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# Maui Super Reefs & Integrating Response Planning

# Outline

1. Super Reefs globally and locally
2. Threat reduction and community engagement at Olowalu
3. Reef response preparedness & reef restoration capacity building in Hawai'i



# Super Reef Project Locations



# Super Reefs Alliance

Partner collaboration to increase reef resilience to warming oceans

**TNC** identifies areas (based on conservation priority; political will)



**WHOI** builds hydrodynamic models to locate potential Super Reefs within each area



**Stanford** quantifies thermal tolerance of corals to confirm Super Reefs

**TNC** works with governments and communities to protect well-connected Super Reefs that can withstand future conditions



**WHOI** conducts future simulations to predict reef temperatures in 2030, 2050, 2070



**WHOI** conducts particle tracking simulations to determine larval flow from Super Reefs



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**OCEANOGRAPHIC**  
INSTITUTION

The Nature  
Conservancy 

  
**HOPKINS**  
MARINE STATION  
OF STANFORD UNIVERSITY

# Super Reefs Process

1

TNC identifies potential reef areas through consultation with reef managers and local community



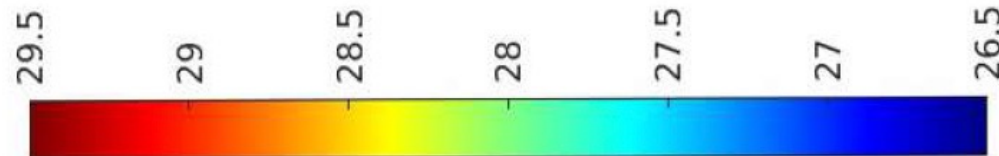
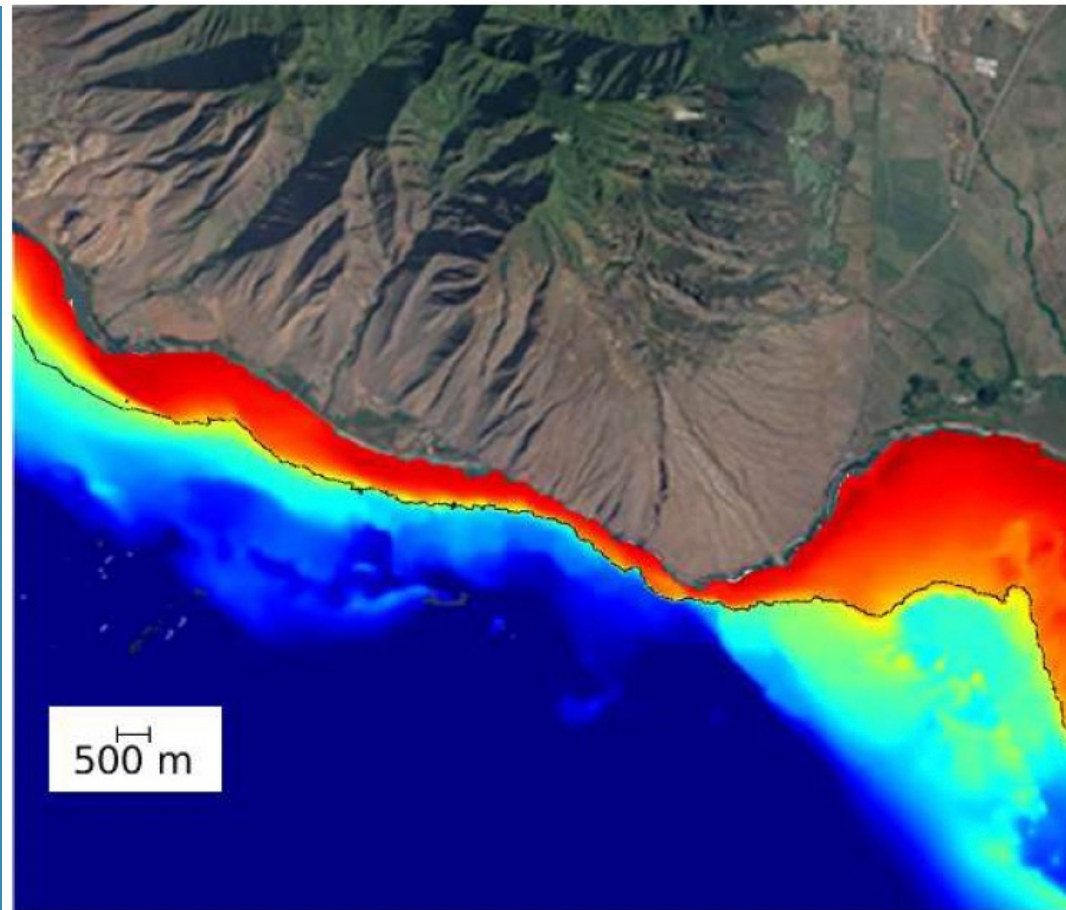
# Super Reefs Process

2

WHOI builds hydrodynamic models, determines larval flow



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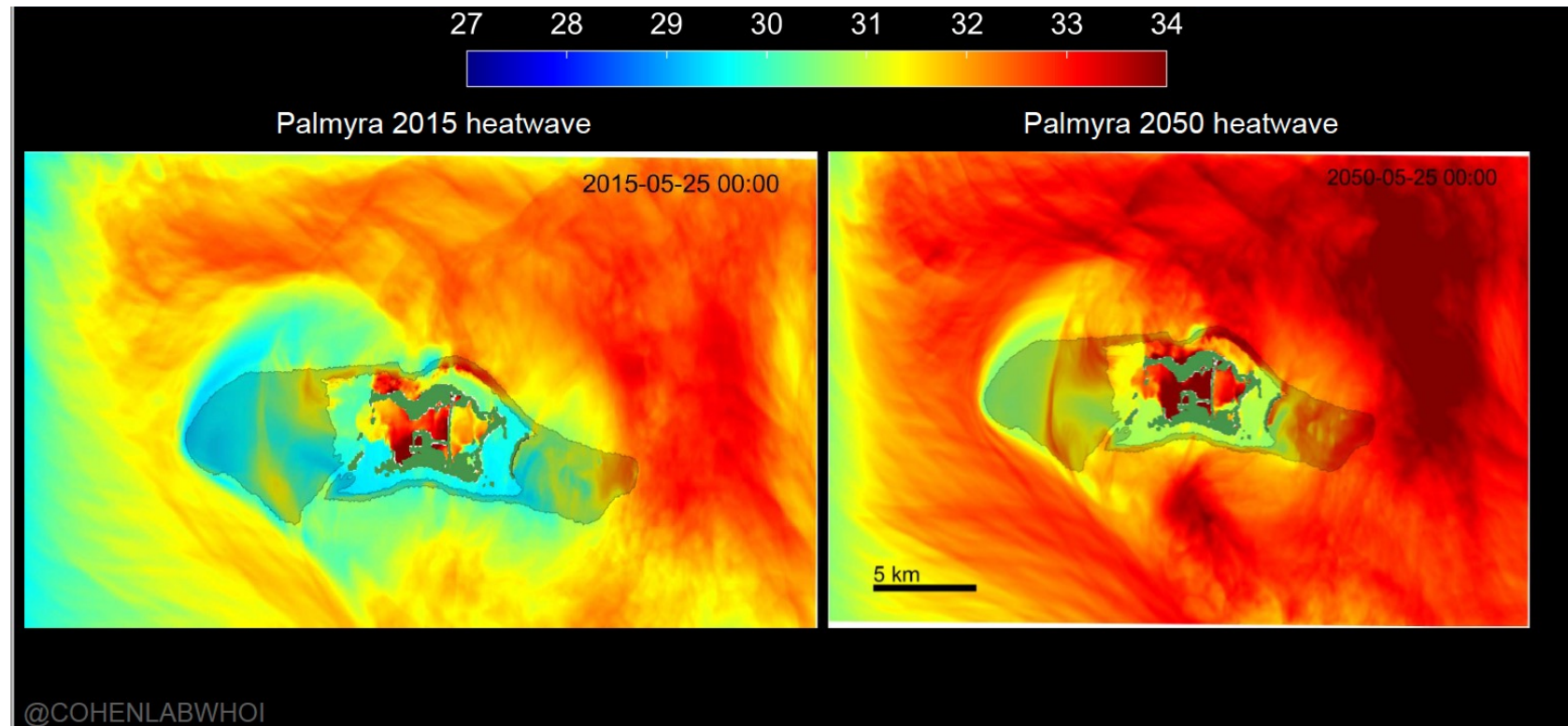
# Super Reefs Process

3

WHOI conducts future simulations to predict reef temperatures in 2030, 2050, 2070



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# Super Reefs Process

4

WHOI works with local teams to validate super reef model outputs using local data



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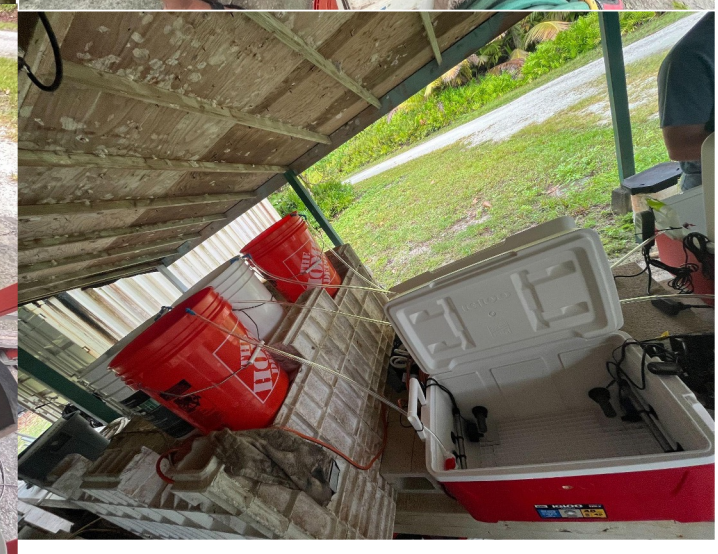
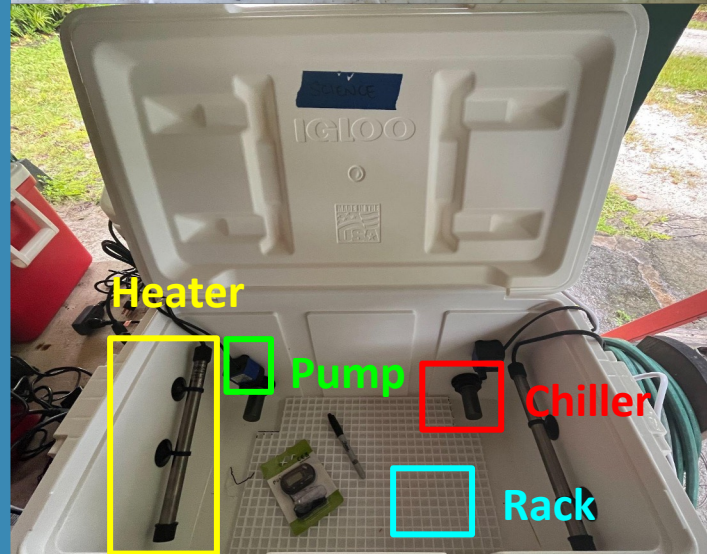
# Super Reefs Process

5

Stanford works with local teams to quantify thermal tolerance and outplant more tolerant corals



Example from C



# Super Reefs Process

6

TNC works with communities and governments to protect and manage well-connected Super Reefs with potential to survive future conditions



# Super Reef at Olowalu, Maui, Hawai'i



# Deep Community Engagement & Empowerment



How Healthy  
is Your  
Ahupua'a?

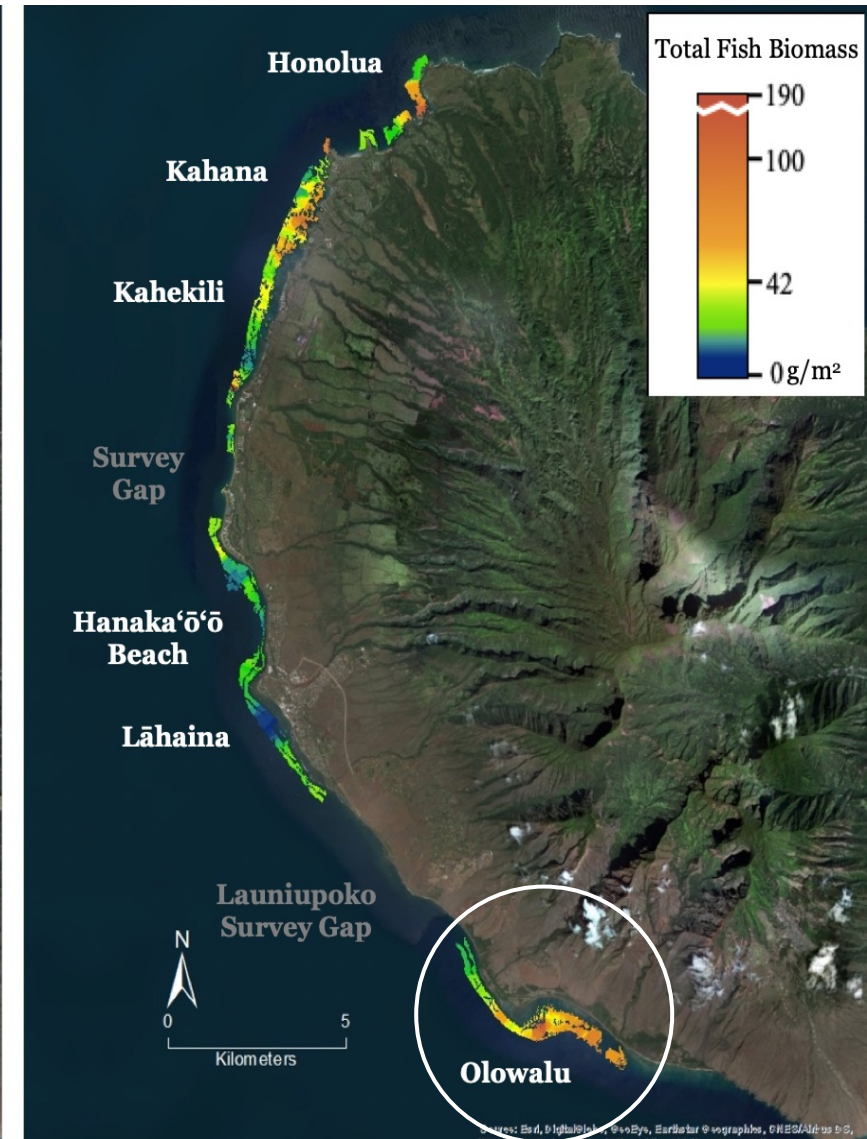
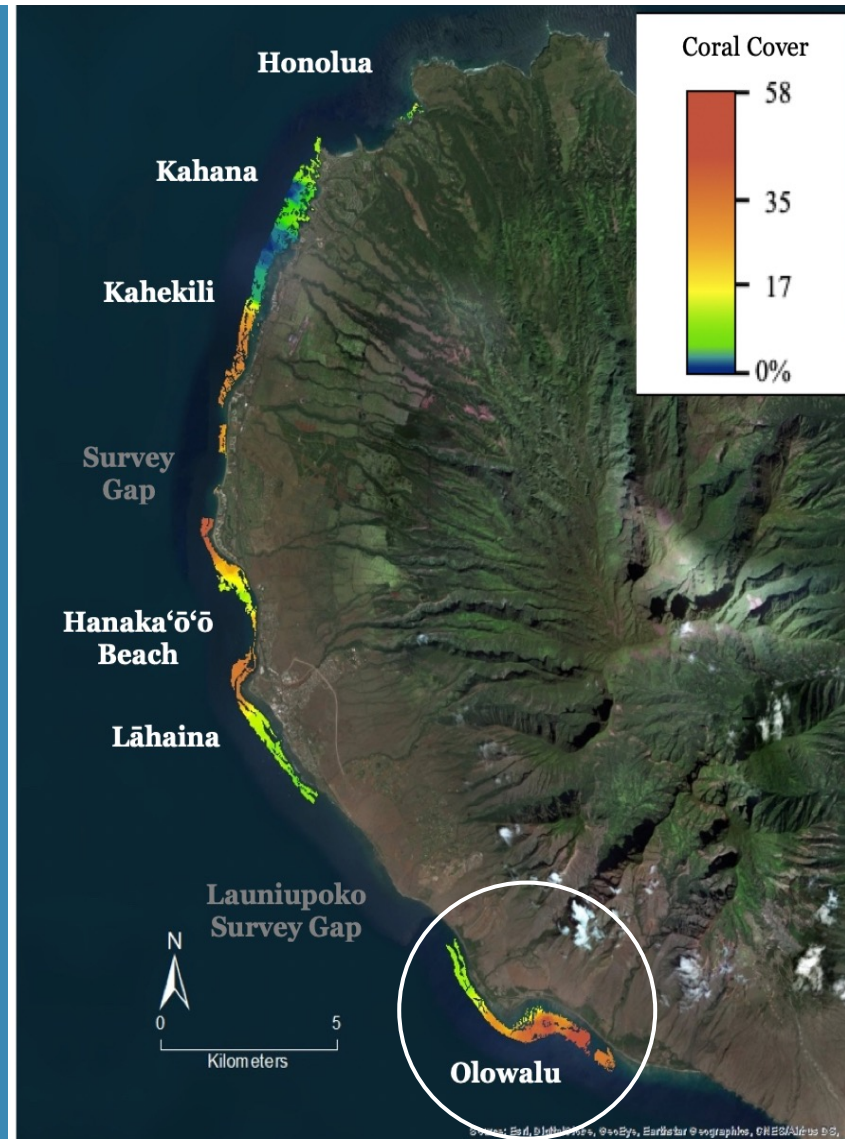


# Olowalu Reef



# Olowalu Reef

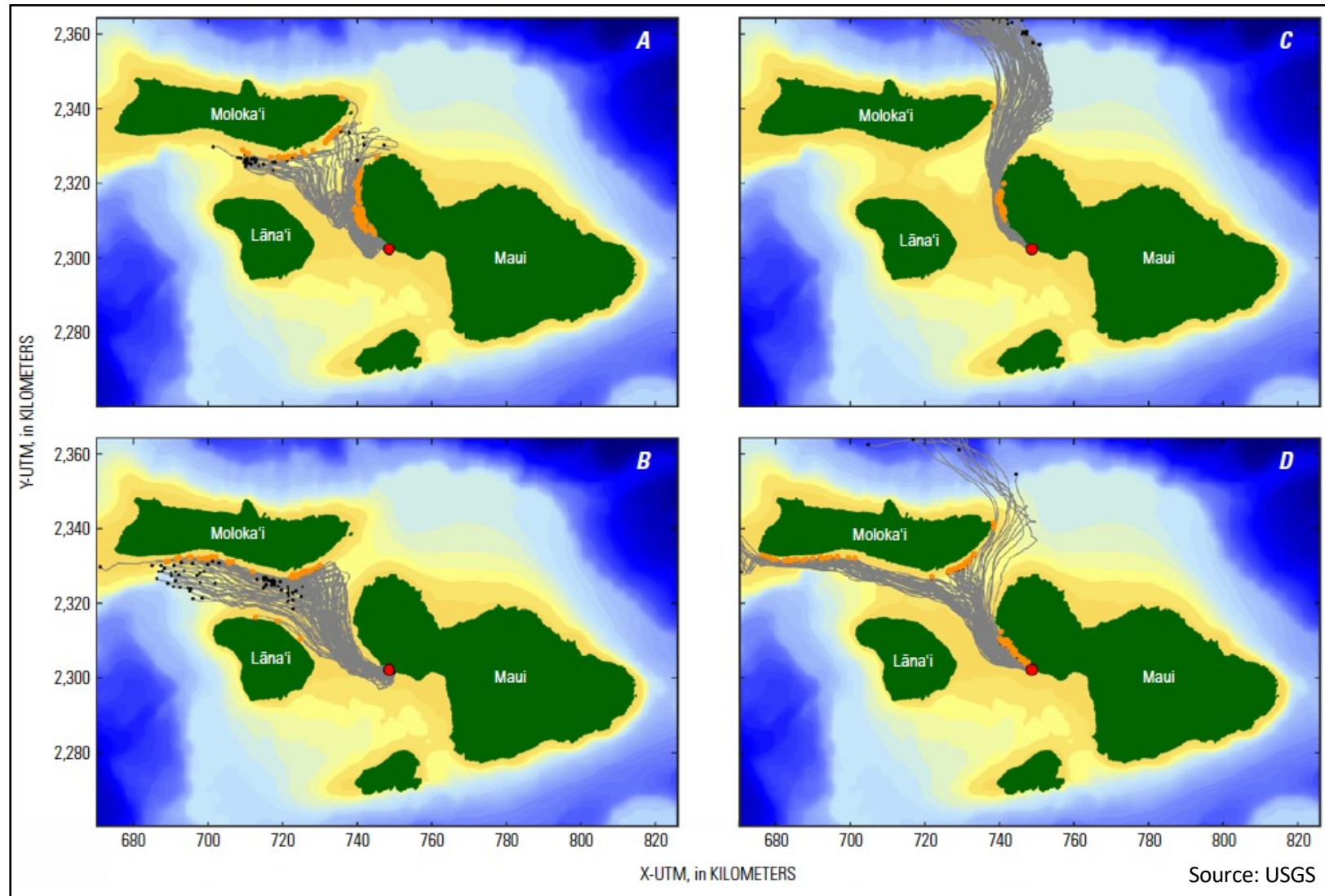
- Some of the highest coral cover in West Maui
- Some of the highest fish biomass in West Maui



# Olowalu Reef



© Drew Sulock

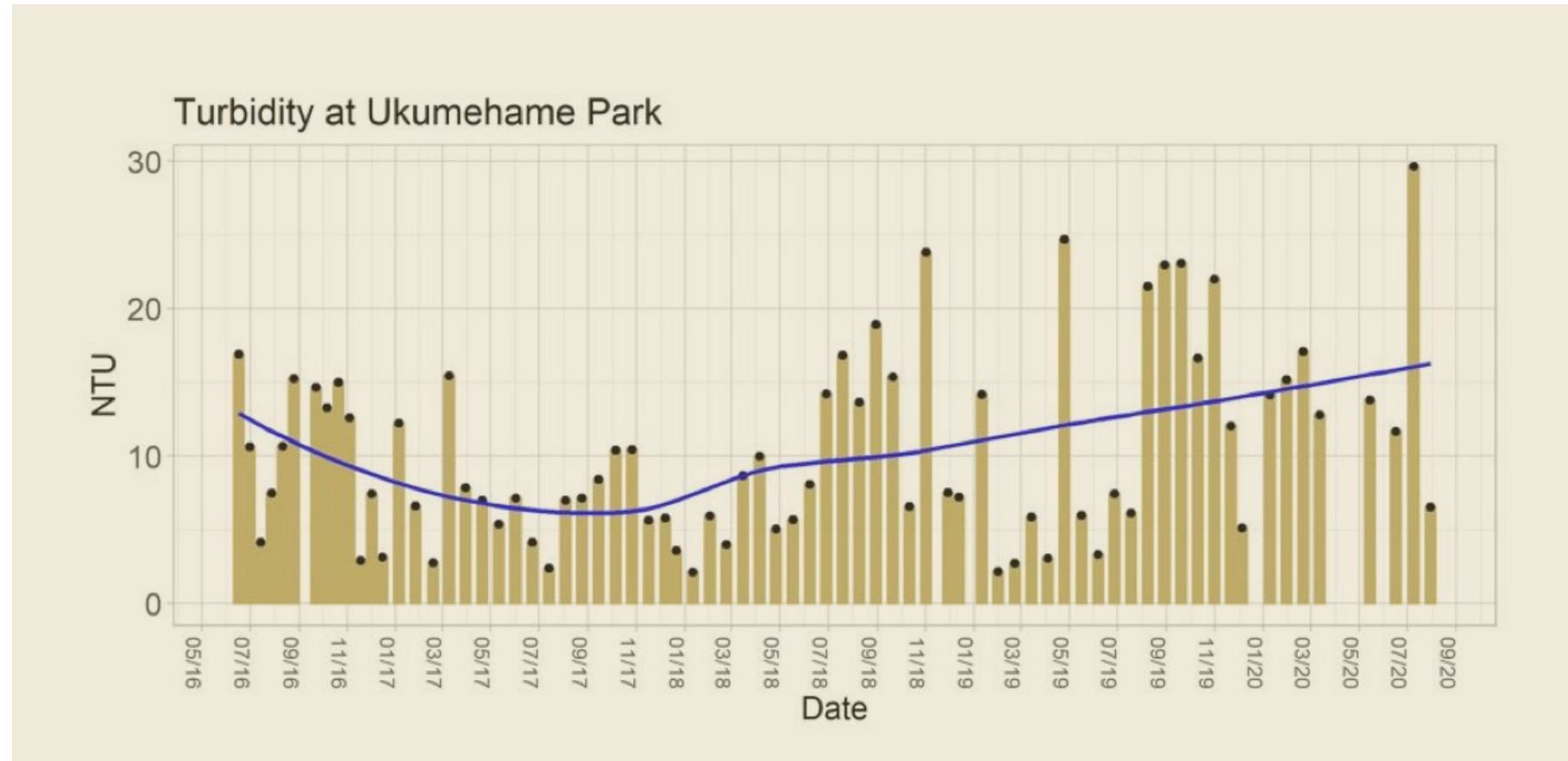
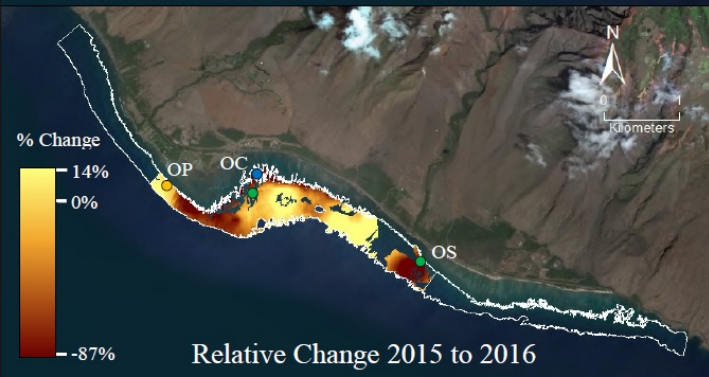
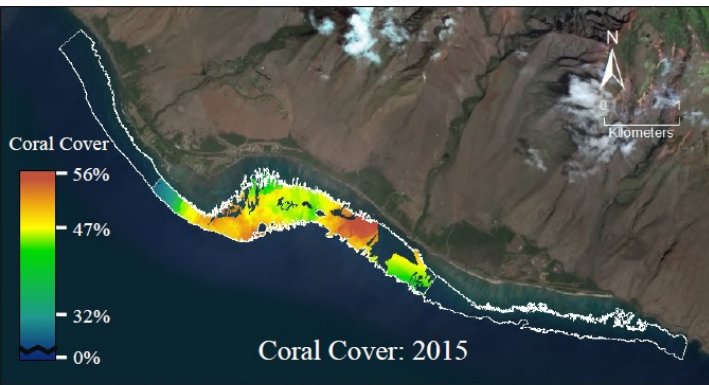


# Addressing Reef Stressors at Olowalu

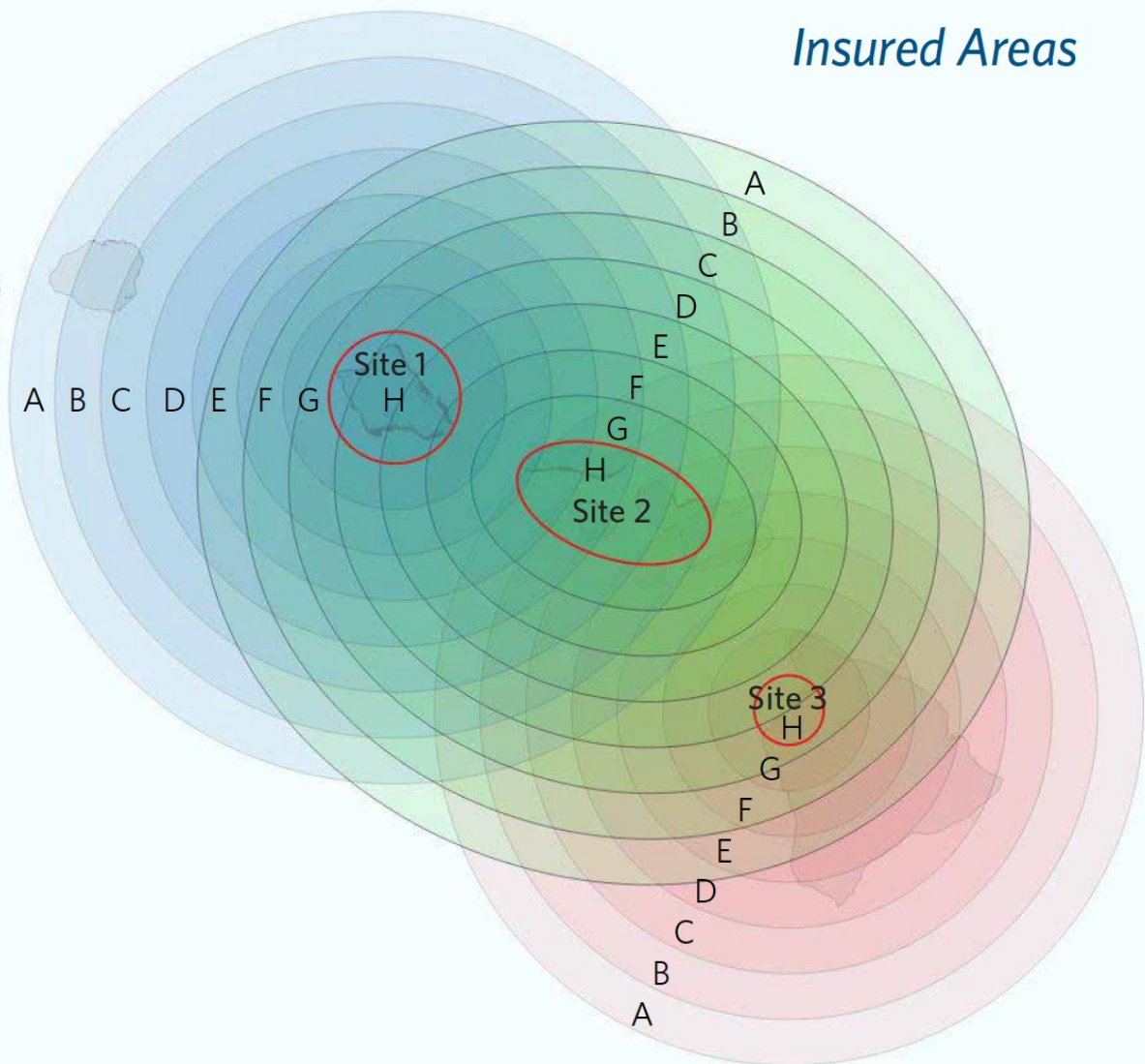




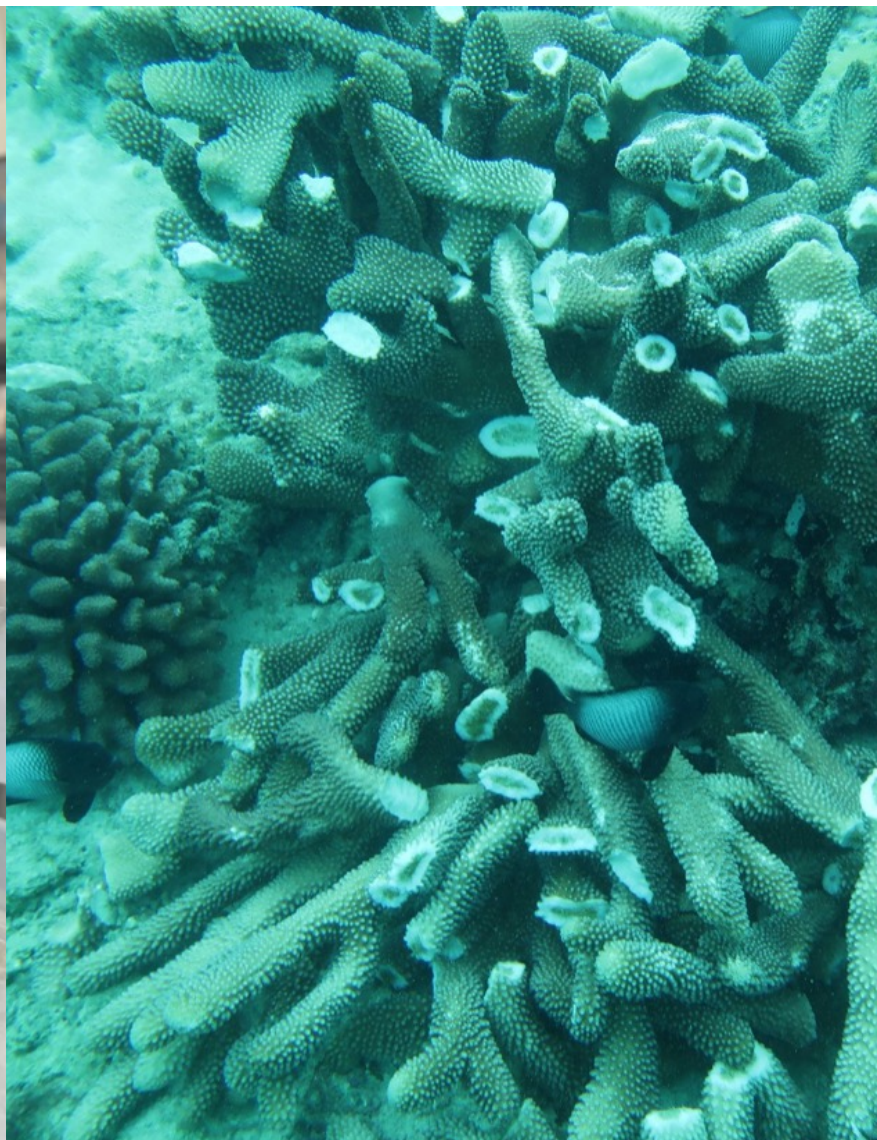
# Baseline Data & Regular Monitoring



# Reef Insurance & Reef Response

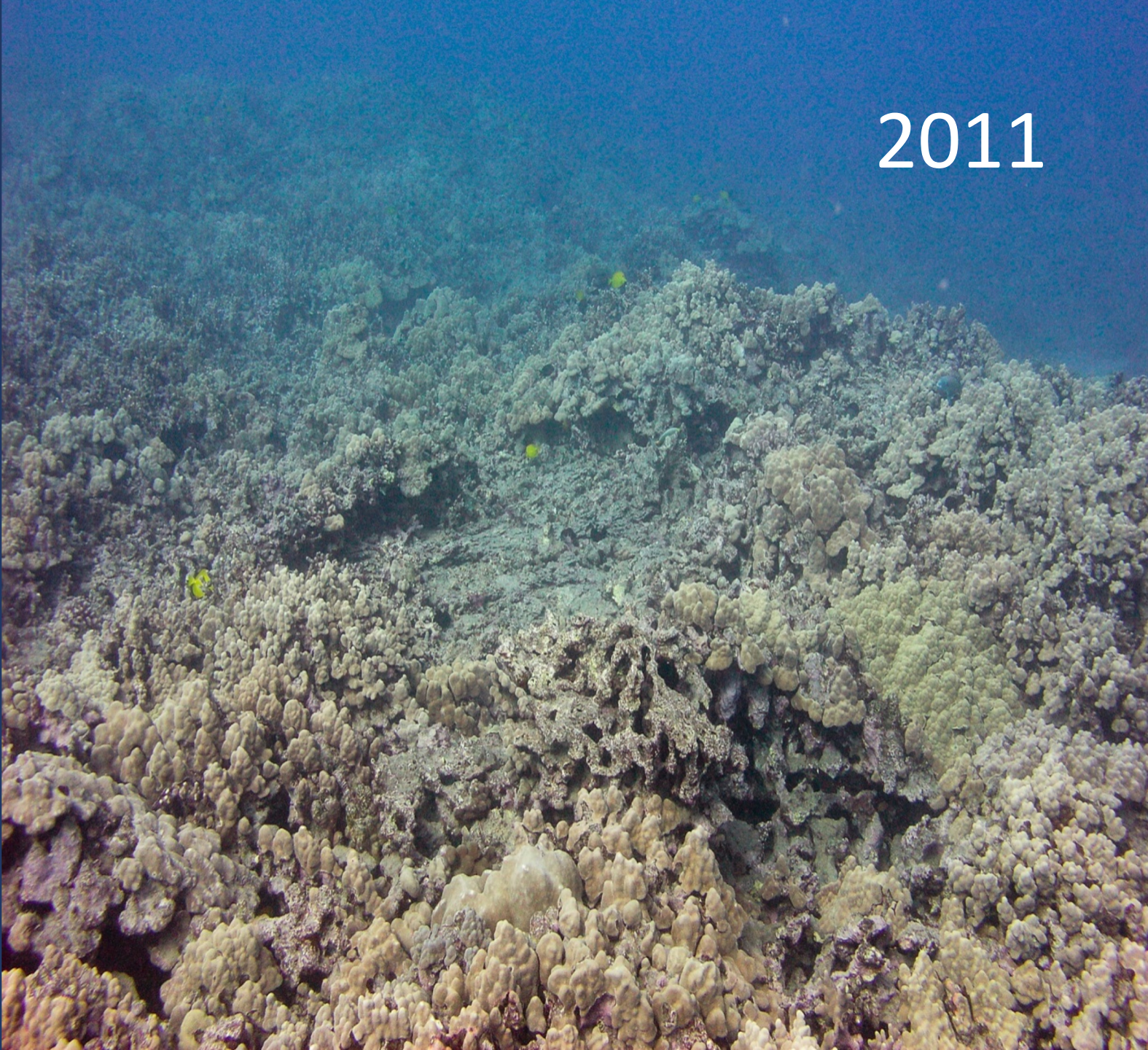


# Reef Restoration Capacity Building



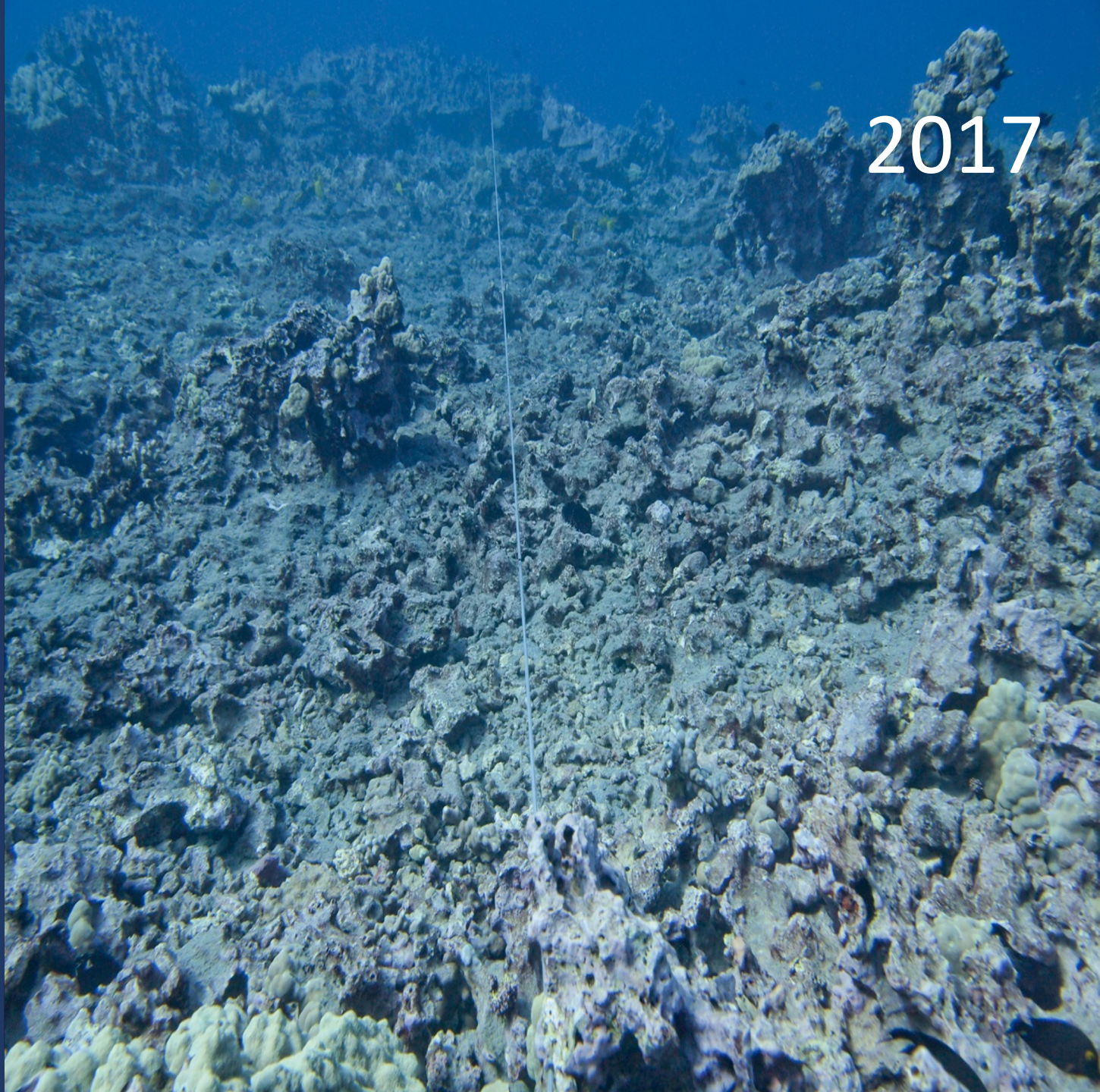
DAR permanent  
monitoring  
transect at  
Ka'ūpūlehu

2011

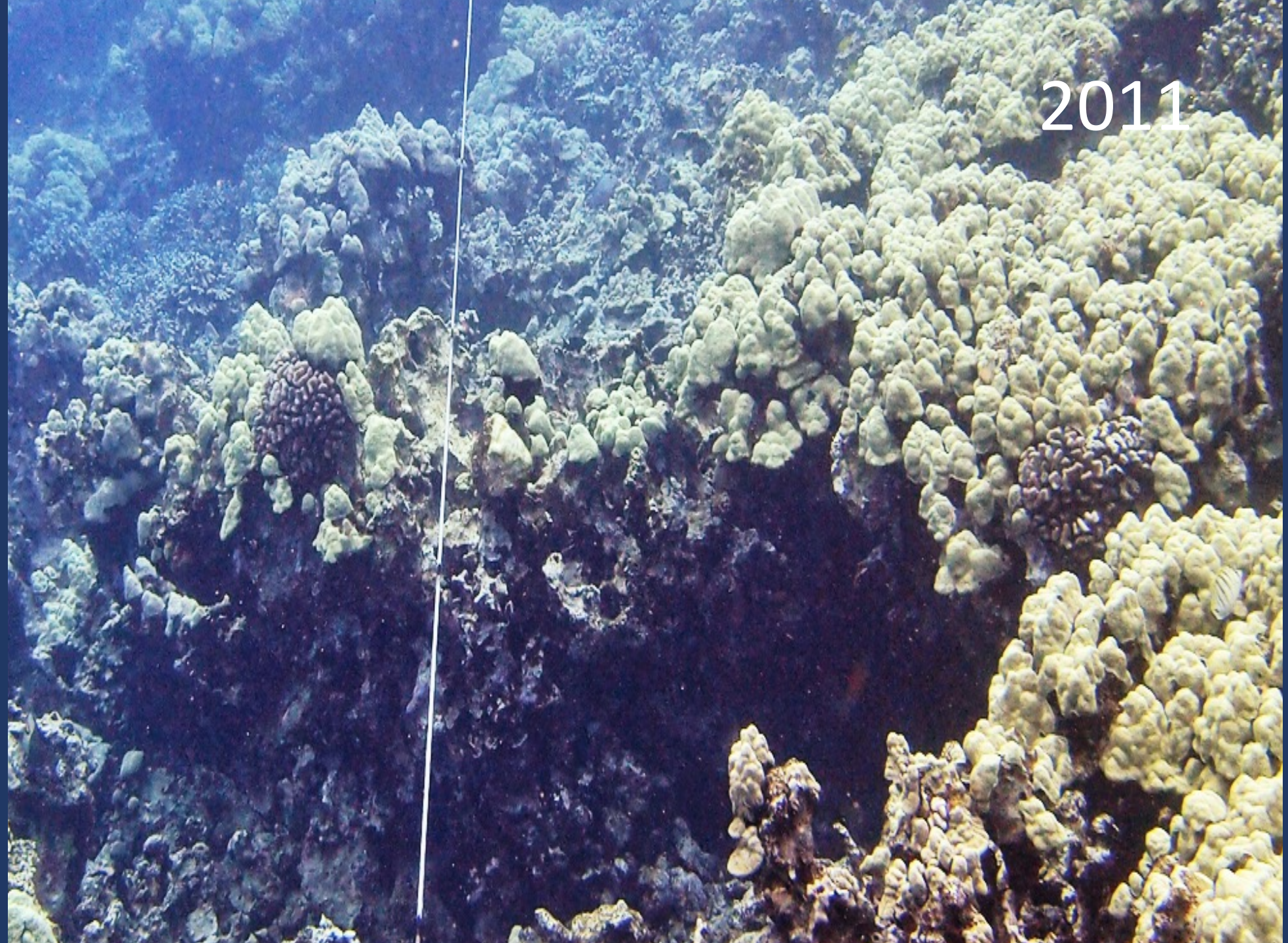


DAR permanent  
monitoring  
transect at  
Ka'ūpūlehu

2017



DAR  
permanent  
monitoring  
transect at  
Kealakekua



2011

DAR  
permanent  
monitoring  
transect at  
Kealakekua



# Mahalo!



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**He pūko‘a kani ‘āina.**

A coral reef that grows into an island.

Also said of a person beginning in a small way, gaining steadily until they become firmly established.

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