

A history and archaeology of fishing in the Federated States of Micronesia

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ABSTRACT

Tuna fishing in the Federated States of Micronesia (FSM) is currently a sustainable and profitable fishing industry and part of the leading world tuna fishing industry in the western Pacific.

This paper will outline how the FSM got to this position and what related tangible and intangible heritage exists today. It begins with how indigenous people from the region implemented their fishing practices, using techniques that were implemented in balance and harmony with their marine environment. When Japan colonised the region, they were aware of the rich marine resources, proclaiming Micronesia had about ‘one-tenth of the total known fish in the world’. In 1918 they enthusiastically began to develop a fishing industry, which included exploiting shellfish, *beche de mer*, mackerel, different species of tuna, and skipjack tuna that became the dominant species exploited, for the benefit of Japanese people and the Japanese economy. However, local people in Micronesia were not actively encouraged to be part of this industry. The Japanese established a research station and imposed several regulations in how the industry should be developed and implemented.

This activity occurred pre-World War II, and during the war many of the fishing vessels were converted to assist in the war effort, then lost during the war. Following World War II, the U.S. attempted to revive the tuna fishing industry in association with local people, having limited success, but today tuna is the FSM’s top export, and part of a sustainable billion-dollar industry that provides benefits to local people. Coupled with the extensive tangible and intangible heritage of indigenous fishing before Japanese times, a holistic picture of the cultural landscape and seascape associated with fishing will be provided in this paper.

Keywords: Tuna fishing, Micronesia, Japan, World War II

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INTRODUCTION

The topic of this paper is relevant to this session that focuses on the sea-people of Oceania, and their cultural identity that is reflected in their maritime cultural landscapes and seascapes. These landscapes and seascapes encompass not just the tangible cultural heritage, being the ‘things’, such as sites and objects, but also the living heritage, the intangible cultural heritage including cultural practices, customs, and folklore associated with their marine environment. Central in the lives of islanders has been the exploitation of the coast and sea for their food—predominantly the vertebrate and invertebrate fish. Fish for islanders has been the major source of protein for thousands of years. Many practices and living heritage in acquiring fish developed, including pelagic offshore fishing, and fish weirs and traps for inshore fishing.

The paper commences with a discussion on the traditional Indigenous cultural heritage associated with fish and fishing practices. When foreigners came into Oceania in 1521, they impacted many lifestyles, cultural practices, and their fishing practices through not allowing indigenous people to use their canoes such as in the Caroline and Mariana Islands. When Japan took control of greater Micronesia in 1914, they enthusiastically established an industry exploiting the region’s fish for their benefit, and Indigenous people’s fishing practices were greatly marginalised. Local people were not supported in the Japanese

fishing industry, which soon became a viable and profitable industry for Japan, and in conjunction with other industries focusing on sugar, phosphate, and copra, this made Micronesia self-sufficient. A large influx of people from Japan, including those from Okinawa assisted in the development of the fishing industry through their involvement in pole-and-line fishing for mainly bonito (skipjack tuna, *Katsuwonis pelamis*), and employment in the canneries.

Through the use of oral sources, primary historical documents (from the pre, during, and post-World War II periods) and secondary historical literature, together with examples of several sites and living heritage, the extent of the cultural landscape and seascape associated with fish and fishing practices in the FSM and in Micronesia is highlighted in this paper. The aim in highlighting this significant sea heritage is to raise awareness of its many attributes including the cultural, historical, and archaeological values being as valuable to land-based heritage. Many sacred and spiritual connections with the coast and sea, as well as with fish have developed for many millions of people across Oceania. They should be as important to land-based heritage given the planet is 70% covered with water. This ‘human’ connection and significance needs to be recognized especially in the United Nations Decade 2021-2030 of Ocean Science for Sustainable Development.

MICRONESIA AND THE FEDERATED STATES OF MICRONESIA

The Federated States of Micronesia is made up of four states (from west to east), Yap, Chuuk, Pohnpei and Kosrae, with Pohnpei containing the capital of the FSM, Palikir. It comprises 607 volcanic, and predominantly coralline islands that stretch 2,736 km west to east, and Chuuk Lagoon, which is approximately at the centre is located at 7° 25’ North and 151° 50’ East. Micronesia is the broader region of the north-west Pacific that includes FSM as well as the independent nations, Palau, Marshall Islands, Nauru, and the Gilbert Islands in Kiribati, and the U.S. territories of Guam, the Commonwealth of the Northern Mariana Islands (CNMI), and Wake Island (Figure 1). The Micronesia term (meaning small islands), was used to distinguish between other regions of Oceania, being Melanesia (islands of black people) and Polynesia (many islands), all 19th century colonial terms for the more than 10,000 islands located in what is now called Remote Oceania (Kirch 2010, 133). It was through the expansion of Austronesian speaking people, originally from Taiwan, through Island Sea East Asia (ISEA), primarily the Sulu and Sulawesi Seas (Wallacea) that people came into Oceania (Bellwood 2006, 113). The oldest inhabited islands are those in the Mariana Islands (c. 3,500 BP), Palau, and the Bismarck Archipelago (3,350 BP) (Carson 2014, 1; Spriggs 2013, 1). The Gilbert Islands, Marshall Islands, Pohnpei, and Chuuk were settled later (from 2,800 to 2,000 BP), through a northward migration via the Solomon Islands into the Gilbert Islands, Marshall Islands, Kosrae, then westward to Chuuk (Blust 1976, 29). A stimuli Bellwood (2006, 110) promotes as to why people moved from Taiwan into ISEA, then into Oceania, was because of their: ‘predilection for rapid coastal movement and exploration, probably to find the most favorable environments for cultivation and sheltered inshore fishing.’

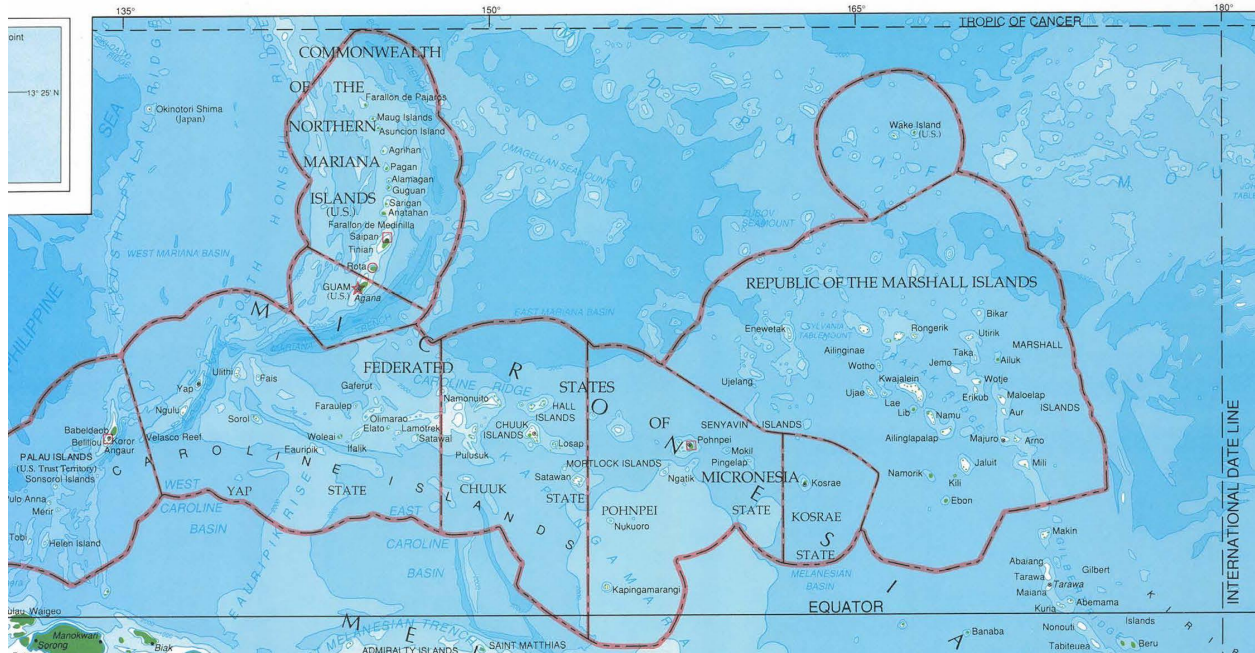


Figure 1: Locality map of various places mentioned in this paper. Chuuk Lagoon is shown as ‘Chuuk Islands’. Source USDA-NRCS National Cartography & Geospatial Center, *Pacific Basin Area*, 1:20,000,000, Fort Worth Texas, 1999.

TRADITIONAL INDIGENOUS FISHING

It is beyond the scope of this paper to provide a comprehensive perspective of the significance of fish and fishing practices to indigenous Micronesians. Throughout Micronesia, fish are valued as part of the living heritage for many Indigenous communities, and they connect people: ‘Fish and other marine animals are not only aspects of many Ocean mythologies, they are also objects of exchange between clans from the sea and the land for ceremonial purposes’ (Hilmi et al. 2016, 178). The authors found that Pacific Islanders in exchanging goods, including fish, were doing so primarily for their social, cultural, and political interactions, and the economic values were of secondary importance (Hilmi et al. 2016, 176). Many traditional Indigenous conservation and management systems are carried out throughout the FSM, such as in the *pwaaw* in Chuuk, where a reef section would be closed off following the death of the reef owner (Rauchholz 2016, 57); traditional bans such as ‘harvesting at specific times the resources needed for feasts and customary exchanges’ (David 2016, 239); and how certain fish collected from a Yapese *aech* are only to be eaten by certain individuals ((Jeffery In Prep; Jeffery & Pitmag 2010, 5).

Micronesians also developed extraordinary skills in catching fish, such as in CNMI, where Driver (1983, 15) related a story from a Micronesian man named Suñama told to a Spanish Priest Fray Juan Pobre in the early 17th century about catching a marlin (Amesbury 2013, 44):

...a very large blue marlin took the hook. His line was very thin and, as he did not want to break it, he hesitated to pull it in. Yet he was very anxious to land the fish; therefore he very cautiously began playing and tiring it. Meanwhile, a large shark appeared and attacked the marlin in the midsection of its back. In order not to let go of his line, the fisherman allowed his boat to capsize. Then he tied the end of the line to the capsized boat, followed the line through the water to the shark and diverted him from his catch. He then brought the marlin back to his boat, righted the craft, and sailed home, flying a woven mat as a banner from the masthead.

Amesbury (2013, 40) has documented the range of fish bones found in various archaeological sites on Guam, testifying to the importance of pelagic fish in the diet, although reef fish remains are dominant. What she discovered was that this quantity of pelagic fish remains were unique when compared to a database of 75 Pacific Islands archaeological sites. Flying fish were also a very popular fish to catch throughout Micronesia, either as a source of food, or as bait during pelagic fishing. In discussing fishing practices using canoe in Yap, I learnt that the Yapese outer islanders would fish without a canoe by floating in the water dangling a line and hook to catch shark, and there are many other stories related to the extraordinary fishing skills of Micronesians (W. Pitmag, personal communication, 2008). Other fishing practices can include using spears, nets, fishing poles, poisons, and traps, activities implemented by both men and women (Merlin 2002, 27-31). Fish traps and fish weirs were extensively used throughout Micronesia for catching reef fish on the reef flats (inshore fishing). Several styles made of different materials such as wood, bamboo and rocks have been used, and it is the fish weirs made of basalt or coral rocks, called *aech* in Yap that is extensive today and indicative of their value in FSM. The first seven *aech* in Yap were built by spirits, guiding the Yapese in how to build and catch fish in a sustainable manner, and there are about 800 around the volcanic islands of Yap. They reflect a Yapese cultural identity, highlighting Yapese ingenuity and the harmonious, spiritual, and sustainable relationship they have with the marine environment, through building and utilising the Traditional Ecological Knowledge they built up (Figure 2) (Jeffery 2013).



Figure 2: Two *aech* (fish weirs) on the reef flat in Yap at low tide. Photograph by Bill Jeffery 2018.

JAPANESE COLONIAL PERIOD

The FSM had Spanish, German, Japanese and the U.S., colonial rulers, which all greatly impacted the lives of Indigenous people. During the Japanese period (1914-1945) a fishing industry, as compared to Indigenous subsistence fishing, was first developed.

The Japanese commercial fishing industry was administered by a Marine Industry Section of *Nan'yō-chō*, which established licences, regulations, and penalties for all commercial fishing, including Indigenous people although their licensing was simplified if using traditional techniques (USFEA) 1944, 20). They declared closed seasons for certain types of fishing, provided subsidies for the construction of fishing vessels, the manufacture or purchase of new and improved fishing implements, and the construction of processing plants, amongst other things. In addition, they provided several subsidies to assist Japanese fishers, including the provision of boats to groups of 30-40 men who would implement bonito fishing (USFEA 1944, 21). The commercial fishery was a Japanese industry developed for the benefit of the Japanese government and people (USFEA 1944, vii). Subsidies for Indigenous fishers amounted to just 0.02% from 1922-1937 (Purcell 1976, 207). A Marine Products Experiment Station was established in Palau in 1931 and was equipped to implement fisheries research, with surveys of tuna implemented across Micronesia with two vessels *Suiho Maru* (180 tons), and *Haku Maru* (10 tons) (Gillet 2007, 4; USFEA 1944, 20).

Chuuk and Palau were the centres for this fishing industry with over 640 fishing vessels between them, and 4,750 predominantly Japanese, and Micronesians engaged in the industry in 1937. The pole-and-line bonito fishing vessels employed in the industry had distinctive features, with 'angling racks extending around the entire outside of the bulwark, and in most cases they are detachable. Live-bait tanks are placed fore in some boats, aft in others' (USFEA 1944, 8). Okinawan fishermen migrating to Chuuk commenced the fishing industry, and together with Palau and Saipan, the export value of bonito climbed substantially (Hezel 1995, 188; Kawashima 2008, 52) (Figure 3). A total of 23 factories implemented the drying and manufacturing process for export to Japan: eight in Chuuk, and seven in Palau, all operated by *Nan'yō Kōhatsu Kaisha* in 1933 (USFEA 1944, 15). In addition, two canneries were operating in 1937, one in Chuuk run by *Nankō*, and one in Palau, but only 50 of the 6,305 tonnes were processed into cans.



Figure 3: ‘Memorial on Tonoas (formerly Dublon, and Natsushima) dedicated to the fishermen from Okinawa who died in Chuuk (Truk).’ Inscription reads ‘Tamashiro Shoei (玉城松榮) [and] Shoutokuhi (頌徳碑) [memorial]’. Photograph taken during U.S. General Robert Blake’s inspection on the island on October 4, 1945. Source: Okinawa Prefectural Archives. <http://www2.archives.pref.okinawa.jp/opa/SearchPicsDetail2.aspx?pid=63260&keyword=Truk>

Remains of land-based fishing-related activities, such as the docks, the drying factories and canneries, as well as the fishing vessels can be found throughout Micronesia. In Chuuk, the well-preserved remains of a pole-and-line fishing vessel, and several documented by Holly (1999, 2000, 2006) in the Marshall Islands are a legacy of this type of tuna fishing and a significant link to the present day profitable and sustainable tuna fishing industry (Figure 4).

During World War II, both traditional Indigenous fishing and the profitable Japanese fishing industry essentially based on tuna greatly declined. Many fishing boats were adapted to serve in the Japanese military, with some being destroyed during the war together with the land-based facilities. Immediately following the war, the USA attempted to revive the tuna fishing industry, but resources were so badly damaged, and local people had such a minor role in the industry that it was not possible. A United Nations mission report to the Pacific Islands in the 1950s, partly blamed in a neocolonial tone, the characteristics of local people for the poor post-war economic advancement, in addition to ‘extensive transport requirements and a dearth of economic resources’ (United Nations Trusteeship Council 1950, 3).

In the early 1950s, restrictions on Japanese vessels fishing in Micronesia were lifted and they resumed commercial fishing. In the 1960s both Japan and the U.S. established tuna bases throughout the Pacific Islands (Gillett 2007, vii). Since then, tuna fishing based on skipjack tuna, has now developed into a profitable and sustainable industry for the FSM, Palau, Kiribati, Marshall Islands, Nauru, Solomon Islands, Papua New Guinea, and Tuvalu. They have come together ‘to coordinate and harmonise the management of fisheries with regard to common stocks within the Fisheries Zones, for the benefit of their peoples...in the world’s largest sustainable tuna purse seine fishery’ as provided in the ‘Nauru Agreement’ (PNA (Parties of the Nauru Agreement) 2021).

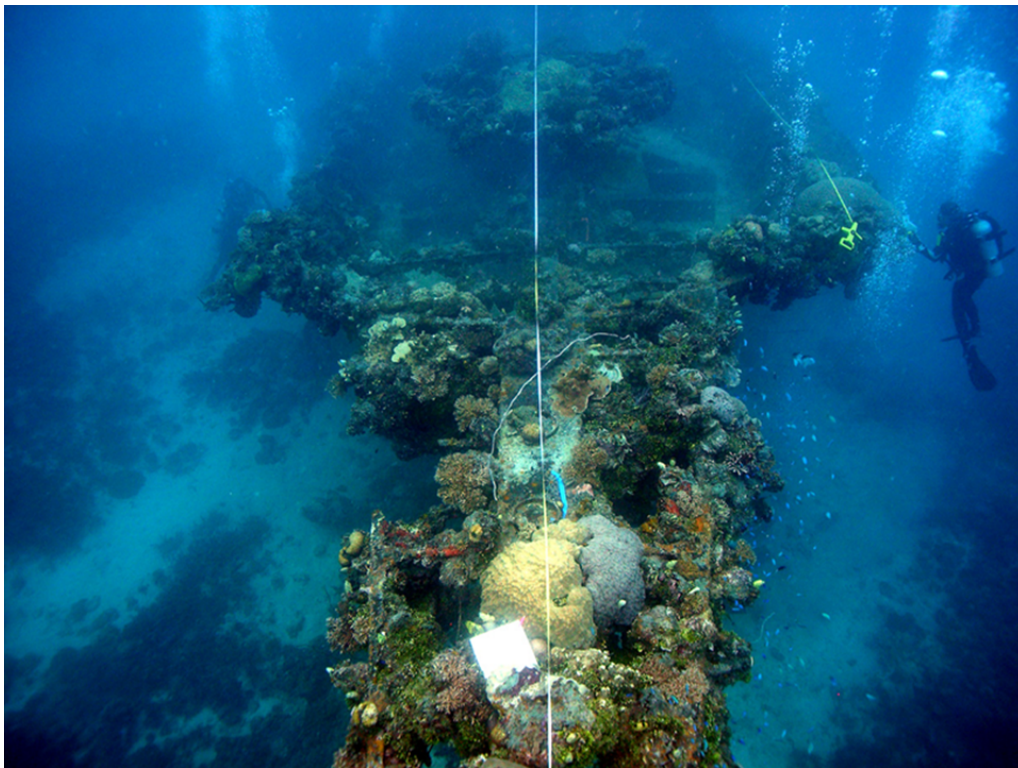


Figure 4: Photograph of the bowsprit of the Tonoas dock boat shipwreck, looking back along the vessel. Photograph by Bill Jeffery, 2006.

CONCLUSIONS

The most important value of the legacy of the Japanese in developing the tuna fishing industry is the well-regulated approach to research and management of the fishery. However, the Japanese commenced and pursued the industry for Japanese personnel and as a Japanese commercial endeavour with minimal support for Indigenous Micronesians. Fortunately, this has now changed with good local employment in the industry, and good revenue for Micronesians, although the Japanese still have the largest fleet of fishing vessels.

From the time the commercial fishing industry in Micronesia commenced in 1922, when 16 tonnes of tuna were caught across greater Micronesia, the industry has developed where in 2020 a total of 174,476 tonnes of tuna (skipjack, yellowfin, bigeye and albacore) were caught in the FSM Economic Exclusion Zone (EEZ) alone (Western and Central Pacific Fisheries Commission (WCPFC) 2020). The highest catch of tuna in the FSM EEZ was in 2017, with 272,580 tonnes. In 1937, there was a total of 644 vessels employed across greater Micronesia, and in 2020, it was 312 vessels (142 purse seiners; 149 long-liners; and 21 pole-and-line), of which 69 were FSM fishing vessels, and 243 foreign vessels (NORMA (National Oceanic Resource Management Authority) 2019). Modern day fishing vessels have got much larger, with the purse seiners ranging from a few hundred tonnes up to 1500+ tonnes; and the long-liners from 50-500+ tonnes. The World Wildlife Fund (2021) regard skipjack stocks as healthy, and ‘resilient, [but] could easily slip into a vulnerable state due to overfishing if improperly managed,’ a situation the fisheries managers are aware of through lowering the maximum catches and limiting the number of long-liners and purse seiners.

This paper has briefly revealed a holistic maritime cultural landscape and seascape related to fishing over many centuries in the FSM. Traditional Indigenous fishing and the pre-World War II tuna fishing industry, all of which incorporate tangible cultural heritage, and intangible cultural heritage (living heritage), is a sea heritage reflecting a cultural identity of indigenous people. It is an important focus for maritime heritage/archaeological studies in Micronesia, and throughout Oceania.

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Personal Communications

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