



Pacific Islands Fishery

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MONOGRAPHS

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Fisheries Development Projects in American Samoa, Guam and the Northern Mariana Islands, 2010–2015

By Eric Kingma



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Magnuson-Stevens Fishery Conservation and Management Act

Selected provisions related to fisheries development and the Western Pacific Region

Section 2 (a) FINDINGS

The Congress finds and declares the following:

Paragraph (7): A national program for the development of fisheries which are underutilized or not utilized by the United States fishing industry, including bottom fish off Alaska, is necessary to assure that our citizens benefit from the employment, food supply, and revenue which could be generated thereby.

Paragraph (10): Pacific Insular Areas contain unique historical, cultural, legal, political, and geographical circumstances which make fisheries resources important in sustaining their economic growth.

Section 2 (b) PURPOSES

It is therefore declared to be the purposes of the Congress in this Act—

Paragraph (3) to promote domestic commercial and recreational fishing under sound conservation and management principles, including the promotion of catch and release programs in recreational fishing;

Paragraph (6) to encourage the development by the United States fishing industry of fisheries which are currently underutilized or not utilized by United States fishermen, including bottom fish off Alaska, and to that end, to ensure that optimum yield determinations promote such development in a non-wasteful manner;

Section 2 (c) POLICY

It is further declared to be the policy of the Congress in this Act—

Paragraph (7) to ensure that the fishery resources adjacent to a Pacific Insular Area, including resident or migratory stocks within the exclusive economic zone adjacent to such areas, be explored, developed, conserved, and managed for the benefit of the people of such area and of the United States.





INTRODUCTION

This monograph describes fisheries development projects coordinated by the Western Pacific Regional Fishery Management Council (Council) from 2010 to 2015. Funds used to implement the projects described herein derive from a series of cooperative grants between NOAA and the Council through use of the Western Pacific Sustainable Fisheries Fund (WPSFF) and other federally appropriated sources.

The WPSFF is established pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), which is the national fisheries legislation of the United States.¹ The WPSFF is available, without appropriation or fiscal year limitation, to the Secretary of Commerce, who provides funds to the Council to implement projects contained in the Marine Conservation Plans (MCPs) of the Territory of American Samoa, Territory of Guam, the Commonwealth of the Northern Mariana Islands (CNMI) and the US Pacific Remote Island Areas (PRIAs).² Separately, the Governors of American Samoa, Guam and CNMI provide MCPs for their respective jurisdictions. The Council develops the MCP for the PRIAs. Each of the MCPs, which is valid for a three-year period, is subject to review and approval by the Council and Secretary of Commerce. See Appendix 1 for a list of fisheries development projects in respective MCPs of American Samoa, Guam and CNMI.

As described in the MSA, the Secretary of Commerce is authorized to deposit funds into the WPSFF received from Pacific Insular Area Fishing Agreements and from violations

by foreign vessels occurring within the US exclusive economic zone (EEZ) around the PRIAs. Pursuant to regulations implemented under the Council's Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region (Pelagic FEP), the Secretary of Commerce can also accept and deposit funds into the WPSFF that are associated with US Participating Territory Specified Fishing Agreements.

Specified Fishing Agreements, as identified in 50 CFR 665.819(c), are agreements between the Guam, American Samoa or CNMI (collectively the US Participating Territories) and the owner or a designated representative of a fishing vessel or vessels holding a valid permit authorized by the Pelagic FEP.³ A Specified Fishing Agreement provides access to an identified portion of a catch or fishing effort limit attributed to a particular US Participating Territory. In exchange for using a portion of a US Participating Territory's catch limit, the vessel owners who are party to the Specified Fishing Agreement deposit an agreed amount of funding into the WPSFF in support of fisheries development projects identified in the MCPs of the US Participating Territories.

Photo: Dock crane moving tuna at Guam transshipment facility.

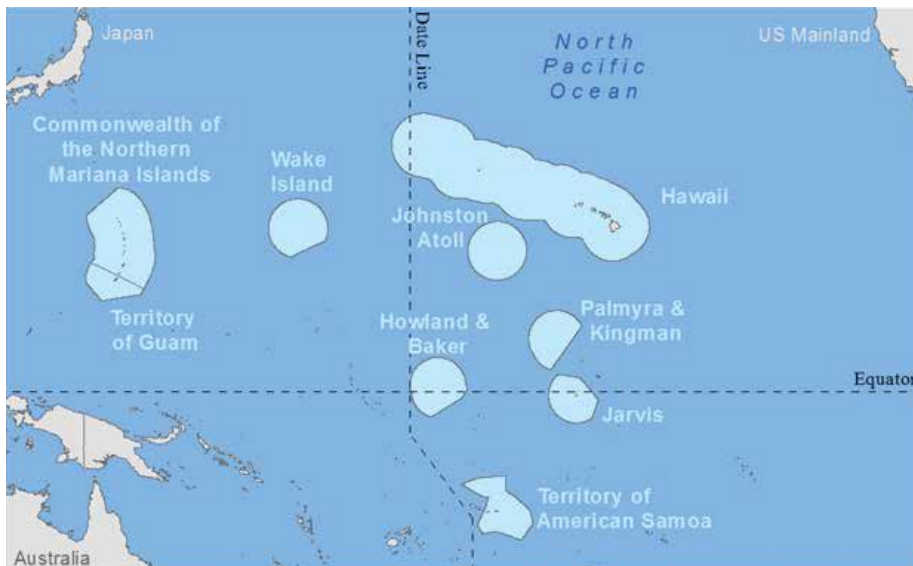
¹ 16 U.S.C 1824(7)

² The Pacific Remote Islands Areas include Midway Atoll, Johnston Atoll, Kingman Reef, Palmyra Atoll, Jarvis Island, Howland Island, Baker Island and Wake Island.

³ See http://www.wpcouncil.org/fishery-plans-policies-reports/pelagics_fe/

FISHERIES DEVELOPMENT IN THE WESTERN PACIFIC REGION

AMERICAN SAMOA, GUAM AND THE CNMI share similar fisheries development challenges, as well as unique differences according to their location, infrastructure and local economies. Shared challenges include high fuel and operating costs, high material costs, transportation costs for accessing large metropolitan seafood markets, poor access to local capital for startup ventures and lack of fisheries training programs.



Territory of American Samoa

In terms of fisheries infrastructure, American Samoa is the most developed among the three US territories. Since the early 1950s, some of the world's largest tuna canneries have been located in Pago Pago Harbor. Fish offloaded in Pago Pago Harbor derive from both foreign and US-flagged purse-seine and longline vessels. Local American Samoa fisheries have benefited from the presence of tuna canneries in Pago Pago Harbor but not to the extent that matches the local processing infrastructure. Since 1961, fisheries development initiatives in American Samoa have included

local boat-building projects, vessel loan programs and trainings on vessel operation, navigation, marine electronics and engine repair. Notable projects include the local boat-building Dory Project, development of the wooden hand-reel for bottomfish and trolling and the introduction of the aluminum, double-hulled alia vessel, which was capable of multispecies fishing including pelagic longline and bottomfish handline.

In 1982, a fisheries development project aimed at exporting high-priced deep-water snappers to Hawai'i caused a notable increase in bottomfish landings and revenues. Between 1982

and 1988, the bottomfish fishery comprised as much as 50 percent (by weight) of the total commercial landings. Recently, American Samoa small-scale fisheries have been on the lower end of the historical 30-year time series in terms of participation and landed value. In 1983, for example, 38 vessels landed approximately 125,000 pounds of deep-water bottomfish, compared to approximately 42,000 pounds landed in 2015 by around 15 vessels. There were 21 bottomfishing vessels operating in 2009, the year of a devastating tsunami.

In mid 1990s, there was a local boom in small-scale pelagic longline fishing by alia vessels targeting albacore tuna. By 2001, there were 43 alia vessels—predominately owned by indigenous American Samoans—actively fishing with longline gear. The boom, however, was followed by a bust. Since 2008, only one alia vessel has been fishing with longline gear in local waters. A number of reasons might explain the lack of continued alia longline operations including lower albacore catch rates, increased operating costs and an increasing regulatory environment.

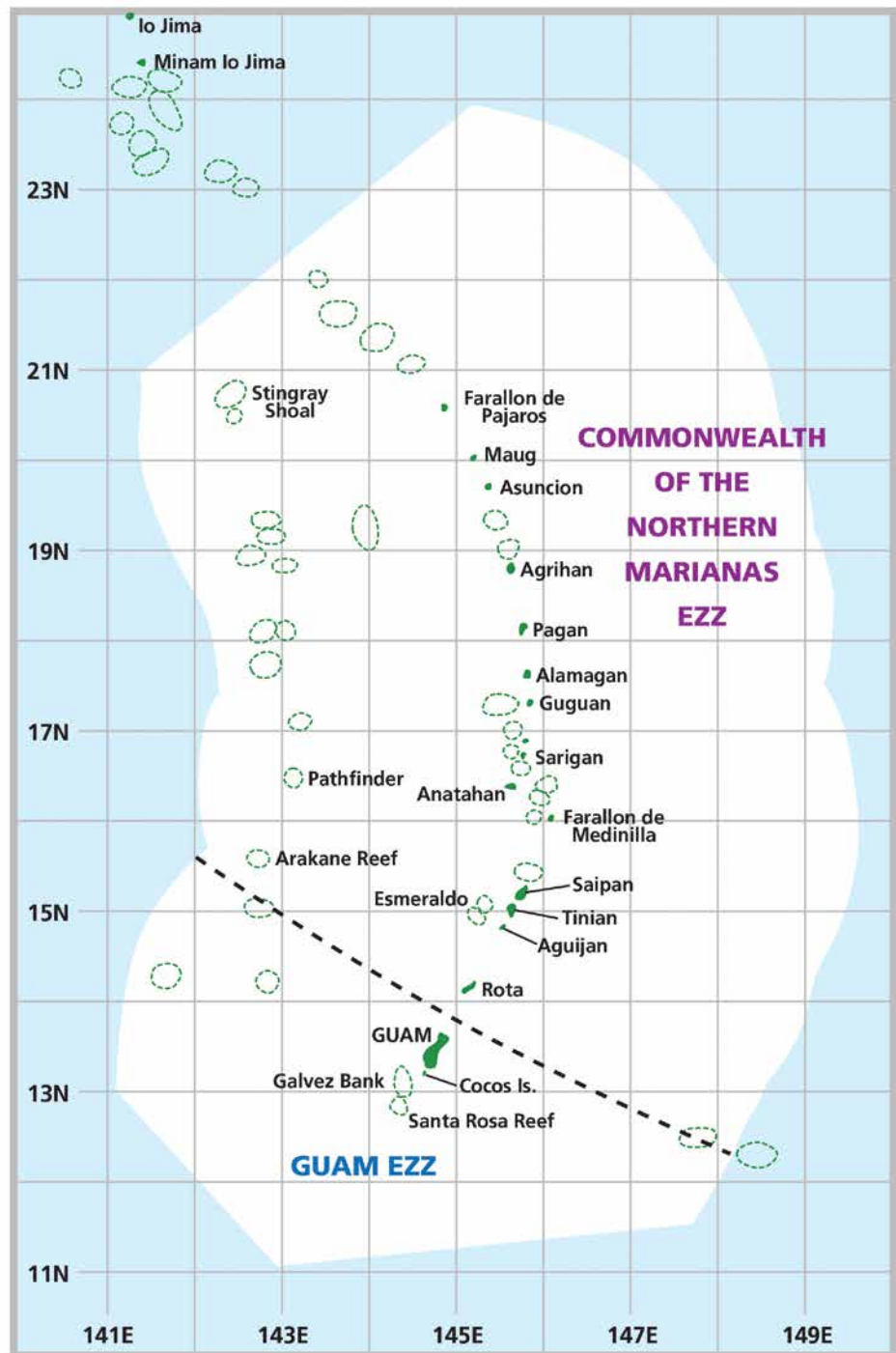
In the early 2000s, there was a rapid increase in large US-flagged longline fishing vessels fishing in the EEZ around American Samoa. The combination of alia vessels and large longline vessels led the Council to establish a Large Vessel Prohibited Area (LVPA) that restricted vessels over 50 feet in length from fishing within 50 nautical miles (nm) around Tutuila, Manu'a Islands, Swains Island and Rose Atoll. The Council also established an American Samoa longline limited entry permit program in 2006 to control vessel participation in the longline fishery. The large vessel

fishery expanded rapidly after 2000 and reached a peak of about 30 vessels in 2004, after which it declined to 19 vessels in 2014. The catch of the American Samoa longline fleet reached a maximum of about 6,000 metric tons (mt) in 2002. Catches have declined since 2007. The large vessel component of the American Samoa longline fishery has endured a prolonged period of poor economic conditions. In 2013, for example, longline vessels based in American Samoa recorded their lowest annual catch in the past decade. The catch per unit effort (CPUE) of albacore has declined by 40 percent on average within the fleet. Similar conditions have been experienced in longline fisheries of other Pacific Island countries in the South Pacific. The 2013 catch rate was a record low and 70 percent less than the highest catch rate, which was recorded in 1996.

American Samoa is in need of coordinated and comprehensive fisheries development. The continued presence of tuna processing in the Territory by StarKist Samoa and the recent arrival of Tri Marine-owned Samoa Tuna Processors highlight the strategic importance of Pago Pago as a fish processing and export hub to US markets. A major challenge to fisheries development in American Samoa continues to be lack of local fisheries training and access to financial capital to support diversified fishing ventures. Air transportation costs and poor airfreight linkages to major seafood markets also make the export of fresh, ice-chilled fish nearly impossible to sustain financially.

Territory of Guam

Guam has a robust tourism industry and large US military presence that support a multifaceted economy. Guam has substantial port facilities and local infrastructure that could support increased fisheries development. Several US purse-seine vessels used to base



their operations out of Guam in the 1980s, but that has since ceased. Guam's international airport is a regional transportation hub, and several dozen foreign longline vessels regularly land fresh tuna and billfish on Guam for air shipment to Asian cities. However, the number of such

vessels landing in Guam has been declining over the last decade. No US flagged purse-seine or longline vessels currently fish in the US EEZ around Guam.

Guam bottomfish fishing is a combination of recreational, subsistence and small-scale commercial

fishing. The fishery is composed of two distinct fisheries targeting species complexes separated by depth and species composition: shallow-water and deep-water bottomfish complexes. Commercially oriented vessels tend to be greater than 25 feet in length, and their effort is usually concentrated on the deep-water bottomfish complex. Most fishermen troll for pelagic fish to supplement their bottomfishing effort, and most of those who sell their catch also hold jobs outside the fishery.

Due to Guam's tourism and military economy and wide-spectrum of resident ethnicities, local demand for seafood is high. Guam's excellent harbor facilities and local infrastructure could support local fisheries development. Existing challenges include a relatively small EEZ around Guam and the lack of fisheries training programs and access to large capital needed for startup fishing ventures.

Commonwealth of the Northern Mariana Islands

CNMI does not currently have substantial infrastructure dedicated to commercial fishing. Prior to World War II, Japanese pole-and-line fishing vessels were based out of Saipan and targeted skipjack tuna. After World War II, the US government attempted to revive the skipjack fishery with local Carolinian fishermen, but the venture failed.

Several US purse-seine vessels fishing in the equatorial Pacific used to operate from the CNMI, but they ceased operations in the 1980s. Current fishing is mostly artisanal, meaning small-scale for subsistence or for small, local markets. Fishing vessels use mostly troll and bottomfishing techniques to target coral reef, shallow and deep-reef slope and pelagic species. The pelagic fishing fleet consists primarily of trolling vessels less than 24 feet in length that generally take one-day trips within 30 nm to primarily target skipjack tuna.

Schools of skipjack tuna have historically been common in nearby offshore waters, providing an opportunity for trollers to catch numerous fish with a minimum of travel time and fuel costs. Yellowfin tuna and mahimahi are also easily marketable species but are seasonal. Peak mahimahi catches are usually from February through April while the yellowfin season usually runs from April through September. The troll fishery very rarely catches bigeye tuna.

Longline fisheries in CNMI are permitted with a Western Pacific General Longline Permit under the Pelagic FEP and regulated with a suite of measures similar to the American Samoa and Hawai'i longline fisheries. For example, the Pelagic FEP includes longline prohibited areas in the Mariana Archipelago, extending from shoreline to 30 nm around the CNMI. An area in northern CNMI around the three northernmost islands (the Islands Unit of the Marianas Trench Marine National Monument) is closed to commercial fishing out to approximately 50 nm. Interest in longline fishing in CNMI has been variable with the issuance of eight, four and five Western Pacific General Longline permits from 2007 through 2009, respectively. In 2012, these longline vessels abandoned their CNMI operations base and returned to Hawai'i. High operating costs and poor market access were attributed to the vessels not being profitable while based in the CNMI.

The bottomfish fishery is characterized as deep-water (depths greater than 500 feet) or shallow-water (between 100 and 500 feet). The deep-water fishery is primarily commercial, targeting snappers and groupers. The shallow-water fishery, which targets the redgill emperor (*Lethrinus rubrioperculatus*) is also commercially oriented but does include subsistence fishermen. These fishermen harvest coral reef associated species as well. Hand lines, home-fabricated hand reels and small electric reels are the

commonly used gear for small-scale fishing operations, whereas electric reels and hydraulics are the commonly used gear for the larger operations in this fishery. Fishermen generally fish daylight hours, with vessels presumed to return before or soon after sunset, although larger vessels have made multi-day trips to the Northern Islands (Farallon de Medinilla to Farallon de Pajaros) in the past and prior to the establishment of the Marianas Trench National Marine Monument.

In the early 1980s, more than 100 vessels participated in the CNMI bottomfish fishery. By 2005, the participation level decreased to approximately 62 vessels. By 2009, CNMI creel survey data estimated that 40 vessels reported bottomfish landings. Federal regulations require all commercial bottomfishing vessels to have a federal bottomfish permit. The total (permitted and non-permitted) number of vessels estimated to be bottomfishing in 2015 was nine.

In addition to the fishing grounds adjacent to the emergent islands, a western chain of seamounts runs the length of the Mariana Archipelago. This seamount chain likely provides upwelling of nutrients that support a range of commercially important bottomfish and pelagic species.

CNMI's local tourism market coupled with its close proximity to Guam and large Asian markets make responsible fisheries development a key area for economic growth. Significant foreign investment is currently occurring in Saipan with the development of several new hotels and gambling centers marketed towards Asian clientele. In order to meet local demand, CNMI bottomfish and pelagic fisheries require development. CNMI fisheries development needs include longline vessel capacity, large vessel docking space, fish processing and cold storage facilities, and training in fish handling and Hazard Analysis Critical Control Point (HACCP) protocols.

COUNCIL-SUPPORTED FISHERIES DEVELOPMENT PROJECTS

The following is a description of fisheries development projects in the US Territories of American Samoa and Guam and the Commonwealth of Northern Mariana Islands that have been implemented by the Council through use of the WPSFF and NOAA cooperative grants.



American Samoa

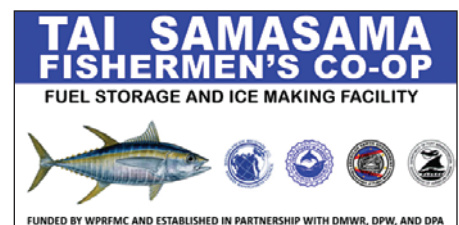
Faga'alu and Tafuna Boat Ramps

Working in close coordination with American Samoa's Department of Marine and Wildlife Resources (DMWR) and other local agencies, the Council completed the construction of two new boat ramps on Tutuila in 2011. The boat ramps are located in Faga'alu and Tafuna (Lions Park). The boat ramps support commercial and non-commercial fishing and general boating activities. By providing more access points, the ramps improve safety at sea and search and rescue operations.

Manu'a Fishermen's Facilities

In coordination with DMWR and other local agencies, the Council worked with locally based contractors on Ofu and Ta'u to help refurbish existing structures owned by the American Samoa government.

The two facilities were established to support fisheries development in the Manu'a Islands and were each equipped with industrial ice machines capable of producing 5,000 pounds of high quality flake ice per day.





Top row: Faleluaanu'u facility before and after. **Bottom row:** Tai Samasama facility before and after.

Refrigerated storage containers were also procured, delivered and installed on-site at the facilities. In addition to the ice machines, the Council procured and delivered four transportable fuel tanks to each facility. The fuel tanks enable fishermen in the remote Manu'a Islands to have

consistent access to fuel in support of fishing operations.

The Council worked with local fishermen to establish two fishermen's cooperatives to operate the Manu'a fishermen's facilities. Both the Tai Samasama (Ta'u) and Faleluaanu'u (Ofu/Olosega) Fishermen Cooperatives



Ice machines.



Transportable fuel tanks.

have been incorporated within American Samoa and have each received non-profit status. Funds from the sale of ice and fuel go to support the fishermen cooperatives and cover operation costs for the facilities.



Redesigned Fagatogo Fish Market before (left) and after (right).

Fagatogo Fish Market

In 2010, the Fagatogo Marketplace near Pago Pago Harbor opened. The facility included a fish market, but it was rudimentarily equipped with bench-style, open air displays, lacked proper drainage and wash-down areas, and did not have an ice machine. The Council, working in coordination with the American Samoa DMWR and the American Samoa Department of Commerce, funded the redesign of the Fagatogo Fish Market, which included the removal of the concrete benches, installing a drainage system, building a small office, installing proper wash-down facilities, modifying the freezer to include a chiller and adding ambient air conditioning, ice makers and refrigerated retail display cases.

Small Vessel Dock

In 2011, Tri Marine leased the former Samoa Packing/Chicken of the Sea cannery in Pago Pago Harbor, which had not been operating since 2009. Under a new company called Samoa Tuna Processors, Tri Marine refurbished the facility and extended a wharf to create a small vessel and longline dock. The Council contributed funds towards the completion of the small vessel dock on American Samoa government owned lands fronting Samoa Tuna Processors. In early 2015, the dock was completed. It will support the offloading of fresh fish by small vessels and longliners for processing and/or export.

The dock is important for the small vessel fisheries development in American Samoa as Samoa Tuna Processors has the capability and interest in purchasing fresh tuna and other pelagic species for export markets. The facility contains both a fresh/frozen processing area for sashimi and value added products and several lines for traditional canning operations.

Fresh Fish Handling Workshop and Training

The Council conducted several workshops on fresh fish handling in American Samoa. The first was conducted in May 2011 and included fresh fish handling techniques and best practices for seafood safety. Workshop participants included American Samoa longline fishermen, alia fishermen targeting pelagic fish and bottomfish, and other interested individuals.

The second workshop was conducted in May 2014 and was attended by more than 70 local longline and troll fishermen. Fresh fish handling and processing techniques to promote seafood quality and safety were demonstrated.

During the same week in May 2014, the Council conducted a seafood safety workshop for local seafood retailers on Tutuila. The workshop, which was



Photo: Tri Marine

Above: Dock at Samoa Tuna Processors, Pago Pago Harbor, American Samoa.



Left: Counsel-led workshops on fresh fish handling for American Samoa longline fishermen, alia fishermen and others to improve seafood safety.

Below: Samoan longline vessel.



attended by more than 20 participants, focused on fish handling and processing including HACCP protocols.

Longline Fishery Diversification

In conjunction with the fresh fish training workshop that the Council conducted in May 2014, the Council worked with five American Samoa

longline vessel owners to conduct fresh fish demonstrations. The longline vessels targeted yellowfin and bigeye tuna, mahimahi and other pelagic species for local and US markets. The demonstrations coincided with the low albacore season, which typically runs from February through June.

Evaluation and Design of New Multipurpose Fishing Vessel

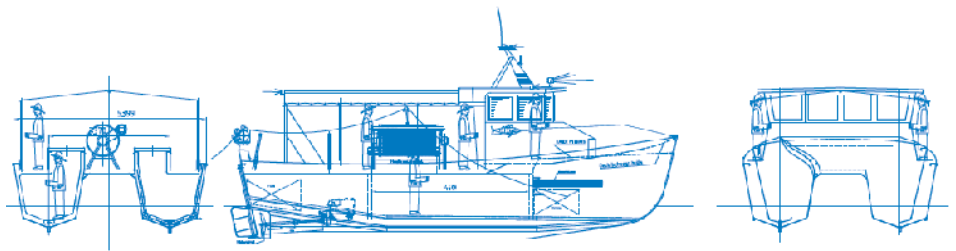
The Council completed a technical report on a new multipurpose, small-scale fishing vessel capable of conducting pelagic longline, troll, handline and bottomfish operations in American Samoa. The report includes general design specifications and estimated construction and fishing equipment costs. A profit/loss analysis was also included in the report, identifying the level of fisheries production needed to cover fixed and variable costs associated with the vessel and fishing operations. The design of a new multipurpose fishing vessel is important to fisheries development in American Samoa. If constructed, the vessel would serve to replace the aging fleet of alia vessels that are limited in their range, fish hold capacity, on-board fishing gear, and safety and navigation equipment.

Fisheries Training Program

The Council developed a report detailing the required elements of a fishermen's training program for American Samoa. Target participation in the program would be local small-scale fishermen. The program would support fisheries development through the following goals:

- i. Increase fish catches through enhanced fishing skills and new fishing methods.
- ii. Introduce simple business management tools so fishermen are able to successfully monitor, control and operate profitable small-scale fishing units.
- iii. Provide the main prerequisites to qualify for a fishermen lending scheme.

The curriculum of the program would involve both classroom instruction and field training. Classroom instruction would include lessons



Multi-purpose, small-scale fishing vessel design.

on small business management such as book keeping, importance of submitting fish catch data, how to complete and submit logbooks, fishermen safety at sea, fish handling for seafood quality and safety, fishing techniques, vessel configurations, and engine and vessel repair. The field practicum component of the course would involve fishing gear construction, knots, vessel construction and fishery techniques associated with trolling, bottomfishing and longlining. The detailed fishermen's training program was provided to the American Samoa government for implementation, which has yet to occur.

Malaloa Dock Extension

There is no dedicated longline dock in Pago Pago to accommodate the approximately 20 US longline vessels

based in American Samoa. Currently, US longline vessels utilize the transient vessel wharf at Malaloa or temporarily tie up at the Main Dock. Berthing at the Main Dock is problematic because longline vessels have to be move on regular basis to accommodate larger vessels such as cruise ships and container vessels.

In 2015, the Council provided funding to the American Samoa Port Administration, which administers the Pago Pago Harbor, to conduct a feasibility study including design plans to extend the Malaloa Wharf area for the purpose of accommodating the locally based US longline fleet. The feasibility study and engineering design will be for a 500-foot wharf extension, which both are anticipated to be completed in late 2016 or early 2017.



Longline vessels tied up at Malaloa Wharf, Pago Pago.

Guam

Hagatna Fishing Platform

Paseo de Susana Park in the Hagatna Boat Basin area is a popular recreational area owned and operated by the Government of Guam. Guam fishermen brave the rocky Hagatna Marina Channel shoreline to fish, especially during the seasonal run of the atulai (mackerel or bigeye scad). Anglers often slip or lose their balance while trying to navigate the large boulders that block their way down to the water level in order to cast their lines.

The Council, working with the Guam Department of Agriculture and local fishing organizations such as the Guam Organization of Saltwater Anglers and the Guam Fishermen's Cooperative Association (GFCA), contributed funding towards the construction of a fishing platform of approximately 500 feet along the shoreline. The fishing platform will provide a safe fishing location for all of Guam's anglers, including its senior citizens and disabled citizens, and will help ensure that individuals with disabilities have access to the fishing area.

Agat Small Boat Marina Dock Repair and Rehabilitation

Agat Small Boat Marina was built by the Army Corps of Engineers and completed in 1989. It is located in the village of Agat in southern Guam. By design, it was built to accommodate 163 vessels with shore-side facilities for fuel, loading and car and trailer parking. Agat Marina is administered by the Guam Port Authority. Agat Marina is one of only two public small-boat marinas that support the approximately 5,400 boats used by the island's recreational and commercial boating communities.

The Council provided funds to the Guam Port Authority to support major repairs to the Agat docking facilities as none had occurred since its construction in 1989. The repairs

included rehabilitation of the finger slips, work that involved replacing the wooden structures with newer materials that require much less maintenance such as no-rot recycled plastic composite material and stainless steel accessories.

The Council worked closely with the Guam Port Authority on this

project and provided funding through a sub-award. The Port Authority contributed additional funds to complete the project. After receiving the local and federal permits and authorizations, the Port Authority executed a competitive bid process and selected a qualified local contractor to complete the project.

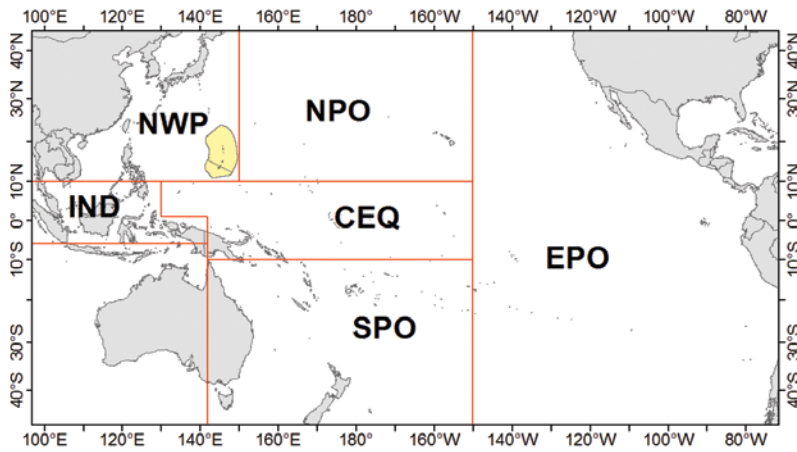


Top: Fishing platform nearing completion. Persons (from left) are GFCA President Manny Duenas, Council Executive Director Kitty M. Simonds, Guam Department of Agriculture Director Matthew Sablan and a Mega United contractor. **Above:** Fishermen enjoy the completed portion of the fishing platform.

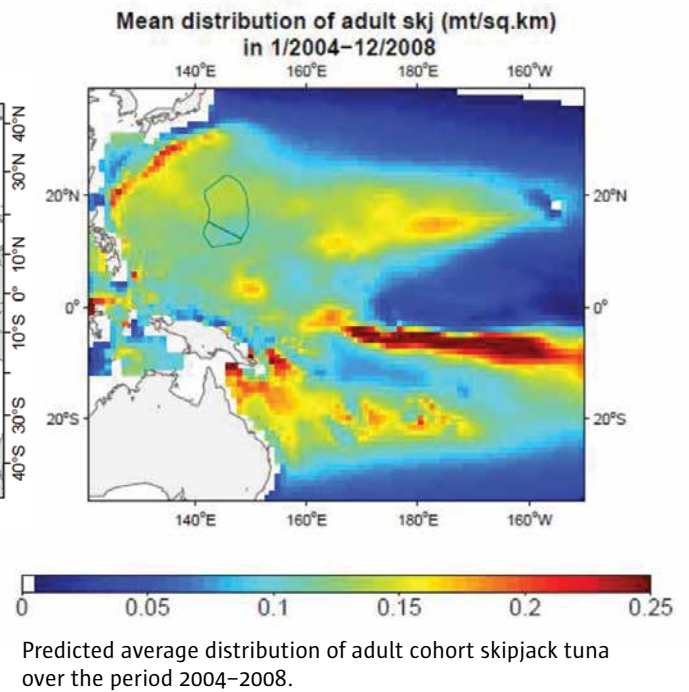


Agat small boat marina dock before and after improvement.

Commonwealth of Northern Mariana Islands



Map showing the definition of large oceanic regions to estimate connectivity between the US EEZ around the Mariana Archipelago (yellow area) and adjacent regions.



Skipjack Resource Assessment in the US Exclusive Economic Zone

The Council worked with the Secretariat of the Pacific Community (SPC) to model the skipjack tuna biomass in the US EEZ around the CNMI. The SPC used the SEPODYM model to estimate the skipjack abundance. SEPODYM is a spatial environmental population dynamic model that uses environmental and spatial components to constrain the movement and the recruitment of tuna in the model. Model inputs include sea surface

temperature, dissolved oxygen concentration, oceanic currents and primary production, which can be predicted from coupled physical-biogeochemical models, as well as satellite-derived data distributions.

Results from the assessment indicate that the total adult biomass of skipjack estimated for the Mariana Archipelago for the period 2003 to 2012 varied between 128,000 and 155,000 mt, which is approximately 1.3 percent of the total estimated skipjack spawning biomass in the Western and Central Pacific Ocean.

Marianas Seafood Marketing Plan

In 2014, the Council completed a Marianas Seafood Marketing Plan that evaluated potential fisheries development opportunities in CNMI and Guam. The plan characterized existing seafood markets, product forms, market chains and development constraints. For CNMI, for example, the plan assessed various fisheries development scenarios including a fish auction, bottomfish export, fishermen cooperatives, an active longline fleet and a centralized, public fish market.

Sunrise over Uracas (Farallon de Pajaros), CNMI.

NOAA PHOTO BY JAKE ASHER

The report serves as a guide for future fisheries development planning in the Marianas.

Saipan Longline Dock Feasibility Study

The Council has long held the view that fisheries development opportunities exist within the CNMI. The Marianas Archipelago extends several hundred miles in a north to south configuration resulting in a relatively large EEZ and potential fishing grounds. In addition, a chain of seamounts to the west of the emergent islands likely aggregates stocks of highly migratory species. The capitals of major Asian countries are within three hours flight time from Saipan, and a substantial tourism economy on Saipan is associated with a high seafood demand.

In 2010, four longline vessels from Hawai'i shifted operations to base out of Saipan. Catch rates for these vessels were not great. Perhaps more challenging were local operational barriers to support these vessels. One of the major hurdles was finding adequate dock space at reasonable rates.

To address the potential development of a longline fishery in CNMI, the Council completed a longline dock site evaluation and engineering plan. More than 10 potential sites were evaluated. Based on a range of factors, including opportunities for public input, the former Puerto Rico dump site was identified as the



Top: Aerial photo of Puerto Rico Dump showing the proposed dock layout and existing I-beam steel piles. **Above:** Artist's rendering of dock with support facilities.

preferred choice for a new longline vessel dock. The study analyzed various issues associated with a new dock including engineering, dredging, utilities, shore-side facilities and costs. The engineering design was completed to accommodate at least 10 longline vessels up to 85 feet in length.

Garapan Fishing Base Improvements

Garapan Fishing Base is one of the most important boating access points on the island of Saipan. A boat ramp at the Garapan Fishing Base is used by fishing vessels that target both demersal and pelagic species. Currently, the parking area at Garapan Fishing Base is unimproved gravel and lacks designated parking spaces. The Council, working with the CNMI Department of Lands and Natural Resources, will be improving the parking area to add pavement, parking stalls and lighting. The CNMI government has also identified the following four future projects that will serve to improve the Garapan Fishing Base: 1) shoreline revetment, 2) floating dock, 3) widening of existing boat ramp, 4) maintenance dredging and 5) aids to navigation.



Garapan Fishing Base boat ramp and parking area.



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