

# *What is Backyard Buoys?*



**BACKYARD BUOYS**



BACKYARD BUOYS

# MISSION

Support collection, stewardship, and use of wave data that complements existing knowledge and protects lives and livelihoods in a changing climate.



NSF's Convergence Accelerator



Photo: Lloyd Pikok, Jr.



# BACKYARD BUOYS



ALASKA



PACIFIC NW

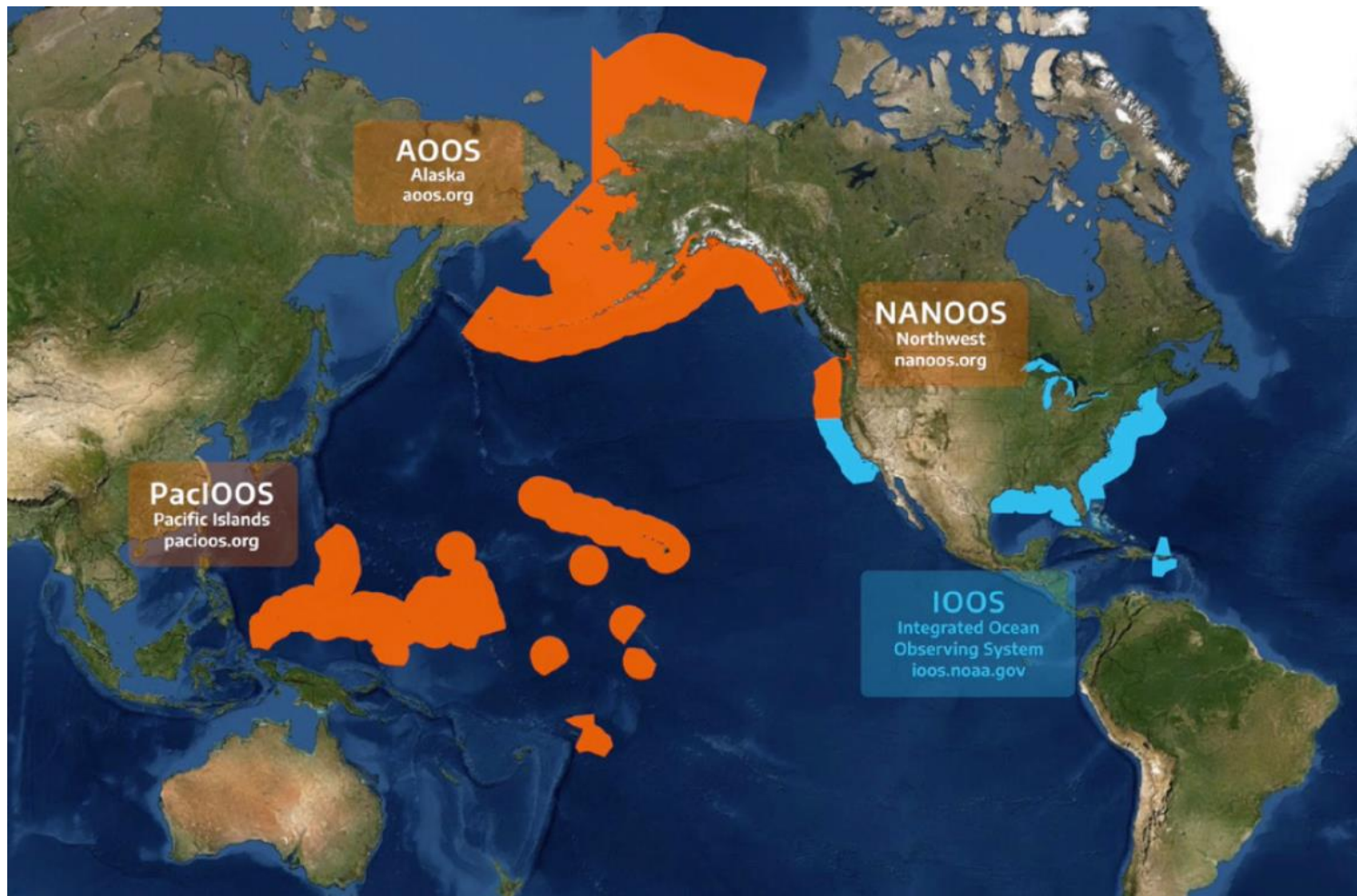


PACIFIC ISLANDS

# WHERE ARE WE?



## US Integrated Ocean Observing System (IOOS)



## Observing Partners\*



\* US IOOS Regional Nodes



***OUR THREE REGIONS LOOK NOTHING ALIKE...***



**PACIFIC ISLANDS**



**PACIFIC NORTHWEST**



**ALASKA**

***YET EACH HAVE NATURAL WAVE BUFFERS...***



**CORAL**  
**CORAL BLEACHING**



**KELP**  
**MARINE HEAT WAVES**



**ICE**  
**GLOBAL WARMING**

***THAT ARE BEING AFFECTED BY CLIMATE CHANGE***

# BACKYARD BUOYS TEAM



## Indigenous/Community Partners

## Technical/Educational Partners

## Ocean Observing Partners



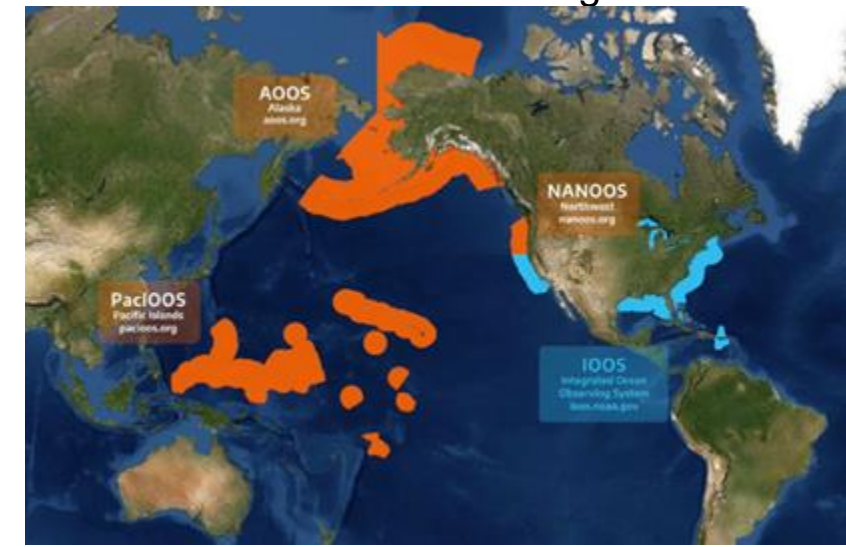
Marshall Islands Conservation Society



ALASKAESKIMO  
WHALING COMMISSION



\* US IOOS Regional Nodes







- An **affordable** wave buoy system to support **safety** by augmenting limited resources in **remote** regions, especially in a **changing** climate.



Fuiava Bert Fuiava  
Samoan Village Chief, National Park of American Samoa, Project Partner

- **Bridge** Knowledge Systems to support ocean safety by making the data more **accessible** and **relevant** to local communities.



Lesley Hopson  
Executive Director, Alaska Eskimo Whaling Commission, Project Partner

- **Community-led and community-driven** buoy program enhances local autonomy in ocean observing.

TO: Support collection, stewardship, and use of wave data that complements existing knowledge and **enhances safety at sea** in a changing climate



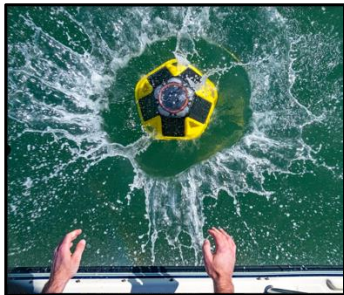
### TRUST

Long-term partnerships



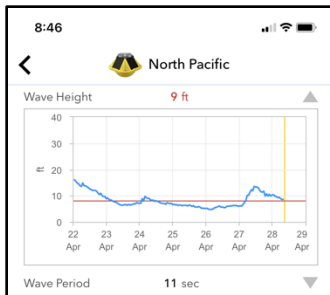
### CO-DESIGN

Wave buoy programs bespoke to each community



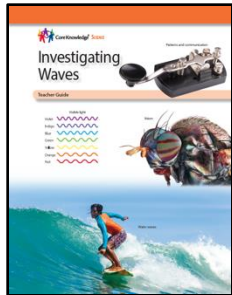
### LOWER-COST TECH

Communities receive Sofar Spotter wave buoys



### USEABILITY

New data tools developed with community input



### EDUCATION

Curricula for the next generation of ocean stewards

*“If they don’t understand the data, then it’s not their data.”*  
- Dua Rudolph, Deputy Director for Marshall Islands Conservation Society

# TRUST AND CO-DESIGN

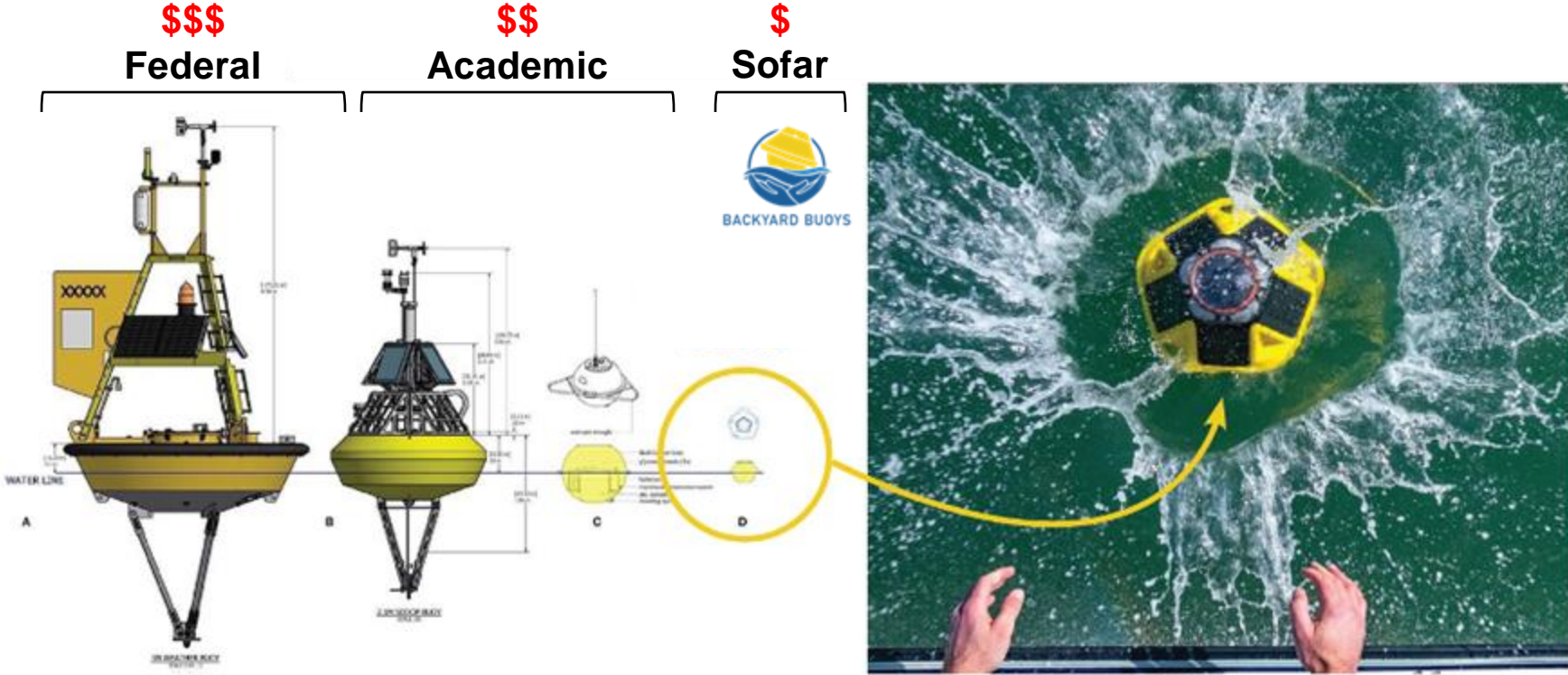
*Indigenous communities not prioritized for ocean observing assets*



- Working Groups:
- ✓ Everyone is a full partner
  - ✓ Room for critical feedback



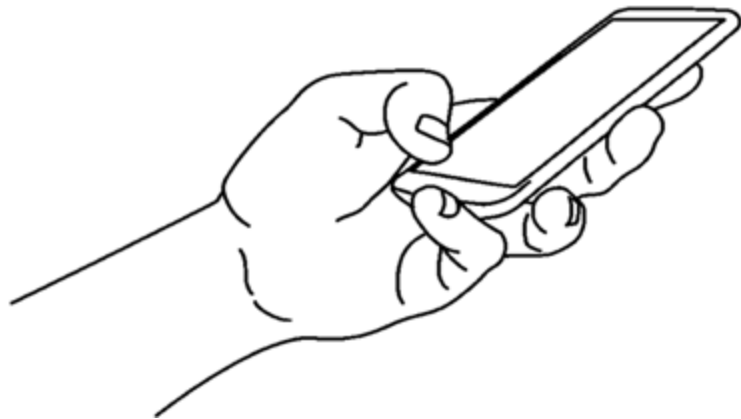
*Insufficient wave data to support safety at sea*



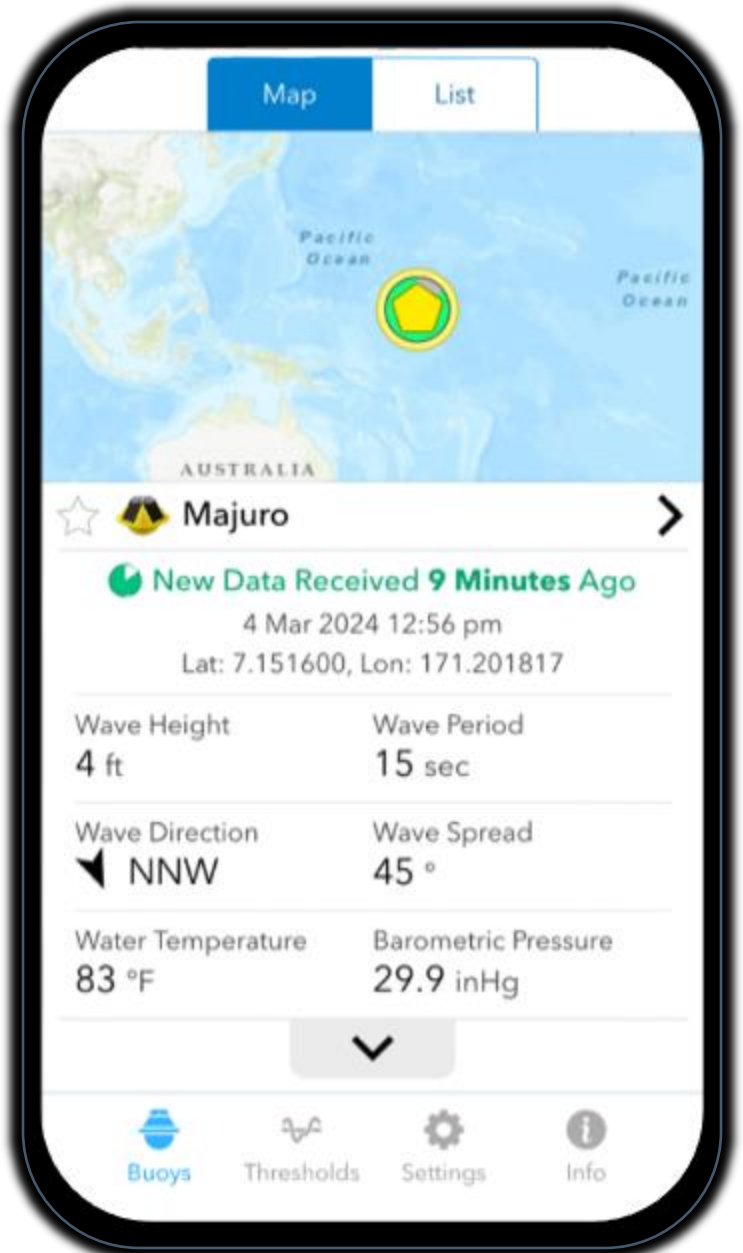
*[Scale comparison of buoys]*



*Data access in challenging environments*



# USEABILITY



**Majuro**

**Maua Data Fou 16 Minute Tuana'i**

28 Feb 2024 4:56 pm PST  
Lat: 7.151000, Lon: 171.201967

**Fa'amatalaga Atoa**

Mauluga o galu 2 ft

Taimi o galu 11 sek

Itu o aga'i ai galu WNW

Va o galu 61°

Taimi ogalu 4 sek

Itu i le va o galu NNW

**Pole** **Limiti** **Setiina** **Fa'amatalaga**

**Majuro**

**New Data Received 17 Minutes Ago**

28 Feb 2024 4:56 pm PST  
Lat: 7.151000, Lon: 171.201967

**Complete Information**

Wave Height 2 ft

Wave Period 11 sec

Wave Direction WNW

Wave Spread 61°

Wave Mean Period 4 sec

Wave Mean Direction NNW

**Buoys** **Thresholds** **Settings** **Info**



“For this project to be sustained, we need fewer gray hairs to be a part of this.”  
- Arctic Whaling Captain

*Need new ways to engage youth in ocean science and Indigenous practices*









***"We were able to make safer decisions to go out whaling based on these wave buoys offshore. We are excited to get these out sooner next year!"***

*- John Hopson Jr., Wainwright Whaling Captain and Alaska Eskimo Whaling Commission Chair*











*“Snare the bird,  
watch the wave”*



**BACKYARD BUOYS**