

Marine and Coastal Zone Advocacy Council (MACZAC) / Ke Kahu O Na Kumu Wai

MINUTES

Wednesday, April 26, 2023: 9:00 am – 12:00 pm

Zoom Virtual Meeting

OPSD Conference Room
State Office Tower, 6th Floor
235 S. Beretania St.
Honolulu, HI 96813

ATTENDANCE

- **Members present (7):** Phil Fernandez, Donna Brown, Scott Sullivan, Susan “Sue” Sakai, Robert “Bob” Nishimoto, Denver Coon, Kimbal Thompson
- **Members absent (2):** Rich Brunner, Taryn Dizon
- **Office of Planning and Sustainable Development/Coastal Zone Management (OPSD/CZM) staff present (8):** Justine Nihipali, Shichao Li, Debra Mendes, Josh Hekekoa, Sarah Chang, Lisa Webster, Kristi Kimura, Yuki Terada
- **Others present (2): Department of Land and Natural Resources-Division for Aquatic Resources (DLNR-DAR)** Luna Kekoa, Kim Peyton

DISTRIBUTED MATERIAL

- MACZAC meeting agenda for April 26, 2023
- Draft minutes from December 2, 2022, MACZAC meeting
- CZM Report to MACZAC (April 26, 2023)

I. Call to Order

MACZAC Chair Phil Fernandez called the meeting to order at 9:02 am and welcomed everyone. Introductions were made. Chair Fernandez welcomed and introduced new MACZAC member Denver Coon (Maui). Mr. Coon expressed his appreciation.

Chair Fernandez shared the announcement by the Biden-Harris Administration of \$26 million in funding for eight projects in Hawai'i to strengthen the Climate-Ready Coasts initiative. Projects are focused on restoration of coral reefs and coastal habitats and strengthening resilience to coastal hazards, and include:

- REEFrame receiving \$8.9 million
- Mālama Maunalua receiving \$7.8 million
- The Coral Reef Alliance (Maui Nui Reefs) receiving \$3.1 million
- Hawai'i Sea Grant (fishing gear removal) receiving \$4.7 million

CZM Program Manager Justine Nihipali shared that the CORAL.org Project (\$3.1 million) is the one that CZM facilitated for the CZM Habitat Restoration Competition last

year, and that CZM is hoping for two additional projects starting in May when the next Federal Funding Opportunity is expected to come out.

Chair Fernandez noted that these projects have overlap between multiple organizations and departments within the State. Chair Fernandez added that the Division of Aquatic Resources (DAR) is promoting a program on coral reef restoration as well, and we may want to request that they provide us with a presentation about their program.

II. Approval of December 2, 2023, Meeting Minutes

The minutes were approved as circulated.

Mr. Coon asked what the acronym PIG of “Muliwai PIG” in the December 2, 2022 meeting minutes stands for. Chair Fernandez responded that a “PIG” is a form of committee/working group that is allowed under the State’s Sunshine Law to work on various tasks that have a specific mission and a clear deadline. CZM Project Analyst Lisa Webster added that “PIG” stands for Permitted Interaction Group.

III. Welcome from Hawai’i Coastal Zone Management (CZM) Program Manager

Chair Fernandez asked Ms. Nihipali to share updates on OPSD’s status, including updates to leadership. Ms. Nihipali welcomed everyone and responded that OPSD Director Scott Glenn will be serving as an interim director until May 4, and that Governor Green will then appoint an acting director if there is no new director by then.

IV. Hawai’i Coastal Zone Management (CZM) Program Manager’s Report:

National Initiatives

National CZM Program Funding

The CZM Program is expected to receive its allocated funding in the amount of \$2,705,500 for FY23.

CZM Habitat Protection and Restoration Infrastructure Investment and Jobs Act (IIJA)

The CZM Program has the privilege of administering IIJA funds that support the goals and intent of the Coastal Zone Management Act, the Coastal and Estuarine Land Conservation Program, and the Infrastructure Investment and Jobs Act.

CZM solicited for LOI and submitted the maximum of three (3) to NOAA.

- Competitive: One of the 3 projects submitted was selected to submit a full application. Announcement of funding was made on April 21, 2023. CZM facilitated the project through the process in support of CORAL.
- Capacity Building: CZM has received its first year of program capacity funding to coordinate and administer IIJA projects over 3 years. Funds will be used to establish and support a position in the CZM program.

Hawaii CZM Program

- 8 of 11 positions staffed (1/2-time Project Analyst)

- Position Vacancies: Planner V, 2 Project Analysts (in recruitment).
- 1 intern position
 - The graduate intern is supporting Act 178, SLH 2021/FA#1 Implementation
- CZM Website updated periodically (<http://planning.hawaii.gov/czm/>). Working on improving communications for consistency and currency. Analyzing existing website to make it more efficient and streamlined.

Section 312 Evaluation

- Notified that Hawaii CZM will be part of the NOAA evaluation cycle in federal FY24.
- CZM Staff contact is Debra Mendes

Section 309 Assessment and Strategy

- No new activity
- CZM Staff contact is Justine Nihipali

Program Changes

- Submitted proposed program changes with public notice to NOAA OCM on October 12, 2022. NOAA OCM issued its approval, dated January 31, 2023, on the Hawai'i CZM Program request. As of January 31, 2023, the enforceable policies identified in the Table of Approved Changes are applicable in reviewing federal actions pursuant to the federal consistency requirements of the CZM Act and its implementing regulation. CZM Staff contact is Shichao Li

Chair Fernandez inquired about the letters of intent (LOI) for IIJA funding and the timing of the final proposals, and when the program can start. Ms. Nihipali responded that the timeline depends on NOAA deadlines, which were unclear last year. CZM received notice in June, requested LOI from the community by the end of the month, submitted in August, and submitted full proposals in September. Funding was allocated to CORAL on October 1. The schedule for this year may be different, and CZM will assess the Federal Funding Opportunity (FFO), which will be released in May.

Ocean Resources Management Plan

- CZM Staff completed work with Esri to build additional features to incorporate into the ORMP Dashboard, including an Esri Survey123 survey template and accompanying dashboard to be used for future community surveys.
- CZM Staff are reassessing the meeting and governance structure for the ORMP (i.e. Council on Ocean Resources, Coordinated Working Group, Action Teams) to account for shift to ORMP implementation projects and an increase in requests for partners to participate on Action Teams (project-specific).
- Upcoming Coordinated Working Group Meeting: Thursday, May 18, 2023 (in-person with virtual option). Meeting objectives include ORMP project status updates, debrief on 2023 Legislative Session, reconnect with Working Group members.

Ms. Nihipali noted that MACZAC normally sends a representative to participate in ORMP Working Group Meetings, and that Jim Coon attended in the past. Chair

Fernandez responded that discussion of a participant for ORMP meetings would be held later in the meeting. In addition, he supported CZM in reevaluating the meeting and governance structure of the ORMP to improve government efficiency and benefit the public.

Focus Area I: Development & Coastal Hazards

Recently completed projects:

- The *Menu of Coastal Hazard Adaptation Strategies Suitable for Hawai'i Coastlines* project was completed November 2022. This project's objective was to create an informational resource highlighting the range of potential coastal adaptation strategies appropriate for Hawai'i. Strategies spanned from gray to green infrastructure and are implementable at parcel to regional level scales. Information for each strategy includes pros and cons, relative cost, ideal siting, relevant regulatory agencies. The deliverables include a StoryMap, Adaptation Strategy Info Cards (PDFs), and interactive map. CZM is currently developing an outreach plan for disseminating resources to regulatory agencies, legislators, and the general public. CZM Staff contact is Sarah Chang.
- The *Developing a Scoping Study for a Regional Shoreline Strategy Specific to the State of Hawai'i* project was completed in February 2023. This scoping study was an exploratory step towards a regional shoreline management strategy for the State of Hawai'i and resulted in a proposed methodology for delineating shoreline regions for the purpose of facilitating planning and management decisions that consider how environmental factors interact with the natural and built environment. CZM is currently doing final reviews of the final deliverables, which include a Final Report and StoryMap, and developing an outreach strategy for sharing the deliverables with relevant stakeholders. CZM Staff contact is Sarah Chang.

On-going projects:

- CZM's NOAA Coastal Fellow began her 2-year fellowship on August 1, 2022. The Fellow's project focuses on the nexus of coastal hazards and social vulnerability in Hawai'i and aims to better understand and identify communities with higher risk to coastal hazards due to socio-economic and demographic factors. The StoryMap explaining the project background, outcomes, and uses will be housed on the ORMP Dashboard (StoryMap Link: <https://storymaps.arcgis.com/stories/d1c1181d2d98404cb09d22ffe4b9892b>). An inventory of Social Vulnerability factors that relate to coastal hazards has been created, and data representing those factors were collected for an initial spatial analysis. The results of the initial spatial analysis are being compared with the White House's Climate and Economic Justice Screening Tool (CEJST) to see where there are overlaps or differences. The CEJST is being used by the federal government to identify underserved communities to distribute Justice 40 funds. Comparison of a Social Vulnerability-based analysis with the CEJST is being done to see if there are areas that are underserved that are not identified by the CEJST, and therefore would not receive funding. Coastal Fellow is Kristi Kimura.

Chair Fernandez asked NOAA Coastal Fellow Kristi Kimura how the social vulnerability indicators will be ranked and who will decide which are the most important. Ms. Kimura responded that she is in the process of overlaying indicators to identify the highest count of indicators present and noted that CZM is not currently ranking indicators or creating an index for the State and that there are limitations of creating an index at the State level.

- OPSD continues to move forward with the Act 178, SLH 2021 initiative looking at sea level rise and State facilities. OPSD has received and is incorporating feedback from the Act 178 Action Team on the 2022 Annual Report. SB 1291 requests funding to support the development of a standardized vulnerability assessment. The bill is currently awaiting Conference Committee discussion. A CZM intern was brought onboard in January 2023 to assist with refining the facilities inventory and data used for the sea level rise exposure assessment. The intern is conducting QA/QC on the data, and updating GIS layers to use building footprints. CZM Staff contact is Sarah Chang.

Chair Fernandez emphasized the significance of the Act 178 project, stating that it necessitates extensive public input. Decision making should not lie solely with the State but should instead involve the public as perspectives may differ in determining priorities. MACZAC can also review and offer feedback on the project. Ms. Chang noted that future updates will be shared with all MACZAC members.

- CZM received full funding for a NOAA Project of Special Merit FY22 project proposal to advance Focus Area #1's goal to continue building off the 2019 Managed Retreat Feasibility Study and further develop the State's understanding of managed retreat as an adaptation strategy. This project will analyze the legal and policy impacts of managed retreat in Hawai'i and will identify existing laws, policies, and regulations that either facilitate or hinder managed retreat. The policy analysis will be one of two components in a larger project, *An Analysis of Managed Retreat Strategies in Hawai'i: Policy and Funding Opportunities and Challenges*. The second component will be an analysis of potential funding and financing mechanisms to facilitate managed retreat in Hawai'i and will be supported with CZM Section 309 programmatic funds. CZM is currently reviewing proposals submitted in response to RFP solicitation, and anticipates a contract start date in late May 2023. CZM Staff contact is Sarah Chang.

Chair Fernandez inquired about the level of specificity and scope of the managed retreat analysis project. Ms. Chang responded that the project would not identify specific roads or infrastructure to be retreated. Instead, it would focus on examining legal venues and existing regulations related to shoreline management. Ms. Chang noted that the purpose is to explore creative strategies involving private and public partnerships to fund the relocation of assets away from the shoreline and looking at the whole picture of how it might be implemented.

MACZAC member Sue Sakai suggested first focusing on public lands and prioritizing these for the managed retreat analysis, looking at infrastructure, sewage treatment plants, airports, harbors, and schools due to having more control and jurisdiction. Ms.

Nihipali responded that the analysis does not specifically address what needs to be retreated. Chair Fernandez noted that the State-owned land may have a different legal framework as compared to privately owned land. That delineation might help to organize the thinking and analysis of this report.

Mr. Sullivan inquired if the study is focusing more on complex land issues, which offer greater challenges compared to public land. Ms. Nihipali noted the intricate nature of private land management. Chair Fernandez recommended that CZM clearly state that they are focusing on private properties in the objective statement to ensure clarity and specificity.

Pending funding:

- CZM submitted one proposal for the NOAA Project of Special Merit FY 23 competition. The proposed project was developed in collaboration with DHHL and will improve cross-agency coordination in coastal management by (i) identifying current areas of inconsistent legal interpretations and challenges for DHHL beneficiaries when navigating county and State requirements for conducting activities in the shoreline area, as well as (ii) identifying potential strategies to address these major challenges and inconsistencies. Award announcements are anticipated to be made in Summer 2023. CZM Staff contact is Sarah Chang.

Ms. Nihipali stated that CZM intends to look at Focus Area I holistically. CZM has a new initiative to bring together state and county agencies to have direct, focused discussions about what coordination means along the shoreline between the various agencies involved.

Focus Area II: Land-based Pollution

- CZM Staff continue to work towards developing projects under Focus Area II: Land Based Pollution with respect to the CZM-funded report produced by UH Sea Grant: *Frameworks for Nonpoint Source Pollution Management in the Hawaiian Islands*. Due to competing CZM priorities over the last few months, the project development process has been delayed with anticipated prioritization in the upcoming months. Currently, CZM staff are taking steps to update existing planning guidance documents with contemporary non-point source pollution information and best management practices tailored for the Hawaiian Islands and to identifying effective mechanisms to increase land-based pollution reduction considerations among permit and EA/EIS reviewers and the public with these revised resources. CZM Staff contact is (in recruitment and Josh Hekekoa for guidance update).

Focus Area III: Marine Ecosystems

- Implementation of the Kokua Community-Based Monitoring Program continues with the DLNR-DAR 30x30 planning team, project partners, and community groups. The program will increase DLNR-DAR's capacity to monitor culturally valuable nearshore marine resources that are not regularly monitored by the

Division and support adaptive management. Due to contracting delays, an 18-month no cost extension to September 30, 2024, was approved by NOAA on March 31, 2023. The team has drafted a monitoring framework, with an initial focus on limu and 'opihi, and a draft monitoring and communication plan (MCP) with the communities through an iterative process. The MCP will include additional information on data quality management, analysis, and communication of results both internally within the community and externally to DAR. The MCP will provide the foundation for the Memorandum of Understanding and Data Sharing Agreement between DLNR-DAR and community entities. The draft monitoring framework is currently being circulated to partners for feedback, and training materials and monitoring protocols are in development. CZM Staff contact is in recruitment, Justine Nihipali.

Coastal Non-Point Pollution Control Program (CNPCP)

- No new activity.
- CZM Staff contact is Debra Mendes

Climate Change Adaptation

- OPSD Director and CZM Program Manager serve as Commissioners on the Climate Change Mitigation and Adaptation Commission.
- The next meeting date is Thursday, May 11, 2023.
- CZM Staff contact is Justine Nihipali

Coastal Hazards

- Section 309 Coastal Hazards Strategy for the *Probabilistic Tsunami Design Zone Mapping – Maui Island (Phase II) and Kaua'i Island* contract executed January 20, 2021, is underway. The Contractor requested a contract extension, which was approved by NOAA. The new contract end date is September 30, 2023. The second informational meeting for Maui Island (Phase II) and Kauai Island took place on February 16, 2023, and the second technical meeting took place on March 3, 2023. Contractor will be presenting to HACBO, hosted on Kauai, on May 17, 2023. Staff accompanying will be Lisa Webster and Justine Nihipali.
- CZM Staff contact is Lisa Webster

Ms. Webster noted that she and Ms. Nihipali will accompany CZM's contractor, Professor Ian Robertson of University of Hawai'i at Mānoa (Civil and Environmental Engineering) as well as the expert in Tsunami design, who will be presenting at HACBO on May 17 in Kaua'i. Chair Fernandez asked if Taryn Dizon, Kaua'i MACZAC member, would be able to attend HACBO. Ms. Nihipali noted that they have been awaiting Ms. Dizon's response and Chair Fernandez noted that he will reach out to Ms. Dizon as well.

County CZM Projects

- Hawai'i County has entered into Phases 4 & 5 of the Shoreline-Riparian Setback Project, *Shoreline Pursuit*. This allows continued leveraging of products in pursuit of island wide data and analysis to support coastal management objectives. Phase 4: Contract(s) and MOA were executed (May 2022) for UH-SDAV to

continue data collection and processing of data in additional geographies/coastal areas. Phase 5: Contract(s) and MOA were executed (May 2022) for UH-SDAV to continue data processing, analyzing, and modelling findings.

- Request from the County of Hawai'i Planning Department to support Phase 6-7 for services to December 31, 2023 for Shoreline and Riparian Setback Project.

Other Initiatives

- Greenhouse Gas Sequestration Task Force. Three projects have been completed to meet objectives of Act 15, SLH 2018. CZM Staff contact is Justine Nihipali.
- Waikiki SLR Resilience and Adaptation Plan. OPSD continues to work on an initiative to develop a SLR plan for Waikiki. UH CDC has been contracted for this initiative utilizing the \$400,000 budgeted by the 2022 Legislature. It will be conducted in collaboration with the City and County of Honolulu Department of Planning and Permitting that received \$400,000 in county funding to develop a Waikiki Special Area Plan. This will be supported by the CZM program, with no additional State funding for staff capacity. CZM staff contact is Deb Mendes.
- CZM Program is involved with a number of external groups and activities:
 - Coral Reef Initiative Working Group (DLNR-DAR)
 - Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council
 - Hawai'i Invasive Species Council (HISC) and HISC Resource Committee
 - State Hazard Mitigation Forum (HiEMA)
 - Coastal States Organization
 - Fisheries Local Action Strategy Hawai'i (FLASH)
- Continue to review environmental assessments/environmental impact statements to ensure CZM objectives, policies, and initiatives are considered.

Chair Fernandez noted that the shift in reporting format, which now focuses on ORMP focus areas 1, 2, and 3, is a more sensible approach compared to going through individual projects. Mr. Sullivan expressed appreciation for the new format, emphasizing its value and the importance of the information provided.

V. MACZAC Chair and Vice-Chair elections for 1-year term

Chair Fernandez's 1-year term as Chair has expired, leaving the position open for a nomination. Chair Fernandez welcomed the opportunity to serve for another 1-year term, and no other members volunteered for the position. MACZAC member Donna Brown volunteered to serve as Vice Chair and no other members volunteered for that position. Chair Fernandez and Vice Chair Brown were unanimously approved for 1-year terms by all members present.

VI. Discussion and evaluation of CZM's 2021 *Identifying Frameworks for Land-Based Pollution Management in the Hawaiian Islands* to recommend priorities from the report

Chair Fernandez summarized the purpose and content of the *Identifying Frameworks for Land-Based Pollution Management in the Hawaiian Islands* report. He then asked

Mr. Sullivan to lead the discussion and identify recommendations for actions based on the report shared with MACZAC at a previous meeting.

Mr. Sullivan emphasized the importance of reviewing the report, highlighting the significant and complex nature of the issue. He noted the challenges posed by limited funding and staffing across the 18 responsible Federal, State, and county agencies, making effective management of pollution difficult.

Mr. Sullivan added that land-based pollution management in Hawai'i faces challenges such as multiple pollution sources, voluntary management approaches, limited quantitative data, and a parcel-based, rather than watershed-based approach. Overcoming these challenges will require collaborative efforts and strategic solutions to effectively address land-based pollution in the State.

Mr. Sullivan suggested several solutions for addressing land-based pollution, including prioritizing and breaking down the subject into manageable components, promoting vegetation areas and reducing pavement to minimize runoff, implementing stormwater utility fees based on surface coverage, and establishing larger buffer zones between land-based pollution and the ocean through shoreline setback rules. These measures aim to mitigate pollution and protect the coastal environment.

Chair Fernandez noted that having gravel and/or vegetation to help absorb runoff would be an improvement over impervious surfaces and suggested reviewing urban and rural areas separately because they each have their own challenges.

Ms. Brown highlighted runoff issues in Maui from former sugar cane and pineapple fields and expressed appreciation for the involvement of the CORAL group in addressing the situation.

Ms. Sakai emphasized the need for better enforcement rather than excessive rules and regulations, pointing out that the urban yards on O'ahu contribute to the brown water problem during heavy rain.

Chair Fernandez noted the Waikōloa golf course runoff issue in West Hawai'i, emphasizing the need for better enforcement and fines to ensure compliance with the Clean Water Act.

Chair Fernandez summarized the discussion with three major proposals for MACZAC to recommend to OPSD:

1. Explore existing ordinances to discourage impervious surfaces in urban areas to prevent runoff.
2. Prioritize watershed-based approaches over parcel-by-parcel management.
3. Advocate for better enforcement to prevent land-based and non-point pollution.

Mr. Coon inquired about accessing federal funds from the EPA, and Ms. Nihipali responded that one of the challenges is to comply with the requirements for grant management and compliance and that CZM has limited staff to manage federal funds.

Bob Nishimoto, MACZAC member, shared that the dairy on the Hāmākua Coast on the east side of Hawai'i Island was supported by agencies, who turned a blind eye towards environmental impacts, which led to increased polluted runoff.

MACZAC member Kimbal Thompson noted that stormwater runoff concerns also needs to be listed as a concern and recommendation for prioritization.

VII. Guest Presentation: Holomua Marine Initiative Update
Luna Kekoa, Department of Land and Natural Resources - Division of Aquatic Resources (DLNR/DAR)

Luna Kekoa, the program manager for the recreational fisheries program at DLNR/DAR shared an update on the Maui Island community pilot process for the Holomua Marine Initiative Update. DAR has formed a 20-member Maui Navigation Team consisting of community members, including fishermen, to address nearshore resource management and improve communication networks.

DAR and the Navigation Team held their first virtual meeting to establish a facilitation team and will hold a second in-person meeting for better feedback. Based on conversations with the Maui Navigation Team, DAR will propose potential rules for monitoring specific areas in Lahaina, Wailuku, and Hana for restoration, and will incorporate community feedback to develop final rules. After the final meeting, they will engage in public scoping and, if appropriate, proceed with the Chapter 91 Process.

Mr. Kekoa stated that DAR has removed the name "30x30" from the Holomua Initiative to address public concerns. They will now focus on promoting healthy reefs and sustainable nearshore resources. The 30% network, associated with the monitoring tool, is still used in the Maui Island Pilot Process for ecological data monitoring and restoration, within the Place-Based Planning pillar of Holomua.

Mr. Kekoa stated that DAR has integrated socio-cultural elements into the Holomua Initiative, focusing on four key themes: place-based knowledge & education, physical, mental & spiritual well-being, community relationships, engagement, and commitment, as well as efficacy and equitable governance. In conclusion, Mr. Kekoa noted that the updates on the Holomua Marine Initiative can be accessed by the public through the DLNR-DAR website.

Mr. Coon noted his involvement in the Maui Navigation Team alongside Mr. Kekoa and praised DAR for their excellent communication efforts with the people of Maui. Chair Fernandez inquired about DAR's plans to promote the Holomua Initiative to the rest of the State. Mr. Kekoa responded that DAR has been forming a public relations

navigation team to provide regular updates on Holomua's progress and the announcement about the team will be made shortly.

VIII. Guest Presentation: Using eDNA to Measure Estuary Biodiversity
Dr. Kimberly Peyton, Department of Land and Natural Resources - Division of Aquatic Resources (DLNR/DAR)

Dr. Kimberly Peyton (DLNR/DAR) presented on the benefits of environmental DNA (eDNA) as a tool for improving the management and conservation of freshwater-dependent ecosystems.

Muliwai, or estuaries, play a significant role in sustaining healthy fisheries along the coasts, although muliwai is often overlooked when "Mauka-Makai" is discussed. A variety of marine species utilize estuaries as their habitat for juvenile growth and foraging. There are various types of estuaries in Hawai'i including riverine, bay, groundwater, and lagoonal.

eDNA is a monitoring technique which can be used to accurately identify species in an environment, and is a tool which was borrowed from criminal justice techniques. It has a higher rate of decay (hours to a day or two) in aquatic environments compared to terrestrial DNA (months to years). The sampling is time-sensitive as well as restricted in terms of distance. eDNA is useful for detecting environmental changes, rare and invasive species, industry impacts, food webs, and estuary biodiversity.

In January 2023, a new system of sampling aquatic eDNA was introduced and Dr. Peyton's team utilized a backpack lab with GPS for field sampling. It led to improved research quality and cost efficiency. The new approach involves collecting and filtering a larger volume of water (sample size increased from one liter to four liters) and allows for instantly preserving samples. Sampling can target rare species, invasive species, and other samples of interest.

Dr. Peyton discussed her projects in the Hawaiian Islands. In Maui, historically, streams have been focused on for study, but other freshwater-dependent estuaries have never been considered. Her team has been highlighting estuaries, including West Wailua Iki, East Wailua Iki, Waiohue, Honomanū, and Honokōhau. These projects aimed to understand the freshwater and marine fish species that utilize estuaries and detected a range of species in each location. As a result, there were notable findings in terms of hydrology, geomorphology, and the historical flow of fresh water into the bay.

Biodiversity is important because the more species that are present, the more stable the ecosystem. It is critical to measure biodiversity, as increased biodiversity enables ecosystems to adapt to environmental changes. Analyzing data from different systems, including the noted locations, revealed distinct groups.

Estuaries with favorable hydrology showed higher species diversity (65 and 47 fish species), while restored estuaries with controlled hydrology had lower diversity (10-19

fish species) due to past stream diversions. The goal is to have estuaries supporting both marine and freshwater species. Unclear stream results were attributed to dry beds from heavy diversions. Additional sites on Maui will be analyzed for baseline data.

Kalauha'īha'ī in Maunalua Bay in East O'ahu, a restoration project, is underway to address coastal groundwater. Three decades ago, DOT disrupted the natural flow by expanding Kalaniana'ole Highway. Restoration efforts, including piping and pumping systems, aim to restore freshwater flow by the end of this year. The team is conducting cast netting and eDNA collection, using Paiko Lagoon and Kanewai Fishpond as reference sites.

The team has been cast netting since 2016 - 2020 for eDNA samples across the Hawaiian Islands and rating on biodiversity, most diverse to least diverse sites. The team will be returning to all sites for eDNA sampling to compare with the previously collected cast netting data to see if there is a difference in biodiversity results using eDNA sampling, the method that is meant to detect biodiversity.

Chair Fernandez shared his organization's work in counting species on coral reef versus sandy substrate under water. A noticeable contrast was observed, with fish species on coral reefs numbering upwards of a hundred different species, while sandy substrates had between 10 and 17 species. The results of the muliwai eDNA sampling show similar differences between healthy and unhealthy estuaries.

IX. Report back from MACZAC Muliwai PIG meeting, held April 10, 2023

Dr. Nishimoto shared slides and presented recommendations from the April 10 Muliwai PIG meeting, referring to ORMP's guiding perspectives: land-sea connections, traditional ecological knowledge, multi-agency collaboration, and climate change adaptation. The Muliwai PIG aims to establish a resource for the mauka-muliwai-makai connection and will provide recommendations to CZM to complement the Holomua engagement process.

The purpose of outreach materials is to create awareness about the importance of estuaries as critical habitats and nurseries for coastal fish species. It emphasizes the connection between the mountains, estuaries, and ocean (mauka-muliwai-makai) and introduces the term "Muliwai" to the lexicon. Dr. Nishimoto suggested that PIG members consult with Hawaiian Language Specialists regarding the use of the term "Muliwai" for "estuary".

The audience for the outreach materials will include State and county agencies, decision-makers, fishermen, conservationists, property owners along waterways, and students, in order to promote land-sea connectivity, communication across agencies, estuary conservation, and Hawaiian fishponds awareness.

Dr. Nishimoto recommended including key topics like the definition of estuary, the various types of estuaries in Hawai'i, identifying the eDNA survey tool, risks to estuaries ,

benefits of healthy estuaries, freshwater contribution to limu productivity, and clarifying agency responsibilities. He proposed creating handouts or posters for dissemination through community events or social media.

Dr. Nishimoto concluded his presentation with the message, “Na Muliwai...the maika’i place” and inquired about the next steps for producing the outreach materials. Ms. Webster shared the process of the PIG in relation to the Sunshine Law. The PIG presented their recommendations to MACZAC at the meeting today, which will be discussed and voted on for adoption at the next meeting, after which the PIG will be dissolved. In the meantime, CZM will consider their capacity to proceed with the proposal. Ms. Webster added that it is not necessary for the PIG to meet again as it has fulfilled its purpose prior to the next meeting.

Ms. Sakai noted that the word “muliwai” is listed as “estuary” in the Hawaiian Dictionary. Dr. Nishimoto emphasized the importance of involving local fishing practitioners. Chair Fernandez suggested Dr. Nishimoto provide a presentation to the Non-Commercial Advisory Panel of the Western Pacific Regional Fishery Management Council. Chair Fernandez noted that a discussion and vote to adopt these recommendations will be on the agenda as an action item at the next meeting.

X. Hotspots

1. Kā’anapali Beach Restoration Project (Maui)

Chair Fernandez noted that Kā’anapali Beach Restoration Project has been an ongoing agenda item with MACZAC and asked Mr. Coon for his observations as a Maui resident.

Mr. Coon shared that the BLNR had unanimously moved not to approve proceeding with project funding in March 2023, despite the memorandum of agreement between the State and hotel operators to share the expenses, due to public opposition. The project’s future is now uncertain due to funding issues and concerns about mixing outside sand with Kā’anapali sand.

Mr. Sullivan agreed with Mr. Coon’s observation, stating that his firm has been working on the Kā’anapali Beach Restoration Project for a decade, but little progress has been made. He noted that the amount of sand on Kā’anapali Beach is constantly changing due to the shifting patterns of south and north swells. These unpredictable cycles make it difficult to maintain stable beach conditions.

Chair Fernandez suggested Mr. Coon and Mr. Sullivan could write a letter to OPSD/CZM to document their thoughts and recommendations. Ms. Webster inquired about the possibility of forming a PIG for this purpose. Chair Fernandez agreed that was one option and confirmed that MACZAC will continue to monitor this hotspot and will leave it on the agenda for the next meeting.

2. Honolulu Bay Yacht Grounding (Maui)

Chair Fernandez shared that the grounding of an expensive yacht in Honolulu Bay underscores the need for a legislative resolution requiring annual vessel insurance, and that there is a resolution still alive in the legislature that proposes this. The yacht's owner had insurance, but the insurance company is disputing payment for damages, fuel removal, and towing costs. Uninsured vessels in the past have cost the State for damages and recovery. Raising awareness about vessel insurance is vital. The resolution promotes responsible ownership and reduces the State's burden.

Mr. Coon noted that illegal tour operators violated the 2.5-hour day-use mooring time limit at Honolulu Bay, prompting the push for a reporting system and enforcement by DOCARE. The funding for the preservation of Honolulu, SB 1153, failed due to land ownership issues. The bill will likely be reintroduced next year.

Chair Fernandez noted a past incident where a longline vessel became stuck off Waikīkī, resulting in a significant recovery effort to remove diesel fuel and repair reef damage. The vessel owner was fined and compensated the State for the damages. In other cases, vessels have been abandoned on the beach because the owners lack the financial means to salvage them. Chair Fernandez stated that this is an ongoing issue.

3. Public Input on all agenda items

No public input was provided.

4. New Business

1. Chair Fernandez asked if a MACZAC member would like to attend the May 18 ORMP Coordinated Working Group Meeting. Ms. Sakai offered to attend the meeting virtually.
2. The next MACZAC Quarterly Meeting is tentatively scheduled for Friday, July 7, 2023, 9:00 am – 12:00 pm.

5. Adjournment

The meeting was adjourned at 11:45 am.