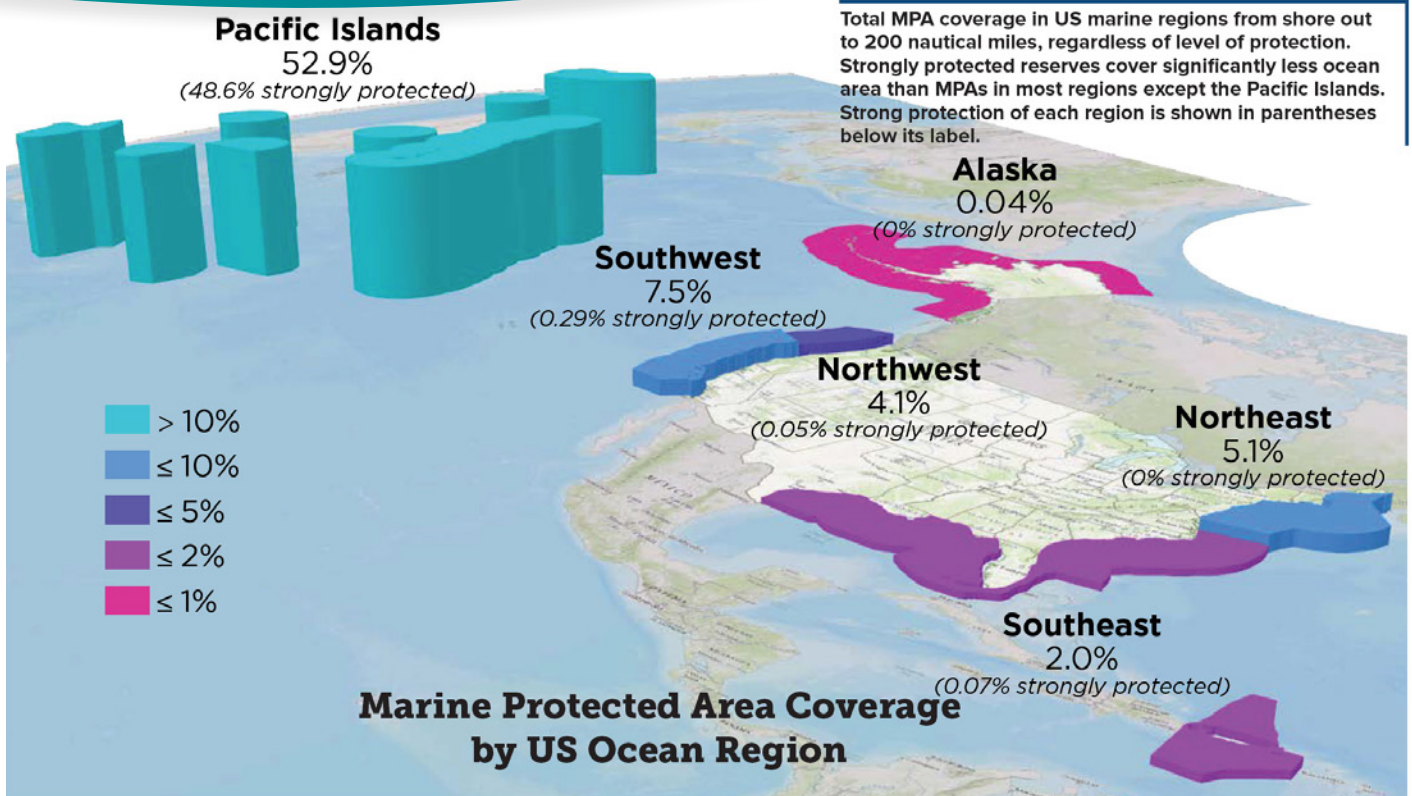


PACIFIC ISLANDS FISHERY NEWS

Newsletter of the Western Pacific Regional Fishery Management Council / Winter 2021

ISSN 2151-2329 (PRINT) ISSN 2151-2337 (ONLINE)



Source: www.marine-conservation.org/us-seastates-2021.

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President Biden Plans to Conserve 30% of Land and Waters by 2030

On Jan. 27, 2021, President Joe Biden issued an Executive Order on “Tackling the Climate Crisis at Home and Abroad,” directing his administration to conserve at least 30% of U.S. lands and waters by 2030. A National Climate Task Force will review recommendations from the Secretary of the Interior, in consultation with the Secretary of Agriculture, Secretary of Commerce and the chair of the Council on Environmental Quality. This report will outline how the United States should work with state, local, tribal and territorial governments, agricultural and forest landowners, fishermen and other key stakeholders to achieve this goal. Included in this section of the EO is for NOAA to initiate efforts to consult with fishermen and the regional fishery management councils on ways to make fisheries and protected resources more resilient to climate change.

The 30x30 initiative, as it is colloquially known, is an ambitious attempt to support conservation efforts across the country. However, the window is short for engaging stakeholders to provide information for this effort. The report is due to the Task Force within 90 days of the EO, or April 27, 2021. This allows very little opportunity for collaboration with fishermen and other stakeholders, so it is important for everyone to participate when the opportunity arises.



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Dedicated to ecosystem-based fisheries management in the U.S. Pacific Islands.



30x30 initiative CONTINUED FROM PAGE 1

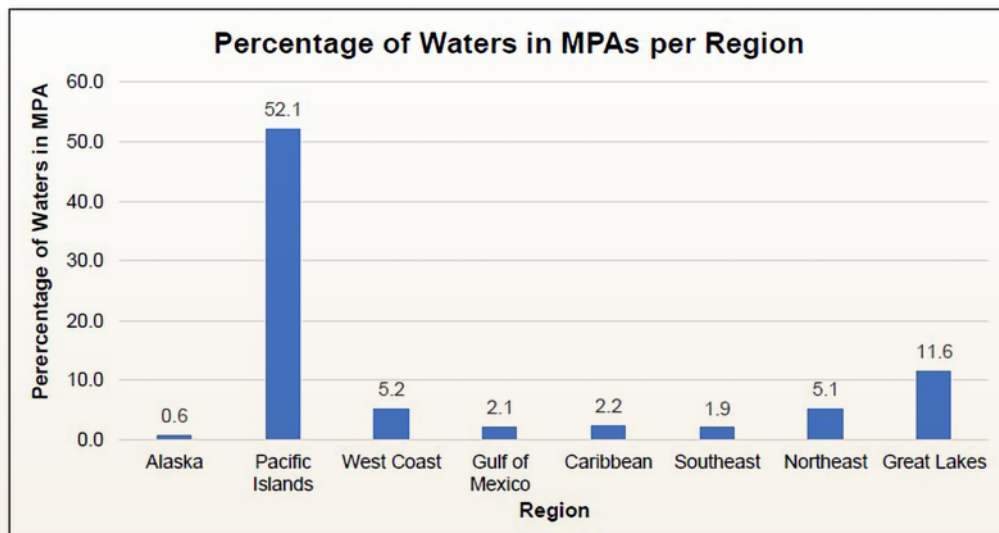
A key sticking point for this initiative may be the definition of conservation. Previous legislation that introduced the 30x30 idea essentially meant no-take areas. The Western Pacific Regional Fishery Management Council maintains that conservation and management go hand in hand and refers to the regulations required to rebuild, restore or maintain any resource and the marine environment (Magnuson-Stevens Act §3(5)). Regional fishery management councils have practiced conservation since the Magnuson-Stevens Fishery Conservation and Management Act was enacted in 1976. The fisheries and fish stocks within the U.S. exclusive economic zone (EEZ, up to 200 nautical miles seaward of state waters) are currently 100% conserved and managed. This includes target, non-target and protected species affected by those fisheries, along with their habitats.

Nearly half of the entire U.S. EEZ is in the Western Pacific Region, which means it will play a large role in whatever form the 30x30 initiative takes when finally rolled out. How conservation is defined and if it refers to 30% of the total U.S. EEZ or to each region is yet to be seen, but the WP Region appears to be ahead of the game. In terms of area, the WP Region has more than 50% designated as marine national monuments—almost 24% of the entire U.S. EEZ. According to the

SeaStates 2021 report developed by the Marine Conservation Institute, these areas are considered “strongly protected” as they do not allow commercial extraction but provide for noncommercial fishing activities. Depending on which approach is taken with the 30x30 proposal, the WP Region is in a good position to demonstrate it already has some of the most protected areas in the nation.

The State of Hawai'i and Governor Ige pledged to “effectively manage 30% of nearshore ocean waters by 2030” at the 2016 World Conservation Congress held in Hawai'i. Ten years prior, the Micronesia Challenge (which includes the Commonwealth of the Northern Mariana Islands and Guam) set out a similar initiative to “effectively conserve at least 30% of the near-shore marine resources” by 2020 and, more recently, increased that goal to effectively manage 50% of marine resources by 2030. The idea is not new. The Council has effectively managed 100% of the almost 1.7 million nautical square miles of EEZ under its jurisdiction with management regulations such as prohibitions on bottom trawls and other destructive gears, area-based closures and gear/vessel restrictions. Whatever form the president's 30x30 initiative takes, it should be fair and equitable to reduce any additional burden on the fisheries in the WP Region. 🐟

In terms of area, the WP Region has more than 50% designated as marine national monuments—almost 24% of the entire U.S. EEZ.



Graph shows the percent of regional waters that are in marine protected areas (MPAs). Relative to the area of marine waters, the Pacific Islands have the highest proportion of MPAs (52%) while Alaska has the lowest (<1%). Source: NOAA.

Additional \$300 Million for Fishing Community in New COVID Relief Law

On Dec. 27, 2020, President Trump signed the \$900 billion Coronavirus Response and Relief Supplemental Appropriations Act of 2021. \$300 million is allocated for fisheries and designates seafood as an eligible use for U.S. Department of Agriculture food purchases, with additional funding for the Paycheck Protection Program (PPP).

Funds for the new law, as with the previous Coronavirus Aid, Relief and Economic Security (CARES) Act, will be available to commercial fishermen, charter businesses and subsistence/cultural/ceremonial users, including \$15 million for aquaculture and seafood processors. The distribution among states, tribes and territories will be determined by NOAA, and is expected to follow the same formula and process as the CARES Act.



Seafood dealers in Hawai'i such as Fresh Island Fish Co. are among the fishery-related groups eligible to receive funds from the recently approved Coronavirus Response and Relief Supplemental Appropriations Act of 2021. Photo: Fresh Island Fish Co.

CARES Act funding for fisheries and aquaculture was distributed as follows for the Pacific Region: Hawai'i—\$4,337,445; American Samoa—\$2,553,194; and \$1 million each for Guam and the Commonwealth of the Northern Mariana Islands (CNMI). Spending plans submitted by eligible states, tribes and territories were approved by NOAA and funding was administered by the Pacific States Marine Fisheries Commission (PSMFC). Not covered were businesses farther down the supply chain, such as vessel-repair businesses, restaurants or seafood retailers not considered "fishery-related businesses."

Under the COVID relief law, \$284 billion is provided for a second round of Small Business Administration (SBA) PPP loans. Fishing companies that qualify as small businesses under SBA regulations may be eligible. Restaurants, seafood processors and distributors that supply them will benefit from these loans.

According to the National Fisheries Institute, the seafood industry has been saddled with approximately \$2.2 billion in outstanding debt since the beginning of the pandemic. In Hawai'i, restaurants closed as of Feb. 1, 2021, include local seafood favorites like Uncle's Fish Market at Pier 38 and the Honolulu locations of Ahi Assassins (www.foodagogo.org/closed-restaurants). The new legislation allows restaurants to qualify for PPP loans as long as they do not employ more than 300 employees at each physical location, recognizing that many midsized and larger restaurant groups are on the verge of bankruptcy.

Spend plans for each state, tribe and territory that address the CARES Act requirements vary in funding allocation between fishing sectors and how much each applicant receives. To be eligible for relief, participants must have "revenue losses greater than 35% as compared to the prior five-year average revenue, or any negative impacts to subsistence, cultural or ceremonial fisheries."

Hawai'i's spend plan calculated the fishery participant sector (i.e., longline fishery, commercial nonlongline fishers, charter fishery, seafood processors/dealers and subsistence fishers) allocations based on the relative proportion of a fishery to the total calculated value. For example, the charter fishery's value of approximately \$20 million is 12% of the total value for all Hawai'i fisheries combined, so the total allocated funding for that sector was \$500,000. Applications were due to the Hawai'i Division of Aquatic Resources by Nov. 23, 2020, and checks were mailed out Dec. 24, 2020. The PSMFC received approximately 326 applications from Hawai'i of which 284 were deemed eligible and received funds.

In American Samoa, the Department of Marine and Wildlife Resources (DMWR) received more than 7,000 applications, mainly from subsistence fishermen, and about 10 from commercial fishermen by the extended deadline of Dec. 31, 2020. While not all applicants may be eligible, the high turnout is an indication that families are struggling financially. DMWR's spend plan allocates funds to fish processors, dealers, fishing businesses

CONTINUED ON PAGE 4



Ahi Assassins, known for its fresh poke, and many other restaurants across Hawai'i have closed their doors due to the COVID-19 pandemic. Photo: David Groves.



Fishermen on Rota (CNMI) listen to a presentation on the CARES Act before receiving their application for relief funding. Photo: Rota Mayor's Office.

(longline, alias), charter fishing and aquaculture operations according to each sector's contribution to the local economy. However, with the majority of applications from subsistence fishermen, and no applications for categories such as aquaculture and fish processing, DMWR plans to work with NOAA Grants Management Division to reallocate funds.

The Guam Division of Aquatic and Wildlife Resources (DAWR) submitted a spend plan to NOAA outlining the guidelines for distributing \$988,803 in direct payments to eligible fishery participants. DAWR started its process by registering 811 interested applicants into a database and separating them into three categories—tier one and two commercial fishers and subsistence fishers—with the vast majority falling in the latter category. The application deadline was extended from Nov. 30, 2020, to March 31, 2021. As of Feb. 1, 2021, DAWR had received around 313 complete applications that were deemed qualified for funding. Checks are estimated to arrive two weeks after documents are submitted to the PSMFC.

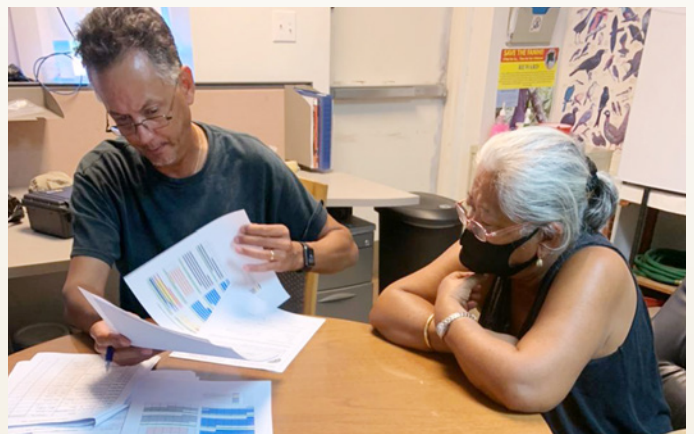
CNMI's spend plan was approved in November 2020 and \$980,000 was allocated to assist commercial fishermen, charter businesses, aquaculture operators, fish dealers and processors and subsistence fishermen. The CNMI government made a request to NOAA and the PSMFC to expand eligibility for all fishermen that fall into the categories of commercial and subsistence fishermen, regardless of immigration status. All eligible applicants will receive assistance based on an approved formula that

determines the amounts allocated for businesses and individual fishermen. Applications are due to the CNMI Office of Grants Management by March 1, 2021, and while more than 1,000 applications were received, as of Feb. 1, 2021, 61, 43 and 18 applications were submitted to PSMFC from Saipan, Rota and Tinian, respectively. Checks will be distributed from PSMFC between May 3 and June 16, 2021. 🐟

For more information, visit:

www.wpcouncil.org/coronavirus

www.psmfc.org/cares-act-the-coronavirus-aid-relief-and-economic-security-act



Council Advisory Panel Vice Chair for CNMI Richard Farrell helps Tinian fisher Delores Palacios with her CARES Act application. Photo: Richard Farrell.

Highlights from 184th Council Meeting Dec. 2-4, 2020

Hawai'i Deep-Set Longline Fishery

A conservation effort developed by the Hawai'i deep-set longline fishing industry to further reduce interactions and post-hooking deaths of oceanic whitetip sharks, leatherback turtles and other protected species will be considered for incorporation into the Pacific Pelagic Fishery Ecosystem Plan. The Western Pacific Regional Fishery Management Council staff will prepare a regulatory amendment by the March 2021 meeting that, among other measures, evaluates options prohibiting wire leaders in the fishery.

The Hawaii Longline Association (HLA) presented its initiative to voluntarily change the fleet's gear to the Council. The proposal would replace the current wire leaders used on fishing gear with monofilament ones, which are better for the species that occasionally interact with them. Whether or not any proposed regulatory change could be implemented before summer 2021, the HLA has committed to making this change on all of the vessels operated by their members no later than July 2021. The HLA is currently evaluating changes to fishing procedures to ensure that the gear change can be made while minimizing risk of injury to crewmembers.



The Hawaii Longline Association proposed switching the Hawai'i deep-set fishery's gear from steel wire leaders (top) to monofilament nylon leaders (bottom) to increase oceanic whitetip sharks and other protected species' chance of survival post-interaction. Wire leaders are commonly used in the industry to increase crew safety by preventing gear flyback. Note: image shows "J" tuna hooks and not circle hooks that are used in the Hawai'i deep-set longline fishery to minimize fishery impacts on protected species. Source: Ward et al., 2008.

Bottomfish Stock Management Measures

American Samoa

Action on specifying the annual catch limit (ACL) and rebuilding plan for the American Samoa bottomfish fishery was deferred. The stock is overfished and subject to overfishing. The Magnuson-Stevens Fishery Conservation and Management Act requires the Council to take action to end overfishing immediately and rebuild the overfished stock within 10 years. In the past quarter, four fishermen landed 665 pounds of bottomfish.

Deferring action allows the Council to support the American Samoa government in finalizing its territorial

bottomfish fishery management plan. With 85% of bottomfish habitat located within territorial waters, it is essential that local and federal governments work together to manage the fishery. The Council requested that the National Marine Fisheries Service (NMFS) extend the American Samoa interim catch limit of 13,000 pounds of bottomfish for an additional 185 days from the expiry date of May 17, 2021, while the Council finalizes conservation and management measures to end overfishing in the fishery. A new stock assessment is scheduled to be completed in 2023.

Guam

The Council voted to adopt a bottomfish ACL of 31,000 pounds starting in fishing year 2023 to rebuild the overfished bottomfish stock in Guam. The limit corresponds to a 35–40% risk of overfishing and would allow the stock to replenish in six years. This option poses the least chance of the fishery exceeding the catch limit and extending the rebuilding time. The annual average bottomfish catch over the past several years is about 27,000 pounds. An in-season accountability measure will be implemented to track catch relative to the ACL. Federal waters will be closed to bottomfishing when the ACL is projected to be reached.

Main Hawaiian Islands False Killer Whales

The Council directed staff to send a letter to NMFS in response to its request for comments on the main Hawaiian Islands insular false killer whale (FKW) draft recovery plan and draft recovery implementation strategy. The letter, which was sent Dec. 15, 2021, incorporated the following recommendations and requests:

- Prioritize information gathering to verify assumptions and anecdotal information regarding potential nonlongline fisheries impacts.
- Work with social scientists to better characterize potential for interactions between nonlongline fisheries and FKWs.
- Coordinate with the Council on matters related to nonlongline fisheries that target pelagic management unit species.
- Remove unsubstantiated assumption of longline vessels converting to shortline gear and associated recovery action in the draft strategy.

Fishing Industry Advisory Committee (FIAC) Outcomes

The Council endorsed several FIAC recommendations, including supporting a Pacific Island-wide seafood promotion program and working with the U.S. Coast Guard and State of Hawai'i Harbors Division to review policies on allowing longline vessels to shelter in place during tropical storms and hurricanes, among others. The current regulation requires vessels under 250 gross tons to vacate the harbor during hurricanes. The FIAC provides input and recommendations on management and conservation actions to the Council from an industry perspective. 🐟

NMFS Issues Region's First Experimental Fishing Permit



On Jan. 27, 2021, the National Marine Fisheries Service (NMFS) issued the first Experimental Fishing Permit under the Council's Fishery Ecosystem Plans. The permit allows tori lines (also known as bird scaring lines or streamer lines) to be tested, which have shown promise in reducing incidental interactions with seabirds in the Hawai'i deep-set longline fishery, without the use of blue-dyed bait. Blue-dyed bait is an existing seabird mitigation requirement in the fishery that has been shown to be less effective than other required measures over time.

A joint Council, NMFS and Hawaii Longline Association (HLA) project in 2019-2020 showed that tori lines, when used in addition to blue-dyed bait, are effective

in reducing interactions with seabirds. Following that study, at its September 2020 meeting the Council recommended additional field trials to directly compare the efficacy of tori lines against blue-dyed bait so that results could inform Council deliberations on modifying the required measures for the fishery. NMFS approved the application submitted by HLA and field trials under the permit will be conducted in spring and early summer 2021.

Gilman, E., Naholowaa, H.A., Ishizaki, A., Chaloupka, M., Brady, C., Carnes, M., Ellgen, S., Wang, J., Kingma, E. 2021. Practicality and Efficacy of Tori Lines to Mitigate Albatross Interactions in the Hawaii Deep-set Longline Fishery. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii, 48pp. <https://tinyurl.com/torilinesreport>

New US Administration



Gina Raimondo

Rhode Island Governor Gina Raimondo was confirmed March 2, 2021, by the U.S. Senate as the new Department of Commerce secretary, succeeding former Secretary Wilbur Ross. Raimondo will have authority over NOAA, which encompasses NMFS, the agency that oversees fisheries management and other agencies that make decisions regarding the use of federal waters, including

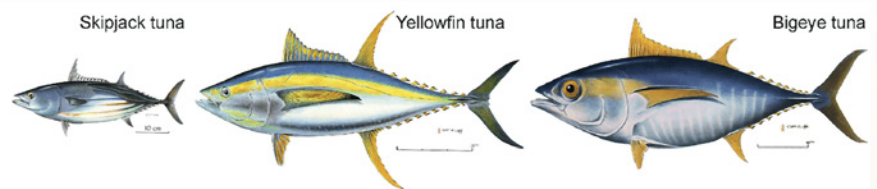
the development of aquaculture and offshore wind farms and the management of marine sanctuaries. At her Senate confirmation hearing Jan. 26, 2021, Raimondo pledged to use science and data to help move the seafood industry forward and make distributing funding from the two COVID-19 relief bills a priority.

Paul Doremus, current NOAA deputy assistant administrator for operations, will serve as the interim head for NMFS after Chris Oliver's departure in late January 2021. Oliver was a staunch supporter of all the regional fishery management councils, including the Western Pacific.

President Biden has yet to identify his choice to replace Neil Jacobs as NOAA administrator. 🐟

International Commissions Renew Tropical Tuna Measures

The IATTC and WCPFC are international fishery management organizations that meet annually to manage highly migratory fish stocks, such as tropical tunas. Image: P. Opic.



Both the Inter-American Tropical Tuna Commission (IATTC, oversees tuna fisheries in waters east of Hawai'i) and the Western and Central Pacific Fisheries Commission (WCPFC) had tropical tuna conservation and management measures (CMMs) set to expire at the end of the 2020 fishing year. The annual meetings were held virtually due to the COVID-19 pandemic. This made interpersonal negotiations and the free-flow of ideas very difficult. At the IATTC meeting (Nov. 30–Dec. 4, 2020), several nations objected to the lack of purse seine fish aggregating device (FAD) set limits. Limiting use of FADs reduces the possibility of large catches of juvenile bigeye tuna in sets targeting skipjack. The meeting ended without any agreement on CMMs for tropical tunas (i.e., bigeye, yellowfin and skipjack tuna).

The WCPFC meeting (Dec. 7–15, 2020) opted to avoid this situation and agreed to roll over its existing CMMs for tropical tunas. However, several nations noted shortcomings to the existing measures with respect to longline catch limits for bigeye tuna, purse seine FAD limits/closures and the distribution of purse seine effort. The WCPFC agreed to explore intersessional working groups and workshops to develop possible CMMs (beginning in April) before its next meeting in December 2021.

The IATTC met again in an "extraordinary" meeting Dec. 22, 2020, where country delegations worked together on future provisions. The meeting followed the WCPFC's example of authorizing the current tropical tuna measure to roll over another year while taking steps to address continuing concerns. 🐟

Supporting Coral Reef Research in the Western Pacific Region

The Western Pacific Regional Fishery Management Council recently completed its latest NOAA Coral Reef Conservation Program (CRCP) grant with three projects that support improving or amending Council coral reef fishery resources and management. As most of the coral reef species have been designated as ecosystem component species (ECS) instead of management unit species under the Council's Fishery Ecosystem Plans, projects were developed to gather additional information to determine if further management is warranted.

While the Council and the National Marine Fisheries Service (NMFS), along with local governments in the Western Pacific Region, continue to monitor ecosystem component species, new annual catch limits and associated accountability measures are no longer established.

Developing a Hawai'i Biosampling Program

The Council first supported biosampling efforts, or the collection of information about fish to determine life history characteristics, in the Mariana Archipelago in 2004. Fish vendors allow scientists to measure and extract samples from coral reef species for sale at their markets, with NMFS using the data for stock assessments.

The Council wanted to do something similar for Hawai'i, contracting Poseidon Fisheries Research (PFR) to gather

fish biosamples from markets on O'ahu (and later Maui). More than 11,000 fish were measured and weighed over the course of the three-year project. However, since not all species of interest or the full range of fish sizes are available in the market, PFR has also teamed up with fishing tournaments and volunteer fishermen to gather additional samples. Their efforts paid off with more than 1,000 additional samples of length and weight measurements, gonads (reproductive organs to gauge sexual maturity) and otoliths (ear bones for aging). The analyzed data represents new information on four species of surgeonfish that has never before been published. A manuscript on this work was submitted to the *Journal of Fish Biology*. The results may improve the existing stock assessment information for these species and assist the State of Hawai'i in its nearshore fishery management efforts.

Estimating Detection and Occupancy Rates for Pacific Islands Coral Reef Species

The life history data from biosampling is one component that goes into stock assessments used to manage coral reef fisheries. Another component is fishery-independent data from underwater surveys. One type of survey is the stationary-point-count method that involves two divers counting fish at the same time, generating a biomass estimate at a certain time and space. Each diver has an intrinsic bias in counting and estimating length based on his/her experience and physical capabilities to detect the different species. In addition, some species' characteristics and behavior make them harder to see than others.

This project estimated the detection probabilities and variable habitat occupancy of various coral reef fishes in Hawai'i, American Samoa and the Mariana Archipelago. This is important to refine the estimate of total biomass. Results showed that using the detection probabilities increases the total biomass estimates for certain species and for others, there was no significant change.

Evaluating Options for Assessment and Management of Coral Reef Fish

Fish life history characteristics, catch, effort and fishery-independent information are fed into different models depending on the quantity and quality of the data. Coral reef fisheries and ecosystem data come in many formats. This project tested the different data available in the Pacific Islands Region using various models to determine

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John Wiley of Poseidon Fisheries Research extracts otoliths from an *ulua aukea* provided by fishermen at the 2019 HoloHolo Hawaiians Ohana Fishing Tournament. Photo: PFR.

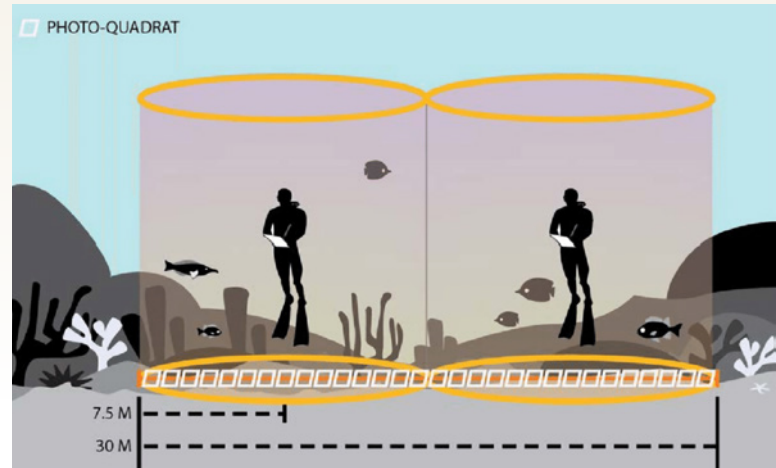
Coral Reef Fish Conservation

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if the model results would generate better management advice for annual catch limits (ACLs). Results showed that models integrating length and catch data into the approach are the most precautionary. Other catch-based methods still provide ACL estimates below the overfishing limit, but many uncertainties exist concerning the estimate, which would require a larger buffer. The bottom line is that the more data that can be used in an assessment, the more precise the management measure will be.

The Council's coral reef fishery management research and management efforts are chronicled in a monograph titled "Western Pacific Coral Reef Fisheries: Management and Research in the US Pacific Islands." This publication and other project reports are available at www.wpcouncil.org. 🐟

Funding for these projects was provided by the Council through the NOAA CRCP award number NA17NMF4410251.



Side view of the stationary-point-count method. Dive partners count and size fishes within adjacent cylinders measuring 7.5 meters (24.6 feet) in radius. Source: NMFS.

What is Happening with Non-Bigeye Tuna Pelagic Species in the Hawai'i Longline Fishery?

The Western Pacific Regional Fishery Management Council supported a project to monitor changes in the Hawai'i longline fishery performance and availability of nontarget pelagic species caught in Hawai'i longline fisheries, particularly the deep-set sector that targets bigeye ahi. These species include shortfin mako sharks, *opah* (moonfish), *hebi* (shortbill spearfish), *ono* (wahoo), *monchong* (sickle pomfret) and *mahimahi* (dolphinfish). The analyses use catch per unit effort (CPUE, or catch rates) to develop indicators for select non-bigeye, yet still marketable, species. CPUE is often used as an indicator of the availability of a fish stock to a fishery and even as a relative population size. This project was conducted and led by Dr. William Walsh, who spent nearly two decades as an analyst for the National Marine Fisheries Service Pacific Islands Fisheries Science Center.

The project objectives were to fit statistical models to bycatch and incidental catch of fishes taken by the Hawai'i longline fishery using operational information (location, time, gear modifications), fishing effort (number of hooks and sets deployed) and catch data collected by the Pacific Islands Region Observer Program from 1994 to 2019. A model that is well-fitted to data allows scientists to use the model to make predictions about future outcomes. Other information, such as sea surface temperature (SST), was also considered to help explain catch rates. This work

began with analyses on oceanic whitetip sharks using a unique approach that is preferred due to the large number of zero catches in longline sets since the fishery does not intentionally catch them. The approach was then used to estimate factors driving availability of other pelagic species of interest.

Results showed that shortfin mako sharks were highly sensitive to fishing location and SST, preferring warmer waters. *Opah* were also highly dependent upon SST and location (specifically longitude), but preferred slightly cooler waters (below 24 °C) to the northeast of the main Hawaiian Islands. These fish can inhabit cooler water since they are warm blooded, keeping their internal body temperature 5 °C (9 °F) warmer than the surrounding water as they dive up to 500 meters deep. A similar twofold increase in *opah* catch rates (from 1/2 to one fish per set on average) in the last two decades can partially be attributed to fishing effort migrating to that area. *Hebi* catch rates have remained mostly consistent since 2000, although catch rates in the deep-set sector were highest between 1994 and 1999, up to two fish observed per set. High catch rates of *hebi* happen to coincide with higher catches of striped marlin.

Ono catch rates tripled from 1994 to 2002 (from less than 0.5 to 1.5 *ono* per set on average) before declining back to 1994 levels in 2010. However, catch rates have gradually increased in the last 10 years and 2019 standardized catch rates were five times those observed in 1994 and 2010 (Figure 1), reaching nearly three *ono* per set. *Monchong* are another species with a peculiar trend and catch rates highly dependent upon fishing location. Catch rates of

monchong ranged from less than one to more than four per set between 1994 and 2019 (Figure 2). This cyclical trend was noted from 2015 to 2017 when catches of *monchong* exceeded *ono* and *mahimahi* combined. This information can be found in the Council’s annual Pacific Pelagic Fishery Ecosystem Plan Stock Assessment and Fishery Evaluation (SAFE) Report.

Walsh noted that while *mahimahi* were caught across a broad latitudinal range and in a wide range of environmental conditions, data showed that catches were greatest in waters 26–27 °C, with SST being the main factor in sets with nonzero catches. He also noted that

no attempt was made to include the presence of marine debris in the data, which is known to coincide with a higher presence of *mahimahi*.

Walsh is making his analytical framework reproducible so that the Council can monitor and predict the likely CPUE and performance of the Hawai’i’s longline fishery on these nontarget species and include this information annually in the Pelagic SAFE Report. 🐟

Reference: Brodziak J, Walsh WA. 2013. Model selection and multimodel inference for standardizing catch rates of bycatch species: A case study of oceanic whitetip shark in the Hawaii-based longline fishery. *Canadian Journal of Fisheries and Aquatic Sciences* 70:1723–1740.

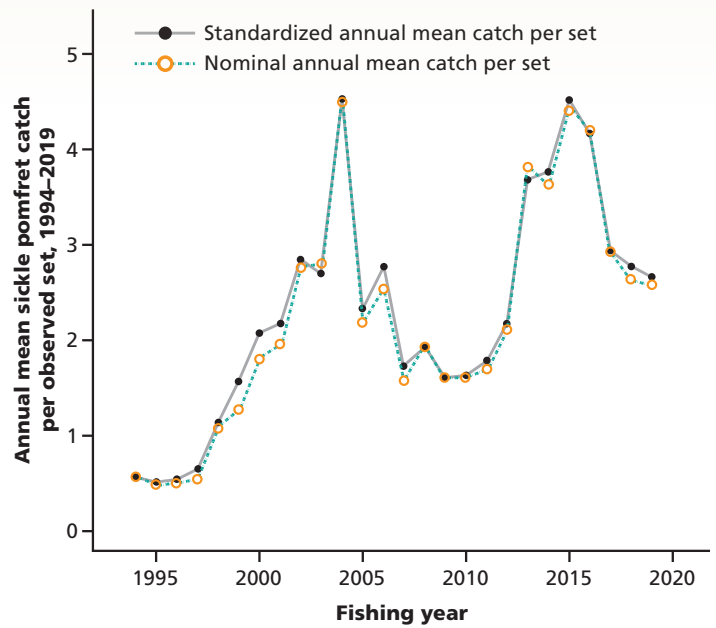
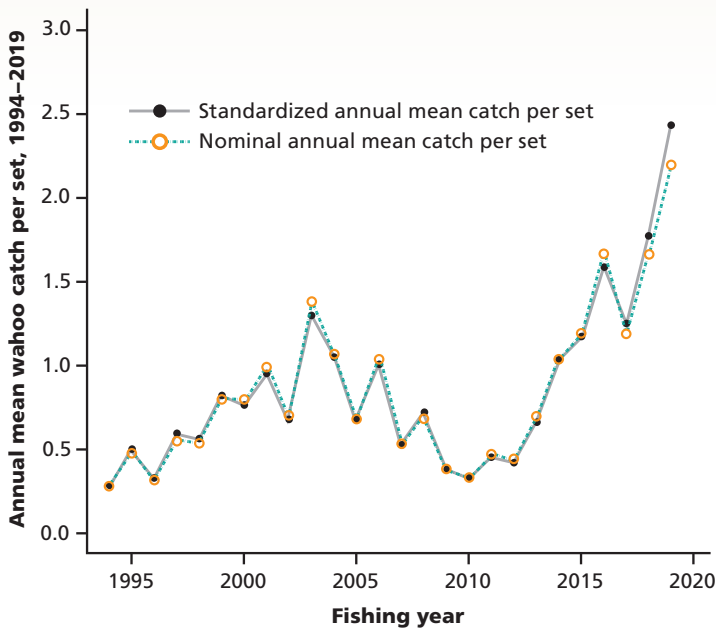


Figure 1 (left) and 2. Annual average catches of wahoo (*ono*) and sickle pomfret (*monchong*) per observed set, along with the standardized trend from 1994 to 2019. Standardizing values allows scientists to compare data across different metrics. Source: William Walsh unpublished report.

Are you really eating the seafood you think you are?

Subway does not use tuna in its tuna fish sandwiches, alleges a recent lawsuit filed in U.S. District Court for the Northern District of California. Based on multiple samples taken from Subway locations in California, lab tests showed that the ingredient billed as “tuna” is “made from anything but tuna.” The complaint alleges that false advertising led to consumers paying more for a premium product with commonly known health benefits. Subway has denied any wrongdoing.

www.washingtonpost.com/food/2021/01/27/subway-tuna-lawsuit

A recent study by scientists at the University of Hawai’i at Mānoa found that more than 21% of seafood sold in the greater Honolulu area is mislabeled. Researchers used DNA sequencing from 75 fish samples to reveal mislabeling rates at sushi bars (27%), restaurants (23%)

and grocery stores (17%). Swai, an inexpensive fish also known as Asian catfish, was the most commonly mislabeled fish sold as more expensive species, such as red snapper, sea bass and *mahimahi*. The study also found that fish sold under generic market names can hide true species identities and led to the sale of two endangered species, European eel and Southern bluefin tuna.

www.uhm.hawaii.edu/news/article.php?ald=11042
www.sciencedirect.com/science/article/pii/S2665910720301043?via%3Dihub



Swai was the most commonly mislabeled fish in a recent novel University of Hawai’i study done in the greater Honolulu area. Photo: University of Hawai’i.

Connecting Fishermen and Scientists Through Data

It is no secret that many fisheries in the Western Pacific Region are considered “data poor.” Some data used by the Western Pacific Regional Fishery Management Council to manage fishery resources are either old or incomplete and decisions have to be made with the data available. The Council has worked to supplement the available information by funding projects to fill research needs and to build capacity within the region. One organization that has been working to provide data to the Council, local fishery management agencies and the National Marine Fisheries Service is Poseidon Fisheries Research (PFR).

Two former Hawai'i Pacific University students who worked on projects with the Council while completing their master's degrees founded PFR in 2018. Today, Cassie Pardee and John Wiley lead a group of fishery biologists whose goal is to provide the best scientific information available so that managers can effectively make decisions about fishery resources. They have worked closely with fishing communities to gather data and educate fishers about their current research, while also learning about traditional knowledge and expertise.

One of PFR's main goals is to build a bridge between the fishing community and scientists. They have noted a lack of communication between the two groups and strive to maintain an open dialogue with fishermen to ensure long-lasting relationships.

PFR has completed a number of research projects in Hawai'i that provide important life history information for coral reef fish and crustaceans to stock assessment scientists and managers including an Akule Aerial Abundance Survey, a post-release mortality study on the Hawaiian Kona crab fishery and a Hawai'i Biosampling Program focusing on nearshore species like surgeonfish.

Teaming up with the American Samoa Department of Marine and Wildlife Resources and the Nature Conservancy, PFR produced age and size at maturity information for three commonly targeted fish species—*filoa* (*Lethrinus rebrioperclatus*), *umelei* (*Naso literatus*) and *fuga* (*Chlorurus japonese*). Pardee held two three-day workshops in American Samoa to train local government employees and fishermen on how to process fish samples to determine fish age from otoliths and reproductive maturity from gonads and various stock assessment methods and management tools.

“This is just the start of Poseidon Fisheries Research,” said Wiley. “There is still a lot more data to collect and collaborations between fishermen and scientists to be made.” Pardee added “our hope is that science can be used by the community to promote more *pono* [sustainable] fishing practices. That way, when managers use the data from our projects, fishermen feel confident in the process and with the outcomes, and any related management measures will be accepted and followed voluntarily.”

PFR continues to do research to fill data gaps, particularly with fish life history information, and are looking for fishermen to participate in a yearlong study on the spawning seasons of *ulua* (giant trevally, *Caranx ignobilis*) and *omilu* (bluefin trevally, *Caranx melampygus*) on Maui and O'ahu, and provide additional samples for *nenue* (chub, *Kyphosus* spp.) and *umaumalei* (orangespine unicornfish, *Naso literatus*). For more information or to participate in this study, check them out at www.poseidonfisheriesresearch.org or on Instagram (@Poseidon.Fisheries) or Facebook (poseidonfisheriesresearch). 🐟



Cassie Pardee and John Wiley of Poseidon Fisheries Research collect life history samples from an *ulua* at a Hawai'i fishing tournament. Photo: Zach Yamada.

Proposed Critical Habitat for Coral Species Raises Concerns in Territories

On Nov. 27, 2020, the National Marine Fisheries Service (NMFS) published a proposed rule to designate critical habitat for Endangered Species Act (ESA)-listed species that occur in American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam and the Pacific Remote Islands Areas (PRIAs).

The proposed area includes lands 0–20 meters or 0–40 meters deep around the islands in American Samoa, CNMI and Guam, with some exemptions.

Inset image: *Acropora globiceps* is one of the ESA-listed coral species confirmed for American Samoa, CNMI and Guam. Source: NMFS.



Critical habitat is defined as an area that contains habitat features that are essential for the conservation of a species. NMFS listed 15 Indo-Pacific coral species as threatened under the ESA in 2014, six of which are present in American Samoa, three in Guam and two in CNMI.

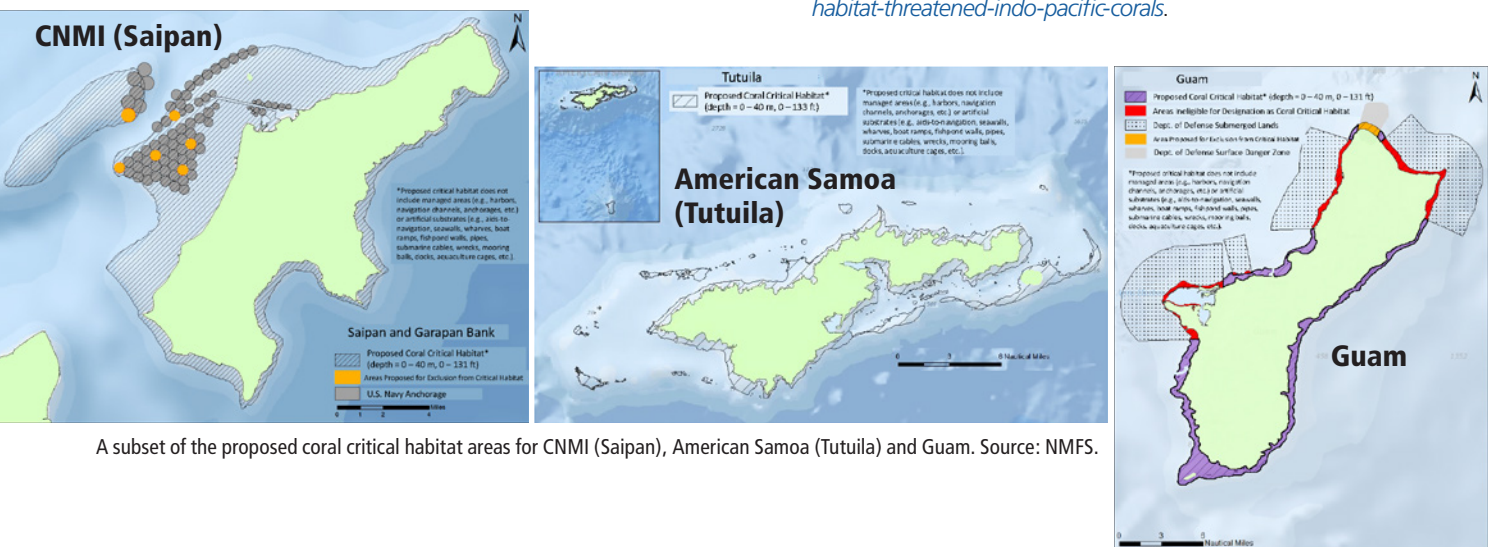
The proposed critical habitat for coral specifically includes consolidated, hard substrate free of sediment or algae and good water quality with suitable seawater temperatures, aragonite saturation, nutrient levels and water clarity and low levels of contaminants. The designation excludes existing artificial structures and substrates such as harbors, navigation channels, seawalls and boat ramps. It also excludes two areas off Guam and Tinian (CNMI) for national security reasons and three Department of Defense areas that are subject to Integrated Natural Resources Management Plans.

Critical habitat is a tool used in the ESA consultation process to ensure that federally funded, authorized or permitted activities do not destroy or severely modify the species' habitat. It does not, by itself, create a protected area or restrict access and does not stop development or directly impact activities without the "federal nexus." Many projects move forward without modifications after consultation with NMFS. However, if NMFS determines that an activity will likely impact coral critical habitat, then it must work with the responsible federal agency or other entity to modify the activity or take precautions to protect the habitat.

At two virtual public hearings held in January 2021, government agency representatives and Western Pacific Regional Fishery Management Council members expressed concerns over potential impacts of the designation to local infrastructure, research and resource management activities. While the responsibility of ESA consultations lies with the federal agencies, many projects and activities carried out in the marine environment by local governments are federally funded or require federal permits or authorizations, and may be affected by the outcomes of these consultations. Concerns were also raised regarding NMFS' lack of coordination with the local governments ahead of the proposed rule.

The public comment period for the proposed rule was originally set to close Jan. 26, 2021, but had been extended through Feb. 25, 2021, to accommodate public hearings. On Jan. 19, 2021, the governors of American Samoa, CNMI and Guam sent a joint letter to the NMFS assistant administrator requesting an additional 90 days. NMFS subsequently issued a second comment period extension for 30 days until March 27, 2021. 🐟

The draft ESA Critical Habitat Information Report, Economic Impact Report and other supporting documents are available at www.fisheries.noaa.gov/action/proposed-rule-designate-critical-habitat-threatened-indo-pacific-corals.



A subset of the proposed coral critical habitat areas for CNMI (Saipan), American Samoa (Tutuila) and Guam. Source: NMFS.



Council contractor Lino Tenorio (seated) registers and trains CNMI fishers and vendors on the Catchit Logit fishery electronic reporting app. Photo: Lino Tenorio.

More Fishermen Support Needed for Catchit Logit App

The Western Pacific Regional Fishery Management Council always reminds the fishing community that catch and effort data is the blood that keeps the heart of fishery management beating—without data, fishery managers cannot take the pulse of the fishery. To augment the current data collection systems in the territories, in 2020 the Council launched Catchit Logit, the first fishery electronic reporting app for small-boat fisheries in collaboration with the Pacific Islands Fisheries Science Center and local fishery management agencies in American Samoa, Guam and the Commonwealth of the Northern Mariana Islands (CNMI). The system is designed to put the power of data into the hands of the fishermen by allowing the fishing community to submit data in near real-time. The system also provides an incentive for fishermen by creating a catch-log system to monitor their fishery performance and summarize and securely store their data.

The Council conducted a Catchit Logit outreach campaign to the community through radio ads, a social media blitz, dissemination of posters and brochures and face-to-face interaction with fishermen at various access points around the islands. The Council's Advisory Panel members, territorial fishery management staff and boat-based fishermen were registered and trained on the app from

September to November 2020. As of Jan. 25, 2021, 80, 73 and 56 fishermen are registered in Guam, CNMI and American Samoa, respectively. Of those registered, 18 fishermen reported fishery data in Guam (22%) and 12 in CNMI (16%). In American Samoa, only one commercial fisher regularly reports while the remaining data was collected on the app in near real-time from a fishing tournament held Nov. 27-28, 2020.

The low usage rate is indicative of the need to increase outreach and get fishermen's support by self-reporting. Aside from CNMI, reporting fishing trip information in the Catchit Logit app is mostly voluntary. American Samoa and Guam do not require mandatory reporting. CNMI's regulations require fishermen and fish vendors to obtain a fishing license and report, however, most fishermen are unaware that these requirements are in place and they are required to comply.

The Council is again reaching out to fishermen to encourage them to submit accurate data. There is a dark cloud looming on the horizon for American Samoa and Guam where the recent stock assessment indicated that the local bottomfish stock is overfished and restrictive rebuilding plans are under development. This is due to the data-limited nature of these fisheries. Better data means better management for a sustainable fishery. Use the power of your data to reflect the true status of your fisheries.

Remember – if you Catch it, Log it! 🐟

New American Samoa Administration Supports Regional Fisheries

Lemanu Peleti Mauga and Talauega Eleasalo Ale were elected Governor and Lieutenant Governor, respectively, on Nov. 3, 2020, and sworn into office Jan. 3, 2021. Gov. Lemanu served as Lieutenant Governor during the past eight years. Lt. Gov. Talauega served in the previous administration as the Attorney General. Lemanu won with more than 60% of the total vote. He promised as part of his campaign platform to establish a trade school that focuses on enhancing local labor force capacity in existing industries including construction, tourism, fisheries and agriculture.

Congresswoman Aumua Amata Radewagen was reelected. She received 83.5% of the total votes in a landslide

industry and will create the first ever national grant program through the U.S. Department of Commerce to support training, education and workforce development for the nation's next generation of commercial fishermen.

Three Council family members were reelected to serve their districts in the Fono (American Samoa legislature) for another two years—current Advisory Panel (AP) member Samuel Meleisea and former AP members Titali'i Kitara Vaiau and Manumaua Wayne Wilson.

Gov. Lemanu appointed the cabinet and nominations going through the confirmation process at the Fono. One of the appointees is Taotasi Archie Soliai, chair since 2018 of the Western Pacific Regional Fishery Management Council, as the director of the Department of Marine and Wildlife Resources (DMWR). Soliai returns to the American Samoa Government after having served as



Council Chair Taotasi Archie Soliai was selected as the new director of the American Samoa Department of Marine and Wildlife Resources. Photo: WPRFMC staff.

and review and reform existing policies. With a well-equipped staff, he believes his department can increase community and stakeholder engagement to ensure proper data collection. Ownership and commitment by all stakeholders is key to addressing data collection issues within the territory.

Speaking about his past experiences as the manager for StarKist Samoa, Soliai said he has gained a broader understanding of the value of fisheries in the territory. He acknowledged the large role that Starkist plays in the local economy as the biggest private company on the islands. Soliai stressed that the experience and insight he gained will be invaluable when making policy decisions as the new director. He also wants to ensure that any actions that may impact the cannery are carefully deliberated beforehand.

About working with other island states and territories in the region, Soliai said that DMWR will continue to take part in international commissions and agencies (e.g., Western and Central Pacific Fisheries Commission) to share best practices and collaborate on ways to improve fisheries. He believes that engagement with other Pacific Islands can help advance local understanding and management of the territory's fisheries. 🐟



Newly elected American Samoa Gov. Lemanu Peleti Mauga (right) and Lt. Gov. Talauega Eleasalo Ale wave to their supporters in Utulei Village. Photo: Aoelua Solomona Aoelua.

victory and will continue to represent American Samoa in the U.S. House of Representatives. On Jan. 5, 2021, President Trump signed into law the bipartisan Young Fishermen's Development Act cosponsored by Congresswoman Amata. The legislation addresses the longtime decline in younger Americans entering the commercial fishing

the Government Relations Manager at StarKist Samoa for more than five years.

Director Soliai's priorities for DMWR during the first 100 days of the new administration are to strengthen American Samoa's fisheries profile, improve data collection and enforcement, build staff capacity

Socioeconomic Context for Fisher-Shark Interactions in the Mariana Archipelago

Fishers in Guam and the Commonwealth of the Northern Mariana Islands (CNMI) have long expressed frustration and concern about their interactions with sharks while fishing. Government officials' and fishing communities' pleas for assistance from the Western Pacific Regional Fisheries Management Council date back to 1979. The Council has repeatedly recommended that shark abundance and depredation studies be done in the Mariana Archipelago, referencing its fisheries' high shark interaction and depredation rates which could negatively impact fisher catch per unit effort (CPUE) and income. Social media has played a key role in documenting these interactions, allowing the fishing community to share photos of shark-bitten fish. But shark research in the region has remained limited. To better understand the impact of fisher-shark interactions on fishing communities and reflect on potential solutions, scientists at the Joint Institute of Marine and Atmospheric Research (JIMAR) and the Pacific Islands Fisheries Science Center (PIFSC) conducted a joint study in 2019–2020.

Scientists collected data by engaging with more than 100 people in Guam and the CNMI islands of Saipan, Rota and Tinian through interviews, stakeholder meetings, fisher-organized gatherings and conversations with boat fishers returning from or departing for fishing trips. The majority of the research participants were fishers, but the group also included scientists and managers. Council staff and regional advisory panels took part in the stakeholder meetings.

The resulting report compared participants' perceptions of sharks and mitigation strategies, which were then put into a broader socioeconomic context. Research participants described various impacts of fisher-shark interactions including loss of gear, damaged equipment, and increased safety risks and fishing trip costs. The costs include frequent shifting of fishing locations, time and fuel, resulting in impacts to CPUE. Many participants also expressed confusion regarding shark regulations, and concerns about the lack of shark research in the Mariana



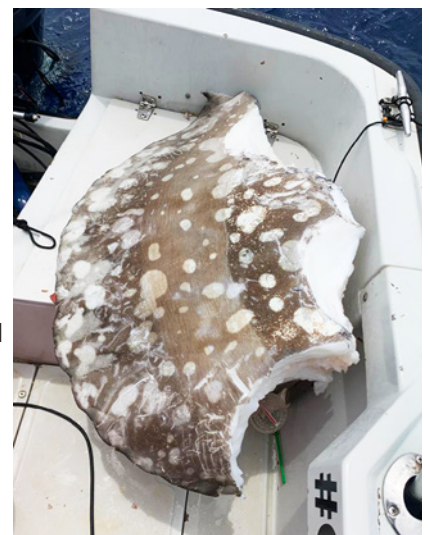
Guam fishermen expressed their frustration with shark interactions to JIMAR and PIFSC researchers, with their observations suggesting that sharks may be increasingly conditioned to fishing activity. Photo: Capt. James Borja.

Archipelago and sharks being underutilized/ wasted as a food resource.

Scientists noted a disconnect between fishers' observations of increasing shark interaction frequencies and existing shark research, which has indicated depleted reef shark populations. For example, the Guam Division of Aquatic and Wildlife Resources' coastal aerial surveys over a 40-year period show an 84% decrease in reef shark density. However, fishers described pelagic sharks more often using negative, problematic descriptors than reef sharks. Given limited scientific information, understanding the Mariana Archipelago's shark populations and changes in shark abundance, particularly for pelagic species, represents a research priority from both the scientific and fishery perspectives.

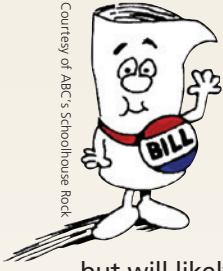
Shark behavior represents a possible bridge between stakeholders' conflicting perceptions of sharks. Fishers' observations suggest that sharks may be increasingly conditioned to fishing activity. Research participants noted increasing shark interaction frequency, numbers, aggression, prey diversity, broadening shark distribution and responsiveness to fishing cues. The latter included descriptions of sharks arriving more quickly to fishing activity and biting unbaited artificial lures. Participants discussed decreasing fish abundance and size, shark finning bans, increases in fishing participation (and thus fishing effort) and changes to fish aggregating devices as being potentially related to these changes. Whatever the cause, structuring discussions around changing shark behavior may offer a more productive common ground for fishers, scientists and managers.

Research participants discussed solutions and mitigation strategies such as on-the-water tools and maneuvers, some means of shark population control or harvest, cooperative research, outreach to clarify shark legislation and economic fisheries support. Each of these has unique challenges and the potential to address the array of problems surrounding fisher-shark interactions and their socioeconomic context. They represent a starting point for future discussions of shark research and mitigation strategies. 🐟



Fisherman Adam San Gil recovered the carcass of a sunfish (*moa*) from the east side of Guam that had been eaten by sharks. Photo: Adam San Gil.

Congressional Corner



Courtesy of ABC's Schoolhouse Rock.

The 117th U.S. Congress convened Jan. 3, 2021, and will conclude Jan. 3, 2023. At the end of the last Congress in 2020, there were many proposals for ocean management that did not pass

but will likely reemerge in the new Congress. The Ocean-Based Climate Solutions Act that would provide a strategic roadmap for ocean climate action and protecting habitat, the AQUAA Act that would establish a regulatory system for sustainable offshore aquaculture, and a discussion draft on a potential reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) are all likely to be reintroduced in some form.

One initiative out of last year's Ocean-Based Climate Solutions Act has already been pushed forward by the new U.S. Administration. On Jan. 27, 2021, President Biden pledged to conserve 30% of U.S. lands and waters by 2030 (see cover story). Coupled with the discussion draft for the MSA reauthorization, a main focus of both Congress and the administration appears to be acknowledging climate change and managing for the potential impacts. The Council's ecosystem approach to fisheries management through its archipelagic-based Fishery Ecosystem Plans will play a large role in actualizing these initiatives.

While the United States continues to feel the effects of COVID-19, Congress will also likely have its hands full responding to the impacts of the coronavirus on the economy, including

fisheries and fishing communities. Initial funding to support fisheries in the Western Pacific Region included nearly \$9 million in direct CARES Act funding to fishermen and payments are expected this year. The progression of the pandemic and the forecasted impacts beyond the short term means it is likely that fisheries will need continued support or be lost.

The beginning of this new Congress will be busy with many different issues but fisheries are expected to be addressed, so the Council will be paying close attention. To keep tabs on any of these or other fishery initiatives, visit www.congress.gov and stay tuned to the Council's website, www.wpcouncil.org. 🐟

Fisheries-Related Executive Actions Taken by President Biden as of Feb. 8, 2021

Signing Date	Type	Executive Order Number	Title	Description
1/20/2021	Executive Order	13990	Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis	Cancels the Keystone XL pipeline and directs agencies to review and reverse more than 100 Trump actions on the environment
1/20/2021	Executive Order	13992	Revocation of Certain Executive Orders Concerning Federal Regulation	Directs the White House Office of Management and Budget director to develop recommendations to modernize regulatory review and undoes Trump's regulatory approval process
1/20/2021	Executive Order	N/A	Paris Climate Agreement	Rejoins the Paris climate accord, the landmark international agreement signed in 2015 to limit global warming
1/22/2021	Executive Order	14002	Economic Relief Related to the COVID-19 Pandemic	Calls for assistance to those who are struggling to buy food, missed out on stimulus checks or are unemployed
1/27/2021	Executive Order	14007	Establishing President's Council of Advisors on Science and Technology	Reestablishes the President's Council of Advisors on Science and Technology
1/27/2021	Executive Order	14008	Tackling the Climate Crisis at Home and Abroad	Seeks to cement the climate crisis at the center of US foreign policy and national security and commits to the goal of conserving at least 30% of the nation's lands and oceans by 2030
1/27/2021	Memorandum	N/A	Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking	Charges the director of the Office of Science and Technology Policy with responsibility for ensuring that White House policy is driven by scientific evidence that remains free of political pressure

New Outreach Resources

Pacific Islands Fishery Monographs

The Western Pacific Regional Fishery Management Council added four historical issues to its *Pacific Islands Fishery Monographs* series between November 2020 and January 2021.

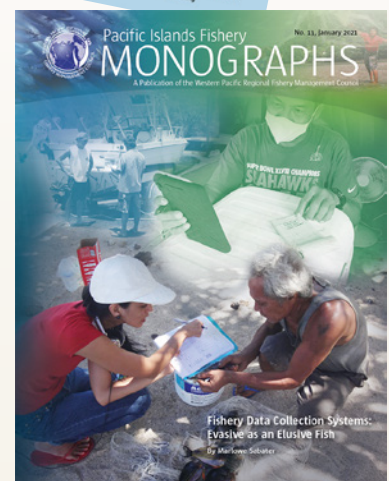
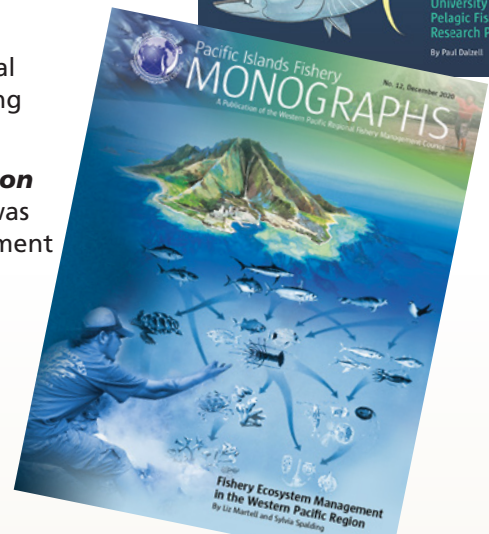
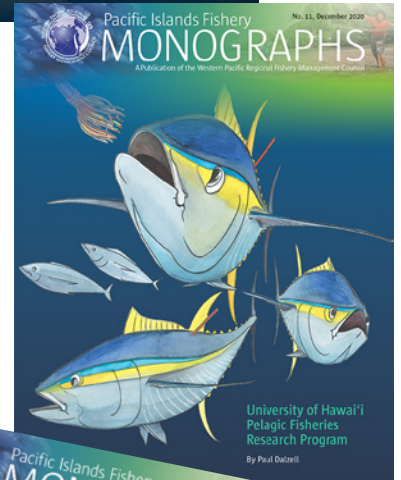
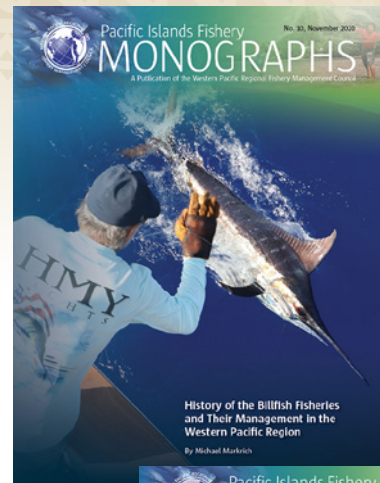
#10 History of the Billfish Fisheries and Their Management in the Western Pacific Region by Michael Markrich — From 1900, competition began in the Western Pacific between wealthy big-game fishermen in the United States who wanted to preserve the rare and iconic Pacific blue marlin for display and entertainment, and local commercial fishermen in Japan and Hawai'i who caught it with special longline vessels for use as a fish cake—an important food for the working class. This competition grew in intensity until it had geopolitical implications that affected the world's oceans, while commercial tuna fisheries and sportfisheries expanded to meet their respective current demands.

#11 University of Hawai'i Pelagic Fisheries Research Program by Paul Dalzell — This monograph is a history of the PFRP, a grant awarding program, which primarily funded research on tuna and tuna-like species. Without it, pelagic science across many disciplines would have trailed behind the fishery and social dynamics over the past three decades. The PFRP meetings dealt with leading edge studies, such as improving electronic tagging, saving and archiving data streams that cover several decades or longer and bringing scientific rigor to the issues surrounding bycatch of protected species.

#12 Fishery Ecosystem Management in the Western Pacific Region by Liz Martell and Sylvia Spalding — The Western Pacific Council was the first in the nation to develop an ecosystem-based fishery management plan (completed in 2001 and implemented in 2004). It then began converting all of its fishery management plans to fishery ecosystem plans. To help inform this endeavor, the Council convened three workshops of renowned marine ecosystem scholars between 2005 and 2007 to review the biophysical, social science and policy aspects of ecosystem-based management. The monograph provides a summary of these workshops, the Council's ecosystem-based accomplishments since the workshops and its current and planned actions to refine its fishery ecosystem plans and corresponding annual reports, organizational structure and project priorities.

#13 Fishery Data Collection Systems: Evasive as an Elusive Fish by Marlowe Sabater — This publication gives the Council's history of data collection activities and the efforts expended to improve the data over almost four decades. It documents the evolution of the fishery management requirements via the different reauthorizations of the Magnuson-Stevens Act and the increasing need for data at each iteration. Each reauthorization triggered a series of workshops that attempted to push for changes in the data collection and associated reporting given limited funding and human resources. 🐟

A limited number of printed copies are available on a first-come basis by contacting the Council. These publications and prior issues of the monograph series are also available online at www.wpcouncil.org/educational-resources/education-library.





The Council developed FAQs for the Catchit Logit app which was provided to fishers that applied for CARES Act funding in Guam and distributed to fishing stores, marinas and local government offices.



CNMI Advisory Panel members Ray Dela Cruz (left) and Richard Farrell share Catchit Logit and other information with fishermen at the 2021 Pika Festival Annual Wahoo Derby held on Tinian Feb. 13, 2021. Photo: Richard Farrell.

Contact your regional coordinator for more info

Major Aiumu (American Samoa): major.m.aiumu@gmail.com

Darrin Pangelinan (Guam): darrin.pangelinan@gmail.com

Lino Tenorio (CNMI): linotenorio62@yahoo.com

Remember – if you Catch it, Log it!

Catchit Logit app FAQs

What is it? A free, electronic, self-reporting app to log your fishing trips, catch and effort to share near real-time data with fishery managers.

Who is doing this? The Western Pacific Regional Fishery Management Council in partnership with the Division of Aquatic and Wildlife Resources.

Why are fish catch data important? Scientists and managers monitor the health of Guam's fish populations to determine if they are sustainable so we can continue to fish forever.

How will the app help me? You can track your fish catch history and compare your fishing reports with everyone else with a confidential, personal dashboard.

How do I get the app? Contact your regional coordinator to set up training so you can join the Catchit Logit family.

Is the app available at any of the app stores? No. The free app can only be downloaded with your regional coordinator's assistance.

Will using the app take long? No. You can log your fish report when you have time after your fishing trip.

What do I need to start? A smart device such as a mobile phone, tablet or laptop. Your regional coordinator will provide a short training (~30 minutes).

Will my reports be shared? No. Your reports are yours. The information you provide will be used to create an overall picture of fishing activity but your contact information will not be shared or visible to anyone else.

What if I sell my catch? The app only captures the sales process but not your private information. All the information you provide will be kept confidential and will only be used by fishery managers.



What types of fishing are included? All types of fishing methods.

Science and Management 101: Fish Stock Assessments

How Many Fish Are There?

The Magnuson-Stevens Fishery and Conservation Act mandates that the Council prevent overfishing while achieving optimum yield, using the best scientific information available. The Council works closely with the National Marine Fisheries Service (NMFS) on fish stock assessments that support management decisions.

Stock assessments use mathematical models to answer two basic questions:

-  What is the status of the stock?
-  What level of catch is sustainable?

Data that go into the models are collected from various sources including boat-based surveys, biological information about the species and required reports or volunteer surveys from fishermen, among others. Licensed commercial fishermen are required to report all of their catch data, but for noncommercial fishermen, it is not possible to gather data on every angler who fishes. In this case, surveys designed with input from statisticians

are used to interview a sample of fishermen that represent the whole population.

Typically, NMFS completes benchmark or “new” stock assessments every six years, with an update done about midway through. For example, in the Western Pacific Region, a 2015 update bottomfish stock assessment was completed for American Samoa, Guam and the Commonwealth of the Northern Marianas (CNMI), with a benchmark assessment following in 2019. The 2015 assessments showed that none of the U.S. Pacific territories were overfished or experiencing overfishing. However, the 2019 assessments said that the American Samoa bottomfish stock was overfished and experiencing overfishing, and the Guam bottomfish stock was overfished.

Overfishing is when the rate of fish being removed from the ocean is higher than what is sustainable, and **overfished** is when there are too few fish left in the ocean and the species may not be able to recover.

What Happened?

The main change between the 2015 and 2019 assessments was the definition of a fishing trip (see table) that increased the total number of data points used in the models. The new trip definition now includes trips with zero up to 50% bottomfish management unit species catch. Although data quality was not included in the review, the application of the data to the model passed an independent review panel and the Council’s Science and Statistical Committee determined the assessment to be the best scientific information available.

An angler **creel survey** is a sampling program involving interviews and inspection of individual catches to estimate fishing effort and catch. The name comes from the woven wooden basket, or creel, that anglers sometimes use to hold captured fish while they continue fishing.

	2015 Update Bottomfish Stock Assessment	2019 Benchmark Bottomfish Stock Assessment
Model used	Bayesian state-space surplus production model	Bayesian state-space surplus production model
Fishermen data used	Creel survey	Creel survey
Data timespan	1982–2013	1982–2018
Bottomfish species	17 species complex	13 and 11 species complexes (American Samoa + Marianas)
Fishing trip definition	>50% bottomfish MUS* in catch	Bottomfish gear was reported to be used

*MUS = management unit species

Moving Forward

- 🐟 The Council is working on bottomfish stock rebuilding plans.
- 🐟 In collaboration with Council staff and advisors, NMFS will hold a series of workshops with the bottomfish fishery community to improve the quality of data used for the 2023–2025 stock assessments.

🐟 The Magnuson-Stevens Act says that “an individual stock...shall be managed as a unit throughout its range.” Due to the close proximity of Guam to the CNMI (39 miles between the closest islands), an option may be explored to do a combined new benchmark assessment for the entire Mariana Archipelago in 2024.

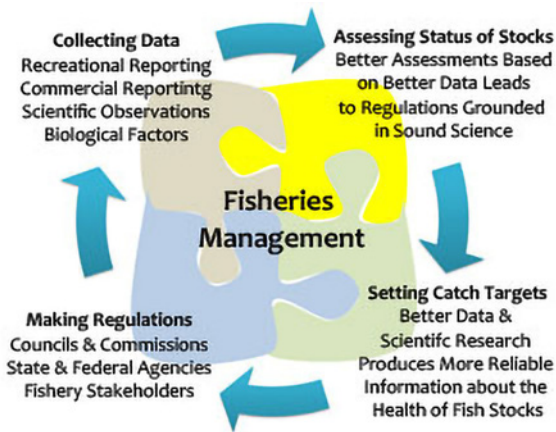
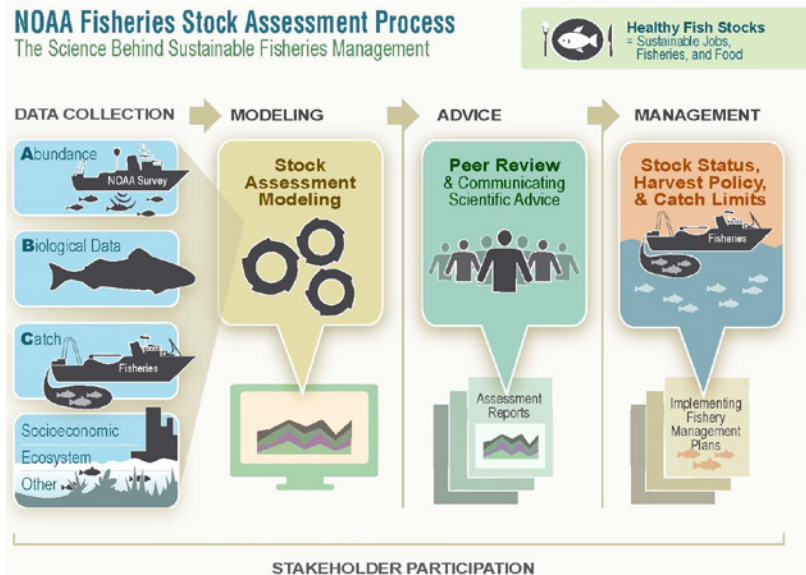


Image source: NMFS.



Council Family Updates

At the 184th Council meeting, the following Council members were re-appointed as officers for 2021:

- Taotasi Archie Soliai**, chair
- Howard Dunham**, vice chair, American Samoa
- John Gourley**, vice chair, Commonwealth of the Northern Mariana Islands
- Michael Dueñas**, vice chair, Guam
- Edwin Watamura**, vice chair, Hawai'i

The Council supported the following advisory body changes:

- Appointed **Jason Helyer**, Hawai'i Division of Aquatic Resources, to the Pelagic Plan Team
- Appointed **Ashley Tomita**, National Marine Fisheries Service (NMFS) Pacific Islands Fisheries Science Center (PIFSC), to the Pelagic Plan Team, Archipelagic Plan Team and Fishery Data Collection and Research Committee–Technical Committee (FDCRC-TC)

- Appointed **Rebecca Walker**, NMFS PIFSC, to the Pelagic Plan Team, Archipelagic Plan Team and FDCRC-TC

Fa'asalafa Diana Kitiona has joined the Council staff as its American Samoa Island Coordinator. Diana was a recipient of the U.S. Pacific Territories Fishery Capacity-Building Scholarship and graduated in 2017 with a bachelor of science in marine science from the University of Hawai'i at Hilo. She worked for American Samoa Department of Marine and Wildlife Resources (DMWR) in the Coral Reef Advisory Group office before coming to the Council.



Taotasi Archie Soliai has been selected as the director of the American Samoa DMWR (see page 13). Council contractor **John Wiley** and Council staff **Marlowe Sabater** co-wrote a recently published peer-reviewed article on aerial survey data that were used to better understand



Taotasi Archie Soliai (left) with Christopher King, the new director of ports in American Samoa.

spatial and temporal patterns for bigeye scad (*akule*) around O'ahu.

Wiley J, Sabater M, Langseth B. 2021. Aerial survey as a tool for understanding bigeye scad (*Selar crumenophthalmus*) dynamics around the island of O'ahu, Hawai'i, *Fisheries Research*, Volume 236, 105866, ISSN 0165-7836. 🐟
<https://doi.org/10.1016/j.fishres.2020.105866>



2021 Council Calendar

www.wpcouncil.org

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youtube.com/wpcouncil

vimeo.com/wprfmc

All meetings will be held virtually.

March

3-4 Pacific Pelagic Fishery Ecosystem Plan (FEP) Plan Team meeting

10 American Samoa Archipelago FEP Advisory Panel (AP) meeting
• Non-Commercial Fisheries Advisory Committee meeting

11 Fishing Industry Advisory Committee meeting • Mariana Archipelago FEP—Guam AP meeting (ChST)

12 Hawai'i Archipelago FEP AP meeting

13 Mariana Archipelago FEP—CNMI AP meeting (ChST)

16-18 139th Scientific & Statistical Committee meeting

22 Pelagic & International Council Standing Committee meeting • Executive & Budget Council Standing Committee meeting

23-25 185th Council Meeting

April

8 Social Science Planning Committee meeting

20-22 Archipelagic FEP Plan Team meeting

28-29 Fishery Data Collection & Research Committee—Technical Committee meeting

May

11-13 Pelagic FEP Plan Team meeting

18-20 Council Coordination Committee meeting*

June

15-17 140th Scientific & Statistical Committee meeting

21-24 186th Council Meeting

*Meetings are not hosted by the Western Pacific Regional Fishery Management Council.

Upcoming Events

The 139th Scientific and Statistical Committee meeting will be held March 16 to 18, 2021, via web conference. Major agenda items include main Hawaiian Islands (MHI) deep-seven bottomfish acceptable biological catch update (action item); Guam bottomfish rebuilding plan impact analysis (action item); wire leader amendment for the Hawai'i longline fishery (action item); North Pacific striped marlin catch limits (action item); Executive Order 14008 on tackling the climate crisis briefing; international tropical tuna management updates; and 2020 Hawai'i and American Samoa longline fisheries reports.

The 185th meeting of the Western Pacific Regional Fishery Management Council will convene March 23 to 25, 2021, via web conference. Major agenda items include MHI deep-seven bottomfish annual catch limits update (action item); Guam bottomfish rebuilding plan environmental assessment (action item); wire leader amendment for the Hawai'i longline fishery (action item); North Pacific striped marlin catch limits (action item) international tropical tuna management updates; and 2020 Hawai'i and American Samoa longline fisheries reports.

The Council meeting will have the following host sites, which are subject to local and federal safety and health guidelines regarding COVID-19:

- **Tedi of Samoa Bldg.**, Suite 208B, Fagatogo Village, American Samoa
- **BRI Bldg.**, Suite 205, Kopa Di Oru Street, Garapan, Saipan, CNMI
- **Cliff Pointe**, 304 W. O'Brien Drive, Hagatña, Guam

For more information on agendas, meeting documents and the web conference connection, visit www.wpcouncil.org/meetings-calendars or contact the Council at info@wpcouncil.org or (808) 522-8220.

Action Items at the March 2021 Council Meeting

The 185th meeting of the Western Pacific Regional Fishery Management Council will convene March 23-25, 2021. The meeting will be held by web conference. For the web conference connection and agenda, go to www.wpcouncil.org/meetings-calendars. The Council will consider and may take action on the issues summarized below.

Main Hawaiian Islands (MHI) Deep-Seven Bottomfish Annual Catch Limits (ACLs) Update: The Pacific Island Fisheries Science Center (PIFSC) released an update to the MHI deep-seven bottomfish stock assessment with catch-and-effort data up to 2018 and fishery-independent survey data up to 2020 indicating the stock remains healthy. The assessment provided alternative catch levels at different risk levels of overfishing from 2021 to 2025 to inform the specification of new ACLs. The Council will consider the new information to determine if a change in the ACL is warranted.

Guam Bottomfish Rebuilding Plan: At the 184th meeting in December 2020, the Council received options to address the overfishing bottomfish stock condition in Guam based on a 2019 benchmark stock assessment. The Council selected a 31,000-pound ACL as its preliminary preferred alternative. Since then, Council staff received an updated biomass projection from PIFSC, which substantially changed the rebuilding timeframes of the options provided in December 2020. The Council will review the new information, reconsider its preliminary preferred alternative and consider final action to provide PIFSC with rebuilding recommendations and management measures.

Wire Leader Regulatory Amendment for the Hawai'i Longline Fishery: Most vessels in the Hawai'i deep-set longline fishery use wire leaders in the terminal portion of the branchline between the hook and the weighted swivel to reduce the risk of crew injuries resulting from flyback. Wire leaders make it difficult to remove the terminal portion of the branch line from sharks or other protected species that cannot be brought onboard. Switching to monofilament nylon leaders may facilitate early release of sharks and improve post-hooking survivorship. The Council will review alternatives evaluating the impacts of regulating leader material in the Hawai'i deep-set longline fishery and may select a preliminary preferred alternative for further analysis.

North Pacific Striped Marlin Catch Limits: The North Pacific striped marlin stock is overfished and experiencing overfishing. The Council will consider a preferred option for catch and/or effort levels that demonstrably address relative impacts of U.S. fisheries on international overfishing and/or recommend other options for consideration.

Akule* ala Fishery Attaché



Ingredients

- | | |
|---|--------------------------|
| 4 medium-sized fresh akule, cleaned but left whole for stuffing | 2 green onions, chopped |
| 1 medium onion, chopped | 2 tomatoes, chopped |
| | 1/4 cup olive oil |
| | 1/4 white wine |
| | 2 tbsp shoyu (soy sauce) |

Preparation

Make a marinade of olive oil, white wine and shoyu. Add the diced vegetables and marinate for at least for one hour. When ready to stuff, butterfly the akule fillets. Carefully pack the stomach cavity of each akule with the marinated vegetables. Place stuffed akule on a large piece of aluminum foil (about 12 in x 24 in) that has been folded in half, so that foil is doubled. Pour the leftover liquid over the stuffed akule. Wrap up the foil around the fish and fold in all sides tightly so that no steam or juices escape. Bake in pre-heated oven at 350 degrees for about 15-20 minutes. Serve in foil with steamed rice on the side.

***Akule** is the Hawaiian name for bigeye scad (**atule** in American Samoa, **atulai** in CNMI and Guam).

Source: Bob Iversen