



**NOAA**  
**FISHERIES**

# Federal Programs Office 2020 Annual Report



## *A Message from the Regional Administrator*

We are pleased to announce that in fiscal year 2020 (FY20), the Federal Programs Office of the NOAA Fisheries Pacific Islands Regional Office (PIRO) funded 69 project activities totaling \$7,757,754 in grants and cooperative agreements to constituents in support of the NOAA Fisheries mission. We issued the awards through competitive and non-competitive financial assistance programs. Recipients of the federal awards included 32 U.S. and international agencies and organizations from American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam, Hawai'i, and the greater Pacific.



*Michael D. Tosatto*

PIRO manages programs that support both domestic and international conservation and management of living marine resources within the Pacific Islands region (PIR), which comprises American Samoa, the CNMI, Guam, Hawai'i, and other U.S. Pacific Islands. Our vision is to achieve healthy marine ecosystems that provide:

- Stability for fishery resources
- Recovery of threatened and endangered species
- Enhanced opportunities for commercial, recreational, and cultural activities in the marine environment

PIRO assists the Western Pacific Fishery Management Council (WPFMC) in developing fishery management plans and amendments for offshore fisheries based in the Western Pacific region. In addition to PIRO and the WPFMC, the NOAA Pacific Islands Fisheries Science Center (PIFSC) and the NOAA Office of Law Enforcement (OLE) collaboratively support the conservation and management of marine fisheries, protected species, and marine habitat. Working together and employing regional expertise, these offices are committed to providing improved customer service and stewardship of living marine resources within this expansive geographic region.

Going forward, our efforts will continue to focus on capacity building and proposal-development training for Hawai'i and the territories. We will also work with communities to develop innovative projects that help NOAA Fisheries provide stewardship of living marine resources through science-based conservation and management in our region.

A handwritten signature in black ink, appearing to read "M. D. Tosatto".

*Front cover: Kampachi sashimi. Kampachi fed on a new fish-free diet tasted better, according to a blind taste test. Credit: © Ocean Era, Inc*

*Back cover: University of Hawai'i Marine Option Program (MOP) student and QUEST team leader (center) watches over his divers as they prepare to conduct fish surveys at Hōnaunau, Hawai'i. Credit: UH MOP/Jeff Kuwabara*



*MOP students participating in MOP's Maritime Archaeology Surveying Techniques field course survey one of several WWII era Amphibious Landing Vehicles (LVT(A)-4) lost during training exercises in waters off South Maui in 1944. Credit: UH MOP/Jeff Kuwabara*

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## Federal Programs Office

The Federal Programs Office is located at the NOAA Inouye Regional Center in Honolulu, Hawai'i. With technical assistance from PIRO and PIFSC staff, Federal Program Officers administer grants and cooperative agreements throughout the award period, from the initial solicitation through post-award management.

They also work closely with the NOAA Grants Management Division, technical monitors, and grant recipients throughout the award period. This helps to facilitate the successful completion of each grant's project objectives.

The Federal Programs Office supports the NOAA Fisheries mission through competitive and non-competitive grants and cooperative agreements. PIRO funded the following grant programs during FY20:

- Western Pacific Fishery Management Council
- Saltonstall-Kennedy Grants Program
- Marine Education and Training Program
- Sustainable Recreational and Non-Commercial Fishing Program
- Pacific Islands Region Marine Turtle Program
- Hawaiian Monk Seal Recovery and Marine Mammal Response Program
- Interjurisdictional Fisheries Act of 1986
- Habitat Conservation Program
- Promoting Responsible Wildlife Viewing Program

### PIRO Federal Program Officers



*Scott Bloom*



*Penny Larin*

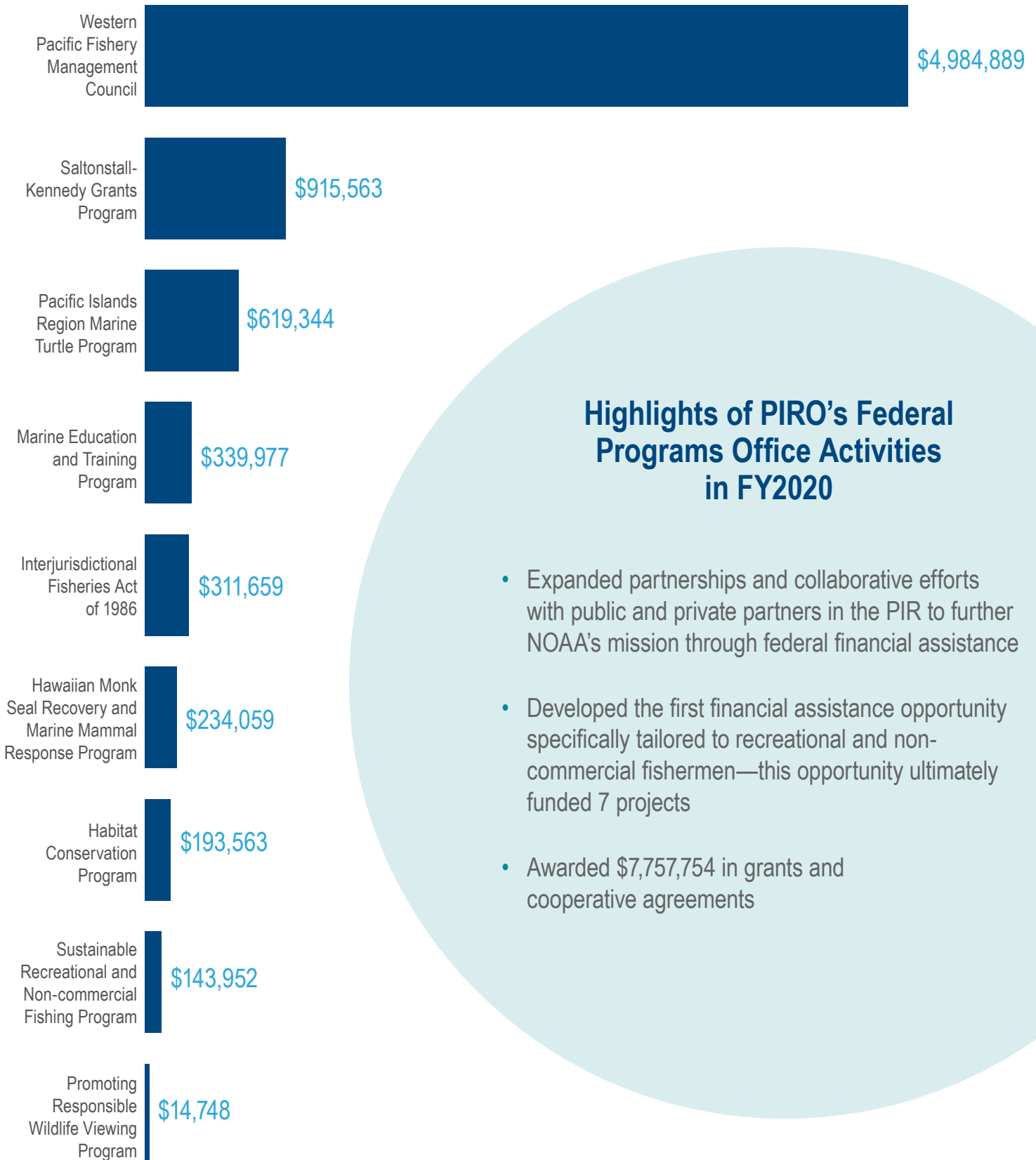


*Mela Flores*



*NOAA Inouye Regional Center, Honolulu, Hawai'i. Credit: NOAA*

## Summary of Fiscal Year 2020 Funding



### Highlights of PIRO's Federal Programs Office Activities in FY2020

- Expanded partnerships and collaborative efforts with public and private partners in the PIR to further NOAA's mission through federal financial assistance
- Developed the first financial assistance opportunity specifically tailored to recreational and non-commercial fishermen—this opportunity ultimately funded 7 projects
- Awarded \$7,757,754 in grants and cooperative agreements

## Western Pacific Fishery Management Council

The WPFMC prepares, monitors, and revises fishery management plans for domestic and foreign fishing within the 200-mile U.S. Exclusive Economic Zone (EEZ) in the western and central Pacific Ocean. PIRO is in charge of implementing the management measures created by WPFMC and NOAA OLE; the U.S. Coast Guard 14th District and local enforcement agencies enforce the measures.

In FY20, PIRO funded the first year of a 5-year cooperative agreement to support the WPFMC base administration and operations. The WPFMC received \$4,176,014 for the following 12 activities under this 5-year cooperative agreement:

- Council Base Administration and Operations (\$3,145,914)
- Annual Catch Limits Implementation (\$197,528)
- Territorial Science Initiative (\$189,000)
- Council Peer Review (\$142,075)
- Gear Diversification in the American Samoa Longline Fishery (\$100,000)
- Magnuson-Stevens Act Implementation (\$89,235)
- National Environmental Policy Act (\$88,998)
- High School Fisheries Workshops (\$62,500)
- Scientific and Statistical Committee (\$55,764)
- Council Education Committee Internships (\$50,000)
- Council Education Committee Scholarships (\$50,000)
- International Pacific Marine Educators Network (\$5,000)

### Protected Species Conservation and Management Program

In addition to the cooperative agreement, PIRO funded a single financial assistance award to support WPFMC's Protected Species Conservation and Management Program. The award, totaling \$300,000, encompasses the following two activities:

- Protected Species Conservation and Management Coordination (\$200,000)
- Ecosystem-Based Fisheries Management Project for Protected Species Impacts Assessments for Hawai'i and American Samoa Longline Fisheries (\$100,000)



WPFMC partnered with NOAA Fisheries to engage Hawai'i high school students in hands-on learning opportunities, such as this marine debris fieldwork, during their annual fishery and resource management summer course. Credit: WPFMC

## Western Pacific Sustainable Fisheries Fund

The Magnuson-Stevens Fishery Conservation and Management Act, when reauthorized in 1996 and 2006, included authorities in Section 204(e) to permit foreign fishing within the EEZ in the Pacific Islands Region. Before permitting foreign fishing under a Pacific Insular Area fishery agreement, the WPFMC must develop a 3-year Marine Conservation Plan (MCP) that describes the uses for any funds collected by the Secretary of Commerce (Secretary). The Commonwealth of the Northern Mariana Islands and the Territories of Guam and American Samoa must develop similar MCPs.

The Western Pacific Sustainable Fisheries Fund (SFF) serves as a repository for:

- Permit payments the Secretary receives for foreign fishing in the EEZ around Johnston Atoll, Kingman Reef, Palmyra Atoll, Jarvis, Howland, Baker and Wake Islands.
- Fines and penalties the Secretary receives, in the case of violations by foreign vessels occurring in the EEZ around these Pacific Islands.
- Funds or contributions received in support of conservation and management objectives under an MCP, as well as payments made pursuant to specified fishing agreements with the Territories.

In FY20, PIRO awarded the *Western Pacific Sustainable Fisheries Fund 12* in the amount of \$508,875 to support the nine activities described below in American Samoa and the CNMI.

### American Samoa (\$254,437.50)

#### South Pacific Albacore Fishery Forecasting and Longline Fleet Diversification Study (\$80,000)

This project will study and develop an albacore tuna catch forecasting mechanism for two groups: American Samoa longline fisheries operating within its EEZ and U.S. vessels in the South Pacific targeting juvenile albacore in troll fisheries in the high seas. It will also investigate variables impacting trolling/jigging for albacore, linking any likely commonalities between fishery performance in the U.S. North Pacific troll/pole-and-line fisheries to those in South Pacific high seas waters within range of vessels originating from American Samoa.



*U.S. Pacific Territories Fishery Capacity Building Scholarship recipient Keena Leon Guerrero (center) proudly displays her acceptance letter into the program, along with WPFMC staff Floyd Masga (left) and CNMI Secretary of the Dept. of Lands and Natural Resources Tony Benavente (right). Credit: WPFMC*

The project will identify feasible fishing zones for vessels originating from American Samoa that may utilize troll/jig operations. It will also explore seasonal tradeoffs for American Samoa vessels to transition between longline operations and troll operations. It will identify seasonal or ecosystem ‘triggers’ to suggest conditions for if or when vessels should transition between sectors to optimize catch.

Project staff will need to analyze catch and effort data from NOAA Fisheries observer and logbook records. This will allow them to determine existing and possible catch and effort distributions from the two groups specified above. The analyses may also use predictive geospatial oceanographic data. This data could be coupled with fishery data and may incorporate a time series of oceanographic indices, which together may explain fishery performance for each fishery sector. Staff will also need to understand albacore age/size selectivity from American Samoa longline fisheries and troll/jig fisheries that operate in the South Pacific. This information will help reveal how these fisheries may differ with respect to the opportunity of catching targeted albacore for maximizing economic viability.

### Ice Delivery System for Malaloa Dock (\$65,275)

This project will purchase and provide self-contained refrigerated trailers to haul flake ice to fishing vessels operating out of Pago Pago Harbor and Ofu Harbor. The trailers will be housed at the DMWR located next to the facilities that will be producing flaked ice in Pago Pago Harbor, and at the American Samoa Government facility near the Ofu Harbor in Manu'a. Large capacity ice storage bins will be co-located with the refrigerated storage bins for temporary holds to allow for increased production of ice to support the fishing fleet. Vendors will use the trailers to deliver ice directly to the vessel at the harbor. This service will decrease the time needed for fishermen to transport and load ice prior to departing on fishing trips.

Depending on the vessel size and capacity, fisherman operating single hull- or alia-type vessels generally require between 200 and 500 pounds of ice for a day trip. Currently, vendors sell flaked ice for the fishing boats in 7-pound bags, making it very cumbersome and difficult for fishermen to purchase the needed amount of ice. Additionally, fishermen have to transport it from the vendor to their vessel. By delivering larger volumes of flaked ice to the harbored vessels, this project will support and produce higher-quality fresh fish for the local markets and the communities of American Samoa.

### Short-longline Pilot Fishing Project (\$44,066)

The 180th Meeting of the Western Pacific Fishery Management Council was held in American Samoa in October 2019. Alia boat owners from the islands of Ofu and Olosega in Manu'a testified on the impacts of the new bottomfish stock assessment on their fishing activities. Fishermen requested that the Council provide support by helping them develop and test new fishing gears, such as short-longline fishing. Unlike the Hawai'i shortline gear, the gear used in this pilot project would deploy nylon cord mainline from baskets to which fishermen would attach floats in intervals. They would clip terminal gear on at intervals resulting in 50–60 baited hooks deployed per mile. The total length of the gear would be about 2 miles. Fishermen would retrieve gear with a battery-powered 24-volt pinch puller.

This project will provide short-longline fishing gear to outfit those alia boats on Ofu and Olosega and provide training for the fishermen who are new to longline fishing. The project will address the American Samoa MCP objective of maximizing social and economic benefits through sustainable fisheries. The MCP lists projects that enhance fishing infrastructure as a very high priority for the territory. The project also aligns with the MCP project priority of developing fishing



*Alia are small, double-hulled catamaran multi-purpose boats. They are used for commercial and subsistence fishing (pelagic trolling and bottomfishing) or for transportation like the vessel seen in this photo taken at Ta'u Harbor, American Samoa. © Nate Ilaoa*



technologies, boat design, and construction (Objective 1.7). To qualify for participation in this pilot project, fishermen will sign data agreements obligating them to submit catch data to the DMWR and participate in data collection workshops.

### **Alia Vessel Upgrades (\$26,850)**

American Samoa's alia fishery plays an important role in the Samoan community. Alia fishermen fish to provide food to local markets and their families and communities to fulfill cultural obligations. Priority actions to help alia fishermen include upgrading the current alia design and introducing technology to improve catch rates. This project will provide large insulated coolers for qualified alia boats, allowing them to carry more ice and fish. Fishing vessels will be outfitted with appropriate weatherproof electronics (plotters/depth finders) to improve their operating efficacy, safety at sea, and chances of catching fish. As a condition for participating in this project, the Department of Marine and Wildlife Resources (DMWR) will require fishermen to submit catch and effort data from all fishing activities using the new electronic reporting application, Catchit Logit.

### **Fisheries Training for Educators (\$25,746.50)**

This project addresses priorities identified in the American Samoa MCP. High priority projects include: developing and enhancing educational materials to increase awareness about coral reefs and fisheries, and enhancing regional cooperation with regional agencies and partners through scientific research and meetings. As the fishing community identified, the territory needs more fishery-related learning content in school curriculums.

The fisheries of American Samoa represent the backbone of the local economy. The American Samoa Government and others have engaged in numerous efforts to generate interest in the fisheries with local students, as well as create opportunities for those young people to get involved in fishery and marine-related activities. This project will supplement ongoing training and education efforts, such as the annual Summer High School Fisheries and Marine Resource Management Course and U.S. Pacific Territories Capacity Building Scholarship Program.

Through a series of workshops, local educators will provide knowledge and resources to integrate fisheries

and marine science content into their classroom lesson plans. The workshops will involve a combination of classroom setting and hands-on activities provided by the DMWR and their Coral Reef Advisory Group partner agencies, the Council's local advisors, and the local fishing community. Participating teachers will learn about the fisheries and how they are managed, and they will obtain materials needed to implement that information into their lesson plans. These workshops will be consistent with information and training provided by the Hawai'i Seafood Council Fisheries 101 training to American Samoa in 2019, which was funded through the NOAA Saltonstall-Kennedy Grant Program.

### **Manu'a Student Fishing Tournament (\$12,500)**

The first student fishing tournament in American Samoa will be held on Ta'u Island in Manu'a. Manu'a students in grades K-12 will showcase their fishing skills in a shoreline fishing derby. They will compete in both modern and traditional fishing gear categories. The community will work with Manu'a Elementary School and Manu'a High School faculty and staff to host the event. This project directly addresses Objective 4 in American Samoa's current MCP by promoting traditional fishing practices, recognizing the importance of island culture, and fostering opportunities for participation.

### **The Commonwealth of the Northern Mariana Islands (\$254,437.50)**

#### **Garapan Fishing Base Improvement Project (\$160,000)**

This project will continue the administration's initiative to improve the Garapan Fish Base area, which remains central to the Saipan small boat fishing community. This effort builds on the shoreline stabilization fronting the Fish Base parking area. The project seeks to improve the southern parking lot expansion, as well as create disability access for fishing and reviewing. Funds will support design, engineering, and environmental review work required to support the proposed construction of the access area, and it is a high priority in CNMI's current MCP. Improving the shoreline area will allow for level extensions of the parking lot area for public walk-up access or disability access via wheelchair. The project will also install steel rails to provide security along the water's edge.



To enhance the bottomfish training, CNMI leased a commercially outfitted vessel, the Kirida—a 36-foot Radon boat, configured to target bottomfish after extensive solicitation and expert consultations. Credit: WPFMC



The WPFMC collaborated with the CNMI Governor's Office to offer a four-day vessel maintenance and capacity-building training on Saipan in 2019. Here, Hawai'i commercial bottomfish fisherman and Council Hawai'i Advisory Panel member Ed Ebisui III displays a fishing reel as he presents on types of fishing gear and their use. Credit: WPFMC

### SFF Project Coordinator and Monitor (\$54,437.50)

The CNMI received grants to develop its fisheries. But due to economic constraints caused by Typhoon Yutu in 2018, as well as impacts caused by COVID-19, the CNMI is forced to limit work hours and furlough needed staff. The CNMI recognizes the need to continue to support

and meet current fisheries development projects to meet its objectives by promoting responsible domestic fisheries development to provide long-term economic growth and stability and local food production. To meet its fishery development projects, the CNMI will use the funds to better manage and monitor ongoing MCP projects, as proposed in this funding request and support the agency's ability to meet deadlines concerning deliverables. The CNMI will continue to provide oversight, educational outreach, and administrative support.

### Improving Fishery and Resource Monitoring (\$40,000)

Currently, the only fisheries-dependent data collection in the CNMI is through opportunistic creel surveys and dealer reporting. The CNMI has enacted regulations making commercial fisheries data reporting mandatory and is working to implement the regulations. The CNMI is also working to adopt an electronic data collection program using the "Catchit Logit" application. The data collection program will help improve the monitoring of local fishery, habitat, ecosystem, and protected species by providing the community a platform through which it can share information.

The CNMI Department of Land and Natural Resources will solicit and engage additional resources to support interagency coordination to improve resource monitoring and the implementation of the electronic data collection system. Technical staff will assist in the registration and issuance of the app and the tablets (for people without smartphones). Staff will travel to Rota and Tinian to work with fishermen on app usage, provide outreach, monitor performance, and support data collection efforts.

## Saltonstall-Kennedy Grant Program

The Saltonstall-Kennedy (S-K) Grant Program is a nationally competitive program administered by NOAA Fisheries. The program provides financial assistance through grants and cooperative agreements for research and development projects that benefit the U.S. fishing industry. The program's statutory authority is the S-K Act, as amended (15 U.S.C. 713c-3). The S-K Act established a fund for the Secretary of Commerce to provide funding support for projects addressing aspects of U.S. fisheries, including, but not limited to, harvesting, processing, marketing, and associated infrastructures. In 2020, PIRO allocated \$915,563 for four projects.

### Conservation International Foundation — Advancing the Promotion, Development, and Marketing for Hawai'i's Local, Sustainable Fisheries (\$299,633)

This project creates a scalable market-based model that promotes better business practices and marketing strategies to increase production and market demand for local and sustainable fish species in Hawai'i. Increasing demand for local, sustainable seafood and connecting chefs and restaurants with fishermen creates opportunities for innovation, increased

production, and increased commercial benefit to the fishing community presently not existing in Hawai'i. Additionally, the heavily promoted Hawai'i Seafood Month campaign and increased local, regional, and global public relations will create enabling conditions for business opportunities to emerge as a result of this market-based model. The project will also create an innovative "Pacific Chef Network" as a long-term, self-sustaining mechanism to prioritize business practices for improvement.

### University of Guam — Determining Patterns and Drivers of Life-History Variation to Inform Present and Future Fishery Management in the U.S. Pacific (\$279,786)

Through an integrated series of studies and outreach opportunities rooted in fundamental life-history research, this project will create the largest database of tropical fish life history to date spanning the southern Mariana Islands. Through collaboration, student mentorship, and formal training workshops, it will build upon three existing data sets at different spatial and temporal scales spanning U.S.-affiliated and other islands of the tropical Pacific. Using this information, it will project and forecast fishery yield across space



Hawai'i Feed & Fertilizer turning fish waste into aquaculture feed. Credit: Hawai'i Feed & Fertilizer





## Project Update

Ocean Era (formerly Kampachi Farms) recently released results from their 2018 S-K-funded project, in which they have successfully raised a carnivorous fish on a diet free of fishmeal and fish oil without any harmful effects. The kampachi (Hawaiian yellowtail, almaco jack) were raised on a diet of feed-grade poultry meal and a fish-free oil blend high in omega-3 fatty acids. The fish were not only as healthy as those grown on traditional feed but also more flavorful in blind taste tests. The achievement may ultimately help aquaculture expand by decreasing its reliance on fish-derived feed.

**For more information about this project,** read Ocean Era's technical report at the Global Aquaculture Alliance's Advocate: <http://bit.ly/sk-oceanera-fishfreefeed>. The new feed formulations are publicly available online through the F3 Feed Innovation Network at <http://bit.ly/f3fin>.

*A new fish-free feed that replaces fishmeal and fish oil with poultry meal and algae oil. Credit: © Ocean Era, Inc.*

and time under projected future climate variability. Robust measures determine life-history traits for commercially important species and generalize relationships between environmental factors and fish biological traits to better inform management in this region, which is a leading producer of coral reef-associated fisheries research.

### **Hawaii Feed & Fertilizer, LLC — Building Resiliency in Hawaiian Fishing Communities: A Pilot Project Assessing the Feasibility of Developing a Local Fishmeal Plant (\$220,000)**

Hawaii Feed & Fertilizer, LLC, creates and tests fishmeal made from Hawai'i fish processing waste to establish and produce a locally sourced aquafeed. Using new technology developed in Iceland by Hedinn, Inc, Hawai'i will be able to divert fish byproducts, currently disposed of in landfills, into a marketable product. This will strengthen the existing markets while creating new ones, all while promoting environmentally sound business practices within the Hawai'i fishing communities. Confirming the feasibility of developing a local Hawai'i plant will remove the chief barrier to aquaculture's growth and sustainability throughout Hawai'i and create a scalable use for our state's fish

byproducts. The fishmeal creates locally sourced aquafeeds for fish farmers and other value-added products from the unused byproducts.

### **Pacific Islands Fisheries Group — Community Ideas and Projects for 'Ahi (Yellowfin Tuna) Landed on Kaua'i (\$116,144)**

The Pacific Islands Fisheries Group's project identifies and evaluates a range of possible approaches to diversify the market share and business opportunities for the Kaua'i small boat fleet for 'ahi (and other species). Experts and the Kaua'i Department of Economic Development will review research and diversity approaches used at other locations to add value to fresh-caught tuna.

Workshops will help small boat fleets identify their views of past and present performance of the island fishery, their preferences, and their interest in diversification or new distribution channels. These workshops will also host fishing experts who have completed successful diversification and expanded markets for tuna and seafood products elsewhere. A comprehensive summary provides a roadmap to identify the next steps to implement diversification and increased market shares.

## Marine Education and Training Program

In 2007, the Magnuson-Stevens Reauthorization Act was amended to include §305 (j), which provides guidance on the development of a marine education and training program. Public Law 109-479 states: “the Secretary shall, in cooperation with the Western Pacific Fishery Management Council, establish programs that will improve communication, education, and training on marine resource issues throughout the region and increase scientific education for marine-related professions among coastal community residents, including indigenous Pacific Islanders, Native Hawaiians, and other underrepresented groups in the region.” The Pacific Islands Region Marine Education and Training Program was established to meet Congressional intent. In 2020, PIRO allocated \$339,977 in 10 projects.

### University of Hawai‘i — Marine Support of Marine Option Program (2020-2025) (\$149,977)

To provide experiential opportunities for students with ocean-related interests, the Marine Option Program (MOP) offers marine education programs and activities for undergraduates across more than 40 disciplines. MOP continues to provide career counseling, help students identify and implement hands-on internships and research projects to meet their MOP certificate requirements, liaise with project mentors, and monitor student progress. MOP also provides scientific diving opportunities, which help to teach aspects of hands-on underwater-surveying practices and principles courses. In FY20, PIRO, PIFSC, and the Office for Coastal Management shared funding support for the program.

### Hawai‘i Academy of Science — Hawai‘i State Science and Engineering Fair (\$60,000)

Every student in the State of Hawai‘i has the opportunity to participate in a science fair activity, helping to build interest in marine and natural sciences. The science fair provides a platform for students to use the scientific method to investigate questions and solve problems in the real world. High school students interact with leading scientists in Hawai‘i to conduct in-depth and comprehensive science investigations. Exposure to science activities could provide a catalyst to increase the number of students in Hawai‘i pursuing advanced degrees in areas of study

related to STEM (Science, Technology, Engineering, and Math). The Hawai‘i State Science and Engineering Fair connects students, scientists, and teachers by leveraging partners and donors and offering scholarships and awards to winners. The Hawai‘i State Science and Engineering Fair has temporarily moved to a virtual format, requiring an innovative approach to this effort.

### University of Guam — Enhancing Marine Science Capacity in the Western Pacific Through Science Internships at the University of Guam (\$25,000)

The University of Guam will select students with qualified projects from the Guam Island-Wide Science Fair for a science internship at the university. Project



MOP students use underwater cameras and size class measuring devices (marked PVC) for coral disease surveys. Credit: UH MOP Program/Jeff Kuwabara

selection is based upon the student's abstract, oral presentation, and overall display. The student internship extends for 5 weeks from mid-June to July under the supervision of a qualified scientist engaged in marine research. The internship schedule begins with an orientation week followed by project initiation and data collection. The final week focuses on analyzing data from the 5 weeks and presenting summer research projects to the community in a mini science symposium.

### **Hawai'i Pacific University, College of Natural and Computational Sciences — Aquaculture Workshop at Oceanic Institute of Hawai'i Pacific University for Students of Wai'anae High School's Aquaculture Program (\$15,000)**

This aquaculture workshop is a well-developed curriculum and set of activities to impart up-to-date information on the latest aquaculture techniques and tools, as well as introduce emerging technologies and college career opportunities at local higher education schools and programs. The participants, students, and teachers from Wai'anae High School's Marine Science Learning Center, at its Waimānalo Makapu'u Campus and Oceanic Institute of Hawai'i Pacific University, receive new skills and knowledge developed through the research conducted at the institute. The project will help prepare these local students to pursue science

education, consider jobs in the aquaculture and marine science industry, and contribute to the research needed to advance these industries in the United States.

### **Mālama Learning Center — Reviving Hawai'i's Estuaries and Aquatic Resources: Marine Conservation Career Exploration for West O'ahu Students (\$15,000)**

Under the Hawai'i Green Collar Institute, the Mālama Learning Center will facilitate a program to get 20 core high school students from West O'ahu involved in marine conservation. These multi-day sessions will bring together marine professionals who focus on marine and estuary (muliwai) conservation and protection of ocean resources, and highlight careers and career options in marine conservation and resource management. Activities increase knowledge and life skills (collaboration, communication, academic, and career readiness) related to contemporary estuarine and ocean-related resource management issues. Students gain increased awareness of the value of maintaining healthy muliwai ecosystems through individual and collective participation. Resparking kuleana (responsibility) for muliwai resources in Hawai'i engages both the students and the community in sustainability efforts and solutions. Mentorships guide students who pursue research, management, outreach projects, and future conservation careers related to the muliwai of Hawai'i.



*Students meet with a marine biologist from the University of Hawai'i to study plankton in the ocean and the wetland at Nānākuli. They are comparing and contrasting what they can see and learning about the important role of plankton in marine ecosystems. Credit: Mālama Learning Center*



*Students at Koai'e Cove in North Kohala engage with traditional Hawaiian cultural leaders on how to conduct hana i'a activities (using coconut only) to reestablish ko'a (fish houses) of known species that were historically fed. Credit: North Kohala Community Resource Center/ Amoo Kainoa*

### **North Kohala Community Resource Center — Kohala Unupa'a: Watchers and Caretakers (\$15,000)**

Youth and families of North Kohala and Kailapa engage with kupuna (elders), cultural practitioners, university students, marine professionals, and community members in science-based and culturally relevant marine resource management practices. The training fosters and stewards a productive and healthy fishery for future generations by sharing local and traditional knowledge and by increasing student observation, monitoring, and data collection of coastal Kohala shoreline. Education increases best practices for fishery productivity and sustainability and introduces students to marine resource and conservation professions by developing and expanding established connections with experts in the field. This project promotes community education and outreach through culturally relevant sustainable fishing and safe boating practices for Kohala coastal community residents.

### **Symbrosia, Inc. — Macroalgae Mariculture Apprenticeship for West Hawai'i Students (\$15,000)**

A collaboration between Symbrosia and West Hawai'i Explorations Academy trains Hawai'i students in the basic aspects of mariculture to prepare them for entering the workplace or continued education. The curriculum encompasses STEM, workplace, industry-wide, and innovation competencies. Students engage

with staff to run wet lab experiments in addition to outdoor maintenance of scaled seaweed culture. This project provides equitable opportunities for hands-on experience with sustainable seaweed aquaculture at the Natural Energy Laboratory of Hawai'i Authority under the guidance and supervision of qualified Symbrosia staff. By exposing students to mariculture, this project hopes to inspire them to explore future careers in this field and instill an entrepreneurial mindset. It provides mentorship and tools to help students graduate this program and go on to tackle global problems themselves.

### **University of Hawai'i — Broadening Exposure to Local and Traditional Knowledge in Fisheries Management Through Innovative Television Programming, Online Media, and Curriculum Connections (\$15,000)**

Researchers with the University of Hawai'i Sea Grant College Program partner to develop a 30-minute "Voice of the Sea" television episode, 30-second trailer, and companion educational material. These products will focus on science-based management of fishery resources in the Pacific Islands region with increased awareness and understanding of local and traditional knowledge. The content enhances the use of local and traditional knowledge to restore, protect, and maintain subsistence and commercial fisheries by exploring topics relevant to the region, including native



*Symbrosia macroalegae apprentice learns to use a dissolved oxygen probe. Credit: Kurt Chambers*

fishpond restoration, community-based subsistence fishing areas, and training of local observers to record phenological changes. This will help affect community-wide changes in the conceptualization and management of ocean resources. This project will reach traditional and nontraditional audiences of population segments.

### **University of Hawai'i — Building Pacific Islander Capacity in Shoreline Mapping to Visualize Impacts of Rapid Subsidence and Sea-Level Rise (\$15,000)**

This UH Sea Grant College program recruits Pacific Islanders to pursue fisheries and marine science careers through community-driven scientific training in a spatial mapping workshop developed for undergraduates and local government staff. The geographic information system (GIS)-based shoreline mapping workshop trains participants in creating maps of shorelines in several targeted villages in American Samoa. The project will pair spatial data with resident interviews, particularly elders, to create a longer baseline dataset to better understand how the relative sea-level rise rate has changed nearshore habitats and fisheries over time. Students gain hands-on experience, new technical skills, and

knowledge of historical shifts in marine resources that will increase their job competitiveness and strengthen their desire to pursue a career in marine science.

### **University of Hawai'i — Continuing to Build Pacific Islander Capacity Through Training in Underwater Surveying Techniques (\$15,000)**

Under this project, the University of Hawai'i builds local marine science capacity within American Samoa by recruiting Pacific Islanders to pursue fisheries and marine science careers. This project conducts community-driven scientific training through place-based participation in an underwater surveying training course developed for undergraduates. Training is a modified (snorkeling) version of the Quantitative Underwater Ecological Survey Techniques (QUEST) course conducted by the University of Hawai'i MOP. Students gain hands-on experience, new technical skills, and knowledge of marine resources that increase job competitiveness and strengthen their desire to pursue a career in marine science or related fields. This project will recommend QUEST participants for future internship and research opportunities and encourage them to pursue higher degrees in marine science or seek gainful employment with local agencies.



## Sustainable Recreational and Non-Commercial Fishing Program

This grant program supports both recreational and non-commercial fishing projects in the PIR that improve sustainable fishing opportunities, maintain stability of fish stocks, and protect cultural fishing traditions. As recreational and non-commercial fisheries in the region are major economic contributors to coastal communities, this industry holds both essential social and cultural significance in the region through the perpetuation of subsistence and traditional fishing practices. Projects funded in this first year share a common theme of using local knowledge and citizen science to inform best management practices. In 2020, PIRO funded seven recreational and non-commercial fishing program projects in the amount of \$143,952.



Cassie Pardee, Poseidon Fisheries Research LLC, finds large female gonads while dissectioning this ulua. Credit: WPFMC/Zachary Yamada

### Poseidon Fisheries Research LLC — Seasonal Spawning in *Caranx ignobilis* and *Caranx melampygus* for the Islands of O‘ahu and Maui (\$30,000)

As cooperative research, this study focuses on combining traditional fishermen knowledge with modern reproduction assessments to support collaborative fishery management of the highly targeted and prized ulua (*C. ignobilis*) and ‘ōmilu (*C. melampygus*) species. This project will recruit local fishermen and train them as citizen scientists to aid in the collection of data for studies that aim to support the conservation and management of these species. These recreational fishermen will conduct macroscopic identification of sex and spawning in these two species and provide gonad samples, which scientists use to confirm spawning seasonality through histological analysis. Data from O‘ahu and Maui will reveal spawning peaks throughout the year, including possible differences in spawning seasons between islands.

### Pacific Islands Fisheries Group — Support Community Use of the Electronic Reporting Application to Improve Fishery Data in the Pacific Islands Territories (\$29,810)

This Pacific Islands Fisheries Group (PIFG) project creates a discussion forum for the non-commercial and commercial fishing community to support the Catchit Logit data collection app. This forum encourages app use among the fishing community through increased awareness about the importance of accurate fishery data. It provides fishery scientists and managers improved information to support fishery science, informed fishery management policies, and it may be possible to include that data within the next generation bottomfish stock assessment. PIFG works with local representatives to provide on-the-ground support in each island area and coordinate outreach and community engagement. The project will develop programs to encourage fishermen to use the Catchit Logit app throughout the year, along with additional materials through print and radio to support the Catchit Logit app use.



*The International Game Fish Association, in collaboration with Stanford University, deploy pop-up satellite archival tags on marlin (blue, black, striped) and spearfish to increase our understanding of distribution, population structure, and biology, as well as engage anglers and the general public in the research process. Credit: Hardus Rothmann*

### **Eileen Nalley — Understanding the Impacts of Ciguatera on Hawai'i's Fishing Communities (\$29,700)**

To address the prevalence, consequences, and risk mitigation decisions associated with ciguatera fish poisoning (CFP), this project documents the impacts of CFP on non-commercial and recreational fishermen on O'ahu, Kaua'i, Maui, and Hawai'i Island. Interviews (target = 5–10 on each island) and surveys (target = 100 respondents) contribute to the understanding of the disease. CFP is an illness caused by consuming fish that have accumulated toxins from microalgae in the environment; however, its prevalence is underestimated due to a lack of reporting and misdiagnoses. The illness can cause long-term impacts to the financial, emotional, social, and cultural well-being of fishermen and their families. Data gathered from the project may further determine how ciguatera test kit access might change these factors.

### **International Game Fish Association — International Great Marlin Race (\$27,742)**

International Great Marlin Race (IGMR), in partnership with Stanford University, engages recreational anglers in a citizen science-driven billfish satellite tagging program. The project achieves this goal by engaging anglers in the Hawai'i recreational fishing community who are participating in billfish tournaments to

sponsor and deploy Pop-Up Satellite Archival Tags (PSATs) on billfish species during major fishing tournament activities. Data from the tags reveals the biology, behavior, and habitat use of billfish species, which increases our understanding of their population dynamic characteristics. Dr. Barbara Block will analyze and manage the data from the tagged billfish. This knowledge leads to improved information for resource managers and policymakers to ensure the long-term sustainability of the recreationally valuable billfish stocks.

### **Government of Guam Department of Agriculture — Disposal of Monofilament Lines and Other Marine Debris at Gregorio D. Perez Marina, Agat Marina, and Merizo Pier and Boat Launching Facility in Guam (\$13,000)**

The Department of Agriculture Division of Aquatic and Wildlife Resources promotes responsible disposal of monofilament lines and other marine debris at three popular fishing boating access sites on Guam. This project will install monofilament line collectors, mixed-waste bins, and recycling bins at the Gregorio D. Perez Marina, the Agat Marina, and the Merizo Pier and Boat Launching Facility. The line collectors and bins will mitigate the harmful interactions between marine life and marine debris within Guam's waters by the collection of discarded fishing line and other debris.

Littering and illegal dumping of trash is a primary source of marine debris on Guam and is noticeable at fishing access sites on Guam lacking trash receptacles.

### American Samoa Department of Marine And Wildlife Resources — Pilot Mixed-Waste Collection at Fishing Access Sites in American Samoa (\$7,700)

The American Samoa Department of Marine and Wildlife Resources encourages responsible disposal of monofilament through the availability of mixed-waste bins and community participation in fishing access sites in Tutuila Island, American Samoa. The project will fund mixed-waste bins for construction, installation, and initial maintenance on the Fagatogo floating dock and in the villages of Matuu-Faganeanea, Famalo, and Pologa. It will identify best practices to prevent the loss of gear and engage in outreach to increase participation in the removal of marine debris. Trash collection and the availability of bins are needed in the Territory to prevent waste in the coastal waters. American Samoa does not have an established fish

access site mixed-waste and recycling bin program so this proposed project would address this need.

### Mariana Islands Nature Alliance — Installation and Maintenance of Monofilament Line Collectors for Recreational Fishing (\$6,000)

This monofilament line collectors project promotes best practices for marine debris and responsible fishing by recreational and non-commercial fishermen on the island of Saipan, CNMI. The successful installation and use of the receptacles aid in the prevention of the fishing lines entering the ocean in high-usage areas at Smiling Cove Marine, Garapan Fishing Base, and Sugar Dock. After fabricating and installing the collectors, complete with signage and decals, the project will launch a public information campaign to inform the public of the receptacles and how they benefit the protection of marine resources for future generations. Volunteers from non-profit organizations and clubs maintain the collectors and properly dispose of contents while maintaining data to determine the collectors' efficacy.



## Monofilament Recycling Bin

Help keep our waterways  
**TANGLE-FREE**

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used monofilament  
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Proposed design for the installation of monofilament line collectors at Smiling Cove and Garapan Fishing Base, Saipan, CNMI.

Credit: Hearst Connecticut Media/Genevieve Reilly

# Pacific Islands Region Marine Turtle Management and Conservation Program

The PIR Marine Turtle Management and Conservation Program (MTMCP) implements the recovery plans for the U.S. Pacific sea turtle populations by supporting programmatic activities for Endangered Species Act (ESA) listed sea turtle species. These species may occur entirely within the PIR or have documented linkages to the PIR, such as sea turtles that originate from areas outside of U.S. jurisdiction but migrate through or forage within the PIR, or are impacted by PIR federally-managed activities and therefore relevant to NOAA Fisheries management and recovery obligations. Projects supported by the MTMCP aim to implement regional management priorities and species-specific monitoring, protection, or conservation needs as outlined in the recovery plans. They also complement ongoing federal, state, or international activities and align with current agency initiatives (such as the Species in the Spotlight Pacific leatherback sea turtle initiative). In 2020, PIRO issued 10 federal assistance awards totaling \$619,344 to help progress and complement multi-agency domestic and international sea turtle recovery efforts.

## The Nature Conservancy — Effective Co-Management of Leatherback Turtle Nesting Beaches in Solomon Islands (\$89,847)

Under this project, The Nature Conservancy (TNC) supports community efforts to protect and monitor leatherback turtle nesting beaches in the Solomon Islands and the Isabel Provincial Government (IPG). Activities raise local awareness of the plight of the leatherback turtles. The project will encourage and strengthen communities in Haevo, Sosoilo, and Sasakolo in conservation competency to effectively protect and monitor leatherback nesting beaches during peak nesting seasons. It will also increase capacity to further develop turtle conservation in the IPG by establishing and monitoring a position for a turtle conservation officer. The TNC project increases understanding of leatherback turtle conservation by supporting a local women's group, KAWAKI. To conduct community outreach, KAWAKI is producing a short film on leatherback conservation at Sasakolo.



*Leatherback sea turtle hatchling on beach. Credit: NOAA*

## Did You Know?

Of all the species NOAA protects under the ESA, the Pacific leatherback sea turtle is considered among the most at risk of extinction in the near future. NOAA Fisheries launched dedicated efforts to manage the turtles and prevent commercial longline fishery interactions (a key threat) in U.S. federally managed fisheries, but the population continues to face numerous threats in international habitats, including from fishery bycatch, poaching of eggs and turtles, and climate change (sea-level rise and increasing beach temperatures). To stabilize and protect this species, PIRO, along with federal and international partners, is helping to build in-country capacity for monitoring and conservation in habitats of the western Pacific component of the population. PIRO also supported three leatherback projects in Indonesia and Solomon Islands in 2020. You can help the leatherback sea turtle through responsible consumer choices, such as buying seafood from sustainably managed fisheries that are regulated to reduce sea turtle interactions

**Learn more:**  
[Fishwatch.gov](https://www.fishwatch.gov)

### World Wildlife Fund, Inc — Implementing a Strategy to Address the Direct Take of Leatherbacks (*Dermochelys coriacea*) in the Kei Islands, Indonesia (\$84,449)

The Western Pacific leatherback turtle subpopulation has decreased by more than 80% and is projected to decline by 96% by 2040. In the Kei Islands of Maluku Province, Indonesia, where nine villages hunt and consume turtles, these turtles congregate to forage on large aggregations of jellyfish. World Wildlife Fund, Inc (WWF) has worked to develop a multi-layer strategy to reduce the ongoing leatherback hunt. It has formed a robust regional monitoring program and engaged in broad outreach efforts that have reduced leatherback take from a high of 103 turtles in 2017 to 5 in 2019. Through close collaborations with government agencies and civilian sectors, early conservation gains are promising and the continued support for these activities will be instrumental in achieving a more permanent solution.

### The Honu Project — Strengthening Monitoring Efforts for Hawksbill Sea Turtles on Hawai'i Island With the Hawai'i Island Hawksbill Turtle Recovery Project (\$83,935)

To protect and monitor hawksbill turtles residing in the Hawaiian archipelago, the Hawai'i Island Hawksbill Turtle Recovery Project aims to monitor nesting activities on beaches, protect nests, and ensure hatchlings safely reach the ocean. It promotes public stewardship for coastal and marine ecosystems through educational outreach. It implements relevant and innovative management techniques to assist in the recovery of these turtles. It also collects critical information on the nesting hawksbill population throughout the season to further control any non-native species found on nesting beaches. The project will analyze, share, and discuss its data with the Hawai'i Hawksbill Turtle Network and use it to influence management decisions and the implementation of recovery strategies.



Maui Ocean Center Marine Institute (MOCMI) sea turtle response staff release a juvenile green sea turtle back into the ocean after disentangling it from fishing line. The number MA14 is a temporary number harmlessly etched onto the shell to help researchers track its recovery progress. The public is encouraged to report any sightings of MA14 to [RespectWildlife@noaa.gov](mailto:RespectWildlife@noaa.gov). MOCMI works in partnership with NOAA Fisheries to respond to dead, sick, or injured sea turtles on Maui (response activities authorized pursuant to 50 CFR 222.206).  
Credit: Maui Ocean Center Marine Institute



*Underwater view of a purse seine drifting fish aggregating device. Credit: ISSF/David Itano*

## Did You Know?

Intergovernmental organizations such as the Western and Central Pacific Fisheries Commission work to manage fisheries interactions with endangered species, such as sea turtles, through the adoption of conservation and management measures (CMMs). These CMMs aim to minimize the adverse impacts of fisheries on sea turtles and other non-target species through requirements such as gear modifications, bait restrictions, and non-entangling fish aggregating device (FAD) designs.

## World Wildlife Fund, Inc — An Analysis of the Status of Sea Turtles in the Philippines (\$74,754)

By increasing and improving the data available to governments, conservationists, and fisheries, this project seeks to reduce the removal of marine turtles in the Philippines. Through research and knowledge sharing, the project will address the two main means of turtle removal: fishery bycatch and illegal wildlife trade. Staff will conduct a series of rapid bycatch assessments to measure the level of interaction and bycatch of marine turtles in both small-scale fisheries and small commercial fisheries. Using these results, the project identifies and implements bycatch mitigation strategies with the buy-in of stakeholders and local communities, all the while continuing to support Filipino authorities tasked with combating illegal wildlife trafficking.

## World Wildlife Fund, Inc — Leatherback Sea Turtle Nesting Dynamics in the Maluku Region (\$67,266)

WWF closely monitors the critical habitat for the surviving population of leatherback sea turtle nesting sites on Buru Island. The Indonesian archipelago is a critical habitat for the surviving population, but their numbers have dramatically declined in part due to egg harvesting and direct take from nesting beaches and foraging grounds. The protection of adult females and nests made Buru Island the first substantial nesting population discovered outside of Papua in the last decade. For continued conservation, WWF works to expand nest characterization, monitoring, and satellite tag deployment for further research. Striving to improve and extend the community and government outreach, WWF will ultimately transition conservation responsibility over to capable and enthusiastic local, provincial, and regional governments.

## International Seafood Sustainability Foundation — Definition of Guidelines to Reduce the Impact of Lost and Abandoned Fish Aggregating Devices on Marine Turtles (\$61,446)

This project will define guidelines and conservation recommendations to reduce the impact of lost and abandoned drifting fish aggregating devices (dFADs) on sea turtles in the Pacific Ocean. The dFADs are used to increase tropical tuna species catches; however,

around 20% of these FADs are lost or abandoned every year. Entanglement in dFAD netting is known to cause incidental mortalities for marine megafauna. New guidelines may reduce the occurrence of mortalities associated with entanglement in dFADs and protect turtle habitats caused by dFADs stranding events. Information for these guidelines comes from the cooperation of key stakeholders across the Pacific Ocean (fishermen, ship-owners, and scientists) to minimize the dFAD impacts on sea turtles.

### **The University of the South Pacific — A Multidisciplinary Approach to Monitor Green Turtles From the Central South Pacific Distinct Population Segment Aggregating at Three Foraging Grounds in Fiji, Central South Pacific (\$55,043)**

The University of the South Pacific project uses satellite tracking to improve understanding of green turtle habitat use at Yadua Island and Makogai Island foraging grounds in Fiji. The project collects data on habitat use and impacts from cyclones and El Niño Southern Oscillation in the Central South Pacific distinct population segment. Surveys conducted on the three foraging grounds monitor aggregating turtles and assess their regional connectivity. During site visits, project staff capture and flipper-tag turtles, as well as

check their health status and measurements. They also record habitat plant and macroalgae composition to assess ecology health. Enhanced knowledge improves protection and conservation measures for decision making by Pacific countries on sea turtle management.

### **Hawaii Marine Mammal Alliance DBA HI Marine Animal Response — Sea Turtle Stranding and Rescue Response (O‘ahu) (\$44,604)**

Through the Hawaii Marine Mammal Alliance DBA Hawaii Marine Animal Response (HMAR), this project provides a high-quality staff, volunteer, and intern-based stranding and rescue response program on O‘ahu for dead, injured, or otherwise compromised marine turtles. The program continues to grow and maintain a comprehensive network of staff, volunteers, and interns to improve turtle and human interactions through educational outreach. HMAR receives, processes, and manages reports from the public and others concerning marine turtle strandings (actual or potential); provides fully-trained and vetted personnel to respond to these reports; and conducts these activities in close collaboration with the NOAA PIFSC Marine Turtle Biology and Assessment Program and the NOAA PIRO Marine Turtle Management and Conservation Program.



*MOCMI staff free a juvenile green sea turtle from an illegal gillnet. Credit: MOCMI*

## Maui Ocean Center Marine Institute — Sea Turtle Stranding Response and Outreach Program, Phase Two (\$35,000)

The Maui Ocean Center Marine Institute (MOCMI) project is focused around a volunteer-based stranding response program on the Island of Maui for dead, injured, or otherwise compromised sea turtles. MOCMI will maintain and implement a comprehensive volunteer network that will improve turtle and human interactions through educational outreach. MOCMI will receive, process, and manage reports from the public and others concerning sea turtle strandings on Maui, and provide fully-trained and vetted volunteers to respond to strandings in close coordination with NOAA. Using the stranding response data, MOCMI aims to improve understanding in the community through education and outreach efforts. MOCMI promotes conservation initiatives and accessible environmental education with fishermen through social media and on its website. Programs to reduce the threats impacting sea turtles include expanding a fishing line recycling

program. This project allows MOCMI to increase outreach efforts and expand sea turtle stranding response, rescue, and rehabilitation capabilities.

## Mālama na Honu — Mālama na Honu Sea Turtle Management and Outreach Project (\$18,000)

The Mālama na Honu project focuses on reducing and managing human harassment and disturbance of green sea turtles at Laniakea Beach, O’ahu. The structured and maintained program provides a viable orientation, on-site training, and monitoring instruction for volunteers. This cadre of trained volunteers then conducts daily outreach and education with an ever-increasing number of visitors at the location. Volunteers teach about the species life cycle, foraging habits, migration, and nesting behavior to schools, clubs, service groups, and tourist venues. The project strives to bring awareness and implementation of strategies to mitigate turtle strikes. It collects and analyzes data on basking turtles at Laniakea and makes it available on Mālama na Honu’s website.

## Project Update

Supported by a Pacific Islands Region Marine Turtle Management and Conservation Program grant, the Hawai’i Island Hawksbill Project (HIHP) studies, monitors, and protects the island’s hawksbill sea turtles (honu’ea). With fewer than 200 nesting female hawksbills documented in the Hawaiian Islands in the last 30 years—the vast majority of which nest on Hawai’i Island—honu’ea make up one of the most endangered sea turtle populations in the world. HIHP conducts a wide range of proactive conservation measures to help these struggling reptiles, including maintaining a daily presence across approximately a dozen nesting beaches throughout the April–December season, tagging nesting females and counting successful hatchings, protecting nests from invasive predators, restoring habitat, and engaging in numerous public outreach and education activities. The project also plays an important role in honu’ea research by collecting biological samples for study by NOAA Fisheries scientists. This collaborative work has revealed, for example, that honu’ea are genetically distinct from other hawksbill populations in the Pacific—they truly are Hawaiian hawksbill sea turtles.

Read more about HIHP and the turtles they protect in this PIRO StoryMap: <http://go.usa.gov/xvKFz>



Up-close view of a hawksbill laying eggs on a Hawai’i Island beach. USFWS Permit #TE-739923-8. Credit: Cheryl King



In accordance with permits, Lauren Kurpita (left) from the Hawai’i Island Hawksbill Project, along with scientists from NOAA Fisheries and U.S. Fish and Wildlife Service, excavated a hawksbill nest to release trapped hatchlings and collect biological samples. USFWS Permit #TE-739923-8. Credit: NOAA Fisheries



## Hawaiian Monk Seal Recovery and Marine Mammal Response Program

The Hawaiian Monk Seal Recovery and Marine Mammal Response Program supports specific programmatic activities related to promoting the recovery of endangered Hawaiian monk seals and supporting responses to marine mammal strandings in the main Hawaiian Islands and U.S. Territories. This program supports community-based and community-integrated projects with an educational component designed to elevate public awareness and build capacity from the community for Hawaiian monk seal recovery and marine mammal response. In 2020, PIRO allocated \$234,059 in five projects.

### Hawaii Marine Mammal Alliance, Inc. DBA HI Marine Animal Response — Hawaiian Monk Seal Conservation & Recovery - Priority 1 - O'ahu (\$114,983)

NOAA and HMAR have a common goal — the preservation, recovery, and stewardship of the Hawaiian monk seal. HMAR has developed significant capacity, infrastructure, and experience in three key areas: outreach and education; dispatch and reporting; and field response, escalations, and interventions. HMAR uses these capabilities to conduct activities, measured using Key Operational Indicators, that have a direct and positive impact on Hawaiian monk seal preservation and recovery. The thousands of outreach, education, hotline, dispatch, field response, escalation, and intervention support activities each year have positively impacted monk seal health, management, recovery, and public support. HMAR works with NOAA and Hawai'i Department of Land and Natural Resources (DLNR).

### The Marine Mammal Center — Hawaiian Monk Seal Response and Community Engagement (\$80,000)

This grant supports The Marine Mammal Center's (TMMC) hospital facility, Ke Kai Ola, in Kona on Hawai'i Island for Hawaiian monk seal recovery through a science-based rehabilitation program and well-managed response network with coordinated community partnerships. The project conducts



*Hawaiian monk seal PO2 (Nohea), born in a popular beach area on O'ahu, plays with marine debris (in this case, a sand castle toy for children, which may have been left on the beach) during the Memorial Day holiday. Marine debris is a threat to monk seal survival. The seal's natural curiosity and popularity of the beach presented wildlife management challenges for HMAR. Credit: HMAR*



*Pohaku (RO28) nurses her 2-week-old pup Nanea (PO5)  
Credit: © Melody Bentz Photography*

community outreach and monitoring efforts to inspire visitors and residents to protect and monitor this species. The center strengthens and standardizes a volunteer team with specialized response-dispatch training. This training also helps expand data collection that helps TMMC identify shifts in monk seal behavior. TMMC provides key partners' staff and volunteers with training and materials for haul-out events. The center places an increased focus on areas with low levels of engagement and sightings, updating signage to encourage sighting reports and appropriate behavior around monk seals.

## Mālama Pūpūkea Waimea — Monk Seal Outreach and Education at Pūpūkea Marine Life Conservation District, O‘ahu (\$13,723)

Each year, over one million people visit the monk seals in their critical habitat, which includes the Pūpūkea Marine Life Conservation District (MLCD). Mālama Pūpūkea-Waimea conducts activities at this habitat and areas nearby to increase effective outreach and education in support of the Main Hawaiian Islands Monk Seal Management Plan. Some of these activities are Ka Papa Kai, a “seaside class” for elementary school students; Pono Fishing, a program that teaches sustainable traditional Hawaiian fishing practices to middle and high school youth; Makai Watch, the training and deployment of volunteers in activities that benefit monk seals; regular outreach to inform residents and visitors alike about monk seal conservation; and maintenance of native plants at the Pūpūkea MLCD to reduce erosion and negative impacts on monk seal habitat.

## Dana Jones DBA Hawaiian Monk Seal Preservation ‘Ohana — Hawaiian Monk Seal Recovery Through Education and Preservation (\$13,215)

Hawaiian Monk Seal Preservation ‘Ohana (HMSPO) expands the current programs that support the goals, objectives, and activities that address management strategies outlined in the Main Hawaiian Islands Monk Seal Management Plan for the Island of O‘ahu. Through education and outreach, community engagement, and capacity building, HMSPO’s Recovery Through Education and Preservation project activities support health, partnership, community engagement, and education strategies to upgrade and expand in-classroom education programs, increase volunteer workforce, expand outreach to communities and at pupping events, develop partnerships for conservation, educate through information sharing, and integrate historical and cultural awareness.

## Hawaii Marine Mammal Alliance, Inc. — Hawaiian Monk Seal Recovery and Conservation - Priority 1 - Moloka‘i (\$12,138)

A key Hawaiian monk seal species recovery challenge in the main Hawaiian Islands is fatal human-caused trauma. In recent years, Moloka‘i has, unfortunately, maintained a high ratio of human-caused seal deaths

to the island’s small human population. This project adds staff from the Moloka‘i community and increases activity and support for monk seal stewardship as one part of broader, community-based, sustainable coastal ecosystem management practices that benefit the residents of Moloka‘i while also honoring their cultural identity and traditions. HMAR works cooperatively with Hawai‘i DLNR, TMMC, and other partners to achieve the goals of the Hawaiian Monk Seal Recovery Plan (2007) and the Main Hawaiian Islands Monk Seal Management Plan (2015).



Junior Girl Scout Troop #769 show off their newly created outreach materials as they educate Hawai‘i residents at an outreach event. Credit: HMSPO/Dana Jones

## Project Update

### Continuing over a decade of classroom education and public awareness for the Hawaiian monk seal species.

Hawaiian Monk Seal Preservation ‘Ohana has been educating and inspiring O‘ahu students and teachers (30,000 and counting!) about the Hawaiian monk seal for the last 14 years. Recently, the group was able to partner with Junior Girl Scout Troop #769, where 11 youth participated in various outreach events to obtain their Girl Scout Bronze Award, the highest honor a Girl Scout Junior can achieve. HMSPO helped the group research and learn about how to safely fish around monk seals and the dangers of the cat-borne disease toxoplasmosis; design the sign (below); and teach others about these two key monk seal issues. Community outreach is an important part of HMSPO’s program, working towards the recovery of this species through education and awareness. HMSPO will continue to share the cultural significance this Hawaiian treasure gives to the world and the people of Hawai‘i.

## Interjurisdictional Fisheries Act of 1986

The Interjurisdictional Fisheries Act of 1986 assists states in managing interjurisdictional fisheries resources. Apportionment to states is based on the average value and volume of raw fish that domestic commercial fishermen land. The data obtained is the principal source of information and analysis for the fisheries activities and management options that are used to address federal requirements for fisheries management plans under the jurisdiction of NOAA Fisheries. In 2020, PIRO allocated \$311,659 to four projects.

### **American Samoa Government: Department of Marine and Wildlife Resources — American Samoa Interjurisdictional Fisheries Stock Assessment and Monitoring Program (\$170,333)**

The DMWR of the American Samoa Government assesses and monitors the status of interjurisdictional fish species caught within the American Samoa EEZ. The data obtained is the main source of information used to address local and federal requirements for a Fishery Ecosystem Report under the jurisdiction of the American Samoa DMWRs and NOAA Fisheries through the WPFMC. Through the cooperative efforts between federal and local agencies, fisheries information provides a timely developed, implemented, and evaluated Fisheries Ecosystem Report for the territory of American Samoa and the WPFMC.

### **State of Hawai'i Department of Land and Natural Resources: Division of Aquatic Resources (DAR) — Fisheries Act Award Application-State of Hawai'i (\$107,232)**

DLNR-DAR is modernizing the State of Hawai'i's commercial marine licensing and fisheries reporting systems (CMLS). The agency has nearly 3,800 fishermen required to obtain commercial marine licenses to offer marine life for commercial purposes in the State and 3,000 commercial fishermen submitting monthly fishing reports. Per State of Hawai'i Revised Statute (§189-10), DLNR-DAR also collects transaction purchase reports from 255 active primary commercial marine dealers. Both federal and state fisheries agencies use this integrated best available data to assess the status of marine resources and to establish fishery regulations in State and U.S. EEZ waters. It is essential, therefore, that timely and accurate fisheries

data are available for fisheries agencies to make informed management decisions. This award will support the continued maintenance and support of an fisheries online reporting system for fisheries data. Funds will also support the modified online CMLS which will allow the State to issue and renew licenses to both commercial fishers and marine dealers.

### **Government of Guam, Department of Administration — Data Collection and Entry in the Management of Guam's Interjurisdictional Fishery Resources (\$17,047)**

Guam presently serves as a major trans-shipment and port-of-call for large-scale fishing fleets operating in the Western Pacific. Two primary types of fishing vessels — purse seiners and longliners — make up Guam's large-scale fisheries. Continued support allows Guam to coordinate data collection and entry activities under the Pacific Fisheries Data Program regarding transshipped species offloaded by foreign longliners at Guam's commercial port. Data collected helps address the information requirements needed by both state and federal governments. With the data, managers can then develop and implement conductive policies for the maintenance and expansion of Guam's fishing industry. They can then devise sound management and conservation plans for Guam's interjurisdictional fishery within its territorial waters and EEZ.

### **Commonwealth of the Northern Mariana Islands: Division of Fish and Wildlife — Data Collection and Entry in the Management of CNMI's Interjurisdictional Fishery Resources (\$17,047)**

During fishing tournaments, the CNMI Division of Fish and Wildlife collects, processes, and shares important fisheries monitoring data. This principle source of information provides the CNMI with an analysis of fisheries activities and management options of pelagic landings during tournaments. Data further equips federal and local fisheries management programs in the CNMI and assists in addressing federal requirements for Fisheries Management Plans under the jurisdiction of NOAA Fisheries through WPFMC. A record of fisheries data guides in the development, implementation, evaluation, and amendment of fishery management plans in the Western Pacific region.

## Habitat Conservation Program

Throughout the Pacific Islands Region, habitat protection efforts include programs to conserve, protect, and restore marine habitat and coastal ecosystems. Increasing partnerships with other federal and local authorities allows NOAA to maintain and restore healthy coastal ecosystems and implement strategies that minimize threats. The most biologically diverse yet threatened marine ecosystems are coral reefs. In 1996, the amended Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1855(b)) established a new requirement to identify and describe Essential Fish Habitat to identify and protect against local stressors (overfishing, pollution, and habitat destruction) and global stressors (climate change, coral bleaching, and ocean acidification). The goals of Essential Fish Habitat help to maintain productive fishery species life cycles from spawn to maturity and rebuild depleted fish stocks in the United States. In 2020, PIRO allocated \$193,563 in two projects.

### University of Hawai'i Systems — Developing Multiple Stressor Thresholds for Reef-Building Coral Species in the Pacific Islands Region in Support of Essential Fish Habitat Management (\$165,963)

This project will identify potential environmental and anthropogenic factors that may influence the long-term resilience of coral reef ecosystems and assess both its resistance and resilience to episodic events in specific populations, locations, and habitats. Through systematic gray literature and meta-analysis, the project will develop a framework to manage thresholds for sedimentation and other co-stressors on nearshore coral reef and associated ecosystems. Understanding and quantifying the impacts of anthropogenic stressors of reef-building corals, including synergistic effects and critical threshold values in the Pacific ecosystems, will enhance the management of coral reefs and the fisheries habitat that they provide.

### The State of Hawai'i, Department of Land and Natural Resources, Division of Aquatic Resources — Life History Information for Key Hawai'i Coral Reef Fish Species (\$27,600)

This division has identified life history data gaps of Hawaiian coral reef fish species needing more effective management. This project collects specimens across

a range of sizes and throughout the annual cycle; prepares samples; measures, visually assesses, and preserves gonads; extracts and preserves otoliths; and conducts data analysis and reporting. Lack of life history information presents an obstacle in the development of effective regulations for some of these species. DAR has identified nenu (rudderfish, *Kyphosus spp.*), munu (doublebar goatfish, *Parupeneus bifasciatus*), and moano kea (blue goatfish, *P. cyclostomus*) as priority species with life history data gaps. It will focus sampling efforts on O'ahu, but may preserve specimens from other islands for future research projects.



Coral garden at the Pacific Remote Islands Marine National Monument. Credit: The Nature Conservancy/Kydd Pollock

### Did You Know?

Coral reef habitats are extraordinarily diverse and widely distributed in nearshore and midwater habitats across the Pacific U.S. jurisdictions. Over the past few decades, there have been increases in the frequency, severity, and magnitude of anthropogenic disturbances to corals. This phenomenon has resulted in less time available for corals to recover and reduced coral cover. Corals are inherently resilient and overall resilience remains high; however, anthropogenic disturbance, recovery time, coral cover, and overall resilience are all projected to worsen in the 21st century. Despite broad global threats to corals, there is evidence that alleviating local stressors (e.g., sedimentation from dredging) can improve the resiliency for many coral species.

## Promoting Responsible Wildlife Viewing Program

Hawai'i is home to many indigenous marine plants and animals, attracting people from all over the world who seek out experiences in the marine environment. The wildlife tourism industry in Hawai'i has significantly increased over the last decade, placing more viewing pressure on charismatic protected marine species, including dolphins, whales, monk seals, and sea turtles. Both visitors and residents in Hawai'i encounter these animals daily, and these interactions can often disrupt the animals' important natural behaviors, such as resting, feeding, sheltering, and caring for young. Although these experiences can benefit protected wildlife by promoting species awareness and conservation, wildlife viewing should be performed in a way that is safe for people, minimizes harmful disturbance to wildlife, and is in compliance with the law. NOAA Fisheries has created *Responsible Marine Wildlife Viewing Guidelines* — <https://go.usa.gov/xwPMn> — for Hawai'i to help commercial and recreational viewers behave safely when they encounter these animals in the wild. NOAA Fisheries also manages the Dolphin SMART program, which promotes responsible stewardship of wild dolphins and other protected marine wildlife by offering training to and guidelines for commercial wildlife viewing tour operators. In 2020, PIRO issued one

federal assistance award to support the Dolphin SMART program, totaling \$14,748.

### **Sustainable Tourism Association of Hawai'i / Hawaii Ecotourism Association — Sustainable Tourism Association of Hawai'i and Dolphin SMART: Certifying Responsible Wildlife Viewing (\$14,748)**

This learning module systems project will improve a tour operator certification program that assists in educating Hawai'i visitors and residents on responsible wildlife viewing, with an emphasis on dolphin conservation and stewardship. Wildlife viewing is an ongoing management challenge with a negative impact on the survival of protected species. With a collaborative and education-based approach, this project promotes sustainable tour and travel practices through certified credits required for national tour guide interpretation accreditation. It encourages statewide sustainable tourism educational campaigns with an updated website and active social media accounts. Tour operators can access and use a growing library of education and outreach material about responsible wildlife viewing. This project cultivates partnership relationships to improve the wellbeing of the residents, environment, and culture of Hawai'i.



Two wildlife viewers and a naturalist on a boat taking photos of two humpback whales from a responsible distance away. Credit: Tor Johnson



## Did You Know?

Have you ever witnessed a marine wildlife emergency at the beach or on the water and did not know who to call? NOAA Fisheries manages a statewide hotline — at (888) 256-9840 — for ocean users to report sick, injured, or dead marine wildlife, including dolphins, whales, Hawaiian monk seals, sea turtles, and seabirds. You can also use the hotline to report Hawaiian monk seal sightings, large whale entanglements, false killer whale sightings and fishery interactions, and potential harassment or other illegal activity involving protected marine species.

## 2020 Unfunded Federal Programs

The following programs were not funded in FY20 due to budgetary constraints:

**Western Pacific Demonstration Projects:** Public Law 104-297 (16 U.S.C. 1855) authorizes grants for Western Pacific Demonstration Projects that foster and promote the involvement of communities in the Western Pacific.

**Native Fishery Observer Program:** The NOAA Fisheries Observer Program is responsible for providing longline observers, who obtain data on incidental sea turtle takings and collect fishing effort data. The observers document interactions of all protected species, tally fish that are kept and discarded, and process selected specimens for life history. The Native Fishery Observer Program targets Native Hawaiian, American Samoan, and other Pacific Islander residents for employment as fishery observers in the Hawai'i and American Samoa fisheries.

**Hawai'i Seafood Program:** The Hawai'i Seafood Program is an effort to help strengthen the economic viability of the fishing and seafood industry of Hawai'i through activities that promote Hawai'i fisheries as high-quality and safe domestic seafood produced by a responsible and well-managed fishery.

*Pōhue, a remote and picturesque beach on the south shore of Hawai'i Island, is one of the most active hawksbill sea turtle nesting beaches on the island. Credit: NOAA Fisheries/Joseph Bennington-Castro*





U.S. Secretary of Commerce  
Wilbur L. Ross, Jr.

Acting Under Secretary of Commerce  
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Dr. Neil Jacobs

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