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Social Organization and Types of Sea Tenure in Micronesia

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Although geologically diverse, most islands of Micronesia are surrounded by a reef-lagoon system, which, together with deeper waters outside the reef supplies the islanders' principal sources of animal protein.

Traditional sea tenure, especially reef and lagoon tenure, in Micronesia may be broadly conceived of as a system of social relationships between persons or groups of persons with respect to marine areas and their resources. Patterns of tenure in Micronesia range from the "ownership" of specific tracts of sea space by families, through lineages and clans, to communities.

Based on a study of nine Micronesian societies, this paper examines the social basis for different types of sea tenure in the region. Although details of course vary, four main types of sea tenure may be distinguished in Micronesia:

Type 1: In which a reef and lagoon is owned by all islanders or villagers but is controlled by a chief, as in Palau, Ponape and Satawal;

Type 2: In which particular areas of reef and lagoon are owned by lineages, clans or other similar units, as in Namonuito and the Marshall Islands;

Type 3: In which the entire reef-lagoon system is owned by lineages or clans, as in Ulithi, Lamotrek, Truk, Mortlock and the Gilberts; and

Type 4: In which the reef-lagoon is owned by families, as in Yap.

INTRODUCTION

The islands of Micronesia are not all of the same type: the Marianas are volcanic, the Carolines include both high volcanic and low coral islands, whereas the Marshalls and Gilberts are composed entirely of coral. Although the sizes and forms of these islands are varied, each is usually surrounded by a reef and lagoon system. Needless to say, the most important source of animal protein in Micronesian diets is derived from a wide variety of reef, lagoon and blue-water fishes, supplemented by shellfish and sea turtles.

The concept of sea tenure refers to a multitude of reciprocal rights and duties that arise in relation to real property [see LUNDSGAARDE 1974a,b]. I consider sea tenure as system by which some person or a social group utilizes sea areas, controls the extent and degree of exploitation of their waters and thereby protects them against over-exploitation. As such, traditional sea tenure in Micronesia, especially

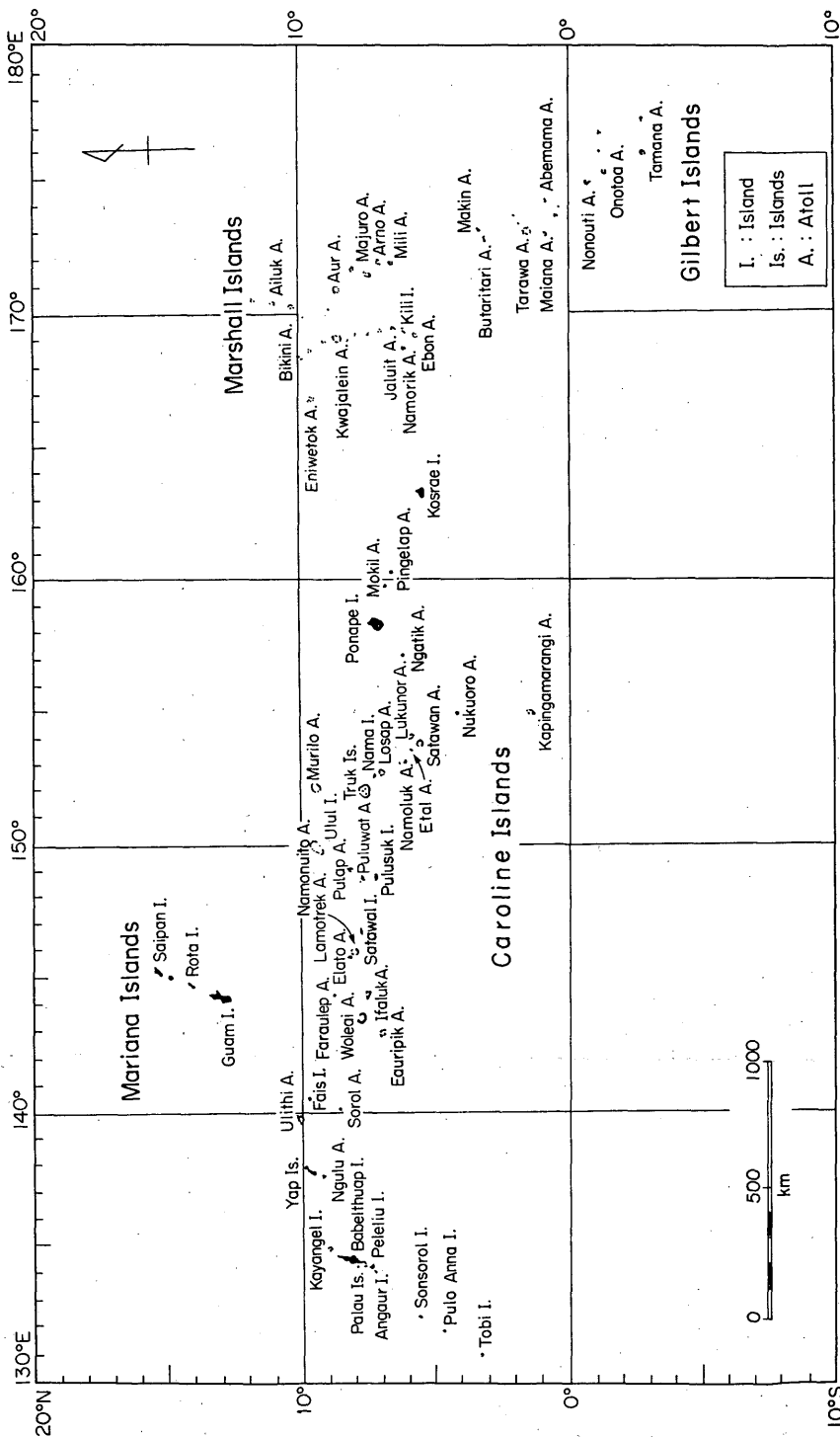


Figure 1. Map of Micronesia

reef and lagoon tenure, may be conceived of as systems of social relationships between persons or groups of persons regarding the sea.

With respect to the features of sea tenure in Micronesia, Johannes has stressed its importance in fisheries and conservational management via protection against overfishing in local fishing grounds [JOHANNES 1977, 1981]. He points out that "...the right to fish in a particular area was controlled by a clan, chief, or family, who thus regulated the exploitation of their own marine resources" [JOHANNES 1978a: 350]. The problems of sea tenure and regulation to conserve a limited resource on Kiribati (Gilbert Islands) have been discussed by Zann [n.d.].

In this paper I attempt to clarify the nature of the relationship between social groups and their exploitation of marine resources. For this purpose it is necessary to answer each of the following questions: what sections of inshore water are categorized as fishing grounds?, what kind of social unit forms the basis for sea tenure?, and how may a person acquire use rights in a sea area?

The patterns of sea tenure range in type from the "ownership" of specific tracts by individual families, through progressively larger social units, such as lineages and clans, to the communities. In Palau, for example, the reef and lagoon belongs to districts or villages. But at the other extreme, in Yap, particular reef and lagoon areas are owned exclusively by patri-extended families.

In this paper nine Micronesian societies are examined, focussing on the social units of sea tenure (Fig. 1). The data on Satawal, Ulul and Truk were collected during the course of my own field research, and those for the others were derived from published sources. For convenience, the societies have been grouped into four major categories (Types I-IV), based on the social units of sea tenure, in a progression from less to more sub-divided.

Type I is where inshore waters are considered the "common property" of all the islanders or villagers and fishing rights are controlled by a chief or village council. Palau, Ponape and Satawal are included into this type;

Type II occurs in societies where several specified sections of the inshore waters are owned by a particular kin group (clan or lineage), but where there are other areas open to use by all inhabitants. Ulul and the Marshall islands are included in this type;

Type III is those societies in which inshore waters are divided into small sections, each owned by a particular kin group. The Mortlocks, Truk and Ulithi atolls are included into this type; and

Type IV is where inshore waters are parcelled into small tracts, each owned by a particular family.

SEA TENURE PRINCIPLES IN PALAU, PONAPE AND SATAWAL ISLAND

Palau

The Palau islands extend northeast to southwest from Kayangel to Angaur, for some 170 km. This chain is composed of about 350 islands, the largest of which is

Babeldaob, a volcanic island with a total area of 230 km². In 1980 the 12,116 people of Palau resided in villages scattered along the coasts of the major islands. Babeldaob Island is divided into 10 Districts comprising about 70 villages. Each village was traditionally settled by either seven or ten ranked clans. The eldest man from the four highest-ranking clans of a village became the leader of the Village Council (*klobak*), which was composed at the heads of all village clans.

The clan is based on the principle of matrilineal descent and segments into lesser units, lineages or families. It is a dispersed, exogamous, named and ranked group. The segments of a clan are the units of land-holding. Post-marital residence is usually patri-avunculocal, therefore the members of one family (household) are a man, his son and in-marrying wives with unmarried sons. However, after the death of a maternal relative, a man usually moves to his mother's village, where his own clan members reside.

In aboriginal Palau, land was divided into public lands and clan lands. The former consisted of lands in the interior of islands (Babeldaob, Koror, Peleliw and Airai), mangrove swamps and the sea and reefs [SUGIURA 1944; BARNETT 1949; KANESHIRO 1958; McCUTCHEON 1981].

FISHING GROUNDS AND FISHING RIGHTS

The public land was owned by the village (*belúú*) and administered by the Village Council. Members of a village had rights to utilize the resources of those areas. That is, they could enter and exploit resources in public lands without first obtaining permission from the council. Other villagers were required to obtain prior approval of the council, and in some cases make a payment of traditional Palauan money before exploiting any resources within the lagoon.

Fishing rights in inshore waters owned by each village are controlled by the chiefs or the Village Council [JOHANNES 1981]. Villagers are free to undertake any kind of fishing. Women may gather shellfish and men may carry out spear fishing, trapping and stone weir fishing. Fish traps and stone weirs are collectively set or constructed by the members of a male age group or by individuals. The men who set the fish traps and the stone weirs have permanent use rights to them. The catches obtained are consumed not only by fishermen's families but are also shared among all the village families. The chiefs, however, are not privileged to receive any share of the catch as a contribution derived from their own status [SUGIURA 1944].

Fishing rights to the open sea, on the other hand, are not defined so strictly and are not regarded by villagers as important fishing grounds. This is because the lagoon provides abundant marine resources and so there is no reason to go beyond the reef for fishing [JOHANNES 1977]. In aboriginal times, it appears that the reef boundaries were not so clearly defined as at present. During foreign administration, following the establishment of the trochus industry, reef rights were instituted [KANESHIRO 1958].

Ngerael and Kossol reefs, between Kayangel and Ngarhelong, exemplify two districts having use rights to the same inshore waters. Traditionally, those reefs belonged to the two districts and were freely accessible to members of both villages.

Further, two districts may arrange for the mutual exploitation of their respective reefs. For example, Ngardmou and Ngaremlengui trochus fishermen do not enter each other's reef area during the first three days of the trochus season, but may do so after the third day [KANESHIRO 1958].

To summarize, inshore waters in Palau are owned by a village and controlled by the Village Council. The members of a village have the right to exploit marine resources in inshore waters belonging to their village. And men usually have the right to use both the inshore waters of their father's and mother's village, owing to the patri-avunculocal residence rules.

Ponape

Ponape is a high island with associated small islands, and has a total area of 375 km². It is surrounded by a barrier reef which averages 4 km in width. In 1980 it had a population of about 20,000 persons, but in aboriginal times the population was probably about two or three times larger. Ponape is divided into five districts, each of which was originally independent and dominated politically by two lines of chiefs, each with particular ceremonial and political functions [FISCHER 1957]. The head of the most important line is *Nanmwarki* (king), who was considered as the original titular owner of the land and sea shore in his district, but who appointed a sub-chief to control each village (*kowshap*). A village is composed of several matri-localized clans.

A number of reef formations are distinguished into several sections; inner reef (*mathalap*), coral heads (*mathapei*), outer barrier reef (*paina*) and small coral island (*theke*). Various fishing methods are related to the tide; hand fishing, hand net fishing, seine netting and fish poisoning, among others [BASCOM 1965]. All those sections are called *nansed* (lit. "home waters"). On the other hand, the open sea (*nanmadau*), the area outside the barrier reefs, is not exploited as a fishing ground by the native islanders [SHIMIZU 1982]. In aboriginal Ponape the inshore waters are strictly divided among the villages. In them fishing and all other use rights are enjoyed by all residents of the village, who are free to enter and exploit the marine resources of the area [FISCHER 1958]. If fishermen catch a particular species of fish or Green sea turtle (*Chelonia mydas*), they are obliged to contribute it to *Nanmwarki* [SUGIURA 1944; SHIMIZU 1982].

However, *Nanmwarki* have no privilege to receive any share of the catch as a contribution derived from the status of titular owner. The catch obtained is distributed to fishermen's relatives. After the establishment of the German mandate, around the turn of the century, the custom that each village, through its *Nanmwarki*, had the right to control access to its fishing ground died out [JOHANNES 1978b]. Today fishing grounds are open to everyone [pers. comm. SHIMIZU]. To summarize, inshore waters on Ponape are believed to have originally been the property of the king, whereas the members of a village have rights to exploit marine resources without the permission of the king.

Satawal

Satawal island lies 1,000 km east of Yap and 500 km west of Truk. It is a raised coral island surrounded by a fringing reef that averages 50 m in width (Fig. 2). In 1980 there were 492 people living on Satawal, comprising 86 household groups. The important kin group and the unit of land ownership in Satawalese society is the matrilineal lineage or clan (*yáyinang*). As postmarital residence is matrilocal, the residential group is the matrilocal extended family: several women (sisters), their daughters and their daughters' daughters with in-marrying husbands, unmarried sons and adopted children. Family members live in adjacent houses built on their lineage land and comprise a corporate group. This residential group is called *pwukos* (homestead). There are fifteen homesteads, the largest of which contains 12 households and 72 members [SUDO 1979, 1980].

SOCIAL ORGANIZATION

Satawalese society is composed of eight matri-clans, which are strictly exogamous, ranked and have names. All clans on Satawal are ranked in an order based on the sequence of their arrival on the island. The three highest-ranking clans are thought of as the "original" clans, and are known as the "clans of chief." The other five are considered as later immigrants, and called "the clans of the commoners." The eldest man of the senior line in the clans takes the status of the clan chief. They control the clan lands and allocate lineage members plots of land.

The heads of the three chiefly clans have authority to organize and initiate island or intra-island activities. They discuss and make decisions on the important affairs of the island, such as communal fishing, ocean-going expeditions by sailing canoe, and sanctions to be imposed on a person. They have the right to call meetings and convey decisions to the islanders. They are also responsible for controlling food resources. For example, they may place taboos to prohibit the use of taro patches, coconut palms or a particular sea area in times of scarcity.

Today, the order of ranking among the three chiefs is less clear so that they share the responsibilities for island affairs: fishing, taro gardening and coconut harvesting. The chief of fishing activities is called *sómwoon sáát* (lit. "chief of the sea") and has rights to control marine resource use and to decide fishing methods.

FISHING ACTIVITIES ON SATAWAL ISLAND

The inshore waters of Satawal are broadly classified into four sections; *neenéné* (reef flat), *woorh* (reef front), *núkúnú woorh* (seaward margin) and *metaw* (open sea).

Neenéné is a shallow reef flat exposed at lowest tide and is small in area. A good catch cannot be expected there. In this area men and women collect shellfish and spear octopus. Some men set small fish traps to catch goatfish (Mullidae) when the southwest wind prevails, especially in June and July. And the communal fish driving, using long ropes with coconut fronds attached, is done only occasionally. This activity is directed by "the chief of the sea" and all islanders participate in it.

On the *woorh* women collect sea urchin during the summer season. The *núkúnú woorh* is the most important fishing ground, where men engage daily in many

kinds of fishing. Fishing techniques employed in this zone are underwater spear fishing, fish driving using a net, pole fishing while swimming, bottom line fishing, and fish trapping. The technique most usually employed is spear fishing. Occasionally, 8-10 fishermen jointly make a circle, hit the water surface and spear fishes which rush to the shelter of the coral reef. Of greater importance is the use of fish traps belonging to a lineage and fish driving techniques.

Fish traps are used from May to July, when the southwest wind is dominant and the sea becomes calm. Traps are set at a depth of five or six fathoms, outside the reef, and retrieved every one or two days. Catches consist mainly of parrotfish (Scaridae), wrasse (Labridae), surgeonfish (Acanthuridae), leopard-cod (*Plectropoma leopardus*), and the like. Fish driving employs a semicircle of 20 swimmers who drive fish toward the net by hitting the water surface and making noise. This communal fishing activity is only permitted on special occasions, when major ceremonies take place. The chief makes the decision to conduct a fish drive.

Bottom lining is usually conducted from canoes both during the day and at night, outside the reef. Fishermen paddle their canoes outside the reef and set lines at depths 10 to 20 fathoms, using sinkers. Bottom line fishing is done at a particular fishing ground off the island; at Wénimong reef, which extends from the northeastern end (Fig. 2). This reef is usually closed to fishing and controlled by the "chief of

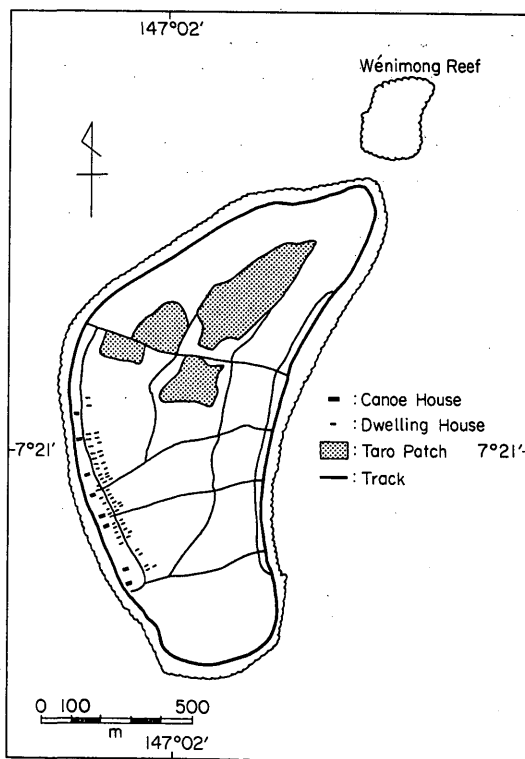


Figure 2. Satawal Island.

sea." Night fishing, using a carbide torch, hooks mackerel scad (*Decapterus pinnulatus*).

The open sea around the island is trolled by sailing canoes which tack back and forth on the lee side of the island, trailing one or two lines. Outboard motor-powered boats have been introduced from the 1970s. Pelagic fishes taken by trolling are tuna (*Thunnus* sp.), bonito (*Euthynnus* spp.), wahoo (*Acanthocybium solandri*), and dolfinfish (*Coryphaena* sp.). Two other important fishing techniques are used; pole-and-line fishing and capturing Green sea turtles (*Chelonia mydas*) either by hand or with a large spear. Pole fishing is oriented toward specific species by season, and is conducted at an unidentified reef, called Wenikiy, some 15 km southwest of the island.

Wenikiy is a good fishing ground since tuna and bonito school there for feeding. This fishing is conducted from large sailing canoes which must be steered to chase the schools of fish. Fishermen hook these fish using a long pole-and-line, during the northeast wind season (October to February). Turtling is mostly limited to two uninhabitant islands, West Fayu Island, 180 km north-northwest, and Pikelot Island, 90 km northeast of Satawal, respectively (Fig. 3). The men of Satawal sail their canoes to those islands in search of turtles. After arriving they walk around the islands looking for nesting turtles or signs of nesting. When a turtle is found it is immediately captured and turned over on the beach. If a turtle is found swimming within the reef, two men chase it with hooks inserted in a bamboo pole and hook it round the neck. Permission must be obtained from the chief to undertake a turtling expedition [McCoy 1974].

Table 1 shows the fishing activities conducted from June to December, 1979 on Satawal. Fishing on Satawal has the following characteristics: activities both in the

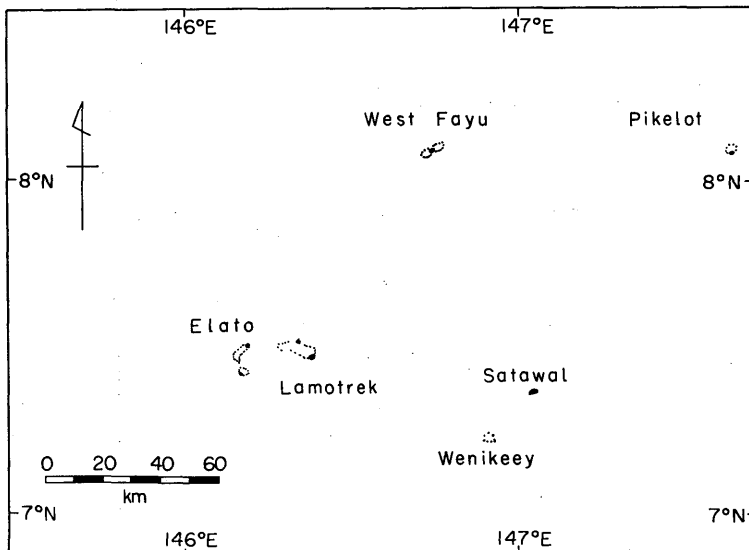


Figure 3. Location of Satawal and nearby Islands

Table 1. Fishing Activities on Satawal, from June to December, 1979¹⁾

Month	Reef Flat and Seaward Margin				Wénimong	Wenikeey		West Fayu	Events
	Trapping	Spear-f. ²⁾	Fish-d.	Bottom-l.	Bottom-l.	Pole-l.	Trolling ³⁾	Turtling	
6	6 days	8 days	2 days	1 day	1 day	0	2 days	1 time	—
7	4	12	4	2	2	0	3	1	—
8	0	9	4	3	2	0	4	0	Church, child ⁴⁾
9	0	6	2	2	2	0	3	0	child
10	0	7	2	1	2	0	2	0	U.N. Day, child
11	0	4	0	0	1	3	1	2	—
12	0	4	0	0	2	2	2	2	Christmas

Table Notes: 1) Days surveyed are from 15–30, June and from 12–30, November. 2) Spear-f. (Spear fishing), Bottom-l. (Bottom line fishing), (Fish-d. Fish driving) and Pole-l. (Pole-and-line fishing). 3) Trolling was carried out by outboard motor-powered boat. 4) Child indicates the birth of a child.

lagoon and outside the reef are conducted extensively from June to August, the southwest wind season, and those done in remote reef areas and off uninhabited islands are engaged in from October to December (northeast wind season). Also, the fishing techniques differ by season, in the southwest wind season spear fishing, fish driving and fish trapping are done, whereas in the northeast wind season pole-and-line fishing, trolling and turtling are carried out.

FISHING GROUNDS AND FISHING RIGHTS

As mentioned above, Satawalese fishermen exploit four main fishing grounds: the area inside and outside the fringing reef, an unidentified reef adjacent to the island, a remote unidentified reef, and two uninhabited islands. Fishing activities in those fishing grounds are usually controlled by chiefs, especially the “Chief of the Sea.” However, the fishing grounds around the fringing reef are open to everybody. Fishing rights of women are limited to within the reef only. Men who wish to fish in the reef flat, at the reef and off the seaward margin are free to do so. Occasionally, the “Chief of the Sea” prohibits use of spears in these areas.

On the other hand, the exploitation of marine resources in all other areas is strictly regulated by the chief. Fishing activities in Wénimong Reef are usually prohibited. The chief permits fishermen to enter and to engage in bottom line fishing on special occasions. For instance, the ban on those fishing grounds was lifted 12 times during a seven month period from June to December, 1979 (Table 1). Those occasions were times of major ceremonies, such as on the national holidays of the U.S.A., on the holy days of church, and on the birth of a child.

Men who wish to visit remote reefs or uninhabited islands for fishing, are required to visit the “Chief of the Sea” and to obtain his prior approval. It is considered that the “Chief of the Sea” has proprietary rights to utilize the food resources in those areas.

DISTRIBUTION OF CATCHES

The catches obtained by individuals or members of an extended family from

fishing grounds in the reef flat and the seaward margin are owned and consumed by them. On the other hand, when the chief directs communal fishing in those areas, all the fishes caught are distributed equally to each islander. This is usually done every Saturday, if fishing can be conducted.

Further, fish and turtles obtained in fishing grounds other than the fringing reef areas are regarded as "foods of the island." For example, when fishing at Wénimong Reef, an area normally closed to fishing, is not banned, all men engage in bottom line fishing and large catches are obtained. On returning to the island, fishermen must bring all their catch to the canoe house of the chief's clan. Then the chief orders the second chief of his clan to distribute the catch equally to all islanders.

After fishing in specified areas, men who participated have the privilege of taking the several bigger fishes as their portion. They eat them, after broiling, in front of the canoe house. Men who did not participate also join this feast. However, the "Chief of the Sea" has no claim to more shares than the others, except for the occasional gift of several specific kinds of fish, such as Maori wrasse (*Cheilinus undulatus*), tuna, and the head of turtle [AKIMICHI 1981; AKIMICHI and SAUCHOMAN 1983]. That is, if fishermen catch these fishes they must present them to the chief.

SUMMARY

Fishing grounds are divided into areas closed to fishing and those open for it. The former comprise the unidentified reefs and uninhabited islands which are controlled by the chief, whereas the latter is the inshore waters around the island, which are utilized by all islanders. Satawalese fishermen characteristically exploit marine resources on the open sea, including those off unidentified reefs and uninhabited islands, during the northeast wind season, when food resources are scarce.

PRINCIPLES OF SEA TENURE IN ULUL AND THE MARSHALL ISLANDS

Ulul Island

Namonuito Atoll lies 230 km northwest of Truk, and comprises five inhabited islands. The largest, Ulul, is 1.5 km² in area and is surrounded by a fringing reef which varies from 50 to 300 m in width (Fig. 4). There are three passages through the reef. These have sandy bottoms and circuitous channels that lead from the beach through the reef flat to the open sea.

In 1974, Ulul had a population of 276 persons. Ulul society is composed of nine matri-localized clans, segmenting into 12 lineages, the latter being the important kin groups and the units of land ownership. Since post-marital residence is uxori-local, the basic residential group is the matri-extended family. Each clan has a proper name, is exogamous and ranked. Status ranking of clans is based on their order of arrival on the island, and that which settled first provides the chief of the island. The chief has authority to proclaim an island-wide food taboo following the death of prominent men or to declare a community feast in honor of visitors. He is also responsible for controlling marine resources, and, for instance, for directing communal fishing [SUDO 1976].

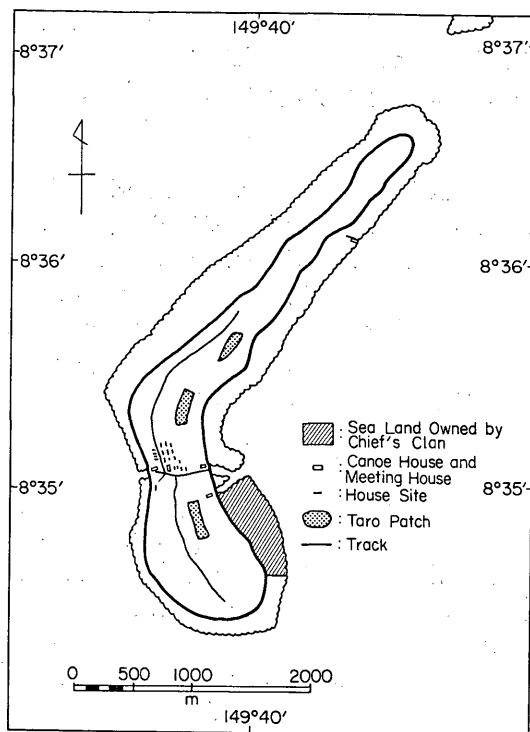


Figure 4. Ulul Island

FISHING GROUNDS AND FISHING RIGHTS

Inshore waters are grouped into three classes: *lelóólō* (reef flat), *lúkúnú woorh* (seaward margin) and *mataw* (deep sea inside atoll). *Lelóólō* has a depth of about one fathom at high tide, and is used by men and women to spear octopus or to take needlefish (*Belonidae*) using a rod-and-line. Occasionally, led by the chief, men conduct fish-drives. In the *lúkúnú woorh*, men engage in collective underwater spear fishing, encircling fishes by hitting the water surface and spearing them as they rush to seek the shelter of the reef.

Mataw is the most important fishing ground, where men carry out bottom line fishing or trolling from canoes. Men paddle canoes 8–9 km offshore to catch snappers (*Lutjanidae*), leopard cod, porgies (*Sparidae*), emperors (*Lethrinus* spp.), and the like from the sea bottom, about 30 fathoms below. They also troll from large sailing canoes for such large fish as tuna, bonito and barracuda (*Sphyraenidae*). All islanders are permitted to do any kind of fishing everywhere, except in one tract inside the reef. That tract, located in the southwestern part of island and near a large reef passage, is exclusively owned by the chief's clan. It is the widest reef flat area and fishes are especially plentiful there.

The members of the chiefly clan utilize it mainly to catch octopus for the baiting of fishing lines or for food. However, this fishing ground is preferentially opened to all islanders for the occasional communal fish drive. Communal fishing directed

by the chief is carried out in different lagoon areas twice a month, on the average. It involves mainly fish driving near the reef flat or bottom line fishing inside the atoll. The chief distributes the catch equally to all the inhabitants.

Marshall Islands

The 29 atolls and 5 raised coral islands which comprise the Marshalls have a total land area of only 120 km² and a population of 30,000 (1980). Marshallese society is composed of a number of ranked matrilineal clans. The most important corporate descent group is the matri-lineage (*bwij*), the basic and foremost land-holding group. A residential group can range in size from a nuclear family to a large matri-extended family of 20 to 25 members [ALKIRE 1977]. In social organization, the head of the highest-ranking clan in any island or atoll assumes the status of paramount chief [SPOEHR 1949; McGRATH and WILSON 1971].

FISHING RIGHTS

Throughout the Marshalls the paramount chief traditionally claimed the reef section. He could place a taboo on several particular reef sections, which were usually near a lagoon entrance and the habitat of schools of fish. When so tabooed, no one else was permitted to fish that particular reef. (In 1934, the Japanese authorities voided that and declared the entire reef open to everyone [TOBIN 1958].)

On the other hand, the inhabitants of any atoll were allowed to utilize the marine resources in sections other than where the chief had invoked a taboo. However, outsiders were strictly prohibited from exploiting the resources of an atoll without obtaining permission from the chief. According to Tobin, "...the power of the

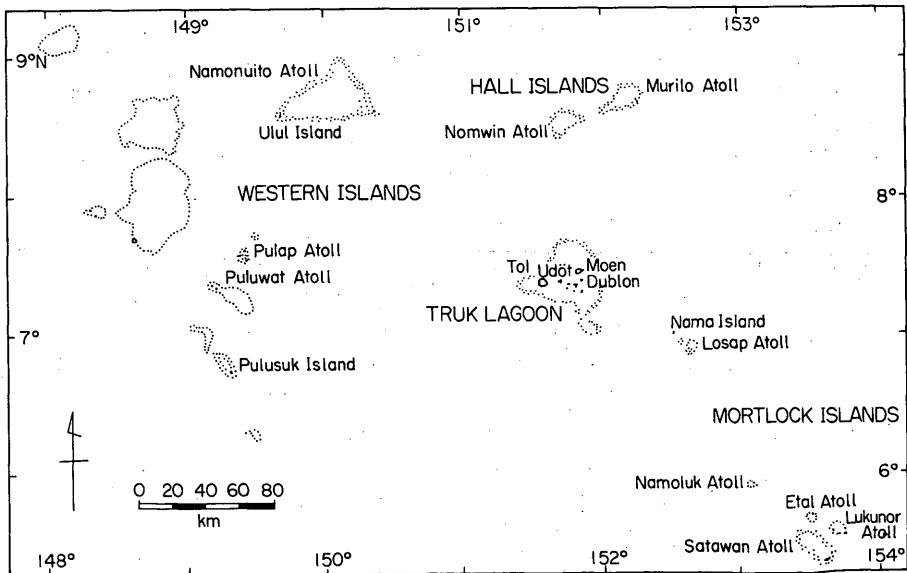


Figure 5. Truk State

Source: [NASON 1975]

chief has become weakened since the arrival of the foreigners but the concept that the right to exploit the marine resources of an atoll is the prerogative of the inhabitants of that atoll still persists" [TOBIN 1958: 69].

In summary, in Ulul and the Marshalls the paramount chief has proprietary rights to control particular areas of inshore waters where fish are especially plentiful. Except for specified sections, all inhabitants may exploit marine resources.

SEA TENURE PRINCIPLES IN MORTLOCK, TRUK AND ULITHI ATOLL

Mortlock

Etal island is an atoll which comprises the Mortlock Islands (Etal, Satawan and Lukunor Atoll). Although there are 15 islets in Etal Atoll, only Etal, the largest, is inhabited. It has area of 0.6 km² and in 1980 had a population of 446. Etal Island is divided into two districts: Western and Eastern (Fig. 5, 6). Mortlock society is composed of eight matri-clans which are strictly exogamous, named and

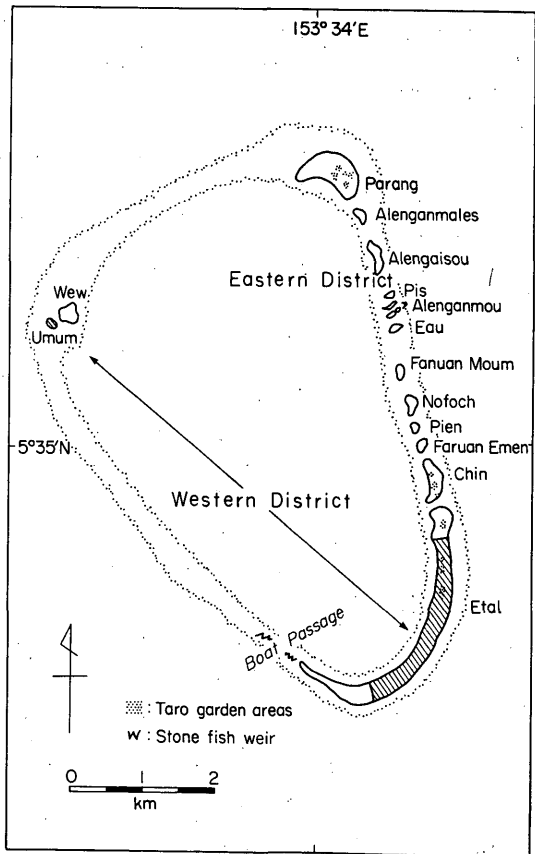


Figure 6. Etal Atoll
 Source: [Nason 1975]

ranked. The most important kin groups and the units of land ownership are the matrilineal descent groups, clans or sub-clans. All clans are ranked in an order based on their sequence of arrival on the island.

The head of the first and highest ranking clans is the island "Paramount Chief." He holds proprietary rights over the entire atoll and is also the chief of Western District. Those rights to both land and sea are the basis for the highest ranking clan's political suzerainty over all later in-coming clans [NASON 1971]. The head of the second ranking clan takes the status of Eastern District chief. The chief of each clan initiates and directs labor activities that are clan-oriented, e.g., cooperative work to clean or maintain clan land, the operation of clan-owned fish weirs and the instruction of collective fish driving.

FISHING GROUNDS AND FISHING RIGHTS

The inshore waters of Etal Atoll are divided broadly into two categories: *wa* and *setilap*. *Wa* is the sections adjacent to the reef, i.e., the reef front and reef flat deeper than 15–30 fathoms. These sections are important fishing ground since they are used by women to collect shellfish, whereas men place fish traps and construct stone fish weirs there. *Setilap* refers to all other deep water sections inside the reef where men carry out bottom line fishing and fish driving.

Compared with *wa* and *setilap*, the open sea is relatively unimportant since it is closed to exploitation for several months each year owing to hazardous wind and sea conditions [NASON 1971]. *Wa* and *setilap* are divided into small tracts, each of which is named. These tracts are owned by clans or sub-clans, which have exclusive fishing rights to them. That is, members of the clan or sub-clan can conduct any kind of fishing in inshore waters belonging to their kin group.

Members of the same clan engage jointly in specific fishing activities: lagoon fish drives into stone fish weirs, lagoon fish drives using a net and joint bottom-line fishing. There are five fish weirs owned by particular clans. The catch obtained from an owned weir or lagoon section is usually distributed to all the clan members by the clan chief. However, if members of another clan wish to utilize the weirs, they must seek permission from clan owning them, just as they would if they wished to do bottom-line fishing in a lagoon section owned by any another clan. And if another clan's members fished there, they are obliged to present some of the catch (from 25–50 percent of the total) to the owners of the weir or lagoon section [NASON 1971].

Since the paramount chief of Etal holds proprietary rights over the lands and inshore waters, he can place a taboo over one section of the reef off Etal islet in times of food scarcity or to commemorate the death of a prominent man. The chiefs of each district also possess proprietary rights to place taboos on particular reef sections within each district. These taboos are designed to conserve marine resources. After removing the taboo, the catches obtained in those sections are distributed to all the inhabitants of Etal or to those of each district.

In Lukunor Atoll, which lies 30 km southeast of Etal, fishing rights to inshore waters are almost same as those of Etal. *Setilap*, the shallow, sandy-bottomed areas within the lagoon, is owned by a matri-clan or matri-lineage. *Wanfouko*

(*wa*) are the submerged shelves jutting out from both sides of the island, in which individuals or lineages have exclusive fishing rights. Stone fish weirs built in the *wanfouko* are owned by clans or lineages, but not by individuals [MARK 1977].

In brief, the fishing rights to inshore waters in the Mortlock Islands are owned by matrilineal descent groups; matri-clans or the lesser segments of those. Clans are ranked, usually in accordance with the order of their arrival on an island. Therefore the chiefs of two higher-ranking clans have specific rights to control the marine resources of inshore waters. In other words, they are the overseers of several particular sections of fishing grounds, the catches of which are distributed to all the inhabitants of an island.

Truk

The Truk Islands are a complex of volcanic and coral islands within a large lagoon encircled by an extensive reef. Individual islands are surrounded by a fringing reef. The land area of Truk is approximately 100 km². The 14 main islands are inhabited and in 1980 had a population of about 34,000. In terms of social organization, each island is divided into several districts, comprised of villages. A village is composed of a number of matri-lineages, the basic units of land holding [GOODENOUGH 1951].

Waters inside a lagoon are broadly classified into the reef flat (*wóónmaamaaw*), seaward margin (*wooch*), and blue water (*mesaaraw*). The reef flat and seaward margin are the most important fishing grounds, and are strictly sub-divided into several named sections. Each section is owned and controlled by a particular lineage. Although such property as sand or rock is owned exclusively by lineages, fishing rights in those sections are open to all villagers. Women gather shellfish and carry out hand net fishing. On the other hand, the fishing rights to the seaward margin are limited to members of the lineage owning that section. Men engage in underwater spear fishing or drag net fishing in this section. If men obtain a catch in reef sections owned by another lineage they are obliged to present several fishes to the owner of that section.

Ulithi

Ulithi Atoll lies 160 km northeast of Yap. It comprises about 30 islands or islets, of which only five are inhabited, by 710 persons in 1980. Politically, the atoll is divided into eight districts, each composed of several villages and one or more lesser islands. Districts are ranked and Mogmog District is the main one.

The basic corporate group which owns land is the matrilineal lineage or clan. Lineages or clans are also ranked, therefore the highest ranking clan of Mogmog District furnishes the hereditary, paramount chief. The paramount chief of Mogmog has some jurisdiction over the entire atoll. It is said that each district was distributed to the chief of each island by the paramount chief, who set aside several reefs, lagoons and islands that he had controlled directly. The chiefs of each district control marine resources on behalf of the paramount chief [USHIJIMA 1982b].

The lagoon and reef areas of Ulithi Atoll are divided into sections: 14 in the lagoon and 18 in the reef. Sections are possessed and controlled by particular clans in a district (Fig. 7; Table 2). Members of clans in any district or island have fishing rights in inshore waters belonging to their clan. They carry out mainly bottom-line fishing and trolling in the deep lagoon sections. In adjacent reef sections spear fishing, drag net fishing and fish driving are done by men.

The authority of the paramount chief is acknowledged by periodic gifts of specified fish, such as Maori wrasse, leopard cod, bluefin trevally (*Caranx melampygus*) and red-throated rainbowfish (*Coris aygula*). No one may partake of them until the proper presentation has been made [LESSA 1950; AKIMICHI and SAUCHOMAN 1982]. If some of these fishes are not presented to the paramount chief he may confiscate the reef or lagoon sections from which they were obtained. That is, the paramount chief has the right to dispossess the inshore water sections of particular clans.

To summarize, in these three societies the inshore water sections, especially lagoon and reef area, are divided into small tracts and each tract is held separately by a descent group. And the chief of the highest ranking clan has the privilege to control and to regulate a specific area of fishing grounds. This regulation is to conserve marine resources for a few months.

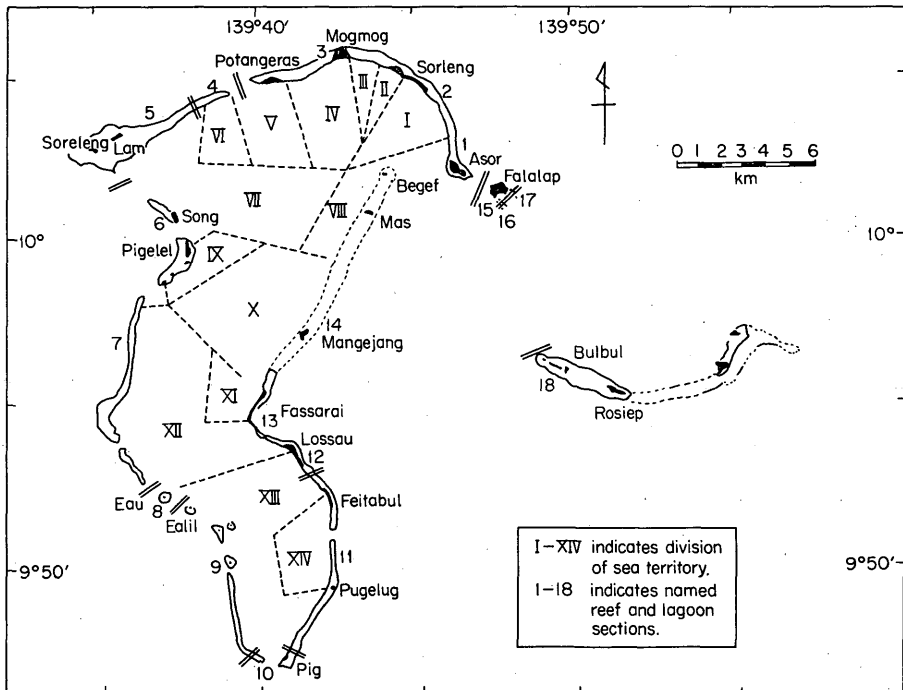


Figure 7. Reef and Lagoon Sections on Ulithi Atoll [after USHIJIMA 1982b]

Table 2. Division of Lagoon and Reef Sections in Ulithi Atoll

Clan	Location	Reef Section	Lagoon Section
Rigipa	Falalap	15	—
Falchugoi	Falalap	16	—
Falkel	Falalap	17	—
Bogatlaplap	Rosiep	18	—
Efan	Asor	1	VIII
Lugalap	Sorleng	2, 5	—
Maifan	Sorleng	—	I
Maiyor	Sorleng	—	II
Fashilith & Numurui	Mogmog	3	IV, V
Falmay	Mogmog	—	III
Fashilith ¹⁾	Mogmog	4, 6	VI, VII, IX
Muroch	Mangejang	7, 9, 11, 14	X
Lebogat	Fassarai	8, 13	XII
Taufan	Fassarai	—	XI
Fachal	Lossau	10, 12	XIII
Ligafaly	Lossau	—	XIV

Table Note: ¹⁾ Paramount Chief's clan.

PRINCIPLES OF SEA TENURE IN YAP

Yap is a high island 216 km² in area, or, if the reef area is included, approximately 400 km². In 1980 it had a population of 6,670, settled in about 100 small coastal villages (Fig. 8), but in aboriginal times the population is estimated to have been four or five times larger. The important kin group and traditional unit of land ownership in Yapese society is the patrilineal lineage, *tabinaw* (lit. "one land"). As post-marital residence is usually patri-local, the residential group is the patri-extended family; a man, his sons and his son's sons with in-marrying wives and unmarried daughters. That family may live on lands belonging to a single, named house site. Schneider [1974] has referred to these associated land parcels as an "estate." Lingenfelter [1975] and Labby [1976] have characterized the *tabinaw* by such terms as "landed estate."

"ESTATE LAND" AND SEA RESOURCES

A Yapese estate usually consists of one or more houses, several taro patches (*maut*), yam gardens (*milay*), coconut palms (*niw*), grassy uplands (*tayid*), forests (*egaragar*), tracts of sea inside the reef (*daay*) and stone fish weirs (*ech*). The eldest man of a patri-lineage heads the estate and has nominal control over all estate land. The Yapese consider these associated land and sea resources as a single unit centered around an elevated stone foundation, on which main dwelling house is constructed. This stone foundation is called *dayif* [MAHONEY 1958; USHIJIMA 1982a].

That is important because the rank of a lineage is derived from the rank of the name-bearing *dayif* itself. The *dayif* is also the seat of all authority and political rights that, by definition, belong to an estate. To the Yapese, people express those roles that are seen to reside within their land. That is, a man is chief because he

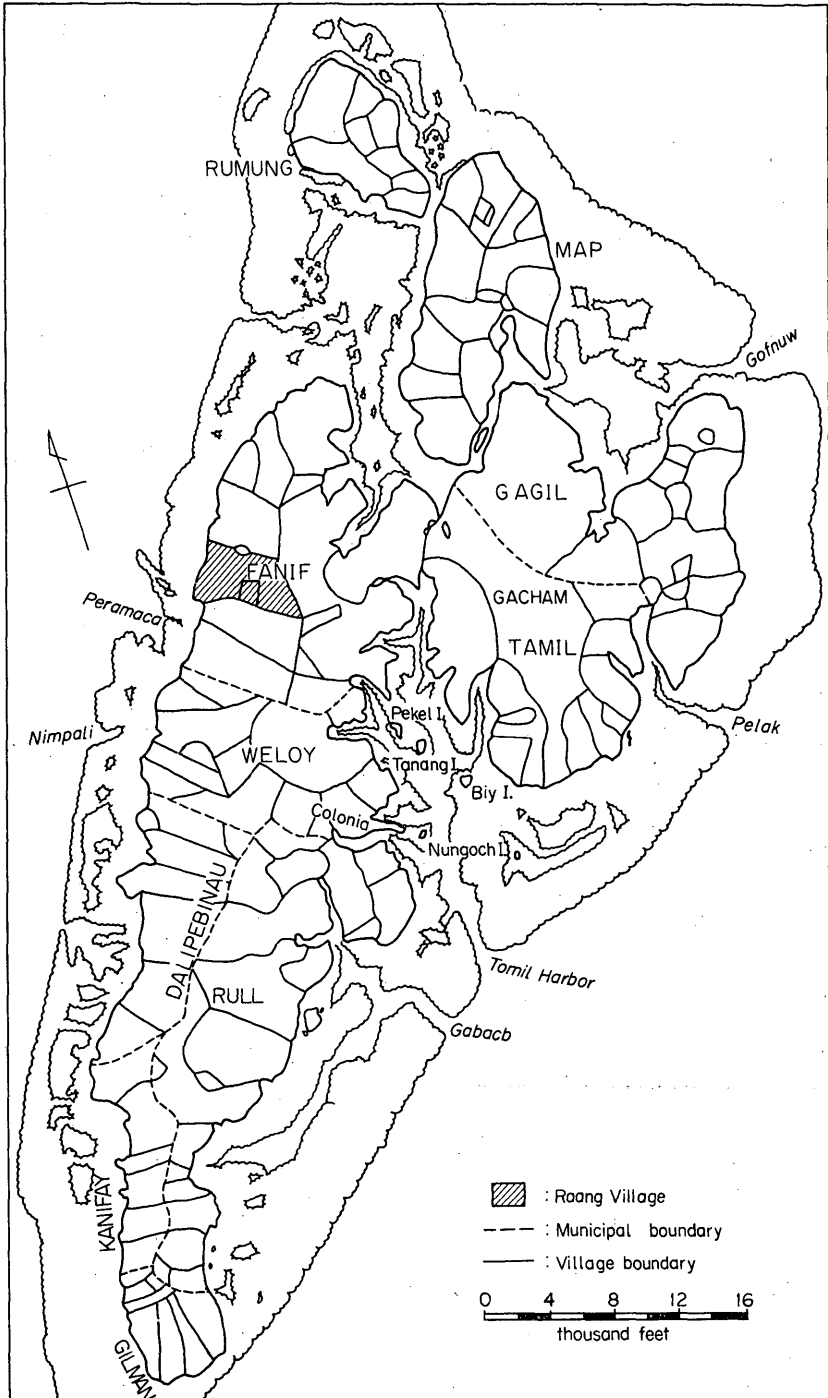


Figure 8. Yap Island
Source: [LINGENFELTER 1975]

holds chief's land. It is said that people are not chief, but rather that the land is chief. Therefore the "estate" (*tabinaw*) supplies more than just subsistence and living space to its occupants. It is also the source of social status [LINGENFELTER 1975; LABBY 1976].

VILLAGE ORGANIZATION

The Yapese community is a distinctly defined and named village settlement, within which land and sea resources are developed, exploited and protected by communal operation. A village (*binaw*) is organized by several patri-lineages (*tabinaw*) each of which is represented by its head at village councils. The council forms the decision-making body and is the legal authority of the village. In the organization of a village, three particular statuses stand out above all others: "the Chief of Ritual," "the Chief of Village," and "the Chief of Young Men."

The "Chief of Ritual" is the old, wise counselor to the council and chiefs. In the past he was responsible for holding religious ceremonies. The "Chief of Village" is the executive head of a village. He is also the economic leader who controls the lands and marine resources in a village. The "Chief of Young Men" is to be heard in all village councils. If the council decides upon work, the young men do it. Those chiefs are heads of the highest ranking patri-lineage, the pioneers of the village, which in any village have the greatest power. Each status is assigned to a certain "estate" (*dayif*) in the village.

A number of lesser statuses are found in the organization of village affairs. These have particular rights or authorities for certain communal activities. For instance, the men appointed to such statuses carry out the roles of the "Leader of Gardening," the "Leader of Net Fishing" and the "Leader of Torch Fishing" in the open sea (*pilung ko fita*). The activities of net fishing and torch fishing are complemented by those of the "Magician of Net Fishing" and "Magician of Torch Fishing." The chiefs and magicians may often be authorities held by the same "estate" and the same person [LINGENFELTER 1975].

In the village organization there are other important statuses, called *suwon* (lit. "sitting erect," "trusteeship," or "to oversee something"). This concept is applied to the men's house, club house, land and food resources. The levels of overseeing vary with the level of village division. There are *suwon e maut* (taro patches), *suwon e daay* (sea lands) and *suwon e fita* (fishing), among others. Those statuses are also derived from a certain "estate."

FISHING ACTIVITIES IN INSHORE WATERS OF RAANG VILLAGE

Raang village, Fanif District, is located in the eastern part of Yap Island. Its shoreline is 800 m in length and surrounded by a fringing reef which averages over 1 km in width. In 1977 it comprised five patri-extended families (*tabinaw*), and had a population of 20 (male 12, female 8). Although there are 50 estates with the *dayif*, only five are occupied by residents, a result of extreme depopulation over time. According to informants, there were estates five or six times this size in the early-twentieth century. The inshore waters of Yap are divided by each village boundary, which extends directly from the village through the lagoon and reef and to the open

sea. Boundaries inside the reef are defined by passages or channels through the fringing reef.

Inshore water is classified into four sections; *ey* (mud flat), *rayém* (reef flat), *náá* (inner side of the fringing reef) and *riigur* (open sea). *Ey* is the sandy tideflat alternately submerged and uncovered by tidal movements. This shore section is utilized for hand net fishing by individuals or members of a family. The catches are mainly damselfish (Pomacentridae) and wrasse (Labridae). *Rayém* is the submerged shelf, with deep holes at low tide. The villagers engage in trap fishing or collective drag net fishing in this area. Their catch consists of wrasse, rabbitfish, goatfish and snappers. In the area through *ey* and *rayém*, one or two families join together and build a large bamboo fish weir (*seegal*). Villagers also engage in fish driving to catch needlefish (Fig. 9).

Náá includes the reef crest and coral heads and patches where there are many passes and submerged channels where fish are especially plentiful. Men engage jointly in drag net fishing, led by the "Overseer of Fishing" (*suwon e fita*), and construct stone fish weirs in this area. This fishing ground is divided into small tracts owned by particular families. The families who own tracts have the right to build stone fish weirs. Villagers consider those tracts and stone weirs as immovable property of particular families. The fishes caught by drag net fishing and the stone weirs are mainly porgies, goatfish, parrotfish, snappers, wrasse, filefish (Aluteridae), and mullet (Mugilidae) [HAYAKAWA 1982; USHIJIMA 1982a].

Fishing in the open sea is a village affair, led by the "Chief of Fishing" (*pilung ko fita*) who is a village official and at the same time a skillful expert and magician of fishing. There are two kinds of typical fishing methods; *mangal* (flying fish: Exocoetidae)-fishing and *athing* fishing. *Mangal*-fishing is done for one or two months during the southwest wind season (June and July). Fifteen fishermen board a canoe at night, two of them having torches, others having large hand nets to scoop-up the flying fishes attracted by the torch light. *Athing*-fishing is a kind of the round haul net fishing. About 32 fishermen get into two canoes. This fishing is done by a long drag net stretched between the two canoes. Fishermen spread the net in large semi-circle and enclose the fish [SUGIURA 1939].

Today, the only fishing activities done in Raang village are at the individual family-level, for subsistence. Communal fishing, in which all male members of a village participate, and which was once important, has been abandoned, as have stone weirs.

FISHING RIGHTS AND FISHING GROUNDS

The inshore waters of each village are called *madaay* ("Village Sea Land") and are owned by the villagers. Outsiders are strictly prohibited from exploiting the resources in this area. If a person lacking an estate in this village fishes inside the *madaay*, the villagers may seize all the catch and gear of the trespasser. In Raang village certain patri-extended families, usually of high ranking estates, "own" and oversee all fishing grounds within the reef. The fishing rights are parceled out to various estates and careful distinction is made among the methods of fishing permitted

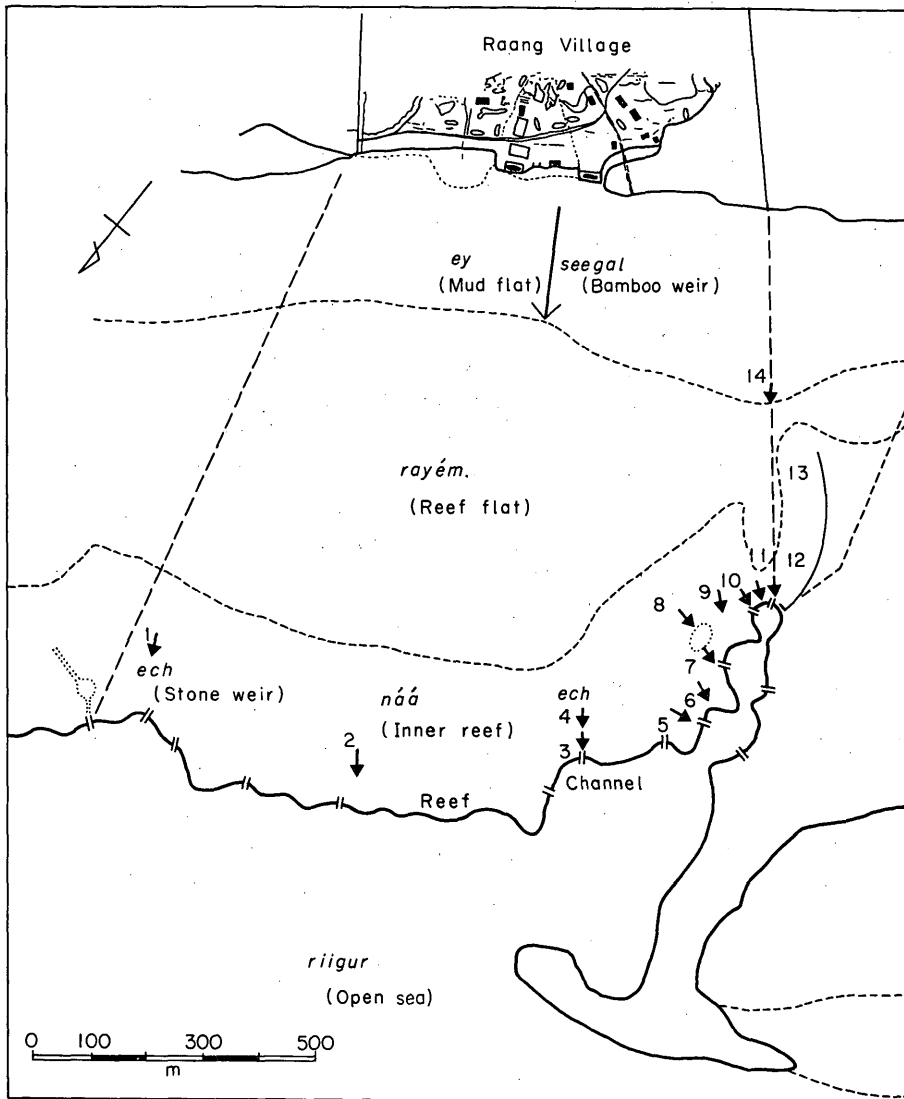


Figure 9. Location of Stone Weirs, Yap after [HAYAKAWA 1982]

and prohibited.

There are two kinds of statuses concerned with fishing grounds and fishing methods, *suwon e madaay* (“Overseer of Village Sea Land”), and *suwon e fita* (“Overseer of Fishing within the Reef”). *Suwon e madaay* is divided into two statuses; *suwon e ey* (mud flat) and *suwon e rayém* (reef flat). The status of *suwon e ey* is assigned the highest-ranking estate in the village (“Chief of Village”). And *suwon e rayém* is allotted to another higher estate. *Suwon e fita* is the overseer and at the same time director of collective fishing in the lagoon.

In the *ey* and *rayém* rights to hand net fishing are allowed to all villagers. But rights to use the drag net, fish trap and bamboo fish weir are owned by the *suwon e madaay*. When villagers engage in such kinds of fishing in the *ey* or *rayém*, they are required to obtain prior approval of the "Overseer of Sea Land." And they are obliged to contribute a portion of the catch to him.

Fishing rights in the *náá* are privately owned by particular patri-extended families. Those families' members have rights to construct stone weirs in this fishing ground. In Raang village are 14 stone weirs which have fallen into disuse. Each weir is set near a pass or channel in the fringing reef (Fig. 9; Table 3).

Today those weirs are owned by six families. Although some families own many stone weirs, in principle one family used to own one stone weir belonging to its *dayif* (estate). Because of depopulation, some families have inherited several *dayif* from relatives. For example, Waath has five weirs, but his own estate has only one (1. Funagil), which is associated with the status of the "Magicians of Fishing in the Open Sea." The others belong to the *dayif* it has inherited.

In the Mangabachans' case, the family owns three weirs. The weir called Fiitlangith is associated with the *dayif* of Tayib, which is assigned to the status of the *suwon e fita*. On the other hand, there are families who do not own fish weirs. Further, families living in another village (Gimen, Lubunow and Falawath) still have the right to use weirs in Raang village, rights passed on to them from an ancestor of this village. Some families of this village have rights to use weirs in other villages. Thus the ownership of the stone fish weirs has been complicated. However, the traditional custom of owning and controlling the use rights of the *náá* section is still recognized by the people of Raang village.

TRADITIONAL METHODS OF DISTRIBUTING CATCHES

There are two kinds of fishing activities in Raang village: individual or family-

Table 3. Ownership of Fish Weirs in Raang Village

Name of Fish Weir	Name of <i>Dayif</i>	Owner
1. Funagil	Bileganow	Mangabachan*
2. Girey	Biléaaw	Lubunow
3. Kókó	Bilemire	Funuo*
4. Efaal	Bilemi	Funuo*
5. Pumuri	Fiitééch	Gimen
6. Kadaay	Elaal	Waath*
7. Rayi	Daney	Falawath
8. Fiitlangith	Tayib	Mangabachan*
9. Wolmúw	Daney	Funuo*
10. Tabuuy	Daney	Waath*
11. Funamayib	Funaamathaw	Mangabachan*
12. Fiitrow	Gelbuch	Waath*
13. Dorach	Fiitedoo	Waath*
14. Peey	Fiitedoo	Waath*

*Table Note:** family living in Raang village.

level and collective (communal) fishing. The catch obtained by small-scale hand net fishing in the lagoon is considered the fisherman's own and is consumed by his family. For stone weirs a particular family who owns the rights to them may also take all the catch. On the other hand, communal fishing inside the reef is led and directed by the *suwon e fita* ("Overseer of Fishing"). He is also responsible for the distribution of the catch and is privileged to take several big fishes as his portion. Some pieces of those fish are presented to the chiefs. Each participant in this activity receives an equal share of the catch. Men engaged in fish trapping or use of bamboo fish weirs are obliged to present three pieces of fishes to the *suwon e madaay*, "Chief of Village."

The distribution methods of communal catches from the open sea are different from those of the lagoon. As mentioned above, there are two kinds of fishing; *mangal* and *athing*, each led by a distinctive "Chief of Fishing" (*pilung ko fita*) with magical power. This leader lays out the catch in front of the men's house and divides it into two parts, one for the "Chief of the Village," and the other to be shared by each participant. At this time the "Chief of Fishing" takes a large fish as the portion derived from his status.

The fishes received by the "Chief of the Village" are redistributed to the villagers who did not participate in the communal fishing, in exchange for traditional Yapese money, *ngane fita* (lit. "food for fisherman"), which is kept for the communal use of the village [SUGIURA 1939; USHIJIMA 1982b].

SUMMARY

Yapese society has complex systems of rank concerned with the rights to use and exploit inshore waters. There are three well-defined status levels, each with definite roles in controlling marine resources. The "Chief of the Village," the highest rank, has important rights to exercise general control over inshore waters. His supreme rights are acknowledged by gifts from the catch obtained by communal fishing and fish trapping.

The "Chief of Fishing," of second rank, is the status which leads communal fishing in the open sea. The statuses to lead fishing and to exercise magical ritual in fishing are appendant to the privilege to receive a portion of the catch. And the "Overseer of Fishing" has the right to direct communal fishing inside the lagoon. He has the privilege to take more shares than the other participants. It is interesting that those statuses are assigned to particular estates.

On the other hand the right to use inshore waters is sub-divided. The fishing rights in reef flat areas are controlled by particular families. Small-scale fishing is allowed to every villager but for communal fishing permission must be obtained from the "Overseer of Village Sea Land." The tracts inside reefs are parcelled out and owned by particular families.

CONCLUSIONS

In this paper I have described various aspects of sea tenure principles among

Micronesian societies, on the basis of documents and from my own field data. There are multiple coexisting tenure categories and there exists a diversity of forms of sea use. I have tried to classify them into four types focussing on the social unit of ownership and the rights to exploit marine resources. That is, I refer to Type I as a type of community tenure; Type II as a composite of community and kin group tenure; Type III as a type of kin group tenure; and Type IV as a type of family tenure. Although the data on each society are not always complete, my tentative conclusions are as follows.

1) The principles of sea tenure among Micronesian societies are that people may hold rights to the sea by virtue of their status as members of a social group, formations of which range from community, through kin group, to family. And kin groups in any society are ranked according to their order of settlement on the island or in the village. Therefore the degree of stratification in society is reflected in the system of sea tenure. In Yap, especially, the authority to exploit and control marine resources is associated with the rank of the family estate. On the other hand, it is common to all societies that some persons (chiefs) or organizations (councils) exist to control and conserve marine resources. Those have rights to regulate the use of particular sea sections, and have responsibilities to protect against the exhaustion of food resources. And those authorities or statuses are allotted by the head of the first and highest-ranking kin group, which have proprietary rights over sea and land.

2) The patterns of utilization of inshore waters, lagoon, reef front and open sea, differ from island-to-island (Table 4). In islands surrounded by a wide lagoon,

Table 4. Sea Tenure Patterns in Micronesia

	Island	Utilization of Sea			Unit of Sea Tenure	Unit of Land Tenure	Type of Sea Tenure	Controlled by
		Lagoon	Reef	Open Sea				
1.	Palau (vo.)	++	-	-	co.	ma-li.	Type I. community	village council
2.	Ponape (vo.)	++	-	-	co.	ma-li.		village chief (king)
3.	Satawal (r. re.)	+	++	+	co.	ma-li.		chief of sea
4.	Ulul (at.)	+	+	++	co. & cl.	ma-li.	Type II. community & clan	paramount chief
5.	Marshall (at., r. re.)	++	++	-	co. & cl.	ma-li.		paramount chief
6.	Mortlock (at.)	++	++	-	cl.	ma-li.	Type III. clan	paramount chief
7.	Truk (vol.)	+	++	-	cl.	ma-li.		paramount chief
8.	Ulithi (at.)	+	++	-	cl.	ma-li.		paramount chief
9.	Yap (vol.)	++	+	+	fa.	pa-fa.	Type IV. family	chief of village, fishing, sea

Table Note:

Importance: co. = Community ma-li = Matri-lineage vol. = Volcanic island.
 Primary = ++ cl. = Clan pa-fa. = Patri-extended family r. re. = Raised Coral Reef island.
 Secondary = + fa. = Family at. = Atoll
 Not used = -

lagoon sections are the most important fishing grounds. Compared with lagoons, reef front and the open sea are not utilized to such a degree by native fishermen. In islands with an atoll formation both lagoon and reef front sections are exploited as the main fishing grounds. On the other hand, in raised coral islands with undeveloped fringing reefs marine resources in the lagoon area are not so abundant, as a consequence those of the reef front and open sea, including reefs and uninhabited islands, are exploited to a maximum.

However, Yap and Ulul islands, both of which have wide areas of lagoon, are not included. In Yap the lagoon and open sea are very important as fishing grounds. In Ulul all sections are utilized, and the open sea area inside the atoll is an especially important fishing ground. Although I have arranged the patterns of sea use based on ecological conditions, I cannot discover a corelationship between patterns of sea use and systems of sea tenure. Therefore I would point out that the principles of sea tenure are far from being decided by ecological factors alone.

3) Finally, in many societies inshore waters are treated in much the same way as is land, and all areas are referred to as "food resources." Therefore, the subject of sea tenure should be discussed within the broader context of land tenure. In general, land, especially agricultural land, is sub-divided into a number of plots, and each is owed or held by particular kin group. The traditional land holding group is basically a matri-lineage or a matri-extended family, except for Yap (Table 4).

Comparing the social unit of land tenure with that of sea tenure, the societies in which the two coincide are the Mortlocks, Ulithi, Truk and Yap. In Yap, especially, a family estate is composed of yam lands, taro patches, coconut palms and sea sections. On the other hand, in the societies included in Type I and Type II, inshore waters are not strictly divided into small sections for the purpose of ownership or holding. That is, the sub-divided lands are owned or held by a kin group, but inshore waters are considered as the common property of all inhabitants. Therefore the principles of land tenure are different from those of sea tenure in those societies.

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