

Pacific Islands Ocean Observing System (PacIOOS)
Governing Council (GC) Meeting Summary
Hawai'i Institute of Geophysics (HIG) Conference Room 210
University of Hawai'i at Mānoa, Honolulu, Hawai'i
November 30 - December 1, 2022

Day 1: Wednesday, November 30, 2022

Attendees: *Council Members:* Jason Biggs, Scott Burch, Jennifer Conklin, Ed Enos, Doug Harper, Eric Lau (proxy for Ray Tanabe), Billy Middleton, Moriana Phillip, Jessica Podoski, Matt Ramsey, Christopher Sabine (chair), Rich Salas, CAPN Ken Wallace, Walden Weilbacher; *PacIOOS staff:* Jesi Quan Bautista, Nicole Guiles, Melissa Iwamoto, Jordan Watson, Chip Young; *Absent:* Matthew Goldsborough, Xavier Matsutaro, Justine Nihipali, Bertha Reyuw

9:00 a.m. Welcome, Review Agenda, and Meeting Objectives, Chris Sabine, Chair of PacIOOS Governing Council

Participant Introductions: Participants were asked to introduce themselves and share top-of-mind issues for their jurisdiction/organization; how we link up to be greater than the sum of our parts; relationships to foster; new directions, concerns, advances to consider, etc. Shared topics repeatedly identified the need to translate data into knowledge and understanding, inclusive of local cultures and languages, and the ways that different people may use information (e.g., NWS advisories). Additional shared concerns included overwhelming environmental changes that are affecting infrastructure and community health through inundation, sea level rise, and wave and tide impacts. Improved forecast accuracy and precision (weather, waves, king tides) is a major concern for many. Numerous applications would benefit from improved bathymetry data and more environmental monitoring buoys or weather stations. IOOS and others are thinking about carbon sequestration. Finally, national security (including food and economic) was highlighted several times.

11:00 a.m. PacIOOS Program Updates, PacIOOS Staff

M. Iwamoto opened the presentation with a discussion of PacIOOS support for marine operations, including an overview of PacIOOS wave buoys and recent deployment or redeployments across the Pacific (e.g., Palau). She also described several delays caused by COVID travel restrictions, in addition to logistical challenges caused by inadequate bathymetry data and personnel gaps. Further challenges were noted regarding our HFR systems.

C. Young presented on PacIOOS work with Coastal Hazards, including high sea level forecasts, wave-driven flooding, and a brief overview of the UNEP Green Climate Fund project in Palau (which includes atmospheric, wave, and ocean modeling, plus a wave run-up forecast). Chip also described the PacIOOS work with the Water Quality Sensor Partnership Program and nearshore sensor networks, including capacity building efforts with sensors in the Republic of the Marshall Islands (RMI) and Federated States of Micronesia (FSM). Finally, he mentioned a planned Sea Glider mission and deployment of the MapCO2 buoy in American Samoa.

A discussion included trying to understand what the greatest challenges are to maintaining, deploying, and redeploying buoys. E. Enos emphasized the value of these buoys to local mariners and how the buoys can drive a go/no-go decision for cargo vessels. He also highlighted the value of harbor weather stations and the ease with which he could facilitate these (plus, additional potential instrumentation of interest to

U.S. Army Corps of Engineers, USACE). PacIOOS staff described some administrative bottlenecks (e.g., travel and vessel charters), as well as logistical challenges of coordinating operations from afar and dealing with the unexpected, including but not only weather.

USACE is planning to collect new topobathy data for Hawai‘i in 2023. A council member emphasized the potential value of the West Maui wave-driven flooding tool to inform site-specific coral restoration locations. Another member emphasized value in partitioning directional vectors for SWAN model components.

11:45 p.m. Lunch

12:45 p.m. Depart for Hawai‘i Institute of Marine Biology (HIMB)

2:00 p.m. Tour of HIMB (Coconut Island)

Mark Royer led a field site visit at the HIMB research facility, with a focus on research supported by the shark lab (Kim Holland and Carl Meyer). There was special focus on acoustic telemetry work around the Hawaiian Islands, as well as a newly funded project led by Jason Biggs in Guam. Tom TinHan discussed the Pacific Islands Regional Acoustic Telemetry (PIRAT) node, and fielded questions on a range of topics from data sharing to acoustic telemetry logistics.

4:30 p.m. Pau Hana at HIMB Beach House

Day 2: Thursday, December 1, 2022

Attendees: *Council Members:* Jason Biggs, Scott Burch, Jennifer Conklin, Ed Enos, Doug Harper, Eric Lau (proxy for Ray Tanabe), Billy Middleton, Moriana Phillip, Jessica Podoski, Matt Ramsey, Christopher Sabine (chair), Rich Salas, CAPN Ken Wallace, Walden Weilbacher; *PacIOOS staff:* Jesi Quan Bautista, Nicole Guiles, Melissa Iwamoto, Jordan Watson, Chip Young; *Present remotely (afternoon only):* Xavier Matsutaro, Bertha Reyuw; *Absent:* Matthew Goldsborough, Justine Nihipali

9:00 a.m. Welcome Back, Recap of Day 1, Christopher Sabine

9:10 a.m. PacIOOS Program Updates (continued), PacIOOS Staff

J. Watson presented an overview of the HIMB bathygraph tagging project and the added benefit of land-based receiver arrays. He transitioned into data management, with an overview of PacIOOS’ most popular data assets, on-going work to meet Darwin Core Standards (biological data), and a new ciguatera knowledge network. He also mentioned tsunami and coral resilience mapping, plus the regional ocean data sharing initiative (RODSI).

J. Bautista continued program updates with a synopsis of workshops and engagement activities by PacIOOS staff and PIs. She also introduced the latest additions to the liaison networks in Guam, Saipan, and the FSM, and recent feedback from PacIOOS data users.

M. Iwamoto anchored the updates with reminders of GC membership terms and recent PacIOOS staff and MOA partner additions.

Discussions emphasized the ciguatera knowledge network and underscored its value to communities across the Pacific Islands. There was also general support for the liaisons and in making sure that the RMI gets a new liaison soon.

9:10 a.m. PacIOOS Program Updates (continued), PacIOOS Staff

10:00 a.m. PacIOOS Program Updates, Budget and Performance Measures, M. Iwamoto

M. Iwamoto gave an overview of the IOOS and PacIOOS budget history and outlook, and then transitioned into assessment of performance measures for the program. Performance measures, developed with the Governing Council, include metrics like the uptime percentage.

The GC reacted to challenges expressed during this session with passionate, constructive comments. The maritime industry may be a valuable in-kind partner for shipping and logistics given their reliance on buoy data (e.g., currents, weather, etc.). Meanwhile, the water quality sensor program may not fully benefit from the effort to maintain the real-time network. It has never become the public health tool that it was hoped to become, though the long-term data are valuable. Council members commented that it might be time to reconsider how to bolster the value of the real-time service, or explore other options for the effort.

IOOS is interested in carbon sequestration. In response to challenges with HFR, the GC emphasized that if the data aren't reliable, they aren't useful, and that perhaps a conversation with IOOS about future steps/directions is valuable.

10:50 a.m. Backyard Buoys Overview, M. Iwamoto and J. Watson

M. Iwamoto and J. Watson gave a brief overview of Backyard Buoys and the NSF Convergence Accelerator program. The project, a collaboration among PacIOOS, AOOS (Alaska), and NANOOS (Pacific Northwest) seeks to use co-production to bolster wave and ocean information access, particularly in Indigenous communities. Due to time limitations, questions were postponed for this session.

11:00 a.m. New PacIOOS Tool Highlight: West Maui Wave Flooding Tool, Dr. Martin Guiles

UH scientist and PacIOOS team member, M. Guiles presented the West Maui flooding tool. He gave a brief overview of the problem, and the science behind changing wave and nearshore dynamics, followed by a demonstration of the tool and visualization platform. He also discussed implications and opportunities for similar tools elsewhere (including newly funded efforts in Palau). Martin elaborated, "What makes this product so good is that people on the ground are excited and are contributing data that continually make it better." Martin also emphasized the need for good bathymetry data.

The discussion generally agreed that this tool is critical for islands across the Pacific and we need to think about expanding. Questions included the data for such products, and how to best support expansion.

11:45 a.m. Lunch with PacIOOS Researchers and Staff

Additional PacIOOS researchers and staff in attendance: Sarah Bingo, Olivia Hughes, Margaret McManus, Pierre Flament, Feng Hsiao, Martin Guiles, Ning Li, Doug Luther, Jim Potemra, Tobias Friedrich, Tom TinHan, Brian Powell, Shaun Wriston, Assaf Azouri, and Ian Quino Fernandez.

1:20 p.m. Brief Discussion Period on Pre-lunch Topics

The group engaged in a brief discussion on how to most effectively steward buoys while deployed. For example, how do we ensure that buoys are not used as moorings for boats? The group discussed topics ranging from better outreach to better enforcement. C. Young emphasized that while buoy performance statistics do reveal vessels tie up to the buoy, resulting in mooring damage, "our biggest challenge in managing buoys is that we do not have a single biggest offender affecting long term

deployments. Environmental conditions, animal interactions and vandalism all occur.” PacIOOS has taken action with mooring design changes, where warranted, but response readiness for when a buoy does break loose at remote locations needs to be improved.

1:30 p.m. PacIOOS Engagement and Capacity Development, J. Bautista

J. Bautista gave an overview of PacIOOS engagement efforts, including the recent Ocean Observing Workshop in Saipan. A summary report will be compiled by J. Bautista and CNMI liaisons and include workshop activities, outcomes, next steps, and lessons learned. The report will be useful for planned engagement in 2023. She also highlighted the success of Voneric Boktok, a PacIOOS-supported student intern in the RMI, who now works for the RMI EPA. Finally, she asked the GC how we might work to expand engagement in particular jurisdictions and what types of activities should be targeted.

The ensuing discussion was fantastic and revolved around several primary themes. The first theme was job skills training, largely through targeted efforts with school programs, internships, or other similar efforts that are low cost and potentially high impact. Such programs may be particularly successful if there are job opportunities attached to them. There are existing internship and outreach programs that could better connect with PacIOOS and PacIOOS assets (National Park of American Samoa, CNMI Bureau of Environmental and Coastal Quality, University of Hawai'i undergraduate research fellowships (C. Sabine), Community colleges, Vessel-based field schools). *The GC members are connected to many such programs and should be leveraged to make connections and amplify the PacIOOS brand.*

The “PacIOOS brand” broadly describes the second primary theme - we need to amplify the PacIOOS brand via knowledge of our assets (think Adopt-a-buoy program?), which if done in a culturally-relevant manner, can bolster stewardship, pride, and ownership over local data and assets.

As PacIOOS considers capacity building efforts, refining and clarifying the PacIOOS niche through clear outcomes and metrics will be critical for success. Moving forward, we can start by identifying what are the specific challenges that motivate the public and what are the PacIOOS advantages over partners (e.g., we have technology that others do not).

2:45 p.m. PacIOOS 5-year Strategic Framework Update, M. Iwamoto

“Our region is so great because it’s so diverse, and it’s so complicated because it’s so diverse” (M. Iwamoto). Previous discussions led to integration of “diversity” into our existing principles instead of as a standalone principle. Meanwhile, PacIOOS goals and objectives in the plan are written as aspirational to help envision a pathway for the future of PacIOOS. The 5-year strategic framework discussion was supportive, with encouragement to explicitly articulate PacIOOS’ need to innovate around meeting stakeholder needs.

3:45 p.m. Meeting Evaluation and Wrap-up, PacIOOS Staff

C. Sabine wrapped up meeting discussions while prompting the group about potential improvements for future meetings. Dr. Sabine also emphasized the value of having the group in-person again and reconnecting with personal relationships.

The group saw value to both a plenary format and some smaller, shorter breakout sessions, as long as any breakouts were concluded with a return to the full group to share everyone’s perspectives. The smaller group discussions that occurred during the field trip and *pau hana* were highlighted, so planning for these types of interactions was considered to be very valuable. While the GC meeting invitation included a prompt for GC members to contribute topics, specific prompts or even program updates might be shared ahead of time (as homework) to make more time in the agenda for discussion instead of structured presentations.

Future meetings could benefit from a timekeeper or some moderation to prevent rabbit holes from detouring discussions too much. The group unanimously agreed that introducing the PacIOOS staff prior to the long lunch would be helpful. The group endorsed a future meeting around late October or early November, with the acknowledgement that these dates might not be ideal for Council members absent from the meeting.