



Pacific Islands Fishery MONOGRAPHS

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Public Involvement and Outreach for Sustainable Fisheries in the Western Pacific Region

by Sylvia Spalding and Amy Vandehey



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Front cover photo: (top) Traditional canoe in Pago Pago, American Samoa, April 2017; (lower left) High school students attending the Council's 2019 marine science summer course on fishery and resource management in Guam with reef fish caught using traditional Chamorro *talaya* (traditional cast net); (bottom left) A school of goatfish. *Tamiano Gurr photo*; (bottom right) Representatives from the Western Pacific Region at the Eisenhower Executive Office Building, Washington, D.C., following an invitational meeting on April 17, 2019, with the White House to discuss marine national monument impacts on fisheries.

Back cover photo: (top) Traditional inter-island sailing canoes in the Northern Mariana Islands. *Jack Ogumoro photo*. (bottom) Isdore Nu'u and d'Angelo Yamson reel in a wahoo during the American Samoa Fisheries and Marine Resource Management Course in the summer of 2019. *Russ Cox photo*.

Inside front cover photo: A school of jacks and other fish. *Sebastian Pena Lambarri photo*.

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List of Abbreviations

ACL	annual catch limit	MHI	main Hawaiian Islands
AP	Advisory Panel	MHLC	Multilateral High-Level Conference
APEC	Asia-Pacific Economic Cooperation	MNM	marine national monument
CBFMP	community-based fishery management plan	MOU	memorandum of understanding
CCC	Council Coordination Committee	MPA	marine protected area
CNMI	Commonwealth of the Northern Mariana Islands	MSA	Magnuson-Stevens Fishery Conservation and Management Act
COFA	Compact of Free Association	NGO	non-governmental organization
CRCP	Coral Reef Conservation Program	nm	nautical mile
EEZ	exclusive economic zone	NMEA	National Marine Educators Association
FEP	fishery ecosystem plan	NMFS	National Marine Fisheries Service
FMP	fishery management plan	NWHI	Northwestern Hawaiian Islands
FSM	Federated States of Micronesia	PIFSC	Pacific Islands Fisheries Science Center
GFCA	Guam Fishermen’s Cooperative Association	PIRO	Pacific Islands Regional Office
HMS	highly migratory species	TREDS	Turtle Research and Monitoring Database System
HPU	Hawai’i Pacific University	UH Hilo	University of Hawai’i at Hilo
IFF	International Fishers Forum	UH Mānoa	University of Hawai’i at Mānoa
IPMEN	International Pacific Marine Educators Network	UOG	University of Guam
IUCN	International Union for the Conservation of Nature	WPRFMC	Western Pacific Regional Fishery Management Council

1. Magnuson-Stevens Act and Western Pacific Region

In 1976, President Gerald Ford signed the Magnuson-Stevens Fishery Conservation and Management Act (MSA) into law. Through this legislation, the United States claimed sovereignty over fisheries in the U.S. exclusive economic zone (EEZ), i.e., the waters out to 200 nautical miles (nm) from the nation's shores. The MSA provides the United States with an opportunity to develop its fisheries and reduce the nation's dependence on imported seafood. Management for long-term sustainability and optimum yield for the U.S. fishing industry are the cornerstones of the MSA and comprise the first of its national standards.

The MSA acknowledges the diversity of the nation's fisheries and conveys authority over them seaward of state waters (generally, 0 to 3 nm from shore) to eight regional councils. The Western Pacific Regional Fishery Management Council (WPRFMC or Council) has authority over the federally managed fisheries of Hawai'i and other U.S. Pacific islands (fig. 1).

The Western Pacific Region is unique in its size, expanse, governance and culture. It comprises half of the nation's EEZ and is situated in both hemispheres and on both sides of the equator. It includes one state (Hawai'i), three territories (American Samoa, Guam and the Commonwealth of the Northern Mariana Islands (CNMI)) and eight U.S. possessions, including Midway Atoll and the U.S. Pacific Remote Island Areas (Wake, Howland, Baker and Jarvis islands; Johnston and Palmyra Atolls; and Kingma Reef). It has five official languages: English, Hawaiian, Samoan, Chamorro and Refaluwasch. Its indigenous communities have a strong history of fishing traditions, management methods, distribution systems and relationship to marine life that spans millennia (Ka'ai'ai 2016) (figs. 2, 3, 4). As noted in the MSA: "Pacific Insular Areas contain unique historical, cultural, legal, political, and geographical circumstances which make fisheries resources important in sustaining their economic growth."

In geographic and population size and fishery harvest, Hawai'i dominates the region. Its 1.4 million residents in 2024 inhabit the islands of O'ahu 67%, the Big Island of Hawai'i 13%, Maui 10%, Kaua'i 5% and Moloka'i, Lana'i and Ni'ihau each with less than 1% (WPR n.d.). The population is 37% Asian, 25% White, 25% mixed ethnicities, 10% Native Hawaiians and Pacific Islanders and 2% African Americans (2020 census) (U.S. Census Bureau n.d.).

The 2024 estimated population of American Samoa is 43,895 with most living on the island of Tutuila and others on the island of Aunu'u and the Manu'a Islands (CIA n.d.). American Samoans have close-knit families and a keen sense of cultural pride. Approximately 85% are Samoan and speak the Samoan language; most are bilingual. Although colonized multiple times, the territory maintains *Fa'a Samoa*, the Samoan way of life rooted in communal land ownership and the *matai* (titled nobility) system.

Guam and the CNMI comprise the Mariana archipelago. Guam, the southernmost island, separated from the rest of the archipelago politically after the Spanish-American War in 1898, becoming a U.S. territory. The CNMI came under German and then Japanese rule until the end of World War II, when it became a trust territory of the United Nations and, in 1986, a

Fig. 1. The Western Pacific Region (light blue areas) includes the Commonwealth of the Northern Mariana Islands, Territory of Guam, Territory of American Samoa, State of Hawai'i (and Midway Atoll) and the U.S. Pacific Remote Island Areas (Wake, Howland, Baker and Jarvis islands; Johnston and Palmyra Atolls; and Kingma Reef).

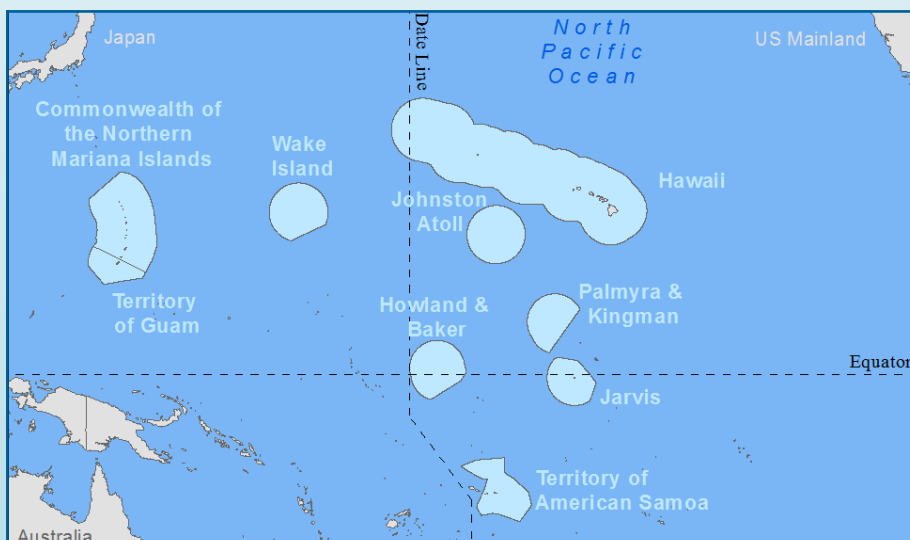


Fig. 2. Non-instrument, inter-island sailing canoes in the Northern Mariana Islands. Jack Ogumoro photo.

U.S. territory. CNMI's main populated islands are Saipan, Rota and Tinian. The indigenous population of Guam and the CNMI are Chamorro, with CNMI also having a vibrant Carolinian population. Commonly called Refaluwasch, the Carolinians migrated from tiny Micronesian islands to the Northern Mariana Islands in the 19th century. Guam's population is 36% Asian, 33% Chamorro, 13% other Pacific Islander, 7% White and 1% African American (2020 estimates). CNMI's population is 50% Asian, 24% Chamorro, 13% mixed, 6% other Pacific Islander and 5% Carolinian (2010 estimates) (CIA n.d.).

Among the other Pacific Islanders inhabiting the Western Pacific Region are migrants from Palau, the Marshall Islands and the Federated States of Micronesia (FSM) due to the Compact of Free Association (COFA) that the United States has with the former Trust Territories of the Pacific Islands. According to 2018 estimates, Hawai'i hosts 23,236 COFA migrants; Guam 18,432; CNMI 2,431; and American Samoa 24 (DOI n.d.).

The MSA recognizes the right of communities to have a say in the management and use of marine resources in nearby federal waters. The Act presents a bottom-up, public participatory process to manage the fisheries. To be effective, this system needs participants who are informed about the MSA and the region's fisheries, which are dynamic responding to nature, markets and regulatory policies.

Congress has amended and reauthorized the MSA, adding new laws to which the Council must adhere and about which participants in the MSA process should

know. Among these changes are the following:

- Inclusion of tuna and other highly migratory species (HMS) as federally managed species (1990 Fishery Conservation Amendments).
- Three new national standards to the MSA's original seven and recommendations to implement ecosystem principles in fisheries management (1996 MSA reauthorization, also known as the Sustainable Fisheries Act).
- Requirement to manage all federal fisheries (with a few exceptions) through annual catch limits (ACLs) and implementation of the Western and Central Pacific Fisheries Convention (2006 MSA reauthorization).

Through the MSA, the U.S. Regional Fishery Management Councils have authority to manage fisheries in the EEZ to achieve the goals of sustainability and optimal use. However, actions by Congress and the president of the United States can circumvent this process. Among the top-down laws that have significantly impacted the region's fisheries and communities are the following:

- 2000 and 2001 Northwestern Hawaiian Islands (NWHI) Coral Reef Ecosystem Reserve (Executive Orders 13178 and 13196), 2006 NWHI Marine National Monument (MNM) Establishment (Proclamation 8031), 2007 NWHI Monument Renaming to Papahānaumokuākea MNM (Proclamation 8112) and 2016 Papahānaumokuākea MNM Expansion (Proclamation 9478), which together ban U.S. fishermen from operating in two-thirds of the U.S. EEZ waters of the Hawaiian archipelago.

- 2000 Marine Protected Areas (MPAs) (Executive Order 13158), which aims to strengthen and expand the nation's system of MPAs in consultation with regional fishery management councils and other entities.
- 2009 Pacific Remote Islands MNM Establishment (Proclamation 8336) and 2014 Expansion (Proclamation 9173), which prohibit U.S. commercial fishermen from operating in the entire U.S. EEZ around Jarvis and Wake Islands and Johnston Atoll and from waters 0 to 50 nm from shore in the U.S. EEZ of Palmyra Atoll and Howland and Baker Islands.
- 2009 Rose Atoll MNM (Proclamation 8337), which prohibits commercial fishing from 0 to 50 nm from shore in the U.S. EEZ of Rose Atoll.
- 2009 Marianas Trench MNM (Presidential Proclamation 8335), which prohibits commercial fishing in U.S. EEZ waters of the islands of Farallon de Pajaros (Uracas), Maug and Asuncion.
- 2010 National Policy for the Stewardship of the Ocean, Our Coasts and the Great Lakes (Executive Order 13547), which directs all agencies whose actions affect the ocean to participate in the process for coastal and marine spatial planning.
- 2012 Billfish Conservation Act and 2018 Amendment, which restricts the sale of marlin, sailfish and spearfish.

The MSA does not address educating staff, advisors, fishing communities, policymakers and the public. It mandates training of only new Council members. Nonetheless, the WPRFMC established principle #3 as one of its seven Guiding Principles: "conduct education and outreach to foster good stewardship principles and broad and direct participation in the Council's decision-making process." This monograph, *Public Involvement and Outreach for Sustainable Fisheries in the Western Pacific Region*, reviews the Council's efforts to fulfill this guiding principle and the MSA mandate to provide meaningful public participation in the management of federal fisheries in the region.



Fig. 3. (right) Communal fishing for *atule* (bigeye scad) in American Samoa. Evelyn Lili'o photo.



Fig. 4. Traditional division of harvest in Guam. Ray Topasna photo.

2. Fostering Informed Participants in the Western Pacific Region

The MSA directs the Council to conduct public hearings so interested people have an opportunity to provide input into developing and amending fishery management plans (FMPs). Notice of Council and advisory body meetings, public scoping sessions and public hearings must be widely publicized. The Council disseminates notices through the *Federal Register*, newspapers, magazines, radio and television. The Council posts meeting announcements on its website and social media platforms and electronically distributes them to those in its database. It distributes flyers through fishing clubs and tackle shops. In remote areas, it posts meeting

announcements as signage on fences along main thoroughfares. If the occasion calls for it, the Council provides notices in one or more of the region's four official indigenous languages as well as in English.

At events, the Council shares information about the federal fishery management process in handouts and on posters and displays. The *Navigating the Western Pacific Council Process* booklet (fig. 5) summarizes the region's fisheries, the MSA, the Council's role and structure, how Council meetings are conducted, ways for individuals to get and stay involved, and contact information for local and federal fishery management agencies. Posters cover the Council's authority under the MSA, the MSA's 10 National Standards and the Council's seven Guiding Principles (fig. 6). Other exhibits reflect topics on the agenda, such as indigenous fishing rights and traditional marine management, coral reef fisheries (fig. 7), ecosystem-approach to fisheries management, MPAs, protected species conservation and stock assessments.



Fig. 6. The Council exhibits its Guiding Principles at its meetings and events.

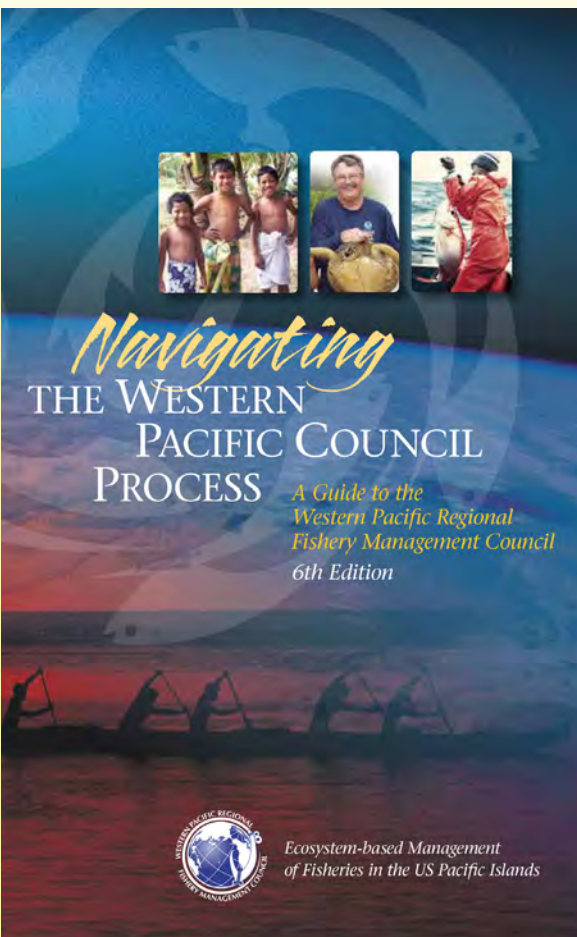


Fig. 5. *Navigating the Western Pacific Council Process* covers the steps fishermen and public members can take to be a part of the federal fisheries decision-making process.

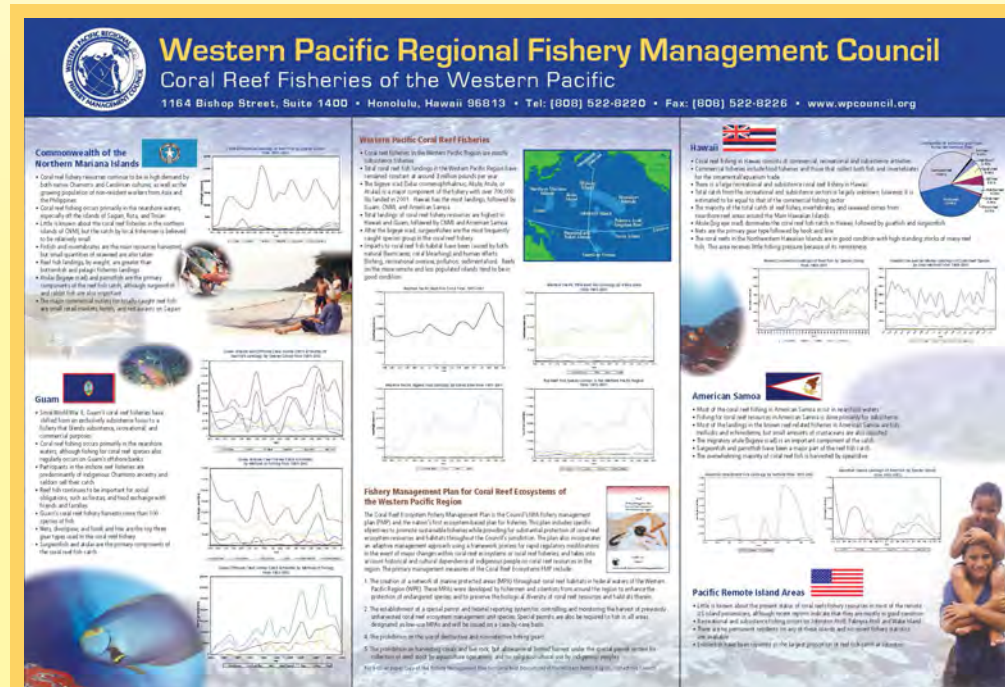


Fig. 7. *Coral Reef Fisheries of the Western Pacific* is one of the displays exhibited at meetings and public events to inform viewers about specific fishery management issues.

To accommodate fishermen and the public who cannot attend meetings during typical work hours, the Council holds evening **Fishers Forums** with exhibits and outreach material available (fig. 8). Since 1989, the Council has held 73 Forums (Appendix 1). In the beginning, the Forums covered an array of current fishery topics or had open sessions asking fishermen to speak on matters of interest to them. More recently, they typically cover a single theme or two. Fishers Forums vary in their agenda structure. They can feature presentations followed by breakout sessions or daylong festivities with exhibits and fishing vessels on display. They can be virtual, as happened in 2020 due to the COVID-19 pandemic. Most Forums include representatives from local and federal agencies, fishing associations and companies, non-governmental organizations (NGOs) and others as invited speakers or exhibitors (fig. 9).

An audience of about 100 individuals attends each Forum (fig. 10), offering an opportunity to query fishery experts and converse with policymakers, fishermen and other stakeholders. Recent events have included the use of an interactive quiz-style game to increase engagement and informally assess participants' learning.

To benefit those unable to attend the Council meetings and Fishers Forums, the Council shares updates on its activities through press releases, media interviews and press conferences. The Council provides reporters and editors with information packets, photos and video clips. It meets with editorial boards to offer insights into complex fishery issues and to encourage coverage of the fishery's perspective on them.

The Council also provides updates on radio and television programs, such as **KKMP (1440 AM)** on Saipan airing in

English, Chamorro and Refaluwasch; the bilingual Samoan and English public television **KVZK-TV** and **KKHJ FM** in American Samoa; and the Hawai'i-based, weekly radio talk show *Go Fish!* (fig. 11). Mike Buck, the *Go Fish!* host, often features the Council in his ***Hawaii Fishing and Yachting*** magazine column.

Dramatic changes in media and information technology in the past few decades steered the Council down additional avenues to reach targeted audiences. Circulation for U.S. dailies decreased from 60 million in 1995 to 21 million in 2022 (Pew 2023). The World Wide Web, which began in 1991, increased from 2,700 sites in 1994 to 1.2 billion sites in 2022 (Tsybulick 2022). The launch of Facebook and Vimeo occurred in 2004, YouTube in 2005, Twitter in 2006 and Instagram in 2012. In 2013, the Council switched to an email marketing tool to distribute news releases and other communiques. Today, the Council has accounts on the major social media platforms and maintains four websites, including www.wpcouncil.org.



Fig. 8. Council staff Thomas Remington (left) shares outreach material with fishermen and others attending the Fishers Forum in Honolulu on using life history in stock assessments held March 19, 2019, in Honolulu.



Fig. 9. (right) The *Fishers Forum on Magnuson and Marine Monuments: Social Environmental Justice in the Era of Large MPAs* featured a panel of indigenous experts on Oct. 12, 2016, in Honolulu.



Fig. 10. About 100 participants attended the *Fishers Forum on Tuna! Tuna! Tuna!* on Oct. 30, 2022, in Honolulu.

Fig. 11. (below) Mike Buck, host of *Go Fish!*, interviews Dean Sensui (*Hawaii Goes Fishing*) and Stan Wright (former host of *Let's Go Fishing*) to discuss the Council's Fishers Forum on media coverage of Hawai'i fisheries, held March 14, 2018, in Honolulu.



3. Ramping Up Outreach Efforts

In 1995, the Council developed a **Public Involvement and Outreach Plan** and hired its first staff member dedicated to outreach and education. The plan's goals are to deliver the message of sustainable fisheries and develop print and audio-visual materials to use during outreach events, to distribute to community leaders and policymakers and to post at harbors, marinas and other areas. The plan aims to elevate awareness of factors affecting the fisheries, to establish an understanding of the relationships among the Council and other entities that share responsibility in managing the resources and to promote fishery diversification. The target audiences are fishing communities, regulatory/policy-setting agencies and the public to promote community-based involvement in the management of the resources. The plan includes school-aged children as future fishermen, policymakers and resource managers.

3.1 Outreach Material

One of the Council's earliest outreach vehicles was the **Pacific Islands Fishery**

News. Inaugurated in 1984 (fig. 12), the newsletter now has a quarterly distribution (Appendix 2). It typically runs 16 to 20 pages and highlights key issues and events impacting the region's fisheries and fishing communities. The newsletter was initially available in print. The Council mailed approximately 5,000 copies and distributed another 2,000 copies at events. Today, the Council primarily distributes the newsletter electronically and posts it on the Council's website as a PDF and in a flipbook format. A limited number of printed copies are available at events and direct mailed to select venues (such as libraries, government offices and organizations) and to individuals by request. Newer columns include "Meet Your Council Members," "Congressional Corner" and "Science and Management 101." Colored icons were added to denote primary target audiences for each story, including regional interest, conservation, fishermen, educators and federal and local governments.

The Council contributes opinion pieces and informational articles to local, regional, national and international

media. To provide audiences with in-depth information on specific fishery management concerns and activities, the Council partnered with **Pacific Magazine**, a Pacific-wide publication with a circulation of 17,000, to produce features in each issue from 2002 to 2008 (Appendix 3). Council staff handed out reprints of these eye-catching articles at public events (fig. 13). Council articles have appeared in **Hawaii Fishing News** and **Lawai'a** fishing magazines. The Council runs informational ads in **Hawaii Skin Diver**, **Marianas Fishing** and **Marianas Pond**. Articles about the Council appear nationally in **National Fisherman** and **Pacific Fishing** and regionally in **Islands Business** magazine.

One of the goals of the Council's outreach plan is to promote fishery diversification. Featuring island recipes in its newsletter for different fish species is one way the Council promotes this. In 2014, the Council compiled these recipes into the booklet **Fish Forever Favorites** (fig. 14).



Fig. 12. Front page of the Council's inaugural issue of the *Pacific Islands Fishery News* in 1984.



Fig. 13. *Pacific Magazine* ran the Council's article on the American Samoa's longline fishery in the June 2002 issue. Copies of Council articles from the magazine were handed out at public events.



Fig. 14. *Fish Forever Favorites* is a compilation of island seafood that promotes fishery diversification.

One of the Council's jobs is to monitor the federally managed fisheries in the region. To do this, the Council's Plan Teams annually produce lengthy Stock Assessment and Fishery Evaluation reports for scientists and fishery managers. To make the report findings accessible to laypeople, the Council publishes snapshots of each fishery annually in a *Western Pacific Region Status of the Fisheries* pamphlet (fig. 15). The snapshots show performance trends and ecosystem factors, lists the year's administrative and regulatory actions and much more.



Fig. 15. The *Western Pacific Region Status of the Fisheries* provides snapshots of annual trends of the region's fisheries. Above is the 2019 issue.

Other Council publications provide long-range perspectives on the region's fisheries. The *Pacific Islands Fishery Monographs* series gives historical overviews by fishery subject (Appendix 4). The first issue in 2010 described the region's precious coral fisheries (fig. 16). The NWHI lobster fishery, the region's billfish fishery, the Pelagic Fisheries Research Program, fishery ecosystem management and fishery data collection systems are among the subjects featured in other monographs. The Council electronically distributes each issue, running 20 to 40 pages, and posts it on the Council's website. The Council direct mails around 500 printed copies.

The Council has published multi-year overviews of its accomplishments as part of its major anniversaries. The 1996

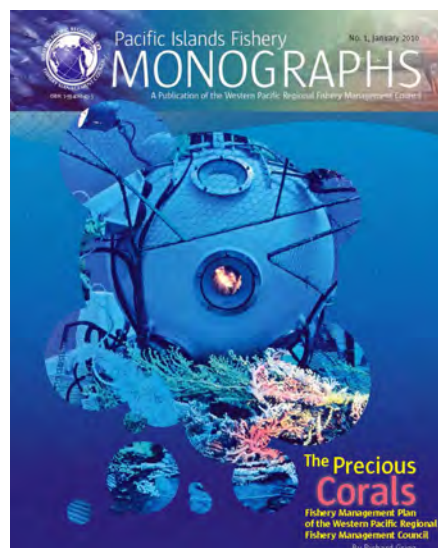
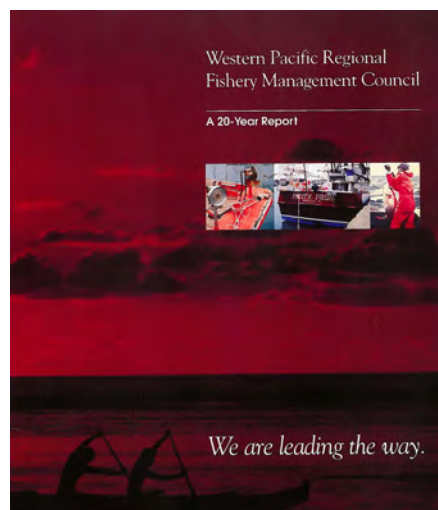


Fig. 16. The Council's *Pacific Islands Fishery Monographs* provide historical overviews of a variety of fishery subjects. Pictured is the cover of the inaugural issue on the region's precious coral fisheries published in 2010.

anniversary products included *We Are Leading the Way: A 20-year report of the Western Pacific Regional Fishery Management Council* (fig. 17) and *Stewards of the Pacific*, a 12-minute companion video. Both feature remarks by U.S. Sen. Daniel K. Inouye (D-Hawai'i) and highlight the Council's pioneering work (e.g., first to ban driftnets, develop a limited-entry program, utilize satellite-based vessel monitoring) and its role in promoting MSA recognition of indigenous fishing rights and inclusion of tuna as a federally managed species.

For its silver anniversary, the Council published *Our Voyage Continues... Progress Report 1996–2001*. Among



the achievements highlighted are the convening of the first major conference in Honolulu on the black-footed albatross and a symposium on Pacific Island game fish tournaments, forming a Recreational Fisheries Data Task Force and a Recreational and Charter Fisheries Advisory Sub-panel, assisting the United States in hosting four sessions of the **Multilateral High-Level Conference** (MHLC) to develop the first international fishery management treaty for the central and western Pacific, co-hosting the *International Marine Debris Conference* and developing the nation's first ecosystem-based FMP.

The Council celebrated its 200th meeting in Honolulu in September 2024 by developing a 10-foot display highlighting major WPRFMC milestones in its almost 50-year history.

In 2003, the National Marine Fisheries Service (NMFS) transferred responsibility for managing marine resources in federal waters surrounding the U.S. Pacific Islands from its California-based Southwest Regional Office to the newly defined Pacific Islands Region based in Honolulu. NMFS Pacific Islands Regional Office (PIRO), NMFS Pacific Islands Fisheries Science Center (PIFSC) and the WPRFMC solicited stakeholder input to form the **Strategic Plan for the Conservation and Management of Marine Resources in the Pacific Islands Region**. The Council and NMFS in 2004 published a 20-page summary of the plan for distribution to fishermen and the public.

The Council partnered with the popular Hawai'i television program *Let's Go Fishing* to create the *Fishing in Old Hawai'i* series of short videos. The 2007 and 2008 episodes cover traditional conservation knowledge and fishing practices concerning *aku* (skipjack tuna), *kawakawa* (mackerel tuna), *noio* (Hawaiian tern), *ama'ama* (mullet), *'opae* (shrimp), *'opelu* (mackerel scad), *puhi* (eel), *uhu* (parrotfish), *lawai'a lamalama* (night fishing), *imu* (fish

Fig. 17. The Council published *We Are Leading the Way*, a report on its pioneering work and remarks from U.S. Sen. Daniel K. Inouye, in 1996 to celebrate its 20th anniversary.

aggregating rocks), *one* (sand), *konohiki* (natural resource stewards), *ahupua'a* (land division), *kapu* (prohibitions), lunar calendars and fishing omens. The 2008 and 2009 episodes cover the traditional 'Aha Moku system of natural resource management. The 2011–2014 video spots focus on 'Aha Moku, ACLs, bottomfish management, noncommercial fishing, yellowfin tuna, longline management, stock assessments, Council accomplishments and the *Fishermen Code of Conduct*.

The Council also produced short videos with *Hawaii Goes Fishing* in 2014 on spearfishing and fish habitat. They point to the selective nature of spearfishing, the secretness of fishing spots and the impacts of pollution and invasive species. Also in 2014, the Council produced *Ahi, The Yellowfin Tuna: Managing Our Fisheries*, a longer video that explored the biology and management of this important species for recreational, commercial and subsistence fishermen in the islands (WPRFMC 2014).

With funding support from the NOAA Coral Reef Conservation Program (CRCP), the Council ran a **Success Depends on You!** campaign in 2009 and 2010 to engage fishing communities in the federal fishery management process. The Council mailed a four-page brochure (*Success Depends on Managers, Scientists and You!*) to fishermen, divers and other ocean users, explaining the importance of participating in the

decision-making process (fig. 18). This information was displayed at meetings and events and in an ad featured in a local diving magazine. The Council also produced the short video *Fishery Management and Us*, which explains the roles of federal and local fishery agencies and laws and emphasizes the significance of fishermen's involvement in management decisions. Roy Morioka, former Council chair (2004–05), visited fishing and boating clubs to show the video and encourage fishermen to become active in the Council process. **'Olelo Community Television** aired the video on its stations.

Another innovative way the Council has tried to involve fishermen in federal fisheries management is through its **Advisory Panels (APs)**. Besides providing advice to the Council, AP members in the Western Pacific Region collaborate with the Council to produce community outreach material. The AP brochures for each island area explain their role, introduces its members and lists key fishery concerns (fig. 19). The American Samoa AP has been particularly active. It developed brochures about the territory's commercial and noncommercial fisheries, which the Council helped finalize for print in 2015 (fig. 20).

Dozens of experts who have collaborated with the Council agreed to speak to groups on request. The Council compiled their contact information and expertise to create the *Hawai'i Speakers Bureau Program* brochure in 2010 and updated it



Fig. 19. The American Samoa AP brochure introduces the panel members, explains its role and lists key fishery concerns. Similar brochures are available for the other areas of the Western Pacific Region.

in 2015 and 2017. Rotary clubs, schools and the Hanauma Bay lecture series are among the venues that requested speakers. The program was on pause during the COVID-19 pandemic and is being reinitiated and expanded to the other island areas in 2024. It is also available through the Council website.

In 2016, the Council produced the *From the Boat to the Table: 40 Years of Fishery Management* short video, featuring

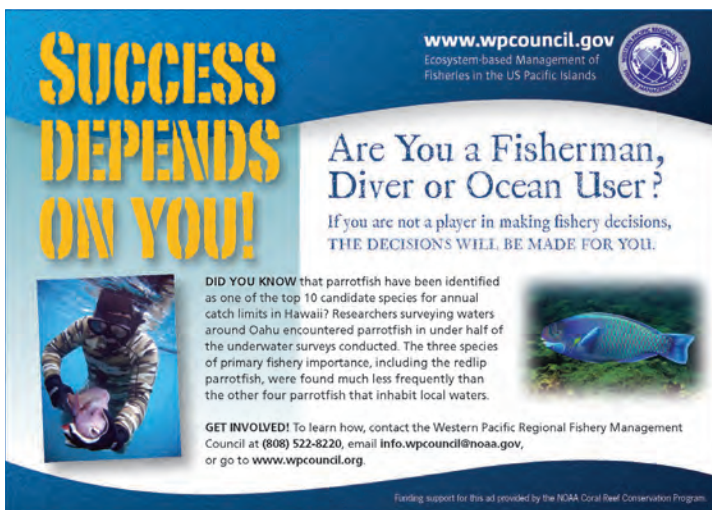


Fig. 18. The *Success Depends on You!* informational ad promoted public participation in federal fishery management during the Council's 2009–2010 outreach campaign.

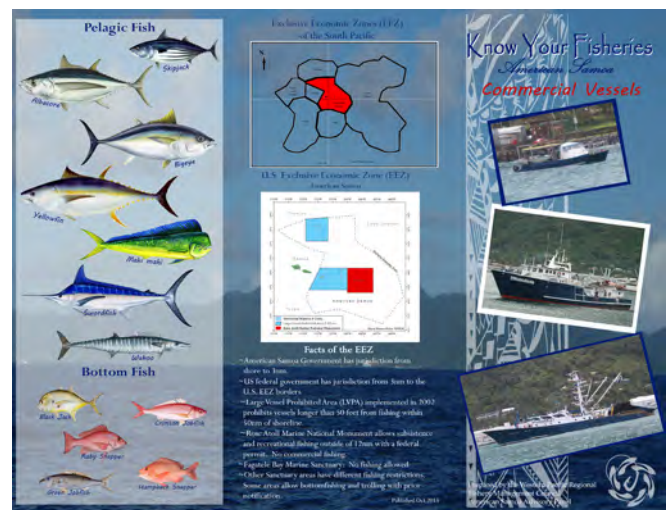


Fig. 20. The Council helped the American Samoa AP to finalize and print the *Know Your Fisheries* brochure about the territory's commercial fishing industry.

U.S. Rep. K. Mark Takai (D-Hawai‘i) and distributed it through YouTube (WPRFMC 2016a) and various fishery websites.

The Council in 2016 also supported the **Hawai‘i Bottomfish Heritage Project**, funded by a Preserve America Grant and administered by the Pacific Islands Fisheries Group. The project documents traditional fishing knowledge and identifies changes in the fishery through the interviews of 46 fishermen. Fourteen of the project’s videos are available on the Council’s YouTube channel.

In 2021, the Council produced *Open Ocean Fishing in the Mariana Archipelago*, a 26-minute film featuring archaeological evidence for open ocean fishing dating back 3,000 years and then moving through fishing during Spanish colonization, World War II and the 21st century (WPRFMC 2021). Guam AP member Judy Amesbury spearheaded the project, which showcases fishermen from Guam and Saipan. The film was aired on

PBS Guam in Spring 2023, nominated for “Best Special Focus Documentary” and won awards of recognition for two categories: Documentary Short and Women Filmmakers at the IMPACT DOCS Awards film festival in 2022.

In 2022, the Council published *U.S. Pacific Islanders and the Sea: A History of the Western Pacific Regional Fishery Management Council (1976–2020)* (Markrich and Spalding 2020) (fig. 21). The book covers the Council’s challenges and successes in developing sustainable American fisheries in the region while banning unlicensed foreign fishing in U.S. EEZ waters. It examines the struggles of the U.S. fishing industry to operate and the indigenous communities to maintain their cultural relationship with the ocean within an ever-increasing regulatory environment. The Council shared a limited number of copies with Council members, policymakers and others. Print and digital versions are available for purchase online.

3.2 Outreach Events

To engage fishermen and other stakeholders, the Council participates in community events and fishing derbies. Council staff set up informational tables to display and distribute outreach material and offer interactive activities.

The Council and the NGO Malama Na I‘a co-organized and co-sponsored the *Fisheries Forum 2000: Reclaiming Our Ocean Resources* on Nov. 13, 1999, at the University of Hawai‘i’s William S. Richardson School of Law in Honolulu. Fishermen, fishery scientists and managers, Native Hawaiians and environmentalists attended the event. The main topics were *akule* (bigeye scad), *moi* (Pacific threadfin), Native Hawaiian fishery issues and community-based fishery management. The *Honolulu Star-Bulletin* featured the event on the Hawai‘i section front page under the title “Fisheries forum ‘a big step’ toward

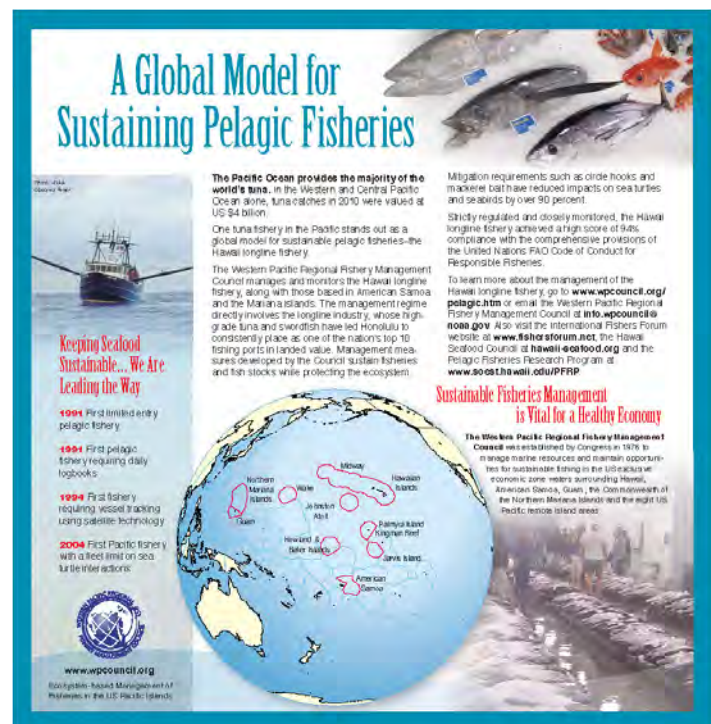
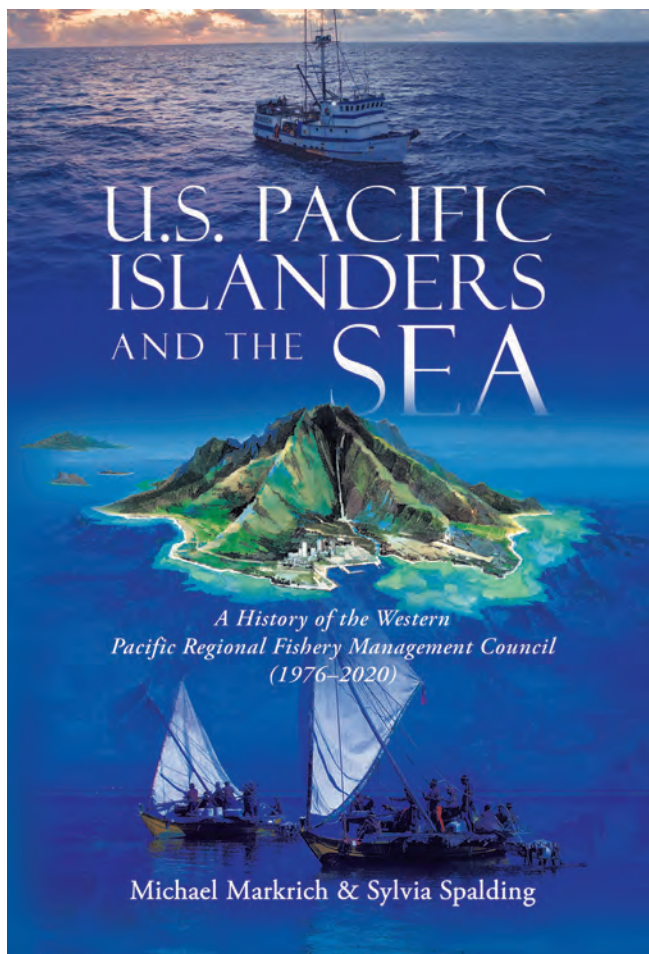


Fig. 21. (left) The Council published *U.S. Pacific Islanders and the Sea: A History of the Western Pacific Regional Fishery Management Council (1976–2020)* in 2022.

Fig. 22. (above) *A Global Model for Sustaining Pelagic Fisheries* was a printed ad on the Council’s pelagic fishery management successes targeting international audiences during the 19th APEC Economic Leaders’ Meeting held Nov. 12–13, 2011, in Honolulu.



Fig. 23. (left) Contenders weigh their catch during the *Pago Pago Open Fishing Tournament* held Oct. 20, 2017, in conjunction with the Council meeting in American Samoa.

Fig. 24. (above) Carl Dela Cruz, the Council's Guam Island Coordinator (left) and AP member Matthew Orot share fishery management outreach material and promotional items at the Fishing Expo on Oct. 14, 2017, at the Guam Museum.

cooperation.” A video of the program aired on ‘Olelo community television 45 times.

The Council has exhibited at the *Hawai‘i Fishing and Seafood Festival* and the *Hawaii Ocean Expo* in Honolulu. It has provided informational material and speakers for the **Hawaiian International Billfish Tournament’s Science Night** in Kailua-Kona on the Big Island. For the **19th Asia-Pacific Economic Cooperation (APEC) Economic Leaders’ Meeting** held Nov. 12–13, 2011, in Honolulu, the Council reached international audiences through an ad titled **Global Model for Sustaining Pelagic Fisheries** (fig. 22) and through a virtual, interactive exhibit on the Council’s management successes. One of the topics under APEC discussion was the proposed Trans-Pacific Partnership Agreement, which could impact fisheries in the region. The Council’s interactive exhibit booths for the **International Union for the Conservation of Nature (IUCN) World Conservation Congress**, held Sept. 6–10, 2016, in Honolulu, addressed management measures to

mitigate fishery interactions with protected species among other topics.

To help bring public awareness of Hawai‘i’s fisheries to local audiences, the Council spearheaded Hawai‘i’s recognition of the United Nations second annual **World Fisheries Day**. Gov. Benjamin Cayetano issued a proclamation acknowledging the date of Nov. 21, 1999. As part of the celebration, the Council organized a fish drive for the Hawai‘i Foodbank to help feed the needy during Thanksgiving. The dive club Ali‘i Holo Kai contributed 200 pounds, which was more than matched by donations from Oceanic Institute, Pacific Ocean Producers, Honolulu Fishing Agency and anonymous fishermen. (WPRFMC 2000a)

In American Samoa, the Council hosts fishing tournaments with the Department of Marine and Wildlife Resources. **The Pago Pago Open Fishing Tournament** on Oct. 20, 2017, included 16 vessels, which donated more than 700 pounds of fish to the Diocese of Samoa’s Hope House (fig. 23).

In Guam, the Council has a history of supporting the **Guam Marianas International Fishing Derby** (now known as the **Greg D. Perez International Sportfish Tournament**) organized by the Guam Fishermen’s Cooperative Association (GFCA). The Council has also supported the **Guam Shut up & Fish** derbies and the Division of Aquatic and Wildlife Resources **Kids Fishing Derby** and has been a major sponsor of the annual **Gupot Y Peskadot (Fisherman’s Festival)** organized by the GFCA. The event features educational and interactive displays about fishing and the coastal environment, entertainment, fresh seafood and *chaban* (underground oven) cooked taro, bananas and pig. The Council worked with the University of Guam (UOG) Sea Grant, the Guam Museum and *Hita I Hanom (We Are Water)* to host a **Fishing Expo** on Oct. 14, 2017, at the Guam Museum. The Council offered fishery-related outreach material and promotional items (fig. 24), and AP members conducted knot tying and spearfishing demonstrations.

In the CNMI, the Council supports and participates in the Saipan Fishermen's Association's wahoo and *mahimahi* (dolphinfish) derbies and **Saipan International Fishing Tournament**. The Council supported the annual **Mariana Islands Fishing and Seafood Festival** held on Saipan from 2016 to 2019 when the COVID-19 pandemic suspended the event. The festival celebrated the richness of the sea and cultural traditions of indigenous fishermen; featured cooking competitions and demonstrations, local crafts, entertainment and community outreach tables; supported ecological fish harvesting; and encouraged family fishing by holding a derby that required each team to have a member under 16 years old (fig. 25).

On occasion, the Council's outreach and education addresses urgent fishery issues and supports fishery development projects. In Hawai'i, NMFS notified the Council in 2005 that bottomfish overfishing was occurring and that reducing fishing mortality in the main Hawaiian Islands (MHI) could resolve the problem. The Council, Hawai'i Division of Aquatic Resources and NMFS held public meetings to solicit input on management options and jointly created the **www.hawaiibottomfish.info** website to provide

public access to information related to the scientific research, daily monitoring and ongoing management of the fishery. The agencies equipped fishermen with tools to release MHI bottomfish caught during the closed season and taught them to identify bottomfish species and use GPS units to determine the coordinates required to report catch effort. The group provided the U.S. Coast Guard with **species identification cards** to aid personnel during at sea-inspections. The Council conducted additional outreach to chefs, restaurants and markets about the regulations for the closed MHI bottomfish fishery versus the then-still open NWHI bottomfish fishery. **Tent cards** produced and distributed by the Council clarified to restaurant patrons that they could still legally enjoy bottomfish from the NWHI (fig. 26).

In America Samoa, the Council provided a **seafood handling training** for local longline and *'alia* (traditional double-hulled canoe) fishing crews in 2014. John Kaneko, head of the Hawaii Seafood Council, and Nelson Aberilla from the United Fishing Agency conducted the training in Pago Pago. The Council also supported a week-long **sanitation control procedures course** presented by Kaneko for seafood vendors and

restaurant owners. The course combined classroom lessons and on-site visits to local businesses. Participants completing the course received critical control points certification.

To assist with fishery development education in the CNMI, the Council collaborated with the governor's office to offer vessel maintenance and capacity-building training to fishermen. The **CNMI Bottomfish Fishery Development Program**, financed by the Western Pacific Sustainable Fisheries Fund, held the multi-day workshops on Saipan, Rota and Tinian. At the first workshop on Saipan from May 31 to June 3, 2019, former Council member John Gourley discussed reef fish life history, while Council AP members Ed Ebisui and Clay



Fig. 25. Youth participated in the fishing derby held during the 2019 Mariana Islands Fishing and Seafood Festival, an event supported by the Council and where it shared outreach material with the CNMI fishing community.

Fig. 27. (right) Participants of the CNMI Bottomfish Fishery Development Program workshop, held in 2022 on Saipan, learn to prepare bottomfish gear from instructor Lino Tenorio (second from left). *Lino Tenorio photo.*



Fig. 26. (above) Through the *It's OK* tent cards distributed to restaurants, the Council aimed to reassure patrons that they could still enjoy legally caught NWHI bottomfish despite the 2007 seasonal bottomfish closure in the MHI.





Fig. 28. Council Executive Director Kitty M. Simonds (2nd from left), Secretary of Commerce Donald Evans (center) and NOAA Administrator Conrad C. Lautenbacher (right of center) serve fish dishes from the Western Pacific Region at the 2003 NOAA Fish Fry.

Tam covered specialized gear, commercial fishing and fishery data collection. The Council later engaged AP member Lino Tenorio, with 30 years of experience as a CNMI commercial bottomfish fisherman, to conduct the workshops and lead field training on his boat (fig. 27).

The Council's education and outreach efforts extend beyond the region to Washington, D.C., where decisions made have dramatic impacts on U.S. Pacific Island fisheries. The Council regularly participates in the annual *NOAA Fish Fry*, historically held at the U.S. Department of Commerce's courtyard, to promote understanding of sustainable marine fisheries and aquaculture. It includes a wide variety of creatively prepared fresh seafood from across the country (fig. 28). Scientists, policymakers, scholars, businesses and the public attend **Capitol Hill Ocean Week** in D.C. to address pressing science, conservation and management issues. The week includes plenary sessions and a gala. In 2012, the Council, with support from Matson Inc. and Tradition about Seafaring Islands, exhibited a Chamorro *proa* (traditional sailing canoe) at the gala to raise awareness about the indigenous cultures of the U.S. Pacific Islands (fig. 29). In D.C., the Council also participates in educational events of the **National Fisheries Institute** and advertises in its members' directory. When asked by **Congress**, the Council provides oral comments on a variety of fishery issues (Ensuring Access to Pacific Fisheries Act 2016, State of U.S. Fisheries 2019, MSA 2000).



Fig. 29. The Council, with support from Matson Inc. and Tradition about Seafaring Islands, exhibited a Chamorro *proa* at the 2012 Capitol Hill Ocean Week gala in Washington, D.C.

The Council helps organize and participate in periodic *Managing Our Nation's Fisheries* conferences in D.C., with the seven other U.S. Regional Fishery Management Councils and NMFS to provide insight about American fishery issues to federal administrators and legislators. The shared council website (www.fisherycouncils.org), maintained by the **Council Communications Group** of the Council Coordination Committee (CCC), includes the proceedings of the 2003, 2005 and 2013 conferences. The CCC consists of chairs, vice chairs and executive directors from each of the councils. The Council Communications Group is a permanent committee of the CCC and consists of outreach and public affairs specialists from each region. The group interacts informally through email and conference calls and holds periodic in-person meetings to share best practices, discuss common issues and develop public affairs strategies on issues of importance to the CCC.

The Council also monitors the NMFS *Fish Watch* sustainable seafood website to ensure that it includes and accurately represents fish from the Western Pacific Region.

In the international arena, the Council co-sponsored the *International Marine Debris Conference on Derelict Fishing*

Gear and the Ocean Environment in Honolulu with the Hawaiian Islands Humpback Whale National Marine Sanctuary and other government agencies and NGOs in August 2000. Participants from 20 countries and 15 U.S. states highlighted the need for international coordination. Building on this momentum, the Council co-hosted the *Derelict Fishing Gear and Related Marine Debris Seminar* with APEC in Honolulu in January 2004. Council Executive Director Kitty M. Simonds provided the opening remarks (APEC 2004). Representatives from nine countries and seven intergovernmental and NGOs discussed regional case studies on science and policy; fishing gear and practices; ports, recovery and disposal; and international and domestic regulatory structures. Partnering with the Secretariat of the Pacific Community, the Council published two versions of the poster *Think! Don't Throw!*, which shares information on actions to take to prevent marine debris and its impacts. On the local level, the Council in 2002 spearheaded the Hawai'i **Net to Energy** program at Pier 38 in Honolulu, which collects derelict nets and spent monofilament line to fuel the City and County of Honolulu's H-Power facility.

4. Keeping Pace with Magnuson-Stevens Act Changes

4.1 Tuna Management, Bycatch and Quotas

The 1990 MSA amendment added tuna and other HMS as federally managed species. In Hawai‘i, tuna and swordfish longlining are the most valuable fisheries. The similar technique of flaglining had been part of Hawai‘i’s history since the early 1900s and coexisted with the local small-boat fisheries. However, the introduction of longlining led to gear conflicts and tensions caused partially by the dramatic increase of the fleet from 40 to 160 vessels between 1987 and 1991. The Council needed to quickly engage in outreach about the fisheries and establish longline regulations. The Council produced three outreach brochures (*Important Pelagic Fishes of the Pacific*, *Pelagic Fishing Methods in the Pacific* and *Hawai‘i Seafood Market for Pelagic Fish*) and held Fishers Forums where fishermen and seafood industry representatives could air their concerns. The Council amended the Pelagic FMP to include longline exclusion areas and limit the number and size of longline vessels, among other measures.

Because tuna and billfish are highly migratory, stakeholder nations must cooperate to manage them. Years of negotiations, starting with the first MHLC session in the Solomon Islands in December 1994, culminated in adoption of the **Western and Central Pacific Fisheries Convention** and creation of the international **Western and Central Pacific Fisheries Commission**. The Council helped the United States organize and host the final four MHLC sessions in Honolulu from February 1999 to September 2000 (fig. 30) and oversaw the media for them. The 2006 **Western and Central Pacific Fisheries Commission Implementation Act** appoints a representative from the Council as one of the five U.S. Commissioners on the international organization, which develops tuna quotas for the Western and Central Pacific.

Since 2000, the Council has advocated international agreements to protect sea turtles, a bycatch of HMS pelagic fisheries that migrate across national boundaries during their life stages. The Council sponsored the **Western Pacific Sea Turtle Cooperative Research and Management Workshop**, held in Honolulu in 2002, that brought together sea turtle biologists, conservation specialists and fishery scientists from 18 countries (Kinan 2003). Workshops followed on **West Pacific Leatherback and Southwest Pacific Hawksbill Sea Turtles** and **North Pacific Loggerhead Sea Turtles** (Kinan 2005, 2006). Based on the 2002 workshop recommendations, the Council coordinated development of the **Turtle Research and Monitoring Database System** (TREDS). The system standardizes data collection protocols and stores biological sampling, nesting and foraging data, and tag, clutch and hatching information. The Council launched TREDS on Feb. 17, 2009, at the **29th Symposium on Sea Turtle Biology and Conservation**, Brisbane, Australia.

Among other sea turtle conservation and outreach activities by the Council are the following:

- Sponsored the **Bellagio Conference on the Conversation and Sustainable Management of Sea Turtles** with NMFS and the WorldFish Center, resulting in the **Bellagio Blueprint for Action on Pacific Sea Turtles** (Steering Committee 2004).
- Published **Hawaii Center for Pacific Sea Turtle Research and Conservation**, which covers more than 50 research, management and outreach projects undertaken by the Council and NMFS (WPRFMC 2006a).
- Convened the **Technical Workshop on Mitigating Sea Turtle Bycatch in Coastal Net Fisheries** with the IUCN, Southeast Asian Fisheries Development Center, Indian Ocean–South-East Asian Marine Turtle Memorandum of Understanding (MOU), NMFS and other organizations (Gilman 2009).
- Helped publish **Conservation of Pacific Sea Turtles**, which presents case studies



Fig. 30. Participants of the final session of the Multilevel High-Level Conference held Aug. 30 to Sept. 5, 2000, at the Hawai‘i Convention Center in Honolulu. The Council helped the United States organize and host the session and the three previous ones, which culminated in an international tuna treaty for the Western and Central Pacific Ocean.

on approaches to conserve and recover sea turtles in the Pacific (Dutton and others 2011 (fig. 31).

Besides sea turtles, the Council has had a longstanding interest in seabird conservation. It convened the *Population Biology of Black-Footed Albatross in Relation to Mortality Caused by Longline Fishing* in 1998 in Honolulu (Cousins and Cooper 2000). It also supported **International Fishers Forums** (IFFs) and the publication of their proceedings to facilitate the sharing of sustainable fishery expertise and approaches to minimize seabird, sea turtle, shark and cetacean interactions. In 2002, the Council hosted *IFF2* in Honolulu with a focus on interactions between longline fisheries and seabirds and sea turtles and the creation of **identification guides for seven sea turtles and 34 seabirds** (Parks n.d.). In 2005, the Council and the International Tuna Fishers Conference on Responsible Fisheries convened *IFF3* in Japan. Topics included sustainable tuna and shark fisheries, cetacean depredation,

fishing capacity and production, market-based mechanisms to influence fishing practices, consumption monitoring and illegal, unregulated and unreported fisheries (WPRFMC 2006b). *IFF4*, held in Costa Rica in 2007, covered shark and cetacean interactions with longline fisheries and problematic bycatch in artisanal gillnet fisheries (WPRFMC 2009). *IFF5* in Taipei in 2010 gathered about 300 participants from 30 countries and territories (Gilman and others 2011) (fig. 32). It culminated in the adoption of the Taipei Declaration, a 12-point plan of action presented by WPRFMC and Taiwan Fisheries Agency (the hosts), identifying marine spatial planning as a tool to reduce fishery interactions with sea turtles, seabirds, sharks, non-target finfish and marine mammals.

In July 2015, NMFS announced the Hawai‘i-based longline fleet would no longer be able to retain and land bigeye tuna from Aug. 5, 2015, through the end of the year because it had reached the U.S. annual catch limit. To explain this dire

situation to the public and policymakers, the Council produced *Shutdown—The effects of arbitrary bigeye tuna quotas on Hawai‘i’s fishing community and consumers*. The short video aired on ‘Olelo community television and is available on the Council’s YouTube channel (WPRFMC 2015).

For the inaugural United Nation’s *World Tuna Day* on May 2, 2017, the Council produced a poster that includes the Council’s accomplishments in tuna management. The Council has conducted education and outreach on many other factors that impact the Western Pacific Region’s lucrative tuna industry, including Country of Origin Labeling, tailpipe tuna (i.e., treatment of some foreign tuna with carbon dioxide to bolster their red and apparent “fresh” color), mercury in tuna and the U.S. seafood trade deficit.

Fig. 31. (below) The Council helped to publish *Conservation of Pacific Sea Turtles*, which discusses approaches to conserve and recover sea turtles.

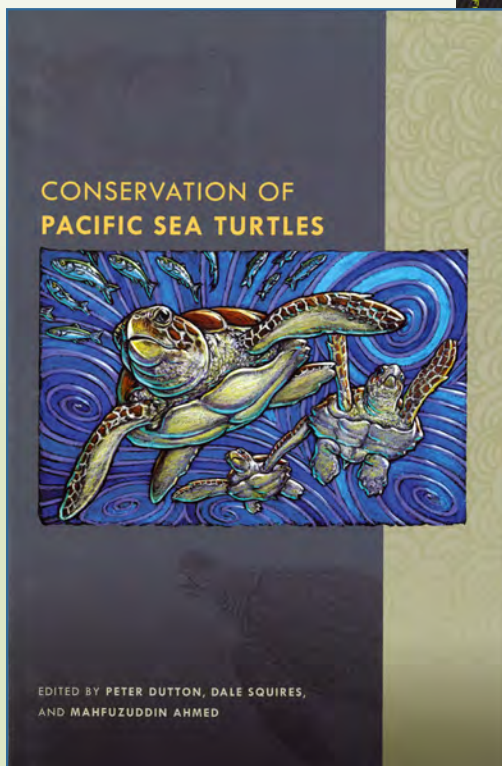


Fig. 32. (above) The Council distributed the *Proceedings of the Fifth International Fishers Forum on Marine Spatial Planning and Bycatch Mitigations* as a bilingual publication in 2011.

4.2 Fishing Communities and Fishery Ecosystems

The 1996 MSA reauthorization, also known as the Sustainable Fisheries Act, added three new national standards to the MSA’s original seven. National Standard 8 requires conservation and management measures to “take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirement of [the best scientific information available] to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities.”

The 1996 reauthorization also created an Ecosystem Principles AP to develop recommendations to implement ecosystem principles in fisheries management. The 1999 Panel report advised each Council to develop fishery ecosystem plans (FEPs) as the mechanism to meaningfully integrate ecosystem principles, goals and policies into species/species-complex-based FMPs.

The Council conducted three workshops between 2005 and 2007 to help inform its move from species-based FMPs to an ecosystem approach to fisheries management. It helped with publication of the proceedings in the book *Ecosystem*

Based Fisheries Management in the Western Pacific (Glazier 2011) (fig. 33). The Council also placed increased emphasis on community outreach and developed a series of ecosystem exhibits (fig. 34).

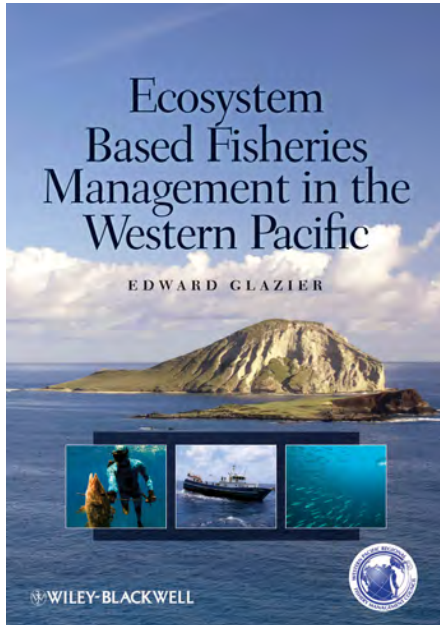


Fig. 33. *Ecosystem Based Fisheries Management in the Western Pacific*, published in 2011, summarizes the proceedings of the Council's three ecosystem workshops conducted between 2005 and 2007.

Beginning in 2006, the Council hosted the *Ho'ohanahano I Na Kupuna Puwalu (Honor Our Ancestors Conference)* series to engage Native Hawaiian communities in developing a consultation process to inform the Hawai'i Archipelago FEP. More than 100 *kupuna* (elders) and Native Hawaiian resource practitioners of the 43 *moku* (districts) in the State of Hawai'i attended the Puwalu. Through their combined efforts, the governor signed Acts 212 and 288 of the Hawai'i State Legislature into law (fig. 35). Act 212 initiated the process to create a system of best practices based on indigenous resource management and established the 'Aha Kiolo Advisory Committee to report findings and recommendations to the legislature and governor. Act 288 officially recognized the traditional 'Aha Moku system of natural resource management and established the 'Aha Moku Advisory Council within the Hawai'i Department

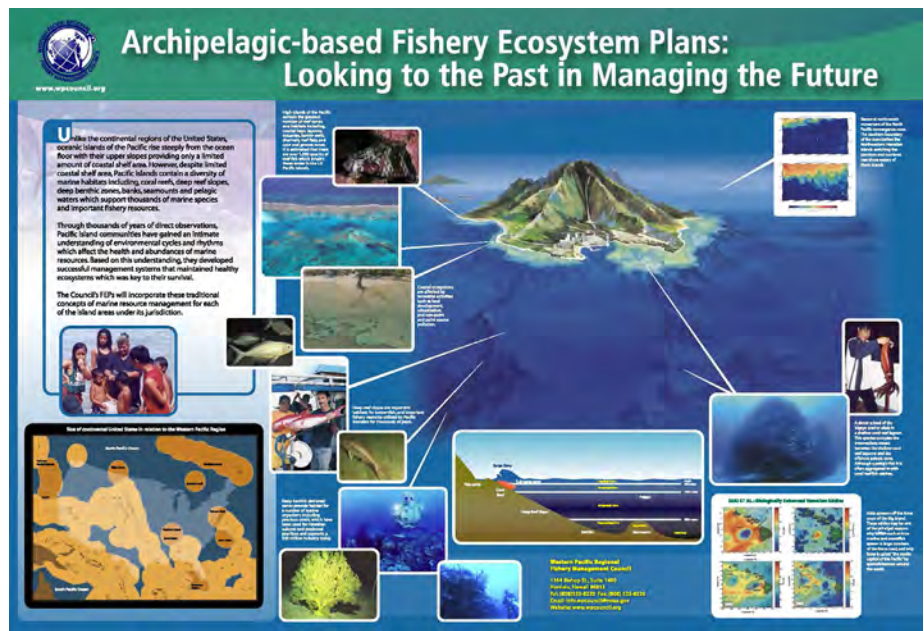


Fig. 34. The Council exhibited the *Archipelagic-Based Fishery Ecosystem Plans* display at meetings and public events to inform fishermen and the public about the Council's move from species-based FMPs to FEPs.

of Land and Natural Resources. The Council supported publication of *Traditional-Based Natural Resource Management: Practice and Application in the Hawaiian Islands*, which reviews the history of the 'Aha Moku initiative (Glazier 2019). The Council also featured the Puwalu conferences in a special edition of *Current: The Journal of Marine Education* (Simonds and others 2008). Reports and resolutions generated after each Puwalu meeting from 2006 to 2017 are available at www.ahamoku.org/index.php/puwalu-reports.

The Council's early outreach on ecosystem management in the territories included

meetings in American Samoa with the pastor, *pulenu'u* (village mayor), residents and youth in Matu'u and Faganeanea communities and with more than 50 mayors in Utulei in March 2011, as well as meetings with the Mayors' Council of Guam.

From the wisdom shared by *kupuna* and traditional practitioners during the Puwalu series, the Council published a *Fishermen Code of Conduct* in English and Hawaiian. Entities throughout the Western Pacific Region asked the Council to translate the code into Samoan, CHamoru, Refaluwasch and Chuukese. The code is available as posters, postcards,

Fig. 35. Supporters of the 'Aha Moku system surround Hawai'i Gov. Neil Abercrombie following his signing into law Act 288, relating to Native Hawaiians, on July 10, 2012, at the Hawai'i State Capitol. In the front row kneeling are Council Executive Director Kitty M. Simonds (far left) and Council Indigenous Coordinator Charles Ka'ai'ai (far right).



signs and videos (figs. 36, 37) and serves as a non-regulatory strategy to address conflicts between longtime local fishermen and COFA migrants from the U.S. Freely Associated States. A unique aspect of Guam and the CNMI is their reliance on tourism, mostly from Asian source markets. Consequently, hotels and other entities asked the Council for Japanese, Chinese and Korean translations of the code to educate their visitors about acceptable ocean behavior.

To further public awareness about ecosystem-based management, the Council conducted **student art contests** on the theme of archipelagic ecosystems in 2006. Schools, parents and local businesses, government agencies and media donated prizes, publicized the winners and joined in award ceremonies. To optimize the outreach, the Council in 2007 featured the winning art in **traditional lunar calendars**. The outreach campaign was so successful that the Council ran student art contests on various fishery-related topics with accompanying teacher lesson plans annually in each island area for years, featuring the winners on traditional lunar calendars. Community groups, schools, local agencies and others partnered with the Council to produce the calendars. More recently, fishermen on the Council's APs have provided calendar content.

In producing the calendars, the Council understood that knowledge about traditional ways of counting time is not equally available in the region. In Hawai'i, the indigenous community can recount the traditional names of lunar months and moon phases, while such knowledge is hard to find on Guam, where Western



Fig. 36. (left to right) 'Aha Moku representative Leialoha "Rocky" Kuluhiwa, harbormaster Ernie Choy, Council staff Sylvia Spalding, Hawai'i Division of Boating and Ocean Recreation's Meghan Statts, harbor agent Mark Herron and 'Aha Moku representative Jerry Kuluhiwa post a *Fishermen Code of Conduct* sign at He'eia Kea harbor, O'ahu, in 2015.

colonization (beginning with the Spanish in 1668) decimated the indigenous population and culture. To assist in reviving knowledge about traditional lunar calendars, the Council in 2011 convened a **Traditional Lunar Calendar Workshop** on Saipan with non-instrument navigators, fishermen and cultural experts from throughout the Western Pacific Region and the U.S. Freely Associated States of Yap (FSM) and Palau (fig. 38). After this workshop, the Council supported the production and archiving of calendars from Yap and the Mo'omomi fishing community on Moloka'i.

To ground-truth knowledge in the calendars produced for American Samoa, the Council contracted **American Samoa Community College's Samoan Studies Institute** to conduct research with village elders and fishery agencies in American Samoa and the Independent State of Samoa. The Council also, through a NOAA CRCP grant, hired

Fig. 37. The *Pinetsigen Kinalamten Para Mampeskadot* poster displays the *Fishermen Code of Conduct* in CHamoru, one of the official languages of Guam and the CNMI.



an independent consultant to conduct surveys and focus groups to evaluate the usefulness of the calendars to the communities throughout the region.

The ***Kaulana Mabina*** (Hawaiian lunar calendar) includes the traditional 10-day *anahulu* (week) with the month beginning with the first crescent moon visible with the naked eye (fig. 39). Each year focuses on a different theme. Council partners on the calendar over the years include, among others, Mac Poepoe to describe *pono* (right, proper) fishing in Mo'omomi, Moloka'i; Kamealoha Smith and various non-profit and school groups on Kaua'i to record their observations and studies based on the moon phases; and Kimi Makaiau from ALU LIKE, Inc., to share information about *loko i'a* (fishponds). The Council has produced both a large classroom calendar and a smaller fisherman calendar printed on water-resistant paper. In 2019, the Council developed a calendar with the YWCA O'ahu that features Hina, the Hawaiian goddess of the moon. Native Hawaiian artist Oliver Kinney created the cover art,



Fig. 38. Traditional navigators, fishermen and cultural experts share their knowledge during the Council's *Traditional Lunar Calendar Workshop* on Saipan in 2011.

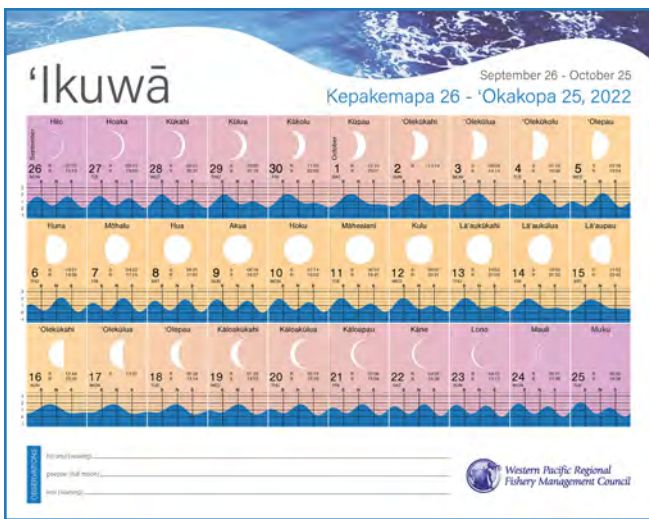


Fig. 39. The month of 'Ikuwā from the 2022 *Kaulana Mahina* begins when the first crescent moon is visible to the naked eye and includes the traditional 10-day *anahulu* (week) and an area for observational notes.

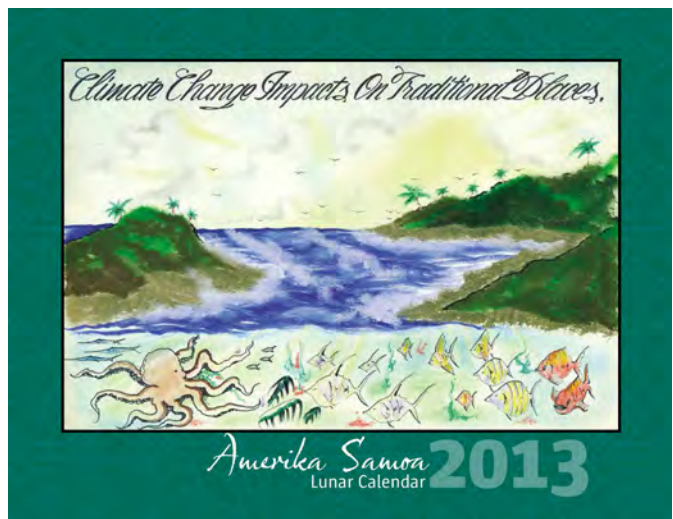


Fig. 40. The 2013 *Amerika Samoa Lunar Calendar* cover features the art of 8th-grader Isaia Nguyen of Lauli'i Elementary School.

which the Council distributed as a poster with shortened Hina *mo'olelo* (stories) on the back and on a postcard with Hina's virtues. Short videos about each month serve as companion pieces and are available on the Council's YouTube channel.

The American Samoa traditional lunar calendar, *Tao Masina o Amerika Samoa*, features traditional month and moon phase names in the Samoan language. Initially, the calendars highlighted the winning entries of student art contests on themes related to marine ecosystems and traditional knowledge (fig. 40). In recent years, the calendars focus on specific fishery issues. Themes have run the gamut from traditional fishing to the importance of the cannery and seafood harvest for the Samoan culture.

In Guam, the GFCA in 2009 began hosting a Lunar Calendar Festival, *Gupot Fanba'anian Pulan CHamoru*, with support from the Council, local media, the Guam Visitors Bureau, mayors and the military. Additionally, the Council exhibited the *Fanba'anian Pulan CHamoru* (Chamorro lunar calendar), highlighting traditional knowledge of fishing and hunting and winners of the annual student art contest, at the *12th Festival of Pacific Arts* on Guam from May 22 to June 4, 2016. The Council, in collaboration with the Guam Museum and other partners, organized the

"I Maneguihan" (Those that fish) exhibit at the Museum in 2024 (fig. 41). The Council contributed large posters about generational fishing families featured in the 2024 Guam lunar calendar, old and new fishing gear, a screening of its *Open Ocean Fishing in the Marianas* video, a history of the lunar calendar and much more. The launch event held April 4, 2024, included talks by Gov. Lourdes Leon Guerrero, Speaker Therese Terlaje and Council Vice Chair Manny Dueñas. Three thousand K–12 students, adult groups and walk-ins visited the exhibit over its two-month duration, a result of substantial pre-event outreach through radio, social media, print ads, flyers and banners.

The Council produces the CNMI lunar calendars, *Eskaleran Pulan Chamorro* and *Refaluwasch Pápáál Maram*, in the CHamoru and Rafaluwasch languages, respectively. The CNMI Chamorro calendar differs from the Guam calendar in that it names fewer moon phases, based on traditional knowledge shared by fishery expert Stan Taisacan of Rota. Two committees of fishermen, traditional navigators and other members of the Chamorro and Carolinian communities approve the CNMI calendars each year.

Council outreach efforts to promote traditional fisheries rights, practices and knowledge have taken the form of brochures, posters, displays, videos,

Fig. 41. Guam Sen. Therese Terlaje (right) tours the Council section of the Guam Museum exhibit *I Maneguihan* at its opening on April 4, 2024, with Council staff Amy Vandehey.



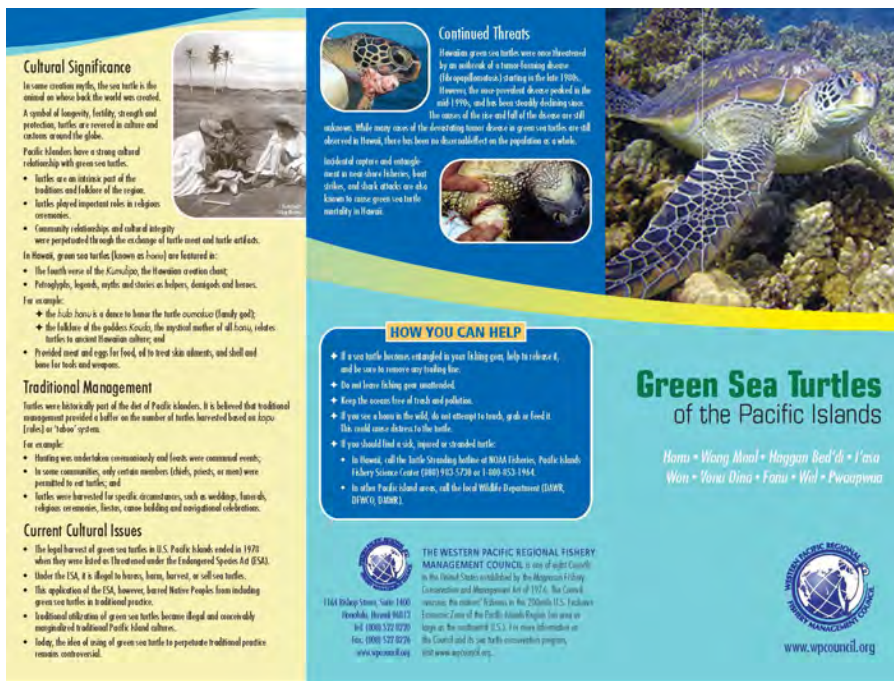


Fig. 42. The *Green Sea Turtles of the Pacific Islands* brochure provides information on the traditional management and cultural significance and issues surrounding these turtles.



Fig. 43. (top) The *Mariana Green Sea Turtle Workshop* held in Saipan in 2011 supported recognition of traditional fishing knowledge and rights.



Fig. 44. (right) Council Executive Director Kitty M. Simonds (2nd from left) at the *2011 Hawai'i Fishing and Seafood Festival* with traditional navigators Cecilio Raiukiulipi (CNMI), Wally Thompson (American Samoa), Chad 'Onohi Paishon (Hawai'i) and Manny Sikau (Guam) who helped staff the Council's cultural booth and were interviewed for a video on traditional navigation for classroom use.

presentations and magazine articles. The Council featured *honu* (Hawaiian green sea turtle) management at Fishers Forums and in posters and brochures, such as the *Green Sea Turtles of the Pacific Islands* (fig. 42). The Council's **2006 Year of the Sea Turtle poster** includes the names for green sea turtle in the native languages of Hawai'i and the U.S. Pacific Island Territories and the Freely Associated States. The Council convened the *Mariana Green Sea Turtle Workshop* on Saipan in 2011 (fig. 43) and displayed large cultural booths at the 2010 and 2011 *Hawai'i Fishing and Seafood Festivals* in Honolulu (fig. 44). The Council invited traditional navigators from throughout the region to attend the festival and interviewed them for a short video, *Traditional Navigation and Seamanship*. The Council shared the video with teachers along with a lesson plan to support regionwide student art contests on the topic. Council staff members have shared insights about traditional resource management in publications such as *Indian Country Today* and at conferences of such groups as **The Wildlife Society's Native Peoples' Wildlife Management Working Group**, **the American Geophysical Union** and the **National Marine Educators Association (NMEA)** (Spalding 2017).

4.3 Annual Catch Limits and Data Needs

Improving fishery data collection in the region has been a long-recognized need and goal of the Council. It was a topic of discussion at the first Forum held in 1989 (Appendix 2). The need became critical with the new ACL requirements of the 2006 reauthorized MSA.

The Council recognized the reluctance of fishermen to provide information about their catch as they believe doing so would lead to more regulations. The posters *Annual Catch Limits—How Do They Work?* and *Where Does My Data Go?* (fig. 45) are among the outreach products the Council developed to address these concerns. They explain how improved data can increase an ACL by decreasing scientific and management uncertainty. The Council exhibited a display on stock assessment components at Fishers Forums dedicated to ACLs and the need for data. The theme for the October 2007 Forum in Hawai‘i was “Fishing for Data.” The theme for the 2009 and 2010 Forums in Hawai‘i, Guam and the CNMI was “Community Resource Management: Fishermen as Scientists.”

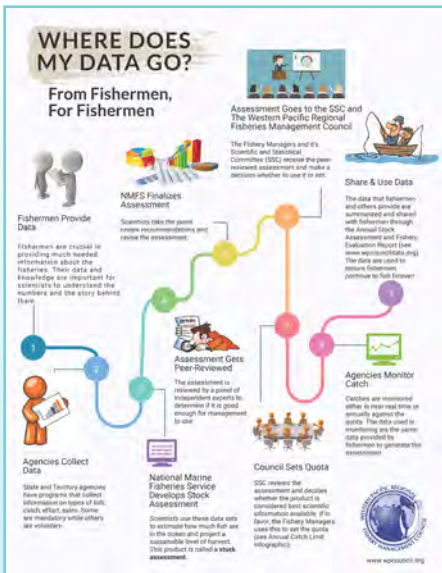


Fig. 45. The Council’s *Where Does My Data Go?* poster explains the importance of catch data and aims to quell fears that providing such data would lead to restrictive regulations.

To accustom fishermen to submitting their catch data, the Council organized fishing contests that required that they do so. One example was the *2008 Pacific Islands Pelagic Skindiver Spearfishing Contest*, an event the Council publicized in *Hawaii Skin Diver* and *Marianas Fishing Magazine* (fig. 46). Another early Council effort to encourage fishermen to provide their data was development of the data-gathering portal known as *Fishbox*. At the online site, fishermen could fill in their catch and effort information and learn about current environmental conditions. A more recent effort encourages fishermen and fish dealers to submit information through the Council’s *Catchit Logit* app (fig. 47). The Council has promoted the app through radio announcements, workshops, social media, contests, award ceremonies and fishing tournaments.

The Hawai‘i small-boat fishery is among the fisheries where data gaps exist. This fishery involves fishing from a vessel using troll, handline, net or other gear for open-ocean species listed under the Hawai‘i Archipelago or Pacific Pelagic FEPs, including tuna, billfish, *mahimahi*, *ono* (wahoo), *uku* (gray jobfish) and *‘opakapaka* (pink snapper). In February 2020, the Council held public scoping

sessions to gather community feedback on small-boat fisheries. The public noted the pros and cons of being part of the federal management system while recognizing the need for good data for effective management and enforcement. The *Summary of Participant Issues and Concerns from the MHI Small-Boat Pelagic Fisheries Public Scoping Session* brochure can be found on the Council website.

On Aug. 27, 2020, the Council hosted its first virtual Fishers Forum, due to COVID-19 restrictions on gathering. The forum highlighted the important contribution of fishermen, particularly noncommercial fishermen, to the knowledge needed by fishery scientists and managers. Scientists highlighted research projects that depend on fishermen input for success. The Council informed participants about current management regulations for the Hawai‘i small-boat fishery and discussed future options for mandatory permitting and reporting.

In Spring 2024, the Council contracted prominent Hawai‘i fisherman and former Council member Roy Morioka to convene the *Hawai‘i Small-Boat Fisheries Working Group*. With support from the NMFS PIFSC, the Working Group conducted eight public meetings across the state from April 23 to May 9, 2024. Each meeting included outreach tables from various agencies and organizations. The importance of establishing trust between scientists/agencies and the fishing community and the need for incentives to encourage data submission were recurring themes.

2008 PACIFIC ISLANDS PELAGIC SKINDIVER SPEARFISHING CONTEST

The Western Pacific Regional Fishery Management Council and *Hawaii Skin Diver Magazine* are pleased to announce the “2008 Pacific Islands Pelagic Skindiver Spearfishing Contest,” which rewards free-diving blue water spearfishermen in the US Pacific Islands who practice safety by diving with a partner and who support resource management by sharing information of their spearfishing catches.

PRIZES:

- Prizes will be awarded to the top three fishermen in each island area in the following categories: (1) Largest Fish and (2) Total Weight of Weighted Fish accumulated by a diver during the contest period (26 prizes in all).
- Additionally, each eligible fisherman who submits a fish during the contest period will receive a \$1 monthly raffle. 10 winners will be announced on the 1st and 30th of each month (10 prizes in all).

Eligibility is limited to:

- Billfish (any species of marlin, swordfish or sailfin), tuna, grouper and yellowfin, snail, or kaula/kama, mackerel and ono (mahoe).
- Caught by free-diving spearfishing in waters around American Samoa, Guam, Hawaii and Commonwealth of the Northern Mariana Islands (CNMI) between 8 a.m., May 1, 2008, and 4 p.m., Sept. 30, 2008 (local time).
- Weighed and recorded at specified weighing locations (see www.pifsc.gov or visit hawaii.skindiver.com).
- Reported to one of the following within 48 hours of landing:
 - Hawaii Skin Diver at info@hawaiiskindiver.net
 - Fiji Airways (in American Samoa) 633-5892 or 633-5102
 - John Carter (in Guam) 649-3150 or 688-6100
 - Jack Ogden (in CNMI) 322-9830 or 261-9492

Information that must be reported includes:

- Your name and contact information (mailing address, phone number, email)
- Name of vessel(s) to the catch (can be diver partner) and dive partner(s) name
- Species, fork length and weight of fish
- Catch location (island and coordinates), date and time
- Whether spearfishing from a boat or from shore
- Species/brand of type
- A photo of you with fish & dive partner (the potential use in Council or Hawaii Skin Diver publications)

Other optional details on how fish was caught will also be welcomed, such as whether fishing around a FAU, tide direction, moon phase, size of chum, etc.

Fish caught using SCUBA, hookah or any other underwater breathing apparatus or by a NOAA employee or contractor are not eligible.

Fig. 46. (left) The Council advertised the *2008 Pacific Islands Pelagic Skindiver Spearfishing Contest* in regional magazines.



Fig. 47. The Council’s *Catchit Logit* app allows fishermen and fish dealers to easily submit catch data information.

5. Addressing Non-Magnuson-Stevens Act Challenges

5.1 Marine National Monument Closures and Environmental Injustice

The Council has a long and comprehensive NWHI management history. It developed the Lobster and Precious Corals FMPs in the early 1980s, followed by Bottomfish and Pelagic FMPs in 1986 and 1987. These FMPs put into place regulations such as permits, reporting, quotas, vessel size limits, prohibited areas and among the first limited-entry programs in the nation. Lobster and bottomfish were the main NWHI fisheries, and the Council helped to promote them through **bottomfish profiles** and **recipe cards**.

In the 1990s, the Council started the process of ecosystem-based fishery management with the development of the Coral Reef Ecosystem FMP. A consultant contracted by the Council erroneously portrayed the NWHI as having the nation's largest area of coral reefs (Hunter 1995, Miller and Crosby 1998). Multiple studies debunked this assumption (Rohmann and others 2005, Grigg 2006, Monaco and others 2012). Nonetheless, those wanting to stop fishing in the NWHI approached the White House to have the area designated as a marine monument or sanctuary. To chronicle the importance of NWHI fisheries, the Council produced *Living the Legacy: The Northwestern Hawaiian Islands*, a 19-minute video on the history of the fisheries (WPRFMC 2000b) and a companion two-page fact sheet.

On May 26, 2000, President Clinton directed the Secretaries of Commerce and the Interior, in cooperation with the State of Hawai'i and in consultation with the WPRFMC, to recommend a new, coordinated management regime to protect NWHI coral reefs and provide for sustainable use of their resources. Council staff worked with the State of Hawai'i, NOAA and the U.S. Fish and Wildlife Service to prepare visuals for seven public "visioning sessions" held between July 21 and Aug. 1, 2000.

The Council developed exhibit panels demonstrating that the NWHI were not "pristine," as environmentalists claimed, because humans had been exploiting and developing the area for centuries (fig. 48).

Through Presidential Executive Orders 13178 on Dec. 4, 2000, and 13196 on Jan. 18, 2001, Clinton established the NWHI Coral Reef Ecosystem Reserve. Encompassing waters from 0 to 50 nm from shore, the Reserve boundaries duplicate those of the Council's long-established Protected Species Zone, where the Council prohibited longline fishing. Spanning 137,000 square miles, the Reserve is 13 times larger than all existing U.S. marine sanctuaries combined. Establishment of the Reserve capped the number of fishing permits in already limited-entry fisheries and limited the "annual aggregate take" for fisheries based on their historical levels of take. The Reserve permanently shut the NWHI lobster fishery because the period chosen to estimate the take for that fishery coincided with a period when NMFS had temporarily closed the fishery. The Reserve also delayed implementation of the Coral Reef Ecosystem FMP. On June 14, 2002, NMFS approved the FMP except the portion that governs fishing in the NWHI, deeming it would be inconsistent with or would duplicate provisions of the NWHI Reserve's executive orders. NMFS published the final rule implementing the Coral Reef Ecosystem FMP on Feb. 24, 2004.

In compliance with the MSA National Standards, the Council utilizes the best available scientific information. It co-hosted the *Third NWHI Scientific Symposium* Nov. 2–4, 2004, to provide a forum for recent research and a mechanism to identify knowledge gaps and future research needs. With Council support, the *Atoll Research Bulletin* published a synthesis of the research (DiNardo and Parrish 2006).

To provide public education and outreach on scientific research and management of NWHI fisheries, the Council produced



Fig. 48. Council Executive Director Kitty M. Simonds (left) stands near the Council's exhibit of ecotourism, education and managed fishery activities and bioprospecting opportunities in the NWHI, which was on display at the first NWHI visioning session held July 21, 2000, in Washington, D.C.

a short video titled *The Northwestern Hawaiian Islands* (WPRFMC 2005) and a companion 12-page tabloid, which include interviews with scientists, fishermen and chefs. Hawai'i Public Television rebuffed Council efforts to air the video because the producer regarded the Council as a special interest group. The video aired on 'Olelo community television.

Despite the establishment of the NWHI Coral Reef Ecosystem Reserve and scientific evidence acknowledging the sound management of NWHI fisheries and healthy status of the stocks, efforts to close the area to all fishing continued. The Pew Charitable Trusts funded a multimillion-dollar media campaign coordinated by the National Marine Sanctuary Program to turn the NWHI into a no-take area (Ward 2010). In 2006, Presidential Proclamation 8031 established the NWHI MNM, encompassing the same area as the Reserve and the Council's Protected Species Zone. In 2007, Proclamation 8112 changed the name of the monument to Papahānaumokuākea MNM. The monument effectively closed all fishing 0 to 50 nm from shore around the NWHI by 2009. The Council was unable to air a third video on the NWHI, produced in partnership with the **Teaching Learning Network**, because it featured sport fishing

and ecotourism on Midway Atoll, which became prohibited activities under the monument designation.

Despite strong opposition by local government officials, industry, native peoples and the public, presidential proclamations designated three additional marine national monuments in the U.S. EEZ waters of the Western Pacific Region through presidential actions in 2009. The Pacific Remote Islands MNM (Proclamation 8336) prohibits commercial fishing from 0 to 50 nm from shore around Kingman Reef, Johnston and Palmyra Atolls, and Wake, Baker, Howland and Jarvis Islands. The Rose Atoll MNM (Proclamation 8337) prohibits commercial fishing from 0 to 50 nm from shore in U.S. EEZ waters of Rose Atoll. The Marianas Trench MNM (Proclamation 8335) prohibits commercial fishing in U.S. EEZ waters of the islands of Farallon de Pajaros (Uracas), Maug and Asuncion.

In 2014, efforts were underway to have President Obama expand the Pacific Remote Islands MNM to encompass the entire U.S. EEZ around those seven islands, atolls and emergent reef. The White House invited the Council to meet

with Obama's counselor, John Podesta, and high-ranking representatives of NOAA and U.S. Fish and Wildlife Service on the subject. Council staff prepared an 18-page document titled *An Ocean Legacy: The US Pacific Island Way* for the meeting held in the West Wing on Sept. 9, 2014. Council members and staff pointed out that expanding the monument boundaries around all the Pacific Remote Islands would not be in the best interest of the United States. On Sept. 25, 2014, Obama expanded the Pacific Remote Islands MNM (Proclamation 9173) to include the entire U.S. EEZ around Jarvis and Wake Islands and Johnston Atoll and prohibited the operation of U.S. commercial fisheries therein. The expansion did not include U.S. EEZ waters from 50 to 200 nm from shore around Kingman Reef, Palmyra Atoll, and Baker and Howland Islands so they remained open to commercial fishing.

Obama also expanded the Papahānaumokuākea MNM on Aug. 6, 2016 (Proclamation 9478), despite strong opposition U.S. Senator Daniel Akaka, former Hawai'i Governor George Ariyoshi, Office of Hawaiian Affairs

Trustee Peter Apo, the Association of Hawaiian Civic Clubs and representatives from various other Native Hawaiian groups, among others. The monument now includes the entire U.S. EEZ waters around the NWHI, in effect banning Hawai'i and other U.S. fishermen from operating in two-thirds of the U.S. EEZ waters of the Hawaiian archipelago.

On Sept. 15, 2016, Obama established the only U.S. marine national monument located outside of the Western Pacific Region. The Northeast Canyons and Seamounts MNM in the Atlantic Ocean encompasses less than 5,000 square miles. By comparison, the marine monuments in the Western Pacific Region amount to more than 1 million square nm, or more than half of the U.S. EEZ around the U.S. Pacific Islands (fig. 49).

On April 26 and 28, 2017, President Trump directed the Secretaries of the Interior and Commerce to review the designations and expansions of U.S. national marine sanctuaries and marine national monuments (Executive Orders 13792 and 13795). The White House invited the Council and fishing representatives from the region to meet with the president's staff on April 17,

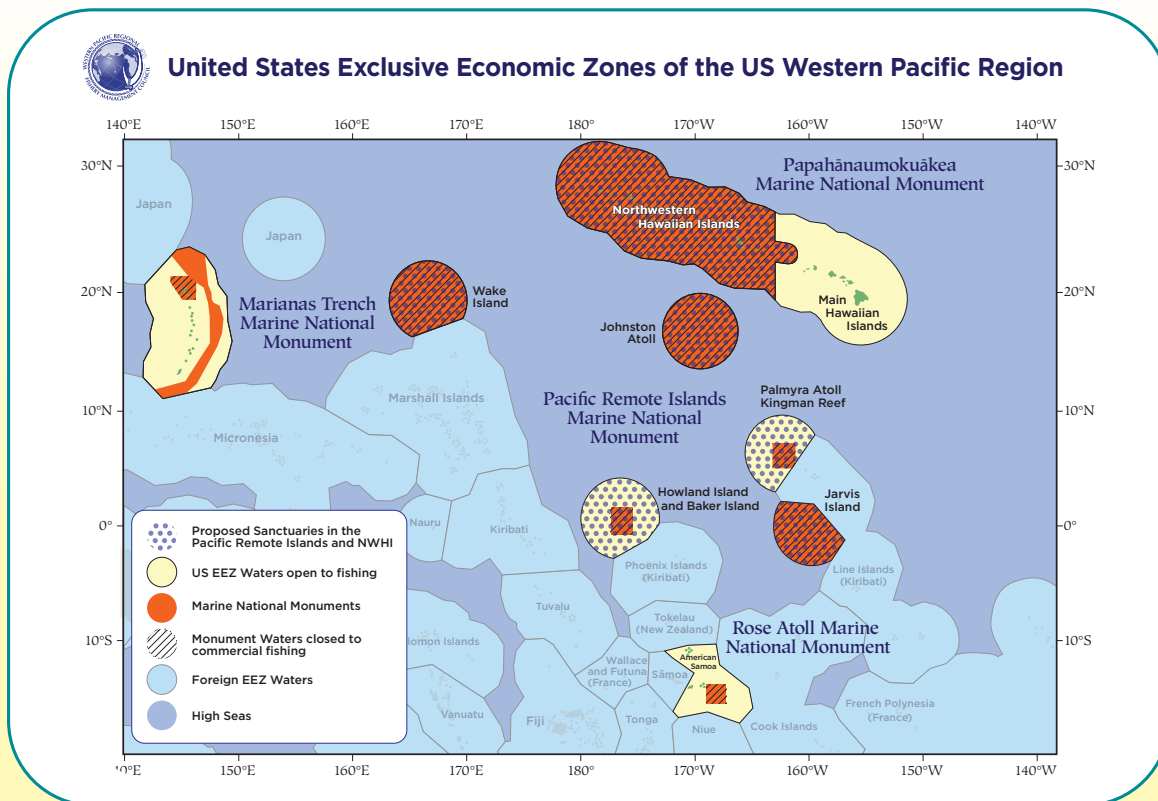


Fig. 49. Presidential proclamations designated more than 1 million square nm in the Western Pacific Region as marine national monuments, i.e., more than half of the U.S. EEZ around the U.S. Pacific Islands.

2019, at the Eisenhower Executive Office Building in D.C., to discuss the matter. A 32-page document titled *Impacts of Marine National Monument Fishing Prohibitions on US Pacific Island Fisheries* was prepared for the meeting.

On June 5, 2020, President Trump lifted the ban on commercial fishing in the Atlantic marine monument but did not address similar restrictions in the Western Pacific Region. In his last days in office, Trump signed a bill that included a provision to restart the process to designate the NWHI as a national marine sanctuary, a process that Clinton initiated when he established the NWHI Reserve and which President Bush halted when he established the NWHI MNM. In 2022, a coalition proposed to President Biden to further expand the Pacific Remote Islands MNM restrictions to completely close the remaining waters to commercial fishing. Then, on March 11, 2023, NOAA received a petition to designate the Pacific Remote Islands as a national marine sanctuary to include the full extent of the U.S. EEZ waters around those islands. On March 21, 2023, President Biden directed the Commerce Secretary to consider initiating the designation process for the nomination. The Council continues its outreach to educate the public and policymakers about these efforts to convert marine national monuments in the region into national marine sanctuaries, including the impacts on the Hawai'i tuna fishery, American Samoa canneries and other fisheries in the region. The Council maintains a webpage with the latest updates at www.wpcouncil.org/marine-spatial-management and published a special issue of *Pacific Islands Fishery News* on the topic (WPRFMC 2022).

The Council and others in the U.S. Pacific Islands have questioned the injustice of establishing all but one small U.S. marine national monument in the Western Pacific Region. The inhabitants of this region are predominantly nonwhite and constitute only 0.5% of the nation's population. The United States has not compensated them for the transgenerational wealth that would normally be associated with access to the resources of these waters and submerged lands. This loss falls heavily on Native Hawaiian and other U.S. Pacific

Islanders who have among the lowest per capita income of any demographic group in the United States (Markrich and Spalding 2002, p 505).

5.2 Marine Protected Areas and Fishermen Safety

On May 31, 2000, President Clinton issued Executive Order 13158 on MPAs, which aims to strengthen and expand the nation's system of MPAs in consultation with regional fishery management councils and other entities.

In 2010, the Council initiated the study *Impact of Marine Preserve Areas on the Safety of Fishermen on Guam*, which analyzes the effects of the loss of accessible traditional fishing grounds in part by the establishment of five marine preserve areas. The study conducted by the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, found enforcement of the preserves in 2001 led to a more than double increase in the risk of drowning for Chamorro fishermen while for non-Chamorro fishermen the risk sharply decreased (Lucas and Lincoln 2010) (fig. 50).



Fig. 50. A map in the *Impact of Marine Preserve Areas on the Safety of Fishermen on Guam* study prepared by the Centers for Disease Control and Prevention in 2010 for the Council illustrates how enforcement of MPAs led to an increase in Chamorro fishermen drownings.

5.3 Coastal and Marine Spatial Planning and Climate Change

President Obama's National Policy for the Stewardship of the Ocean, Our Coasts and the Great Lakes (Executive Order 13547) in 2010 directed all agencies whose actions affect the ocean to participate in the process for coastal and marine spatial planning. In response, the Council held a *Coastal and Marine Spatial Planning Workshop* in partnership with the National Marine Sanctuaries International Program in Honolulu from July 31 to Aug. 4, 2011, where community participants from throughout the Western Pacific Region practiced drafting plans for their island areas (fig. 51). Marine spatial planning was also the theme of the Council's Fishers Forums in Honolulu in October 2010 and in American Samoa in March 2013.

In the Mariana Archipelago, the Council was instrumental in three *Community-Based Fishery Management Plan (CBFMP) Workshops* for Malesso (i.e., Merizo), Guam, in 2013 and 2014. The process culminated in the development of the *Community-Based Management Plan for Coastal and Marine Resources of the Village of Malesso* as a guide



Fig. 51. In response to President Obama's National Policy, the Council convened the Coastal and Marine Spatial Planning Workshop in Honolulu from July 31 to Aug. 4, 2011, for community participants from throughout the Western Pacific Region.

to help the community achieve its resource management, conservation and governance objectives (fig. 55). The Council also initiated a CBFMP effort with the Village of Yigo in northern Guam. Council efforts in Guam continued with a **community coral reef mapping project** (WPRFMC 2016b).

The Northern Islands mayor approached the Council in 2014 for assistance in developing a CBFMP plan. Council staff facilitated the first **CNMI Northern Islands CBFMP Workshop** in 2015. The community was enthusiastic, and the traditional villages/municipalities and

local government supported the project. In January 2016, the Northern Islands mayor, a dozen community members, the CNMI Department of Lands and Natural Resources and Council staff attended the second and final Northern Islands CBFMP workshop on Saipan (fig. 52). The community identified two objectives for the plan: 1) to prevent or reduce the military presence in the area (at the time, the military was trying to turn Pagan, the main island in the Northern Islands, into a military live-fire training area) and 2) to ensure the Northern Island community had a continued presence and access to the area. At a meeting in December 2023, Council staff, the Northern Islands mayor and the Department of Community and Cultural Affairs secretary identified challenges to the CBFMP, such as funding, transportation, safe docks, political influence and enforcement.

Another Council response to Obama's National Ocean Policy was the formation of the Council's **Marine Planning and Climate Change Committee**. The committee of local agency and community members helped develop the Council's **Marine Planning and Climate Change Policy**, the climate change section of the annual Stock Assessment and Fishery Evaluation reports and climate change outreach material, such as the **Climate Strong: Oceans, Fisheries & Us** logo (fig. 54). With assistance from NMFS, the Council conducted **climate change workshops** for its advisors, staff and Council members throughout the region

in 2011. Climate change was the theme of the Council's Fishers Forums in Guam and the CNMI in 2012. The Council also held meetings with the Bureau of Ocean and Energy Management and provided updates during Council meetings and in its newsletter on proposed offshore energy facilities for Hawai'i waters.

Coastal indigenous people, led by the Hoh, Makah, and Quileute Tribes and the Quinault Indian Nation tribes located in Washington state, hosted the inaugural **First Stewards Symposium: Coastal People Address Climate Change**, on July 17–20, 2012, at the National Museum of the American Indian, Washington, D.C. More than 300 people attended the event that examined the impact of climate change on indigenous coastal cultures and explored solutions to mitigate and adapt based on millennia of traditional ecological knowledge. The symposium was a partnership between the tribal and Pacific Island indigenous communities, scientists, NGOs and government agencies, including the Council. The Pacific Island panelists featured CNMI Gov. Benigno Fitial; Ufagafa Ray Tulafono, American Samoa Department of Marine and Wildlife Resources director; Joseph Artero-Cameron, Guam Department of Chamorro Affairs president (*Dipattamenton I Kaohao Guinahan Chamorro*); Paulokaleioku Timothy Bailey, Haleakala National Park, Maui; and Pualele Penehuro "Pene" Lefale, manager of the International Affairs Office with the Meteorological

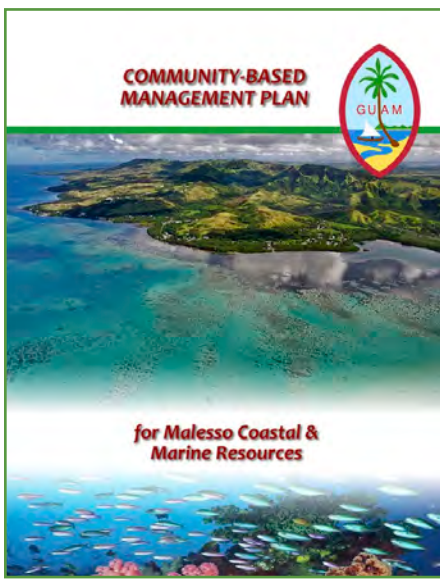


Fig. 52. The Council spearheaded efforts in Guam in 2013 and 2014 that culminated in the *Community-Based Management Plan for Malessa Coastal and Marine Resources*.



Fig. 53. (left) Participants at the *CNMI Northern Islands CBFMP Workshop*, held in 2015 in Saipan, map the resources on Pagan Island.

Fig. 54. (above) The Council's Marine Planning and Climate Change Committee created the *Climate Strong* logo for the region.



Fig. 55. The Council’s short video *Little Changes Have Big Impacts on Little Islands* premiered at the *First Stewards Symposium: Coastal People Address Climate Change*, on July 17–20, 2012, at the National Museum of the American Indian, Washington, D.C.

Service of New Zealand Ltd. Hawai’i Sen. Brickwood Galuteria moderated the panel, which began with a short video *Little Changes Have Big Impacts on Little Islands* produced by the Council for the occasion (WPRFMC 2012) (fig. 55). Other representatives from the region provided cultural demonstrations and exhibits, including the winners of Council’s regionwide student essay contests on climate changes and traditional knowledge and the *Traditional Samoan Expressions about Fishing and Weather* display presenting Council-contracted research conducted by American Samoa Community College students. The newly incorporated First Stewards sent a resolution to the U.S. Congress and President Obama requesting formal recognition of the coastal indigenous people and their expertise in understanding and adapting to changes in their natural systems.

United Indigenous Voices Address Sustainability: Climate Change & Traditional Places, co-organized by the Council, brought together more than 200 indigenous people and those working with native communities from the U.S. Pacific and Caribbean Islands and coastal and inland tribes of North America to Washington, D.C., on July 21–23, 2014. The symposium resulted in MOUs between the National Congress of American Indians and First Stewards and between First Stewards and

the Conservation Legacy to develop a Conservation Corps Program engaging Native American young people.

During the *OceanObs’19* conference held in Honolulu Sept. 16–20, 2019, the Council organized participation by indigenous representatives from the Western Pacific Region. They joined Native American and Alaska Natives on a session highlighting traditional knowledge as a key to getting scientists and indigenous people to talk about ocean observation and climate change solutions. This was the first OceanObs conference to proactively include indigenous representatives in the decennial meeting of international scientists, instrument manufacturers and policymakers to develop ocean observation objectives for the upcoming decade. Approximately 1,500 people, including 100 indigenous members, attended the event, which culminated in a conference declaration on how ocean observation should move forward. The indigenous representatives presented a supplemental declaration, entitled *Aha Honua*, which calls on the ocean observing community to formally recognize the traditional knowledge of indigenous peoples worldwide and to establish meaningful partnerships with indigenous communities, organizations and nations to design, develop and conduct ocean observing initiatives. Council Director Kitty M. Simonds publicly delivered the declaration



Fig. 56. Council Executive Director Kitty M. Simonds (right) presents the *Aha Honua* declaration to Vladimir Ryabinin, the executive secretary of the UN Intergovernmental Oceanographic Commission, on the last day of the OceanObs’19 conference, in Honolulu.

to Vladimir Ryabinin, the executive secretary of the UN Intergovernmental Oceanographic Commission, on the last day of the conference (fig. 56).

Additionally, Council staff were appointed to the national NOAA **Climate and Marine Resources Task Force**, coauthored the *Pacific Islands Regional Action Plan: NOAA Fisheries Climate Science Strategy* (Polovina and others 2016) and *Pacific Islands Regional Action Plan to Implement the NOAA Fisheries Climate Science Strategy* through 2024 (Woodworth-Jefcoats and others 2023), and helped organize multi-day *Annual Collaborative Climate Science Workshop in the Pacific Islands* involving NMFS PIFSC, NMFS PIRO and the WPRFMC held at the NOAA Inouye Regional Center, Honolulu, almost yearly since 2017.

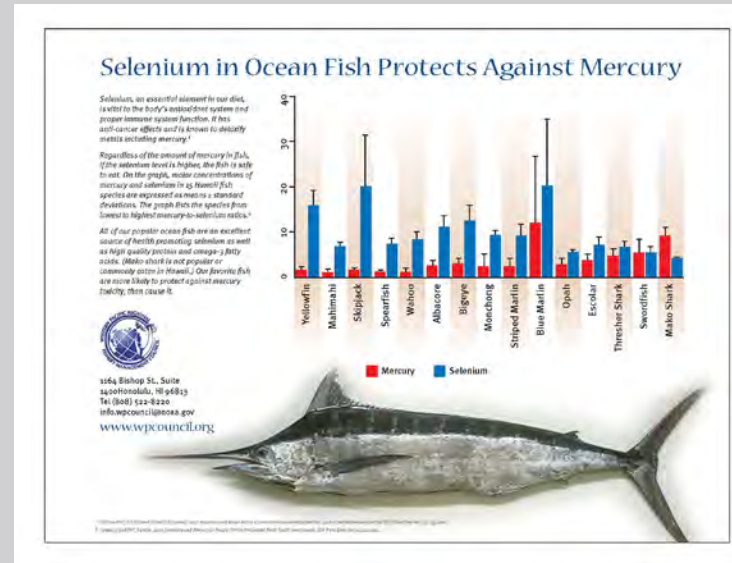


5.4 Billfish Ban and Seafood Safety

Billfish are important species to Hawai'i and the U.S. Pacific Islands culturally, recreationally and commercially. The Council has a long history of promoting sustainable billfish fisheries in the region. It completed the Billfish FMP (renamed Pelagic FMP after the MSA included tuna) in 1986 and implemented it in 1987. The Council also convened the *Pacific Island Gamefish Tournament Symposium: Facing the challenges of resource conservation, sustainable development and the sportfishing ethic* from July 29 to Aug. 1, 1998, in Kailua-Kona, the Billfish Capitol of the World and home to the *Hawaiian International Billfish Tournament* (Miller M and others 2001).

The 2012 Billfish Conservation Act recognized the importance of billfish to the region. The Act prohibits any person from selling, offering for sale or having custody, control or possession for purposes of selling or offering to sell certain species of marlin, sailfish and spearfish. Billfish caught by U.S. vessels and landed in Hawai'i or the U.S. Pacific Islands were exempt from prohibitions. Foreign-caught billfish landed in the U.S. Pacific Islands

Fig. 57. The *Selenium in Ocean Fish Protects Against Mercury* handout highlights the protective role of selenium in fish, showing how higher selenium levels counteract mercury.



were also exempt if exported to non-U.S. markets or kept for local consumption in Hawai'i or the U.S. Pacific Islands. However, in 2018, President Trump signed into law a Congressional bill introduced by U.S. Rep. Darren Soto (R-Florida) that amends the Act, such that U.S. caught billfish landed in Hawai'i and the U.S. Pacific Islands can no longer be sold in continental U.S. markets, including Alaska and Puerto Rico. A coalition of sportfishing groups that supported the bill represent East Coast fishermen who target billfish recreationally in tournaments.

Council outreach efforts to support the regional billfish fisheries have included a flyer to debunk assertions that marlin is unsafe to eat due to its mercury content. The *Selenium in Ocean Fish Protects Against Mercury* handout depicts the selenium to mercury ratios of various fish species and provides references to studies that show fish are safe to eat if the selenium level is higher than the mercury level (fig. 57). The Council also developed posters to show the importance of locally caught seafood, e.g., *Where Seafood in Hawai'i Originates and Seafood Products Imported Directly to Hawai'i*.

6. Educating the Next Generation

6.1 Classroom Curricula and Lesson Plans

The Council's *Public Involvement and Outreach Plan* includes activities targeting school-aged children that focus on management alternatives and the consequences of overfishing. The Council also undertook outreach to address two areas that Council members and advisors found lacking in the current educational system: traditional fishing practices and where the fish we eat comes from. The Council provides school administrators and teachers with lesson plans and educational resources about fisheries and invites them to engage their students in

Council-sponsored art and photo essay contests.

In 1999, the Council hired an intern to develop a *Sustainable Fisheries and Fishery Management* unit. The intern designed the unit's three lessons for grades 4–6 and incorporated activities about sustainable use, optimal use and responsible fishing. The lessons discuss fishery careers and engage students in playing the roles of a commercial fisherman, recreational fisherman and fisheries manager.

In 2001, the Council expanded on these efforts by contracting Patty Miller, manager for the Hawai'i State Department

of Education's *KidScience program*, to produce and broadcast a three-part *FishQuest* series with accompanying teachers guide for grades 4–8. The series includes *Fishing for Facts*, *Fishing for Food* and *Fishing for Solutions*. Filming took place in Hawai'i, American Samoa, Guam and the CNMI (fig. 58). The Council broadcast the series live into schools in Hawai'i in 2002 and delivered tapes of the series to the territories. The live broadcast featured scientists and other guest experts, videos and a studio classroom demonstrating learning activities related to the subject.



Fig. 58. (left) Filming of *FishQuest* in American Samoa in 2002.

In 2009, the Council updated lessons from the *FishQuest Teachers Guide* with the National Science Education Standards and Ocean Literacy objectives for inclusion in a special issue of *Current: The Journal of Marine Education*. The issue, *U.S. Regional Fishery Management Councils: Providing Sound Stewardship of Our Nation's Fishery Resources*, was co-edited by staff from the Western Pacific, North Pacific and Pacific Councils (Spalding and others 2009) (fig. 59). Besides the lesson plans, the issue explains federal fishery management, fishery concerns and fishery management

tools and provides contact information for the nation's eight U.S. Regional Fishery Management Councils.

Activities from *FishQuest* were also big hits at public events, particularly the fish coloring pages and fish printing, or *gyotaku*, a traditional Japanese art utilized by fishermen to record their catch (fig. 60). To promote traditional knowledge, the backside of the coloring pages includes both English and indigenous names of the fish.

In 2011, with funding from the CRCP, the Council repurposed video footage

from the *FishQuest* program to produce the *Fish Forever* video podcast series. The series has 10 short podcasts for students and 10 longer versions for fishermen. Topics include bottomfish and ulua tagging, Hawai'i's coral ark project, fish life history research, Hawai'i marine recreational fishing survey, Guam creel surveys, recreational fishing in the Western Pacific Region, the GFCA and fishermen traditional knowledge. The Council mailed DVDs of the video podcasts (fig. 61) along with other teacher resources to schools and passed them out at conferences of the **OCEANIA Marine**



Fig. 59. The 2009 issue of *Current: The Journal of Marine Education* dedicated to the U.S. Regional Fishery Management Councils includes fishery management lesson plans and student activities.



Fig. 60. (above) Council staff Bella Hirayama and Sarah Pautzke share *FishQuest* activities with youth visiting the Council booth at the 2009 Hawai'i Fishing and Seafood Festival in Honolulu.

Fig. 61. (left) The *Fish Forever* DVD has 10 short podcasts for students and 10 longer versions for fishermen.



Fig. 62. Council staff Asuka Ishizaki helps a young visitor at the Council booth at the 2011 Maunaloa Festival on O‘ahu to play the interactive computer game *Island Ecosystems*, which involves placing marine species in their correct habitat.

Educators Association, Hawai‘i Science Teaching Association, National Science Teachers Association and NMEA, among others.

In 2011, the Council transformed the *FishQuest* lesson titled the “Life and Times of a Fish” from a paper-based activity to an interactive computer game (fig. 62). Students playing *Island Ecosystems* learn about marine habitats and the fish species that inhabit them. The Council distributed the game on a DVD to

educators by direct mail and at educator conferences, posted it on the web and utilized it as a public outreach activity.

6.2 High School Summer Courses and Student Symposiums

In 2006, the Council developed the *Marine Science Course on Fishery and Resource Management* for Hawai‘i high school students. The five-week summer course targets students entering grades 10 to 12 and typically runs early June through July in partnership with Moanalua High School and science teacher Erron Yoshioka as the course instructor. Registered Hawai‘i Department of Education students receive one science credit. Classroom lessons include guest lectures by fishery experts (fig. 63) and CPR and first aid training. Field trips offer experiences with traditional fishponds, fishing and seafood businesses and fishery science, research and management. Students complete a project at the end of the course, such as hosting a *keiki* (children) fishing tournament, conducting intercept surveys, assessing water quality and biological baselines or producing an ocean safety video. The course concludes with an outer-island trip where students learn valuable life lessons about themselves and the environment.

Following the success of the Hawai‘i course, in 2008 the Council expanded the program to American Samoa, Guam and

the CNMI with funding from the CRCP and later NMFS PIRO.

The Council held the *American Samoa Fisheries and Marine Resource Management Course* for high school students on Tutuila typically in July. The three-week class combines classroom and field activities that teach students about the territory’s fisheries and the Council process. The course helps students understand the differences in vessels, gear type and motivation for each of the fisheries. They tour fishing boats and the tuna cannery and go fishing on a boat. Other activities include data collection and water activities that promote ocean stewardship, such as outrigger canoe paddling, sailing and navigation. The program introduces students to the management activities of local fisheries and environmental resource agencies and career paths connected to fisheries and resource management.

The *Guam Fisheries and Marine Resource Management Course* provides students with an overview of marine-related jobs, expands their knowledge of local marine fisheries and resources and culminates in a student activity or product to engage the public. Richard Seman, former Council member, Secretary of the CNMI Department of Lands and Natural Resources and *Marianas Fishing Magazine* publisher, taught the early courses with assistance from the Council’s on-site coordinators for Guam and the CNMI, John Calvo and Jack Ogumoro, respectively. In later years, the UOG 4-H

Fig. 63. Students in the 2019 *Marine Science Course on Fishery and Resource Management* conducted in Hawai‘i learn about fishery and resource management from Council Program Manager Mark Mitsuyasu.



Fig. 64. Students in the 2019 *Guam Fisheries and Marine Resource Management Course* learn the art of throwing *talaya* from master *talayeru* (talaya fisherman) Dan Narcis.



Fig. 65. (above) High school students in the Council's CNMI summer course in 2019 receive safety and food handling instruction at the Northern Marianas Trade Institute and use their new skills to prepare *poke* (a raw fish dish).

Program was engaged to recruit up to 24 students each summer for the three-week course. Master fishermen provide outdoor instruction on subjects such as fishing knots, Hawaiian slings, shore rod-and-reel fishing, fish identification, data collection, *talaya* (traditional cast net) throwing (fig. 64), octopus fishing, seasonal runs and trolling for pelagic fish. In the classroom, UOG and Guam Division of Aquatic Resources biologists, local fishing experts and Council staff teach the students about fishery management, habitat, life history and marine ecosystems.

Seman also led the Council's **CNMI High School Summer Course on Marine Fisheries and Resources** during the initial years. Later, science teachers, the CNMI Department of Lands and Natural Resources, guest lecturers and field trip volunteers collaborated to offer the two-to three-week course. Students learn about federal and local fishery management and law enforcement programs, MPAs, marine pollution, fish biology, aquaculture, fishery data collection and sampling, traditional Chamorro and Carolinian fishing methods, and safe food handling (fig. 65). Students earn CPR and first aid certification. Field trips are to MPAs, fish markets, fishing gear outlets and marine polluted areas among other places.

In 2010, the Council held its first **student symposiums for high school students**, which the CRCP partially funded. The events increased student awareness in the CNMI and Guam about the rich cultural heritage of fishing in the Mariana

Archipelago, coral reef issues and local marine-related educational and career opportunities. More than 250 students from public and private high schools throughout Saipan participated in the CNMI symposium on March 13. The students engaged in plenary sessions and in activities at booths staffed by government agencies and NGOs. The Council provided educational resources to teachers, encouraging them to prepare their classes ahead of the event to maximize the learning opportunity. Approximately 170 public and private school students attended the Guam symposium on March 20. Among the presenters were Peter Gervacion from the Guam Organization of Saltwater Anglers and Judy Amesbury from the Micronesian Archaeological Research Services (fig. 66) as well as students from Hawai'i and Guam who shared their experiences attending the Council's summer marine education program.

In 2011, the Council hosted the **Sustainable Fishery Development and Ecosystem Management Symposium** for American Samoa high school students at the Gov. Rex Lee Auditorium in Utulei. Students learned about the relationship between moon phases and fisheries, humphead wrasse habitat and population distributions, coastal currents and fish larvae dispersion, watershed monitoring and community-based MPAs. At the end of the day, students who demonstrated they learned the information presented during the event received fishing poles,

Fig. 66. (below) Peter Gervacion (front left) of Guam Organization of Saltwater Anglers and Judy Amesbury (back middle) of Micronesian Archaeological Research Services speak with high school students at the *Guam Student Symposium* held March 20, 2010.



mask and snorkel sets, water sampling kits, GPS units and more. The event concluded with awards presented to the winners of a poster competition on the coral reef ecosystem, which the Council held in conjunction with the symposium.

The Council has been involved in other high school initiatives besides the summer courses and symposiums. In the CNMI, it partnered with **Tasi to Table**, a nonprofit organization established in 2019 that focuses on career pathways, the environment, mental health and fishing methodologies (fig. 67). In American Samoa, the Council partnered with the Department of Marine and Wildlife Resources and NMFS OceanWatch—Central Pacific to develop the **Exploring Muliava from a Ta'u Perspective** project in 2015. Funded by a NOAA Marine National Monument grant, the project taught Manu'a High School students on the small island of Ta'u environmental



Fig. 67. Gene Weaver, a Council member and Tasi to Table president, teaches high school students in the CNMI to tie lures in October 2021.



Fig. 68. NOAA Deputy Assistant Administrator for Regulatory Programs Samuel Rauch III helps judge student posters at the America Samoa *Fishers Forum on Fishing: Food, Life, Future* in 2017.



Fig. 69. (left) Sean Martin of POP Fishing and Marine gives Hawai'i teachers a tour of the fresh fish auction at Pier 38 in Honolulu in 2006.

Fig. 70. (above) Guam teachers analyze the water samples they collected from the shore during the Council's *2012 Monitoring Watersheds Workshop*.

monitoring skills and about nearby Rose Atoll, traditionally known as Muliava. Additionally, in American Samoa, the Council organized a competition on the island of Tutuila for public and private schools. Each school submitted a three-panel exhibit that explained the territory's fisheries and their importance to American Samoa. Council members and visiting NMFS officials judged the exhibits at the **2017 Fishers Forum on Fishing: Food, Life, Future** (fig. 68).

6.3 Maximizing Limited Resources: Educating Educators

To prepare and encourage teachers to include fishery lessons in the classroom, the Council has organized various educator workshops. The Council and the *Honolulu Advertiser's Newspaper in Education* program held the first workshops in Honolulu beginning in 2006. They focused on the Hawai'i seafood industry and federal management of the Hawai'i-based fisheries (fig. 69).

In March 2012, the Council organized and hosted the *Monitoring Watersheds*

Workshop for teachers in Guam and the CNMI. During each workshop, Lucas Moxey, PhD, of the NMFS PIFSC's OceanWatch Program, explained island geology and techniques to sample, analyze and monitor the quality of fresh and near-shore waters (fig. 70). The Council showed the teachers how to store data online at www.fishbox.org and provided each educator with an estuary and marine monitoring kit and each school with a pH and connectivity tester. Guam teachers worked with UOG Sea Grant faculty member Laura Biggs, PhD, to implement lesson plans in their classrooms to earn college credit.

The Council, along with the NMFS OceanWatch Program and the American Samoa Department of Marine and Wildlife Resources, presented the *Workshop on Water Quality Monitoring* to 42 teachers in March 2013. Moxey provided lessons on Tutuila's geography, geology and water resources; watershed monitoring tools; and study approach and design. Teachers practiced data collection and water sampling techniques in Pago Pago Bay with boats provided by the Department of Public Safety. Moxey then led the teachers through exercises in data

collation, analysis and visualization. At the end of the workshop, teachers received an estuary and marine monitoring kit.

The Council hosted the *Educator Workshop on Geologic History, Sea-Level Change and Water Resources* on May 20–23, 2014, in Honolulu for formal and informal educators from throughout the region. Moxey prepared the participants to educate other educators in their island areas on these subjects (fig. 71 on the next page).

The Council has been active in the **OCEANIA Marine Educators Association, Hawai'i Science Teaching Association, NMEA, National Science Teachers Association, Center for Ocean Sciences Education Excellence, One Ocean Marine Forum and International Pacific Marine Educators Network (IPMEN)**. Council staff have served on their boards and committees and regularly provide exhibits and presentations at their conferences. At the NMEA conference in 2005 on Maui, attended by about 450 educators, the Council exhibited a display and shared videos and other informational materials on the NWHI fisheries. The Council also co-hosted a workshop with

Hawai'i Division of Aquatic Resources, Maui Ocean Center and Kewalo Keiki Fishing Conservancy to teach marine educators about the statewide *papio* (jack) tagging program and the value of private-public partnerships to support cooperative research. The Council also sponsored plenary speakers Bobby Gomes, a bottomfish fisherman presenting on the NWHI limited-entry fisheries (fig. 72); Mahina Paishon, executive director of Paepae O He'eia, presenting on Hawaiian fishpond restoration in He'eia; and the Council's Indigenous Coordinator Charles Ka'ai'ai, who provided an overview of Native Hawaiian marine resource use and management.

The Council was instrumental in the formation of the **NMEA Traditional Knowledge Committee** in 2007 and the **NMEA Traditional Knowledge Scholarship** in 2009. Recipients are cultural practitioners or experts of indigenous traditional knowledge who share their expertise to help promote the recognition, understanding and respect of traditional knowledge and rights as it relates to marine resources, science and ecosystems.

The Council was also a major player in the creation of **IPMEN**, hosting its first conference Jan. 15–18, 2007, in Honolulu and publishing its proceedings in a special edition of *Current: The Journal of*

Marine Education (Simonds and other 2008) (fig. 73). The Council continued to play a leading role in the biennial IPMEN conferences that followed. The goals of IPMEN are to enhance Pacific Ocean health, support coastal communities and facilitate marine education and stewardship across the Pacific, with an emphasis on traditional ecological knowledge and ocean literacy. The Council staff provided remarks on behalf of IPMEN and NMEA as an invited speaker at the **UN Decade of Ocean Science for Sustainable Development, Virtual Ocean Literacy Summit**, held June 8, 2020.

6.4 Scholarships, Internships and Employment

One of the Council's public involvement and outreach goals is to prepare the next generation of fishermen and fishery scientists and managers. To address this, the Council in 2010 partnered with the University of Hawai'i at Hilo (UH Hilo) and the American Samoa Coral Reef Advisory Group to continue the **Marine Science Undergraduate Fellowship Program**. The program provides financial support to college students from American Samoa to obtain a marine science degree from UH Hilo with the requirement that they return to the territory to work. In

2013, the Council recommended forming a committee to discuss providing similar opportunities for college students from the region's other territories. The Council formed an **Education Committee** to complete the task.

One impetus for the program was the perception that local fishery agencies prefer hiring island-born individuals, as they often have a deeper understanding of the culture and language(s) compared to newcomers. To ground-truth this, the Council in 2014 conducted an informal survey of the agencies. Respondents to the **Territorial Fisheries Staff Issues and Needs: An Exploratory Survey** noted difficulties hiring staff with a fisheries education.

The Council working with its Education Committee established an aspirational MOU in 2014 among the Council, NMFS PIFSC, NMFS PIRO, UH Hilo, the University of Hawai'i at Mānoa (UH Mānoa), Hawai'i Pacific University (HPU) and the local fishing agencies and tertiary education facilities in the three territories. The Committee, which is comprised of representatives from the entities that signed that MOU, developed the competitive **U.S. Pacific Territories Fishery Capacity-Building Scholarship Program**. Funded by the Council and



Fig. 71. (above left) Lucas Moxey, PhD (far right), instructs participants in the *2014 Educator Workshop on Geologic History, Sea-Level Change and Water Resources* on methods to measure sea-level change and ways to teach these techniques and other geologic and water resource lessons to their fellow educators.



Fig. 72. (above right) Through Council support, Hawai'i fisherman Bobby Gomes delivered a well-received presentation on the NWHI bottomfish fishery at the *2005 NMEA Conference* on Maui.



Fig.73. (above) The 2008 special edition of *Current: The Journal of Marine Education* included the proceedings of the inaugural *IPMEN Conference*, hosted by the Council on Jan. 15–18, 2007, in Honolulu.

NMFS, it offers financial support to upperclassman and graduate college students pursuing certain fisheries-related degrees at UH Hilo, UH Mānoa, HPU and UOG. Undergraduate scholarship recipients must complete an internship at the Council or another approved office that can provide background on fisheries science and management. The program requires graduates to return to their territory to work for a fisheries-related agency/organization. Since its inception in 2015, the scholarship program has supported 17 students. Twelve have graduated: four from American Samoa, two from Guam and six from the CNMI (fig. 74). Graduates now work in the American Samoa Department of Marine and Wildlife Resources, CNMI Department of Lands and Natural Resources, Guam Division of Aquatic and Wildlife Resources, UOG Sea Grant fisheries data collection program and NMFS PIFSC. Another serves as the Council's CNMI Island Coordinator.

In 2019, the Education Committee undertook a five-year review and revision of the MOU. The new, expanded **U.S. Pacific Islands Education and Employment Capacity-Building MOU**

(fig. 75) includes the Hawai'i Division of Aquatic Resources, Guam Community College, UH Mānoa College of Education's Department of Curriculum Studies, American Samoa Department of Education, Guam Department of Education and CNMI Public School System. It added the goals of supporting the development of fisheries-related vocational training and incorporation of fisheries education in K–12 classrooms and communities in the Western Pacific Region.

The Council has supported other efforts to build local capacity in fisheries science and management. In 2009, it began working with HPU's Samuel Kahng, PhD, an associate professor of oceanography and a Council Plan Team chair. Through this partnership and a CRCP grant, the Council funded 1) development of an undergraduate fisheries course and seminar series on fisheries; 2) graduate thesis projects creating preliminary framework assessments on finfish; and 3) internships with Kahng and other professors on fishery issues such as characterizing Hawai'i's trap fishery and estimating recreational fisheries catch in the region. Through the HPU partnership,

the Council reaches undergraduate and graduate marine science students who are interested in the fisheries management field. Students with undergraduate degrees found full-time or contract work with the Council. The Council has also recruited HPU graduate students and recent graduates for full-time and contracting opportunities associated with fisheries management in the region. Two students formed Poseidon Fisheries Research, which provides internships and employment to HPU students as well as outreach and education to the community.

The Council kicked off its **Fisheries Internship and Student Help** project in June 2015, designed to provide interested high school, college students and new professionals in the Western Pacific Region with practical experience in coral reef ecosystem, bottomfish and/or pelagic fisheries management. The eight-week program at the Council office in Honolulu aims to increase local fisheries management capacity and to introduce young professionals to the Council's bottom-up management process and facilitate research on regional fisheries issues.

Beginning in 2004, the Council collaborated with UH Mānoa to create a **Coastal and Marine Resources graduate program**, which was approved but never launched. The Council met with UH Mānoa leadership in 2022 to resurrect the program, which is now being developed with a focus on Hawai'i and Pacific fisheries with the first cohort anticipated to start in the fall of 2026.



Fig. 75. The U.S. Pacific Islands Education and Employment Capacity-Building MOU finalized in 2019 expresses the aspiration of 18 educational facilities and fishery agencies to improve fisheries-related college, vocational, K–12 and community education in the Western Pacific Region.

Fig. 74. Keena Leon Guerrero (center), a CNMI recipient of the U.S. Pacific Territories Fishery Capacity-Building Scholarship, poses with Richard Seman, secretary of the CNMI Department of Lands and Natural Resource, and Council Executive Director Kitty M. Simonds at the March 2015 Council meeting in Honolulu.



7. Fisheries Outreach: Past, Present and Future

A half century has passed since enactment of the MSA, which heralded in the prospects of a sustainable America seafood industry developed and managed through regional councils and participation by fishermen and the public. The success of the endeavor is mixed. In the Western Pacific Region, the port of Honolulu continues to rank among the nation's top 10 U.S. ports in terms of the value of commercial landings (\$122 million in 2022), and Pago Pago ranks 11th in terms of landings by volume (88.2 million pounds in 2022) (NMFS 2024, p 6). But individual fishermen and the American Samoa tuna cannery, which accounts for as much as 80% of the territory's revenue (CLUI 2024), are struggling. Presidential proclamations ban or restrict U.S. commercial fisheries from operating in more than half of the U.S. EEZ in the region (Sullivan-Stock and others 2022) (fig. 76), forcing them to compete on the high seas against foreign fleets, which are less regulated and more often subsidized than America's fisheries.

Nationally, despite having authority over one of the world's largest, if not the largest, EEZ, America today imports 80% to 90% of the seafood it consumes (Oyikeke and others 2024) and has an enormous seafood trade deficit, estimated

at \$20.3 billion in 2023 (White 2024). Furthermore, the United States inspects only about 2% of its seafood imports (Love and others 2011), posing health risks and the potential for entry of illegal, unreported and unregulated fish into U.S. markets.

The MSA operates under the premise that fishermen and the public can provide valuable input to help fishery managers formulate sound regulations for the fisheries in nearby offshore waters. For this process to work, the Council must not only engage the fishermen, community members and policymakers through outreach but also educate them on the dynamic nature of fisheries. This includes changes driven by natural phenomena, such as oceanic regime shifts and climate change, as well as evolving regulations introduced through MSA amendments and other Congressional or presidential actions.

The Council launched its *Public Involvement and Outreach Plan* in 1995 and conducted an independent third-party assessment of its success, with CRCP funding support, in 2010. The evaluator solicited fishermen in Hawai'i via fishing supply stores and boating, fishing and diving clubs and interviewed a broad cross-section of them as a **focus group**.

Many of the fishermen said they were unaware of the Council and what it did. In response, the Council contracted with a marketing and branding company to develop a **communications framework** to improve public understanding of the Council and its role in fisheries management. The framework brought focus to the four primary reasons the Council matters to the public:

- to give people a voice in decisions made regarding fishery management;
- to prevent overfishing and protect the ocean's ecosystem;
- to support the fishing industry, as well as the livelihood and culture of fishermen; and
- to provide consultation and recommendations as required by law.

The communications framework also identified key audiences and messaging priorities based on the hot topics for each island area. The assessor convened a second focus group in 2011. Fishermen in that group showed a better understanding about the Council and its role.

Starting in March 2020, the COVID-19 pandemic significantly disrupted traditional in-person education and outreach efforts in fisheries and fishery management. The suspension of in-person activities posed challenges in reaching out to local fishing communities, stakeholders and the public, limiting the direct interaction and individualized touch that is often vital for effective education and communication. However, one benefit is the rise of virtual platforms for webinars and online conferences, enabling global participation.

Demographics in the islands and the nation have also changed. Population trends have brought new residents with diverse cultural knowledge and values, which in turn impact public policy. Nonetheless, U.S. commercial fishermen today continue to be predominantly white (73%) and male (91%) (Zippia n.d.). The majority are also over the age of 45, which

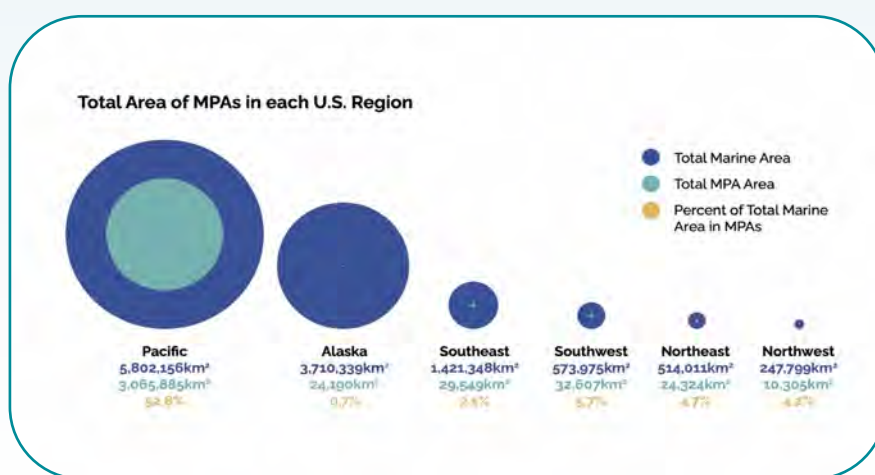


Fig. 76. The U.S. Western Pacific Region is where 99% of the nation's MPAs that are fully or highly protected against extractive or destructive human activities is located. Less than 2% of the U.S. ocean in other regions is protected in any kind of MPA (Sullivan-Stock and others 2022).

led Congress to pass the bipartisan *Young Fishermen's Development Act* in December 2020 (116th Congress, 2nd Session, S. 46 and H.R. 1240). The Act is expected bring much needed funding to support training, education, outreach and technical assistance for young fishermen.

The Council has historically attempted to improve funding for the U.S. Regional Fishery Management Councils to conduct outreach and education. Currently, NMFS does not provide the Councils with designated funding for these programs. The WPRFMC funds education and outreach through grants and partnerships and by using a portion of the budget from funded programs. In 2009, at a CCC meeting in Boston, the WPRFMC gave a presentation on fisheries outreach activities and funding. The presentation referred to a dozen laws, reports, reviews and policies showing that outreach by the regional councils plays a fundamental role in the sound management of our nation's fishery resources. Among the references cited was the *NOAA Science Advisory Board Report on Engaging NOAA's Constituents*, which notes that NOAA spends about 1% on education and public engagement. The report recommends increasing this to 10% and strengthening collaboration with partners to enhance these efforts (Kudrna and others 2008). The report points out that the NOAA programs with the strongest public engagement, Sea Grant and the National Marine Sanctuaries Program, spent 36.3% and 20%, respectively, of their overall budget on outreach in 2007. Following the presentation, the chairs of the eight councils jointly wrote to NOAA asking that it provide consistent and continued additional financial and partnership support to the councils for outreach and

education (Pappalardo and others 2009). NOAA Administrator Jane Lubchenco responded, "It is apparent there is a need for additional education and outreach." She added, there are no funds specified for council outreach in the budget and "I do not believe that any further policy for coordination is necessary" (Lubchenco 2009).

The Council's outreach and education efforts face other challenges besides funding. The Council cannot approach Congress with advice, as this is deemed lobbying. It can provide information only when asked. Additionally, the Council is restricted in its public involvement activities as it is not allowed to engage in activities that could be considered grassroots organizing. Moreover, the Council has been labeled by some as a "special interest group," such as Hawai'i Public Television when it refused to air the Council's NWHI video. Another challenge is the need to build trust and offer incentives to fishermen, as was identified in recent small-boat fishery workshops in Hawai'i. For the WPRFMC, a big challenge is the vast distance between the Western Pacific Region and Washington, D.C., and the general lack of knowledge and respect in the nation's capital for the region's fishing and indigenous communities.

The Council continues to believe in the MSA and invites fishermen and the public to engage in the federal fisheries management process. Readers interested in joining this effort can start by taking these steps:

- Learn about the region's fisheries and current challenges by visiting the Council's website at www.wpcouncil.org.

- Learn how the Council process works by reading *Navigating the Council Process*, available on the WPRFMC website.
- Stay informed about changes in the region's fisheries by subscribing to the Council's electronic distribution list by visiting the Council website home page, sending an email to info@wpcouncil.org or calling (808) 522-8220.
- Stay connected by following the Council on social media (fig. 77).

Connect

with the Council on Social Media!

Keep up with the Western Pacific and Council meetings and actions. How?

- Like us on Facebook
f @wpcouncil
- Follow us on Instagram
@wp_council
- Check us out on YouTube
wpcouncil
- Visit our websites
www.wpcouncil.org
www.wpcouncildata.org
www.ahamoku.org

Fig. 77. The Council publicizes information about its social media offerings in the Council's newsletter, on its website and at public events.

Appendix 1: Fishers Forums

- 67th Council Meeting (1989 Dec 6), Ilikai Hotel, Honolulu, Hawai'i:** Ultrasonic tracking of large pelagic fish; National fishing vessel safety study; National Seafood Inspection Program for Vessels; Tuna transshipment; Interactions between local longliners and small boat fishermen; Major data submission problems; Deep-set tuna longline techniques
- 68th Council Meeting (1990 Apr 10), Guam Public Market, Hagatña, Guam:** Ultrasonic tracking of large pelagic fish; National Seafood Inspection Program for Vessels; Native rights; Fishing vessel safety study; Tuna inclusion and transshipment; Monofilament longline technique
- 68th Council Meeting (1990 Apr 11), Aqua Resort, Saipan, CNMI:** Same as above
- 69th Council Meeting (1990 Jun 18), Ala Moana Hotel, Honolulu, Hawai'i:** Amendments to the Bottomfish and Precious Corals FMPs establishing overfishing definitions; Status report of the longline, troll and handline fisheries for billfish, tuna and other pelagic fishes with major emphasis on Hawai'i; Problem areas identified in the status report; NWHI status report
- 93rd Council Meeting (1997 Aug 20), Ala Moana Hotel, Honolulu, Hawai'i:** Open session: Issues included tagging at Cross Seamount; seabirds and turtles; closed seasons; *kapu* on berried females
- 94th Council Meeting (1997 Nov 13), Ala Moana Hotel, Honolulu, Hawai'i:** Open session: A recreational person spoke about impact of longline catches on Hawai'i blue marlin; Hawai'i longline fishermen and seafood vendors spoke about the impact of the longline closed area around Hawai'i and billfish being an incidental catch and not bycatch
- 95th Council Meeting (1998 Apr 15), American Samoa Legislature, Fagatogo, American Samoa:** Open session: Participants brought up post-harvesting issues in American Samoa, e.g., minimal use of ice on vessels and hazards to consumers; Purse-seine impacts on small boat fishermen; Limited fish marketing opportunities and lack of commercial fishing facilities in Pago Pago; Cost of duty to bring gear into the territory; Closed areas; Community Development Projects
- 97th Council Meeting (1998 Jul 28), King Kamehameha Hotel, Kailua Kona, Hawai'i:** Open session: Issues included traditional fishing methods and traditions; Community-based fisheries management; Aquarium fish collecting
- 99th Council Meeting (1999 Mar 16), Guam Hilton Hotel, Tumon, Guam:** Pacific Island fisheries development; Economic survey of local fishing industry; What HACCP means to the local fishing industry; U.S. Food and Drug Administration's position on carbon monoxide-treated tuna; Role of cooperatives in fisheries development
- 99th Council Meeting (1999 Mar 18), Saipan Diamond Hotel, Susupe, CNMI:** Same as above
- 100th Council Meeting (1999 Jun 17), Ala Moana Hotel, Honolulu, Hawai'i:** Are you an effective player in the fish management game?
- 101st Council Meeting (1999 Oct 20), Sheraton Waikiki, Honolulu, Hawai'i:** Are you ready for Y2K fisheries management?
- 107th Council Meeting (2001 Feb 14), Ala Moana Hotel, Honolulu, Hawai'i:** Pelagic issues
- 120th Council Meeting (2003 Oct 21), Fisherman's Wharf, Honolulu, Hawai'i:** Small-boat management and importance of reporting fishing activity; Pacific blue marlin management; MHI bottomfish restricted fishing areas and fisheries rebuilding plan; Personal fish aggregating devices and their impact; Scoping session on the Pelagic FMP supplemental environmental assessment/impact statement
- 122nd Council Meeting (2004 Mar 23), Hawai'i Convention Center, Honolulu, Hawai'i:** Pacific Islands Region strategic planning
- 123rd Council Meeting (2004 Jun 23), Ala Moana Hotel, Honolulu, Hawai'i:** NOAA draft Recreational Fisheries Strategic Plan for 2004–09
- 126th Council Meeting (2005 Mar 15), Ala Moana Hotel, Honolulu, Hawai'i:** Fishing and marine reserves: Fishing for your ideas
- 127th Council Meeting (2005 Jun 1), Ala Moana Hotel, Honolulu, Hawai'i:** Fish tagging programs; Bottomfish and bigeye tuna overfishing
- 129th Council Meeting (2005 Nov 11), Guam Fishermen's Cooperative, Hagatña, Guam:** Guam Fishermen's Cooperative
- 131st Council Meeting (2006 Mar 14), Ala Moana Hotel, Honolulu, Hawai'i:** MHI bottomfish overfishing (public hearing); NWHI fishing regulations (public hearing)
- 131st Council Meeting (2006 Mar 15), Ala Moana Hotel, Honolulu, Hawai'i:** Mandatory vessel identification systems for vessels over 65 feet
- 133rd Council Meeting (2006 Jun 13), Utulei Convention Center, Pago Pago, American Samoa:** Communities in archipelagic FEPs
- 135th Council Meeting (2006 Oct 17), Ala Moana Hotel, Honolulu, Hawai'i:** Catch of the day! Fishing community issues
- 137th Council Meeting (2007 Mar 14), Ala Moana Hotel, Honolulu, Hawai'i:** The perfect storm (New MSA provisions)
- 139th Council Meeting (2007 Oct 10), Pagoda Hotel, Honolulu, Hawai'i:** Fishing for data
- 142nd Council Meeting (2008 Jun 8), Ala Moana Hotel, Honolulu, Hawai'i:** The cost of fishing
- 143rd Council Meeting (2008 Oct 15), Pagoda Hotel, Honolulu, Hawai'i:** Bottomfish (public hearing)
- 144th Council Meeting (2009 Mar 24), Gov. Lee Auditorium, Utulei, American Samoa:** Fisheries development in American Samoa and surrounding regions: Opportunities and challenges
- 145th Council Meeting (2009 Mar 23), King Kamehameha Hotel, Kailua Kona, Hawai'i:** Marlin on the menu
- 146th Council Meeting (2009 Oct 21), Aloha Tower, Honolulu, Hawai'i:** Community resource management: Fishermen as scientists
- 147th Council Meeting (2010 Mar 22), Fiesta Resort, Garapan, CNMI:** Community resource management: Fishermen as scientists

- 147th Council Meeting (2010 Mar 25), Guam Hilton, Tumon, Guam:** Community resource management: Fishermen as scientists
- 148th Council Meeting (2010 Jun 29), Aloha Tower, Honolulu, Hawai'i:** Hawai'i seafood: Past, present and future
- 149th Council Meeting (2010 Oct 12), Aloha Tower, Honolulu, Hawai'i:** Marine spatial planning: Fishermen and ocean user perspectives
- 150th Council Meeting (2011 Mar 8), Gov. Lee Auditorium, Utulei, American Samoa:** Fonotaga mo so'ó se tagata faifaiva. Sustainable fisheries development and ecosystem management
- 151st Council Meeting (2011 Jun 16), Elks Club, Honolulu, Hawai'i:** Future of honu management
- 152nd Council Meeting (2011 Oct 20), Waikiki Aquarium, Honolulu, Hawai'i:** Code of conduct for Hawai'i ocean users
- 153rd Council Meeting (2012 Mar 5), Fiesta Resort, Garapan, CNMI:** Climate change: Opposing views and monitoring tools; Fishery development and management
- 153rd Council Meeting (2012 Mar 8), Guam Hilton Hotel, Tumon, Guam:** Climate change: Is it really happening?
- 154th Council Meeting (2012 Jun 27), Harbor View Center, Honolulu, Hawai'i:** 'Ihar she blows! Managing for recovery of the North Pacific humpback whales
- 155th Council Meeting (2012 Oct 30), Harbor View Center, Honolulu, Hawai'i:** Tuna! Tuna! Tuna!
- 156th Council Meeting (2013 Mar 12), Gov. Lee Auditorium, Utulei, American Samoa:** Coastal and marine spatial planning and environmental monitoring for Pago Pago Bay
- 157th Council Meeting (2013 Jun 27), Harbor View Center, Honolulu, Hawai'i:** King shark: From mano to Jaws—Culture, science and management of sharks in Hawai'i
- 158th Council Meeting (2013 Oct 27), Harbor View Center, Honolulu, Hawai'i:** I fish. U fish. Got beef? Debunking fishery myths
- 159th Council Meeting (2014 Mar 17), Fiesta Resort, Garapan, CNMI:** Are sharks overabundant in the Mariana archipelago?
- 159th Council Meeting (2014 Mar 20), Guam Hilton Hotel, Tumon, Guam:** Malesso Community-Based Marine Management Plan
- 160th Council Meeting (2014 Jun 25), Harbor View Center, Honolulu, Hawai'i:** We don't play with our food: Noncommercial fishing in Hawai'i
- 161st Council Meeting (2014 Oct 21), Harbor View Center, Honolulu, Hawai'i:** Hawai'i yellowfin tuna and striped marlin management
- 162nd Council Meeting (2015 Mar 17), Harbor View Center, Honolulu, Hawai'i:** Stock assessments
- 163rd Council Meeting (2015 Jun 17), Harbor View Center, Honolulu, Hawai'i:** Seafood safety and traceability
- 164th Council Meeting (2015 Oct 17), Fagatogo Marina, Fagatogo Village, American Samoa:** American Samoa fisheries
- 165th Council Meeting (2016 Mar 15), Ala Moana Hotel, Honolulu, Hawai'i:** MHI bottomfish: History, research and management
- 166th Council Meeting (2016 Jun 6), Fiesta Resort, Garapan, CNMI:** Coral reef fishery sustainability: What does actual data say?
- 166th Council Meeting (2016 Jun 9), Guam Hilton Hotel, Tumon, Guam:** Participatory mapping of coral reef fisheries in the Mariana archipelago
- 168th Council Meeting (2016 Oct 12), Ala Moana Hotel, Honolulu, Hawai'i:** Magnuson and marine monuments: Fisheries management and social-environmental justice in the era of large MPAs
- 169th Council Meeting (2017 Mar 22), Ala Moana Hotel, Honolulu, Hawai'i:** Using fishermen knowledge to inform fishery management
- 170th Council Meeting (2017 Jun 21), Dole Cannery Pomaikai Ballrooms, Honolulu, Hawai'i:** From boat to web: Understanding catch reporting and fishery monitoring
- 171st Council Meeting (2017 Oct 18), Gov. Lee Auditorium, Utulei, American Samoa:** Fishing: Food. Life. Future
- 172nd Council Meeting (2018 Mar 14), Dole Cannery Pomaikai Ballrooms, Honolulu, Hawai'i:** Hawai'i fisheries: Getting the full story
- 173rd Council Meeting (2018 Jun 11), Maui Beach Hotel, Kahului, Hawai'i:** Going deep: Hawai'i's bottomfish story
- 174th Council Meeting (2018 Oct 23), Fiesta Resort, Garapan, CNMI:** One shot, one fish: Saipan's noncommercial spear fishery
- 174th Council Meeting (2018 Oct 26), Guam Hilton Hotel, Tumon, Guam:** One shot, one fish: Guam's noncommercial spear fishery
- 176th Council Meeting (2019 Mar 19), Ala Moana Hotel, Honolulu, Hawai'i:** Food, sex & death: Using life history in stock assessments
- 178th Council Meeting (2019 Jun 25), Ala Moana Hotel, Honolulu, Hawai'i:** Fishing in the future: Emerging technologies in fisheries
- 180th Council Meeting (2019 Oct 22), Sunia Ocean Center, Utulei, American Samoa:** Palolo harvest: Science and tradition
- 181st Council Meeting (2020 Mar 10), Aloha Tower Marketplace, Honolulu, Hawai'i:** Hawai'i pelagic fisheries (2020 Aug 27) **By video conference:** Fishermen helping scientists: Fish tagging, biosampling and noncommercial surveys; Public scoping on proposed longline area closure amendment and mandatory federal permit and reporting for small-boat fisheries
- 194th Council Meeting (2023 Mar 27), Crowne Plaza Hotel, Garapan, CNMI:** All about bottomfish in the Marianas
- 194th Council Meeting (2023 Mar 30), Guam Museum, Hagatña, Guam:** Same as above
- 195th Council Meeting (2023 Jun 27), Gov. Rex Lee Auditorium, American Samoa:** Rising tides and changing times: Climate change in American Samoa
- 196th Council Meeting (2023 Sep 18), Ala Moana Hotel, Honolulu, Hawai'i:** What's in the gut?
- 198th Council Meeting (2024 Mar 18), Ala Moana Hotel, Honolulu, Hawai'i:** Fish ID 101: Know your catch
- 199th Council Meeting (2024 Jun 24), Ala Moana Hotel, Honolulu, Hawai'i:** Where are the fish going? Climate change and fisheries

APPENDIX 2: *Pacific Islands Fishery News: Issues and Lead Stories*

- 1984 Vol. 1(1) Council Has Two Jobs: Fishery Development AND Conservation
- 1988 Vol. 2(1) Council Goals: Fishery Development and Conservation
Vol. 2(2) 62nd Western Pacific Fishery Management Council Meeting
Vol. 2(3) Profile: Dr. Thomas S. Dye
Vol. 2(4) 1988 On the Waterfront: Guam
- 1989 Vol. 3(1) 64th Council FMP Report
Vol. 3(2) American Samoa Governor Peter Coleman Addresses 65th Council Meeting
- 1990 Vol. 4(1) The Big Chill: Fish and the FDA
- 1991 Vol. 5(1) Longline Fishing Restrictions Imposed
- 1996 Vol. 6(1) Satellites May Track Foreign Fishing Vessels
- 1997 Vol. 7(1) U.S. Pacific Islands to Benefit from '96 Magnuson-Stevens Act
Vol. 7(2) Homegrown Longline Industry Blossoms in American Samoa
Vol. 7(3) El Nino 1997–98: Impact on Fishery Uncertain
- 1998 Vol. 8(1) Demand for Pacific Shark Increases
Vol. 8(2) Multilateral Process to Manage Tuna Moves Forward
Vol. 8(3) Reducing Seabird-Longline Interactions
- 1999 Vol. 9(1) The Color of Sashimi—Fresh Red or False Red?
Vol. 9(2) Marking Fish in the Western Pacific Region
Vol. 9(3) Akule Are Unpredictable but Dependable, Expert Fisher Argues
- 2000 Vol. 10(1) Preserving American Samoa's Fishing Heritage
Vol. 10(2) Local Fisheries Critical, Say Hawai'i Chefs and Vendors
Vol. 10(3) Judge Closes Hawai'i Swordfish Fishery
- 2001 Vol. 11(1) 'Saving' the Pacific Leatherback Turtle?
Vol. 11(2) New Boats, New Rules Worry Territories, Commonwealth
- 2002 Vol. 12(1) Council to Assess the North Pacific Squid Fishery
Vol. 12(2) Bird Bycatch Reduced to Zero in Hawai'i Test of New Gear
Vol. 12(3) Council Approves American Samoa Limited Entry Program
- 2003 Vol. 13(1) Super Typhoon Devastates Guam's Fishing Community
Vol. 13(2) Marine Protected Area Inventory for CNMI Now Available Online
Vol. 13(3) Island Fish Features at NOAA's Annual Fish Fry
- 2004 Vol. 14(1) Science Symposium Presents NWHI Research
Vol. 14(2) Swordfish Fishery Plan Receives Waves of Support
Vol. 14(3) Council Develops Archipelagic Fishery Ecosystem Plans
- 2005 Vol. 15(1) Council Co-sponsors Workshop for Pacific Island Countries
Vol. 15(2) Fishermen Promote Responsible Tuna Fisheries
- 2006 Vol. 16(1) Change to Fishery Ecosystem Plans
Vol. 16(2) President's Rules for NWHI Unfair to Fishermen?
- 2007 Vol. 17(1) Magnificent 7 Bottomfish Kapu in MHI
- 2008 Vol. 18(1) Bottomfish Imports Soar as Local Waters Close, More Rules on the Way
Vol. 18(2) Council Votes for Purse-Seine Area Closures
- 2009 Vol. 19(1) Council Agrees on 2009–10 MHI Bottomfish TAC
- 2010 Vol. 20(1) End of an Era: Aloha, NWHI Bottomfish Fishery
Vol. 20(2) Customary Exchange Maintains Cultural Continuity
- 2011 Vol. 21(1) Historic Hawai'i Legislation Restores 'Aha Moku System
Vol. 21(2) NMFS, Fishermen at Odds over Monk Seals

- 2012 Vol. 22(1) Remarkable Recovery Rate May Lead to Honu Delisting, Local Management
- 2013 Vol. 23(1) Council Offers Options to End Bigeye Tuna Overfishing
- 2014 Vol. 24(1) Council Explores Measures to Provide Relief to American Samoa Fishermen
Vol. 24(2) Obama's Proclamation Bans U.S. Commercial Fishing in 63% of the Pacific Remote Island Waters
- 2015 Vol. 25(1) Council Conducts Five-Year Review of Its Fishery Ecosystem Plans
Vol. 25(2) Hawai'i Humpbacks Recovered, Green Turtle Recovery Questioned
Vol. 25(3) Annual Catch Limits for Hawai'i Bottomfish Specified
- 2016 Vol. 26(1) Hawai'i Bigeye Tuna Fishery Survives Two-Month Closure
Vol. 26(2) Can Mariana Fishing Industry's Past Glories Be Revived?
Vol. 26(3) Why the Rush? Prominent Native Hawaiians and Politicians Ask
Vol. 26(4) Executive Director's Message: Change Expected with Federal Transition
- 2017 Vol. 27(1) Thousands of Species Slated for Ecosystem Component Designation
Vol. 27(2) Fisheries May Find Relief in Trump's Monument, Sanctuary Reviews
Vol. 27(3) WCFPC Holds Honolulu Intersessional Meeting to Advance New Tropical Tuna Measure
Vol. 27(4) American Samoa Women Longline Owners Persevere
- 2018 Vol. 28(1) Council Officers Identify Their 2018 Priorities
Vol. 28(2) Managing Hawai'i Bottomfish Has Come a Long Way
Vol. 28(3) Billfish Amendment Targeted Island Fisheries with No Conservation Gained
Vol. 28(4) Fish Is Hawai'i's #1 Locally Produced Food
- 2019 Vol. 29(1) Fishery's Role Elevated in New Guam, CNMI Administrations
Vol. 29(2) New Turtle Limits Recommended to Re-open Swordfish Fishery
Vol. 29(3) Data Is the Backbone of Fisheries Science and Management
Vol. 29(4) Are the Territory Bottomfish Fisheries in Dire Straits?
- 2020 Vol. 30(1) Hawai'i Swordfish Harvest Returns after Nine-Month Hiatus
Vol. 30(2) Message from the Chair and Executive Director
Vol. 30(3) Trump Initiatives Support American Seafood
Vol. 30(4) Building on Successful Fisheries Management
- 2021 Vol. 31(1) President Biden Plans to Conserve 30% of Land and Waters by 2030
Vol. 31(2) Celebrating Women Leaders and Diversity
Vol. 31(3) Why is my Poke Bowl \$20? Is this the A-poke-lypse?
Vol. 31(4) Council Recommends Improving Science to Support Better Management of False Killer Whale Interactions
- 2022 Vol. 32(1) Gender Roles, Power & Fisheries
Vol. 32(2) Council Proposes a New Pacific Strategy to Advance US Interests Through Fisheries
Vol. 32(3) Sustainable Take of Sea Turtles: A Global Perspective
Insert: Rebounds and Lingering Effects from Pandemic-Related Impacts on Fishing Communities Seen in 2021 US Pacific Island Fisheries Reports
Special Issue: Pacific Remote Islands Marine National Monument Expansion Proposal
Vol. 32(4) Fishing for Information on Regulations in the NWHI
- 2023 Vol. 33(1) Climate Change in the Western Pacific: Where to Now?
Vol. 33(2) Potential Economic and Political Fallout of Tuna Fishery Closures in Proposed PRIA Sanctuary
Vol. 33(3) Council, American Samoa Leaders Frustrated by Fishery Management through Pacific Sanctuaries, Monuments
Vol. 33(4) Navigating the Choppy Waters of the Sanctuary Designation and Fishery Impacts
- 2024 Vol. 34(1) Trial, Error and Improvement in Pacific Island Bottomfish Stock Assessments
Vol. 34(2) Adapting Amidst Challenges: Insights from the 198th WPRFMC Meeting
Insert: Seeing Through the Haze: Understanding Tuna, Mercury and Health
Insert: Justice? Or Just Us? Equity in Fisheries: Balancing Conservation and Livelihoods in the Pacific Islands
Vol. 34(3) Unfair Trade and Problems with Foreign Fish Flooding US Pacific Island Markets
Vol. 34(4) Fish Are Food: Embracing Sustainable Fishing in Pacific Island Fisheries

APPENDIX 3: *Pacific Magazine* Articles

- March 2002. First Fishery Ecosystem Plan Is Developed in the Western Pacific Region
- April 2002. Fishery Managers Use Ecosystem-Based Approach
- May 2002. Fisheries to Be Managed Using Ecosystem-Based Approach
- June 2002. Longline Fishing off American Samoa: Finding the Balance
- July 2002. Second International Fishers Forum: Reducing Unintended Catch of Seabirds and Sea Turtles
- August 2002. Western and Central Pacific Fishery Convention: Ensuring the Future of Tuna and Other Highly Migratory Fish Stocks
- September 2002. Fisheries Education Program Targets US and Pacific Island Students
- October 2002. Future of Longline and Purse Seine Fishing in the Pacific
- November 2002. Fishermen Have a Voice in Fishery Management Decisions
- December 2002. Overview of 2002 US Pacific Islands Fishery Management and Conservation Activities
- January 2003. Fishermen Commit to Actions to Save Sea Turtles and Seabirds
- February 2003. Coastal Fisheries Bring Stability to Local Communities
- November 2005. Fishermen from the Pacific, America and Asia Promote a 12-Point Plan to Protect Tuna
- March–April 2006. US Pacific Islands Offshore Fisheries to Be Managed as Archipelagic Ecosystems
- May–June 2006. NWHI: Should the Majority of Hawai‘i Waters Be Closed to Fishing?
- November–December 2006. Pearls of Wisdom ... Honoring Our Ancestors
- March–April 2007. Marine Educators Form Network to Protect Resources of the Pacific; Scientists Rebut Claims of Oceanic Fish Extinction
- May–June 2007. US Pacific Islands Celebrate 30 Years of Fisheries Management
- September–October 2007. Pacific Island Longline Fisheries Benefit from US Management Model, Canneries
- November–December 2007. ‘Come Back Leatherback’ Seeks Long-Term Recovery of the Pacific Sea Turtle
- March–April 2008. Central and South American Fishermen Join International ‘Fish Forever’ Initiative
- May–June 2008. Hawai‘i Initiative Provides Model for Mainstreaming Traditional Knowledge

APPENDIX 4: *Pacific Islands Fishery Monographs*

- Grigg, Richard. 2010. The Precious Corals Fishery Management Plan of the Western Pacific Regional Fishery Management Council. Pacific Islands Fishery Monographs 1.
- Fougner, Svein. 2010. Ten Years and Counting: The First 10 Years of the Western and Central Pacific Highly Migratory Fish Stocks Convention. Sylvia Spalding, editor. Pacific Islands Fishery Monographs 2.
- Sabater, Marlowe and Ray Tulafono. 2011. American Samoa Archipelagic Fishery Ecosystem Report. Pacific Islands Fishery Monographs 3.
- Ishizaki, Asuka. 2015. Protected Species Conservation by the Western Pacific Regional Fishery Management Council. Pacific Islands Fishery Monographs 4.
- Markrich, Max and Christopher Hawkins. 2016. Fishing Fleets and Fishery Profiles: Management, Vessels, Gear, Economics. Pacific Islands Fishery Monographs 5.
- Kingma, Eric. 2016. Fisheries Development Projects in American Samoa, Guam and the Northern Mariana Islands, 2010–15. Pacific Islands Fishery Monographs 6.
- Ka‘ai‘ai, Charles. 2016. Western Pacific Indigenous Fishing Communities. Pacific Islands Fishery Monographs 7.
- DeMello, Joshua, Martha Maciasz, Jordan Kurokawa and Marlowe Sabater, editors. 2016. Western Pacific Coral Reef Fisheries: Management and Research in the U.S. Pacific Islands. Pacific Islands Fishery Monographs 8.
- Markrich, Michael. 2020. Northwestern Hawaiian Islands Lobster Fishery. Pacific Islands Fishery Monographs 9.
- Markrich, Michael. 2020. History of the Billfish Fisheries and Their Management in the Western Pacific Region. Pacific Islands Fishery Monographs 10.
- Dalzell, Paul. 2020. University of Hawai‘i Pelagic Fisheries Research Program. Pacific Islands Fishery Monographs 11.
- Martell, Liz and Sylvia Spalding. 2020. Fishery Ecosystem Management in the Western Pacific Region. Pacific Islands Fishery Monographs 12.
- Sabater, Marlowe. Fishery Data Collection Systems: Evasive as an Elusive Fish. 2021. Pacific Islands Fishery Monographs 13.
- Spalding, Sylvia and Amy Vandehey. 2024. Public Involvement and Outreach to Sustain Fisheries in the Western Pacific Region. Pacific Islands Fishery Monographs 14.
- Fougner, Svein and Mark Fitchett. 2022. Western and Central Pacific Fisheries Commission: The Second Decade—Evolution of Modern Management. Pacific Islands Fishery Monographs 15.
- Yamada, Zachary. Forthcoming. Finding Equity and Environmental Justice for Western Pacific Fisheries. Pacific Islands Fishery Monographs 16.

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