

Building Capacity for Resilience on Florida's Coral Reef through Coral Rescue and Propagation

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Stony Coral Tissue Loss Disease (SCTLD)

- First documented in 2014 in Miami-Dade
- 34 susceptible Caribbean and ESA listed species (AGRRA)
- 80-90% reduction in abundance/live tissue
- Confirmed presence in 33 Caribbean countries and territories
- Prevalence currently <5% with occasional flare ups

Tissue Loss Disease (SCTLD) Outbreak in the Caribbean



Florida Coral Rescue Project

“Rescue” (collect and live gene bank) healthy and surviving corals from SCTLD

- **prevent** them from becoming infected
- **preserve** genetic diversity
- **propagate** for future restoration



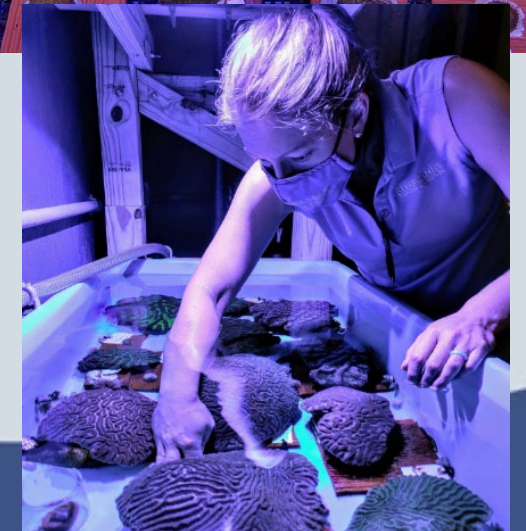
Rescue by the Numbers

- 8 years (2018-present)
- 2339 corals under care
- 20 species
- 83 collection sites
- 22 day trips/ 7 cruises
- Continued endemic collections



Species Collected:

- *Agaricia lamarcki*
- *Colpophyllia natans*
- *Dendrogyra cylindrus**
- *Dichocoenia stokesi*
- *Diploria labyrinthiformis*
- *Eusmilia fastigiata*
- *Favia fragum*
- *Madracis auretenra*
- *Meandrina meandrites*
- *Montastraea cavernosa*
- *Mussa angulosa*
- *Mycetophyllia aliciae*
- *Mycetophyllia ferox**
- *Mycetophyllia lamarckiana*
- *Orbicella annularis**
- *Orbicella faveolata**
- *Orbicella franksi**
- *Pseudodiploria clivosa*
- *Pseudodiploria strigosa*
- *Solenastrea bournonii*

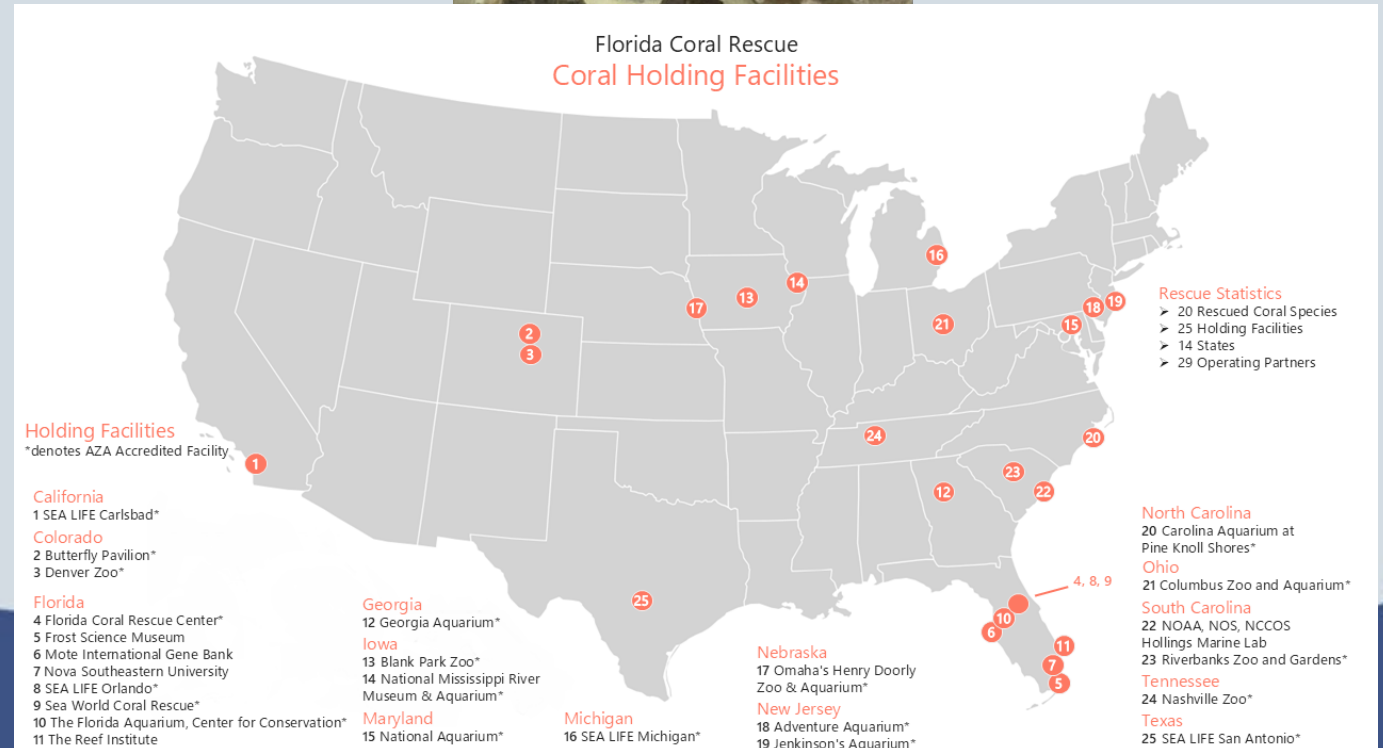
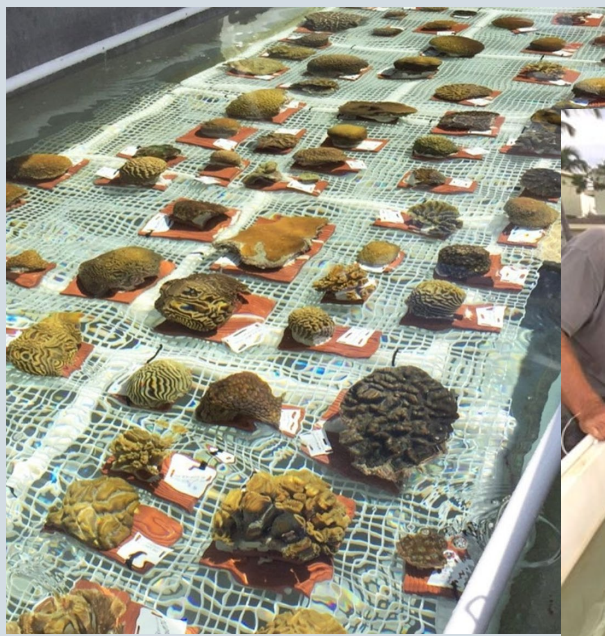


Holding

Long-term land-based holding facilities

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- non-AZA holding facilities
- universities, research facilities, non-profits
- Adding new facilities in 2026



Partners



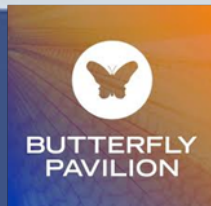
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THE FLORIDA
AQUARIUM

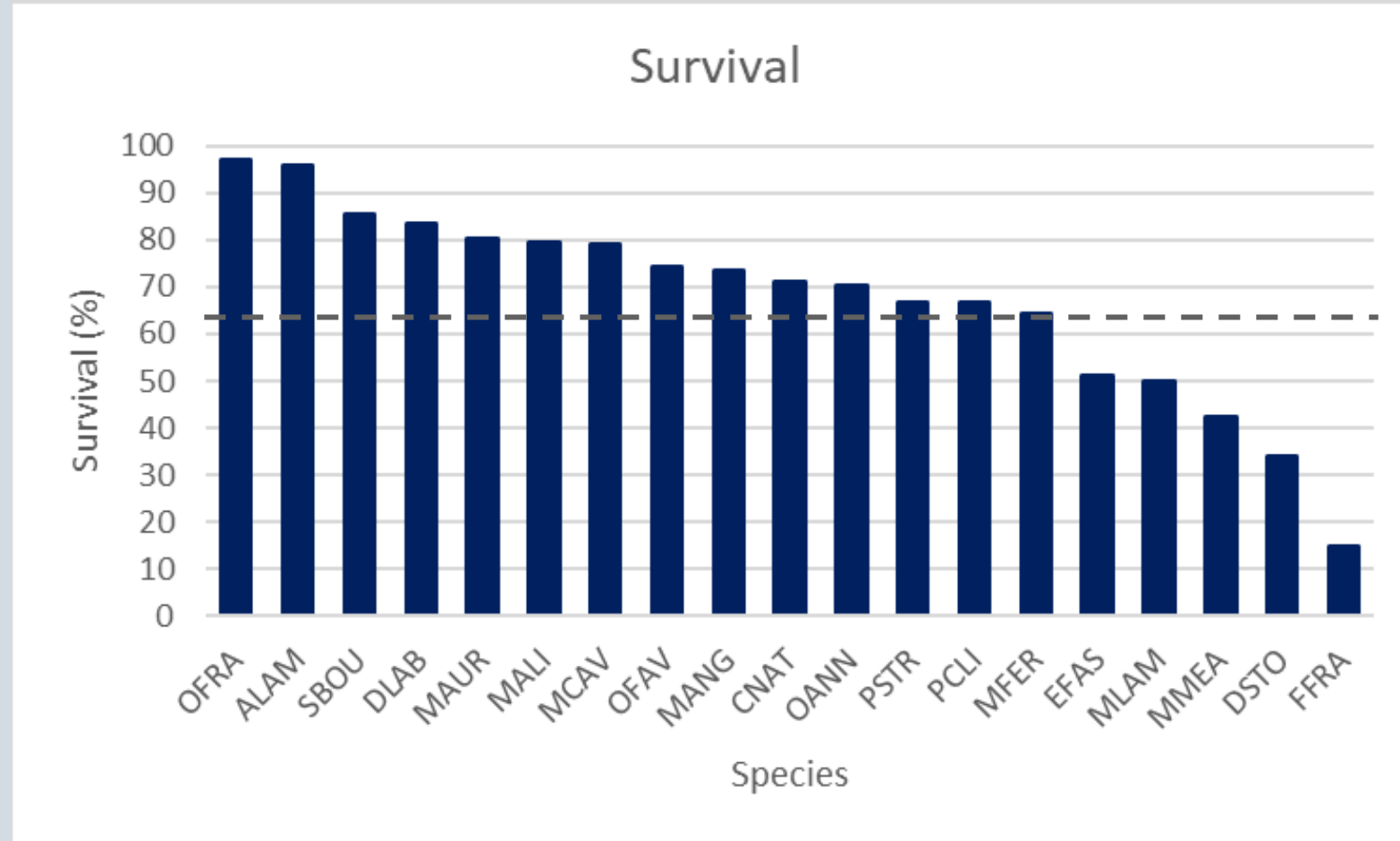


NOVA SOUTHEASTERN
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Survival

- Survival- 62.6%
- Lowest survival in Meandrinidae family (42.5%)
- No SCTLD observed under care
- Other sources of mortality



Advancements in Care

- Many species new to land-based care
- Opportunity to learn husbandry/care needs for Caribbean corals
- Treatments

Treatment	Success (%)
Antibiotic	63.8
Dip	55.9
Supplements	49.0
Topical	70.0
Amputation	55.6
Total	57.4



Genetics

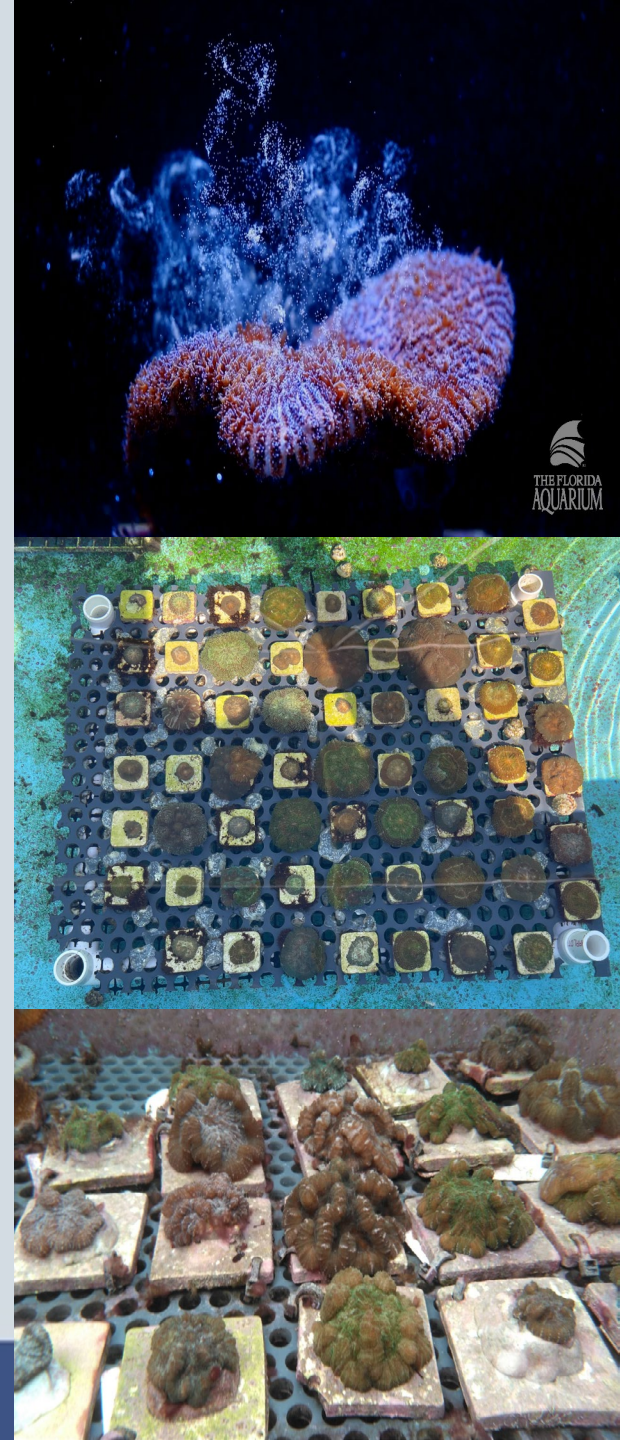
Species	Steps in the Genetic Pipeline						# of Unique Broodstock Genets
	Genotyping-by-Sequencing (GBS)	SNP Selection	Assay Development	Genotyping	Data in FWC Genet Registry	Breeding Plan Developed	
ALAM	X						
CNAT A	X	X	X	X	Pending	X	67
CNAT B	X	X	X	X	Pending	X	126
DCYL	X	X	X	X	X	X	117
DLAB	X	X	X	X	X	X	208
DSTO	X	X					
EFAS	X	X					
FFRA	X						
MALI	X	X	X	Pending			
MANG	X	Pending					
MAUR	X						
MCAV	X	Pending					
MFER	X						
MLAM	X	X	X	X	Pending	Pending	87
MMEA	X	X	X	X	X	X	287
OANN	X	X	X	Pending			
OFAV	X	Pending					
OFRA	X	Pending					
PCLI	X	X	X	X	X	Pending	63
PSTR	X	X	X	X	X	X	282
SBOU	X						



*see Alicia's presentation at 9:20am

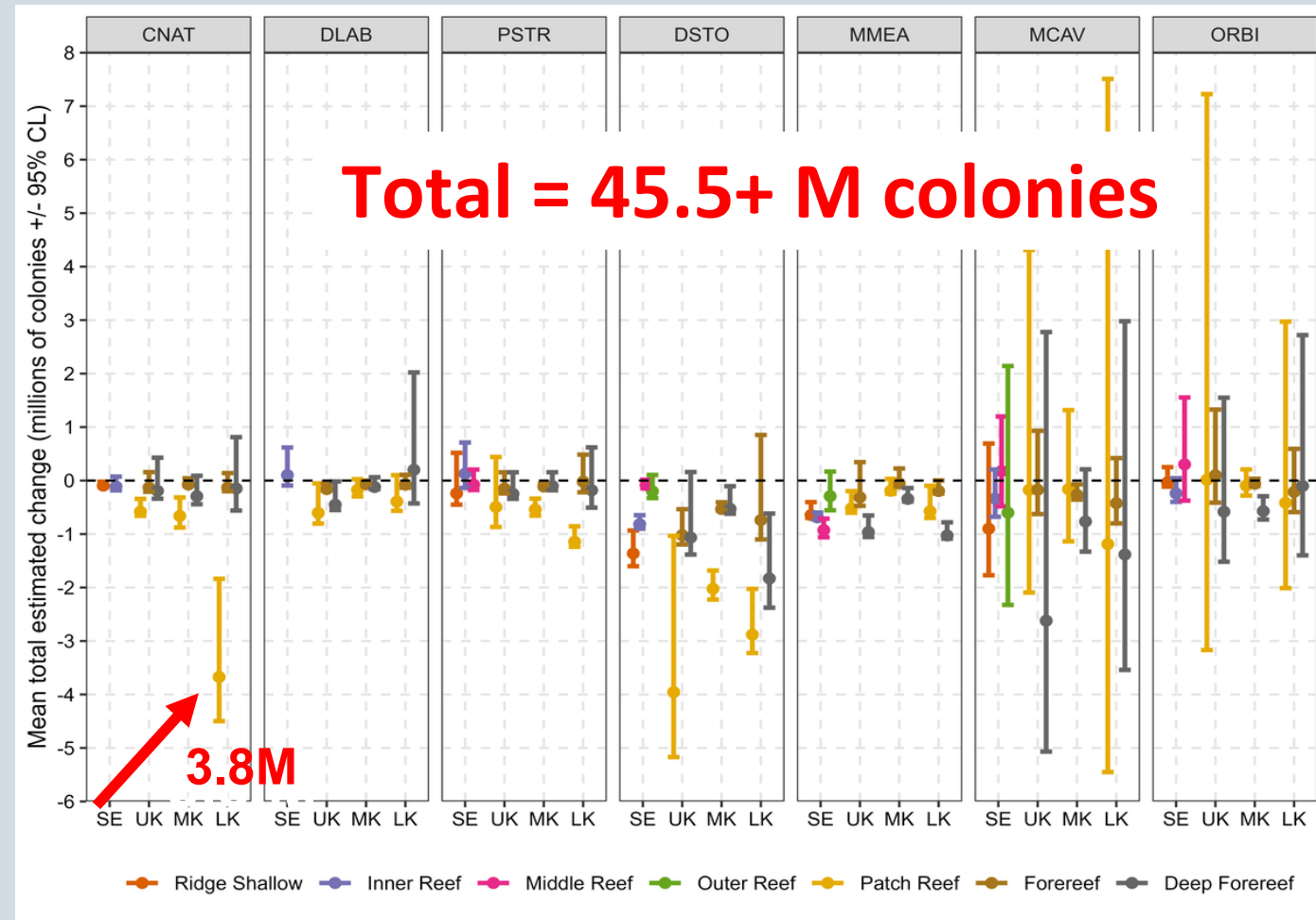
Propagation and Rearing Success

- Land-based spawning = 15 species
 - Lab-assisted spawning = 8 species
- Breeding Plans/Assisted Fertilization
- Production of larvae (2025 = +2.4M larvae)
 - 5 species (CNAT, DLAB, MCAV, OFAV, PSTR)
- Increase in settlement rates
- Successful grow-out to outplant size = 22k*



SCTLD losses

- Long-term monitoring datasets
- Estimated pre-SCTLD densities for 7 Rescue species
- Modeled total losses post-SCTLD



Propagation Needs

Species	Estimated Losses
CNAT	8,818,179
DLAB	6,093,628
DSTO	1,895,413
MCAV	3,181,450
MMEA	1,746,499
ORBI	17,039,245
PSTR	6,737,555
Total:	45,511,969

Florida's Coral Reef is estimated to support 71,000 jobs and generate \$6.5B annually in sales and income



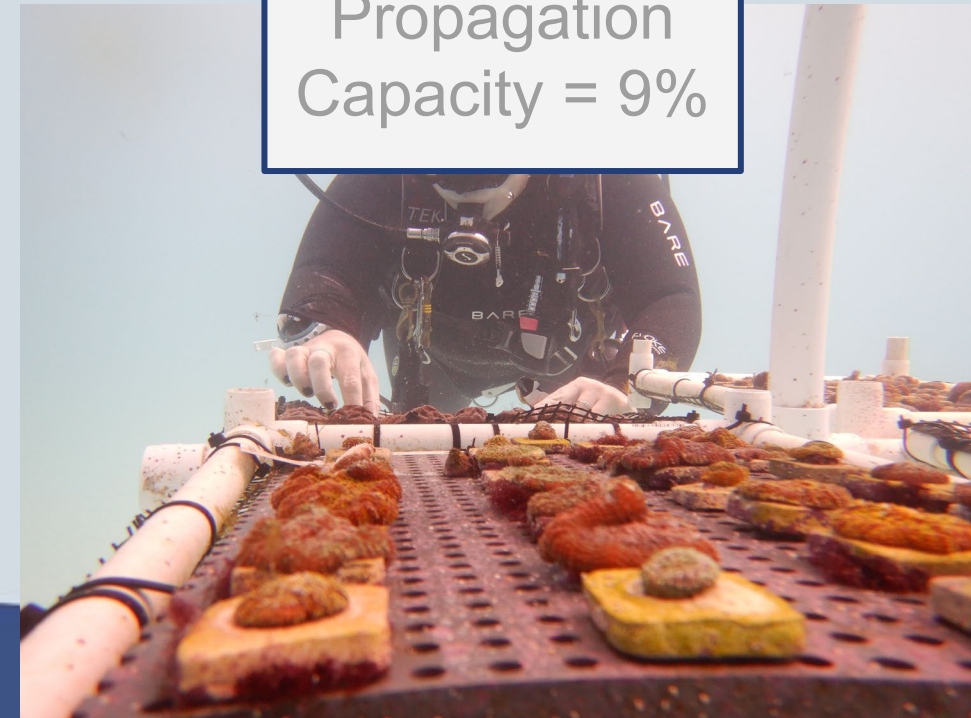
Propagation Capacity

corals
needed

4,551,197

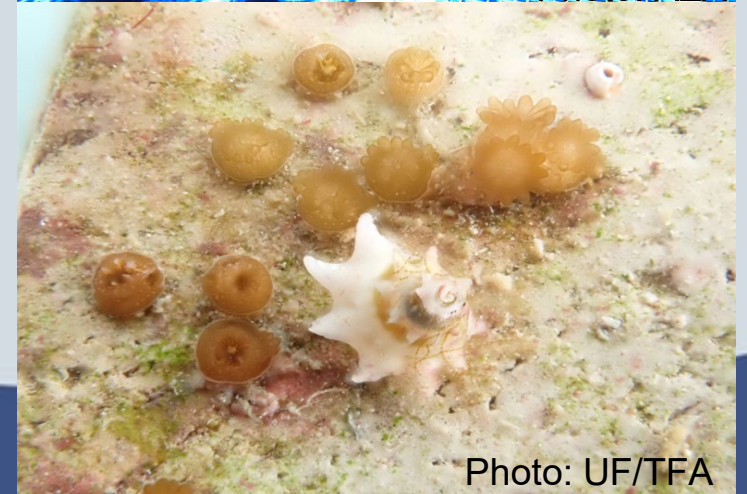
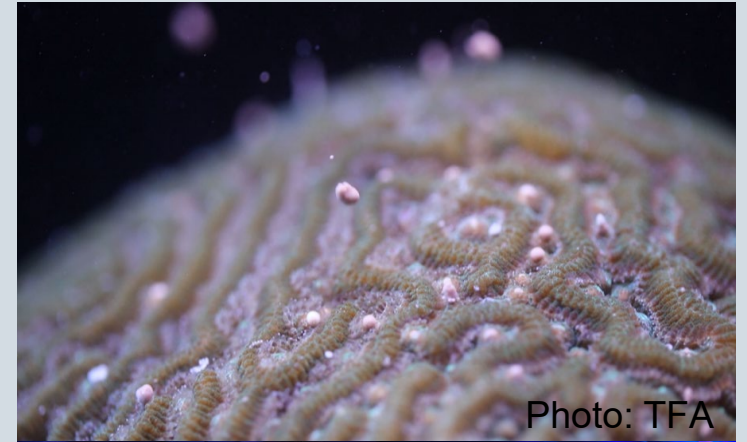


Current
Propagation
Capacity = 9%



Scaling Up Propagation

- Funding
- Space and Infrastructure
- Skilled Workforce
- Population Recovery vs. Ecosystem Restoration



Acknowledgements and Funding

- Coral Rescue Team
- AZA-FRTRP- many thanks to all the Rescue Coral Holders!!
- Florida Keys National Marine Sanctuary
- Dry Tortugas National Park
- M/V Makai (Capt Joe Bailey and crew)
- Calloway Marine Technologies
- Keys Marine Lab
- NOAA Marine Disaster Recovery (IRMA)
- State of Florida (Marine Resource Conservation Trust Fund)
- National Fish & Wildlife Foundation
- State Wildlife Grants

