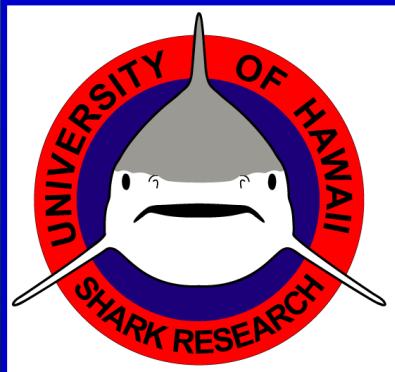


# SHARK RESEARCH IN HAWAII

Kim Holland, Carl Meyer, Shark Lab Team



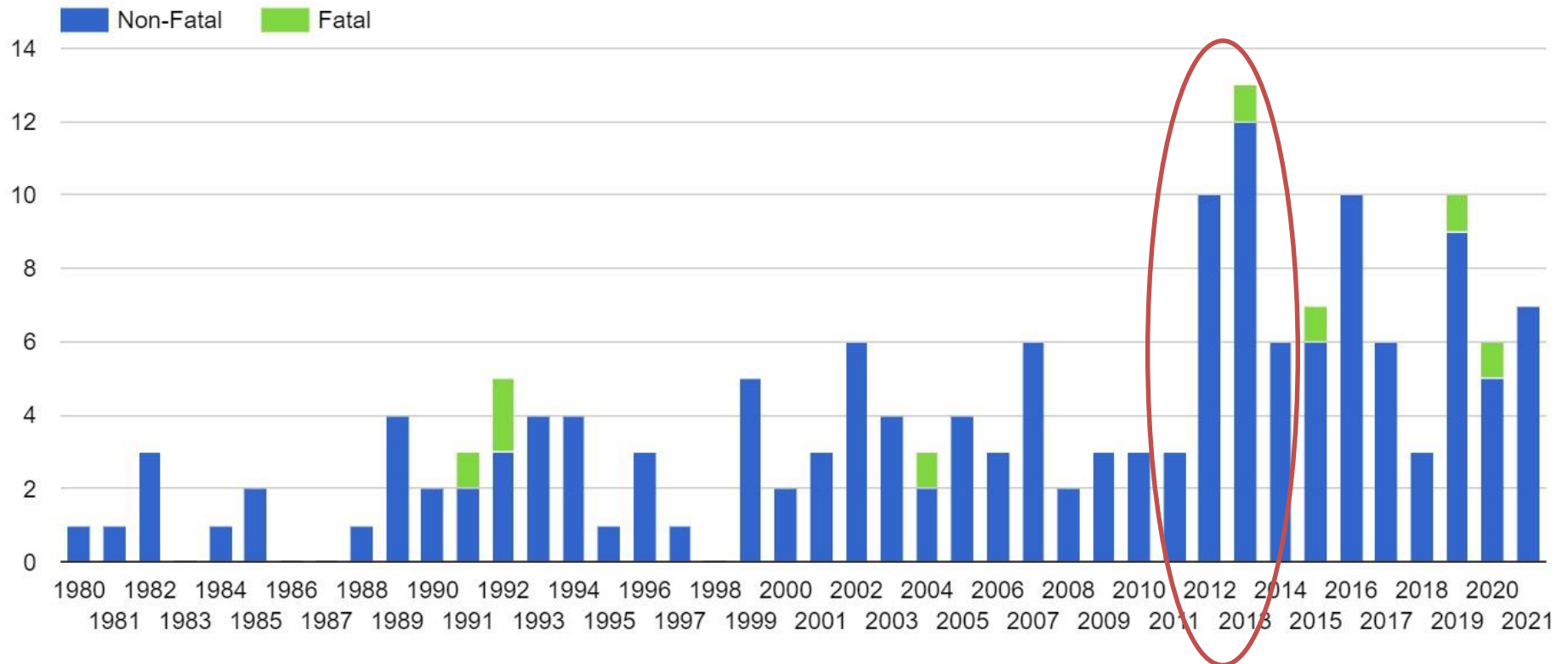
Hawaii Institute of Marine Biology  
University of Hawaii at Manoa



# Two Main Themes

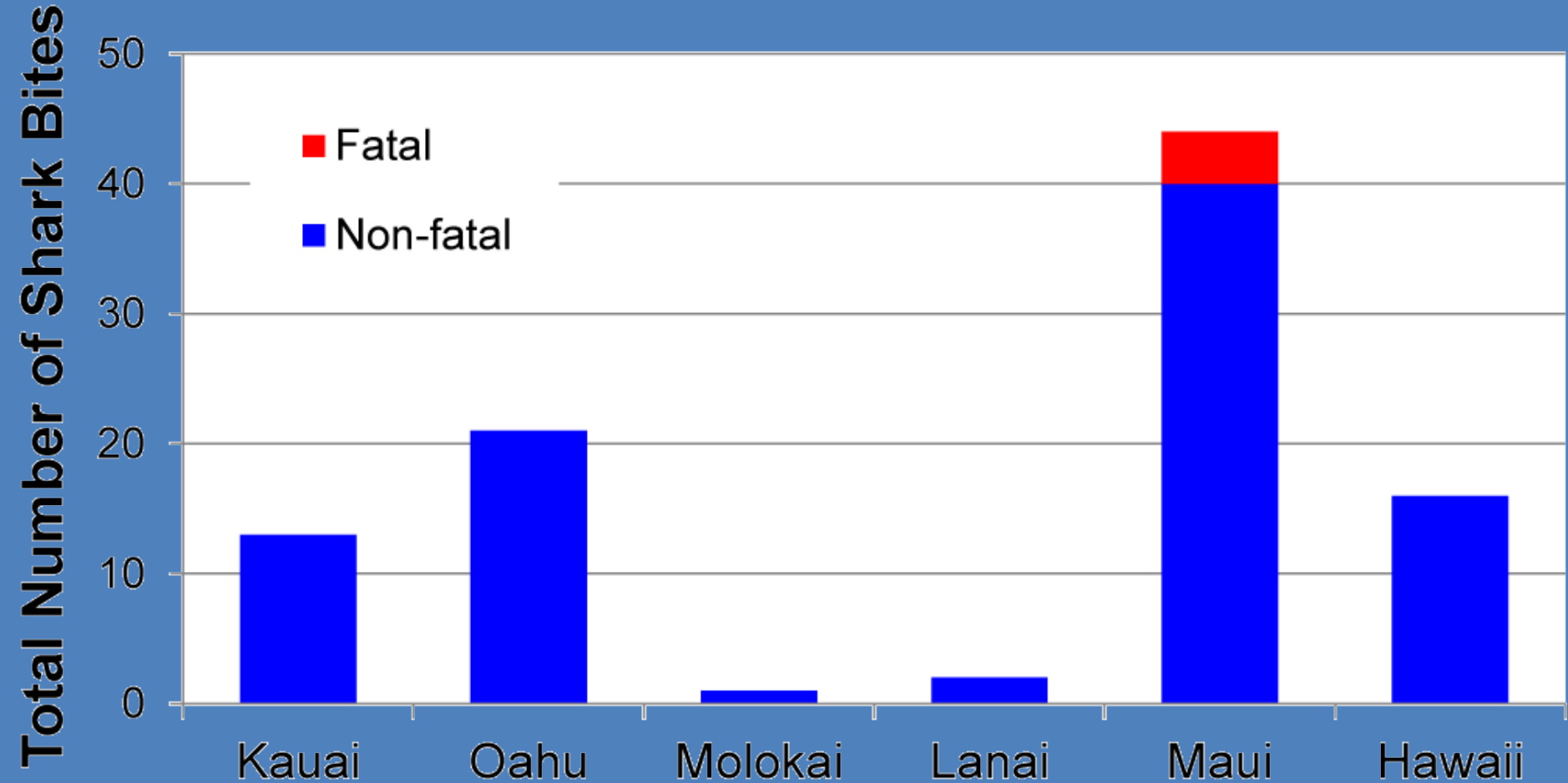
- Tracking and “Sharks as Oceanographers”
- Shark Deterrent Research

# Annual Shark Attacks





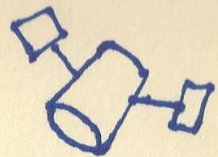
### Shark Bite Frequency By Island 1995-2015



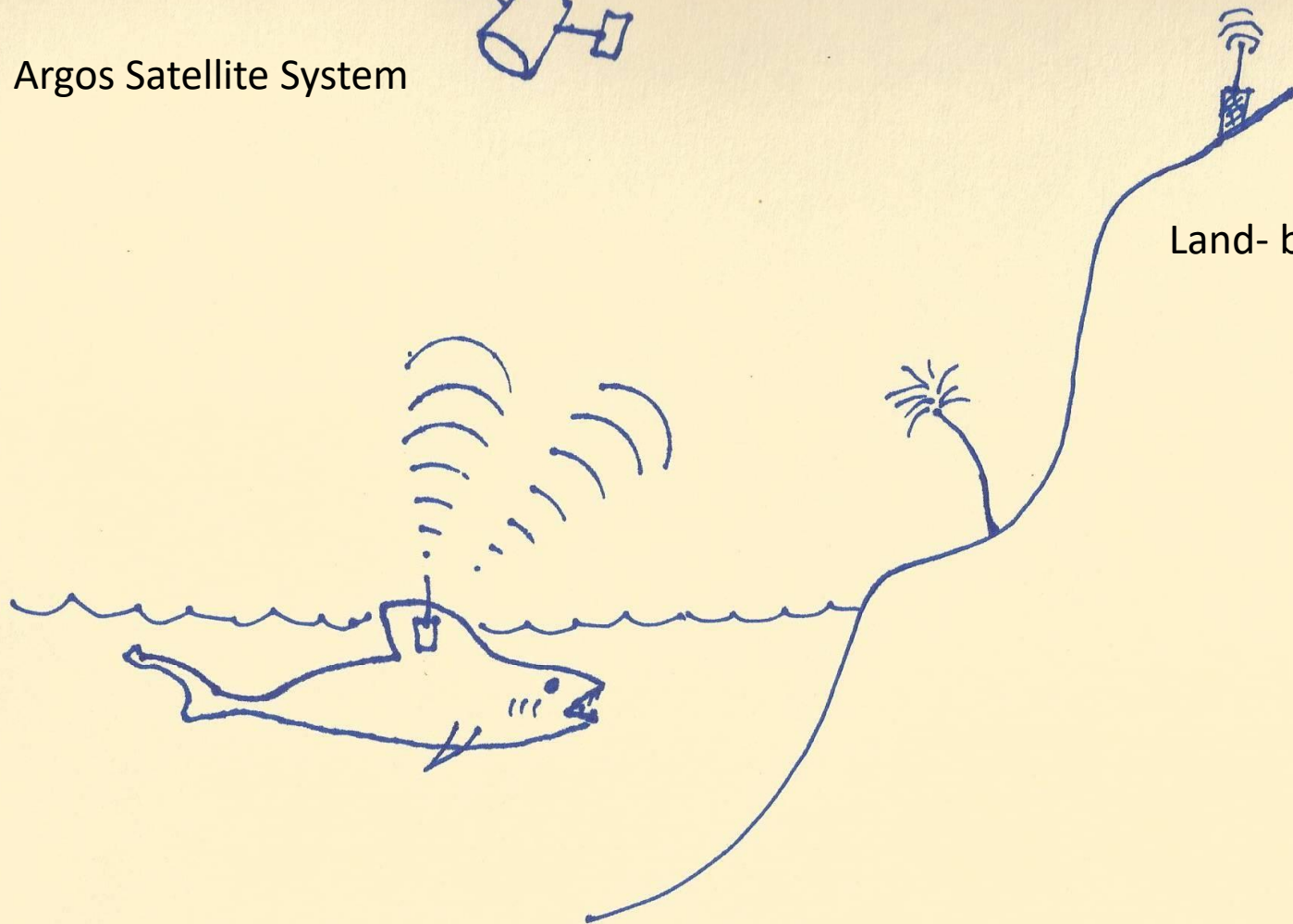




Argos Satellite System

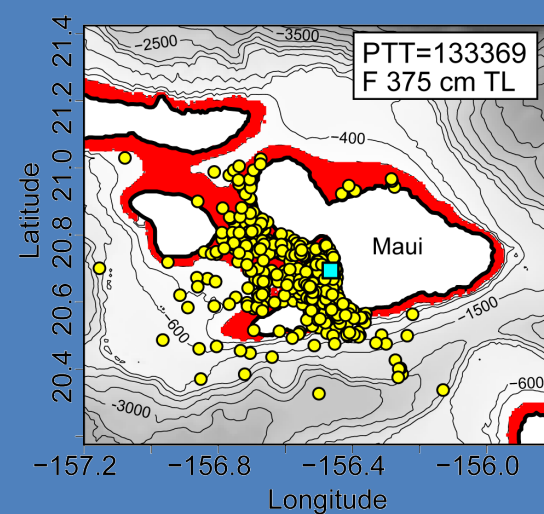
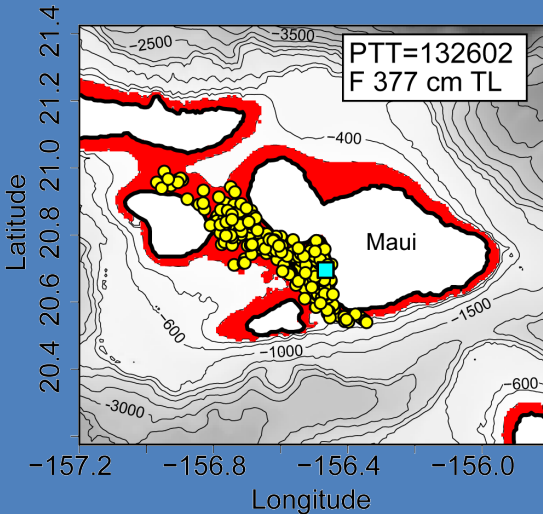
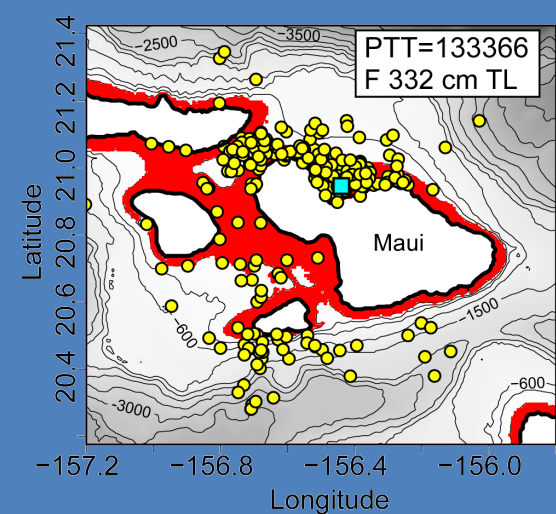
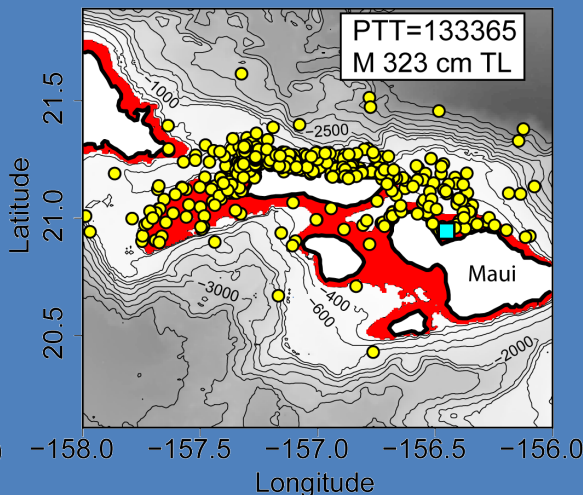
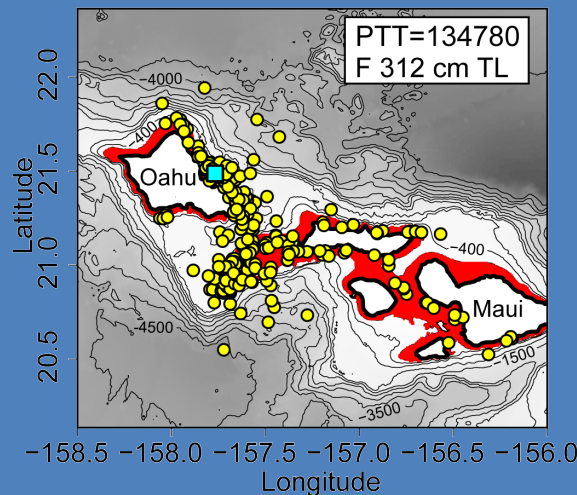
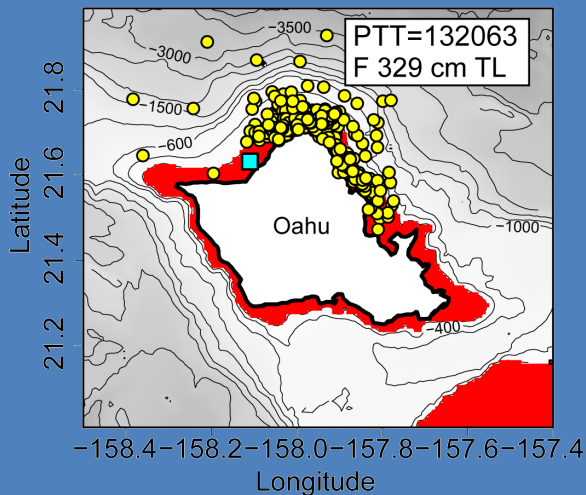


Land-based receivers





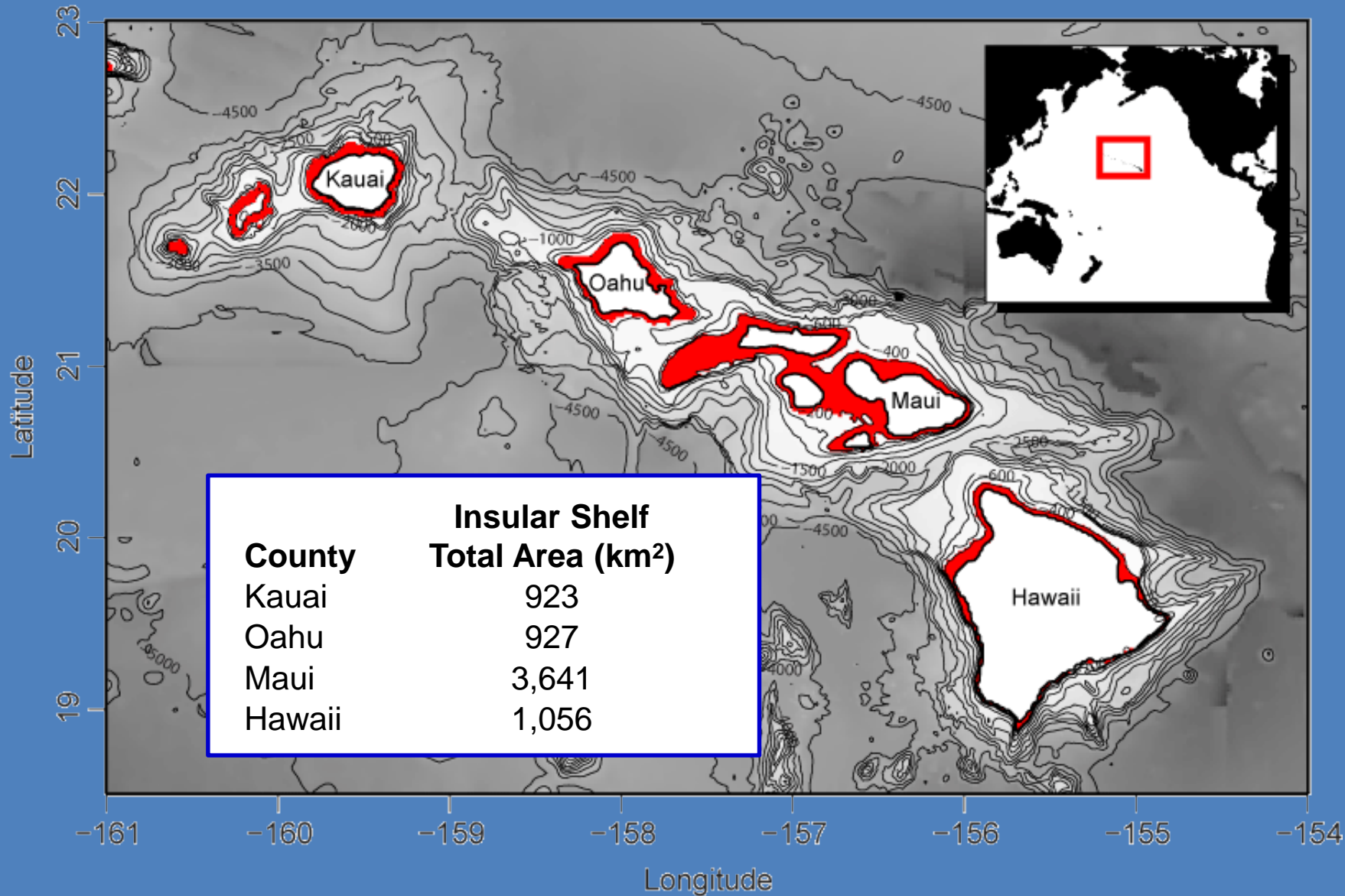
### Satellite Tracks of 6 Tiger Sharks Captured Around Maui & Oahu

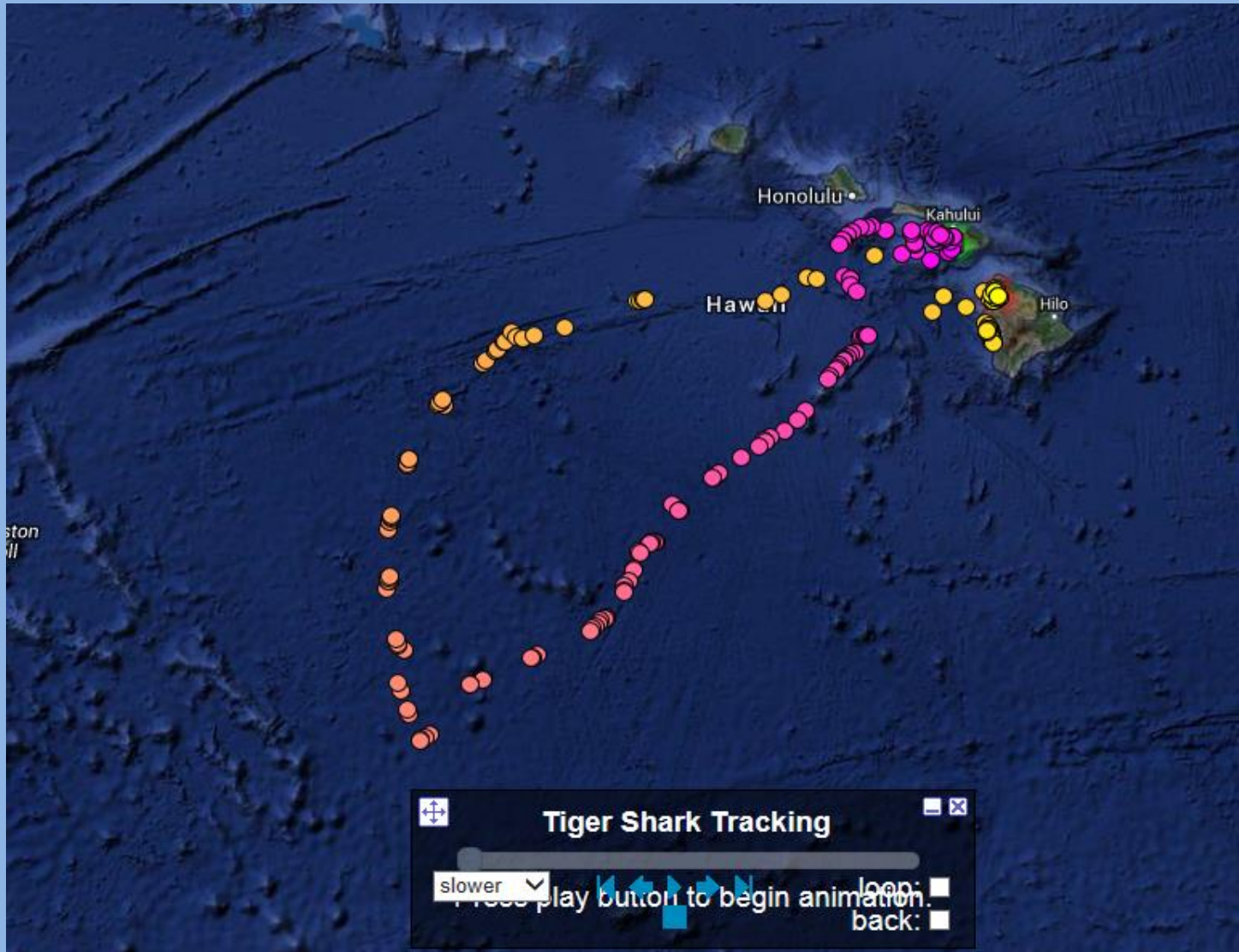






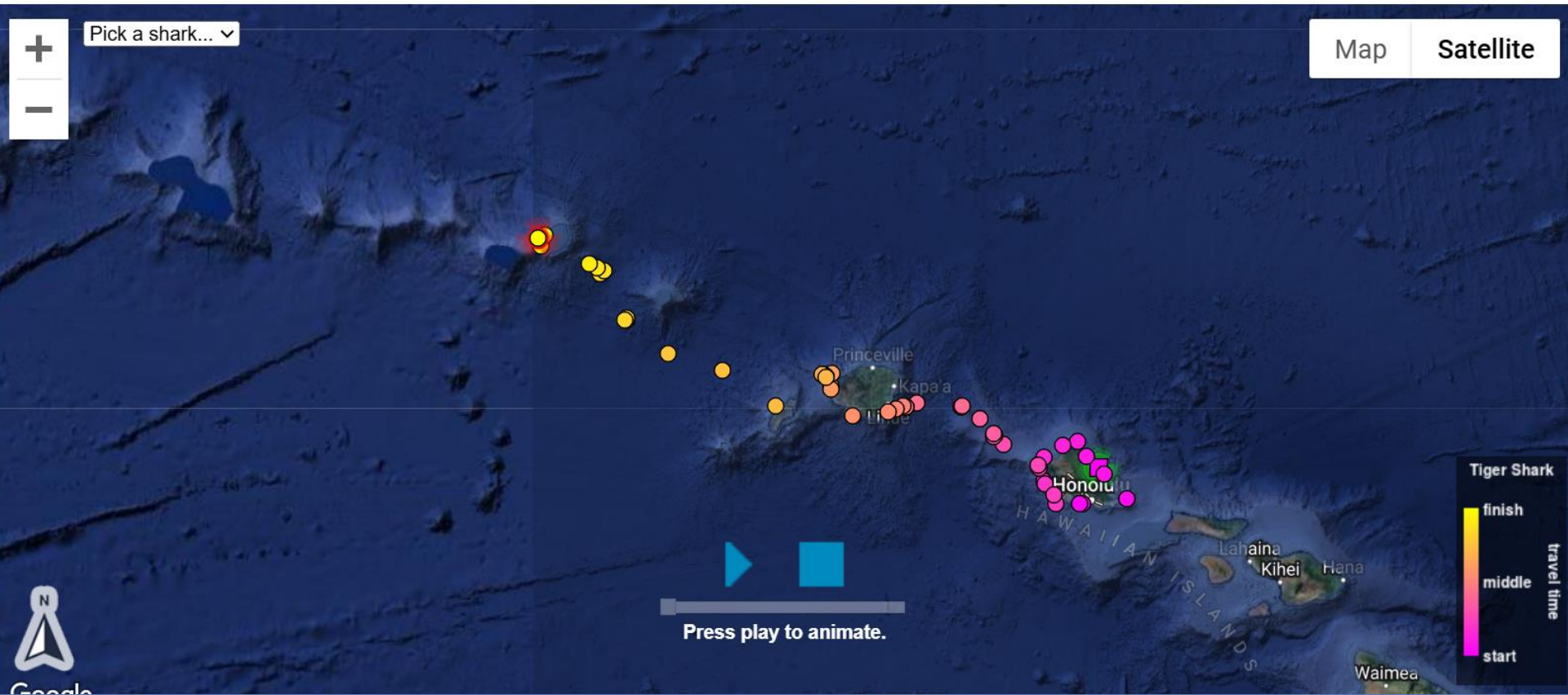
### Distribution of Insular Shelf Habitat Within the Main Hawaiian Islands







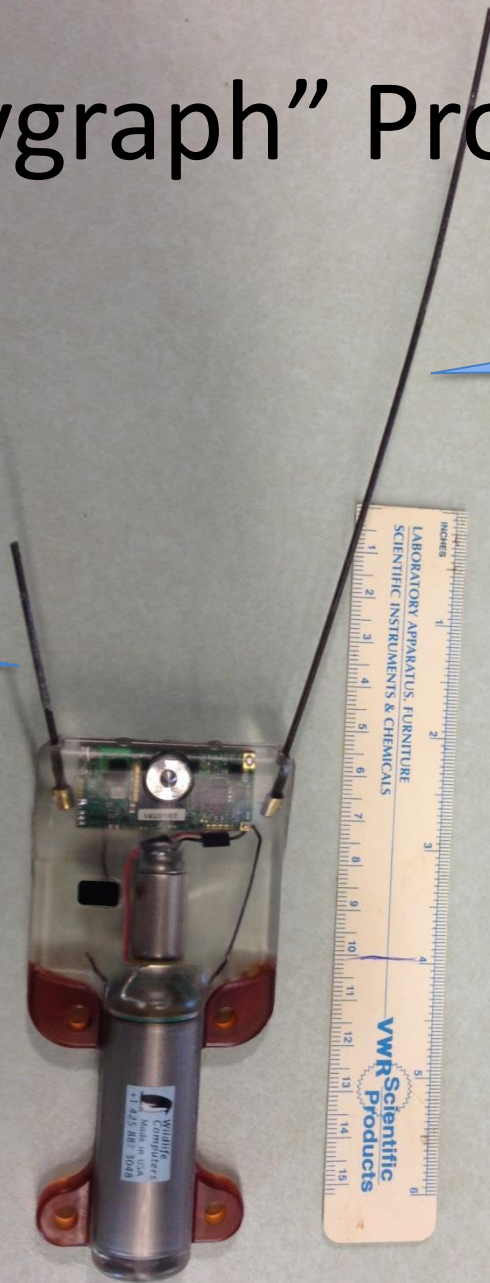
<https://www.pacioos.hawaii.edu/projects/sharks/>



# “Bathygraph” Profiling Tag

GPS  
ANTENNA

ARGOS  
ANTENNA

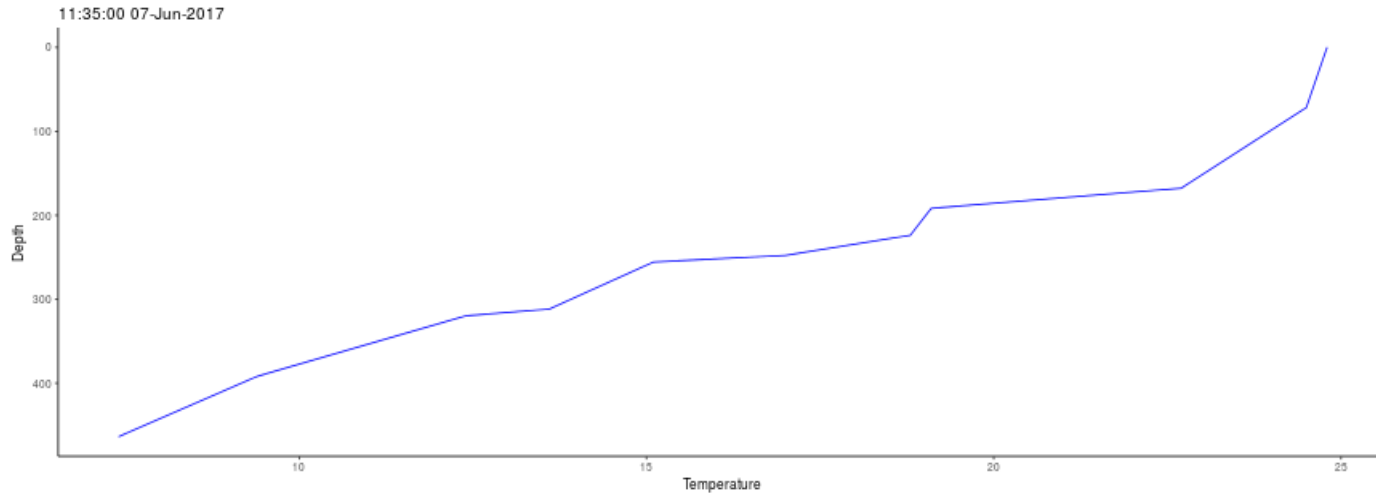


# OCEAN DEPTH/TEMPERATURE PROFILES

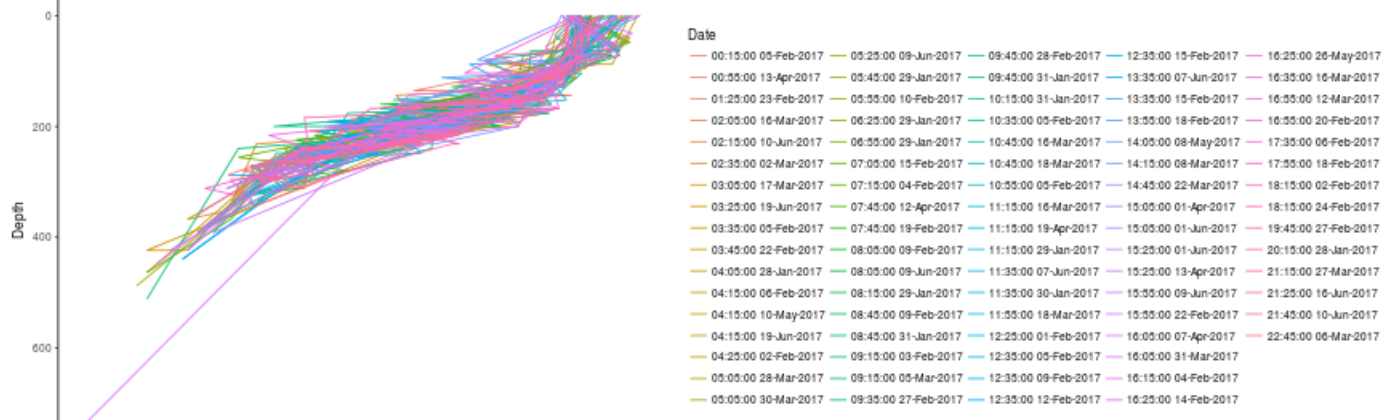
Summary

Details

Map



All Profiles

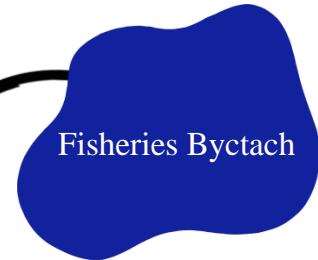
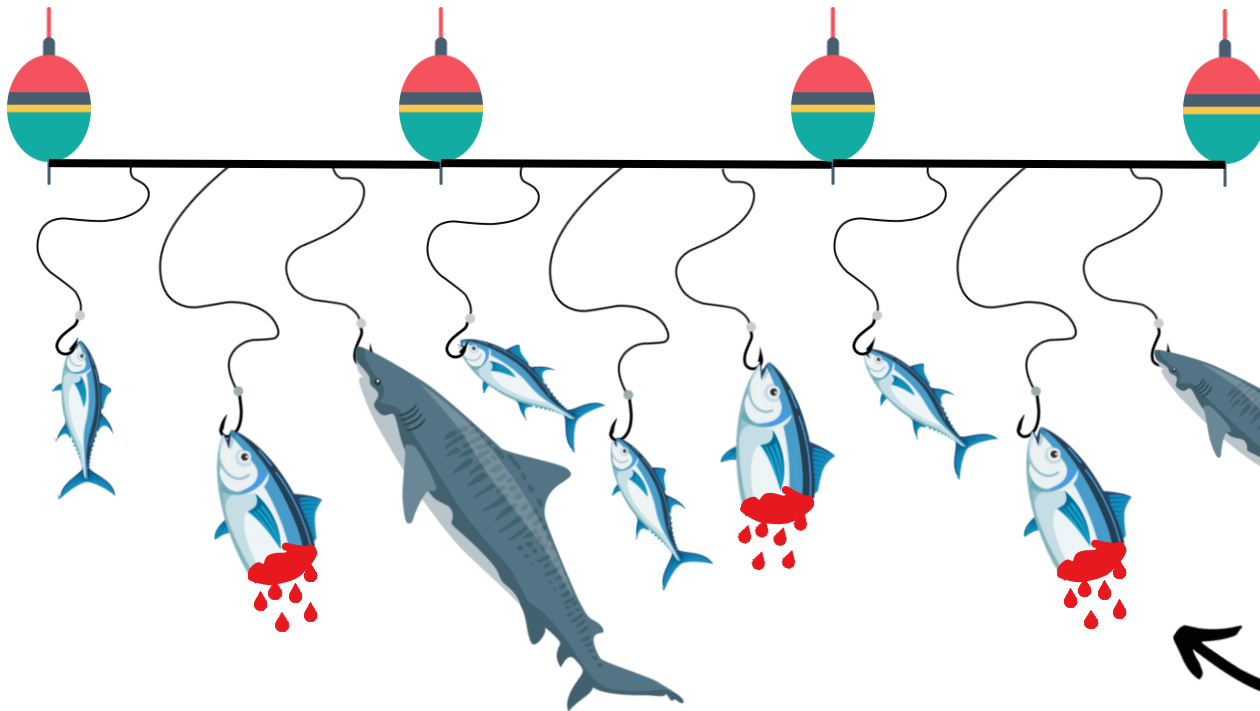
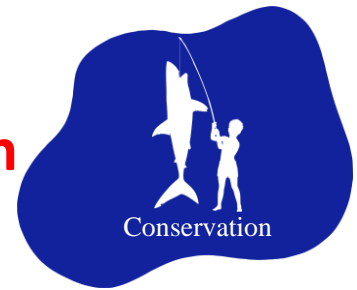


# Deterrent Applications

- Human safety
  - Swimmers
  - Surfers/Divers
- Shark Bycatch Reduction
  - Primarily longline fisheries
- Shark Depredation Reduction
  - Longlines (pelagic and benthic)
  - Bottom fish handline (“snapper”) fisheries

# Key Application

## Preventing Shark Bycatch and Depredation





# Capture and Transport to Captivity

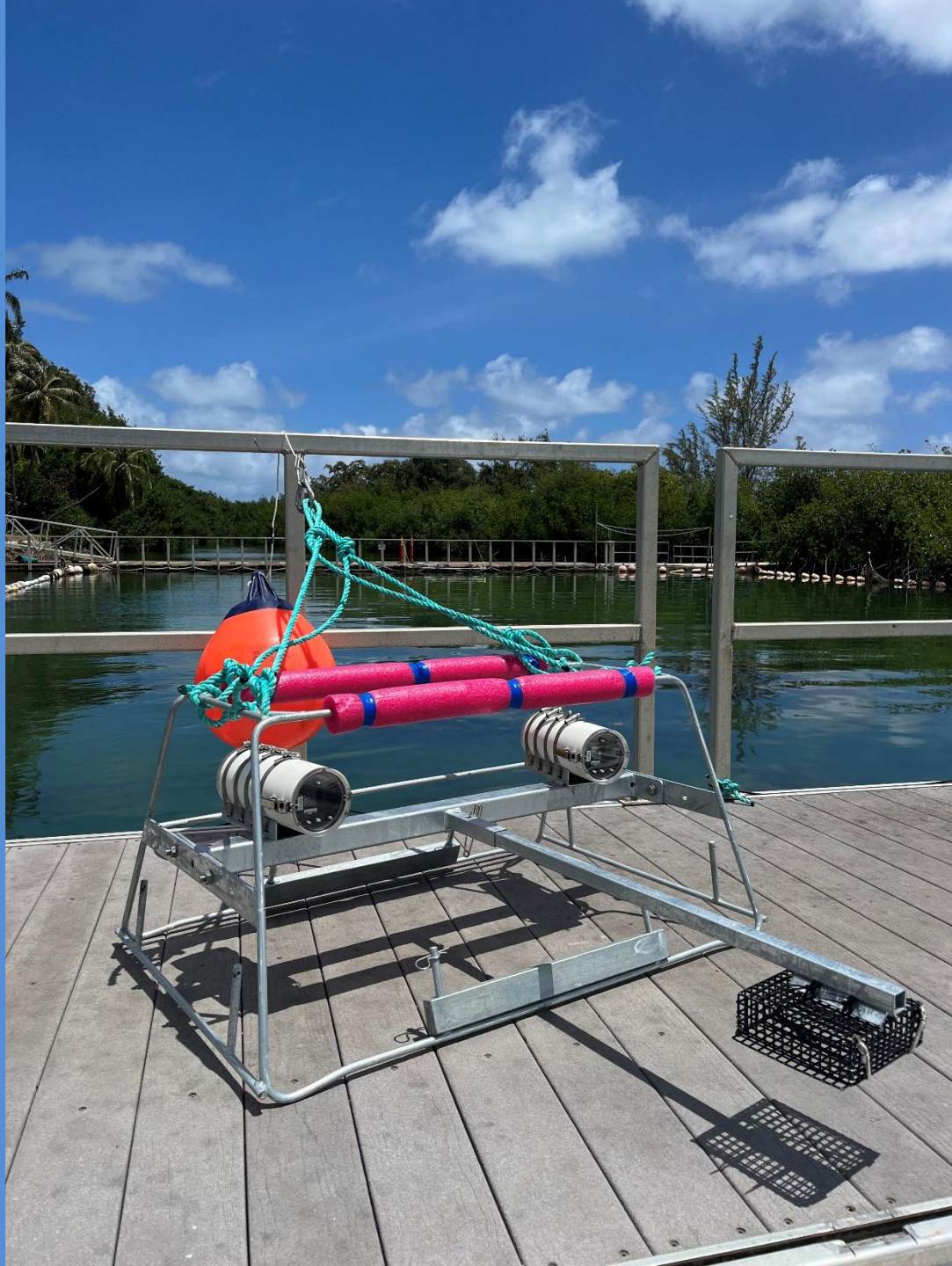


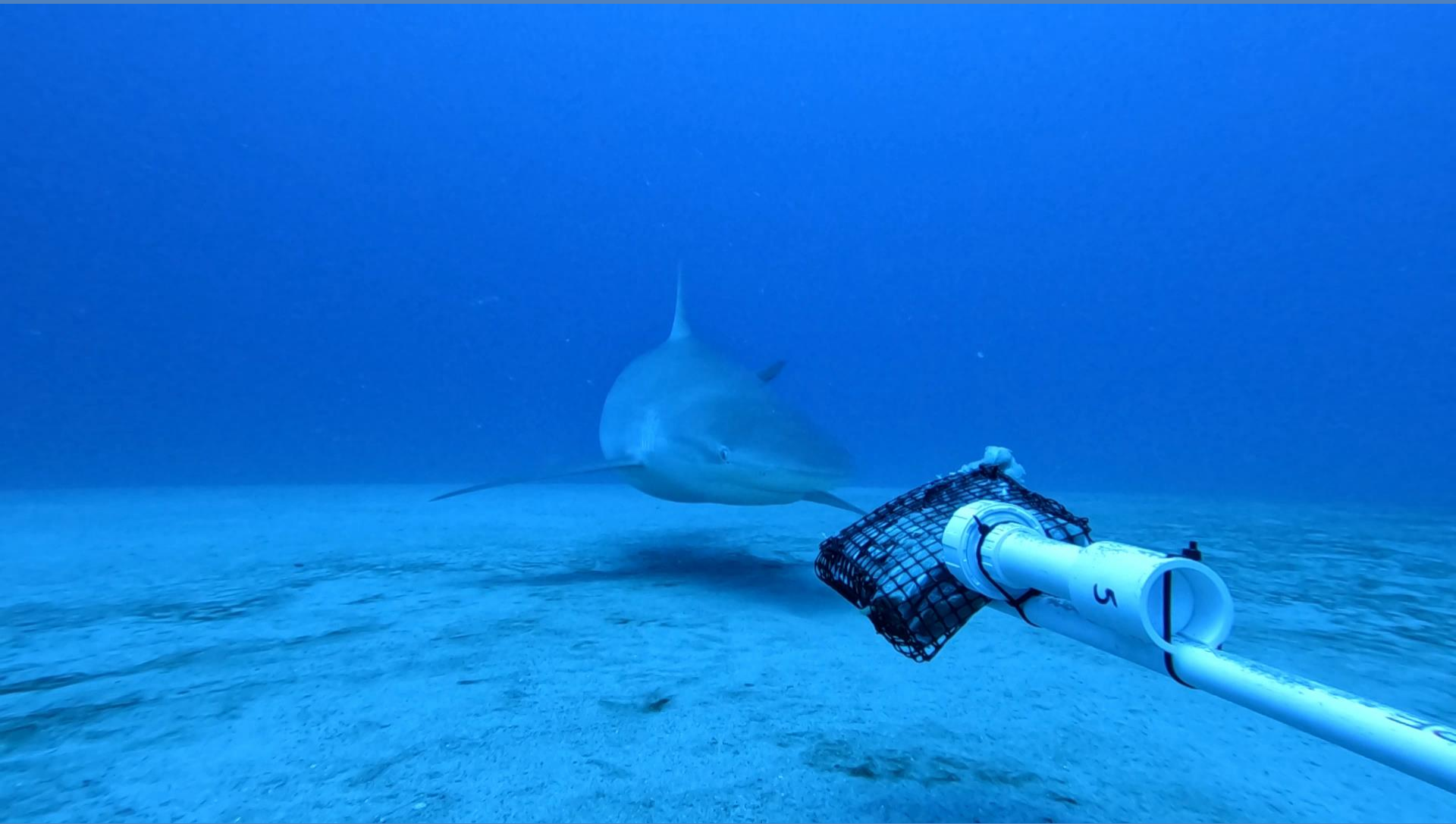
# Holding Pen and Test Arena



Two sets of calibrated  
stereo video cameras







MAHALO  
THANK YOU

