

# Pacific Partnerships

*Supporting ocean observing & enhancing capacity in the Federated States of Micronesia and across the Pacific Islands*

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[4] Local Coordinator contracted via The Ocean Foundation

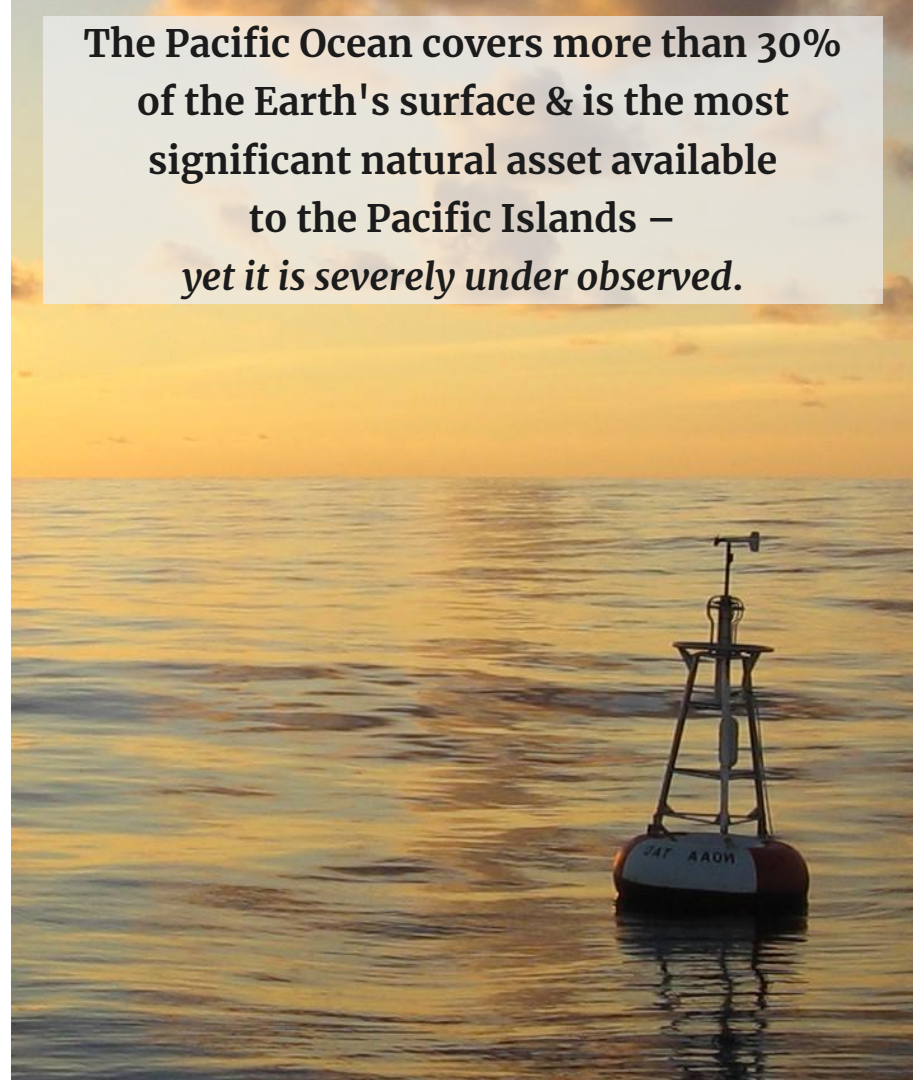


# Importance of Ocean Observing

Ocean observations help us:

- Predict future of **weather and extreme events**, such as floods, droughts, and tropical cyclones
- Monitor **changes over time**, such as ocean warming, carbon absorption, ocean health, and life in the oceans
- Improve maritime **safety**, navigation, and ship routing

The Pacific Ocean covers more than 30% of the Earth's surface & is the most significant natural asset available to the Pacific Islands – *yet it is severely under observed.*



# Pacific Partnerships



- Identify and engage relevant community of experts and partners
- Work collaboratively with regional partners to address priority weather & climate needs
- Co-develop observing strategies to provide tailored ocean information



## Supporting Regional Partnerships



## Improving Storm Surge Mapping



## Supporting Women in Ocean Careers



## Enhancing Ocean Observing Capacity





# Implementing Partners



**NOAA**  
GLOBAL OCEAN  
MONITORING & OBSERVING

 THE OCEAN  
FOUNDATION

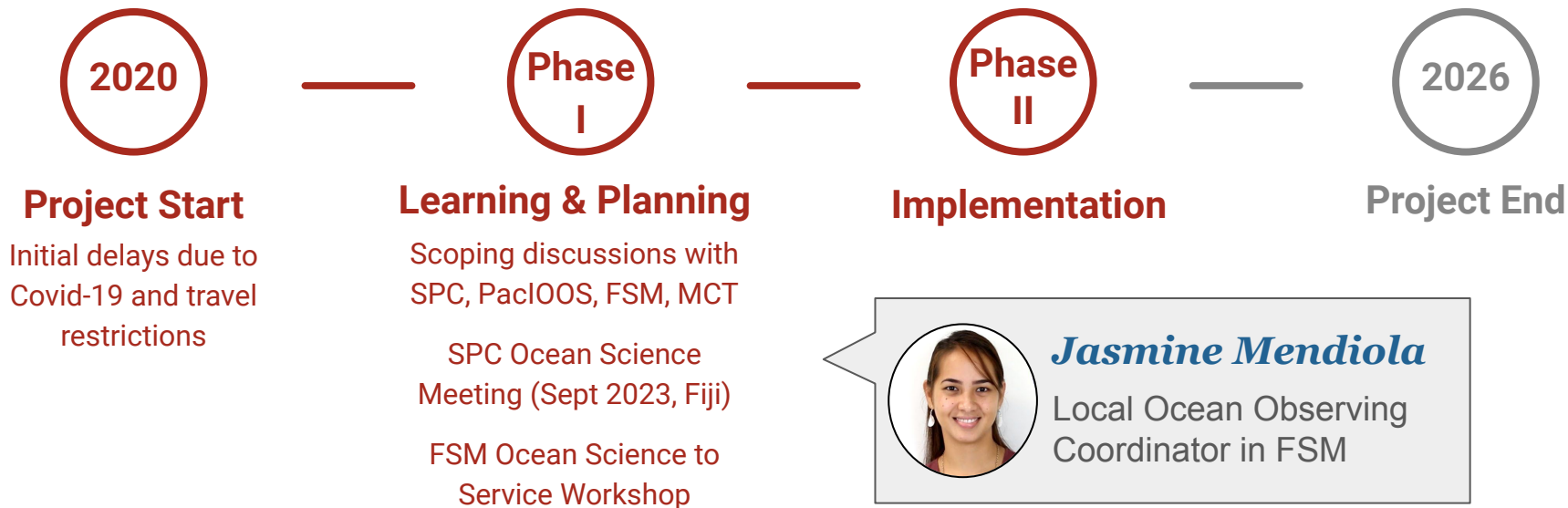
**PMEL**  
Pacific Marine Environmental Laboratory



Pacific  
Community  
Communauté  
du Pacifique



# Current Status & Progress



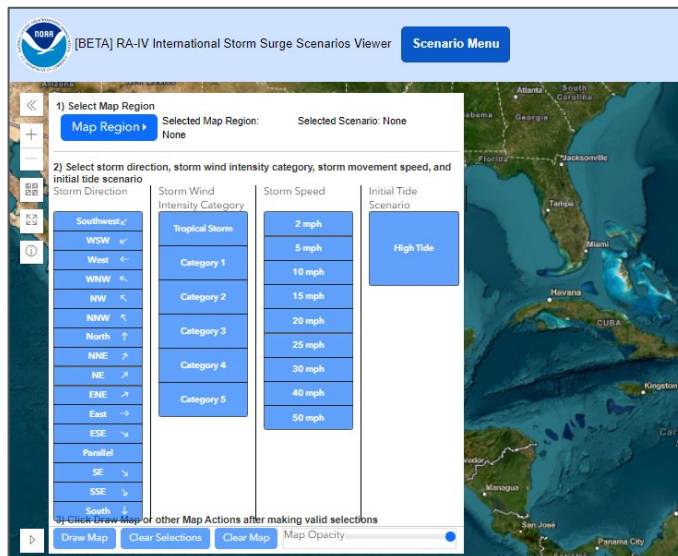
# Storm Surge Mapping

- Delivered through NWS National Hurricane Center, Storm Surge Unit
- Products to aid coastal inundation planning
- On-site training and translated learning modules
- Focus on Pohnpei and Chuuk

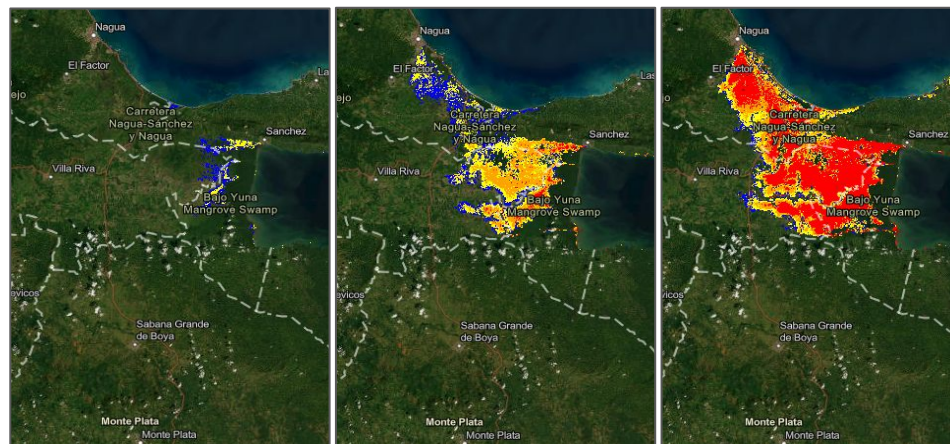




# Storm Surge Mapping

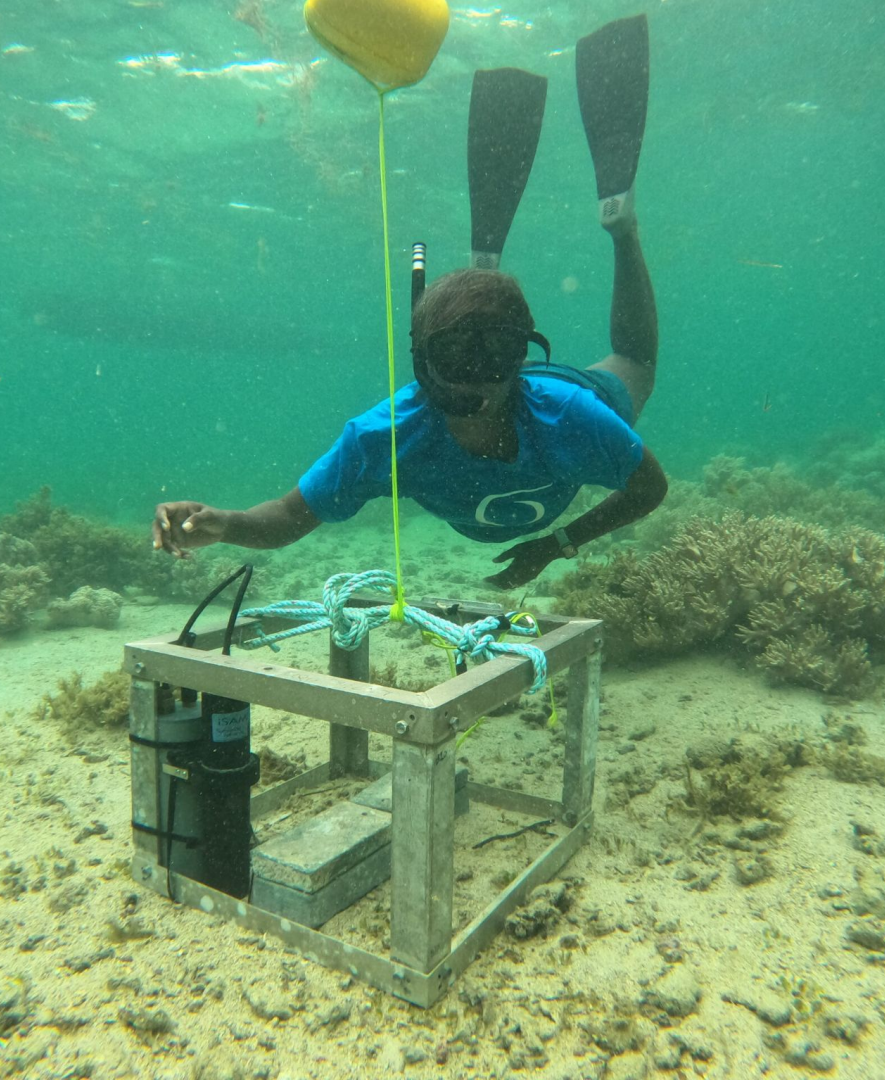


## International Storm Surge Scenario Viewer



- Risk map for FSM under different forecast scenarios, not specific to a given storm
- Requires coastal elevation, topography, and near-shore bathymetry maps





# Women's Fellowship Program

- Professional development & mentoring opportunities for women in ocean careers
- Established partnership with SPC's Early Career Ocean Professionals (ECOP) Programme
- Focus on broader Pacific Islands region, with plan to support recruitment of FSM participants

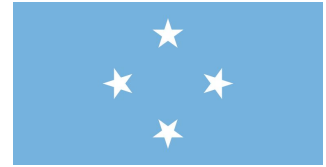
Weather buoys measure parameters including air & water temperature, wind speed, wave height & frequency.

# Ocean Observations

- Emphasis on weather and climate data collection to provide more accurate, tailored information for FSM
- Funding for instrument procurement, deployment, training, and research
- Flexibility to test and co-design technologies to meet local needs

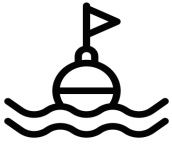


# Local Partner Engagement



- **SPC's Ocean Science to Service Workshop** – November 2023 in Pohnpei
  - Attended by WSO Pohnpei, WSO Chuuk, national and state agency representatives, outer island community members, tourism board, educators, etc.
- **Listening Sessions** conducted by local coordinator, Jasmine Mendiola:
  - Across the four states & across multiple sectors: national governments, state governments, NGO, community groups

# Key Questions Asked



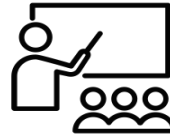
- Which ocean measurements are needed?
- Low- vs. high-cost technologies?
- Intensive sampling vs. long-term maintenance?



- Key target areas?
- Coastal vs. offshore?



- Who is collecting what and where?
- How to complement, support, or strengthen existing work?



- Who is best positioned to test, learn, maintain, and benefit from new technology and training?

# Priority Needs Identified

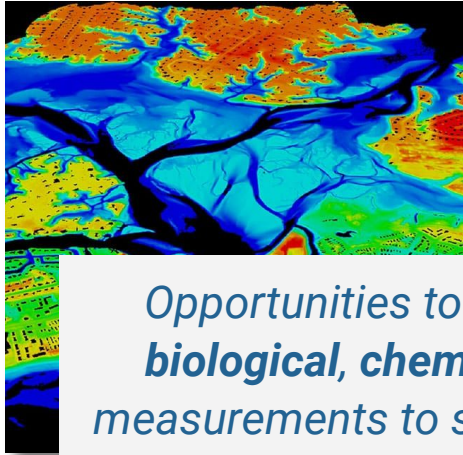
- Real time, local ocean conditions: waves, currents, tides
- Bathymetry
- Tsunamis
- Sea level rise & inundation
- Climate change adaptation & mitigation
- MPAs, fisheries, etc.



*WSO representatives engaging in SPC's Ocean Science to Service Workshop*

## Lidar

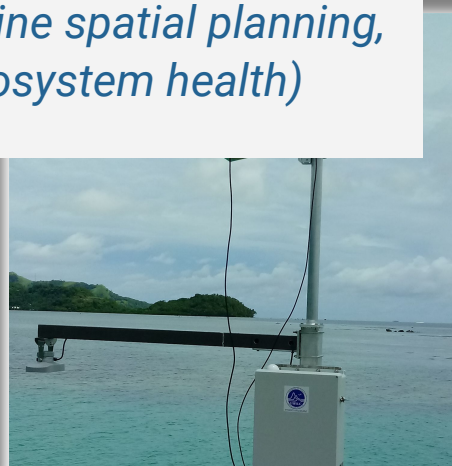
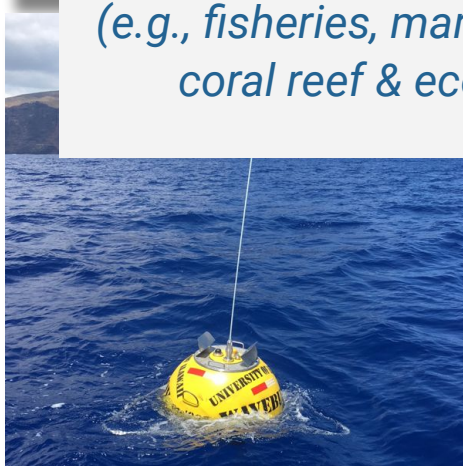
Light Detection and Ranging: Remote mapping of shoreline and elevation for coastal inundation modeling.



*Opportunities to collect additional **biological, chemical, and physical** measurements to support other efforts (e.g., fisheries, marine spatial planning, coral reef & ecosystem health)*

## Wave Buoys

Measure local wave conditions with data available in real-time for maritime safety and wave run-up.



## Uncrewed Systems

Autonomous sailing drone for high quality meteorology & ocean observations, including bathymetry and seafloor mapping.

## Tide Gauges

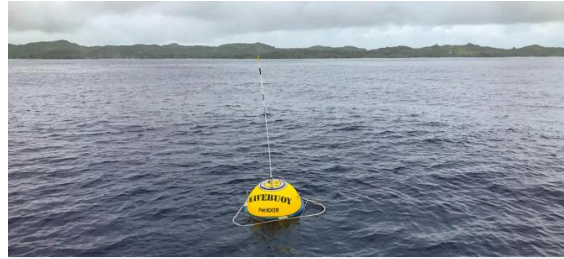
Measure sea level rise to inform navigation, storm surge/flooding, tsunami forecasting, etc. Four in place in FSM already.

# Next Steps



## Community Engagement

- Social marketing strategy led by local coordinator to raise awareness & build trust within the community
- Planned outreach and engagements at schools, churches, College of Micronesia, etc.



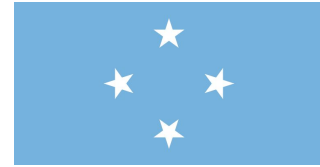
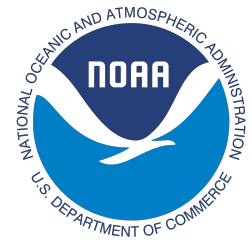
## Technology & Trainings

- Host low-cost technology workshop with local partners to make decisions on equipment (e.g., tide gauges, wave buoys)
- Produce open-source training manuals and hands-on trainings for continued operation of equipment



## Launch Women's Fellowship

- Launch the Pacific Islands Women in Ocean Science Fellowship Program
- Recruit fellows from the region – hopefully from the FSM!



**Thank You!**

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