

# RESTORING SEVEN ICONIC REEFS

A MISSION TO RECOVER  
THE CORAL REEFS OF THE  
FLORIDA KEYS



# C O R A L R E E F S

## A V I T A L E C O S Y S T E M



- For **500 million years**, reef ecosystems have persisted in shallow seas, surviving ice ages and climate shifts.
- They are one of the **oldest and most biodiverse ecosystems** on Earth.



# A NATIONAL TREASURE

THE FLORIDA REEF TRACT



# FLORIDA KEYS

INTIMATELY CONNECTED TO CORAL REEFS



Andy Newman

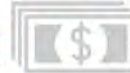


## ECONOMICS & EMPLOYMENT

APPROXIMATELY

**60%**  
OF JOBS

in the Florida Keys are connected to the marine ecosystem.





# HISTORY OF DECLINE

CARYSFORT REEF AS AN EXAMPLE

1975



Phil Dustin

1985



2004



2014





# WHY BOTHER?

- Florida Keys long history of coral restoration efforts to learn from
  1. Concentrated efforts
  2. Abundance in numbers
  3. New species to be used
  4. Building resilience through diversity
- AND there are external efforts going on, designed to help the system as a whole.
  1. Mooring ball program
  2. Waste water treatment system
  3. FKNMS Restoration Blueprint
  4. Everglades Restoration efforts



# BOLD ACTION IS REQUIRED

- We are facing a harsh reality that natural recovery is **no longer an option**.
- Active population enhancement is a necessity
- Recognizing the need for a comprehensive plan.
- The time was right...





# MISSION: ICONIC REEFS

## PROJECT DEVELOPED IN ASSOCIATION WITH

- NOAAs Restoration Center
- Florida Keys National Marine Sanctuary
- Coral Restoration Foundation
- State of Florida
- Mote Marine Lab
- Reef Renewal
- Florida Aquarium
- The Nature Conservancy
- Nova Southeastern University
- U.S. Geological Survey
- Plant a Million Corals Foundation





# SEVEN ICONIC REEFS

SELECTED FOR COMPLETE RESTORATION



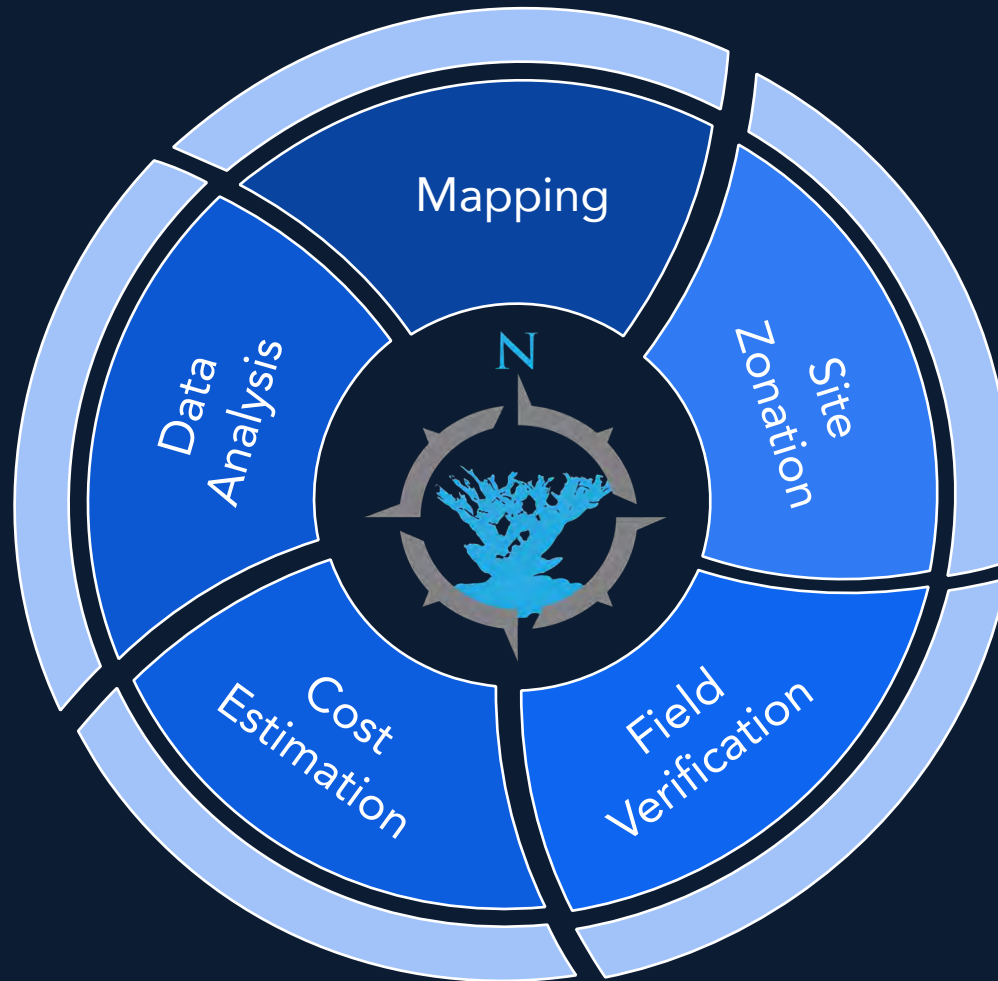
- Seven of the most **iconic and important reef systems** in the Florida Keys.

- A **cross-organization and multi-agency** team of experts and resource managers.

- An internationally unprecedented strategy for **complete reef restoration**.

# MAKING OF AN ICON

BUILDING THE PLAN FOR RECOVERY AND RESTORATION





# S I T E M A P I N G

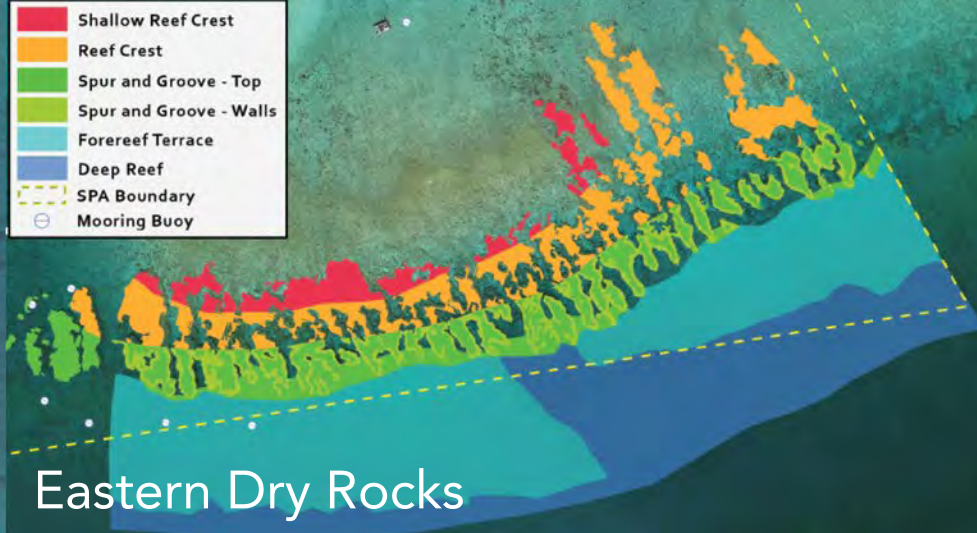
## IDENTIFYING HABITAT ZONES FOR R E S T O R A T I O N



Cheeca Rocks



Horseshoe Reef



Eastern Dry Rocks



# SCOPE OF WORK

IDENTIFYING THE ACTIVITIES NEEDED

1 Site Preparation

2 Coral Propagation and  
Planting

3 Supplement with Grazers

4 Stewardship and Maintenance

5 Monitoring and Adaptive Mgt.





# PHASES OF ICONS

## PHASED APPROACH TO RESTORATION



# 20 YEARS OF RECOVERY

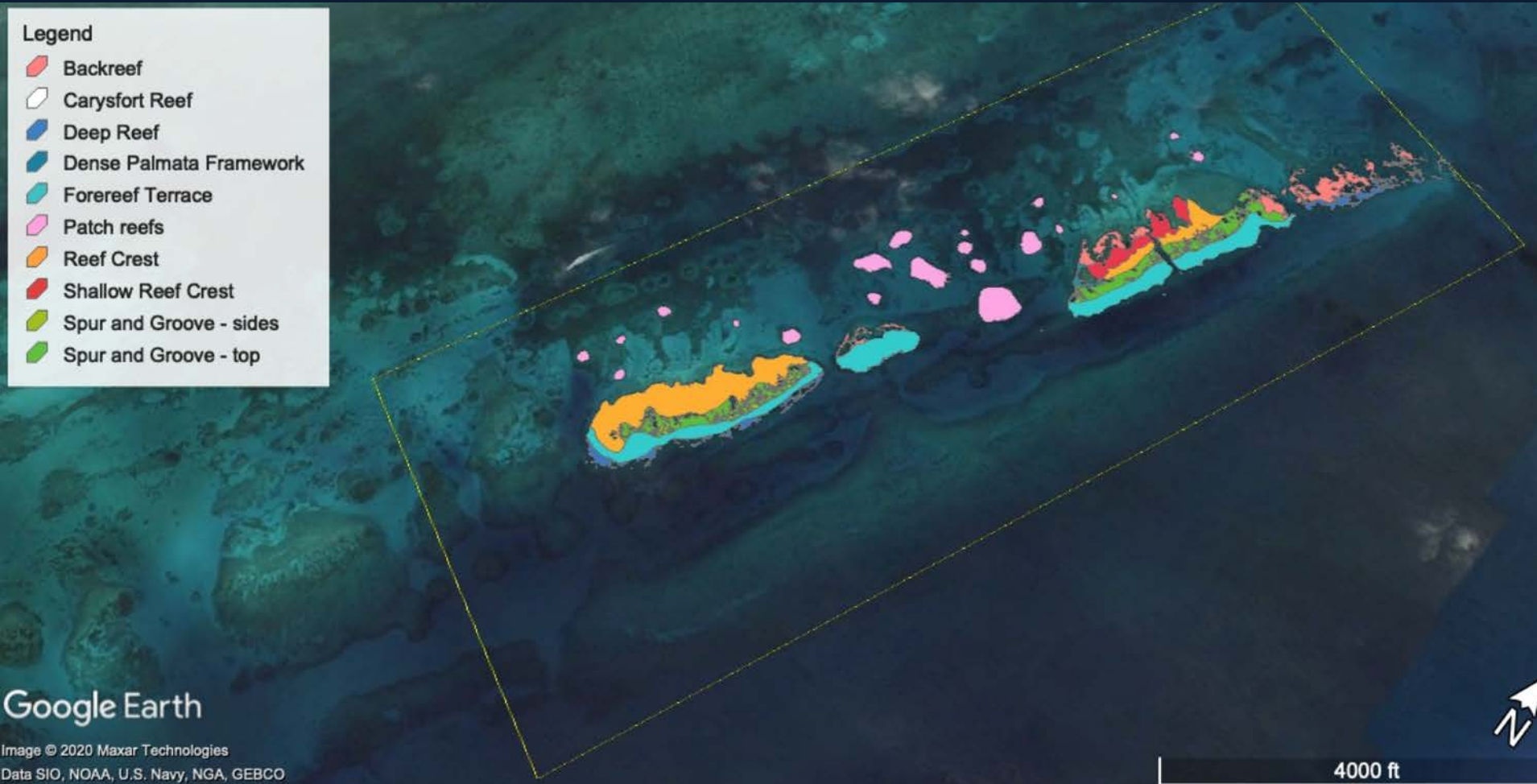
MATURE\* CORALS PLANTED: ~497,000

		Phase 1 A/B			Phase 2	
		ACTION: Add rapid-growing corals DURATION: 5-7 Years of Work 10-YR GOAL: ~15% cover			ACTION: Add slower-growing corals DURATION: 10-12 Years of Work 20-YR GOAL: ~25% cover	
Region	Reef	Restorable Area (sq m)	# of Corals Planted	# of Grazers Added	# of Corals Planted	# of Grazers Added
Upper Keys	Carysfort Reef	125,890	112,228	94,982	93,026	94,982
	Horseshoe Reef	12,223	16,139	5,696	19,556	5,696
Middle Keys	Cheeca Rocks	12,414	12,209	15,517	21,783	15,517
	Sombrero Reef	13,461	11,842	10,096	13,267	10,096
Lower Keys	Looe Key Reef	57,438	47,794	43,078	68,864	43,078
	Newfound Harbor	8,447	4,599	11,066	9,429	11,066
	Eastern Dry Rocks	36,337	30,667	21,633	35,917	21,633
Subtotal		266,209	235,479	202,068	261,842	202,068



# CARYSFORT REEF

R E S T O R I N G   A N   I C O N



# CARYSFORT REEF COMPLEX

- Total Area Mapped
  - North: 259,601m<sup>2</sup>
  - South: 257,778m<sup>2</sup>
- Restorable Area
  - North: 54,088m<sup>2</sup>
  - South: 71,802m<sup>2</sup>

## PHASE 1 RESTORATION TARGETS

	NORTH CF	SOUTH CF	TOTAL
Elkhorn	22,049	40,576	62,625
Staghorn	12,740	18,562	31,302
Star coral	5,877	5,269	11,146
Brain coral	3,278	3,076	6,354
Pillar coral	485	317	802
<b>TOTAL</b>	<b>44,429</b>	<b>67,800</b>	<b>112,229</b>





# WHAT'S THE COST?

RESTORING AMERICA'S ONLY BARRIER REEF



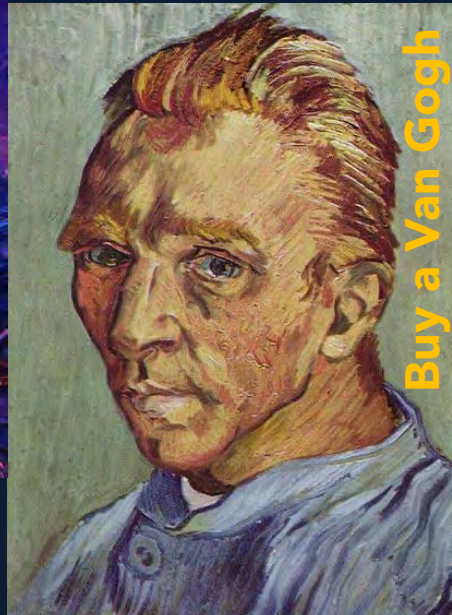
RESTORE AMERICA'S ONLY BARRIER REEF, OR...



Produce 1/4<sup>th</sup> of an  
Avengers Movie



Host the Grammys  
for 10 yrs



Buy a Van Gogh

Host the Macy's Day  
Parade for 10 yrs

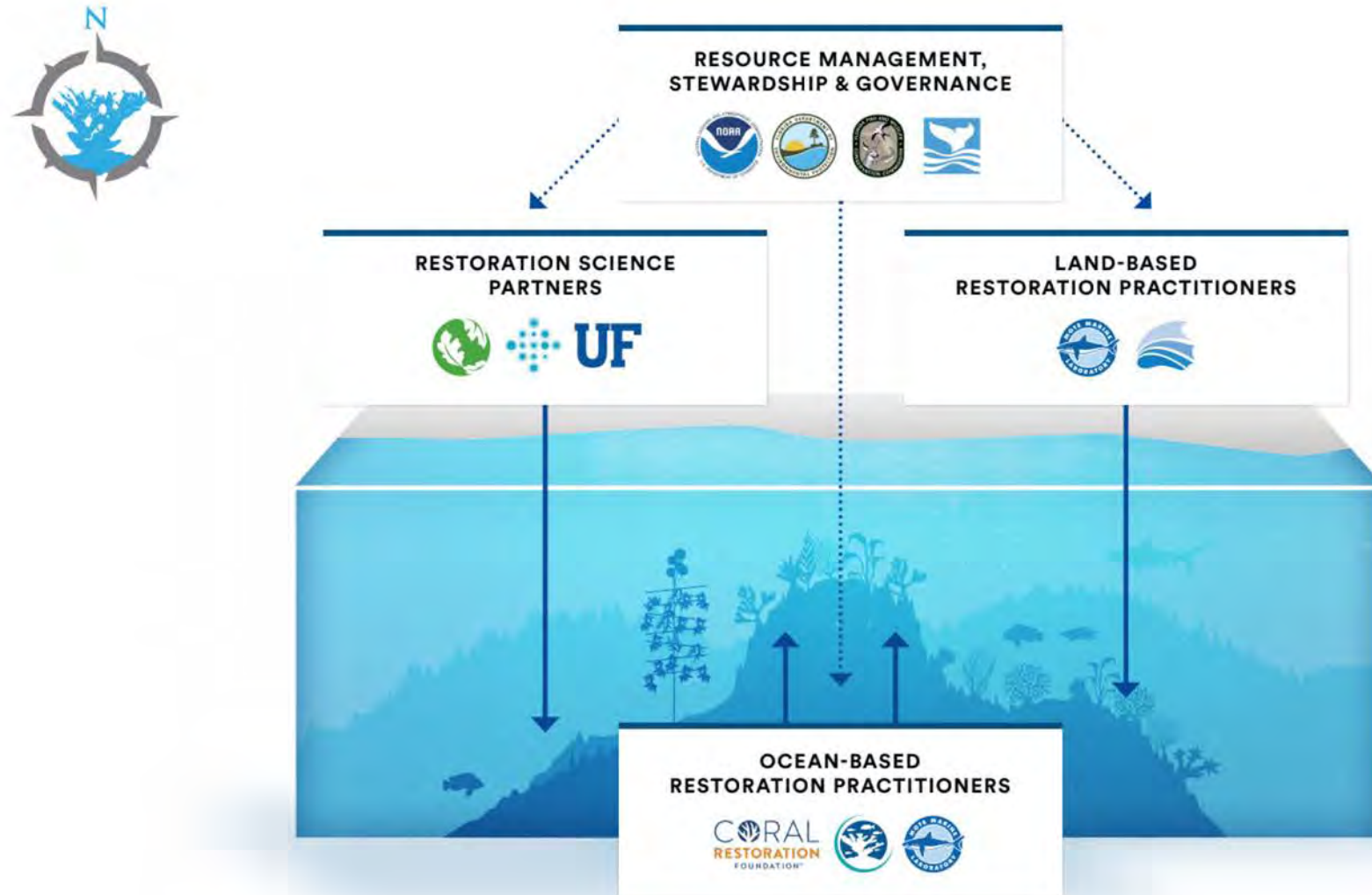


Buy 20 sets of Super Bowl Rings



# COLLABORATION

MISSION ICONIC IS A MULTI-AGENCY INITIATIVE



# STEWARDSHIP

- Mission Iconic Reefs will enlist on the ground support from the Florida Keys community.
- Creation of site prep and site maintenance teams.
  - Two working groups formed
- Volunteering with collaborators.





# T H A N K   Y O U

Resources available at: [www.fisheries.noaa.gov](http://www.fisheries.noaa.gov)

Search for: "Mission Iconic Reefs"