed flying woman, continued her flight all over the Marshall Islands. This happened during the Japanese time. All the people saw her and confirmed it. At the end of the story people from Rongelap saw her and seized her.

D) Ujae, Lae and Wotho.[59]

These three islands are *aer* Wotho, they are related to Wotho. No island has a higher status than the other, they are all relatives. But the king and his wife, Koberwa *im* Liñijlok, live on Ujae.[60] They receive *eojõk*, gifts for the chief, such as food, pandanus, breadfruit, fish, but also mats and other things. Wotho, Ujae and Lae are relatives, *aer ri.*

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[56] Interview with Rington Jelke, January 9,2004, Wotho Island.

[57] Tobin, 2002:261-263.

[58] Women who are *buromoij*, afflicted with an acute melancholia like condition. People always run and try to size them before they can fly away. Tobin, 2002:262.

[59] Tibonieon Samuel, interview on Feb. 27, 2004, in Majuro.

[60] In Ujae is also a small sandy island called Liñijlok, like the wife of the chief.

E) Likokure Jukjuk.[61]

This is the name of a woman on Wotho. But it is also the name of a drumming sound that comes from the ocean side. When people hear this sound, they start hating each other and arguing with each other.

F) World War II.[62]

The Japanese informed the population of Wotho about the coming war. Information concerning the dangers of war came also from the American missionaries on Jaluit. People on Wotho could hear the bombings on Kwajalein (just 130 miles to the south of Wotho). No Japanese were stationed on Wotho during the war, but one plane crash landed in the lagoon.[63]

The US troups went first to Kwajalein and then to Wotho. They arrived on March 8, 1944[64] according to American sources, but Wotho celebrates March 10th as its 'Liberation Day'. When the first Americans reached Whoto, they came on shore with more than 100 men. They raised the American flag, distributed chewing gum, toilet paper, food, biscuits and sea rations.

G) 1946 Evacuation to Lae.[65]

One day a seaplane came to Wotho. People were astonished when they saw it. And more so when it was landing in the lagoon. Everybody went to the beach. When the Americans stepped on shore, Rantak, the father of the informant, said to them, "Follow me!" They all went to the administration house. Everybody met there and the Americans said, "You have to move from Wotho to Lae right away!"

People felt very sad, especially the old members of the community. They did not want to go. Rantak asked the Americans, "Why do you take us from Wotho? Why don't you just stay in Bikini?"

The US soldiers answered, "You have to move because of the bomb test in Bikini." Rantak asked again, "Why do you want us to move?" Then the soldiers drew several big circles on a black board and explained what will happen when they do their tests in Bikini. On this board they also indicated the islands Bikini, Rongelap, Lae Ujae,

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[61] Tibonieon Samuel, interview on Feb. 27, 2004, in Majuro.

[62] Nijan Joseph Jan. 9, 2004, Wotho Island.

[63] See also MI-WO-WO-005. Japanese plane wreckage, p. 58.

[64] http://www.ibiblio.org/hyperwar/USA/USA-P-Gilberts/USA-P-Gilberts-20.html.

[65] Tibonieon Samuel, February 27, 2004, Majuro.

and Wotho. Wotho was within the big circle, which represented danger from the tests. Now people consented to move. About 60 people from Wotho and some more from Roneglap were moved to Lae.

One day a landing craft came and all the people from Wotho went on board. They took their prized possessions with them. But they could not take their animals along, so they killed the pigs and took them as food with them. The dogs had to be left behind.

On Lae these evacuees were housed in tents and also had a water catchment for their convenience. Even though they got food and shelter from the Americans, they, nevertheless, all wanted to go back home. Operation Crossroads lasted from June to July 1946. On June 30, 1946, Abel was detonated and on July 24, 1946, Baker was detonated. Afterwards the people from Wotho were returned to their home islands.

When they came home, dead birds were lying on the island and their dogs were running wild.[66]

H) Nuclear testing.

When the people of Bikini had to leave their home island, they also considered settling on Wotho Atoll.

> The delegation also went to Ujae and Wotho atolls and upon reaching these places talked with the local people to determine whether they thought we would be able to live among them.[67]

> We talked about moving to many places like Wotho and Lae Atolls. But we encountered the same types of problems with all of these islands. One major factor was that these islands already had people living on them and therefore we thought we would have social conflicts with the inhabitants because they recognized the *irooij* of these atolls. We Bikinians did not.[68]

People on Wotho could see the testing which were conducted on Bikini and Eniwetak - after an atomic explosion the sky became dark red.

For operation Redwing in 1956 a monitoring station was built on Wotho.[69]

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[66] Rington Jelke, January 7, 2004, Wotho Island.

[67] Niedenthal, 2001:61.

[68] Niedenthal, 2001:68.

[69] See also MI-WO-WO-007, p. 61, and MI-WO-WO-008, p. 63.

Following the detonation of the hydrogen bomb Bravo (March 1. 1954) fall out was also measured on Wotho Atoll. This only became common knowledge when the U.S. Department of Energy began to release thousand of previously classified documents, many of which confirm the wider extent of the fallout contamination in the Marshall Islands, which also includes Wotho Atoll.[70]

Some people of Wotho made claims at the Nuclear Claims Tribunal. In 1993 five people had their claims awarded. Since then some more have claimed compensation, but no figures for Wotho Atoll are available.[71]

I) 1982 Typhoon Pamela — 1992 Typhoon Gaye.

Fig. 41. Damaged school building, typhoon Pamela, 1982.

In 1982 when typhoon Pamela hit Wotho, people were moving to the old dispensary and into the church building. This storm caused a lot of damage on Wotho, nine houses were destroyed, but all the people survived. The population of Wotho received assistance from the Kwajalein Atoll Development Authority, church leaders, community leaders, and the people of Namdrik Atoll.

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[70] Rington Jelke, January 7, 2004, Wotho Island.

[71] 1993 Annual Report to the Nitijelã. 1993 was the last year when claims were filed according to atolls (personal communication with William Graham, Nuclear Claims Tribunal, March 10, 2004, Majuro).

In 1992 when typhoon Gay hit Wotho Atoll, not many people were on the island as a big percentage of the population attended a celebration on Kwajalein. This typhoon came from the ocean side and the eye of the typhoon went over the island. It was only after one week that help came from Kwajalein and from Majuro. During the first week people lived from coconuts and fallen fruits and ate fish which they had found on land. A FEMA (Federal Emergency Management Agency) relief operation started about three weeks afterwards. FEMA hired a construction company that built the houses that are still standing today.[72]

Fig. 42. House on Wotho Island, built by FEMA in 1992.

[72] Nijan Joseph, January 7, 2004, Wotho Island.

4.4. Wotho Today

A) Population.

In 1817 von Chamisso observed the following in the Marshall Islands:[73]

> The boatmen move from one island to the other on their artfully constructed craft with all their goods and family …

This has not changed in recent times, only the means of transportation are more modernized. People, and here the people of Wotho are no exception, still move a lot within the Marshall Islands as well as to Hawaii and the mainland US. In this respect the following figures have to be seen.

Year	Population	Foreigners	Source[74]
1860	40		Gulick, 1862
1878	40		Krämer & Nevermann, 1938
1880	25		Witt, 1881
1905	30		Jeschke, 1906
1910	74		Merz, 1912a
1912	51		Merz, 1912a
1913	50		Südsee-Handbuch 1913
1930	25		MISA 1988
1935	47		MISA 1988
1945	40		OPNAV 1947
1948	31		OPNAV 1947
1958	71		RMI Census 2001
1967	57		McCoy 1981
1970	87		McCoy 1981
1973	61		RMI Census 2001
1980	85		RMI Census 2001
1988	90	1 USA	RMI Census 2001
1999	145	3 Asian, 2 USA	RMI Census 2001
2001	90	1 USA	RMI Census 2001

Table 4. Population of Wotho Atoll.

According to the 2001 census 90 people live on Wotho. They live on 1,7 square miles in 18 households, of which one belongs to people from Ujae. They had gotten permission to settle by *alap* Emejwa. Quite a few people from Wotho live on Ebeye in Kwajalein Atoll, in Majuro and also in the USA. Thus, today, the population of Wotho is many times more than those living on Wotho Atoll.

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[73] von Chamisso, [1836] 1986: 276.

[74] Sources from Dirk Spennemann: http://life.cse.edu.au/marshall/html.

Even though Wotho is considered a small atoll by Marshallese standards, where atolls can have more than 100 islands, it nevertheless offers good living conditions for its inhabitants. At the time of the survey people's main food resources were rather scarce because of the increased pig population.

In former times pigs had to be kept fenced and the owners of escaped pigs had to pay a fine. Then, about one year ago, some families set their pigs free, without suffering any retribution. These animals started feeding in the gardens and plantations of the islands, so that people not only stopped taking care of their food crops, but soon everybody's pigs were roaming freely over the island. Once a day these domesticated pigs return to their owners for additional feeding, they get leftovers, sprouted coconuts, etc. But they are not fed enough to fill them up, thus, they are forced to look for additional food elsewhere. Some families have 20 and more pigs, some only 4-5. The more pigs you have the more work it is to feed them all accordingly.

Fig. 43. Happy pigs on Wotho Island.

At the time of the survey Wotho was a 'pig island' with pigs roaming freely and feeding on all that was available. There was no more taro on Wotho Island, no pumpkin and no tapioca. The pigs had all taken care of this. Being true omnivores they ate the shoots of young plants as well as crabs and anything they could find.[75]

[75] See also MI-WO-WO-002, p. 52; MI-WO-WO-003, p. 53; MI-WO-WO-011, p. 63.

Currently people of Wotho are relying mainly on pork, fish, breadfruit, pandanus and imported foods such as rice, flour and canned goods. Farming on Wotho is no longer worth while, as can be seen looking at abandoned taro pits.[76]

At the time of the survey Wotho Atoll had been for some time a 'dry island'. Whoever drinks, produces or imports alcohol has to pay a 50 $ fine and has to clean the road.

B) Transportation.

At the time of the survey there was no inter-atoll transportation. One big boat, a so-called *bumbum* government boat, three small boats and some outboard motors were on Wotho Island, but all are in need of repair. The last canoe, which had been built by Jekidoj had been destroyed during typhoon Gay in 1992.[77]

Fig. 44. Most popular transportation on Wotho.

Currently government boats as well as ships of copra buyers come at irregular intervals to Wotho, thus, only a few times a year. Today most people rely on Air Marshall Islands (AMI) flights for travel between Majuro, Kwajalein, Ujae and Lae. One flight a week, with a small Dornier plane, connects all these destinations.

[76] Nijan Joseph, January 7, 2004, Wotho Island.

[77] Rington Jelke January 7, 2004, Wotho Island.

This air connection started in the 80s when the airstrip on Wotho Island was built. From time to time the airfield has to be maintained and weeded. YOUTH, a group of the young people of Wotho, usually weed the airstrip and remove stones.

Until recently Wotho also had one car, but this, too, fell into disrepair.

Fig. 45. Wotho airfield.

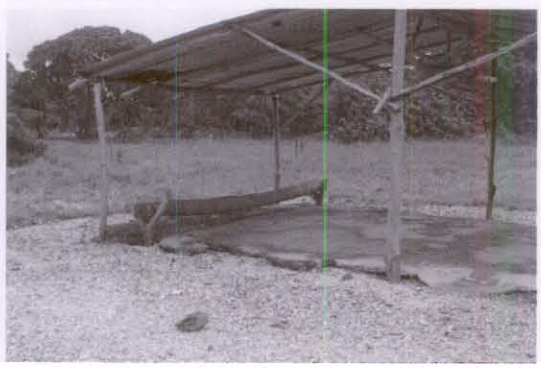


Fig. 46. Wotho arrival and departure hall.

C) Health.

Fig. 47. Rington Jelke preparing local medicine.

In 2001 the new dispensary was built with money from the Asian Development Bank. But the dispensary was never finished; plumbing does not work, there is no solar panel and therefore also no electricity. Therefore, the health assistant works from his own house.

At the time of the research, the Acting Mayor, Tommy Briand, was the health assistant, a job he held since 1981. In this time there were 5 evacuation flights, because of birth problems, broken limbs etc. In case he is off island for a longer period of time a replacement is send. There is also one midwife on the Wotho Atoll but at the time of the survey she was off island.

There were two patients on the island, one having high blood pressure, and the other one having diabetes. The usual health problems he encounters are injuries. The health assistant also provides for family planning. Women can get the anti baby pill and men can get condoms. All these treatments in the dispensary of Wotho are, like on all outer islands of the Marshall Islands, free, whereas treatment in the hospital in Majuro has to be paid for. Local medicine is still widely used as can be seen from the cut marks on the trees. On some occasions even the health assistance uses local medicine for treating his patients.

In 2004 two persons on Wotho Island were recognized by the United States as suffering from nuclear fall out due testing activities in the neighboring atolls in the 40s and 50s. Since 1998 they receive compensation payments and additional food supplies.

D) Education.

Fig. 48. School building in 1961.

Fig. 49. School building in 2004.

Currently Wotho has a headstart program and an elementary school, employing all together five teachers, who teach about 30 students. The principal of the school, Nijan Joseph, was one of the guides and principal informants of the survey team. The school building was modified and modernized over the last decades, as can be seen in Figs. 41, 47, and 48.

E) Subsistence Economy.

Wotho being such a remote Atoll with a small population and a long distance away from Kwajalein and Majuro, people have to rely to a certain extent on subsistence economy. Due to the above mentioned problem with the freely roaming pigs, agriculture has declined lately, no more taro, tapioca, squash and pumpkins are grown. People still consume breadfruit, pandanus and occasionally arrowroot. Many families still produce *jakaro*, palm sap, on a daily base. Papaya, bananas, and lemons do not grow well on Wotho.

Fig. 50. Arrowroot corms.

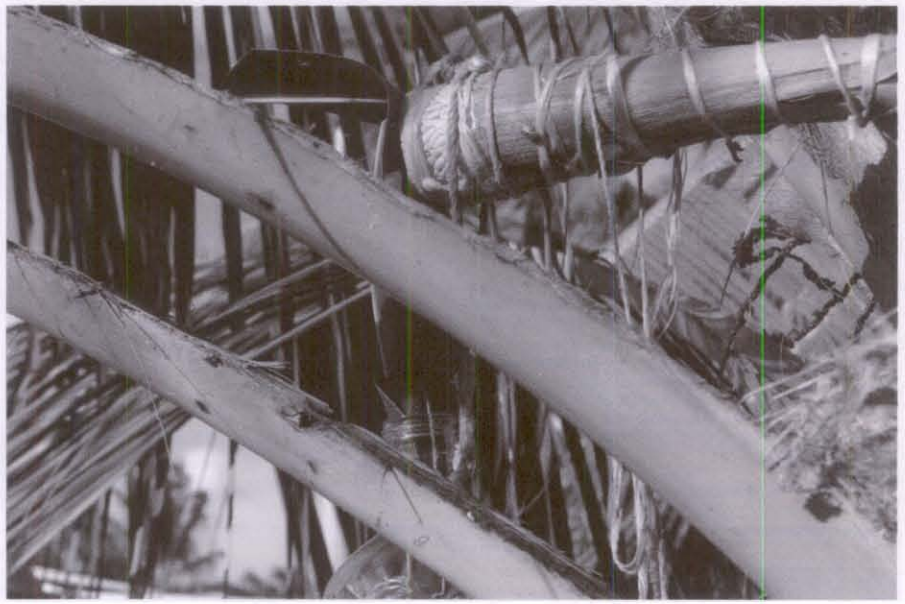


Fig. 51. Local *jakaro*, palm sap, production.

At the time of the survey, due to lack of boats, fishing was conducted from the shore. The last storm in December had washed way all the *okwa* that had been planted in the lagoon and there was only one left, which was destroyed by the waves a few days after the photo (Fig. 52.) had been taken.

Fig. 52. *Okwa*, tripod, in the lagoon of Wotho.

The tripod fishing method is used in shallow water. In order not to disturb the water by standing in it the fisherman use three poles pound together to form a tripod called *okwa*. A footrest to stand on was tied on each side toward the bottom. The ends of the three poles, which did not come together at the top, held a basket for the catch. A hook line or a spear was used for fishing from the tripod.[78]

Bait fish are caught with nets. For big community events the people of Wotho go to Jikin Alele for *alele* fishing.[79] Due to lack of transport they recently did not go fishing in the open ocean. During the time of the survey a few coconut crabs but no turtles were caught.

Fig. 53. Catching bait fish.

F) Cash Economy.

Copra is the only income that the people of Wotho have, therefore, all families make copra. As Wotho is lying in the northern and drier part of the Marshall Islands the coconut meat can be dried under the sun.

[78] Krämer und Nevermann, 1938:120.

[79] See also MI-WO-WO-013 Jikin Alele, p. 76.

In 1992, typhoon Gay hit Wotho Atoll and consequently the copra trade of the atoll suffered. Before the typhoon one family produced 20-30 bags of copra in three months, after Gay only 10-15 bags. One bag weights about 100-120 pounds.[80] 3-4 times a year the ship comes in order to pick up the collected copra.

Fig. 54. Copra production on Wotho island.

Since 2003 the copra production is picking up again. Probably also because the copra price rose. In 2003 9 cents per pound were paid. In October 2003 the government subsidized the price with 3 cents so that it is now 12 cents per pound and immediately the copra trade picked up.

Copra is bought by companies such as Billco, Momotaro, or the Ministry of Resources and Development, whose agents come on board of the government ship. Only Pacific International Inc., has its own ship and collects copra with it. The final copra buyer is Tobolar, Copra Processing Plant Inc. in Majuro. According to Tobolar's data Wotho sold in 2003 4,283.53 pounds (1,944.72 kg) of copra and, thus, earned $ 385.51. Assuming that all households produce the same amount of copra, the total income per household in 2003 was approximately $ 30. We have to keep in mind, that 2003 was not a very productive year and that Wotho Atoll has always been the least productive atoll in the Marshall Islands, often due to transportation problems.[81]

[80] Nijan Joseph, Jan. 7, 2004, Wotho Atoll.

[81] Andy Ishijuro, Manager of Tobolar, Feb. 24, and March 8, 2004, Majuro.

While coconut meat can be dried and stored for export, the fishing industry has been stifled by lack of power for freezer facilities. So, the local government, with the financial help of the U.S. Department of Energy, contracted a local firm to install a photovoltaic-powered freezer unit in 1991. The photovoltaic system consisted of forty 53-watt modules mounted on the roof of the facility, a control system, a bank of twenty-four 1150 amp-hour deep-cycle lead-acid batteries and four Sunfrost 10-cubic-feet freezers. The system operated flawlessly for several months until Typhoon Gay ripped past Wotho Island in late 1992, taking the freezer structure's roof and photovoltaic modules with it. The Federal Emergency Management Administration (FEMA) is assessing the damage, but has not yet decided whether to replace the system.[82]

Fig. 55. Photovoltaic-powered freezer unit on Wotho Island, 1991.

The women of Wotho produce handicrafts, this is the second means of income. They are sent to Kwajalein in order to be sold there, Kwajalein being much nearer than Majuro. No figures concerning this enterprise could be obtained.

There is one small store on Wotho Island, which frequently runs out of merchandise. Therefore people keep close trade connections with Ebeye in Kwajalein Atoll. There they have relatives who hold a job on Kwajalein and send the required goods on the weekly plane. The most common goods sent to Wotho are food, clothing, shirts, cigarettes, etc.

[82] http://www.fsec.ucf.edu/pvt/RESOURCES/PVapps/pvapps_1.htm.

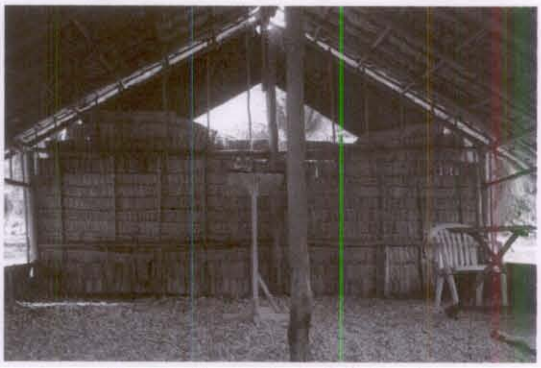
Some inhabitants of Wotho have a job on the island, as for instance the five teachers, the health assistant, the flight agent of Air Marshall Island, the two policemen and the government clerk.

One plan to improve the cash economy of Wotho is a long cherished one — tourism. Currently there is hardly any tourism on Wotho. Very rarely a cruise ship stops at the atoll then for a few hours the island is swarmed by visiting tourists. Occasionally tourists charter a plane and visit Wotho on their way to Bikini Atoll. In any case they hardly spend more than a few hours on the atoll.

There is no tourist accommodation on Wotho and also no family that could offer accommodation. Therefore, in the 5 year plan of 1990, the Government of Wotho, under Mayor Emwijwa, planned a feasibility study for the development of small-scale tourism on Wotho. Beyond this planning nothing was achieved, the plan was never executed and currently there is no location and also no money for the execution of such an enterprise.

G) Churches.

Fig, 56. Protestant church.



Fig, 57. Assembly of God church.

There are two churches on the island, a protestant church and one of the Assembly of God, which was founded later by Misaki Elanzo.

Fig, 58. Old church, Wotho Island, 1960s.

H) Government of Wotho Atoll.

Fig. 59. Flag of Wotho Atoll.

Wotho Atoll has a flag and a seal, which is also part of the flag. It depicts a canoe and two white birds, which are a *joormeto*, a sea sign, for Wotho that will lead the traveler safely to the atoll.[83]

In 1990, under Mayor Aine Emwijwa, a tentative 5 year plan had been assembled. Then the most pressing needs of Wotho were, 'To simultaneously improve basic living conditions and to provide for employment and income-opportunities on Wotho.' Already in 1988 all houses on Wotho were considered in dire need of repair and a low-cost housing repair/construction program was planned.

But it was clear that with an estimated annual per capita tax revenue generation capacity of $US 2.00 nothing could be achieved without national government grants and donor funding.[84]

The following priorities were established;

- An electrification program;
- improvement of inter island as well as inter-atoll transportation;

[83] See also p. 32.

[84] Wotho Atoll Plan, 1990:537-538.

- implementation of a water supply / sanitation program;
- development of subsistence fishery into a small scale, export orientated fisheries sector;
- expansion of the local agriculture; and
- developing a small-scale, cottage-type tourism sector on Wotho.[85]

Of all these plans none had been realized.

At the time of the survey, according to the law, the following tax laws were applicable on Wotho Atoll:

Head-tax, everyone older than 18 years - 50 cents/month	$ 6 /year
Business licenses have to be paid 4 times a year.	
Bicycle tax	$ 10 US /year
Dog tax	$ 5 US /year
There are no taxes on copra sales.	

In November 2003 elections were held. Thus, at the time of the field survey not all government positions had yet been assigned:

Mayor: Malvin Majmeto
Acting Mayor: David Sorimle
Senator: Fountain Inok

There are 7 traditional leaders who choose 4 among themselves. One of them is a *lerooj*, a female chief. The traditional leaders can run as Senators, but cannot become council members.

The four elected traditional leaders:
1. Ato Langkio
2. Flora Lakjohn
3. Summer Elkinwor
4. Aini Emijwa

Council members of Wotho:
1. Tony Inok
2. Ronald Inok
3. Carlmai Antibas
4. David Sorimle
5. Jebelmeto Jelke

Policemen: Benson Brian, Joroa Emijwa
Treasurer: Maggie Tareo
Field worker: Edy Batlok

Clerk: Redlin Momotaro
Judge: Rington Jelke

[85] Wotho Atoll Plan, 1990:539-555.

I) Holidays.[86]

The following holidays are observed on Wotho Atoll.

March 1	Nuclear Victims Day or Memorial Day commemorating the victims of the nuclear tests; this is a national Marshall Islands holiday. Speeches are given, the older people are remembered.
March 10	Liberation Day, commemorating the day when Americans reached Wotho Atoll. On this day there is no school, the flag is raised. People make food and play games, such as 100 m run, volleyball, basketball, etc.
May 1	Constitution Day is a national Marshall Island holiday.
November 17	President Day.

Some of these holidays are celebrated with games. A coordinating committee usually makes the decision if and how people are going to celebrate. Not only children participate in these island-wide games, but adults, too. Everybody donates money ($ 5-10), this is the price money for the winners of the games and races.

Fig. 60. Sunset over the lagoon Wotho Atoll.

[86] Nijan Joseph, January 7, 2004, Wotho Island.

VI. SUMMERY AND CONCLUSION

As mentioned in the introduction, the objectives of the present project were very clear and focused on site survey and inventory and education. The present work at the HPO is focusing on anthropological and archaeological surveys of all the atolls within the republic in order to produce a complete site inventory and National Register.

Part I of this report discussed the project's research design, scope of work, and methodology. It also contains the history of the Marshall Islands and Wotho Atoll. No section of previous work was included as there had never been any survey conducted on Wotho Atoll.

Part II describes the environmental setting of Wotho. Typhoons can drastically alter landscape of the low-lying atolls in the Pacific. Sea level changes pose additional threats to atoll environment. It is predicted that the global warming trend will have a tremendous impact on atoll communities within the next century. Information provided on vegetation and soil types provide clues to the likelihood of areas primarily used for agriculture.

Part III discussed land tenure and subsistence strategies. This is important for evaluating the significance of sites concerning their standing in time and space. How certain areas may provide a better chance of recovering subsurface material in future extensive excavations.

Part IV reported the results of the field research. A total of 14 historic or traditional sites were recorded. All these sites were documented on Wotho Island. It must be noted that given the methodology of the survey this inventory is incomplete. A more intensive survey still needs to be conducted. Non site related oral histories are also reported in this

6.1. Significance of Sites.

The following sites were considered **very significant**:

MI-WO-WO-003: *Lem eo an* Tarmelu, former taro pit.[87]

The story of Tarmelu, who brought the knowledge of navigation to many atolls and islands, is well known all over the Marshall Islands.

MI-WO-WO-009,
MI-WO-WO-010,
MI-WO-WO-011: *Jikin wa,* or *jikin bõl, annañ* Story.[88]

All these sites are connected to the *annañ* story, which is well known on many atolls of the Marshall Islands. These three sites are part of an even bigger site complex, consisting of several large and deep pits, which were not all surveyed in detail.

The following sites were considered **significant:**

MI-WO-WO-001: *Jin en an* Lãdde, "Lãdde's Fart".[89]

MI-WO-WO-004: Gravesite of Leutile.[90]

MI-WO-WO-005: Japanese Plane Wreckage.[91]

MI-WO-WO-006: Gravesite of the Demon Lukuarebjel.[92]

Forms a complex with site MI-WO-WO-001 *Jin en an* Lãdde, "Lãdde's Fart" and has a well known oral history. Lãdde, is a well known figure in the Marshall Islands.

MI-WO-WO-007: Facilities for Operation Redwing.[93]

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[87] See p. 53.
[88] See p. 63
[89] See p. 46.
[90] See p. 55.
[91] See p. 58
[92] See p. 60
[93] See p. 61

MI-WO-WO-008: Weather Station for Operation Redwing.[94]
Both sites (MI-WO-WO-008 and MI-WO-WO-009) belong together and are the only sites on Wotho Atoll that are connected with nuclear testing operations on the Marshall Islands.

The following site was considered **less significant:**
MI-WO-WO-002: Converted taro pit, now used for pandanus.[95]

6.2. National Register of Historic Places of the Marshall Islands.

None of the sites of Wotho Atoll were already included in the National Register of Historic Places of the Marshall Islands. Therefore the following site is going to be nominated:

MI-WO-WO-001 + MI-WO-WO-006: *Jin en an* Lãdde, "Lãdde's Fart" and the "Gravesite of the Demon Lukuarebjel". Both sites are connected through oral history. Lãdde, the main hero of the story, is a well-known figure in Marshallese oral tradition. The story explains the topography of the island, its big inlet as well as its highest elevation.[96]

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[94] See p. 63
[95] See p. 52.
[96] See p. 46 and 60.

VII. GLOSSARY.

Marshallese	Old Sources	English
A		
ad		our
aelon		our atoll, our country
aelon kein ad		our islands
aer ri Wotho		belonging to the people of Wotho.
ak		frigate bird, Fregata minor
	äkejab Erdland, 1914:346-347.	idol
alap		lineage head
alele		special community fishing method, fishing with a rope and coconut fronds
anij		god, spirit
anitta		ability to cast spells, people with special powers
añõn ean		pandanus season (January to March)
añõn rak		breadfruit season (June to October)
ãne		island
annañ	annañ Tobin, 2002:151	white-browed rail, possibly Porzana
	annung Kelin, 2003:211.	cinerea; today extinct.
armwã		Pipturus argentus
B		
badet	baret Kelin, 2003:140	Banded sergeant major damsel fish, Abudefduf septemfasciatus.
	baru Tobin, 2002:153	crab
bõl		taro patch
bubu		divination
bumbum		government boat
bwij		lineage
bwilbwil		to launch a canoe
E		
ek		general term for fish
ekkan		tribute to the *Irroj*, chief
eojok		gifts for the chief
etto im etto ….		a long long time ago ….
I		
im		and
irooj	irooij Niedenthal, 2001:68.	chief
iroojiddik		lesser chiefs
iroojlaplap		paramount chief
it		fire stick
J		
jakaro		palm sap
jikin		place

jin		fart
jolet		present
joorane		land signs
joormeto		sea signs
jowi		clan
ju		straight up
K		
	kaalo Tobin, 2002:151.	brown booby, Sula dactylatra
kajin		language
	kajin ek Tobin, 2002:106.	fish language
kajoor		commoner
kajur		*alap* and *rijerbal*, lineage head and workers
kako	kako Tobin, 2002:151.	red junglefowl, rooster, Gallus gallus
kein		these
kiden		beach helotrope tree, Tournefortia argenta
	kitjdik Tobin, 2002:153.	rat
komlal̦		pit
kõtkõt		ruddy turnstone, Arenaria interpres
	kowak Tobin, 2002:153.	brown booby, Numenius tahitiensis
kupañ	kubañ Kelin, 2003:140.	surgeon fish tang, Arcanthurus triostegus L., or convict tang, Hopatus triostegus
	kweet	octopus
kwõlej		lesser golden plovern, Pluvialis dominica
L		
Lajidik		name of the clan of the chiefs
larooj		island or atoll reserved for food gathering, usually for a chief and his immediate family. Some other *larooj* are Jemo, Bnikar, Taka and Erikub.
leadakkad		higher ranking commoner
lem		bailer
lipon		grave
l̦o		Hibiscus tiliaceus
lõrro		depressed flying woman
M		
mejo		fairy tern, Gygis alba
meto	medo Krämer+Nevermann, 1938:221 mödo Erdland, 1914	stick chart
mejenkwaad		female demon, which has also a pair of eyes at the back of her head
mweo		moving dragnet, made of rope and

		coconut fronds
N		
noniep		small people, that humans cannot see
O		
okwa	okwa Krämer+Nevermann, 1938:221.	tripod, planted in the lagoon and used for fishing
pejwak		brown noddy, Anous stolidus
	pinneneme Chamisso, 1986:280.	fast beat of the drum during a battle
R		
Ralik Chain		Sunrise chain of islands
Ratak Chain		Sunset Chain of islands
rijerbal		worker
	rinegsipinem Chamisso, 1986:280.	slow beat of the drum during a battle
riwut		small canoe for races
roro		chant
T		
Tilan		formerly the first clan of Wotho.
timon	timon Tobin, 2002:106.	demon
W		
	wat	blow fish, Tetradon sp. Puffer
wãto		land parcel

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