



Integrated Monitoring of MHI

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Objectives

(A) Survey Methods Toolkit

Written Protocols

Assessment of power / precision of methods per effort

Database / GIS approach

(B) Extended Trial of Methods

12 sites in West Hawai'i

NOAA-funded work at Maui, Oahu

(C) Data Analysis

Management status

Fishing intensity (data from HRMFS)

Physical-structural and 'habitat' characteristics

Anthropogenic/terrestrial factors

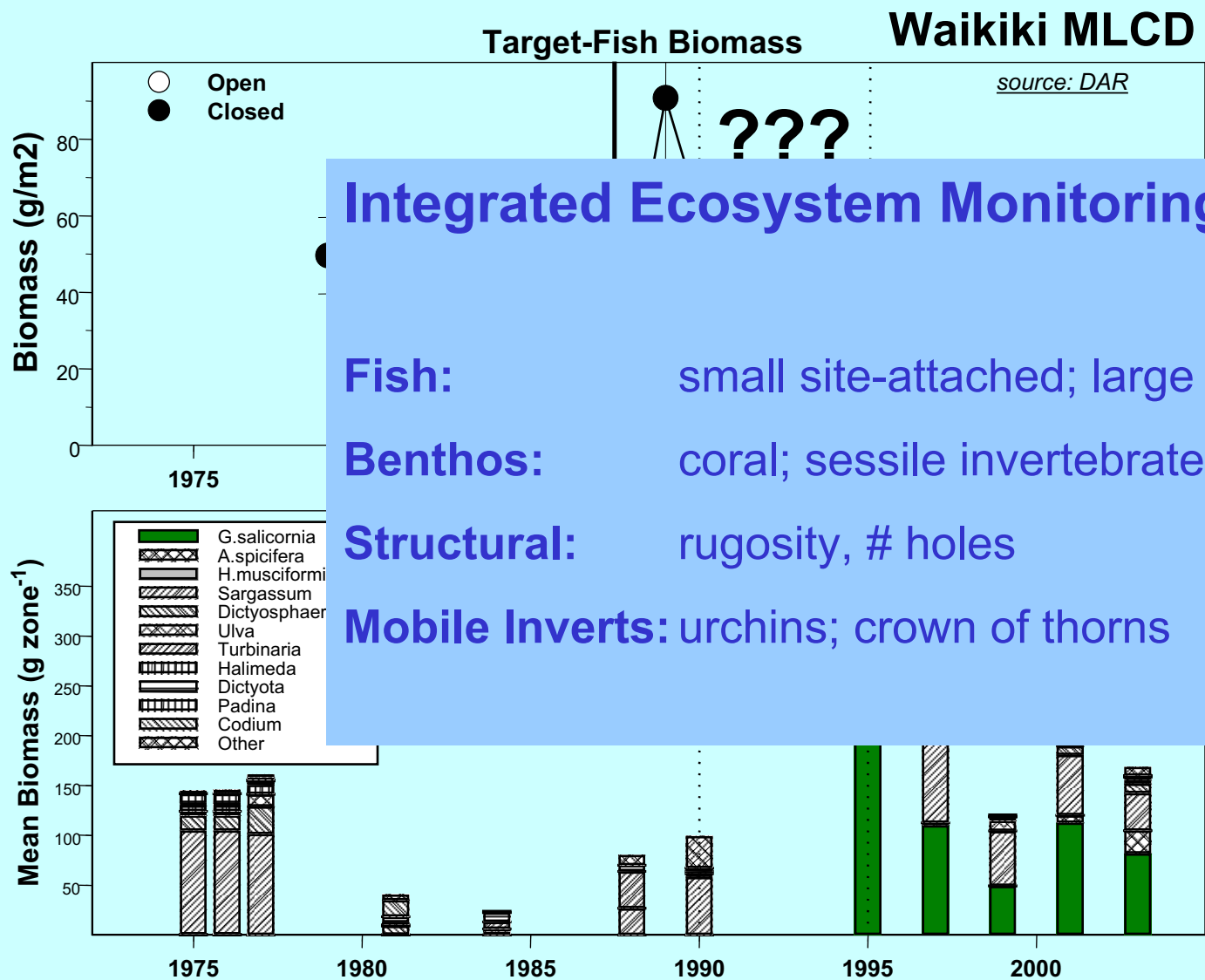
(D) MHI Monitoring Plan

Sites, Methods, Replication

Reporting + Analysis Requirements

MHI Annual Report

Integrated-Ecosystem Monitoring



Integrated Ecosystem Monitoring

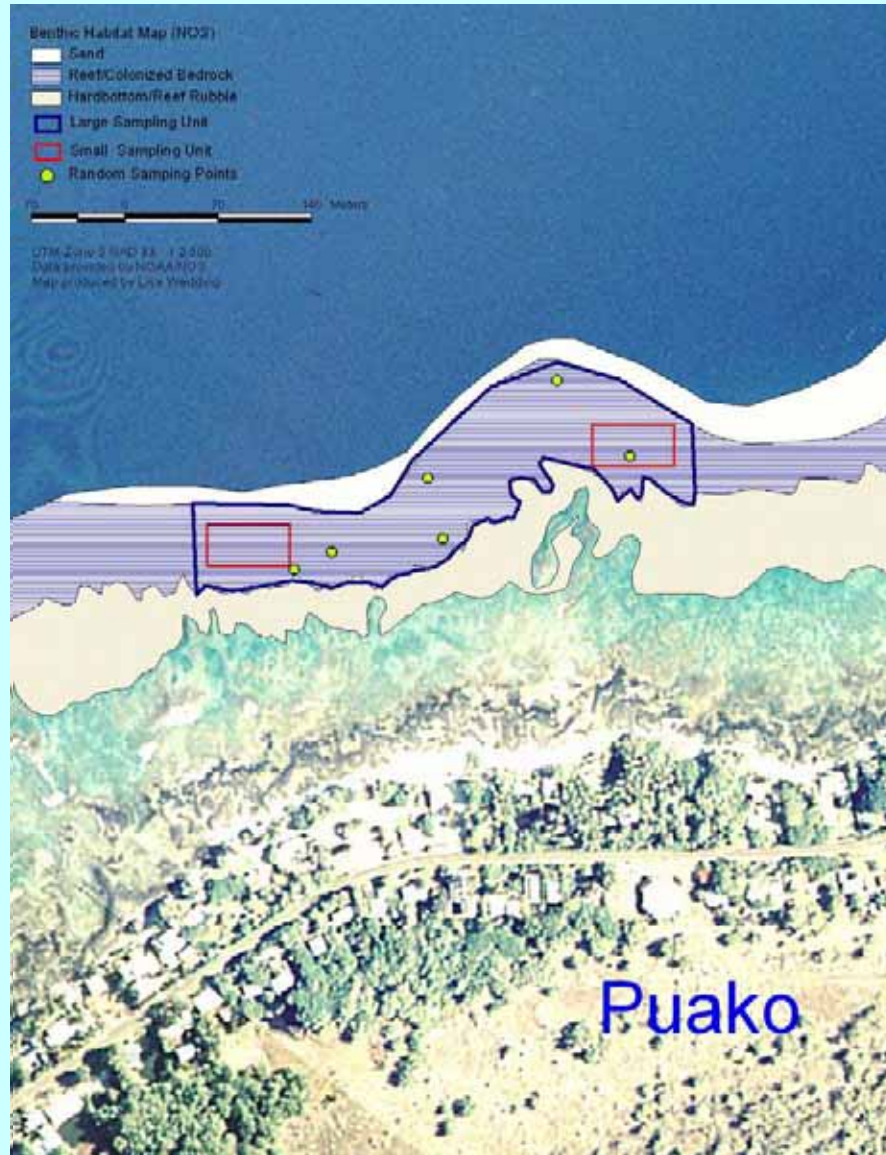
Fish: small site-attached; large & mobile

Benthos: coral; sessile invertebrates; algae

Structural: rugosity, # holes

Mobile Inverts: urchins; crown of thorns

'Reef-Scale' Monitoring



Target Monitoring Unit

Habitat: Colonized Hard Bottom

Depth: 30' to 50'

Size: 300 m * 100 m

Progress ...

Task	Q 1	Q 2	Q 3	Q 4	Task	Q 1	Q 2	Q 3	Q 4
Methods - Protocols					Monitoring W. Hawaii (12 sites)				
Fish – Site-attached	X				Site Layout	X			
Fish – Resource Fish	X				Fish – Resource Fish	X	X	X	X
Fish – Highly Mobile / Rare			X		Fish – Site-attached	X	X	X	X
Benthos – Digital Still	X				Mobile Inverts	X		X	
Benthos – Visual Assessment		X			Benthos			X	
Mobile Invertebrates		X							
Structural – Rugosity		X			Analysis				
					Fish – Fishing				X
					Fish – Reef Condition				X
Data/GIS					Fish – Population Density				X
Fish Database MS Access	X								
GIS - Site Maps		X							
GIS – Selecting Monitoring Points		X			Reporting				
GIS – Site Characteristics			X		Specify Reporting Requirements			X	
Construction of geo-database				?	Annual Report				X
					Web page				?
Fishing Intensity Assessment									
Co-ordination with HRMFS			X		MHI Monitoring Strategy				X