

SOUTH PACIFIC COMMISSIONWORKSHOP ON PACIFIC INSHORE FISHERY RESOURCES
(Noumea, New Caledonia, 14-25 March 1988)**Country Statement**
Federated States of Micronesia

by

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Background

The newly independent nation of the Federated States of Micronesia (FSM) is made up of over 600 small islands with a total land mass of only 682 square kilometers. These islands are spread throughout a zone of over 1,200,000 square kilometers ranging from 1 degree to 10 degrees north latitude and 135 degrees to 165 degrees east longitude in the tropical West Pacific (Figure 1)

The 125 high islands in the FSM are predominantly volcanic, with fringes of mangrove forests, dominated by Sonneratia, Bruquiera and Rhizophora (three species). These are usually encircled with fringing reefs, surrounded by lagoons, and these by outer barrier reefs. The ecological zonation on typical FSM fringing reefs is illustrated in figure 2.

The greater than 500 low islands of FSM are composed of coral reef and lagoon sediments mostly located on atoll reef and to a lesser amount on barrier reefs. Also a few isolated small islands occur which lack lagoons and have minimal fringing reefs. Between the 32 atolls of FSM are also found pinnacles and large submerged banks resembling sunken atolls.

The islands of FSM have been occupied for several thousand years by Micronesians who have evolved ways of life adapted to the islands resources and are especially dependant on marine life for protein. Unlike neighbouring islands FSM, pigs did not occur in the until after European contact.

There are presently eight very different major indigenous languages and cultures throughout the FSM. Ancient structures and traditional dwellings, dress and lifestyle can still be found in Micronesia. Traditional canoe construction and navigational skills persist, allowing certain sailors to navigate thousands of miles, under sail power, with no compass, in open outrigger canoes.

Traditional fishing techniques are still widely used, including trolling, palu ahi fishing, bottom fishing with hook and line, netting in shallow-waters, flying fish netting at night, use of fish traps, fish poisons and reef gleaning. Practically all traditional techniques have accepted modern materials for use at the present time, such as nylon lines and nets, metal hooks, electric torches, etc.

The majority of Micronesians still depend upon a subsistence lifestyle. Commercial fishing, however, is greatly expanding, with trolling and pole-and-line live bait fishing tapping large pelagic stocks of tuna, and bottom fishing, netting and other techniques pressuring the more limited inshore stock of living marine resources.

Deep bottom fishing for export markets is rapidly being developed.

Populations are greatly increasing, with the present total population of FSM of over 95,000 predicted to double in twenty years. The estimated 1985 populations of the four FSM States of YAP, Truck, Pohnpei and Kosrae and population densities are shown in table 1.

The increase of subsistence fishing, development of commercial fishing, spread of destructive dynamite and poison fishing, decrease of traditional controls on resource use and environmental impacts of development are surely decreasing stocks of FSM reef-based resources. Tridacna gigas once occurred throughout the FSM but appears to be extinct now in all states. Hippopus hippopus is fast declining, as are turtles. Although numerous limited assessments of inshore marine resources and mapping of resource habitats have been recently carried out in the FSM (see list of references, appended), quantification of inshore fisheries resources is very incomplete. Subjective estimates by fishermen indicate that stocks of preferred reef fishes are declining, probably due to over harvesting and environmental damage from siltation and sedimentation due to accelerated road building, dredging and filling, construction, and erosion from land clearing and fires. Ciguatera fish poison seems to be triggered by reef damage and affects localised stocks of reef fish. It may increase due to the impacts of expanded development such as the construction of air strips on reef flats and channel blasting.

Fisheries Research

To better assess our marine resources and determine which should be promoted for expanded harvesting and which should be managed and protected, numerous activities are on-going in the FSM.

A computerised, standardised local catch data collection and analysis system was introduced to all four states in 1986-87. Micronesian staff in each state are now measuring catches and efforts with specially designed methods for each state and producing quarterly reports which can be used over time to plan for the management of harvested species.

Seeding of reefs with trochus and Tridacna derasa, which are for subsistence and commercial use, is being carried out. Hatcheries for these molluscs are being established in Pohnpei; and Kosrae, at first, and probably in the other States soon after. Green snail introduction and reintroduction of T. gigas are being planned.

Turtle tagging and assessment is being done, but needs outside funding, hopefully available through the South Pacific Regional Environmental Programme.

Assessment of commercial marine invertebrate resources including clams, beche-de-mer, pearl shell, trochus, turtles, spiny lobster and evaluation of potential mariculture sites is underway, mainly using Peace Corps volunteers and their counterparts.

Gill net impacts are being measured on Yap reefs. Comparison of fish in adjacent mangrove, seagrass, and coral zones on Pohnpei has been attempted. Species of native fish and marine invertebrates have been listed. Limited investigations of inshore plankton have been done. Different types of fish poisoning have been investigated. Availability of bait fish has been tested. Traditional fishing knowledge is being recorded, and so forth. But most of this work is restricted by very limited in trained man power and funding levels.

Future needs

Probably the most important needs related to inshore fisheries resources in the FSM are in-country expansion and improvement of local catch statistics systems. This would best be served by funding an expert to continue the excellent system design and training carried out by Mike Molina. Additionally, the FSM would greatly benefit from more data on our inshore resources, including their extent, locations, values, uses, potential uses, and both the short term and long term impacts of resource use and environmental changes. It would be valuable to all South Pacific countries to have more information on the biology of valuable species including life spans, age at maturity, reproductive cycles, migrations, food and habitat needs, sensitivity to human impacts, etc.

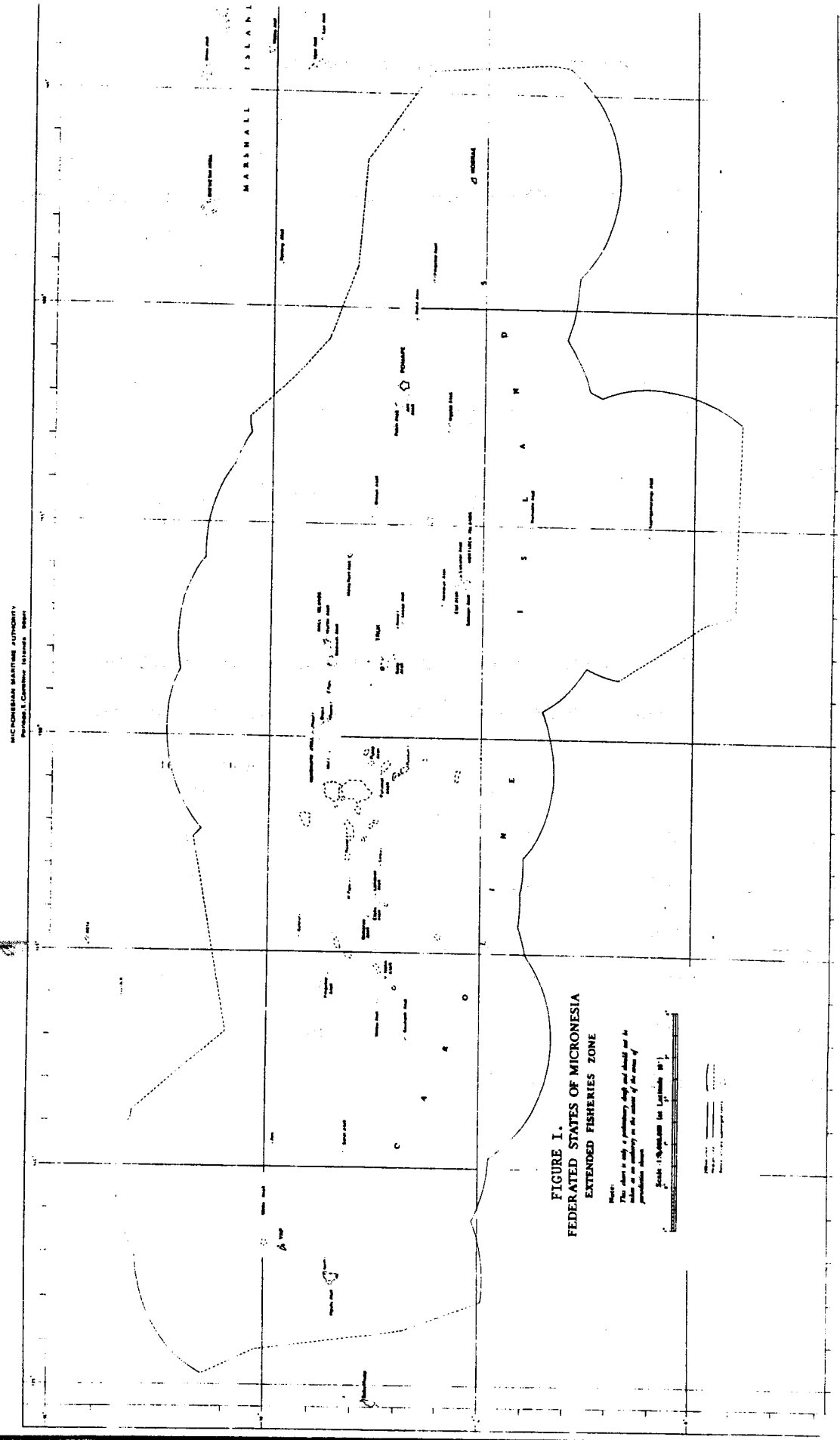


FIGURE 2. MINOR ECOLOGICAL ZONES - LAGOON FRINGING REEF

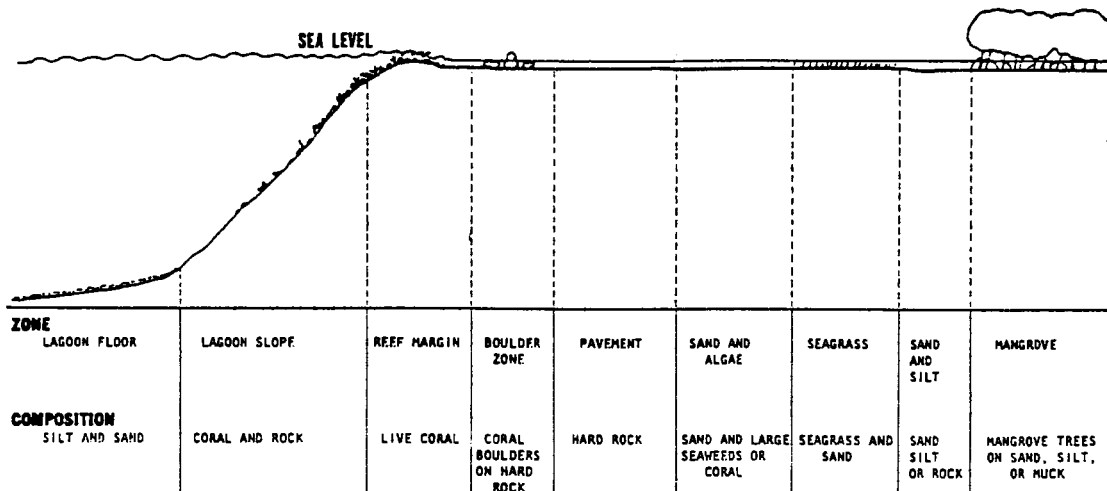


TABLE 1. Areas, Populations and Population Densities in the Federated States of Micronesia. 1985 Estimations

State	Land Area Km ²	Lagoon Area Km ²	Population	Population Density Persons/km ²
Truk	127	5257	46,159	363
Pohnpei	325	884	28,695	88
Yap	100	2129	10,948	109
Kosrae	110	3	6,460	59
Total	682	8,273	92,262	135