OUR FLORIDA REEFS

YOUR VOICE, OUR FUTURE

North Community Working Group Meeting #1

March 27, 2014
South Florida Water Management District - Auditorium

Florida Department of Environmental Protection

Coral Reef Conservation Program

Introduction to Southeast Florida Coral Reef Ecosystems – Part 2

March 27, 2014

Jamie Monty
Manager
FDEP Coral Reef Conservation Program

Overview

- **Southeast Florida Coral Reef Ecosystem:**

  - Water
  - Coral
  - Fish
  - Habitat
  - People
  - Ecosystem

- **What is coral reef management?**

Photo By: Joe Marino

SE FL Ecosystem Components

Southeast Florida Coral Reef Initiative
Acting above to protect what's below.

The Anim

Corals are s
on the plar
coral reefs,
and diverse

Florida's co
array of fish
during stor
economy. Y

Close up view o
Photo: Dave Gil

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Like all anir
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Corals form
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Threats to
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People ben
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Located wit
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Shore fishing is
people enjoy al
Photo: Danielle

How Peopl

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Southeast Flor
more than 10
millions of res
$5.7 billion in
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Management
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Current Man
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Florida Keys N

In 2004, Flori
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- **A Lack**
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- **Land-B**
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- **Maritin**
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Essential f

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nearby coasta
beds, mangro
water meet. T
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Ensuring that t
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Mainland sout
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Nearshore har
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Seagrass beds
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maintain wate

Red mangroves (Rh

Marine Life Depe

From the world-class
ocean-inspired cuisi
shellfish bring enjoy
Florida's reef ecosyste
fish and other animal

Many reef fish depen
growing populations.
other habitats, where

Various reef resident
urchins and other he
Larger predators, suc
Many of these larger
game fish and seafoo

The health of these fis
future. We have a sha

A red grouper (Epinephelus m
Photo: Joe Marino

Commercial fishing c
catches of southeast

Assessing reef fish po
region. As a complem

Linking the Entire S

Water is the basis of all life
that we can safely drink,
and salt water, since all w

Rain falls on land where
recharges Florida's aquif
through canals, streams
through one of nine coas
marshes and cypress swa
crustaceans live and grow

The southeast Florida co
flows over land, it carries
pollutants, such as exces
quality and impact all of th

Algae overgrows a coral reef
wastewater outfall (upper); div
Florida's five partially treated wa
Photo: Steve Spring-Reef Rescue/I
Brad Bedford (lower)

Coastal development car
water, which reduces the

Our Inter-Connected Southeast Florida Coastal Community

From our beaches, mangroves, seagrasses, and coral reefs to our surfers, divers, fishers and beach lovers, southeast Florida is a delicately balanced inter-connected community equation.

The health of the entire southeast Florida coastal ecosystem is dependent upon the health of its parts. Floridians benefit from healthy and productive coral reefs, and we all need to help ensure that a strong and balanced community ecosystem exists in the future.

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The Importance of a Healthy Ecosystem

When the ecosystem equation is balanced, everyone wins. If our coastal habitats are healthy and managed wisely, we can have clean water, lots of big fish, thriving corals, a booming economy, and happy people.

Impacts Felt Throughout the Ecosystem

The entire ecosystem depends on balanced inputs. Many complex biological and physical components work together to maintain a functional ecosystem. If any one of the pieces in the equation becomes unbalanced or unhealthy, we risk severely altering the whole ecosystem. For example, if our water is polluted then the oysters, lobsters, and fish become sick or could die, which directly affects our local seafood supply.

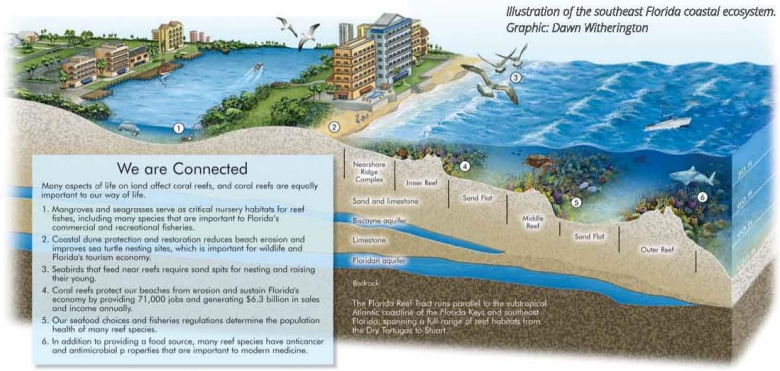
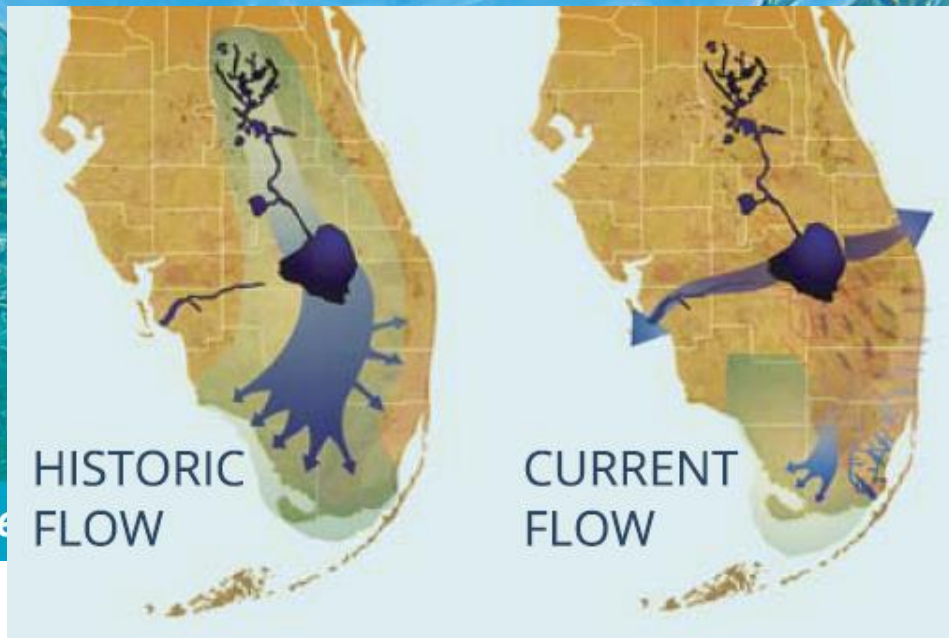


Illustration of the southeast Florida coastal ecosystem.
Graphic: Dawn Witherington

Join the conversation at: www.OurFloridaReefs.org

Water



- **Southeast Florida watershed**

Water

- **Southeast Florida watershed**
- **Water quality, quantity, timing, and distribution**

Water

- **Southeast Florida watershed**
- **Water quality, quantity, timing, and distribution**
- **Land-based sources of pollution**

Coral

- **Hard (stony) and soft (gorgonians) corals, and other sessile organisms – sponges, anemones, algae, etc.**

What Are Corals?

Photo By: Dave Gilliam

What Are Corals?

Photos By: Bill Goodwin (large) and Joe Marino (small)

What Are Corals?

Photo By: Dave Gilliam

What Are Corals?

Over 300 Years Old!

Photo By: Dave Gilliam

Fish

- **Finfish and shellfish, and other mobile organisms sea turtles, marine mammals, etc.**

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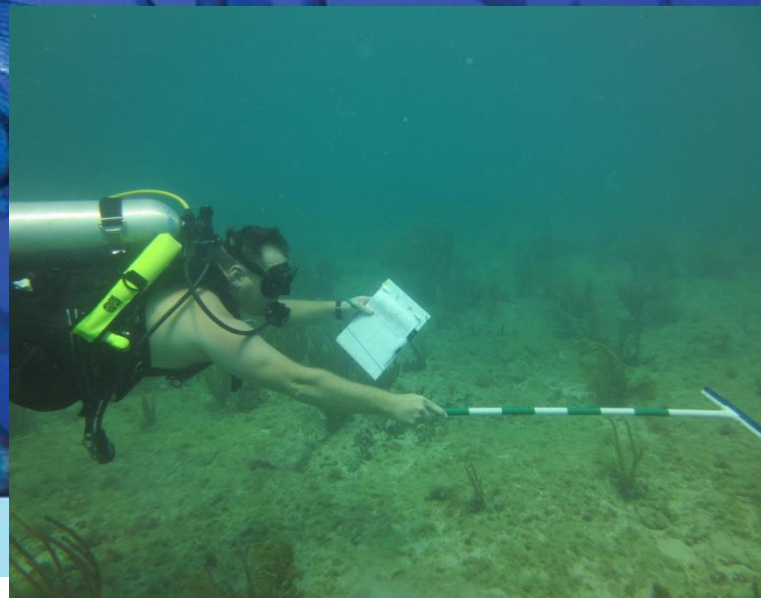
- **Southeast Florida fisheries, fisheries-dependent and -independent data, and fishing**

Fish



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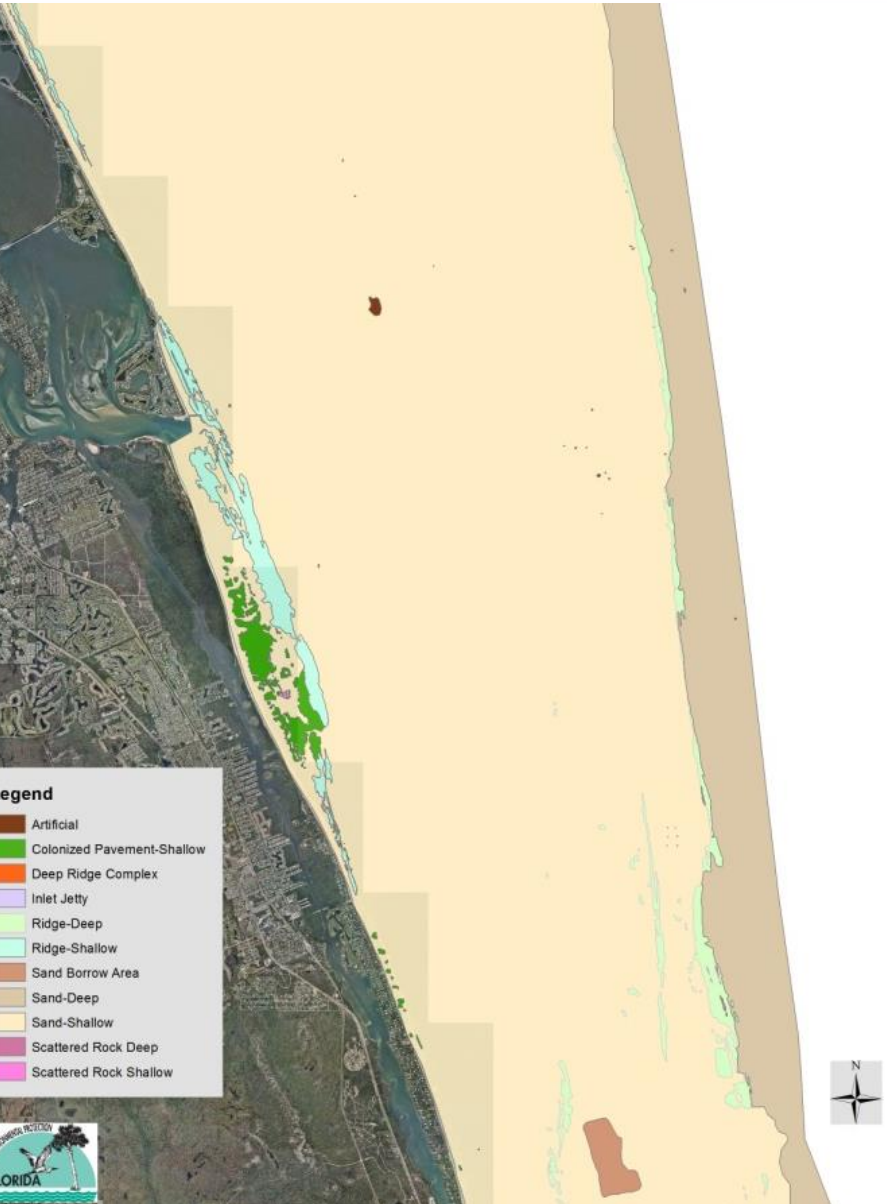
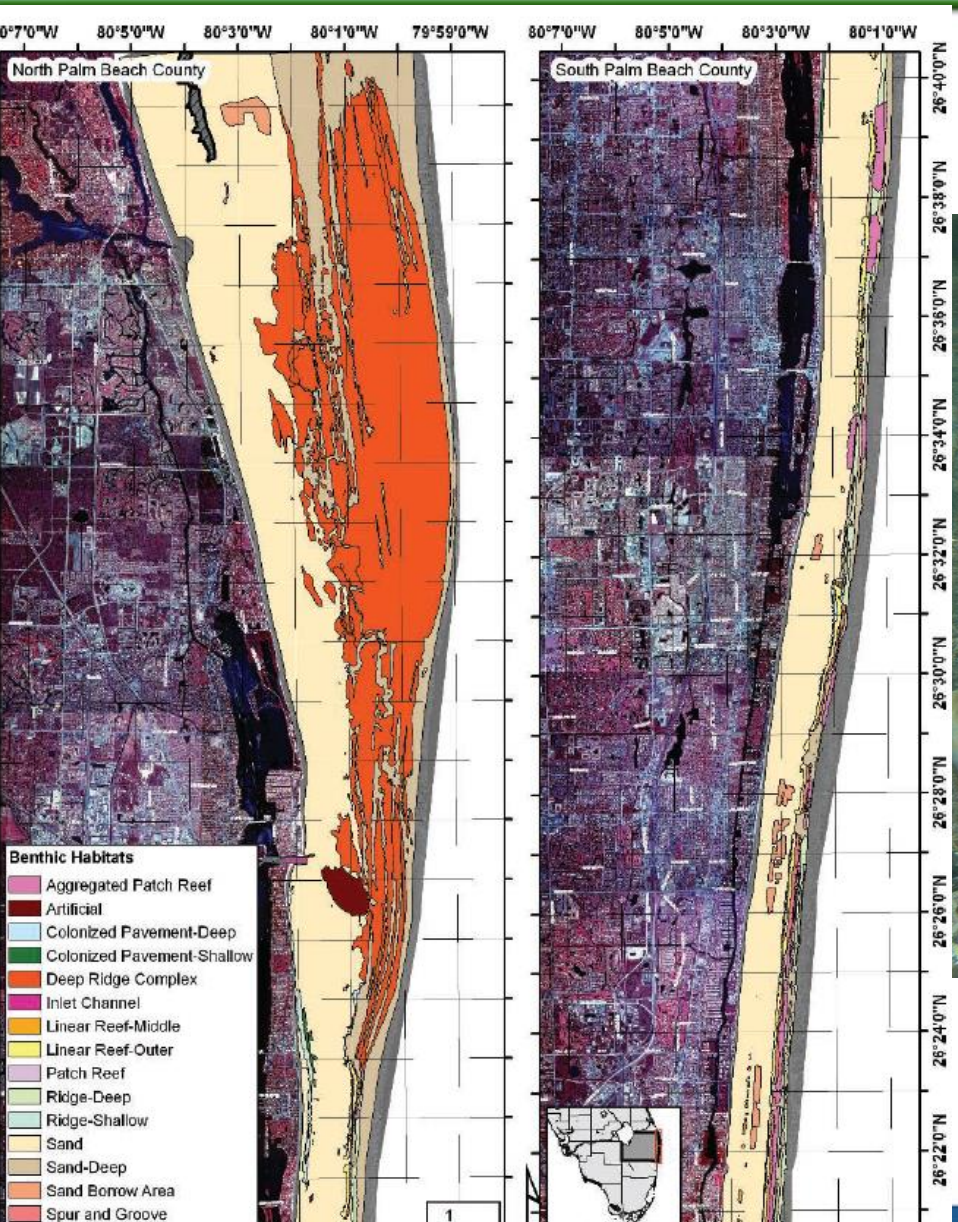
Habitat

- **Coral reef (not just coral species), seagrass bed (not just seagrass species), etc.**
- **Habitat degradation and restoration**

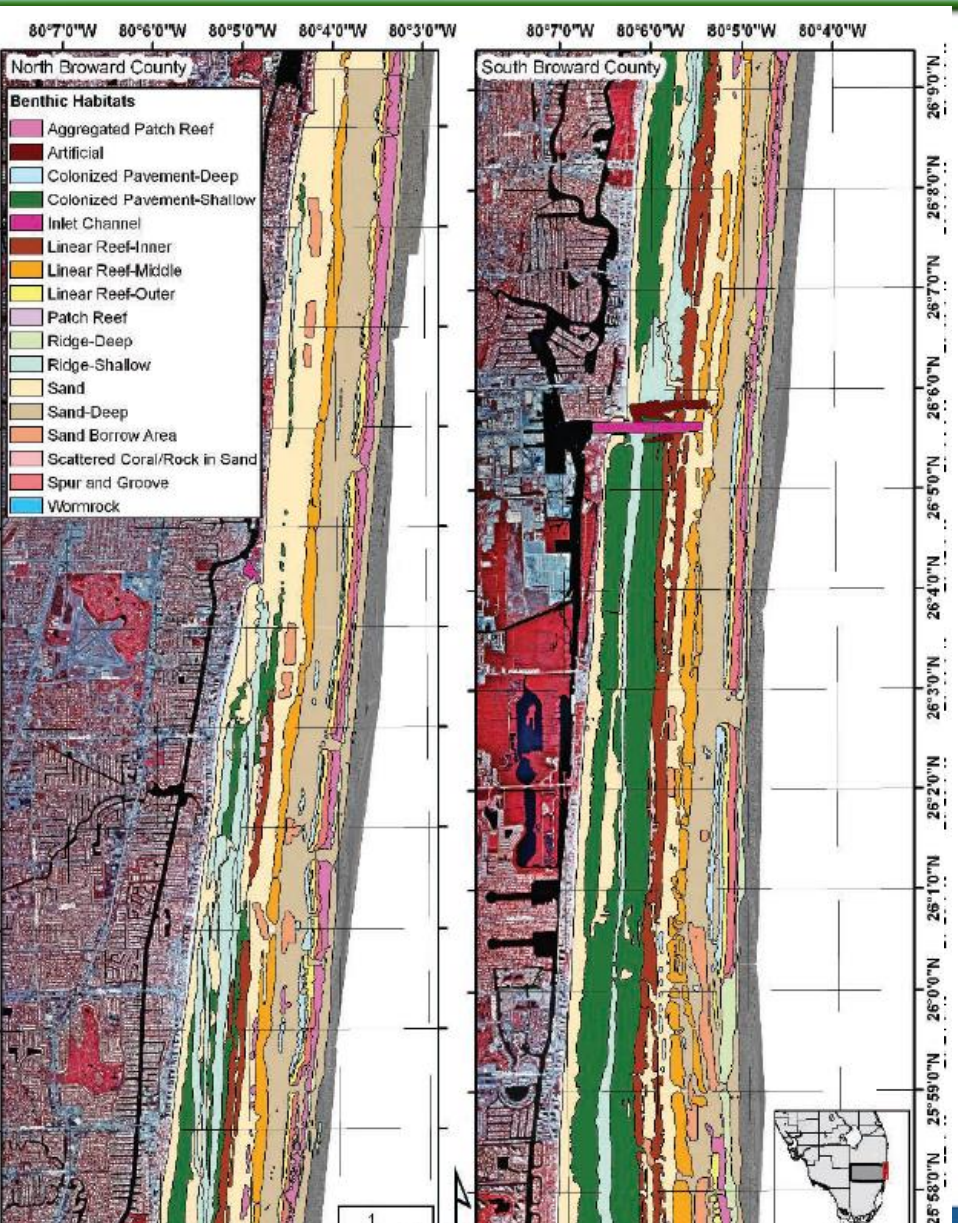
Martin County



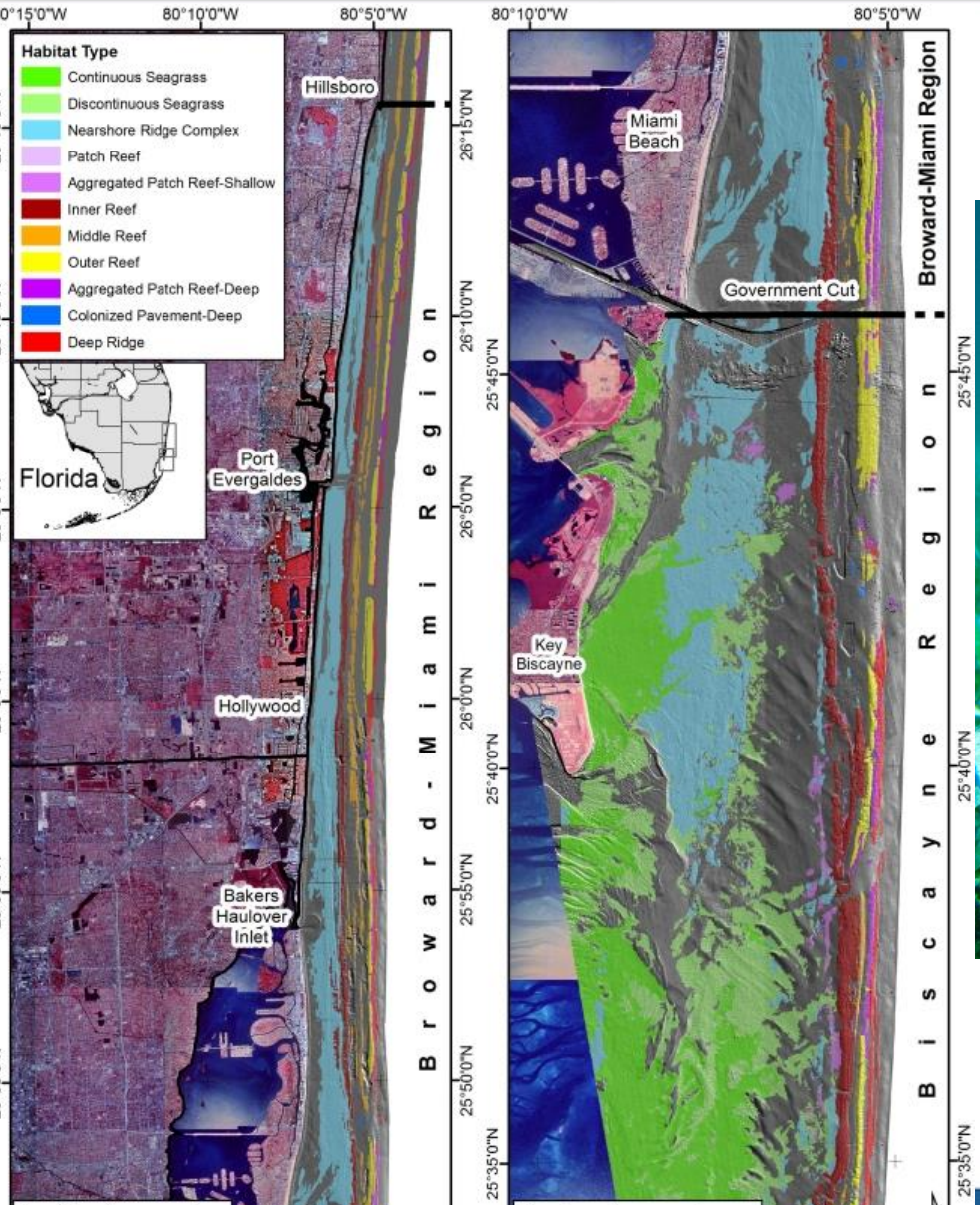
Palm Beach County



Broward County



Miami-Dade County



People

- **Various uses of southeast Florida coral reefs, including fishing, diving, kayaking, etc.**

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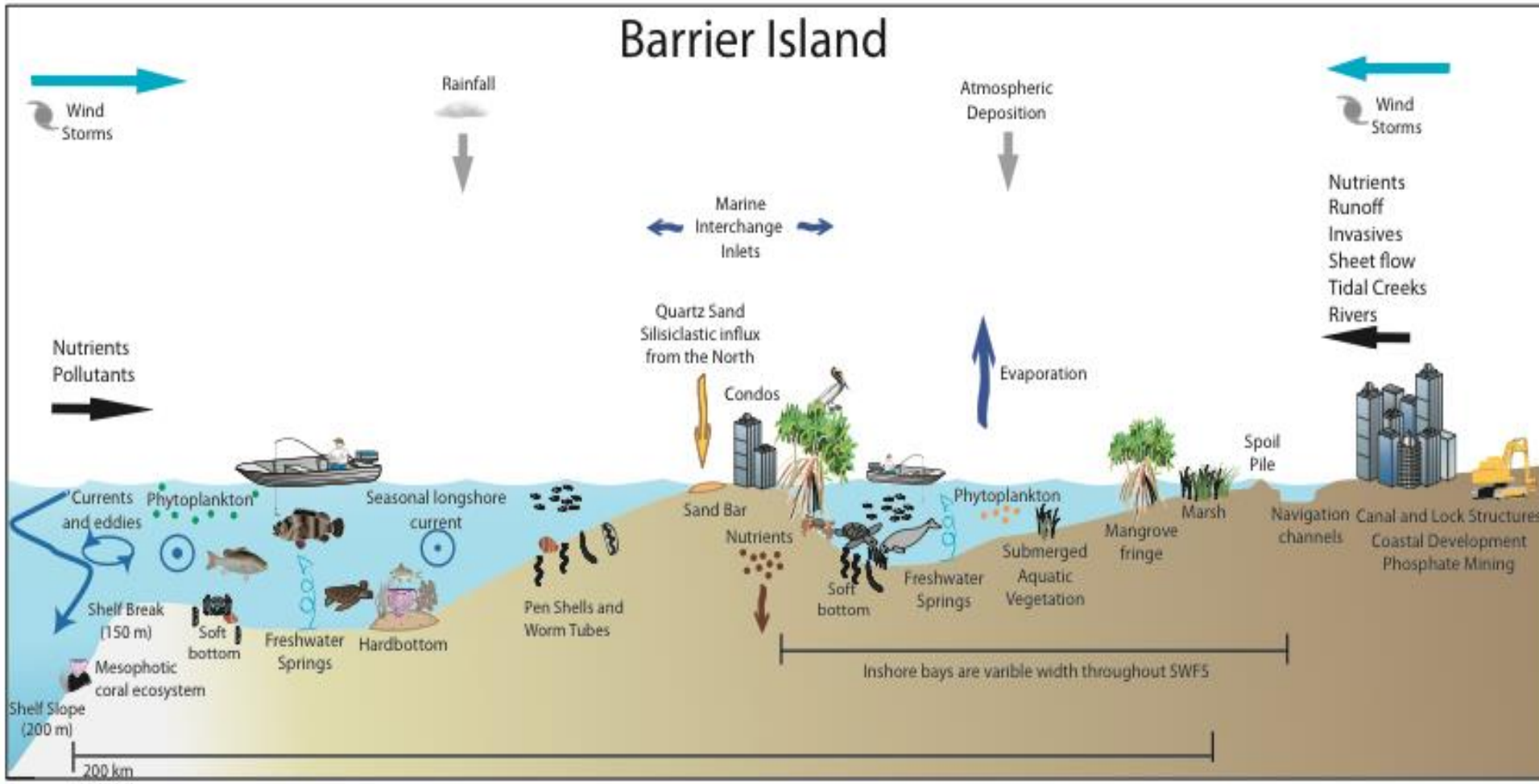
People

- **Various uses of southeast Florida coral reefs, including fishing, diving, kayaking, etc.**
- **Resident perceptions from survey data**

Ecosystem

- **Community of organisms, including people**
- **Living and non-living components**
- **The whole is greater than the sum of its parts**

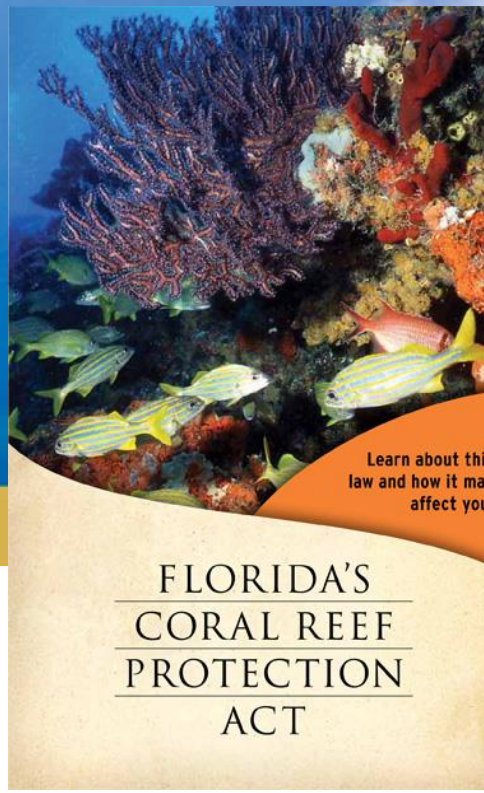
Ecosystem


Barrier Island
Wind Storms
Rainfall
Atmospheric Deposition
Wind Storms
Marine Interchange Inlets
Nutrients Runoff Invasives Sheet flow Tidal Creeks Rivers
Quartz Sand Silisiclastic influx from the North
Nutrients Pollutants
Condos
Evaporation
Spoil Pile
Currents and eddies
Phytoplankton
Seasonal longshore current
Sand Bar
Nutrients
Phytoplankton
Marsh
Mangrove fringe
Navigation channels
Canal and Lock Structures
Coastal Development
Phosphate Mining
Shelf Break (150 m)
Soft bottom
Freshwater Springs
Hardbottom
Pen Shells and Worm Tubes
Soft bottom
Freshwater Springs
Submerged Aquatic Vegetation
Mesophotic coral ecosystem
Shelf Slope (200 m)
Inshore bays are varible width throughout SWFS
200 km

Management

- **Balancing coral reef use and protection**

Management

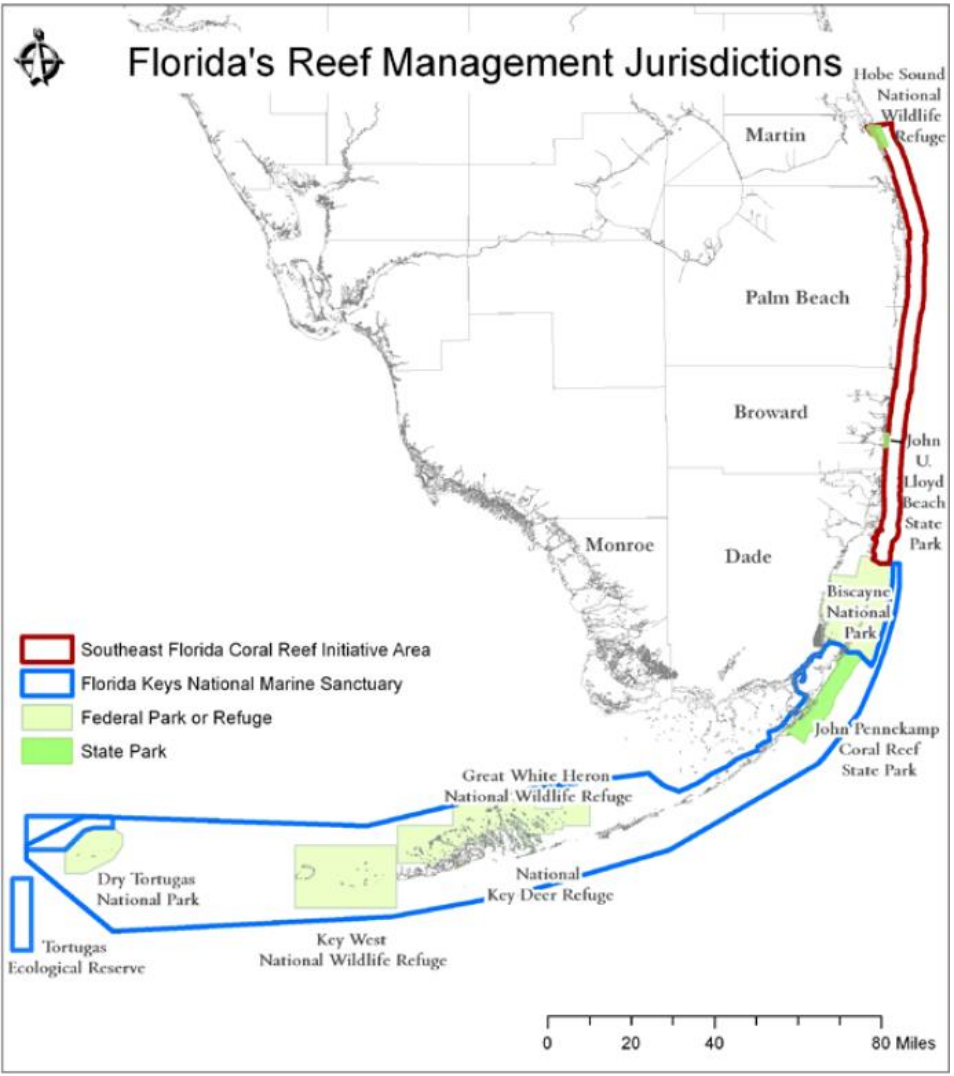


- **Balancing coral reef use and protection**
- **How southeast Florida coral reefs are currently managed**

Management

- **Balancing coral reef use and protection**
- **How southeast Florida coral reefs are currently managed**
- **Examples of how other coral reefs around the world are managed**

Florida Reef Management

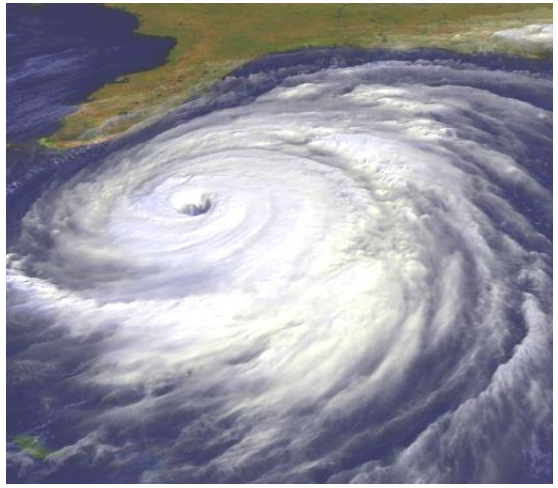


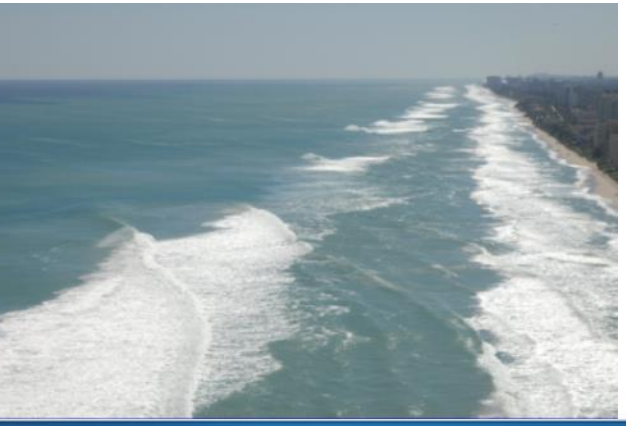
- **1961: John Pennekamp Coral Reef State Park**
- **1980: Biscayne National Park**
- **1990: Florida Keys National Marine Sanctuary**
- **1992: Dry Tortugas National Park**
- **2004: Southeast Florida Coral Reef Initiative**

Map By: The Nature Conservancy

Our Valuable Reefs

Coastal Protection

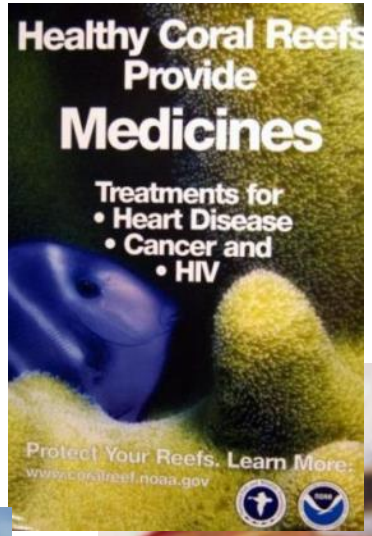


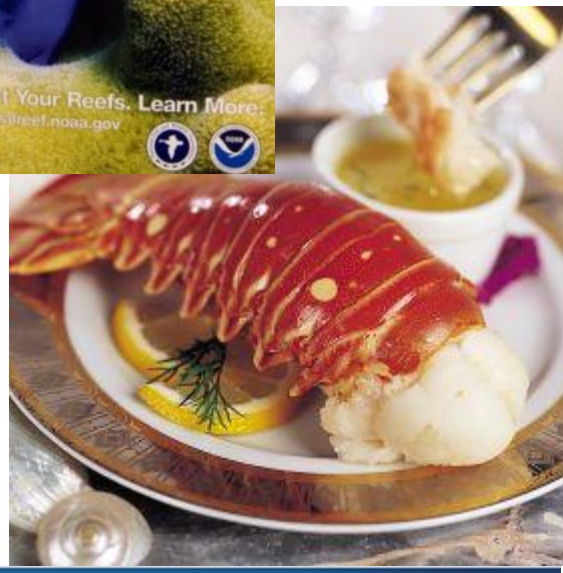


Jobs & Economy

- **61,000** jobs
- **$5.7 Billion** in sales & income every year!

Food & Medicine





Photos By: Hal Pierce (top); Ken Banks (bottom); www.picturescollections.com; www.OmhaSteaks.com

Threats to Reef Health

Land-Based Sources of Pollution

Photos By: Steve Spring (top); Dianne Behringer (bottom)

Threats to Reef Health

Land-Based Sources of Pollution

Coastal Development

Photo By: Dave Gilliam (bottom)

Threats to Reef Health

Land-Based Sources of Pollution

Coastal Development

Illegal or Harmful Fishing Practices

Photo By: www.worldfishnetwork.com (top); Jerry Metz (bottom)

Threats to Reef Health

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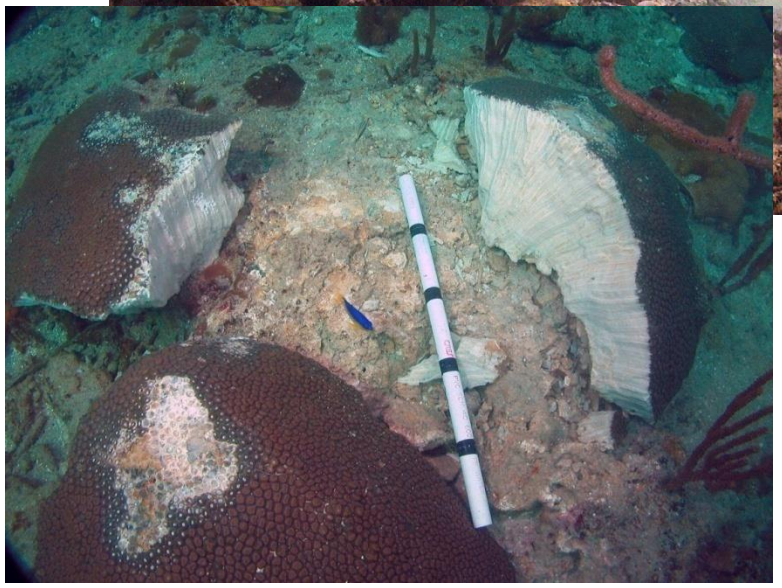
Illegal or Harmful Fishing Practices

Groundings & Anchoring Incidents



Photos By: Dave Gilliam

Threats to Reef Health

Land-Based Sources of Pollution

Coastal Development

Illegal or Harmful Fishing Practices

Groundings & Anchoring Incidents

Direct Damage from Diving

Photo By: Jennifer Podis

Threats to Reef Health

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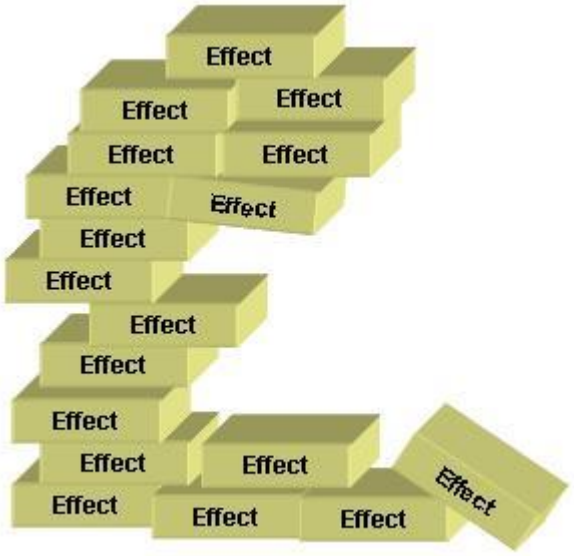
Direct Damage from Diving



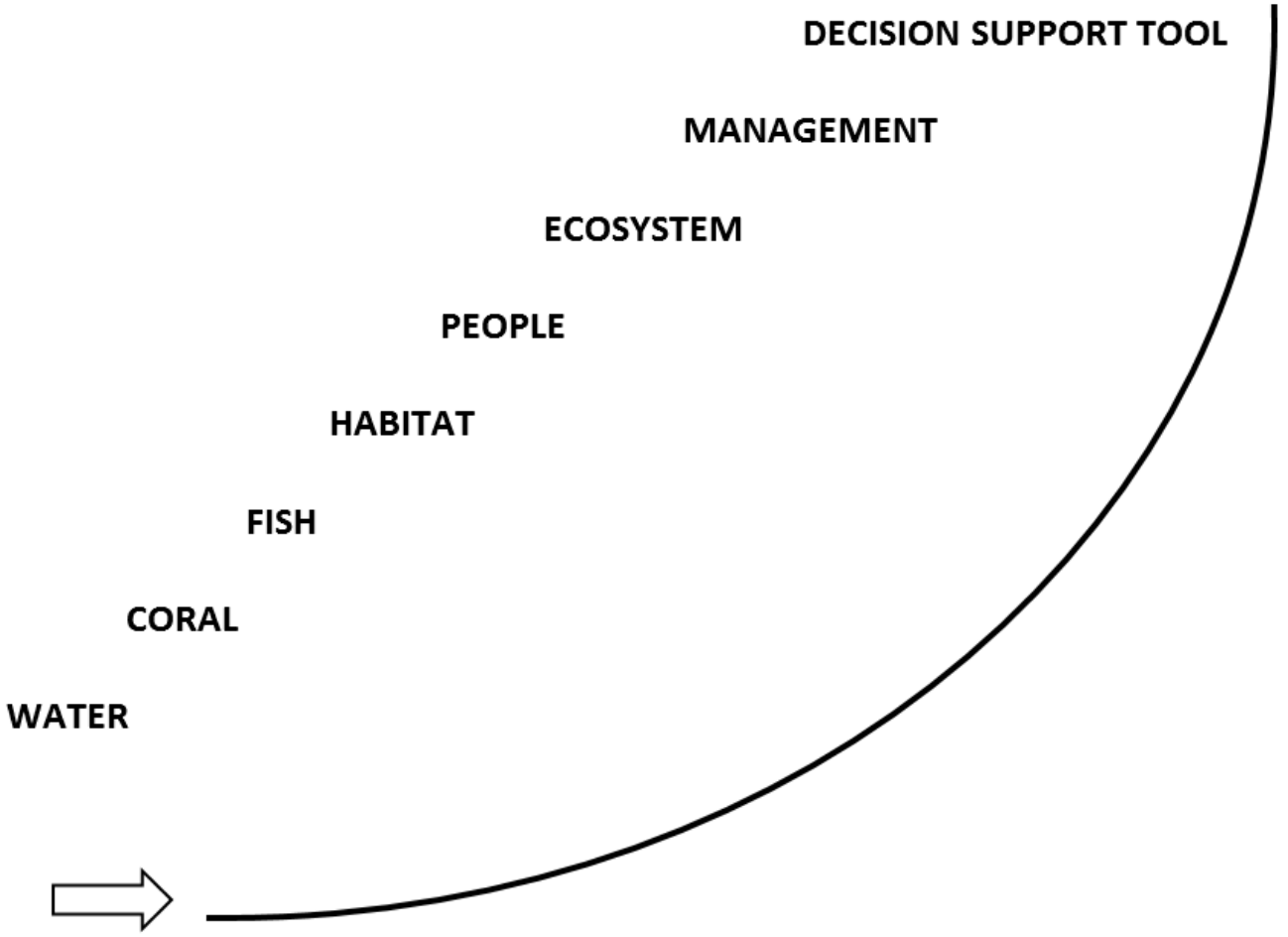
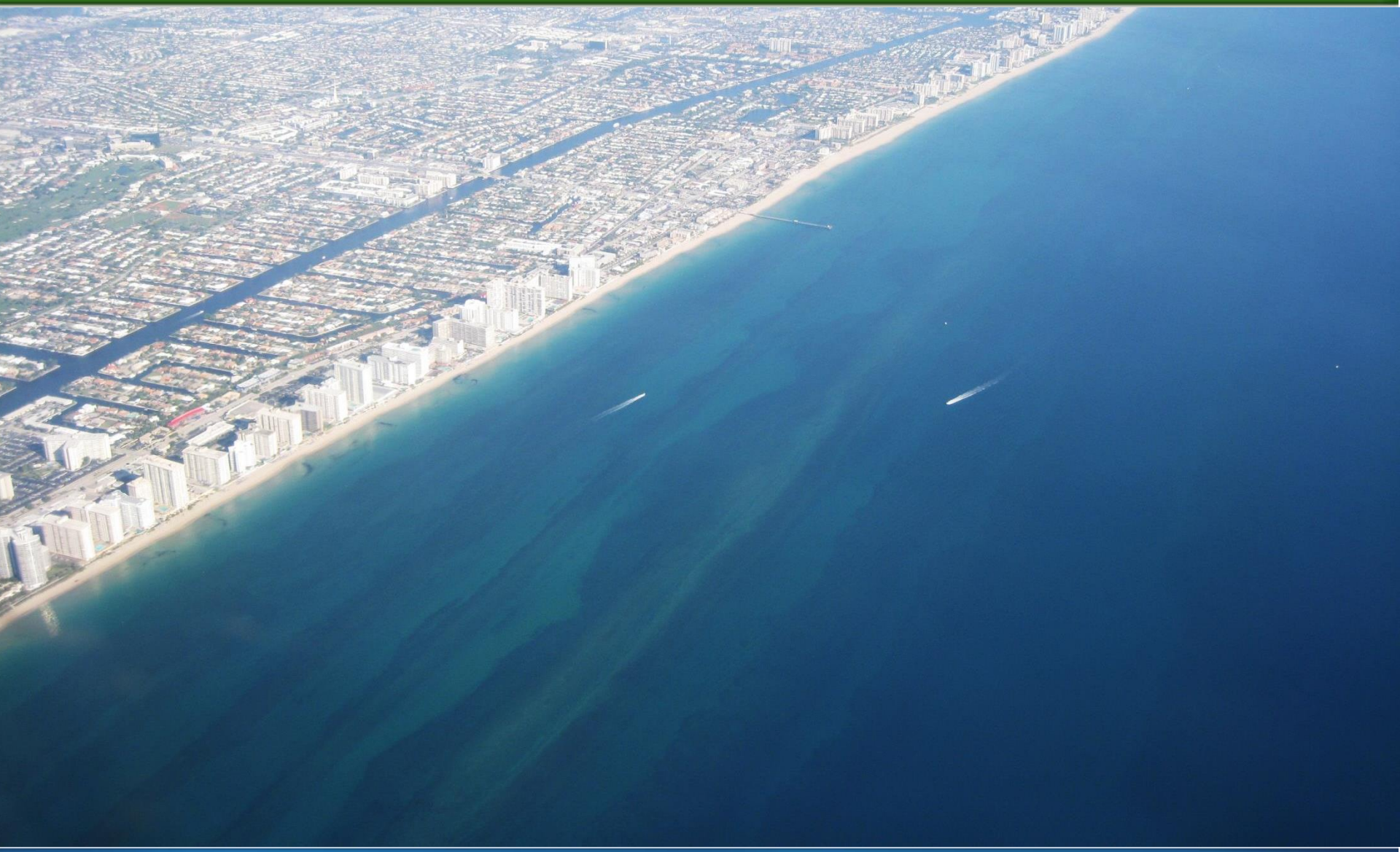
Graphic By: fs.fed.us

Management Tool: Decision Support Tool

Internet-based interactive mapping program

- Survey southeast Florida reef use
- Visualize the most up-to-date information
- Draw, make comments, and save a map that can be shared electronically
- Provide real-time analysis of selected data
- Spatial bibliography

Coral Reef Learning Curve



Questions?