

Updated Oyster Reef Coverage in Mosquito Lagoon - 2021 Imagery

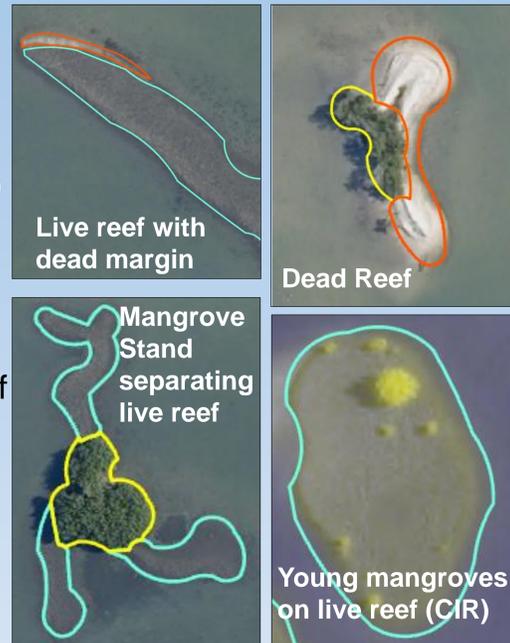
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Research Questions

- How has oyster reef area and abundance in Mosquito Lagoon (ML) changed since 2009?
- What is the number and area of adult mangrove stands growing on oyster reefs in ML?

Methods

- 2021 Color Infrared Imagery (CIR) was provided by SJRWMD
- Reef features were digitized manually
- Minimum reef size digitized: 8.5 m²
- Digitizing Scale: 1:600
- Adult mangrove stands were defined as a continuous canopy of adult trees surrounded by reef or sharing an island with reef
- Unlike Garvis et al. (2015), adult mangrove stands were digitized separately from oyster reefs (This may change with ground truthing)
- Dead reefs were identified by lighter coloration
- Living and dead oyster areas were split into different reefs
- Young mangroves were identified using CIR imagery



Preliminary Results

*Data from Garvis et al. (2015)

- 338 adult mangrove stands were identified on oyster reefs and covered 5.14 hectares
- 416 reefs had young mangroves

Year	# Live Reefs	# Hectares Live Reef	# Dead Reefs	Hectares Dead Reef	% Loss Live of Live Coverage
1943*	2,722	61.07	5	0.32	0
1951*	2,716	57.46	10	0.75	6
1967*	2,715	54.91	18	0.99	10
1971*	2,705	54.17	32	1.06	11
1984*	2,685	51.82	93	2.33	15
1995*	2,609	48.28	230	3.12	21
2006*	2,530	46.04	269	3.61	24
2009*	2,542	46.34	247	4.30	24
2021	3,056	26.07	229	1.86	57

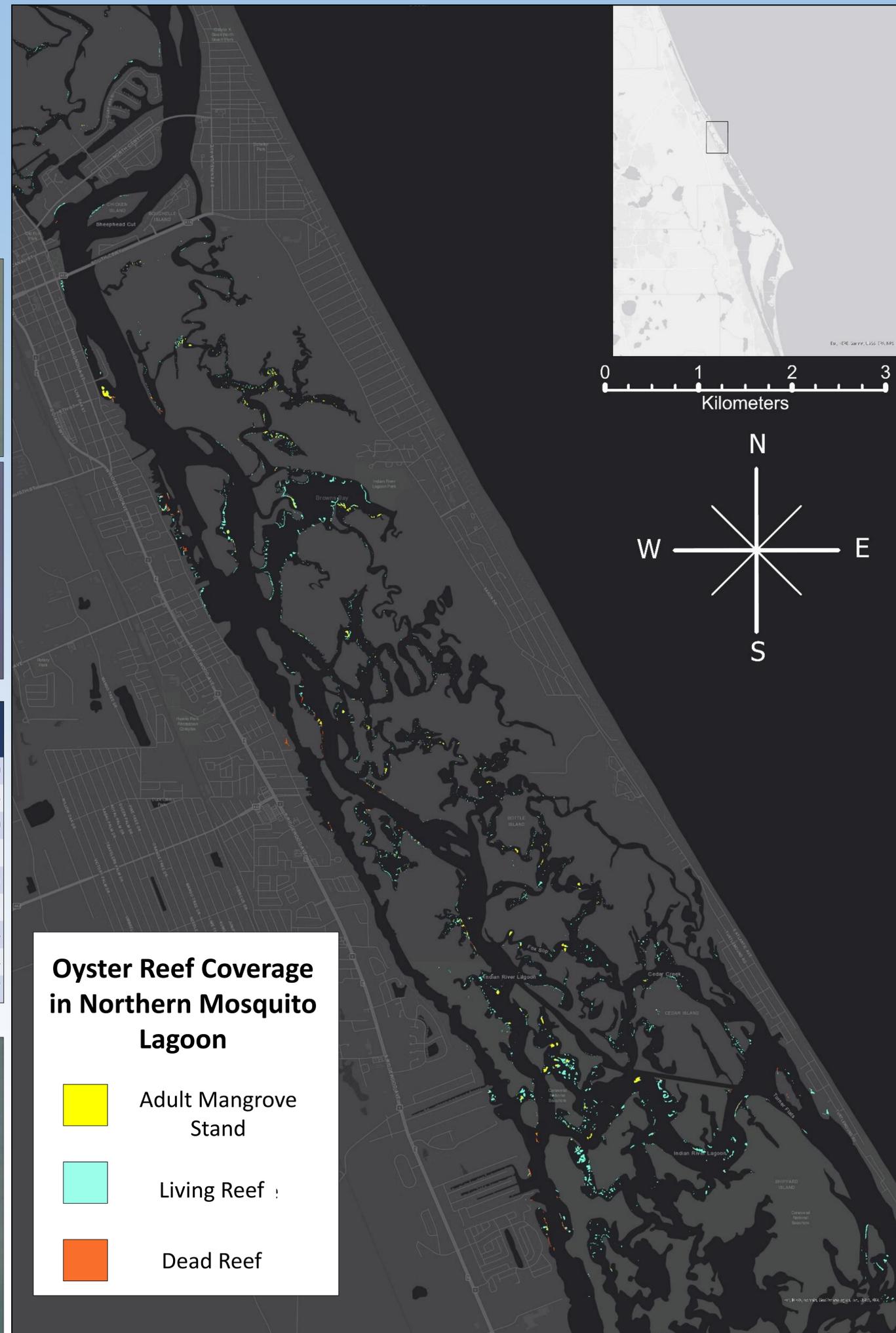
Preliminary Conclusions

- Number of living reefs increased and number of dead reefs decreased
- Possible explanations for total reef area decline include,
 - Increased mangrove cover
 - Reef fragmentation
 - Development of new dead margins
- Reduction in number of dead reefs likely influenced by restoration activities (91 reefs restored)
- Ground truthing will be conducted this summer

Oyster Reefs Surrounding Mangrove Island



How to best delineate reefs in the context of expanding mangrove coverage?



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