

Pacific Islands Ocean Observing System
2020 Governing Council (Virtual) Meeting

	HI	Am Samoa	RMI	Pohnpei	Guam/CNMI	Palau
Day 1	Oct 27 13:30-16:30	Oct 27 12:30-15:30	Oct 28 11:30-14:30	Oct 28 10:30-13:30	Oct 28 9:30-12:30	Oct 28 8:30-11:30
Day 2	Oct 28 13:30-16:30	Oct 28 12:30-15:30	Oct 29 11:30-14:30	Oct 29 10:30-13:30	Oct 29 9:30-12:30	Oct 29 8:30-11:30

Day 1

Attendees:

Governing Council Members: Dr. Jason Biggs, Scott Burch, Janice Castro (for Eli Carbrera), Jen Conklin, Captain Ed Enos, Mathew Goldsborough, Doug Harper, Willy Kostka, Xavier Matsutaro, Billy Middleton, Jessica Podoski, Captain Mike Roth, Ray Tanabe, Dr. Brian Taylor, Ed Watamura, Walden Weilbacher; *PacIOOS Staff:* Simon Ellis, Melissa Iwamoto, Fiona Langenberger, Chip Young

Check-in for Revised Meeting Format, Melissa Iwamoto, PacIOOS Director

M. Iwamoto welcomed Governing Council members to the online meeting and provided a quick overview of the meeting software, ground rules, and meeting roles.

Welcome Brian Taylor, Chair of PacIOOS Governing Council and M. Iwamoto

Chair B. Taylor also welcomed members to the virtual meeting format, and reviewed the abbreviated meeting agenda. The purpose of the meeting was to: 1) check-in and connect; 2) discuss key program updates and plans for the current fiscal year; 3) discuss the upcoming 5-year proposal and beyond.

Participant Introductions: All meeting participants were asked to introduce themselves and share top of mind issues for the region or jurisdiction that PacIOOS should know about. Commonly shared topics included how the ongoing pandemic has changed the coastal and ocean environment and associated human uses; effects of climate change and associated data needs and gaps; and how to make PacIOOS data and information more relevant to local communities

Overview of Stakeholder Engagement Process for 5-year Proposal and 10-year Outlook Development, Fiona Langenberger, PacIOOS Communications and Program Coordinator

Due to COVID-19 and the ongoing travel restrictions, PacIOOS’ plans to solicit stakeholder input for the 5-year proposal and 10-year Outlook via in-person workshops and meetings had to shift to online engagement. Over 500 individual emails were sent to partners and stakeholders, including follow-ups, to gather input from throughout the region. More than 170 responses were received, which translated into 370 individual comments. Additionally, 19 concept papers from researchers were received. All comments were carefully reviewed and organized by region and by thematic area. The proposal timeline was also shared with Governing Council members. The 10-year Outlook is a required document by IOOS for governance and management. The Outlook is supposed to serve as a 10-year vision and guiding document for internal management and external partners.

What have we been up to? What are we planning? PacIOOS Staff

M. Iwamoto, F. Langenberger, Chip Young (Operations Coordinator), and Simon Ellis (Pacific Islands Coordinator and FSM Liaison) presented on key updates since the last Governing Council meeting in November 2019, and discussed the 5-year proposal plans based on the stakeholder feedback received. The topics were presented by thematic area.

Marine Operations

Wave Buoys

- The wave buoy program continues to maintain 15 wave buoy location throughout the region. A new wave buoy technician was hired to support operations and maintenance.
- PacIOOS' wave buoys in the Marshall Islands and American Samoa measured record-breaking wave heights in November 2019, and February 2020, respectively.
- With the support of several funding sources, PacIOOS will extend its wave buoy program in Micronesia and in American Samoa in the upcoming years.
- 5-year Proposal: PacIOOS plans to sustain the existing wave buoy locations, as well as the new locations coming onboard through outside funding. Potential new wave buoy sites and the use of GPS wave buoys are proposed as well.

High Frequency Radar

- In addition to PacIOOS' existing HFR coverage on O'ahu and Hawai'i Island, new stations will come online to collect real-time surface currents in the area between Guam and Tinian (Commonwealth of the Northern Mariana Islands).
- 5-year Proposal: PacIOOS plans to sustain the existing stations in Hawai'i, Guam and CNMI; if funding allows aging systems will be upgraded and potential new sites will be added based on stakeholder feedback.

Weather Station

- 5-year Proposal: PacIOOS plans to continue to maintain the existing weather station in Honolulu Harbor and serve data from Honolulu Harbor and Moku o Lo'e, O'ahu. New weather stations and marine radars are proposed for other ports in Hawai'i and Palau.

Subsurface Observations

- 5-year Proposal: PacIOOS plans to run its Seaglider off O'ahu for data assimilation into the ocean circulation forecast. Future glider mission types and duration might also inform other thematic areas such as Marine Operations and Ecosystems and Living Marine Resources. An Investigation of the sources of cross-channel currents at Kalaeloa Barber's Point Harbor is also proposed.

Forecasts

- PacIOOS developed new high-resolution wave forecasts for the Manu'a Islands and Tutuila in American Samoa, as well as for Saipan, Tinian, Aguijan, and Rota in the Commonwealth of the Northern Mariana Islands with funding from the Office of Insular Affairs.
- 5-year Proposal: PacIOOS will continue to maintain its Harbor Surge Forecast in Hale'iwa, O'ahu, as well as all existing modeling grids for wave, atmospheric, and ocean circulation forecasts in Hawai'i and the territories. Improvements will be made to the wave, atmospheric and ocean circulation models, and new areas in the Insular Pacific are proposed to be added. Additional harbor surge forecasts are proposed for ports in Hawai'i, and the development of a portable Tropical Cyclone model is proposed as well.

Governing Council Member Discussion: For potential funding from industry partners, it was suggested to provide a cost breakdown (e.g., cost for one new wave buoy site). Wind data at wave buoys sites continues to be of stakeholder interest, but is not possible to collect with Datawell Waverider buoys. There is interest to utilize gliders for fishery independent research. While cameras cannot be attached to PacIOOS' Seaglider, bioacoustics packages are a possible option.

Coastal Hazards

- A new, high-resolution wave run-up forecast has been developed for West Maui and will be released in 2021. The forecast was developed with funding from NOAA's Coastal Resilience Grant Program.

- 5-year Proposal: PacIOOS will continue to maintain all existing high sea level forecasts (Hawai‘i, Palau, Guam, American Samoa) and wave run-up forecasts (Hawai‘i and Marshall Islands). Improvements are planned for the Majuro wave run-up forecasts, and new, numerical wave run-up forecasts are proposed for Palau, CNMI and American Samoa.

Day 2

Attendees:

Governing Council Members: Dr. Jason Biggs, Scott Burch, Janice Castro (for Eli Carbrera), Jen Conklin, Captain Ed Enos, Mathew Goldsborough, Doug Harper, Xavier Matsutaro, Billy Middleton, Jessica Podoski, Captain Mike Roth, Ray Tanabe, Dr. Brian Taylor, Ed Watamura, Walden Weilbacher; *PacIOOS Staff:* Simon Ellis, Melissa Iwamoto, Fiona Langenberger, Chip Young; *U.S. IOOS Office:* Carl Gouldman

Welcome back and recap of Day 1, B. Taylor

Message from Carl Gouldman, IOOS Director

C. Gouldman provided a brief address to Governing Council members and PacIOOS, congratulating the Regional Information Coordination Entity (RICE)¹ re-certification of PacIOOS by the IOOS Office. RICE certification means that PacIOOS is providing high-quality observations that meet National-level standards.

What have we been up to? What are we planning? PacIOOS Staff *continued*

Water Quality

Nearshore Sensors

- With new volunteer support, the nearshore sensor in Kihei, Maui, was redeployed.
- In collaboration with the State of Hawai‘i Department of Health Clean Water Branch, PacIOOS deployed three new nearshore sensors in Maunalua Bay, O‘ahu. The three sensors will rotate to different locations within the State on an annual basis.
- The Ebiil Society in Palau is currently using one of the sensors from the PacIOOS Water Quality Sensor Partnership Program (WQSPP) to monitor water quality downstream of watershed revegetation efforts. The Maui Nui Marine Resource Council is using another WQSPP sensor at Ma‘alaea Harbor, Maui, to monitor water quality in the harbor in conjunction with watershed management efforts to reduce sedimentation and pollutants.
- 5-year Proposal: PacIOOS will sustain the existing nine long-term nearshore sensors, continue the WQSPP, engage in outreach and capacity building, and maintain the Ala Wai Plume Forecast. Recapitalization of aging equipment, improvement of telemetry, expansion of the WQSPP and long-term sites, as well as adding new plume forecasts is proposed. In addition, enhanced access to expertise and data interpretation products, as well as exploring the use of different instrumentation through pilot projects is also included in the proposal.

Coastal Moorings

- 5-year Proposal: PacIOOS will continue to maintain the Hilo Bay and Pelekane Bay, Hawai‘i Island, water quality moorings, and also continue to operate the MAPCO2 mooring in American Samoa in partnership with local and national partners. Undergraduate mentoring, capacity building, and community involvement will also be sustained and improved. A new

¹ After the meeting, on December 31, 2020, the name of the certified regional entities changed from RICE to RCOS (Regional Coastal Observing System) with the reauthorization of the Integrated Coastal and Ocean Observation System Act of 2009 (S. 914).

water quality mooring is planned for Kailua Kona Bay, Hawai'i Island. Refurbishment of a profiling mooring and new ocean chemistry instrumentation is proposed for the future.

Ecosystems and Living Marine Resources

Animal Telemetry

- PacIOOS supports the next generation of shark satellite tags to record environmental data such as temperature, depth, and light levels. The data will help to better understand shark behavior and their habitat and provide environmental data that can support the ocean circulation models and others.
- A proposal to the Office of Naval Research was funded to add three additional moles to the existing array, with a specific emphasis on coverage on the Kona Coast, Hawai'i Island.
- 5-year Proposal: PacIOOS will continue to maintain the land-based moles and bring in data for multiple types of animals through this infrastructure. It is proposed to diversify the species and geography of tagging efforts through the Hawai'i Community Tagging Program. Incorporation of oxygen sensors in profiling tags and establishing efficient data dissemination protocols for ocean profile data is also included in the proposal. In addition, the establishment of a network for animal telemetry and associated capacity building is proposed for the Insular Pacific.

Forecasts

- PacIOOS developed a biogeochemistry model for Hawai'i to capture the physical and chemical dynamics of the ocean as well as the base of the food web.
- With funding from NOAA's Climate Program Office, PacIOOS is partnering with NOAA's Pacific Islands Fisheries Science Center to better understand climate impacts on pelagic and coastal fisheries in Hawai'i. Projections until the end of the century will be developed with a combination of various models.
- 5-year Proposal: PacIOOS will operationalize the Biogeochemistry Forecasts for Hawai'i and proposes to develop decadal forecasts for Hawai'i.

Data Management and Visualization

- The server migration to virtual machines is in its final stage; the local computing cloud allows for more dynamic space allocation, increased speed, and reliability.
- PacIOOS helps to make large biological data sets widely accessible by aligning them to international data standards and adding them to international data sharing platforms.
- 5-year Proposal: PacIOOS will continue to maintain DMAC infrastructure and services, serve as a Regional Data Assembly Center, and focus on biological data access. PacIOOS is also planning on expanding the development of stakeholder-driven products and providing training on data access and use. Proposed new efforts include: developing climatology products; establishing a Pacific Acoustic Cooperative Telemetry Node; developing a Ciguatera Fish Poisoning coordination network and repository; embarking on an edge computing demonstration project; developing enhanced bathymetry data layers; and Synthetic Aperture Radar satellite data processing for coastal wind studies.

Governing Council Member Discussion: Timely delivery/availability of forecasting and real-time data is very relevant for industry partners for safety and time efficiency. Governing council members discussed the importance of bathymetry data for various user groups (e.g., federal agencies, fishermen, etc.). There are many agencies and organizations that have collected bathymetric information, but it is not necessarily available to a larger audience. The fishing community is very interested in the ciguatera information.

Indigenous Knowledge in Ocean Observing, Scott Burch (Superintendent), Bert Fuiava (Manu'a District Ranger), and Pua Tuaua (Cultural Liaison) of the National Park of American Samoa

During the 2019 Ocean Obs'19 conference, the inclusion of indigenous knowledge in ocean observing was brought to the forefront. Indigenous Pacific Island communities hold a wealth of knowledge about their local environment, which – if properly documented and shared – has potential to enhance scientific efforts to understand the ocean. The National Park of American Samoa has conducted traditional use surveys to help inform how traditional knowledge can be combined with science in an ocean observing system, and therefore make data from the observing system more relevant for local communities. Various examples show that issues related to marine operations, water quality, coastal hazards, and living marine resources are part of daily living. For this pilot project, relationships need to be established with interested locals in traditional methods of ocean observing, or those familiar with traditional methods, through oral history sharing to collect traditional observation data. In addition, a comprehensive literature review is suggested. The nexus between qualitative and quantitative data can then be investigated. NPS staff has conducted preliminary interviews to learn about traditional observations and observations of changes over time, as well as to inquire whether the interviewee would be willing to be part of an observer system.

Governing Council Member Discussion: In Samoa, oral traditions are very strong, but they are not well documented and often tightly kept and not shared as they are considered holy. Some families are willing to share oral traditions to ensure they are not lost for future generations, but not many. Building trust is essential. The story of Hōkūle'a and how Mau, master navigator from Satawal, Yap, shared knowledge of navigation across the Pacific, could be an inspiration. Governing Council members were wondering about cell phone use in American Samoa. Most ocean users have access to cell phones, if they don't own one themselves, another family member most likely possesses one.

What have we been up to? What are we planning? PacIOOS Staff *continued*

Engagement and Outreach

- A 1.5-day ocean observing capacity building workshop was held in Pohnpei, with participation from Pohnpei, Chuuk, and Kosrae states representing various sectors.
- 5-year Proposal: PacIOOS will continue to maintain ongoing engagement and outreach efforts, including existing on-the-ground liaisons. Proposed work includes hosting more virtual meetings and webinars, expanding the role of the Marshall Islands liaison, and adding a new liaison for Palau and CNMI. In addition, producing videos is proposed to engage a wider audience in ocean observing.

Management and Governance

- PacIOOS helps coordinate the Regional Ocean Data Sharing Initiative in the Pacific Islands Region. A consultant was contracted to coordinate the stakeholder engagement process and to identify and evaluate projects that could benefit from improved data sharing and/or new data sets.
- The Association of Pacific Island Legislatures joined PacIOOS as a new MOA partner.
- Governing Council elections were held this summer: 4 Hawai'i seats and 2 Regional seats were either newly seated or re-elected.
- 5-year Proposal: PacIOOS will maintain its existing management structure, including annual Governing Council and Executive Committee meetings. PacIOOS will also sustain its NOAA certification, update its 5-year Strategic Framework, and release an Operational Plan and a 10-Year Outlook. In collaboration with other IOOS regional associations, PacIOOS is planning to engage in an assessment on workforce development and diversification. The proposal also includes the goal to strengthen and build new regional, national, and international partnerships.

Hiring a part-time regional projects specialist is proposed to help diversify PacIOOS funding. In addition, PacIOOS proposed to explore opportunities and barriers for making PacIOOS data more relevant for indigenous communities. A student internship program or a similar effort is may help foster workforce development and indigenous knowledge projects.

Close: B. Taylor and M. Iwamoto

The Governing Council members supported the plan for the PacIOOS proposal to date and being named on the proposal to demonstrate their support, knowing that they will all have an opportunity to review the proposal and make additional comments before it is submitted. The Chair thanked everyone for their participation in the meeting. M. Iwamoto also thanked members for their valuable input.