



Polanui Hiu
Community Managed Makai Area

COMMUNITY-BASED MONITORING FISH SURVEYS, Polanui, Maui

Nā Papalimu O Pi'ilani, the reef off Maui's Lāhaina coastline at Polanui, was once known for its abundance of fish and edible limu (algae). These resources, carefully tended by kūpuna (elders), sustained Lāhaina families for generations.

But like other Hawaiian reefs adjacent to high population centers, it now shows signs of significant human impact associated with overharvesting, recreational use, sediment, and poor water quality. These stressors are contributing to the reef's decline and consistently low fish populations. And as resources and habitats disappear, so do the roots, knowledge, and practices patiently acquired by Hawaiian people over generations.

That's why Polanui Hiu, a local community group, is working to restore the resources and traditions once practiced along our shores. Our efforts are enhanced by *laulima*, *kuleana*, and other long-held values, and the strong community involvement the group is fortunate to enjoy.

The Nature
Conservancy 

Community-based monitoring survey methods were designed by The Nature Conservancy. Our monthly surveys are implemented with the organization's guidance and its scientists assist with our data analyses.

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Since 2014, community volunteers have been conducting monthly nearshore surveys of key reef fish species by suiting up in their snorkel gear and swimming out with data sheets and clipboards. These citizen scientists collect data that is vital to detecting changes in reef fish populations through presence, absence, and abundance surveys. The information they compile helps to ensure that management activities, including voluntary fishing guidelines, are having the desired effect and helping to restore abundance to Polanui's reef. Join us!

Nature Conservancy team and Polanui Hiu volunteers relax after monthly monitoring.

Presence/Absence Surveys

Methods and Findings

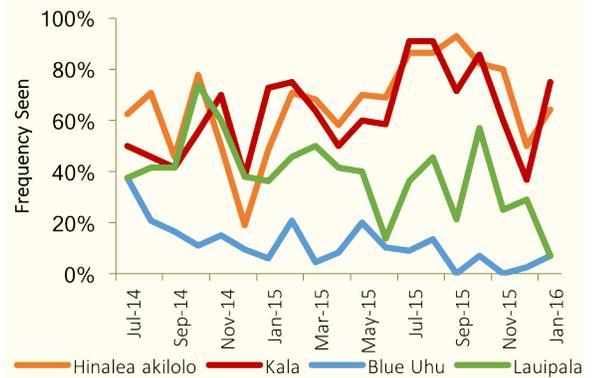
Polanui species presence/absence

Surveyor 1- Date- Visibility- <10 ft 10-20 ft >20 ft	Surveyor 2- Start time- End time-	
		
		
		
		
		

Instructions: Fill in all information at top. Put an X in the box next to the fish you see. Only record fish within the survey area on the map. Size numbers below each animal picture indicates the average size of each specific animal. Photos by Keoki Stender.

Presence/absence surveys of nearshore reef areas can be conducted by most any person, of any age. Volunteers simply indicate the presence of key reef fish species by checking a box on the data collection sheet (shown at left). Presence/absence surveys have been conducted since July, 2014. Though longer term monitoring is required to confirm definitive changes in fish populations, the data compiled by volunteers shows some interesting trends:

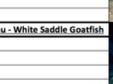
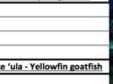
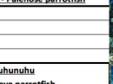
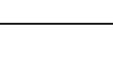
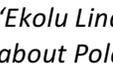
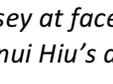
- *Kala* (unicorn fish) and *hina'alea akilolo* (bird wrasse) are being observed more frequently, though this may be a seasonal trend as frequency of observations dips in the winter.
- Frequency of observed blue *uhu* (parrotfish), and *lau 'ipala* (yellow tang) is decreasing over time.



Abundance Surveys

Methods and Findings

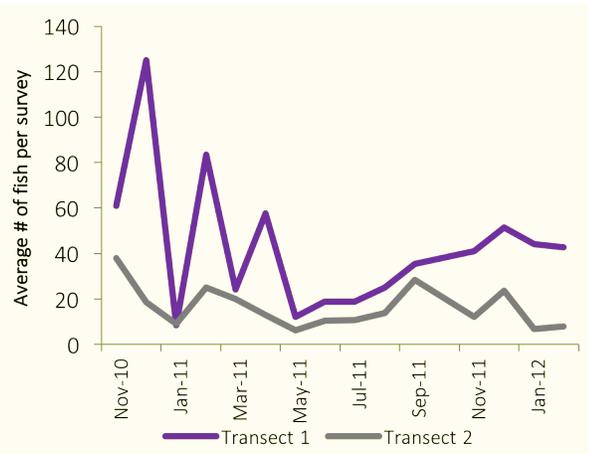
Polanui Fish Monitoring

Date- Depth- Surveyor- Start time- End time-	Location (heading)	1 () 2 () 3 () 4 ()	Visibility- <15 ft 15-30 ft >30 ft
			
			
			
			
			
			
			
			
			

Notes

Abundance surveys are conducted by strong swimmers with the ability to identify fish (training provided). The surveys require pairs of volunteers to swim along two 100 m transects while recording fish data on a collection sheet (shown left). Abundance surveys have been conducted since December, 2014. This bi-monthly monitoring is already highlighting differences across habitats, but it is too early to tell if these are real trends or a result of natural variability:

- Surveyors observed more *manini* (convict tang) than any other fish.
- Fish are more abundant on Transect 1, which has more coral and greater habitat complexity, and less abundant on Transect 2, which is mostly rubble with isolated coral colonies.
- Juvenile Palenose *uhu* appear to be increasing in abundance along both transects, and *hina'alea lauwi'i* (saddle wrasse) appear to be increasing along Transect 1.



Volunteers meet the first Saturday of the month at the Lindsey 'Ohana residence at 393 Front Street. Stop by or contact 'EkoLu Lindsey at [facebook.com/polaniuhiucmma](https://www.facebook.com/polaniuhiucmma), polaniuhiu@hawaii.rr.com, @polaniuhiu, or 808-276-5593 to learn about Polanui Hiu's activities and explore ways to get involved.