

A vibrant underwater photograph showing a coral reef. Sunlight filters down from the surface, creating bright highlights on the coral structures and the sandy ocean floor. Various small, colorful fish are scattered throughout the scene.

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

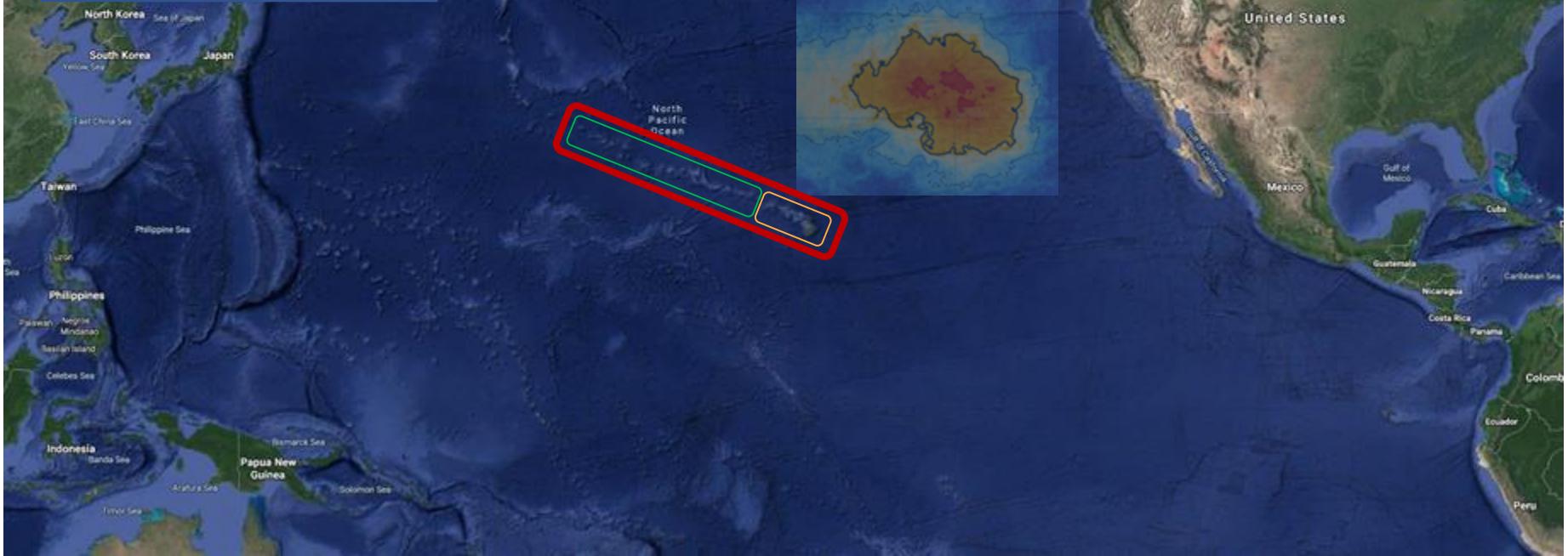
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Great Pacific Garbage Patch (GPGP)

- 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



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



Ocean Conservancy®

⇒ 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



1.)

Department of Land and Natural Resources
Division of Boating and Ocean Recreation

Announcements Boating Registration & Titling Commercial Ocean Use

Home > Report Marine Debris

REPORT MARINE DEBRIS

Use this form if you found marine debris you cannot remove by yourself that is:

- 1) drifting in State waters or washed up on the shoreline,
- 2) removed from the water and is secured on land, or
- 3) so large or heavy that you need DLNR's help to remove it.

<https://dlnr.hawaii.gov/dobo/reportmarinedebris|hawaii/>



<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



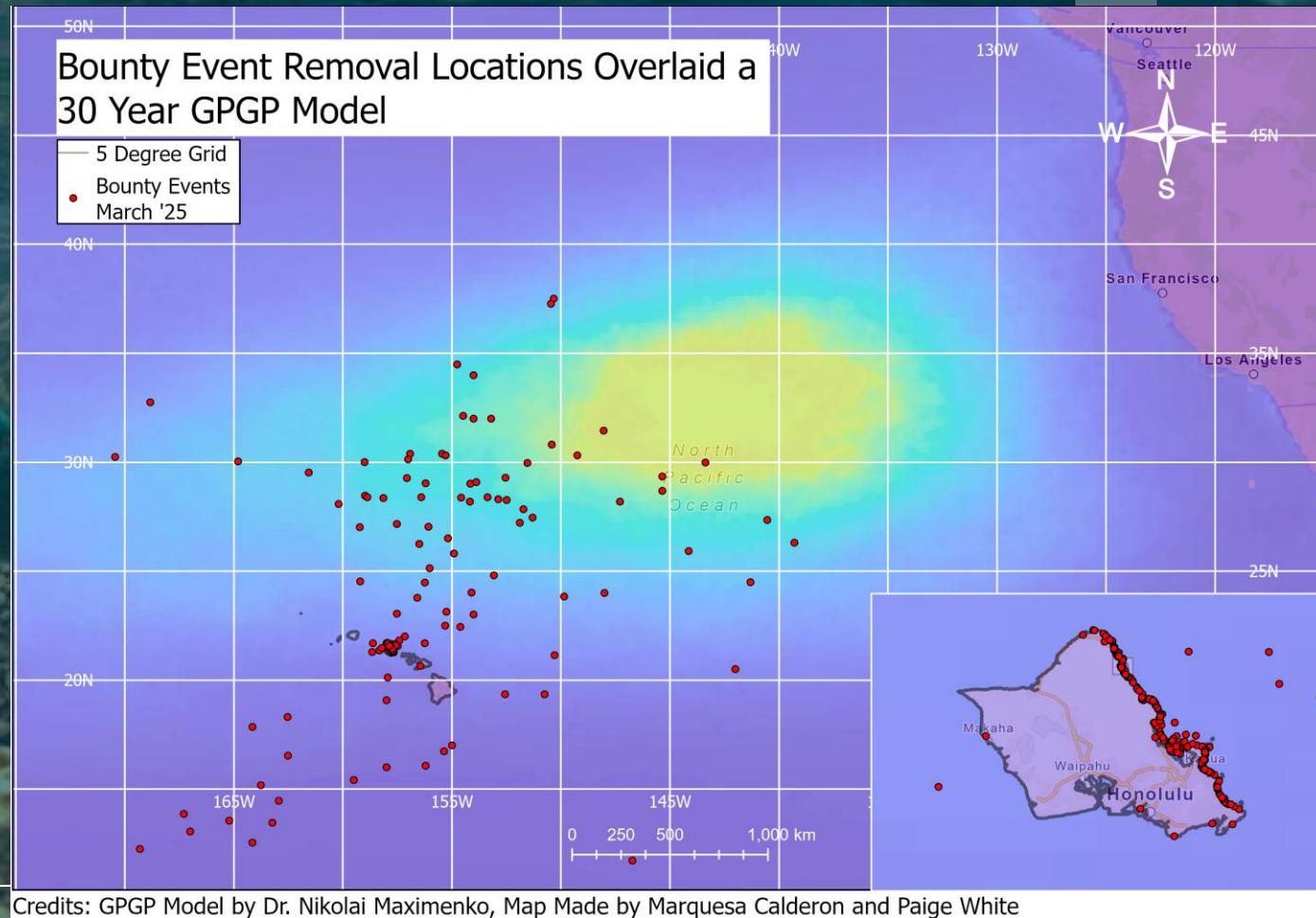
Results (as of 10/31)

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

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

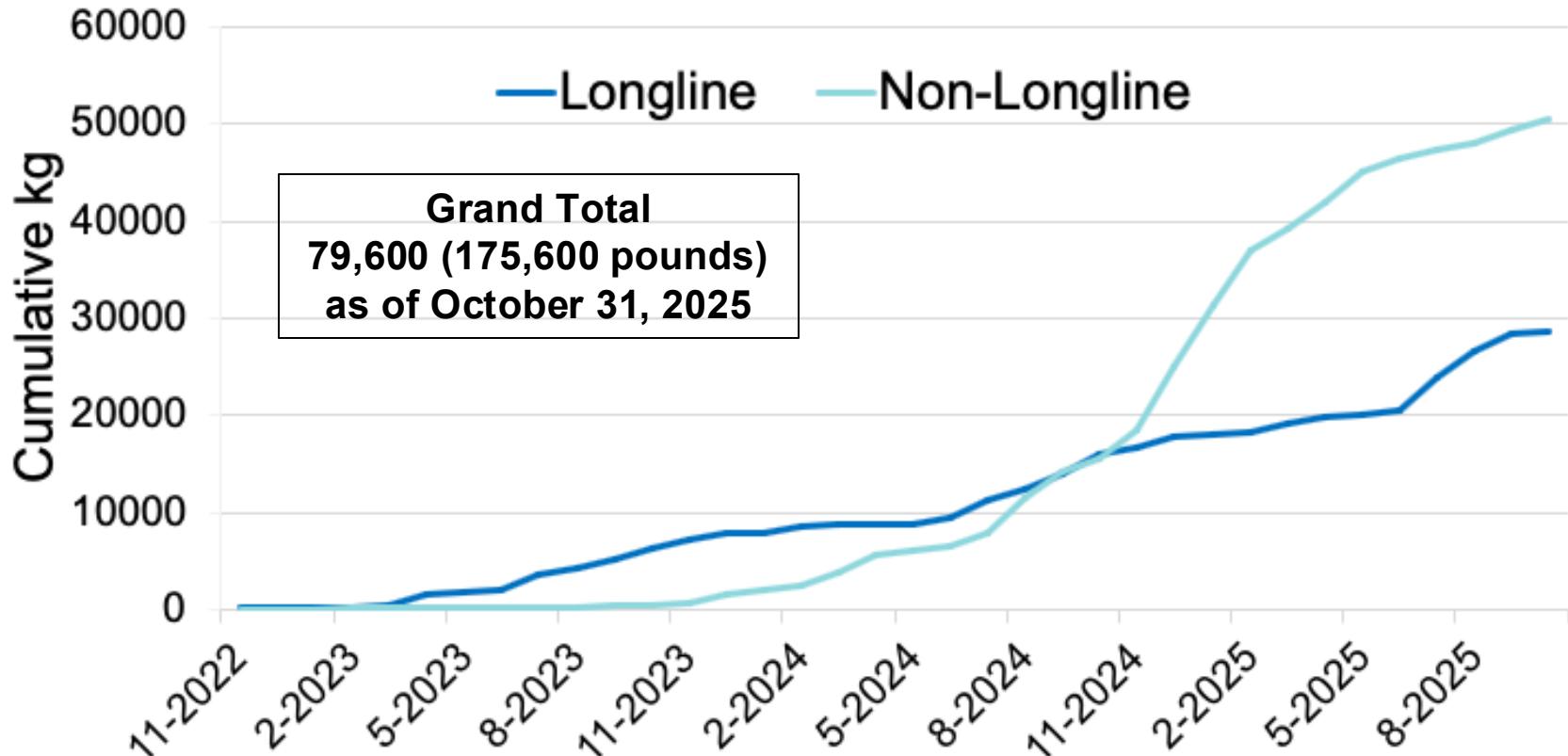
667 DFG events removed

75 distinct
fishers/vessels
participated



Results

HPU CMDR O'ahu-Based Bounty Derelict Fishing Gear Removal Quantities



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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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

dFADs – drifting Fish Aggregating Devices

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



Results - DFG types

Conglomerate

- tangled mass of fishing gear, other DFG or debris –
- >52% of events by count
- >80% of events by mass

dFADs – drifting Fish Aggregations

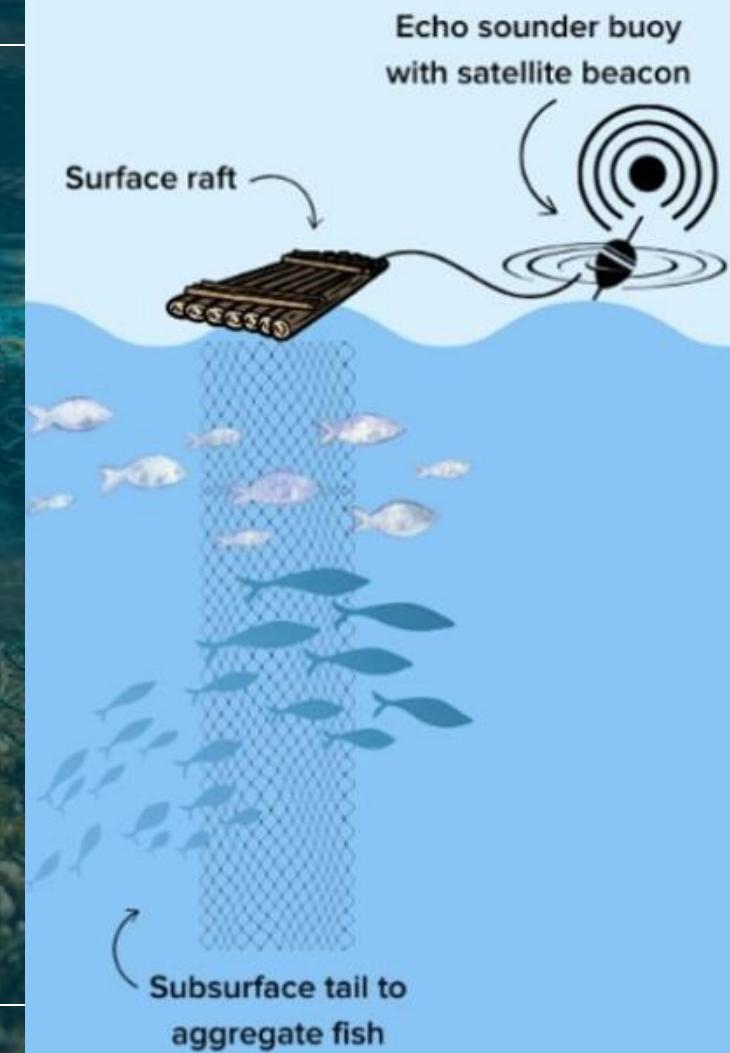
- >5% of events by count
- 5% of events by mass
- (254 FADs documented)

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



NPG 87

What do we do with the DFG?



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?



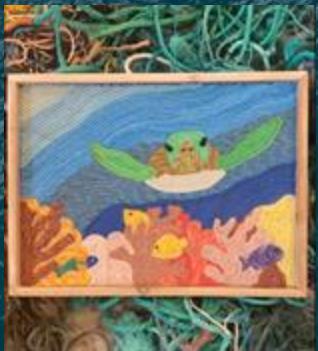
Local Artists



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?

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