

Pacific Islands Ocean Observing System (PacIOOS)
Governing Council Meeting Summary
Hawai'i Institute of Geophysics (HIG) Conference Room 210
University of Hawai'i at Mānoa, Honolulu, Hawai'i
November 4-5, 2019

Day 1: Monday, November 4, 2019

Attendees:

Council Members: Jason Biggs, Scott Burch, Jennifer Conklin, Ash Evans, Mark Fox, Doug Harper, Dolores Kattil deBrum, Xavier Matsutaro, Billy Middleton, Justine Nihipali, Jessica Podoski, Captain Mike Roth, Brian Taylor (Chair), Ed Watamura, Davis Yogi

PacIOOS Staff: Simon Ellis, Melissa Iwamoto, Fiona Langenberger, Chip Young

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

Participant Introductions: All meeting participants were asked to introduce themselves and share top-of-mind issues for their jurisdiction/organization; why they care; how the group can link up to be greater than the sum of our parts; relationships that PacIOOS can help foster, etc. Shared topics included having more wave run-up forecasts throughout the region, water level observations and future projections, ecosystem health and biodiversity, incorporation of indigenous knowledge, sharing technical expertise, and enhanced collaboration amongst meeting participants.

10:35 U.S. IOOS: National Context, Melissa Iwamoto, PacIOOS director

PacIOOS, along with ten other regional associations, belongs to the U.S. Integrated Ocean Observing System (IOOS). The IOOS Association, a non-profit organization, helps to identify common issues across the regions and advocates on behalf of the 11 regions. As part of the OceanObs'19 international conference held in Honolulu, U.S. IOOS, IOOS Association and PacIOOS hosted an evening reception with 450 invited guests at the Waikiki Aquarium to kick off IOOS' 20th Anniversary. Various national and international initiatives and guiding documents are focusing on the importance of the ocean, including the White House Science and Technology for America's Ocean: A Decadal Vision; and the UN Decade of Ocean Science for Sustainable Development. Looking forward, IOOS will continue to focus on Blue Economy initiatives and address customer and stakeholder needs to support decision-making. The IOOS Association and the regions will advocate for the "Fill the Gaps" campaign, with a focus on filling surface currents and glider gaps. A discussion ensued on glider operations. Sea gliders can be equipped with a variety of instruments, including cameras. Other regions send instruments out in front of hurricanes to collect data.

10:45 PacIOOS Program Updates, PacIOOS staff

M. Iwamoto presented an overview of the PacIOOS program and shared programmatic updates since the previous Governing Council meeting in November 2018. Updates included (among others) the aim to increase wave buoy uptime by hiring a new staff person, working closely with partner agencies, and streamlining swaps and redeployments; record-breaking wave heights measured by the PacIOOS wave buoys; Hale'iwa harbor surge forecast results for February 2019 storm event; installation of a new weather station at Honolulu Harbor in collaboration with the Hawai'i Pilots Association; development of a new high-resolution wave run-up forecast for West Maui; deployment of new water quality buoy in Hilo after it was lost during Hurricane Lane; redeployment of Pelekane water quality buoy after hardware failures due to storm damage; purchase and deployment of three new sensors in Maunalua Bay with the State of Hawai'i

Department of Health Clean Water Branch; past, ongoing, and upcoming PacIOOS Water Quality Sensor Partnership Program projects; deployment of pCO₂ buoy in American Samoa; formatting biological datasets to comply with international data standards; new wave model for Manu'a Islands and upgraded Tutuila wave model (American Samoa); supporting U.S. Army Corps' Pacific Waves and Water Level Study; PacIOOS wave modeler Ning Li won RCUH Employee of the Year Award; and a 10-year ocean circulation model (ROMS) reanalysis.

F. Langenberger summarized data management activities, including the development of King Tides project platform, West Maui wave run-up forecast validation platform, and Hawaiian Ko'a (Coral) card platform and project page. She also presented ongoing communication efforts, including the monthly newsletter, media coverage, website stats, participation in conferences, workshops, and outreach events.

With regards to PacIOOS' management and governance, M. Iwamoto shared which seats on the PacIOOS Governing Council will be up for election in the coming year. PacIOOS continues to sit on various boards and advisory committees and attends and presents at partners' meetings to foster collaboration and integrate efforts. Chip Young was hired as the PacIOOS Operations Coordinator. Max Sudnovsky was hired by UH Sea Grant as the Marshall Islands Coastal Management Extension Agent and also serves as the PacIOOS liaison for the Marshall Islands.

Meeting participants engaged in discussions throughout the presentation. Interest was expressed to have a long-term sea level forecast for Palau. For the wave run-up forecasts the importance of validation through the use of instrumentation was discussed, as well as coastal topography. Water quality effect fisheries and through traditional knowledge, people knew freshwater sources. Drones with thermal camera can help to identify freshwater sources, or kayaks trailing an instrument can be used to gather data. The U.S. Army Corps of Engineers is planning to set up "Coast Snap" for Sunset Beach, O'ahu, which is a fixture for visitors use to take pictures and to upload it to an online system, which ultimately provides a time series of the same place and angle.

12:15 p.m. Lunch

1:00 Depart for Site Visit in Maunaloa Bay

5:30 *Pau Hana* (no host) at Liko's Tap and Table in Hawai'i Kai

Day 2: Tuesday, November 5, 2019

Attendees:

Council Members: Jason Biggs, Scott Burch, Jennifer Conklin, Ash Evans, Mark Fox, Doug Harper, Dolores Kattil deBrum, Xavier Matsutaro, Billy Middleton, Justine Nihipali, Jessica Podoski, Captain Mike Roth, Brian Taylor (Chair), Ed Watamura

PacIOOS Staff: Simon Ellis, Melissa Iwamoto, Fiona Langenberger, Chip Young

9:00 a.m. Welcome back, Recap of Day 1, Brian Taylor

9:10 PacIOOS Results: Performance Measures, Melissa Iwamoto

The purpose of PacIOOS' performance measures is to analyze annually the progress towards the Strategic Framework and long-term objectives. It is a snapshot of growth and operational reliability across core subsystems to further define success and improve the program. M. Iwamoto shared the

results of the performance measures covering activities from June 1, 2018, to May 31, 2019 (PacIOOS' fiscal year). While all other performance measures met or exceeded the set goals, operational uptime performed below the target. Reasons for the change in uptime were discussed, along with suggestions on how to address them. For performance measures that exceeded the set goal, questions arose on what went well and how to sustain the high performance.

9:30 PacIOOS Budget Updates, M. Iwamoto

M. Iwamoto shared the history of the President's Request and Appropriations for IOOS. In 2017, the IOOS Association adopted a new approach, a 5-year "Filling the Gaps" Campaign, an incremental approach to fill targeted gaps in high frequency radar (HFR) and glider systems. The campaign has been successful over the past three years. M. Iwamoto also shared PacIOOS' budget history, including IOOS base funding, partner funding, and "Fill the Gaps" funding.

9:50 OceanObs'19 Debrief, B. Taylor and M. Iwamoto

The OceanObs'19 conference is a decadal conference, which was held for the first time in the U.S. in 2019, in Honolulu. PacIOOS staff led or collaborated on several Community White Papers and plenary presentation. The UN Decade of Ocean Science for Sustainable Development is a huge opportunity to expand ocean observations. A conference declaration "Aha Honua" emphasized the need to include indigenous knowledge in ocean observing and to establish meaningful partnerships. It was recommended to engage the Aha Moku Council to get input from the Native Hawaiian community. There are possibly similar groups or networks on other islands. Indigenous knowledge is very localized and at small scale, presenting the challenge of how to scale it up and incorporate it widely. One idea is through lessons learned and systems in place (e.g., information on the temporary resources bans, or "no-take" system, in Palau).

10:45 PacIOOS engagement and capacity building plans, Fiona Langenberger, Communications & Program Coordinator and Simon Ellis, Regional Coordinator

As outlined in PacIOOS Strategic Framework' objectives, PacIOOS is planning to build ocean observing capacity throughout the region. At the last Governing Council meeting, two categories of capacity were discussed: 1) use of data and services; and 2) technical capacity. This can be achieved through workshops or individual training sessions, but must be tailored to each location. Additionally, PacIOOS is planning to do general engagement with existing and new partners throughout the region to identify needs and synergies to collaborate, as well as needs and ideas to build into the next 5-year proposal. F. Langenberger and S. Ellis shared the proposed timeline for the planned engagement. GC members will be kept in the loop as planning for this effort progresses, and input for your jurisdiction is welcome.

11:15 West Maui wave run-up forecast, Doug Luther and F. Langenberger

F. Langenberger provided an overview of the project. The two goals of the project are: 1) increase community capacity to prepare for, and recover from, wave-driven coastal flooding through real-time quantitative forewarning up to a week in advance; and 2) assist with long-term planning efforts by running a series of various scenarios of future conditions. Stakeholders were grouped into three categories, and category-specific outreach has been conducted. D. Luther explained the components of wave-driven flooding and why West Maui is specifically vulnerable to wave run-up. Through the use of a phase-resolved model (BOSZ), high resolution short (6-day) and long-term forecasts are being developed. The coastline is split into 11 domains, each of which gets its own forecast. Field instrumentation has been deployed to validate the model. In addition, photo documentation provided by citizen scientists will help to calibrate and ground-truth the model. A

discussion ensued on how the model could be used to alter the bathymetry, e.g., for artificial reefs and other reef engineering. There was also interest in using BOSZ to model sediment transfer.

11:45 Lunch with PacIOOS researchers and staff

Additional PacIOOS researchers and staff in attendance: Assaf Azouri, Sarah Bingo, Dave Chen, Ian Quino Fernandez, Pierre Flament, Tobias Friedrich, Martin D Guiles, Ning Li, Margaret Anne McManus, Kimball Millikan, James Potemra, and Camilla Tognacchini

1:15 p.m. Open discussion on resilience and other needs across the region

Wave run-up forecasts for American Samoa would be important, and FEMA would be interested in these kinds of products. Models are getting more advanced and can include more parameters. The validation of models is very important and is a role that PacIOOS can fill. For Palau, run-up mapping would be helpful; most impacts from flooding are in Koror with the highest population density, but other areas are vulnerable, too. For Guam and the Marianas, getting the Rota channel surveyed would be important as it plays into how typhoons hit the island. Other areas of interest include ocean acidification, rainfall and sedimentation data, temperature, water quality and freshwater inputs.

2:15 PacIOOS Governing Council Executive Committee, M. Iwamoto

The Executive Committee meets annually in the Spring and members serve for 2-year terms. There are five seats on the Executive Committee, representing six categories: Chairperson, Hawai'i, Freely Associated States, Territories/Commonwealth, Industry, and Government. A new proposed slate for the Executive Committee membership was presented, and discussions will continue offline and via email.

2:45 PacIOOS 5-year proposal discussion, M. Iwamoto

While the exact timing is still unclear, a federal funding opportunity for 5-year proposals is expected to be released around summer 2020 and will be due around winter 2020. There will likely be different funding scenarios required in the proposals. PacIOOS is planning to do broad stakeholder engagement in the first half of 2020 to inform the proposal development. It was acknowledged that the PacIOOS 5-year strategic framework is a good guide. In addition, there was discussion about the importance of filling the gaps in the efforts we have ongoing, such as wave buoys, water quality, and modeling. There is concern about "new" priorities detracting from these efforts. Additional recommendations included folding recap into the proposal and to have a mechanism to consider new technologies to ensure that PacIOOS is not falling behind in technology advancement.

3:30 Meeting Evaluation, F. Langenberger

Meeting participants enjoyed the field trip and the flow of the agenda. The longer introductions were also very helpful for the entire group. It was recommended to keep the meeting at the beginning of November. For future meetings, there was a recommendation to include a presentation from the Insular Pacific and/or the indigenous community. For a field trip, it would be interesting to see an area where modeling was done and the associated adaptation and change over time.

3:45 Wrap up and Recap of Meeting, B. Taylor

4:00 Adjourn Meeting, B. Taylor