

Finding and Collecting Marine Plastic Debris Mid-Ocean October 2021

Mary Crowley
Founder & Executive Director
Ocean Voyages Institute



PASSION
FOR THE
OCEAN





OCEAN VOYAGES INSTITUTE

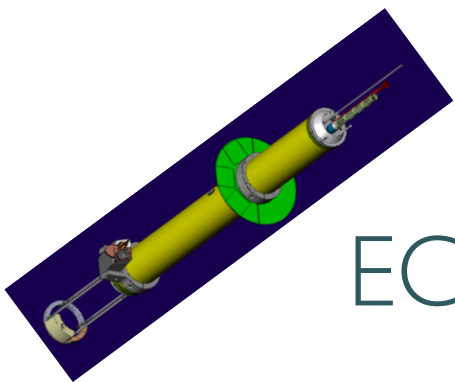
- 1979 Founded. Sail Training & Marine Sciences Education
- 2009: OVI launches “Ocean Cleanup Initiative”
- 2009: Kaisei & New Horizon Expeditions to the Gyre
- 2010: 30-day Gyre Expedition / Think Tank Formed
- 2012: July & Aug Tsunami Debris Expeditions
- 2013 – 2018 Cleanups, Research and Development, Production of GPS Satellite Trackers



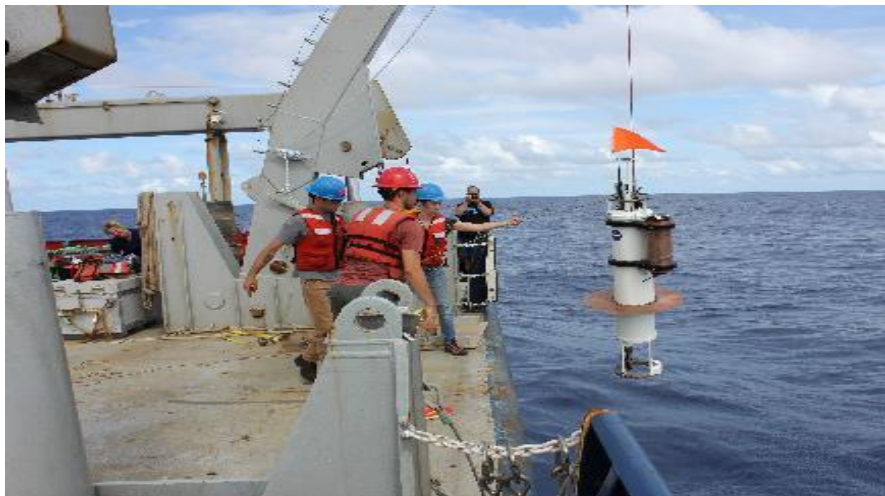
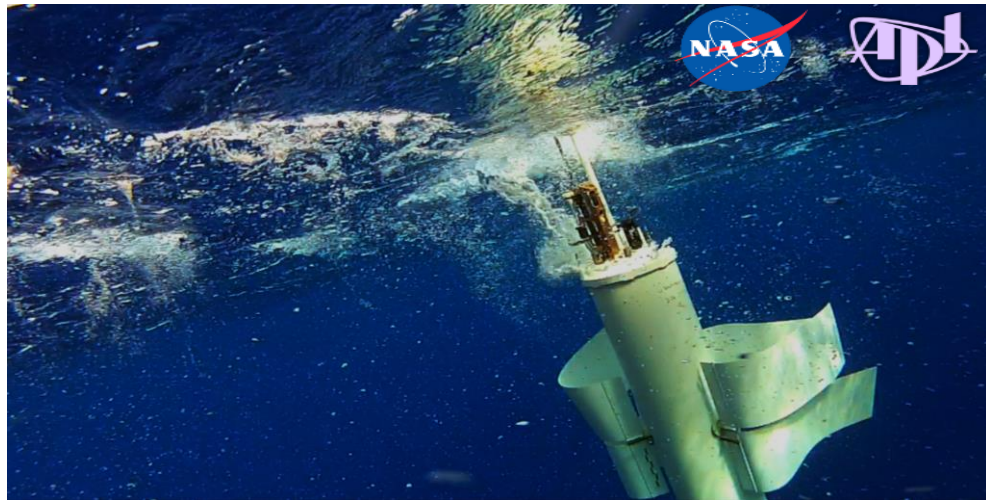
OCEAN CLEANUP EXPANDS



- 2019: Record Setting Cleanup expedition removes over 84,000 pounds of plastic from the ocean.
- 2019: Oct inter-island cleanup & Kane'ohe Bay removes over 15,000 pounds of plastic.
- 2020: Cleanup sets new record with over 340,000 pounds of plastic removed from the ocean.



ECOFLOAT



A WONDERFUL &
SUCCESSFUL
COLLABORATION



NASA Interdisciplinary Science Project: Physical and biological processes maintaining a unique floating ecosystem of the North Pacific garbage patch

Co-sponsored by NASA Physical Oceanography, Biodiversity, and Ecological Forecasting

Project Team:

Nikolai Maximenko and Jan Hafner - University of Hawaii

Gregory Ruiz, Linsey Haram, and Chela Zabin – Smithsonian Environmental Research Center

Luca Centurioni and Verena Hormann - Scripps Institution of Oceanography

Andrey Shcherbina - University of Washington

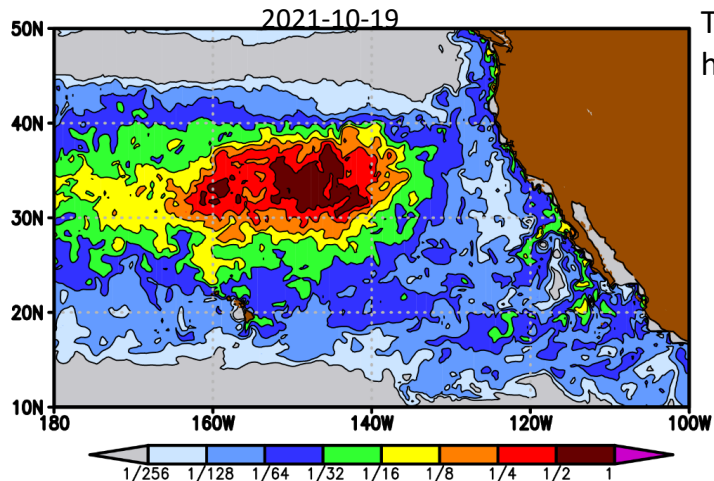
Mary Crowley - Ocean Voyages Institute

Cathryn Clarke Murray and Cynthia Wright - Fisheries and Oceans Canada

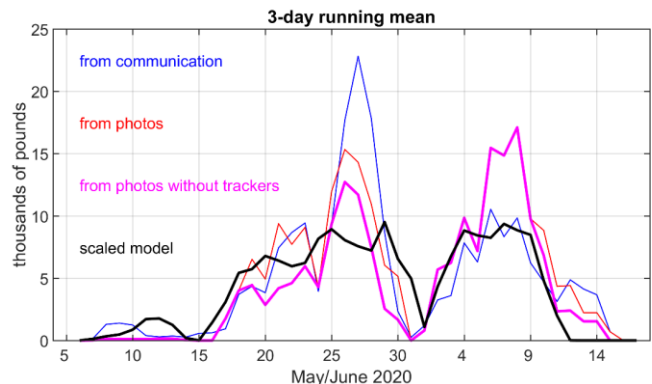
James Carlton – Williams College

Collaboration between OVI cleanup operations and UH modeling studies

Near-real time model maps



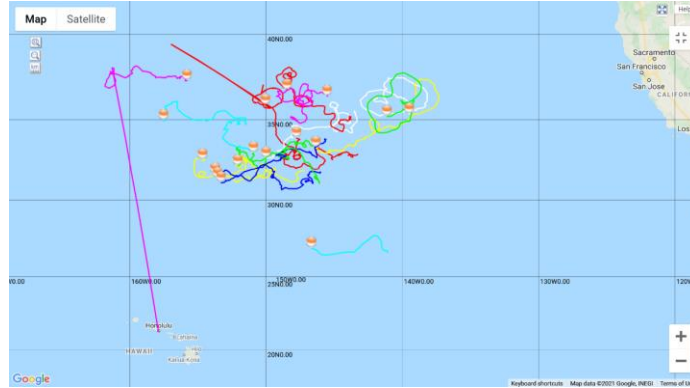
Trajectories of OVI GPS trackers helped to improve UH model, which in turn helped to optimize OVI cleanup operations.



Correlation between model and retrieved debris = 0.80



OVI GPS trackers, attached to real debris



2021 – CONTINUING OCEAN CLEAN UP GLOBALLY!



THE SECRET OF OUR SUCCESS!





TRACKERS AT WORK



CLOSE AND PERSONAL

A TERRIBLE TOLL ON OUR OCEAN





LIKE AN ICEBERG

SEA TURTLE KILLED BY A NET





UPCYCLING, RECYCLING & REPURPOSING

BYFUSION – PLASTIC TO CONSTRUCTION
MATERIALS

RESYNERGI CALIFORNIA – PLASTIC TO FUEL

RESPILION CZECH – PLASTIC TO MEDICAL
SUPPLIES

HPOWER HAWAII – PLASTIC TO CLEAN
ENERGY

BRACENET GERMANY
VARIOUS INDEPENDENT ARTISTS
UH CLIMATE ACTION ARTISTS

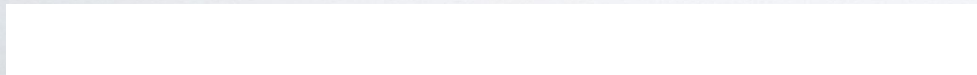


UPCYCLED, RECYCLED, REPURPOSED





SAILING INTO OUR FUTURE



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