



Marine Zoning and Regulatory Review -Education, Outreach, and Media Activities and Products

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Deputy Superintendent for Operations and Education

Goals of this Presentation



- Review FKNMS Education and Outreach Goals and Objectives
- Review FKNMS Education and Outreach Action Plan
- Review FKNMS Education and Outreach Programs and Activities
- Discussion on Possible Action Items for Marine Zoning and Regulatory Review

What is education and outreach?

A tool...

for managing resources and more importantly, reaching people that impact those resources.



Who is our audience?

- 3.5 Million Visitors
(13.3 Million Visitor Days)
- 8,300 School-Aged Children
- 75,000 Permanent Residents
(130,000 during season)



Who is our audience?

2007 – 2008 data

Fishing

- 400,000 visitors and residents
- 2 million person days



Diving

- 739,000 visitors and residents
- 2.8 million person days

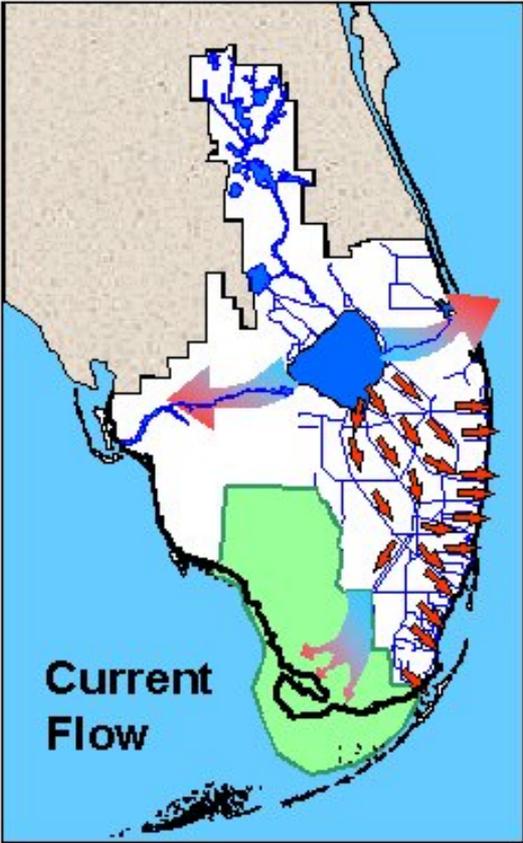


Who is our audience?



NATIONAL MARINE
SANCTUARIES

FLORIDA KEYS



Some Challenges We Face

- No single point of entry
- 26,461 registered vessels (2012)
- Diverse audiences
 - Residential/Tourist
 - Broad Geographic Audience
- Resource damage
 - Direct impacts
 - Indirect impacts
- Lack of Awareness



Education/Outreach Action Plan Goals



- Promote protection and sustainable use of Sanctuary resources;
- Promote public understanding of marine resources, and related watersheds;
- Promote public understanding of the national marine sanctuaries; and,
- Empower citizens with the necessary knowledge to make informed decisions that lead to the responsible stewardship of aquatic ecosystems.

Education/Outreach Action Plan



1997 Plan

Developed with public input
10 Strategies/46 Activities

Implement:

~\$5.2 million
22 FTE employees
80 volunteers

2007 Plan

Developed with public input
9 Strategies/38 Activities

Implement:

~\$4.2 million

Current

Employees

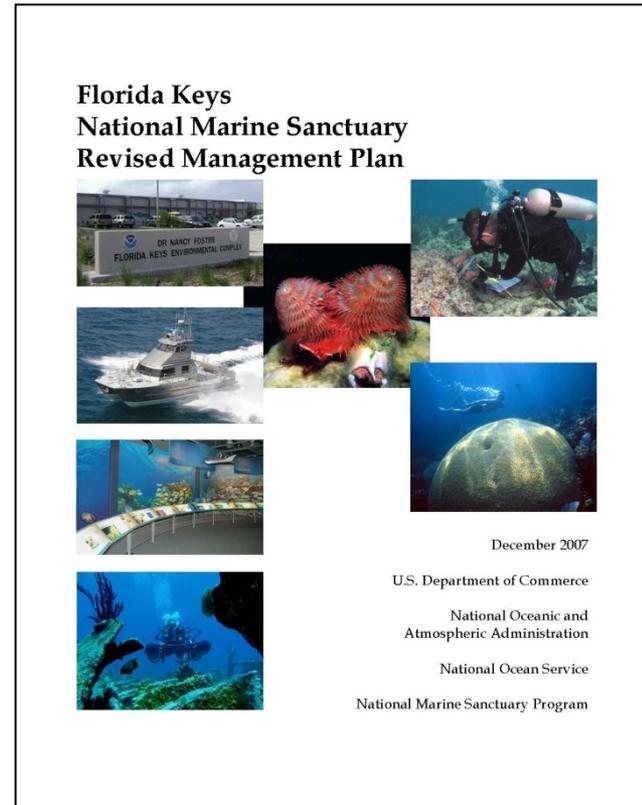
Coordinator: 1/3 of FTE
7 FTE
1 NPS Paid SCA Intern
Volunteers and Interns

Budget (excluding salaries)

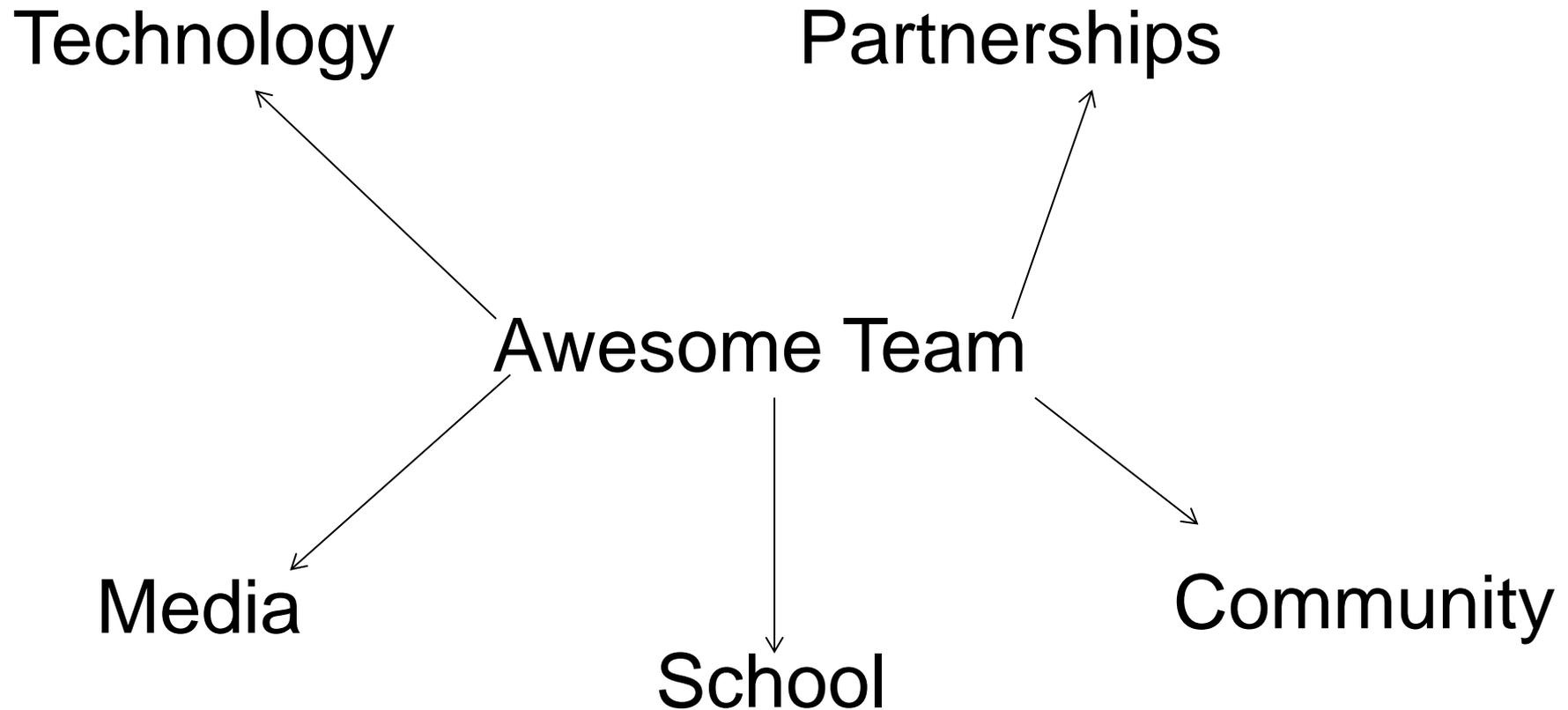
2012: \$18,509 (Teall's was \$15,000)
2011: \$6,225
2010: \$20,671 (Teall's was \$15,000)

Education & Outreach Planning (How do we decide what to do?)

- Identify and Prioritize Relevant Environmental Issues
- Establish Goals for the Issue Selected
- Identify Audience(s)
- Identify your Message(s)
- Identify Tools
- Evaluation Component



Action Plan (What we do)



Community

- Team OCEAN
- Blue Star
- Dolphin SMART
- Blue Rider
- Festival and Events
- Presentations to
Community Groups



Community: Festivals and Events

Conch Fest
Pennekamp Native Plant day
Marathon Seafood Festival
Key Largo Stone Crab and Seafood Festival
Rotary Gigantic Nautical Flea Market
Florida Keys Seafood Festival
BPK Seafood Spectacular
FKCC Community Day
Mote Ocean Fest
Earth Day 5K
Bahia Honda Earth Day

Interactions- ~6,000

Exposure- ~50,000



Community: Team OCEAN

Team

Ocean Conservation Education Action Network

- Established at FKNMS: 1995
- Expanded to MBNMS and within Florida



Community: Team OCEAN Business Community



- Material Distribution
- Relationship Building with Businesses
 - Hotels/Motels
 - Marinas
 - Chambers of Commerce
 - Dive/Snorkel Shops
 - Bait and Tackle Shops
 - Parks
 - Realtors
 - Rental Boat



Community: Team OCEAN Boater Education



U.S. Coast Guard Auxiliary

Classes- 700

Vessel Inspections- 1400

SPA Patrols (similar to Team OCEAN)



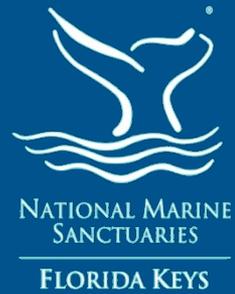
U.S. Power Squadron

Classes- 100

Vessel Inspections- 100



Community: Team OCEAN On Water Program



Summer

- Stationed at reefs in Key West, Looe Key and Key Largo
- Volunteers: 600+ hours
- Contacts: 1,250+



Winter

- Shoreline Clean-Ups
- Since 2007- removed 36,000 lbs. of marine debris



Community: Blue Star

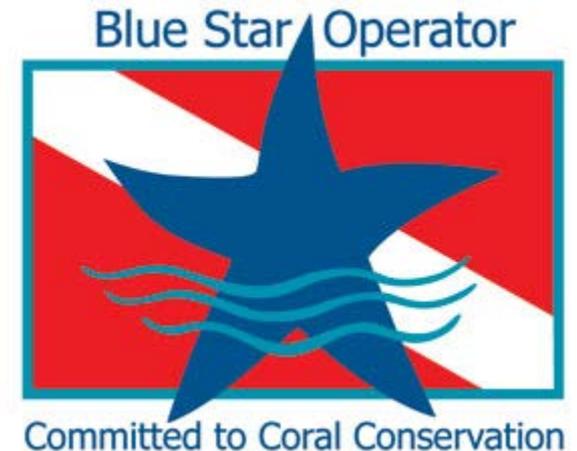
- Established- 2009
- Voluntary Program
- Recognizes tour operators committed to educate their customers about the coral reef ecosystem, the sanctuary, and diving and snorkeling etiquette.
- Yearly must meet criteria: program requirements, education, and evaluation.
- 14 Participating Operators
 - Upper Keys- 9
 - Middle Keys- 1
 - Lower Keys- 4



Community: Blue Star Operators

(As of 4/16/2013)

- Amy Slate's Amoray Dive Resort
- Captain Hook's Marina and Dive Center
- Conch Republic Divers
- Dive Key West, Inc.
- Florida Keys Dive Center
- FURY Water Adventures
- Horizon Divers
- John Pennekamp Coral Reef State Park
- Keys Diver and Snorkel Center
- Quiescence Diving
- Rosa Del Mar Sailing
- Silent World
- Spree Expeditions, Inc.
- Zia Charters



Community: Dolphin SMART



- Established- 2007
- Partners: FKNMS, NMFS, Dolphin Ecology Project, Dolphin Conservation Society
- Voluntary Program
- Recognizes tour operators committed to encouraging responsible viewing of wild dolphins.
- Yearly must meet criteria: program, training and education, and evaluation.
- 1 Participating Operator in Key West (Fury)

**Alabama- 1, SW Florida- 6, Hawaiian Islands- 5

Community: Blue Rider



- Established- December 2009
- Sanctuary and PWIA
- Voluntary Program
- Recognizes operators and riders who rent PWCs in the Florida Keys understand, embrace, and practice good ocean environmental stewardship when riding in the National Marine Sanctuary.



www.BlueRiderPWC.com

School Programs

- Classroom Visits
- Field Experiences
- Monroe County Environmental Education Advisory Council (MCEEAC)
 - Teacher Workshops
 - Teacher Awards
- Florida Keys Community College
 - Guest lecturers
 - Non-credit Course
- Visiting schools outside Monroe County



 **Sanctuary Seminars** 
Six Lectures at the Florida Keys Eco-Discovery Center

 National Wildlife Refuges: Protecting the Backcountry Krislie Killam Park Ranger Florida Keys National Wildlife Refuges	 Meet the Birds of the Backcountry Tom Wilmers Wildlife Biologist Florida Keys National Wildlife Refuges	 The Story of Reef Lighthouses Eric Martin President Florida Keys Reef Lights Foundation
 Florida Bay's Future: Restoration? Dr. David Rudnick Science Coordinator South Florida Natural Resources Center, National Park Service	 Life and Times of Bonefish Dr. Gerald S. Ault Professor, Marine Biology and Fishes Roseman School of Marine and Atmospheric Science	 Tracking Sea Turtles in Backcountry Waters Michael Bresette Founder & Director Inventor Research Group

Florida Keys Eco-Discovery Center
35 East Quay Road
Tuesdays, 9:30 – 9:00 pm
Jan. 15, 22 & 29, Feb. 5, 12 & 19
Call 305-809-4750 for information



Fee: \$19 (includes all six classes)
Non-Credit, No Prerequisite
Space is Limited
FKCC course # 20382
Call 305-809-3185 to Register

School Programs: FKCC Sanctuary Seminar Series



- Established- 2008
- Non-Credit Course
- 6 week course
- 2 hours a week
- Average Attendance- 50
- Age- High School to Retirees
- Subject Matter Experts
 - Research/Science
 - Maritime Heritage



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- Publications
 - Subject Matter Expert
 - Guest Articles
- Waterways TV
- Press Releases
- Weekly Radio Participation



Florida Keys National Marine Sanctuary: Protecting coral reefs for future generations

Details Published on Wednesday, 30 January 2013 13:06 Written by editor



By Karrie Carnes

Winter weather have you itching for warmer waters? Looking for a place where coral is king and the fish are photogenic? Then look no farther than the sunny archipelago of the Florida Keys, home to the world's third largest barrier reef and where coral conservation isn't just a suggestion, it's the law.



PHOTO COURTESY FLORIDA KEYS NATIONAL MARINE SANCTUARY

In 1990, the U.S. Congress recognized the national significance of Florida Keys coral reefs and their vulnerability to increasing environmental threats by designating Florida Keys National Marine Sanctuary to protect and conserve these natural resources. Today's sanctuary protects 2,900-square nautical miles – roughly the size of Vermont – of mangrove islands, seagrass meadows and coral reefs, stretching from northern Key Largo southwest to surround the entire Florida Keys and westward through the Tortugas. As soon as you step foot in the water or giant stride off a boat in the Keys you're in a very special place with special rules.

PREV

1 of 2

NEXT

Every coral, whether hard and soft, is protected in the sanctuary, so mind your hands, fins and equipment when diving. The healthier the coral, the more fish will thrive here, and the longer our and future generations will be able to enjoy these reefs. The Florida Keys are widely regarded as one of the "fishiest" places in the Caribbean, due in part to the protections afforded corals, the seafloor and fish by the national marine sanctuary.

If you've booked a commercial dive charter in the Keys, chances are you'll take a trip to one of 18 Sanctuary Preservation Areas. These areas are closed to fishing and collecting of any kind, so leave your lobster nets and spearguns at home. Because divers don't have to compete for space with anglers, these areas are diving meccas. Sanctuary Preservation Areas encompass many popular "spur and groove" reefs which consist of long fingers of reef (spurs) separated by sandy-bottom channels (grooves), starting at a shallow crest and radiating out to deeper water.

Media: Press Releases & Announcements

(More than 200 reporters (Florida and national))

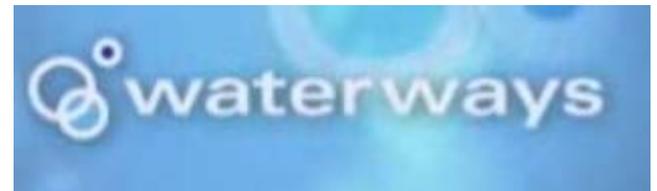


- The Citizen
- Keynoter
- Miami Herald
- Associated Press
- Reuters
- Free Press
- The Reporter
- Keys Weekly
- News Barometer
- Palm Beach Post
- US 1 Radio
- Clear Channel Radio
- Daytona News Journal
- St Petersburg Times
- Tampa Tribune
- Orlando Sentinel
- Ft. Myers News Press
- Ft. Lauderdale Sun Sentinel
- Jacksonville Times Union
- Key Biscayne Islander News
- Marco Island Sun Times
- El Nuevo Herald
- Naples Daily News
- Jacksonville Beaches Leader
- Scuba News
- Dive Training
- Alert Diver
- Florida Sportfishing
- Florida Sportsman
- Diver
- Sports Diver
- Diver Wire
- Hernando Today
- Marco Island Eagle
- Coastal Angler

Media: Waterways TV



- Locally
 - Monroe County Channel 76- Saturday's at 9:00 AM
 - WEYW Channel 19- Saturday's at 6:00 PM
- Florida
 - 35 public access channels (municipality, university, govt.)
- Available on DVD (Monroe County libraries)
- You Tube
- Over 200 episodes produced
- Joint effort with FKNMS, NPS & EPA
- Produced for more than 15 years- potentially reaching 3 million weekly viewers



Technology



FLORIDA KEYS NATIONAL MARINE SANCTUARY
NATIONAL MARINE SANCTUARIES | NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION



Technology- Website floridakeys.noaa.gov



Jan 1 – March 31

- 151,469 visits (1700 per day)

Most Popular Pages

- Florida Keys Eco-Discovery Center
- Visit the Sanctuary
- About Your Sanctuary
- Explore the Sanctuary
- Sanctuary Regulations

Most Popular Downloads

- Lobster Brochure
- Spearfishing Brochure
- Science Summaries

A screenshot of the Florida Keys National Marine Sanctuary website homepage. The page features a blue header with the NOAA logo, the sanctuary name, and navigation links. A large banner image shows coral reefs. Below the banner is a sidebar with navigation options and a search bar. The main content area includes a "Sanctuary Spotlight" section with four featured items: Blue Star Diving & Snorkeling, Eco-Discovery Center, Sanctuary Condition Report, and Marine Zoning & Regulatory Review. There is also an "Announcements" section with links to regulatory updates, events, regulations, and other resources. The footer contains contact information and a revision date of April 01, 2013.

Technology- Website

floridakeys.noaa.gov



- How do visitors find us?
 - Search engines
 - corals, mangroves, maps, shipwrecks, Looe
- Google Analytics since February:
 - 2/3 are new visitors
- Most Popular Pages:
 - Regulations
 - Florida Keys Eco-Discovery Center
 - Corals
 - Mangroves
 - Looe Key
 - Mooring Buoys
 - Artificial Reefs

A screenshot of the Florida Keys National Marine Sanctuary website. The page features a navigation menu on the left with links like Home, About Your Sanctuary, and Management. The main content area is titled "Corals and Coral Reefs" and includes a brief description of the sanctuary's role in protecting the coral barrier reef system. Below the text is a grid of eight small images, each with a caption: "Are corals rocks, plants, or animals?", "How do corals eat?", "How do corals reproduce?", "What is a coral reef?", "How do coral reefs benefit the economy?", "Why are coral reefs called the 'rainforests of the sea'?", "How is climate change affecting coral reefs?", and "How does pollution impact coral reefs?". The footer contains contact information and a revision date of December 08, 2011.

Technology- Facebook

facebook.com/floridakeysnoaa.gov



7,344 Likes

Since January 1:

- Highest Daily People Talking About This: 1598
- Highest Daily Total Reach: 41,580

facebook

Search for people, places and things

Mary Find Friends Home

You are posting, commenting, and liking as Mary Sanctio Tagleros — Change to Florida Keys National Marine Sanctuary

Florida Keys National Marine Sanctuary Timeline Now

Admin Panel

See Your Ad Here

Florida Keys National Marine Sanctuary

Florida Keys National Marine Sanctuary protects 2,900 square nautical miles of coral reef, hard bottom, seagrass meadow, mangroves, and sand flats. For the

Like Message

7,344 Likes

Photos Likes Events Videos

Highlights

Post Photo / Video

Write something...

Florida Keys National Marine Sanctuary 12 hours ago · 0

Hey kids, lets talk turtles! This weekend's FREE Discovery Saturday kids event tackles the timely topic of sea turtles. Kids in kindergarten through fifth grade are invited to the Florida Keys Eco-Discovery Center in Key West from 10-11am this Saturday. Play turtle hurdles and make your very own sea turtle puppet! Learn more about the center at: http://floridakeys.noaa.gov/eco_discovery.html

Florida Keys Eco-Discovery Center

Discovery Saturday

WHO: Kids in kindergarten through fifth grade

WHEN: April 20, 2013, 10:00 a.m. to 11:00 a.m.

COST: FREE

WHAT: Fun!! Games!! Crafts!! Friends!!

WHERE: Florida Keys Eco-Discovery Center

INFO: 305-809-4750

Turtle Talk

Play a game of turtle hurdles and make your own sea turtle puppet while learning about these amazing marine creatures!

4 Friends Like Florida Keys National Marine Sanctuary

NOAA Channel Islands National Marine Sanctuary 1 friend also likes this.

I Love the Florida Keys. Local/Travel Website. 1 friend also likes this.

Quiescence Diving Services Scuba Diving 1 friend also likes this.

Expedition Florida 500 1 friend also likes this.

SeaWeb Non-Profit Organization 1 friend also likes this.

Florida Keys National Marine Sanctuary shared a link. April 10 · 0

What do the following have in common: Marine zones, shallow water habitats, ecosystem restoration, outreach, water quality infrastructure and the Everglades National Park management plan?

Answer! They are all topics to be discussed at the bi-monthly meeting of our Regional Steward Council next

Partnerships

- Florida Keys Eco-Discovery Center
- Lobster Booth
- REEF- Lionfish
- Mote
 - MEERA
 - Bleach Watch
- Seagrass Outreach Partnership
- Mel Fisher Maritime Heritage Society's Archaeology Department
- Florida Public Archeology Network (FPAN)
- Florida Fish and Wildlife Conservation Commission (FWC)



Partnerships: Florida Keys Eco-Discovery Center



- Opened: January 2007
- January to March 2013: 30,000 Visitors
(Project 75,000 in 2013)
- Partners: NOAA/FKNMS, USFWS, NPS,
SFWMD, Mote, Eastern National
- Exhibit Area: 6000 sqft
- Aquariums: Mote Marine Laboratory
- Host: School groups, Elder Hostels,
Community Meetings
- Kid's Program: Discovery Saturdays



Partnerships: External Partners

- Relationship with TDC
- National Aquarium Exhibit
- New England Aquarium (exotic fish exhibit)
- Corals at Aquariums

Discovery World- Milwaukee, WI

SeaWorld- SanAntonio, TX

Florida Aquarium- Tampa, FL

Aquarium of the Smokies- Gatlinburg, TN

Columbus Zoo- Columbus, OH

John G. Shedd Aquarium, Chicago, IL

Mote Marine Laboratory- Sarasota, FL

Museum of the Earth- Ithaca, NY

Omaha's Henry Doorly Zoo- Omaha, NE

Pittsburgh Zoo and PPG Aquarium- Pittsburgh, PA

Smithsonian Marine Station- Fort Pierce, FL

Steinhart Aquarium- San Francisco, CA

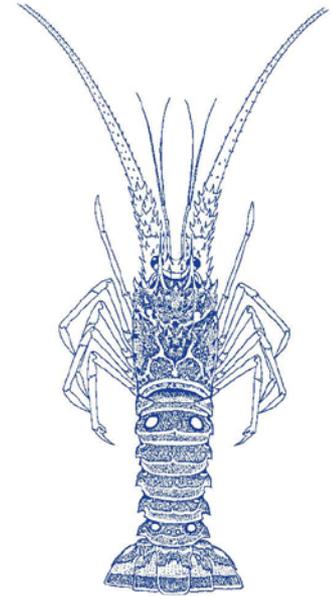


Partnerships: Lobster Education



- Information Booths (700 interactions)
 - Upper Keys
 - Bahia Honda Boat Ramp
- Brochure: 45,000 copies plus web distribution
- Radio Shows: 2 weeks prior to Sport Season
- Newspaper
- Partners: FWC, State Parks, National Parks, Monroe County, Municipalities

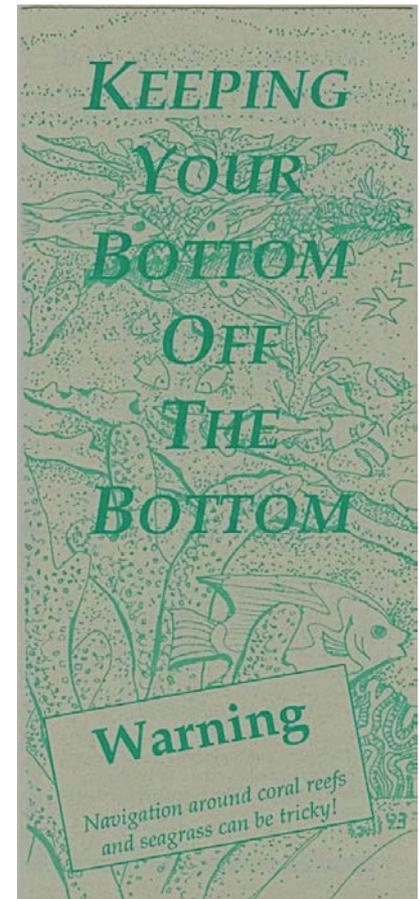
Regulations for
Recreational Harvest
and
Lobster Information
for
Monroe County,
Florida



Florida Spiny Lobster (Crawfish)
Panulirus argus

Products

- Posters
- Brochures
- Science Summaries
- Boat Ramp Signs
- Topical 1-Pagers
- Boat Decals
- Teacher CD



Products: Exhibits

Key Largo Chamber of Commerce
Cannon- 1700s
4 panel exhibit



Pennekamp Visitor Center

Boat Ramp Signs



Florida Keys
NATIONAL MARINE SANCTUARY
For more information on specific regulations visit <http://floridakeys.com> or a local marine retailer.

Florida Keys National Marine Sanctuary

Know Your Buoys!

Yellow Buoy
"This buoy is visible above water, colored yellow."
• Buoy for warning, but with "Under Way" flag for the day.
• "Under Way" flag: "Under way" means "I'm moving!"
• "Under way" means "I'm moving!"

Green Buoy
"This buoy is visible above water, colored green."
• Buoy for marking a hazard, such as a wreck or shoals.
• "Under Way" flag: "Under way" means "I'm moving!"
• "Under way" means "I'm moving!"

Red Buoy
"This buoy is visible above water, colored red."
• Buoy for marking a hazard, such as a wreck or shoals.
• "Under Way" flag: "Under way" means "I'm moving!"
• "Under way" means "I'm moving!"

Red and White Buoy
"This buoy is visible above water, colored red and white."
• Buoy for marking a hazard, such as a wreck or shoals.
• "Under Way" flag: "Under way" means "I'm moving!"
• "Under way" means "I'm moving!"

WHAT YOU DO (OR DON'T DO) CAN MAKE A DIFFERENCE

LO QUE USTED HAGA O DEJE DE HACER PUEDE MARCAR LA DIFERENCIA

Keys' Treasures
The centuries, hundreds of ships have wrecked along the Keys' coral reefs. Together they tell the story of the rich maritime history of the Florida Keys. Like the natural resources, the coral reefs are a treasure.

WHAT YOU DO (OR DON'T DO) CAN MAKE A DIFFERENCE

LO QUE USTED HAGA O DEJE DE HACER PUEDE MARCAR LA DIFERENCIA

Products- Boat Ramp Signs



Garrison Bight Marina, Boat Ramp
 Simonton Street Boat Ramp
 Sigsbee Marina
 Boca Chica Navy Marina
 Stock Island Ramp
 Boyd's Key West Campground Inc.
 Oceanside Marina
 Gieger Key Marina
 Shark Key Boat Ramp
 Sugarloaf Marina
 Sugarloaf Key KOA Marina
 Cudjoe Marina
 Chevron Station, Summerland Key
 State Road 4A Boat Ramp

Looe Key Reef Resort
 Dolphin Marina Ramp
 Dolphin Marina Gas Dock
 Wooden Bridge
 Big Pine Fishing Lodge
 Spanish Harbor Channel
 Bahia Honda State Park
 Sunshine Key
 Veterans Memorial Park
 Marathon Yacht Public Ramp
 Marathon City Marina
 Dockside Restaurant and Marina
 Fiesta Key KOA

Indian Key Fill
 Islamorada Chamber of Commerce
 Harbor Lights Motel
 Islamorada Founders Park
 Tavernier Creek Marina
 Harry Harris County Park
 Holiday Inn Sunspree Resort
 Marina Del Mar
 Molasses Reef Marina
 Ocean Reef Club
 Best Western Sundiver
 John Pennekamp Coral Reef State Park
 Chambers of Commerce- Lower Keys,
 Marathon, Key Largo

Miami-Dade County
 Black Point Marina
 Homestead Bayfront Park

Products: Science Summaries

Summarizes research and monitoring reports for the lay reader.

Maximum: 2 pages

Peer Reviewed
FKNMS Staff
Principal Investigator

23 Available

- Habitats- 7
- Marine Zones- 10
- Socio Economics- 3
- Water Quality- 7

CORAL REEF EVALUATION & MONITORING

FLORIDA KEYS NATIONAL MARINE SANCTUARY

Sanctuary Managers Rely on Research to Protect Coral Reef

North America's only barrier coral reef lies within the Florida Keys National Marine Sanctuary. Located on the ocean side of the Florida Keys island chain, the reef tract is bathed by the warm, clear waters of the Florida Current flowing from the south. In recent years, corals in the Keys, as well as elsewhere in the Caribbean, have experienced impacts from hurricanes and storms, disease and bleaching, coastal pollution, overfishing and climate change. Sanctuary managers rely on the findings from scientific research and monitoring programs to aid them in protecting and managing this world-renowned coral reef for future generations.

To collect valuable information about the reef ecosystem, scientists from Florida's Fish and Wildlife Conservation Commission began systematically monitoring coral reefs throughout the sanctuary in 1996. This research program, called the Coral Reef Evaluation & Monitoring Project (CREMP), studies various aspects of reef ecology and health and employs numerous survey methods and analyses. CREMP is part of the Water Quality Protection Program, which was established by Congress to track the status of natural resources within sanctuary waters and is jointly managed by the U.S. Environmental Protection Agency and the state of Florida.



A scientist digitally records benthic species.
Photo: Florida Fish and Wildlife Conservation Commission

Systematic Monitoring of Coral Reef Ecosystem Reveals Trends

CREMP scientists have conducted systematic inventories of stony coral species richness and recorded digital video at sampling stations throughout the Florida Keys since 1996. The sampling stations fall into three habitat types: patch reefs, offshore shallow reefs and offshore deep reefs. The sampling stations are spread through four regional areas: Upper Keys, Middle Keys, Lower Keys and Dry Tortugas. As of 2009, CREMP was collecting data at 37 locations in the Florida Keys and Dry Tortugas, with each location consisting of two to four sampling stations, for a total of 109 stations currently being assessed by CREMP. The data collected allow scientists to determine mean stony coral species richness (the number of species per station), and the digital video is used to quantify the organisms comprising the benthic (bottom) community, including stony corals, octocorals or soft corals, sponges, and macroalgae.

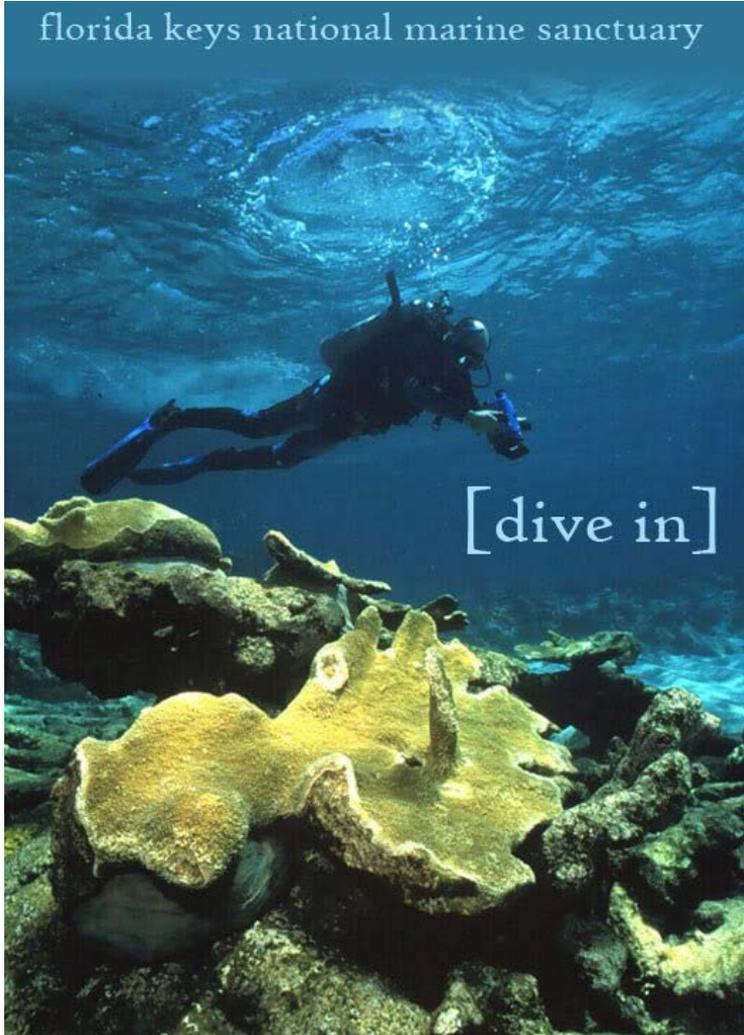


Unbleached elkhorn coral growing next to bleached fire coral.
Photo: FKNMS

Since monitoring began in 1996, mean stony coral species richness has decreased by 2.3 species per sampling station throughout the Florida Keys. Seventy-five percent of all stations show a decrease in species richness between 1996 and 2008. Of the 43 coral species initially recorded in 1996, 29 have decreased in presence while seven species have increased in presence. Mean species richness changed very little between 2008 and 2009 but is higher than in 2006, which was the low point since the program began. In 2009, benthic cover values in the Florida Keys were 14.8% for octocorals, 13.8% for macroalgae, 7.3% for stony corals and 2.4% for sponges. A statistical analysis comparing benthic cover values between 2008 and 2009 revealed an increase in the cover of octocorals, macroalgae, and stony corals, while cover remained similar for sponges. This marked the first time since project inception that CREMP recorded an annual increase in stony coral cover (from 6.5% to 7.3%).

<http://floridakeys.noaa.gov/>

More Information:



Websites:

floridakeys.noaa.gov

facebook.com/floridakeysnoaa.gov

twitter.com/FloridaKeysNMS

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