

# Florida Keys Coral Bleaching Early Warning Network





## BleachWatch



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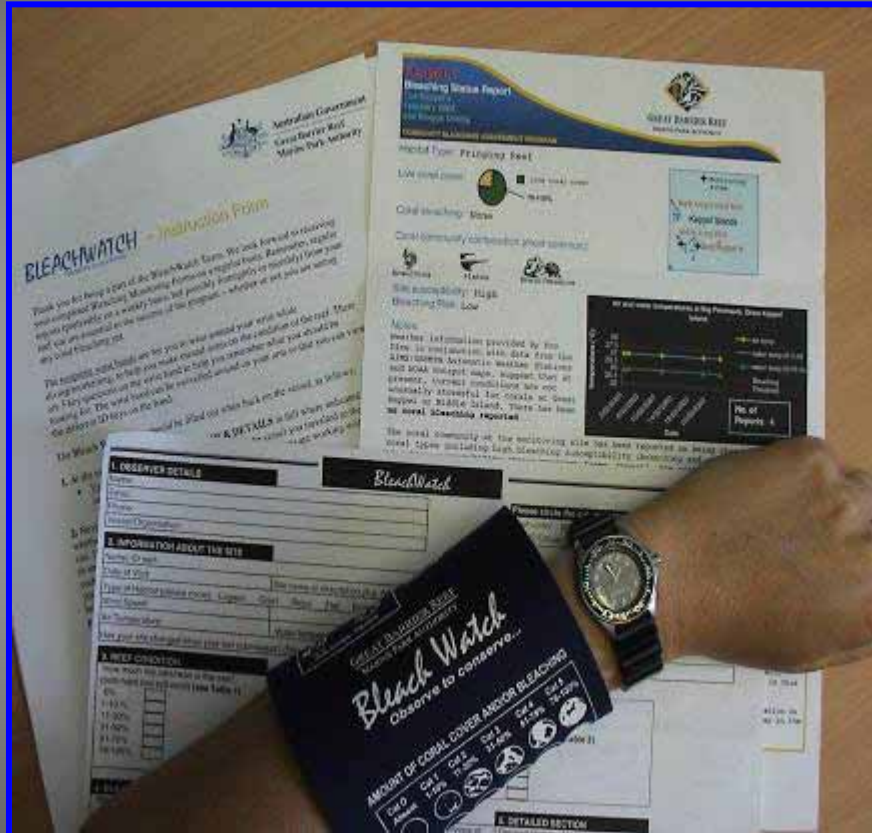
# Florida Keys "BleachWatch" Early Warning Network Objectives

-  To monitor environmental conditions.
-  Provide an "Early Warning Alert" for coral bleaching for the FKNMS and surrounding waters.
-  Involve the community in monitoring coral reef health.
-  Provide FKNMS with the reef's Current Conditions by summaries of the community feedback and environmental conditions.

# Great Barrier Reef BleachWatch Program



Australian Government  
Great Barrier Reef  
Marine Park Authority



Ms Katrina Goudkamp and Dr Paul Marshall  
Climate Change Program

Research & Monitoring  
Coordination Unit

**Florida Keys Early Warning Network**  
MML / FKNMS

**Environmental Monitoring**  
MML / NOAA

**Observer Network  
"BleachWatch"**  
MML / FKNMS / TNC

Climate

Remote Sensing

In-Situ Data

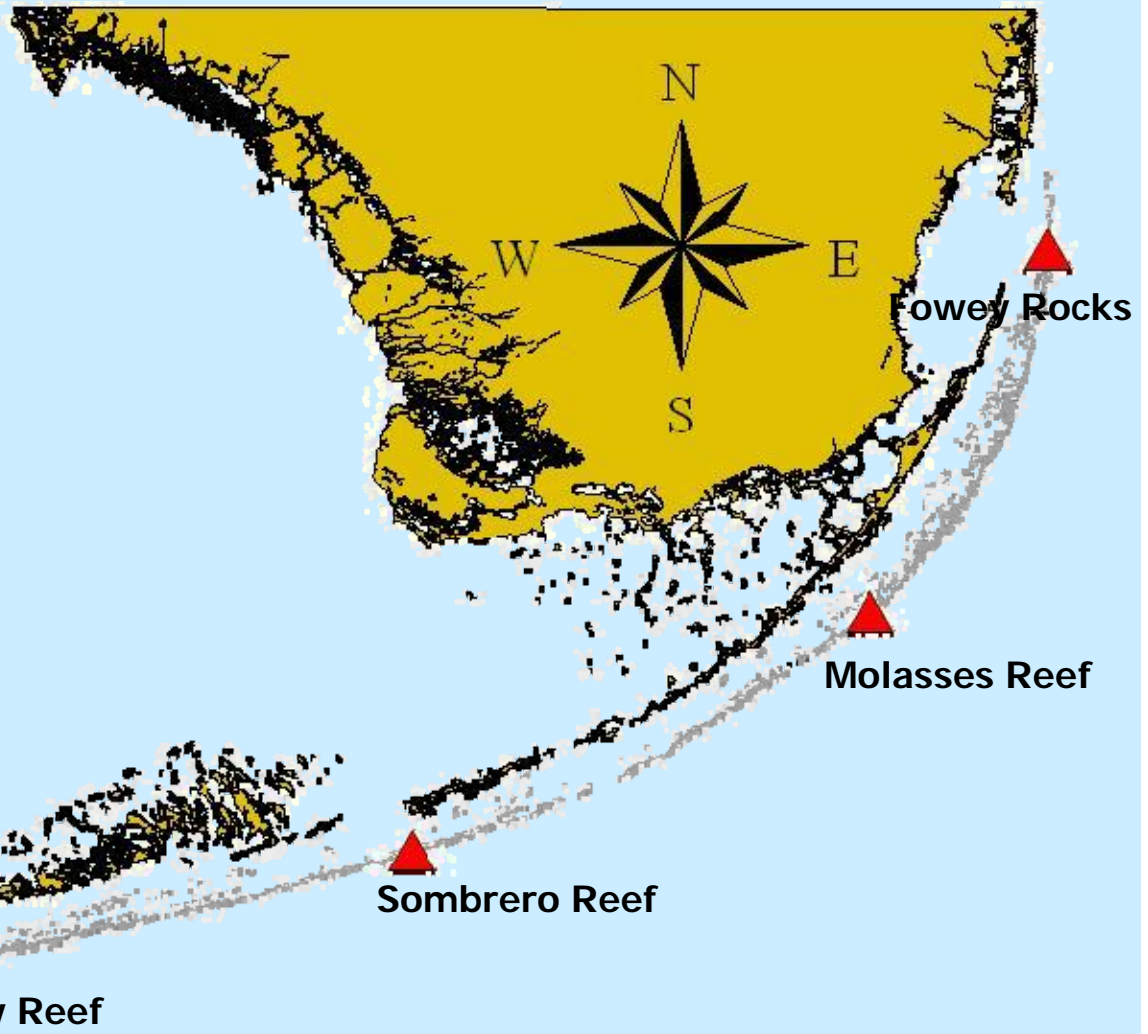
Community

Professional

Scientific

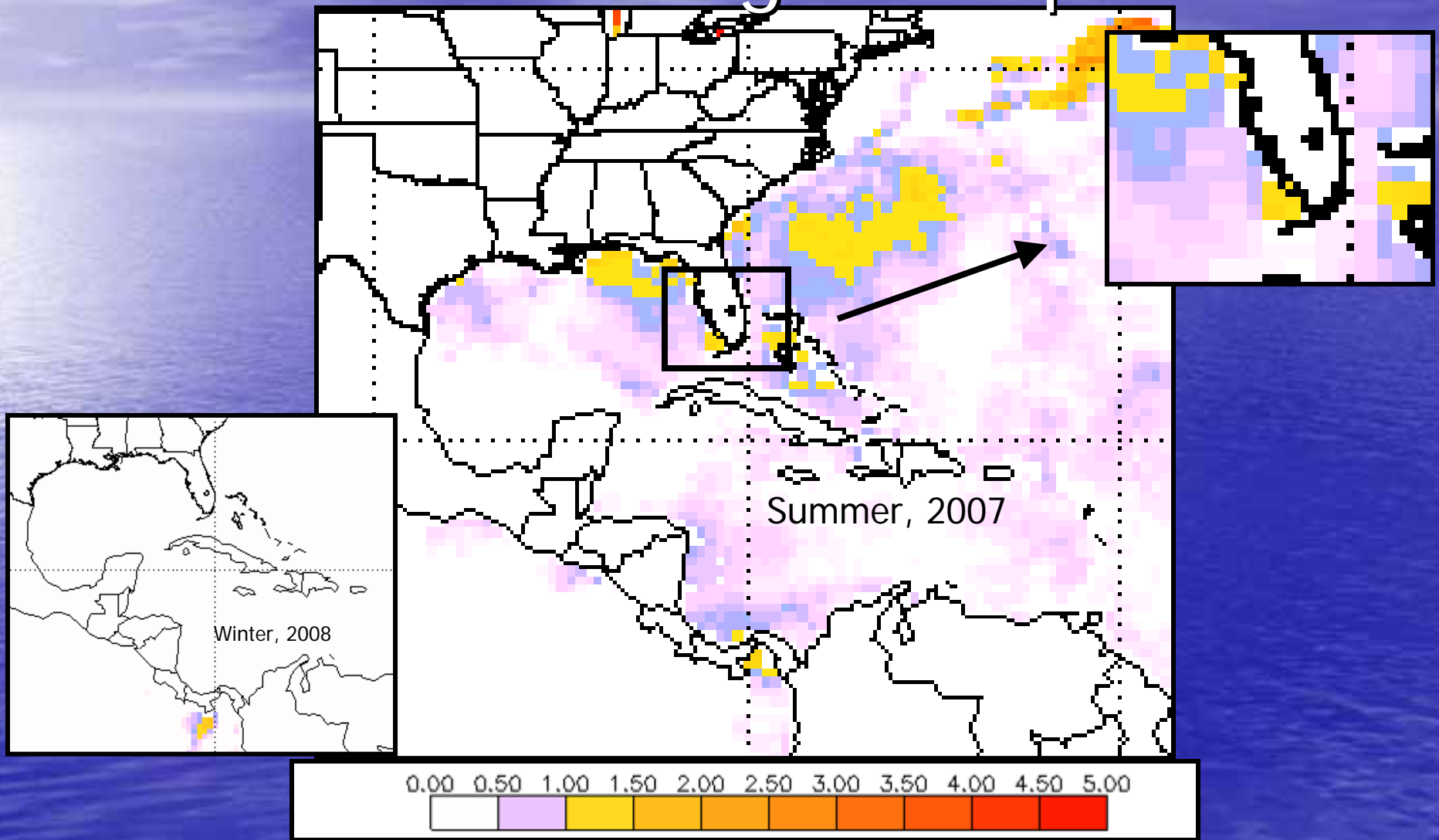
**Synthesize Data and Observations  
and report "current conditions"  
to FKNMS/NOAA**

# In-Situ Monitoring NOAA's ICON Stations



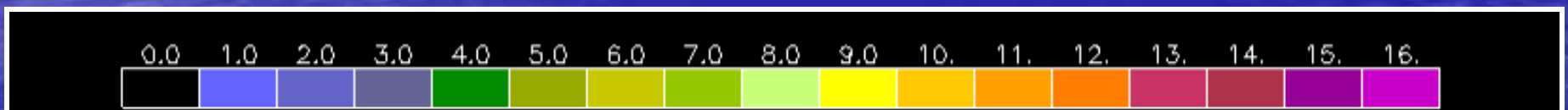
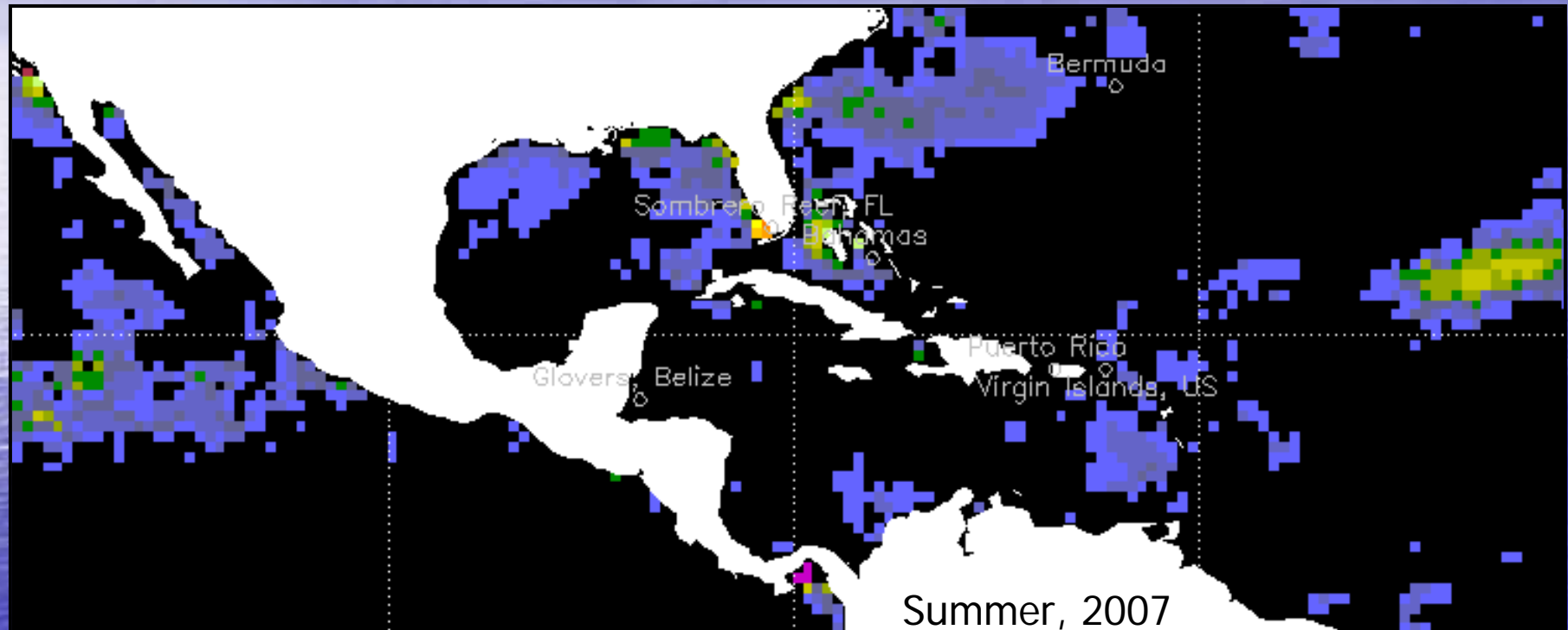
NDBC - Florida and Eastern Gulf of Mexico Recent Marine Data

# NOAA/NESDIS Coral Bleaching "Hot Spots"



Current Coral Bleaching "Hot Spot" Map

# NOAA/NESDIS Degree Heating Weeks



PSB -> EPS -> Current Operational Degree Heating Weeks for the year 2008

# BleachWatch Observer Network

## Community

Anyone that reports bleaching/no bleaching  
(residents, tourist, pilots, any eyes on the water)

## Professional

Observers who complete a short training session  
(FKNMS Team Ocean & Reef Medics, OA Boy Scouts,  
dive operators, dive clubs, marine life collectors)

## Scientific

Federal, State, Private and Academic Researchers  
(Sanctuary DARP and other staff, FWRI, Continual  
scientific surveys, FRRP, etc...)

# Professional BleachWatch Training

 Explanation of Early Warning Program

 Short Coral Biology Lesson

What is a Zooxanthellae and its importance?

Difference between bleaching, disease, and predation

 How To Fill Out Data Form

## Training Materials

Coral Bleaching Information

Project Overview

Several Data Forms

Data Form Instructions

Underwater Wrist ID

Laminated Bleaching Example Sheet



# From Data



## Florida Keys BleachWatch Program BleachWatch Data Form



Online Forms: [http://www.mote.org/Keys/bleaching\\_p.html](http://www.mote.org/Keys/bleaching_p.html)

**A. OBSERVER INFORMATION:** Date of Visit: \_\_\_\_\_ Time: \_\_\_\_\_  
 Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 (please circle) Resident Visitor Tourism Industry Commercial Research Education Other  
 Vessel/Organization (if applicable): \_\_\_\_\_

**B. SITE INFORMATION:** Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
 Location/Site Name: \_\_\_\_\_ Max. Depth: \_\_\_\_\_ Buoy #/ Area of Reef: \_\_\_\_\_  
 Reef Zone (circle) Hard Bottom Patch Reef Mid-Channel Deep Reef Bank Reef Other  
**Environmental Conditions: (Optional)**  
 Wind Speed: \_\_\_\_\_ Air Temp: \_\_\_\_\_ Water Surface Temp: \_\_\_\_\_ Water Bottom Temp: \_\_\_\_\_  
 Cloud Cover (circle): Clear Partly Cloudy Mostly Cloudy Overcast

**Did You Observe Signs of Bleaching? Please Check**  
 YES—Continue with Section C  No- Finished

**C. BASIC BLEACHING OBSERVATIONS**

<i>In general, how severe was the bleaching over entire site?</i>	<i>Types of Corals Bleached?</i>	<i>Percent of live coral bleached?</i>	<i>Depth Range of bleaching?</i>
___ Bleached only on upper surface	___ Brain	___ 0%	___ MIN (ft.)
___ Pale (very light brown or yellowish)	___ Branching	___ 1-10%	
___ Totally Bleached White	___ Fleshy	___ 11-30%	
___ Bleached Coral with Algae	___ Flowering/Cups	___ 31-50%	___ MAX (ft.)
	___ Leaf/Plate/Sheet	___ 51-75%	
	___ Mound/Boulder	___ 76-100%	





**Fire Coral, Palythoa, and Gorgonians are not Stony Corals, but are good baseline indicators of bleaching events. Please circle the following if you saw bleaching on these species.**

Hydrocorals (Fire Coral)      Palythoa (Zoanthids)      Gorgonians (Soft Corals)







**D. NOTES:** (specific species bleaching, coral disease, mortality, etc.)

**Remember: If there is no bleaching we still need to know regularly about your site.**

# Observer Information

-  **Date and Time of Visit**
-  **Name, Phone, E-mail Address**
-  **Type of Observer**
-  **Vessel or Organization**

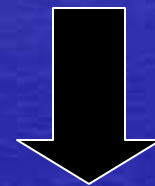
# Site Information

-  GPS Coordinates
-  Location / Site Name
-  Maximum Depth of Site
-  Buoy # or Area of Reef
-  Reef Zone
-  Environmental conditions

Did You Observe Signs of  
Coral Bleaching?



Continue  
Data Form



Finished!!!

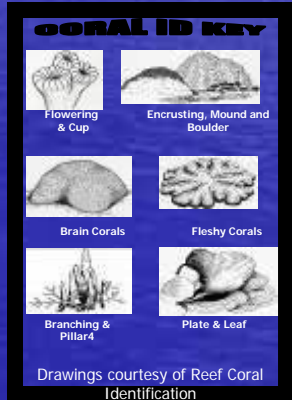
# Basic Bleaching Observations

## Severity of Bleaching



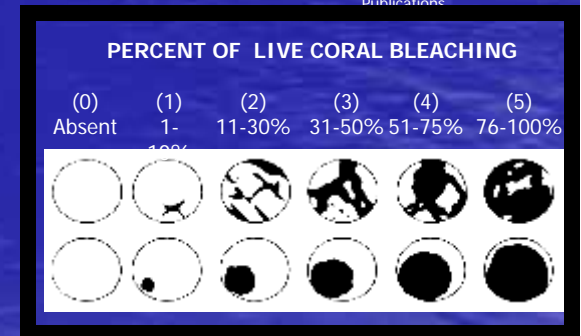
## Types of Corals Bleached

### Coral ID Table



## Percent of Bleached Corals

### Percent Cover/Bleaching Table



## Depth Range of Bleaching

# Baseline Indicators



Zoanthid, *Palythoa spp.*



Gorgonians



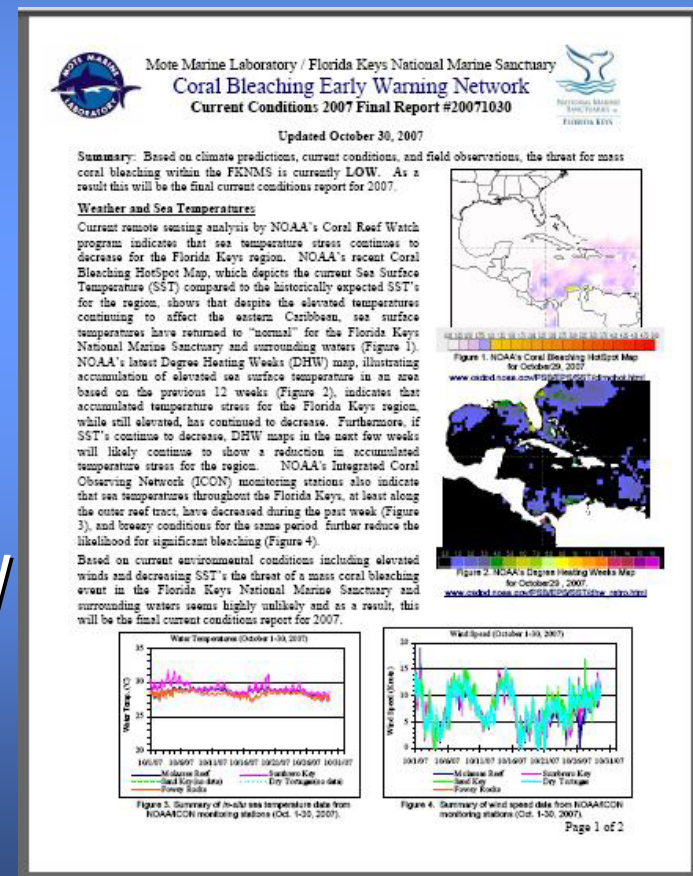
Fire Coral, *Millepora spp.*



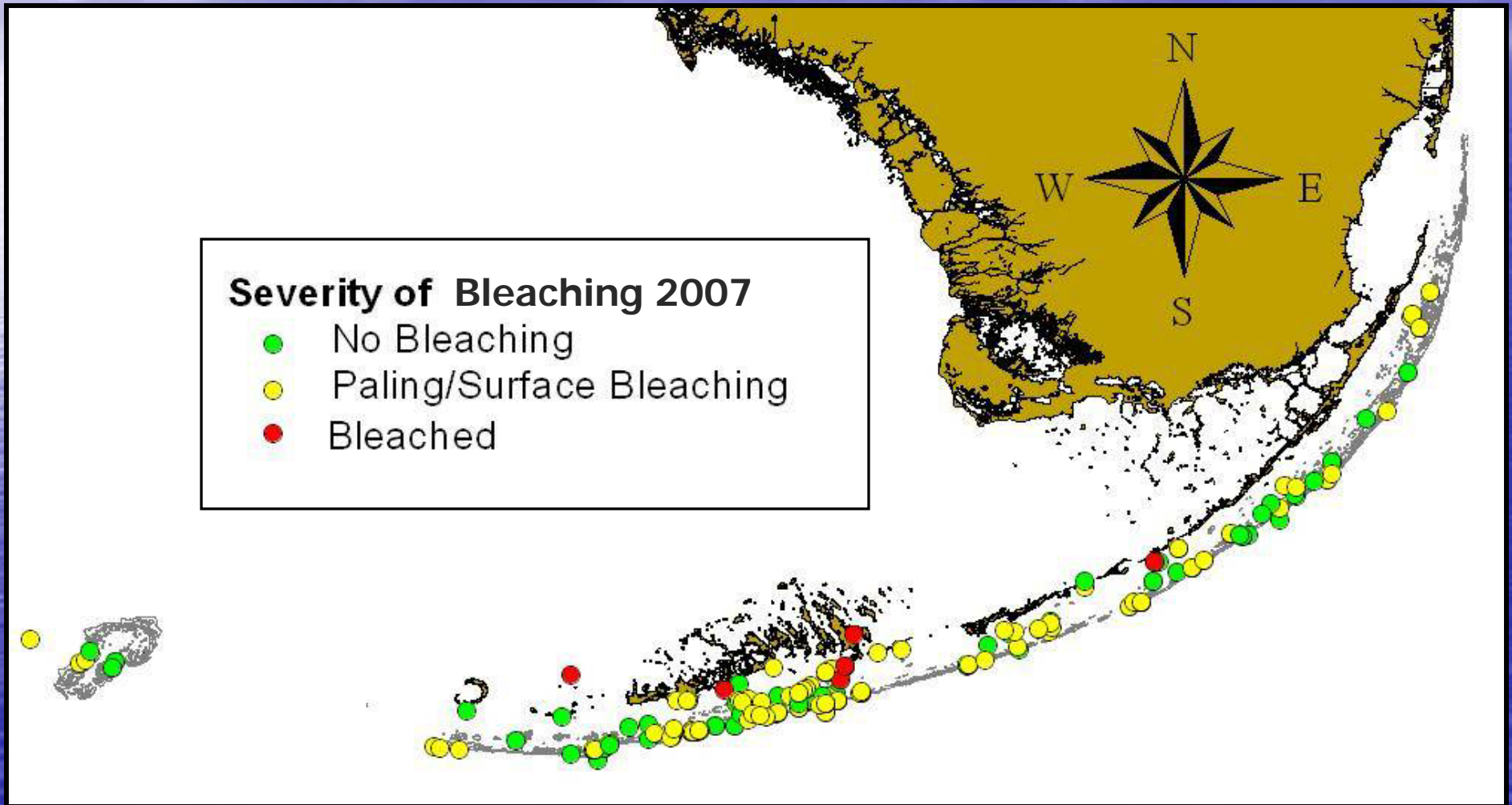
# Current Conditions Report

are available online:  
[www.mote.org/Keys/bleaching.phtml](http://www.mote.org/Keys/bleaching.phtml)

- Updated According to Environmental Conditions
- Outlook for future bleaching events
- Sea Temperature Information
- Relevant Weather Conditions
- NOAA's HotSpot Maps and DHW Maps
- Summary of Field Data from Observers



# 2007 Coral Bleaching

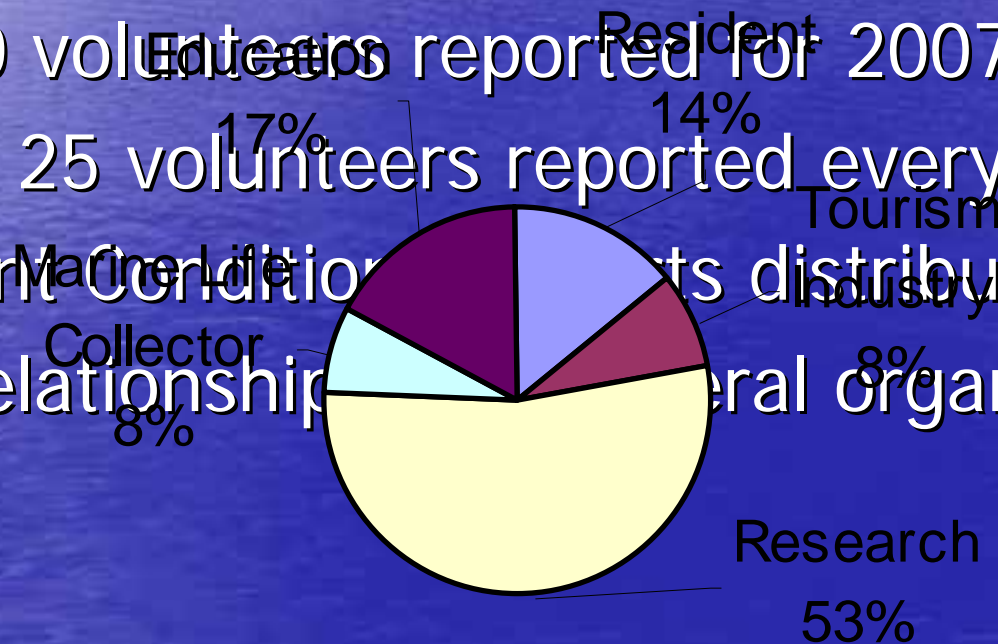


# The 2007 Quick Summery

## Percent of Reports by Observer Type

May 1 - October 18, 2007

- Received 264 reports
- Over 100 volunteers trained to date
- Over 50 volunteers reported for 2007
- At least 25 volunteers reported every 2 weeks
- 8 Current Conditions distributed
- Great relationships with general organizations



# Questions?

