

An underwater photograph showing a coral reef with various types of coral in shades of brown, orange, and yellow. The water is clear and blue, with sunlight filtering through from the surface, creating a shimmering effect. Some green seaweed or algae is visible on the right side of the frame.


# Hawai'i's ALDFG Bounty Program: Harnessing Partnerships to Prevent, Monitor, and Remove Marine Debris for Recycling


Katie Stevens, Raquel Corniuk, Eric Kingma, Mafalda de Freitas, Harley Wahl, and Jennifer Lynch

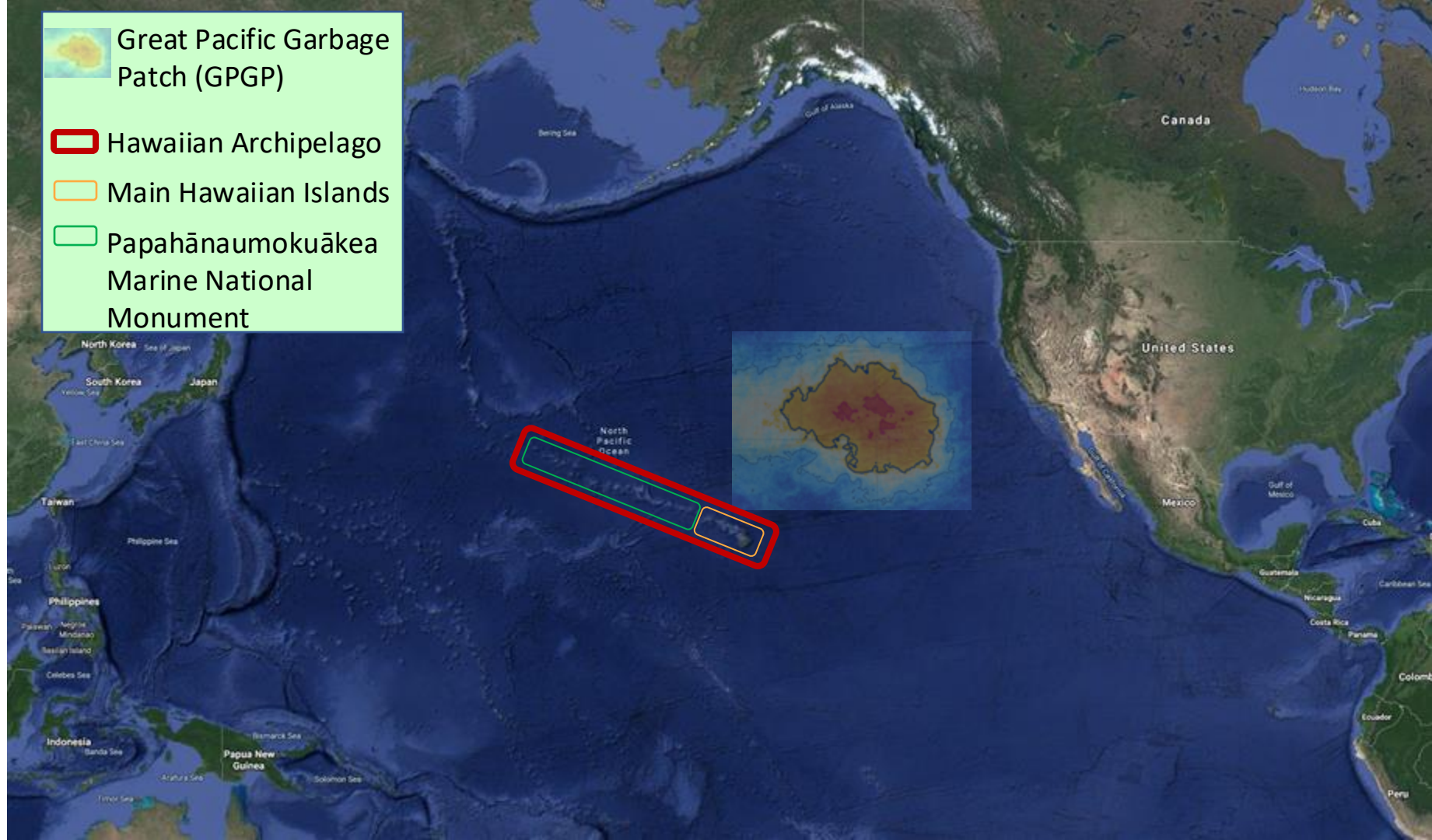
Hawaii Pacific University  
Center for Marine Debris Research

 Great Pacific Garbage Patch (GPGP)

 Hawaiian Archipelago

 Main Hawaiian Islands

 Papahānaumokuākea  
Marine National  
Monument







# Marine Debris in Hawai'i

- Hundreds of tons of plastic marine debris wash ashore in Hawai'i from distant locations
- ~80% of this marine debris is derelict fishing gear (DFG)
- The four most active organizations in Hawai'i remove 200 metric tons per year

# The Problem





# The Problem - Entanglements of Wildlife



NOAA Fisheries



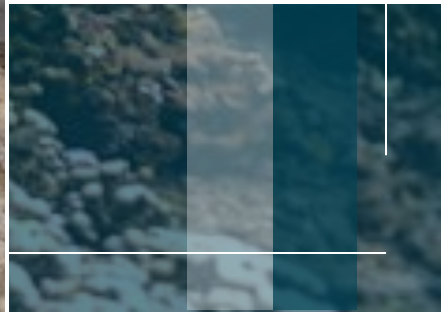
Rachel Sandquist



Jordi Chias/WWF/PA



# The Problem - Entanglements of Wildlife



# The Problem - Human Impact

- Entanglements of vessels
- Navigation & safety hazards
- Economic loss





# DFG Bounty Project



⇒ Financial compensation for in-water removal of DFG



## Goals

- Provide incentive to fishers to remove DFG
- Prevent DFG from harming near shore environments and organisms
- Surveys and rapid removal around O'ahu



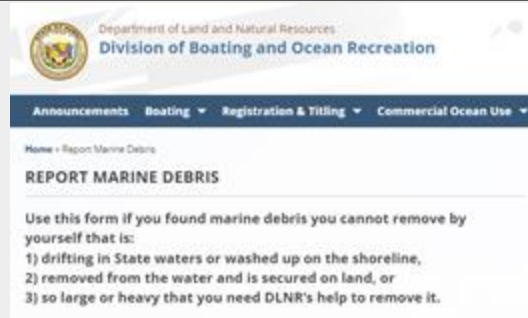
# How it Works

## Vessels of opportunity

- Hawai'i Longline Association - 150 O'ahu based vessels
  - Remove debris at sea
- O'ahu-based non-longline commercial fishers - 6 fishers
  - Remove debris at sea, near shore, shoreline



2.)



<https://dlnr.hawaii.gov/dobo/r/reportmarinedebrishawaii/>

3.)



<https://www.hpu.edu/cnccs/cmdr/research/dfg-bounty.html>



# How it Works

CMDR receives the DFG on and transports to our Plastic Recycling Research Facility in Honolulu for drying, weighing, and studying





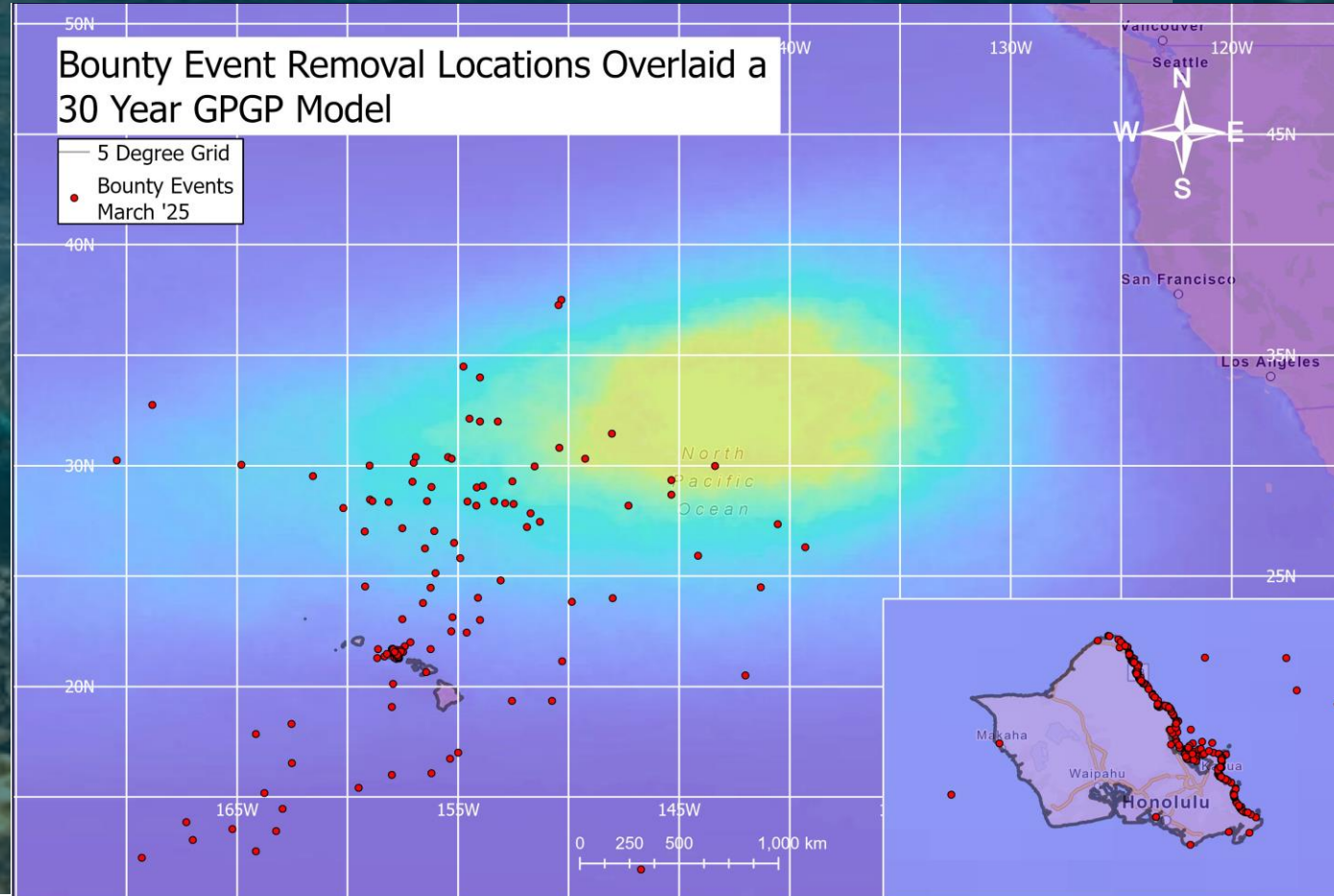
# Results (as of 10/31)

**175,600 lbs**  
**(79,600 kgs)** removed  
since Nov 2022

**\$162,000** paid to  
fishers

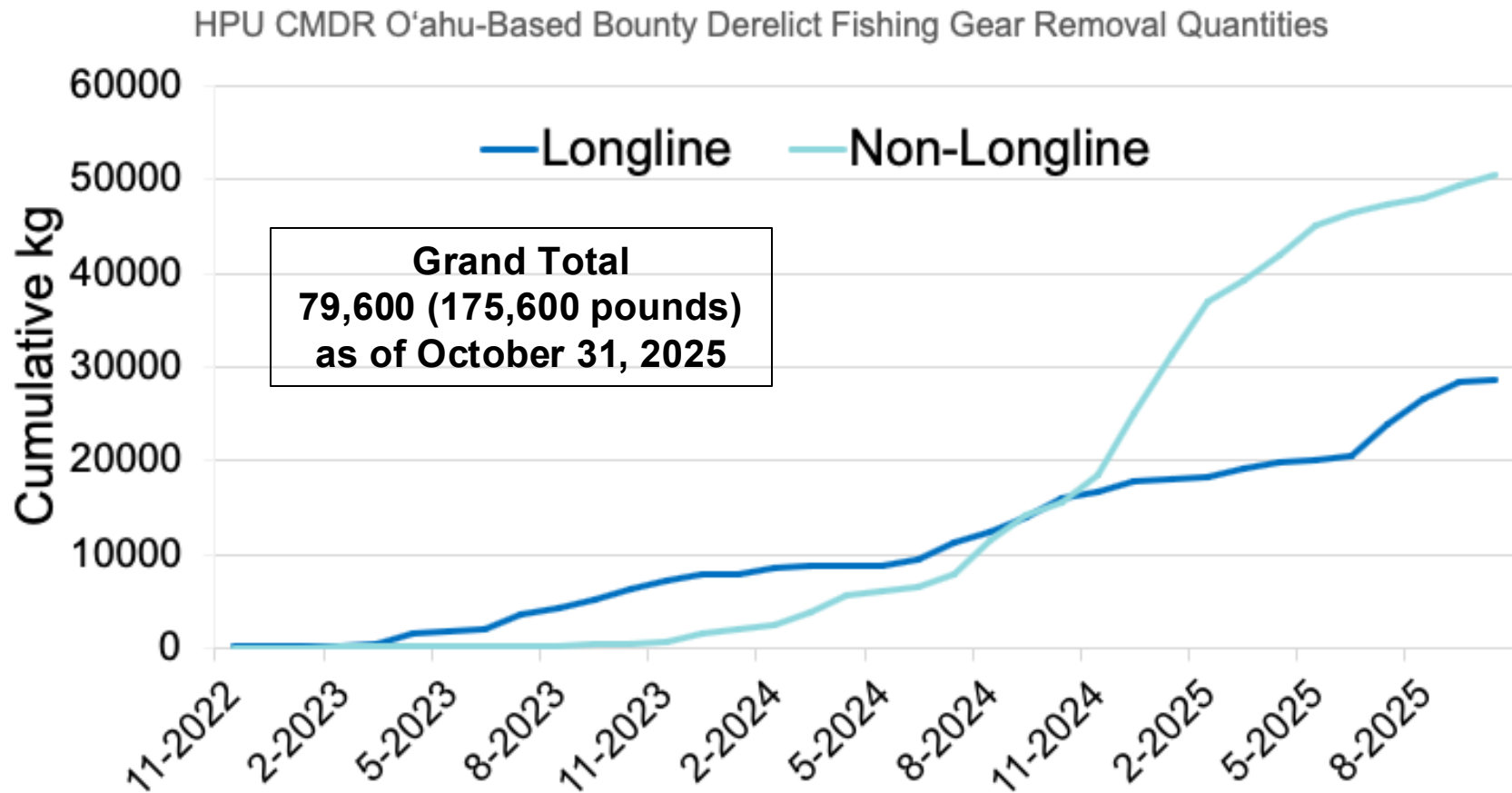
**667 DFG events**  
removed

**75 distinct**  
**fishers/vessels**  
participated



Credits: GPGP Model by Dr. Nikolai Maximenko, Map Made by Marquesa Calderon and Paige White

# Results

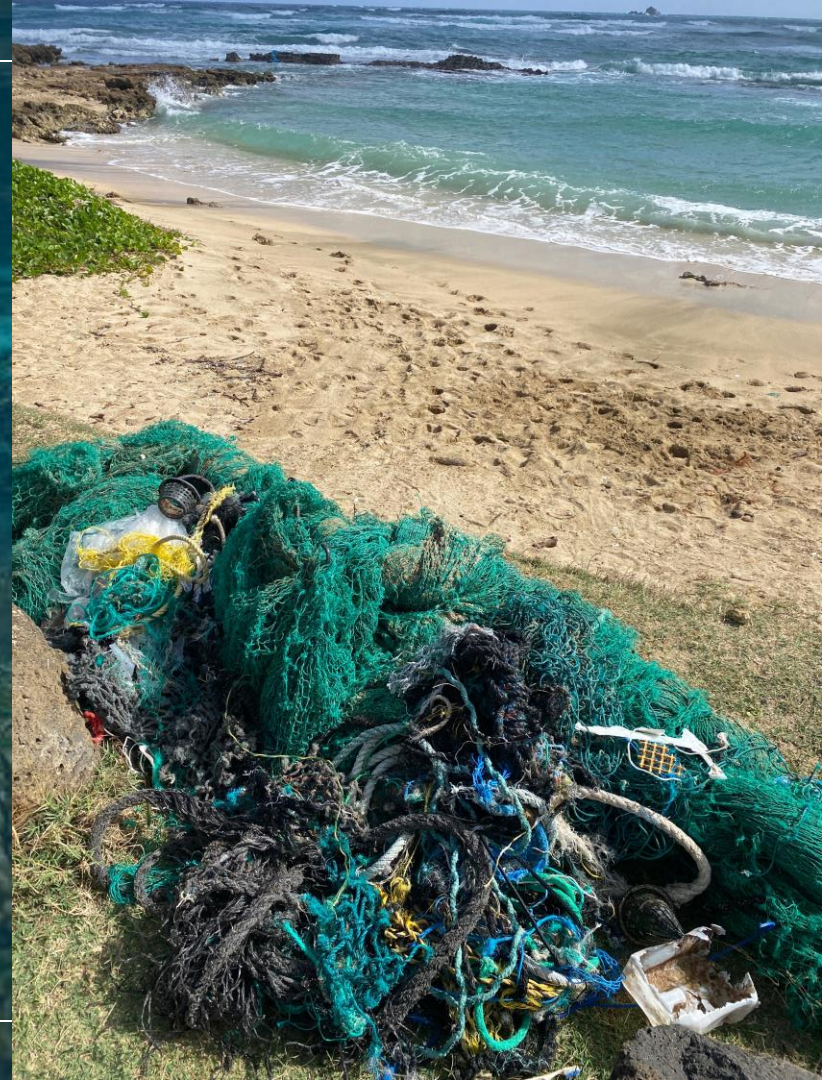




# Results - DFG types

## Conglomerate

- tangled mass of fishing nets, lines, and other DFG or debris – primarily trawl nets
- **>52% of events by count (351/667)**
- **>80% of events by mass**





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## dFADs – drifting Fish Aggregating Devices

- **>5% of events by count (37/667)**
- **5% of events by mass**
- **(254 FADs documented since 2009)**





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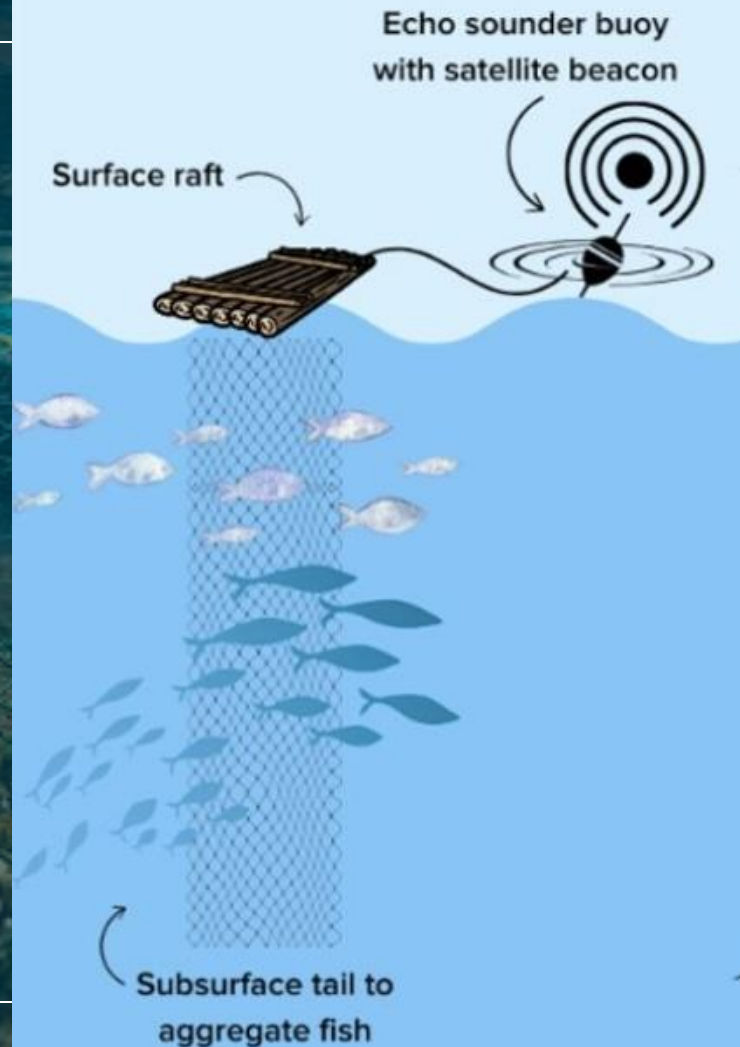
Other event types: floats, distinct net, distinct line, miscellaneous, aFAD, unique





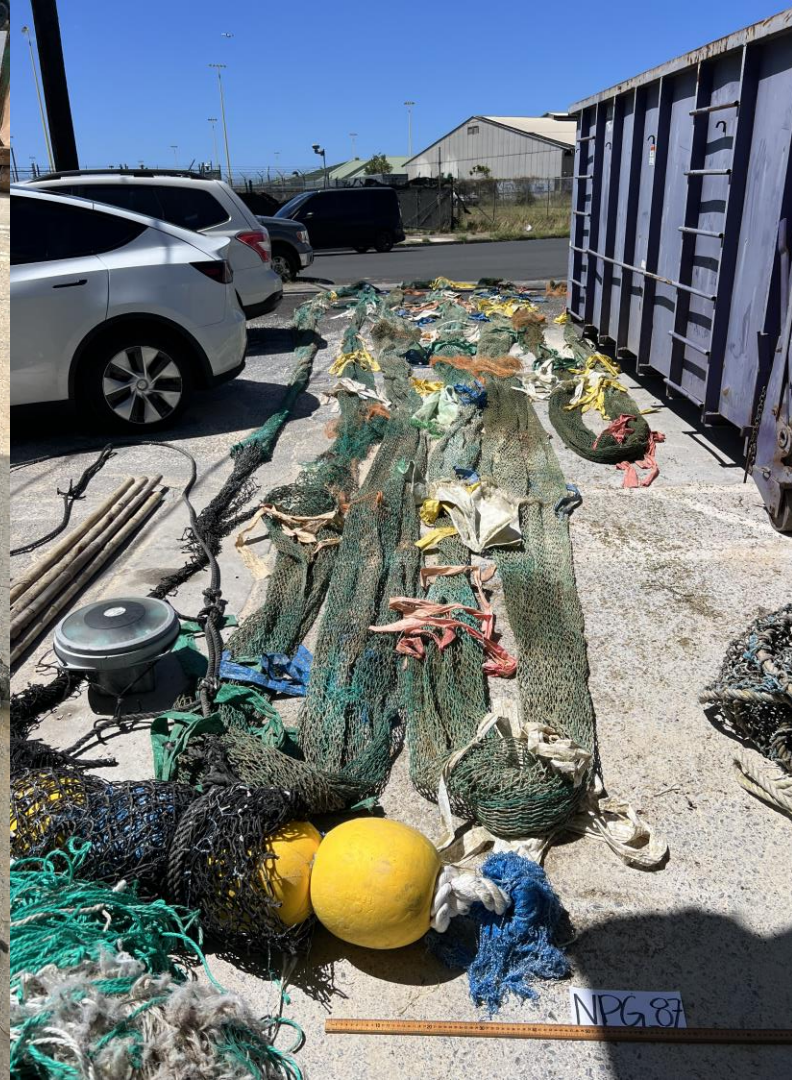
# dFADs

- Tropical tuna purse seine fishery
- More than 45,000 deployed annually
- Less than 10% recovered (Escalle et al 2019)
- Bulldoze coral reefs and entangle marine organisms
- 2024 and 2025 – Resolutions that FADs should be made less entangling and with more biodegradable materials



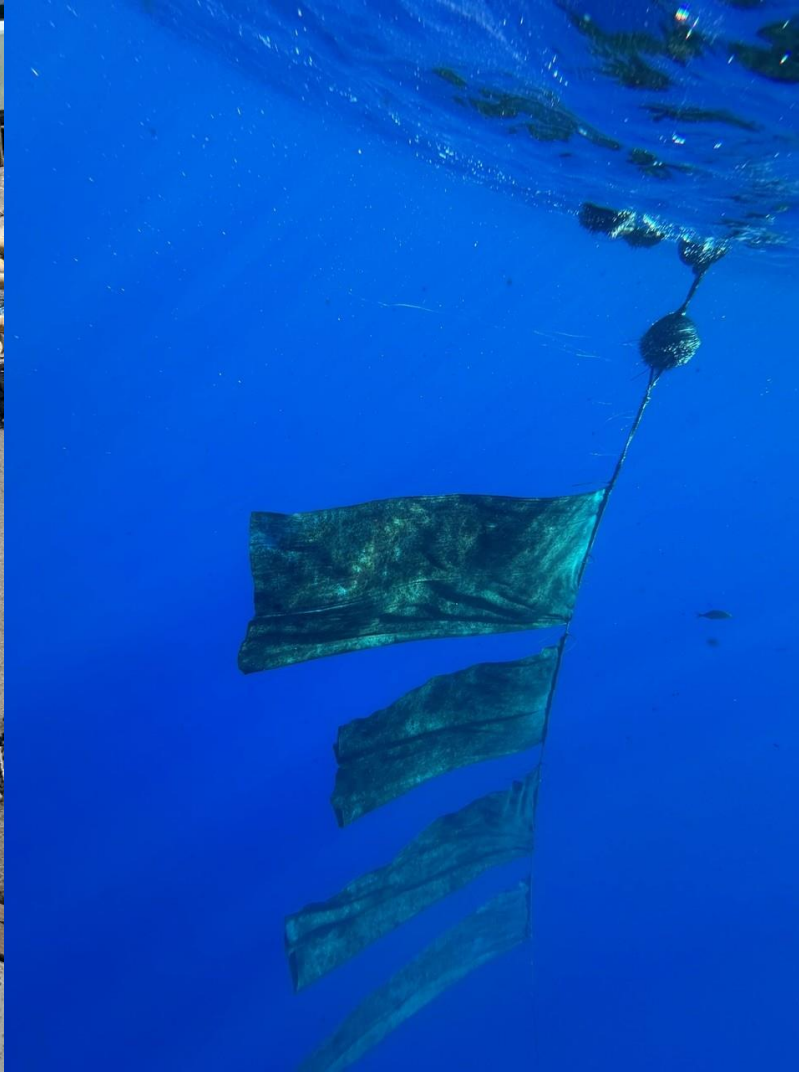


dFADs





dFADs

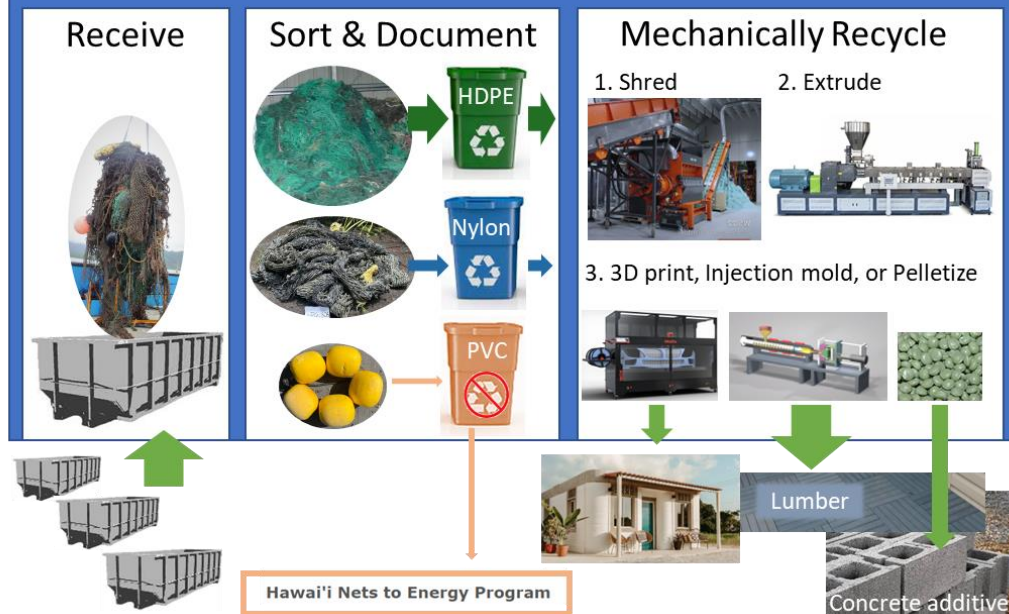




# What do we do with the DFG?



## Plastic Recycling Research Facility (PRRF)



## Nets to Infrastructure

Mechanically recycle into infrastructure products

- Locally made
- Locally used
- Long second life
- Reduce marine debris going to landfills or incineration



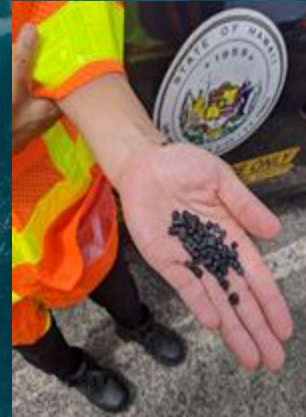
# What do we do with the DFG?



Local Artists



Nets to Roads



Nets to Energy



Research: Shredding, Recycling, Cutting  
Technology, Invasive Algae  
Repurpose: Project CocoNet, 3D print beehives



# Thank you!



Center for Marine  
Debris Research



# Questions?

cmdr@hpu.edu OR kstevens@hpu.edu



@debrisresearch



@MarineDebrisResearch



@company/center-for-marine-debris-research