

## CAR.Committee

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**From:** Kim Falinski <kim.falinski@TNC.ORG>  
**Sent:** Monday, February 24, 2020 2:54 PM  
**To:** CAR.Committee  
**Subject:** CAR-1(4) Presentation for the 2/25 CAR Committee Meeting  
**Attachments:** falinski\_2020\_MauiCounty.pdf

Hello CAR Committee –

Here is the presentation for tomorrow from The Nature Conservancy:

[https://www.dropbox.com/s/ae11y595ymiy5jz/falinski\\_2020\\_MauiCounty.pptx?dl=0](https://www.dropbox.com/s/ae11y595ymiy5jz/falinski_2020_MauiCounty.pptx?dl=0)

If you cannot open dropbox, the same presentation is attached in pdf:

Aloha,  
Kim

Kim Falinski  
Emily Fielding  
Eric Conklin

The Nature  
Conservancy 



## Supporting Maui's Ocean Health through Community Engagement







# Motivation

Coastal water quality is poor in many parts of the state, and is correlated to coral disease and bleaching





# Motivation

Watershed restoration projects are difficult to assess because there are not clear stream monitoring methods





# Motivation


What percent reduction in sediment/nutrients will improve coral reef health?



- Coastal sampling: Hui o ka Wai Ola ;
- Stream monitoring
- Application to community-planning

# Agenda





Communities and agencies are concerned about impacts of poor water quality on reef and human health. They desire more comprehensive, quality controlled, and up-to-date water quality data.



Hui o ka Wai Ola  
Quality assured community based sampling

A background image showing two individuals, a man and a woman, wearing blue t-shirts with 'Kauai Kai Wai' and 'CLEAN OCEAN TEAM' printed on them. They are on a boat, leaning over the side, and using equipment to collect water samples from the ocean. The man is holding a green bucket, and the woman is using a device to transfer liquid into it. The background shows a tropical coastline with trees and a building.

A Quality Assured Project Plan (QAPP) was prepared for coastal water-quality monitoring in Maui.

- Turbidity, Dissolved oxygen, pH, Temp
- Organic and inorganic nutrients

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# Sampling Plan

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Hui o ka Wai Ola

# Sampling Plan

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Hui o ka Wai Ola





The Hui has held 3 New Volunteer Trainings, certifying 100+ volunteers. There are also a Refresher Training for current volunteers, a CPR and First Aid Certification course.

Parameter	Typical Range
Temperature (°C)	15-25
pH	6.5-8.5
Dissolved Oxygen (mg/L)	6.0-7.0
Salinity (ppt)	35-37



# Trainings

Hui o ka Wai Ola

Standardized data sheets, data entry and a common database managed by a single volunteer keep the data clean



# Database

Hui o ka Wai Ola



Funding for the program covers:

- The cost of sampling supplies
- Lab testing
- Repairing and replacing equipment
- Stipends for key roles

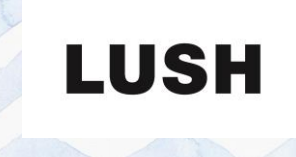
## Help Us Save Maui's Coral Reefs

**\$25** Water quality testing  
supplies for one site

**\$50** Lab testing for one  
water quality sample

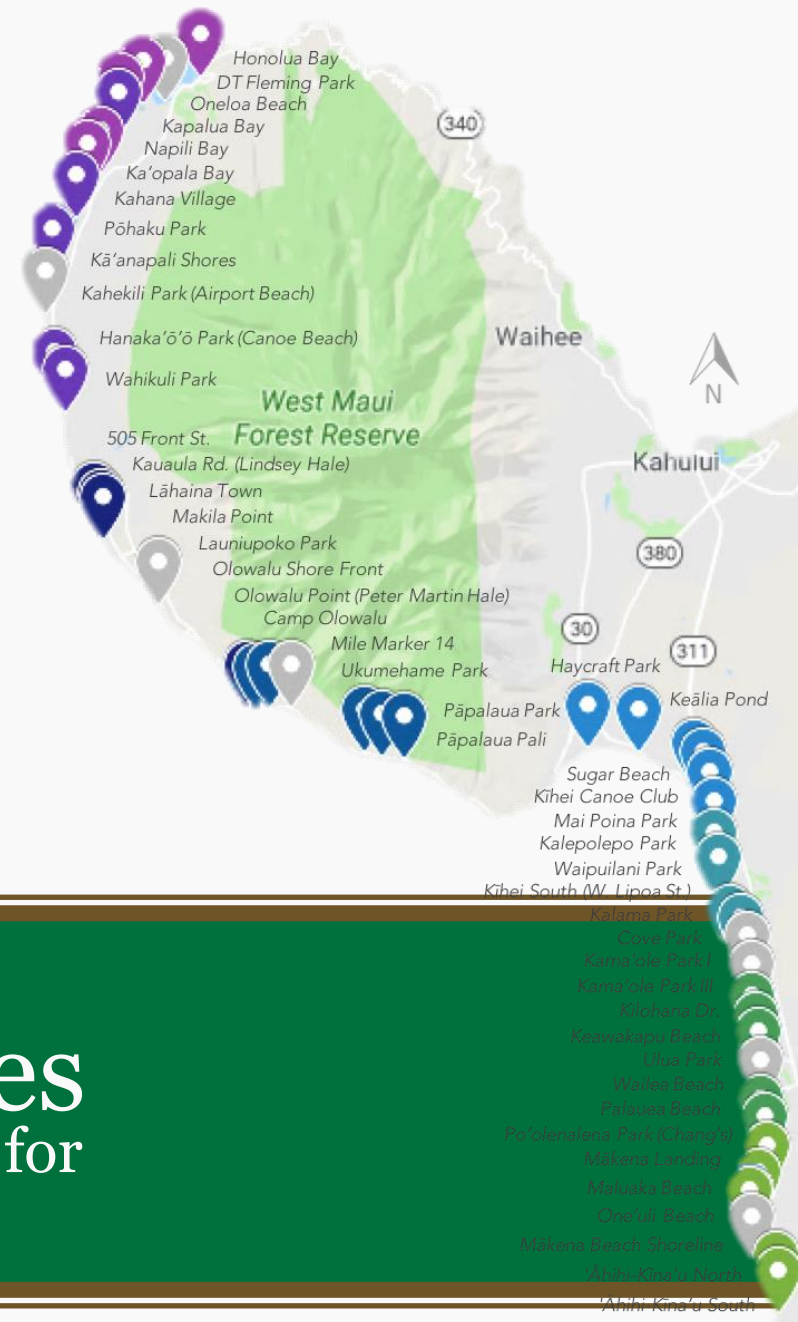
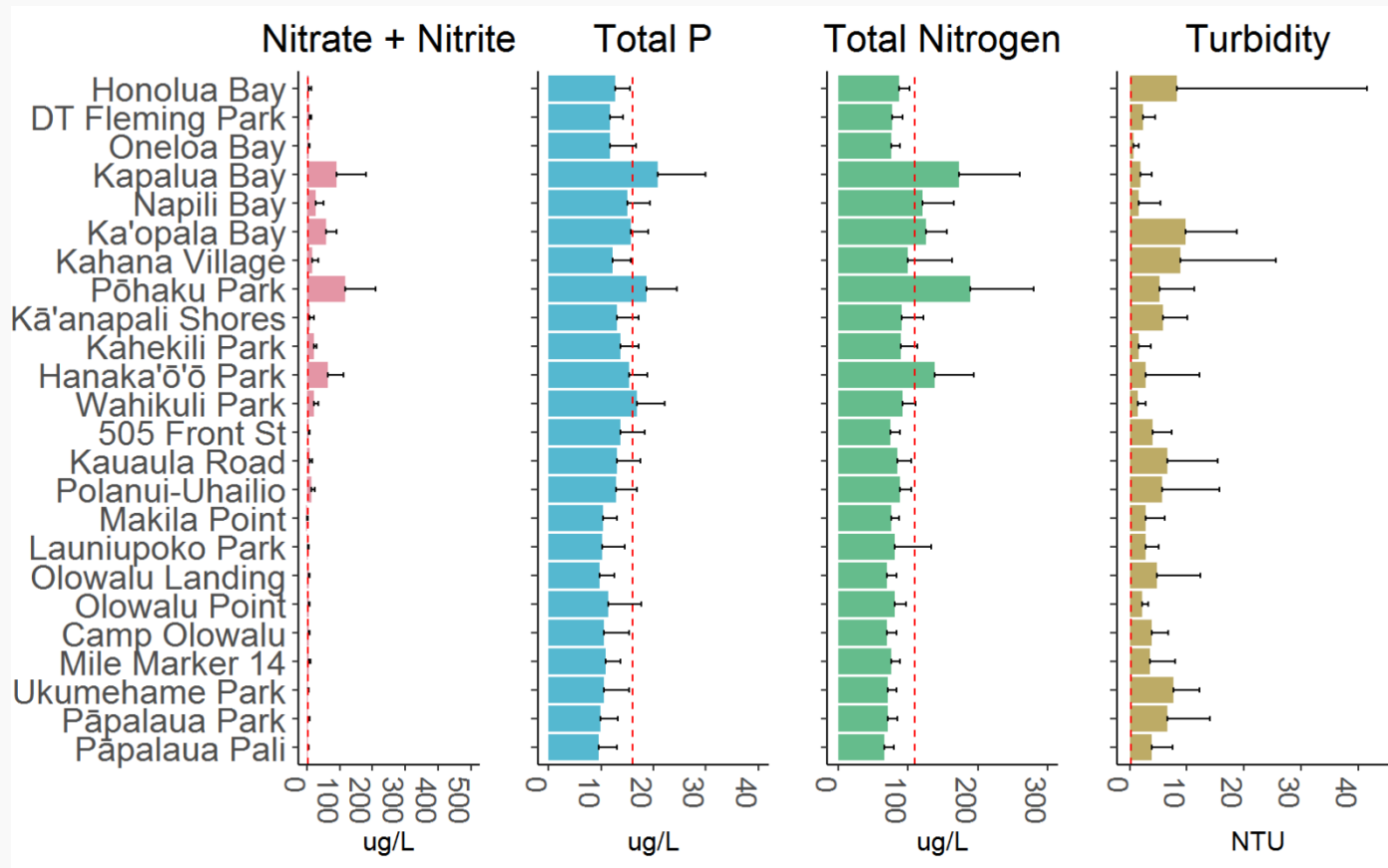
**\$300** Water quality  
monitoring at one  
site for a month

**\$4000** Water quality  
monitoring at one  
site for a year



100 Women Who Care - Maui, DWS Smith Family Charitable Fund, Austin Family DAF, Bird and Sherry Eickbush Gift Fund, Barbara Sachs





**39 West and South Maui Sites**  
 Sampled every 3 weeks by community volunteers – for  
 over three years



## West Maui shoreline water quality to be documented in huge collection program

LOCAL NEWS

MAR 29, 2017

LEE IMADA

Managing Editor  
leeimada@mauinews.com

f SHARE

TWEET



A Hui O Ka Wai Ola team collects ocean water samples at Napili Bay recently. Hui volunteers will be collecting data under strict scientific standards to add to the state Health Department's data set. • DANA REED photo

A groundbreaking scientific data collection program to expand the measuring of water quality off 18 West Maui shoreline sites has been forged between the state Department of Health and Maui community groups involved in the protection of the island's nearshore waters.



## Ingredients

- Community Interest
- People
- Funding
- Equipment
- Lab Space
- Sampling Plan – QAPP

The program is expanding to Hawai'i island (Hawaii Wai Ola) and to new sites in Maui

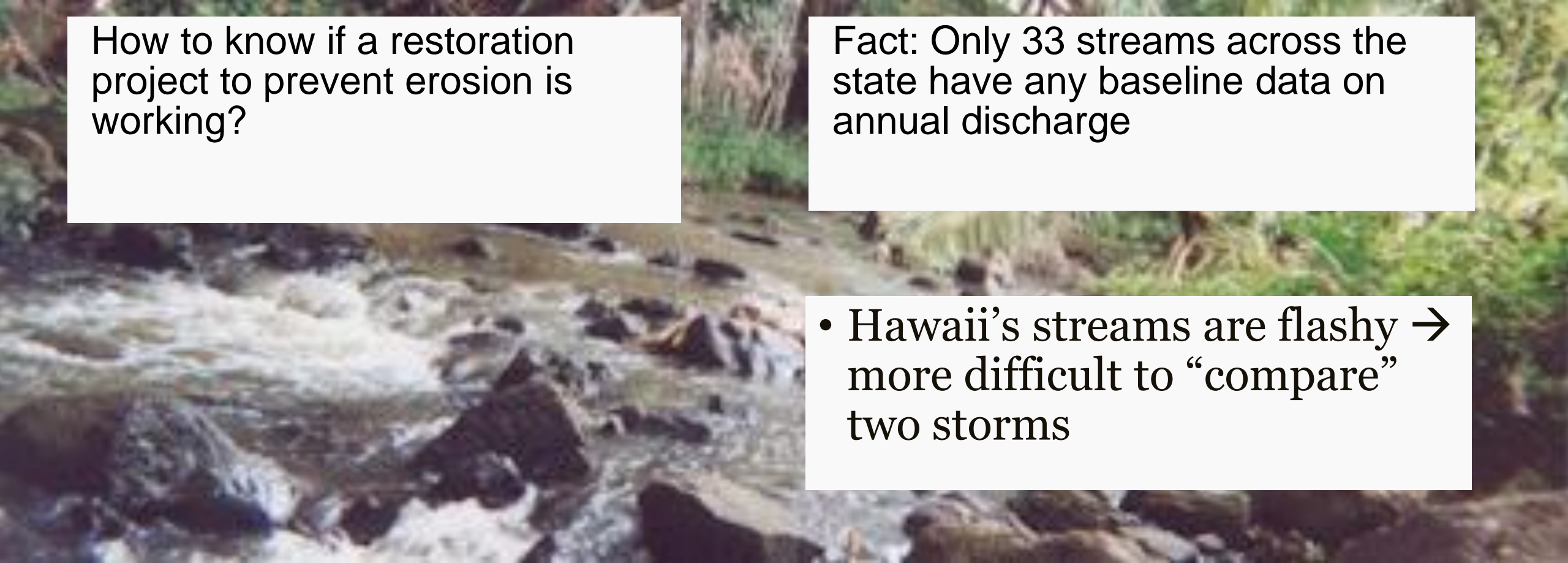




# Freshwater Stream Sampling

New challenges and opportunities





How to know if a restoration project to prevent erosion is working?

Fact: Only 33 streams across the state have any baseline data on annual discharge

- Hawaii's streams are flashy → more difficult to “compare” two storms

# Freshwater Stream Sampling

New challenges and opportunities



Kahana reservoir



Honolua Bay (pc NRCS)

Kahana reservoir, west Maui

Non-profits conducting restoration need unified methods



Streams are also covered under HAR 11-54, but there are currently no common sampling protocols at HDOH

Stream concentrations and sampling frequency may differ from beach sampling.



SMART Ala Wai project: Sampling streams in Honolulu

# Freshwater Stream Sampling

New challenges and opportunities

## Standard stream sampling protocol development

- When?
- Where?
- Who collects?
- Who QAs the data?
- Who manages the data?



End users include non-profits like CORAL and Pu'u Kukui Watershed Partnership

# Protocol design

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Adapting to tropical streams



One year project to come up  
with standard sampling  
protocols for streams in  
west Maui

Data management, training  
documents, and outreach  
materials



Coordination: Sediment sampling working  
group

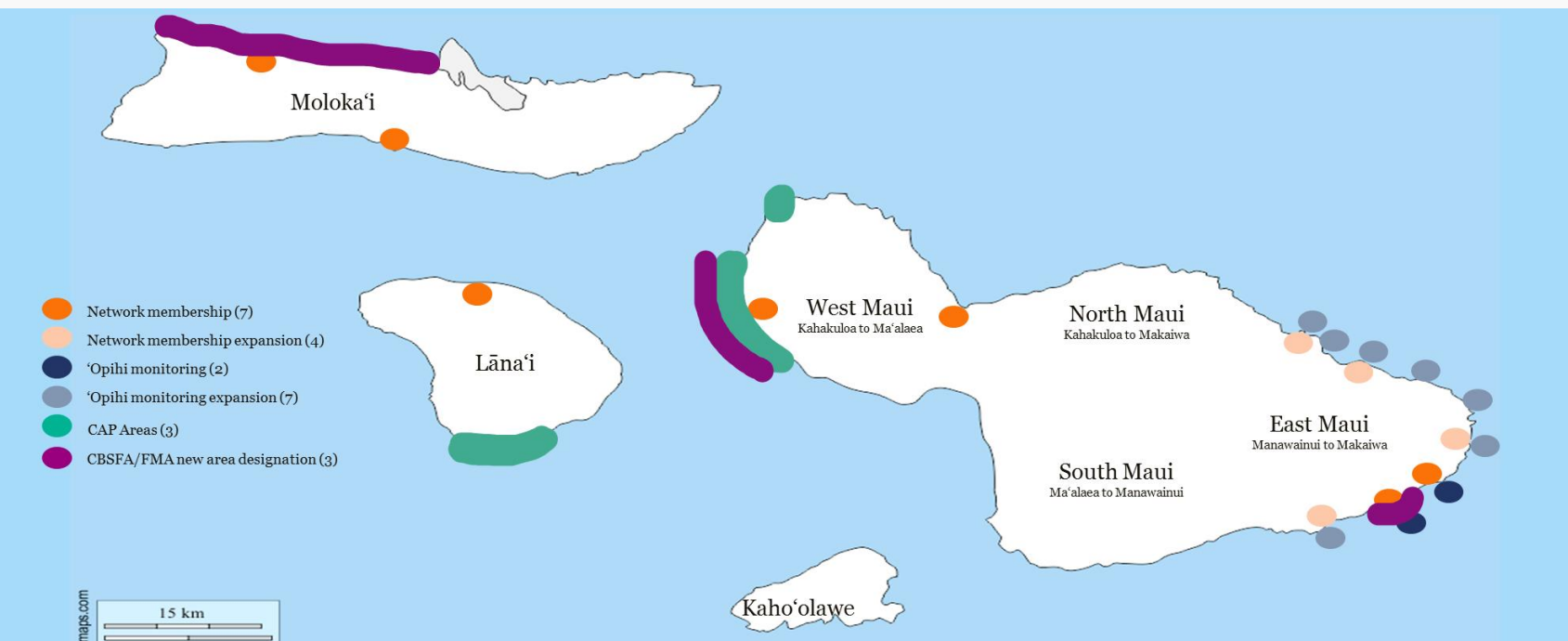
# Maui Nui Makai Network: Reaching across Maui Nui



Planning with  
communities to build  
resilience



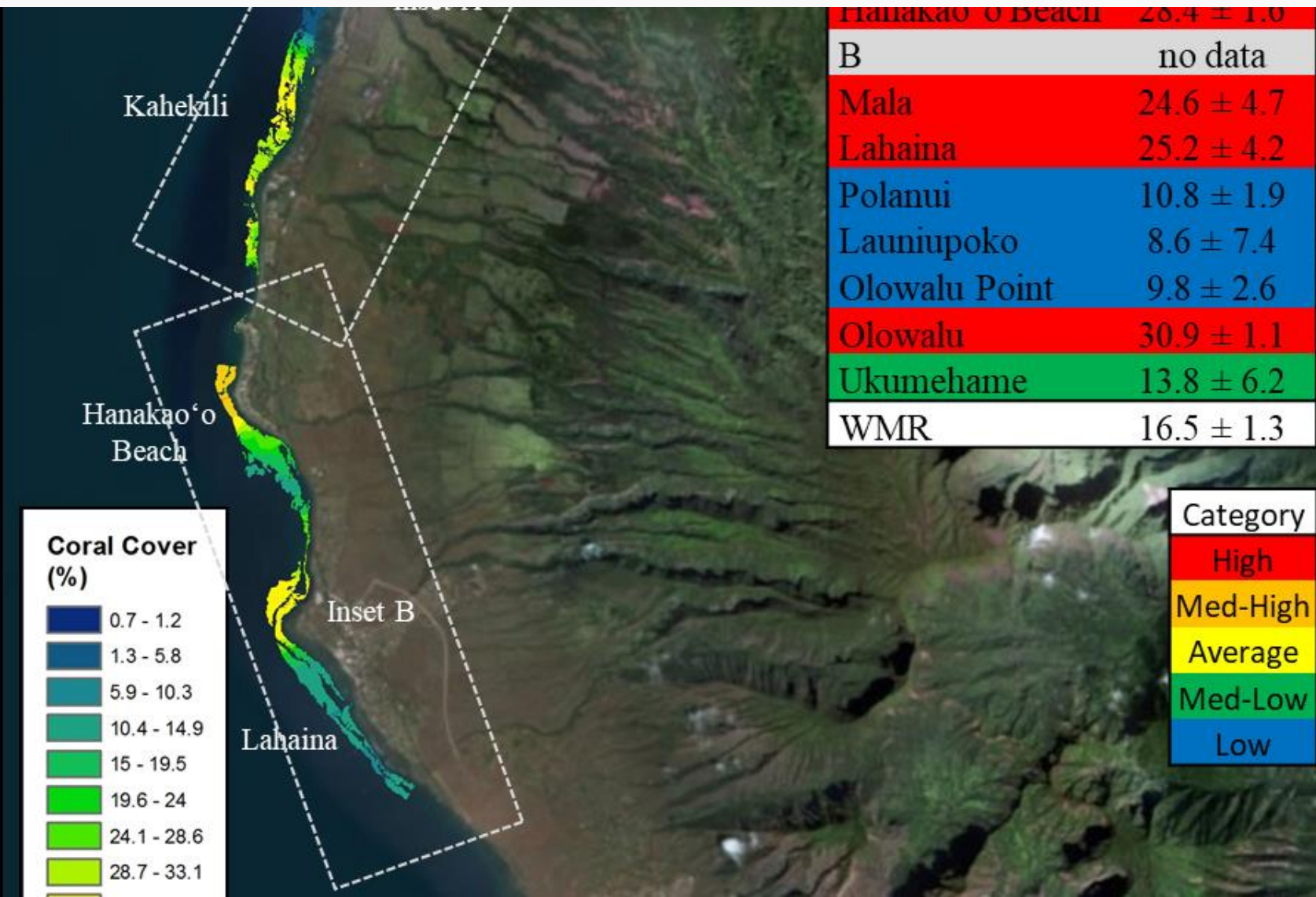
# Maui Nui Makai Network: Reaching across Maui Nui



- Community Action Plans completed or underway
- Community-based Subsistence Fishing Area (CBSFA) Planning
- Science – informed planning with opihi, coral and water quality monitoring

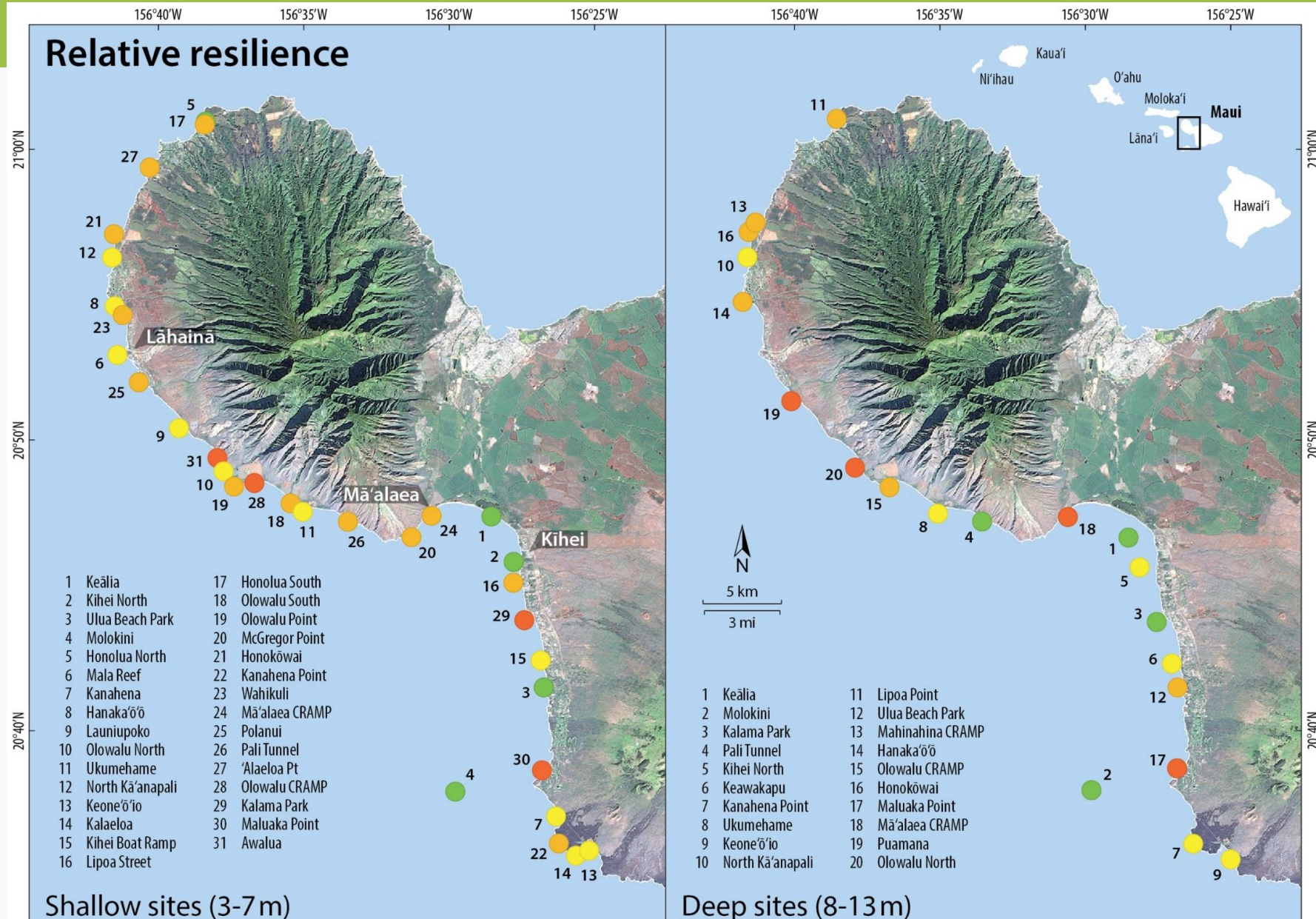
# Leveraging coral surveys to understand which reefs are resilient

Coral surveys  
show where to  
protect





# 2018 Resilience Rankings



Resilience  
Score  
Components

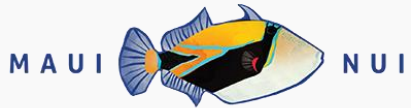
Site Name	Rank	Resilience Final Score	Coral Cover (%)	Coral Diversity	Coral Recruit- ment	Reef Builder Ratio	Coral Disease (%)	Rugosity	Herb. Fish Biomass (g/m²)
Kealia	1	1.00	0.91	0.59	0.96	0.95	0.95	0.84	0.24
Molokini	2	0.90	1.00	0.15	0.68	1.00	0.87	0.77	0.40
Kalama Park	3	0.89	0.88	0.35	0.87	0.57	0.85	0.79	0.55
Pali Tunnel	4	0.86	0.52	0.72	0.92	0.24	0.91	0.76	0.57
Kihei North	5	0.82	0.49	0.55	0.94	0.34	0.90	0.70	0.52
Keawakapu	6	0.81	0.48	0.53	0.92	0.27	0.56	0.78	0.86
Kanahena Point	7	0.78	0.18	1.00	0.89	0.17	0.97	0.80	0.20
Ukumehame	8	0.76	0.55	0.48	0.89	0.20	0.39	0.75	0.90
Keone'o'io	9	0.76	0.18	0.48	0.81	0.05	0.97	0.65	1.00
North Kaanapali	10	0.74	0.48	0.41	0.96	0.15	0.78	0.83	0.37
Lipoa Point	11	0.71	0.06	0.78	0.87	0.02	0.73	0.70	0.67
Ulua Beach Park	12	0.69	0.23	0.51	0.81	0.08	0.70	0.75	0.66
Mahinahina CRAMP	13	0.66	0.57	0.28	1.00	0.20	0.52	0.80	0.23
Hanakao'o	14	0.65	0.58	0.25	0.92	0.25	0.52	0.77	0.23
Olowalu CRAMP	15	0.65	0.40	0.17	0.82	0.15	0.73	0.73	0.50
Honokowai	16	0.63	0.46	0.23	1.00	0.17	0.60	0.75	0.20
Maluaka Point	17	0.56	0.48	0.43	0.83	0.18	0.00	1.00	0.14
Maalaea CRAMP	18	0.56	0.05	0.43	0.64	0.01	0.88	0.58	0.45
Puamana	19	0.55	0.04	0.37	0.61	0.01	1.00	0.56	0.38
Olowalu North	20	0.53	0.05	0.29	0.79	0.02	0.92	0.71	0.09

Deep Sites





MAYOR'S OFFICE OF  
ECONOMIC  
DEVELOPMENT  
MAUI COUNTY



MARINE RESOURCE COUNCIL



# Thank you

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