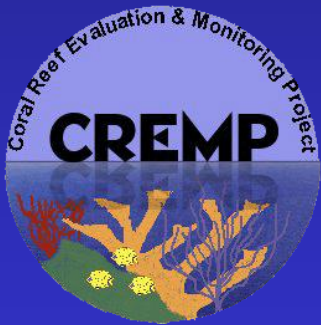


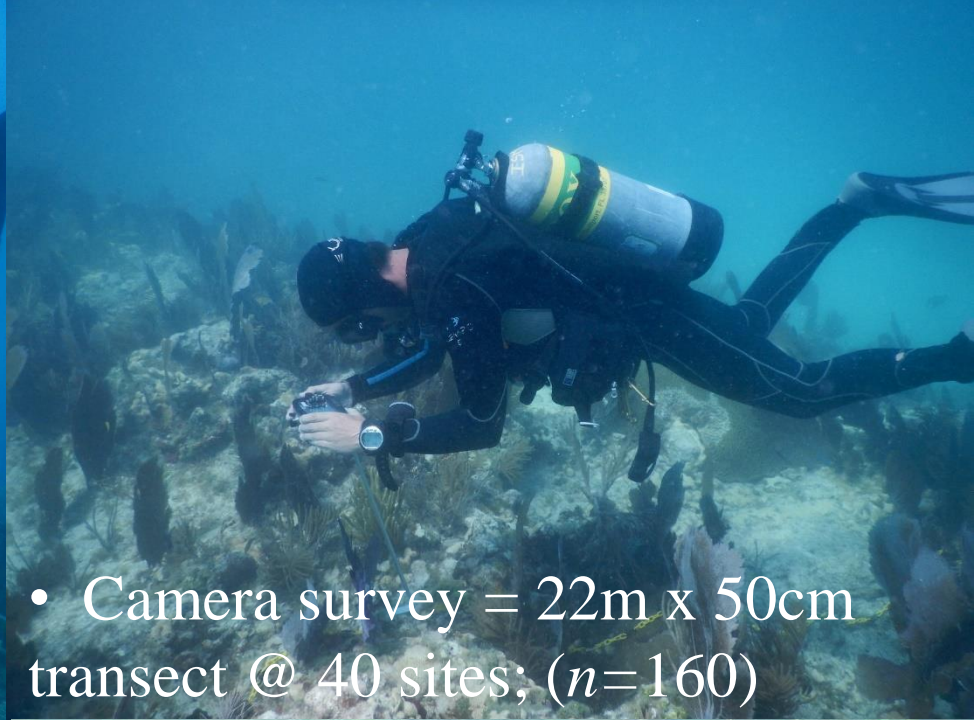
Coral Reef Evaluation and Monitoring Project FKNMS Water Quality Protection Program TAC Workshop July 14th, 2016

**Rob Ruzicka, Mike Colella,
Vanessa Brinkhuis, Lindsay Huebner,
& Many Others**



**CREMP is funded by US EPA Water Quality Protection Program
Federal Award No. X7-95447709**

**A presentation of the Florida Fish and Wildlife Conservation Commission/
Fish & Wildlife Research Institute**

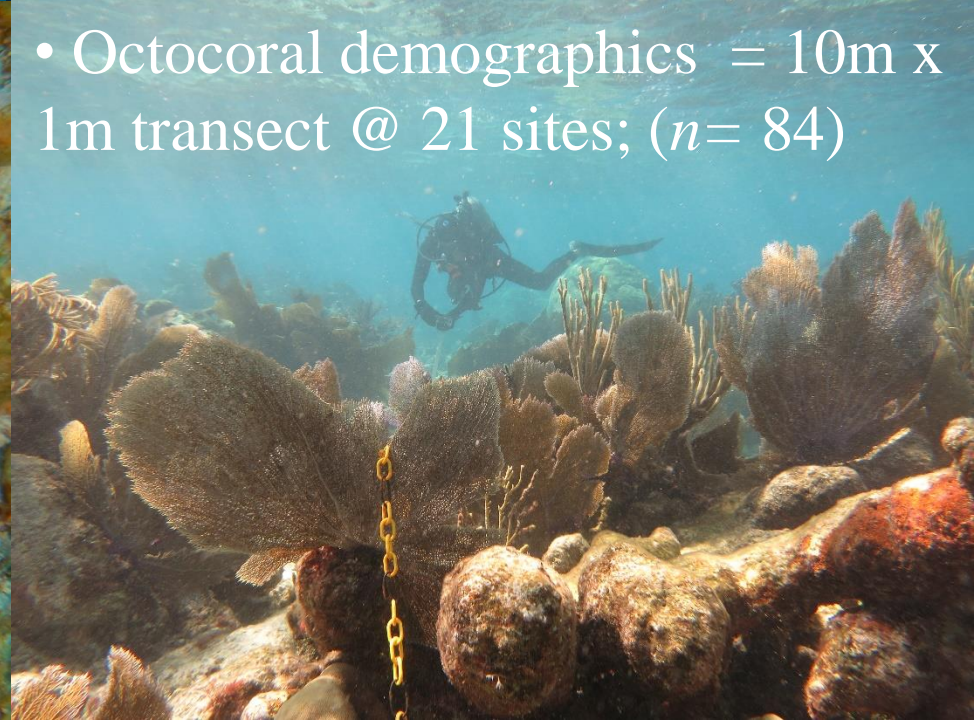
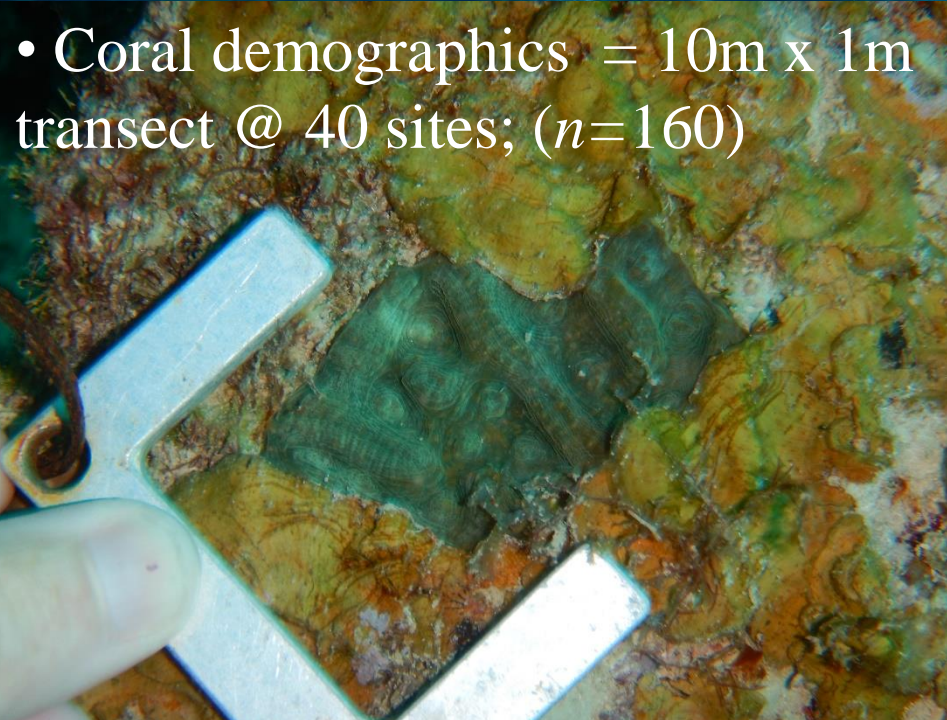


- Permanent transects @ 40 sites

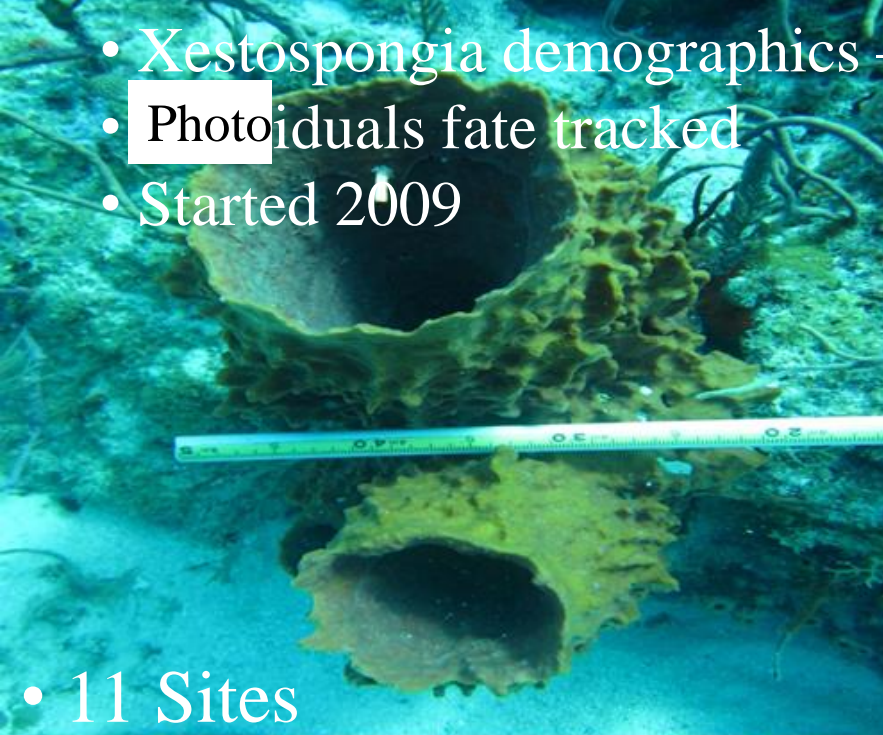
- Camera survey = 22m x 50cm transect @ 40 sites; ($n=160$)

- Coral demographics = 10m x 1m transect @ 40 sites; ($n=160$)

- Octocoral demographics = 10m x 1m transect @ 21 sites; ($n= 84$)



- *Xestospongia demographica* – 11 sites; 6, 22m x 1m transects
- Photo individuals fate tracked
- Started 2009



• 11 Sites

• 6, 22m x 1m transects



• Colonies fate tracked

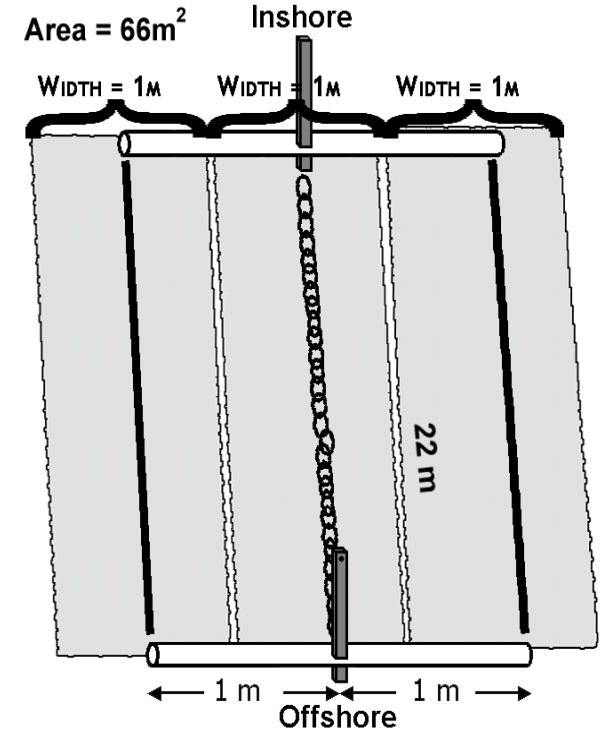
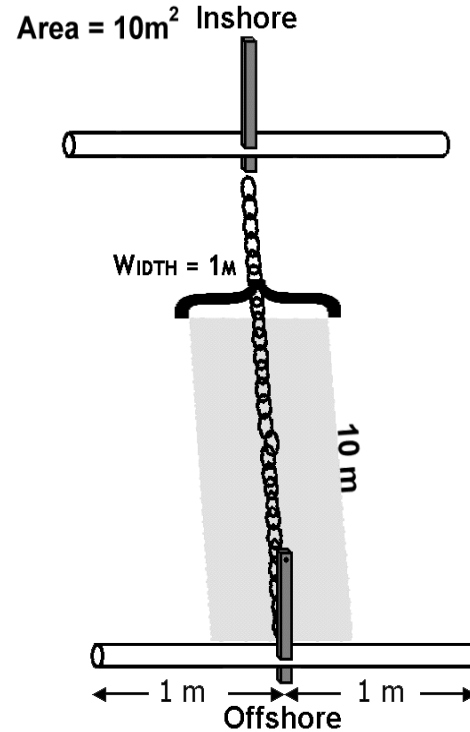
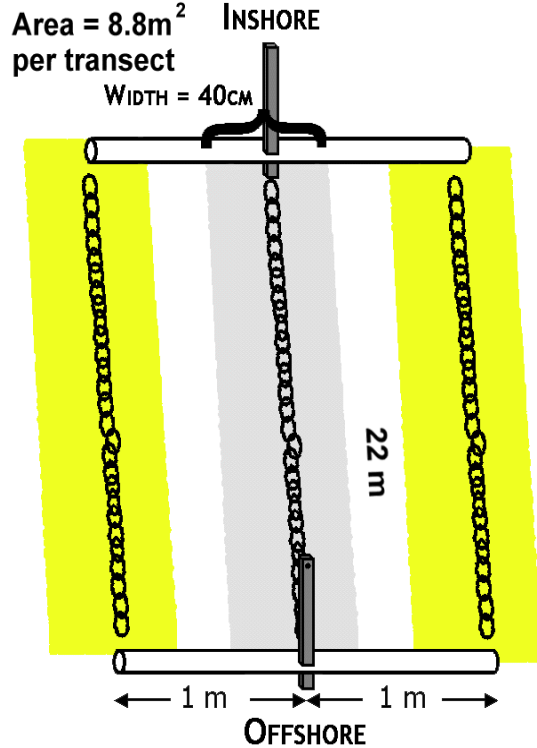
• >500 Individuals tracked since 2009

Methods - Present

Demographic Surveys

Xestospongia muta

Photo Transects



Percent Cover:

1. Corals
2. Octocorals
3. Sponges
4. Zoanthids
5. Macroalgae
6. Cyanobacteria
7. Other benthic critters

Coral & Octocoral:

1. Abundance (density)
2. Size Class Information
3. Living Tissue Estimates
4. Disease Prevalence
5. Bleaching Prevalence
6. Prevalance of Recent Mortality

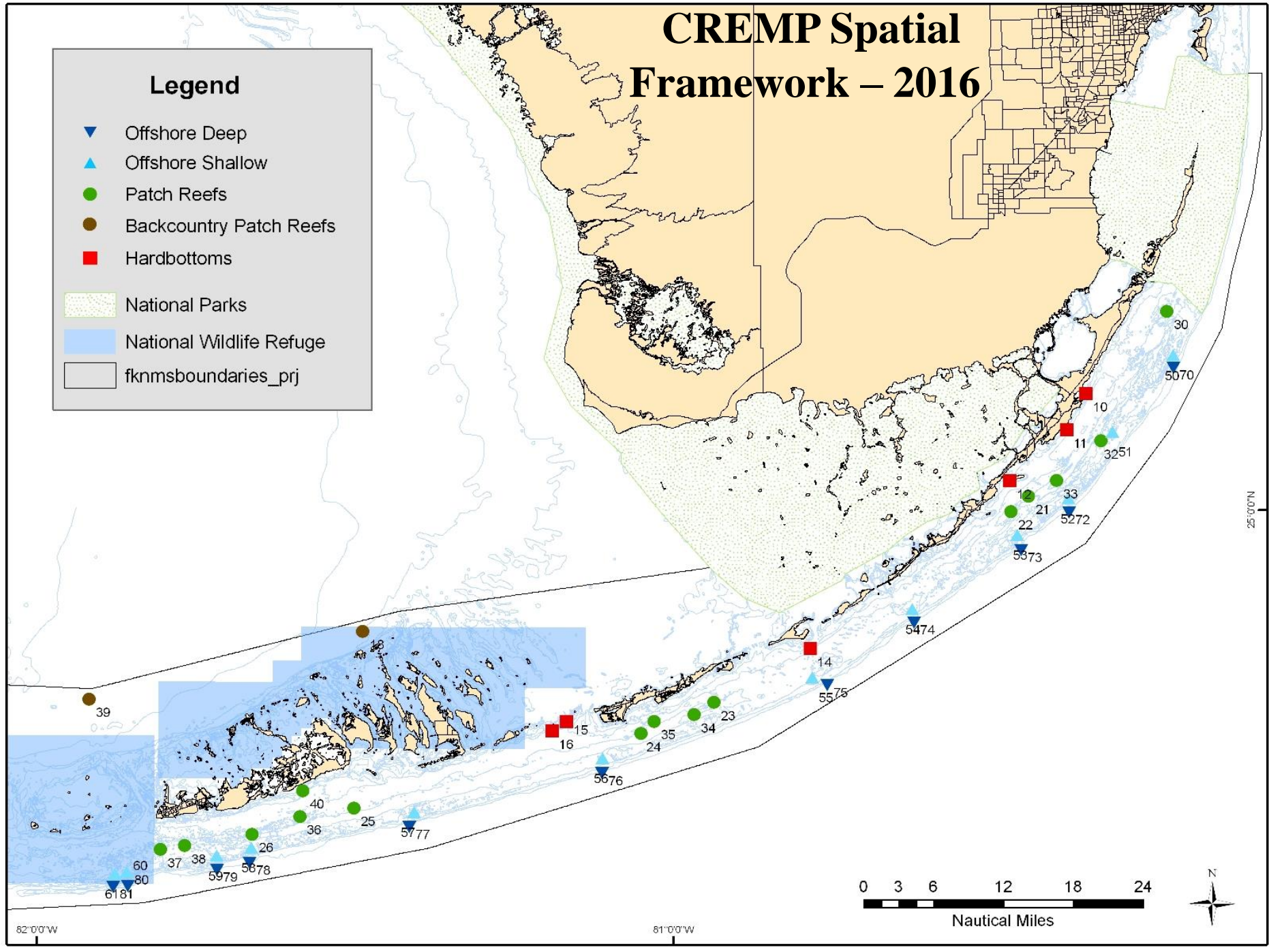
Sponge:

1. Abundance (density)
2. Size Class Information
3. Recruitment Rates
4. Mortality Rates
5. Disease Prevalence

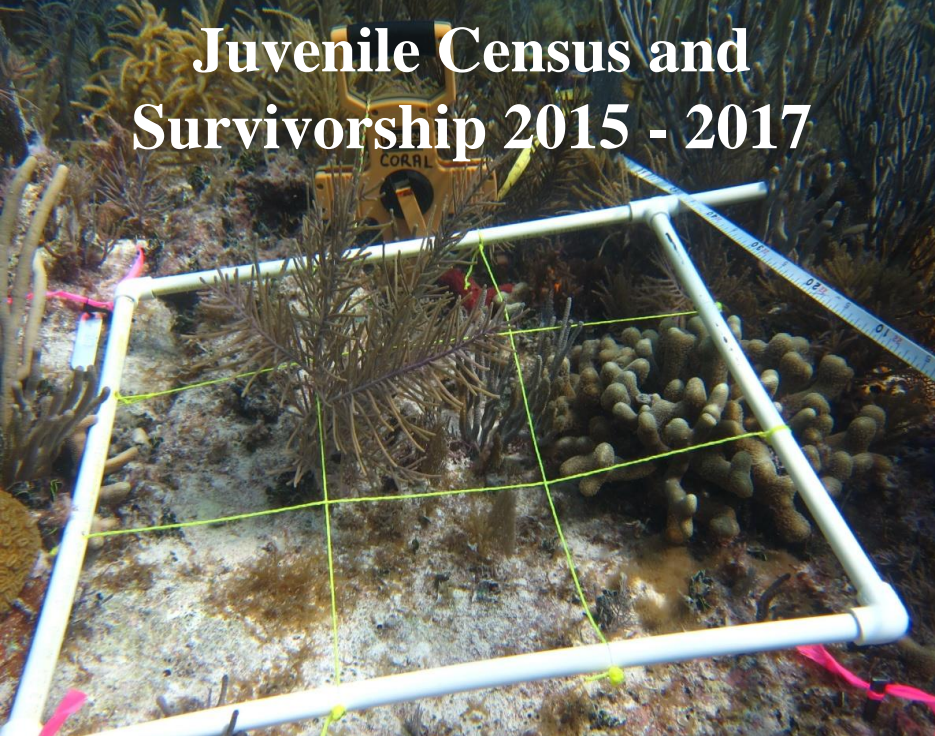
CREMP Spatial Framework – 2016

Legend

- ▼ Offshore Deep
- ▲ Offshore Shallow
- Patch Reefs
- Backcountry Patch Reefs
- Hardbottoms
- ▨ National Parks
- ▨ National Wildlife Refuge
- ▭ fknmsboundaries_prj



Juvenile Census and Survivorship 2015 - 2017



**18 Sites Florida Keys
12 Sites SE Florida**



Coral Settlement on tiles

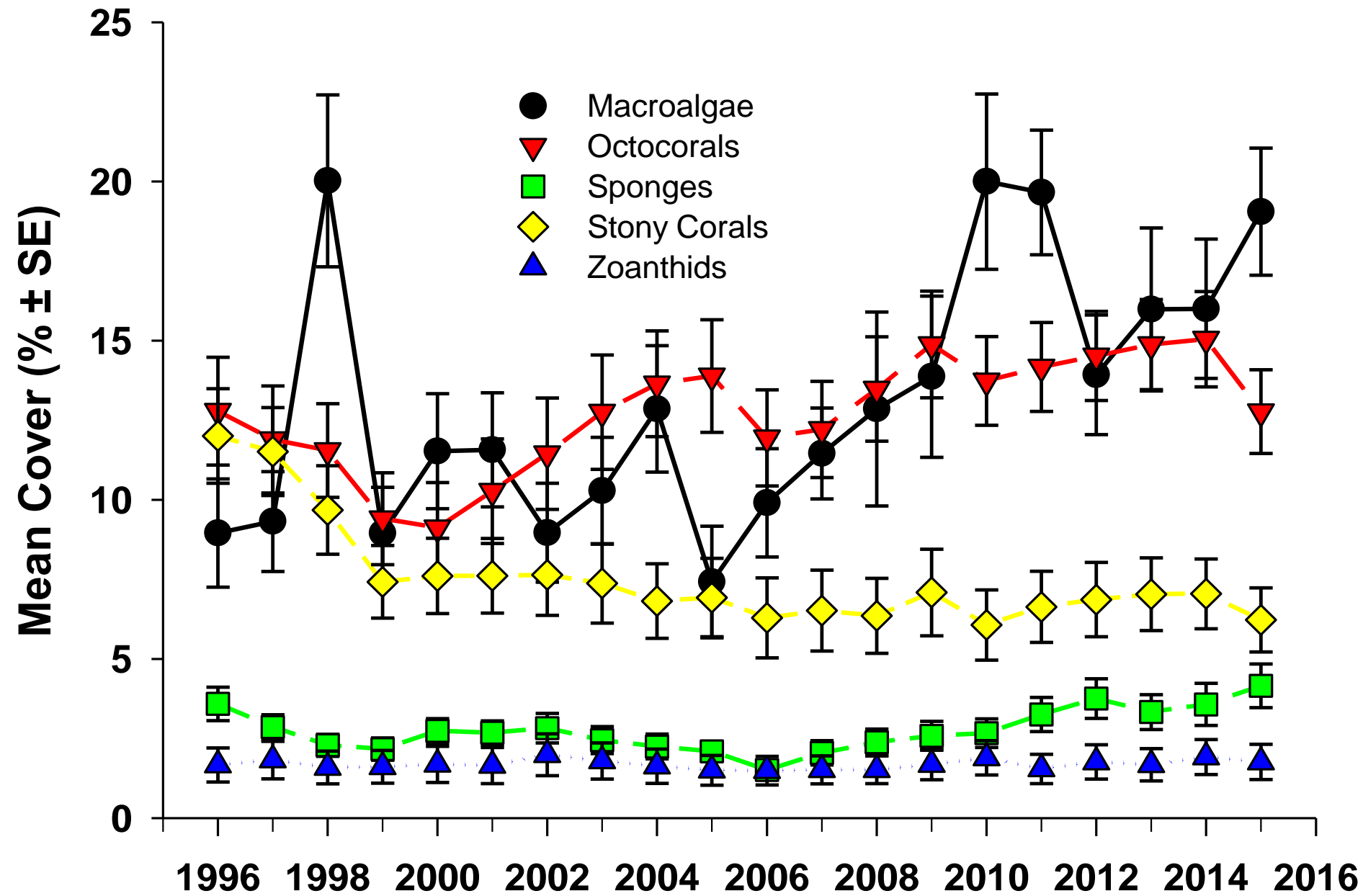


**18 Sites Florida Keys
12 Sites SE Florida**

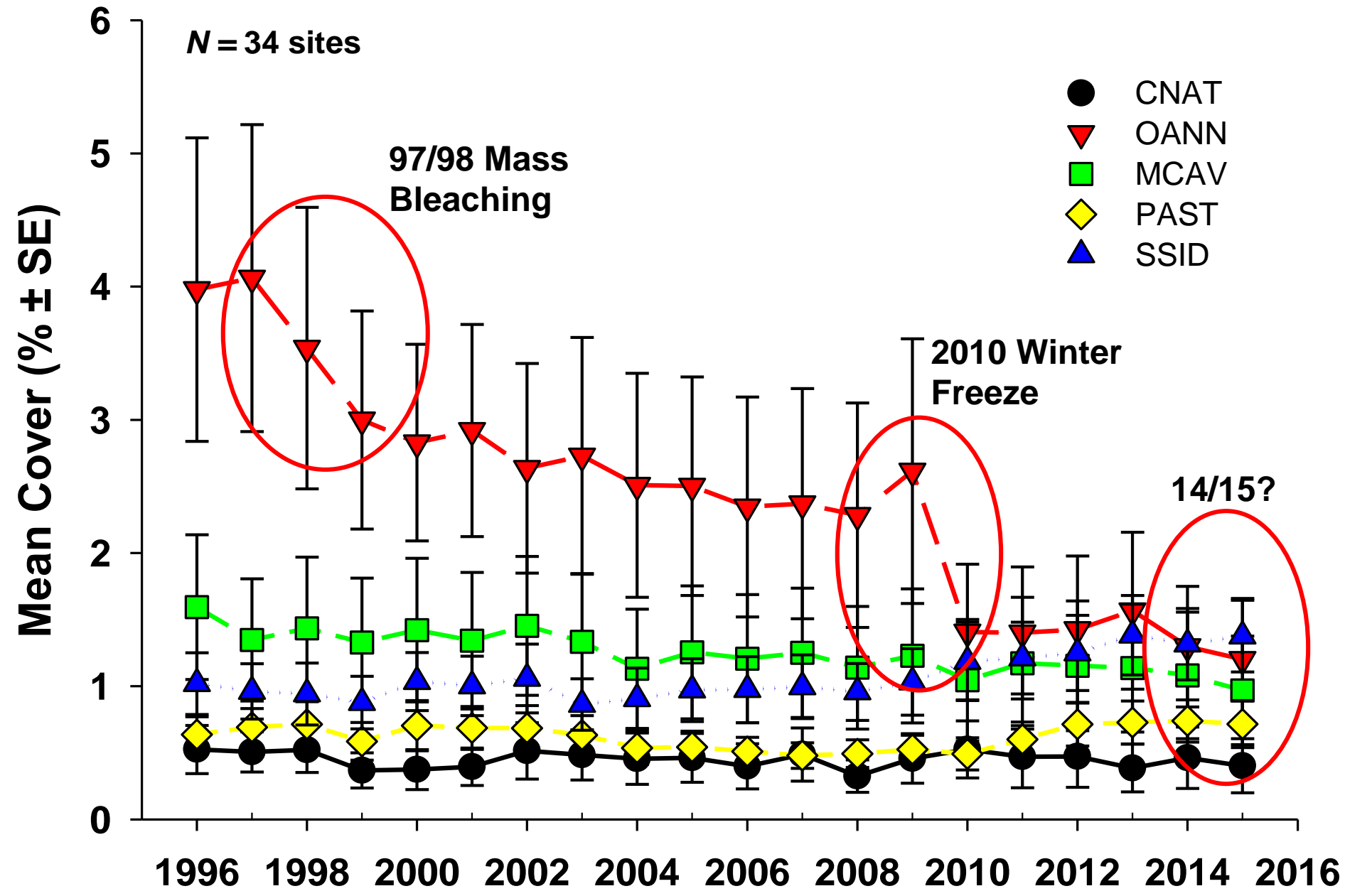


Funded by NOAA CRCP for 3 Years 2015 - 2017










Long Term Trends in Benthic Cover – Florida Keys



Long Term Trends in Benthic Cover – Coral Species



Species Specific and Total Coral Abundance 2011 - 2015

YEAR	CNAT	DSTO	MMEA	MCAV	PAST	SSID	SMIC	UAGA	OANN	All Corals
										
2011	206	122	33	597	1698	2412	1041	1206	292	8786
2012	176	120	34	664	2019	3040	1258	1368	313	10372
2013	183	123	36	639	2010	3065	1282	1247	289	10106
2014	196	122	37	612	1916	2961	1221	1214	269	9632
2015	185	130	41	629	1991	3191	1292	822	264	9528
<i>P</i>	NS	NS	NS	NS	NS	NS	NS	*	**	NS

- $N = 40$ sites; transect data pooled for all sites
- Two way repeated measures ANOVA with year and habitat as factors

Juvenile Coral Abundance 2015

- Region

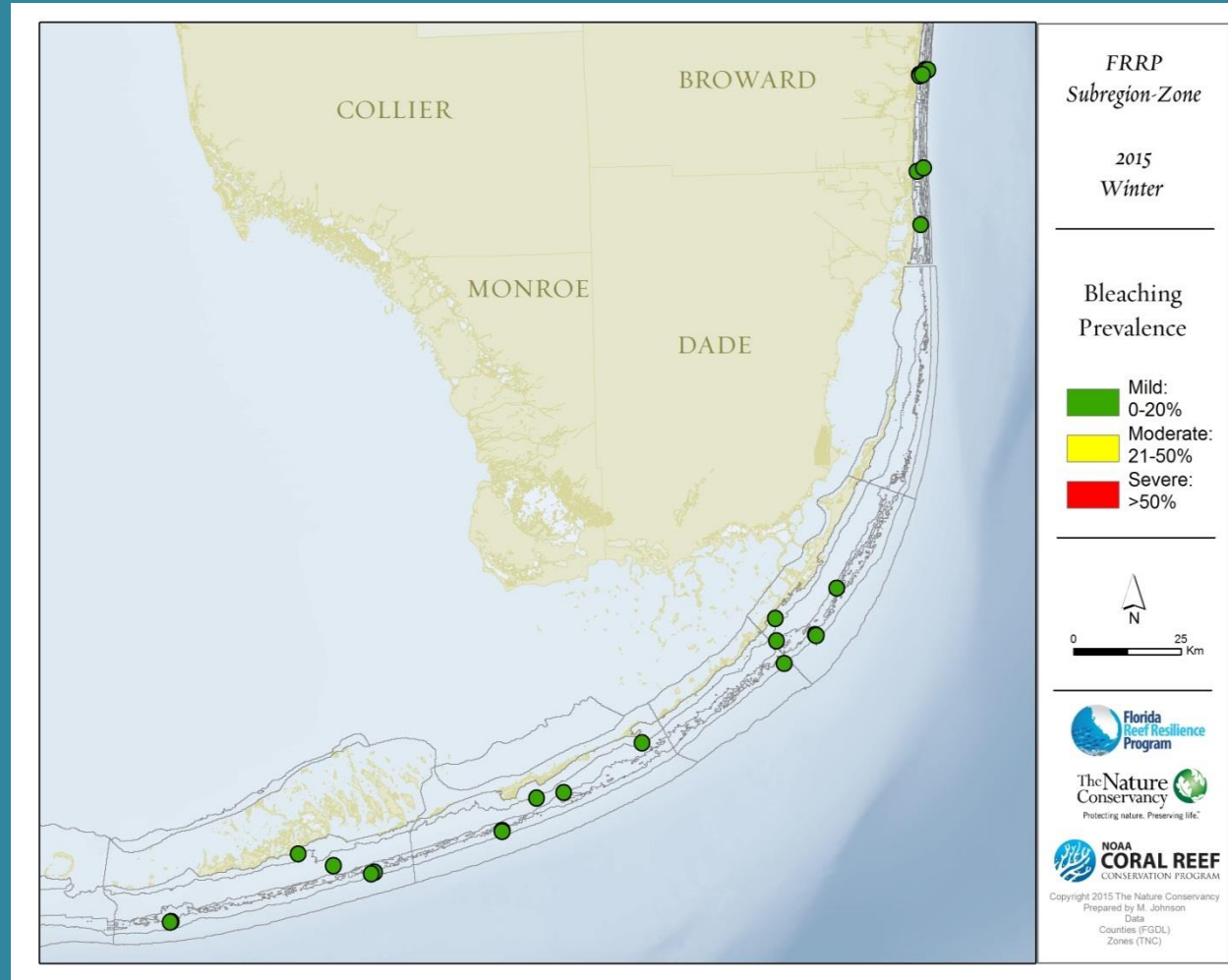
	Stony	Octo	Total
Upper Keys	526	751	1277
Middle Keys	1176	476	1652
Lower Keys	917	401	1318

- Reef Type

	Stony	Octo	Total
Patch Reef	784	444	1228
Shallow Forereef	634	589	1223
Deep Forereef	1201	595	1796

2015 Post-Bleaching Surveys

- Surveys completed at 25 CREMP and SECREMP sites
- Surveys took place from January-February 2015
- Mild bleaching occurred at all sites.
- This data shows bleaching only, NO paling



CREMP Publications and Reports available at
<http://research.myfwc.com/>

