Reef Environmental Education Foundation (REEF) conserves marine ecosystems for their recreational, commercial, and intrinsic value by educating, enlisting, and enabling divers and other marine enthusiasts to become active stewards and citizen scientists. REEF links the diving community with scientists, resource managers, and conservationists through marine-life data collection and related activities. This report documents REEF’s success and growth in 2011.
We are proud to present the 2011 Annual Report. In 2011, Reef Environmental Education Foundation (REEF) significantly improved its marine conservation programs by utilizing innovative technologies and partnerships. The launch of online fish identification webinars was one of REEF's most exciting and successful endeavors of the year. “Fishinars” have attracted a world-wide audience of marine enthusiasts and expanded REEF's ability to train Volunteer Fish Survey Project participants. Early in 2011, REEF also received its 150,000th fish survey! By year’s end, the number approached 160,000, making this the world's largest fish sightings database created by volunteer divers and snorkelers. Scientists used REEF data to publish landmark findings that resulted in better conservation and management practices. One such impact was National Oceanic and Atmospheric Administration (NOAA) granting Goliath Groupers five more years on the endangered species list in Florida, a decision based in large part on REEF survey data. Grouper Moon Project research paid off with the Cayman Islands' official eight-year extension of a ban that prohibits fishing for Nassau Grouper at spawning aggregation sites between November and March. Finally, REEF took advantage of collaborative partnerships to further the Lionfish Project through regional collecting and handling workshops, removal derbies, and cutting-edge research. In 2012, REEF looks forward to incorporating even more technological advances into our work, including: expansion of Fishinars, live video feed of Grouper spawning online and in the classroom, acoustic tagging and tracking of lionfish, increased outreach efforts, and a new look to our website. We hope that you continue with us on our adventures in the coming year!
Volunteer of the Year

REEF volunteers are at the heart of our grassroots marine conservation programs. Our volunteers are as diverse as the ocean they work to conserve. They can be found making a difference through work on land or in the water, in their hometown or abroad, behind a computer or a microphone. Whatever your interests, there's a niche at REEF just waiting for you. Here's what a few of our members are saying about their volunteer experiences:

“T’ve learned a lot and have met other wonderful REEF members who have really inspired me. I only wish I had hooked up with REEF sooner!”
Kenny Tidwell

“I feel lucky that I get to be part of looking after our mostly unknown and least observed animals on earth.”
Doug Harder

REEF gave me a reason to continue diving.
Patricia Broom

“I like sharing with others the fun of being a REEF member and volunteer.”
Georgia Arrow

“Always hoping to locate a new or rare species has added a new and exciting dimension to diving.”
Bob Hillis

“Thanks to REEF, I feel I am making a contribution to the preservation of this precious and fragile environment.”
Patricia Richardson

“We are so proud of the work REEF has done, and we will continue to be fish counters as long as we can dive!”
Itziar Aretxaga

Membership Overview

Members are the key to REEF’s success! Signing up as a member is free and can be done easily online at www.REEF.org.

In 2011, REEF welcomed 3,064 new members, bringing the total number of REEF members to 45,814.

The Faces of REEF

REEF awarded 2011 Volunteer of the Year to Heather George. Since becoming a member nearly a decade ago, she has conducted 192 REEF surveys throughout the world and is a member of the Advanced Assessment Team in the Tropical Western Atlantic and Hawaii. In 2010, Heather joined the volunteer research team for the Grouper Moon Project. Through the years, she has conducted fish identification trainings for dive shops and aquaria and has led several REEF Field Survey Trips. Heather also served on the REEF Board of Trustees from 2007 to 2010 and brought a wealth of knowledge about fundraising and membership development to the organization. In 2011, Heather assisted with the expansion of the Volunteer Fish Survey Project to the South Pacific as part of the field team to American Samoa. We are so grateful to have such a wonderful volunteer who contributes to REEF in so many ways.

Thank you, Heather!
REEF's Volunteer Fish Survey Project enables divers and snorkelers to report fish sightings and other data. Since the program's inception in 1993, REEF has trained and involved over 16,000 divers and snorkelers in marine life identification and the collection of fish population and distribution data. Through this citizen science program, REEF volunteers have generated one of the largest marine life databases in the world. Today, they continue to conduct surveys throughout the coastal waters of North and Central America, the Caribbean, Hawaii, and the South Pacific.

**Survey Summary**

In 2011, the Volunteer Fish Survey Project achieved several exciting milestones that included:

- Reaching the 10,000th survey in Hawaii and celebrating the program's tenth anniversary in the region;
- Reaching the 20,000th survey in the Pacific Coast Region. Divers from California to the Pacific Northwest have conducted surveys on fish, invertebrates, and algae along the Coast since 1997; and
- Reaching the 150,000th survey in REEF's Survey Project database! Ross Whiteside conducted the lucky 150,000th survey on June 13, 2011, at Mixing Bowl in Little Cayman in the Caribbean. Ross and his wife Terri have been active REEF members since 2002 and are members of the Advanced Assessment Team. Congratulations Ross and Terri, and thanks to all of our surveying members for helping us achieve this landmark!
- During the year, REEF volunteers conducted 8,485 surveys at 2,090 sites. They conducted 64% of surveys in the Tropical Western Atlantic, 20% of surveys in the Pacific Coast region, and 8% around the Hawaiian Islands. Members conducted the rest of the surveys in the Northeast, the Tropical Eastern Pacific, and the South Pacific. At the end of the 2011, REEF volunteers had completed 157,962 surveys.

**Advanced Assessment Team (AAT) and Special Projects**

In 2011, REEF welcomed 34 new members into the AAT. This elite group of 356 REEF Surveyors contributes expert-level survey data and has opportunities to participate in special survey projects. Collectively, the AAT has conducted 59,610 surveys throughout REEF's project regions.

REEF continued three monitoring projects in 2011 with assistance from our AAT:

- **Vandenberg Artificial Reef Project**
  In its second year post-deployment, survey team members documented fish assemblages associated with the Vandenberg and adjacent reef areas. The Vandenberg is a 523’ steel hulled missile tracking ship that was intentionally sunk seven miles off Key West, FL, in May 2009, to serve as a recreational diving and fishing artificial reef. Over 140 species have been documented on the wreck.

- **Marine Sanctuary Projects**
  Members of Pacific AAT conducted fish and invertebrate surveys at two United States (US) West Coast National Marine Sanctuaries (NMS): the Monterey Bay NMS; and the Olympic Coast NMS. These datasets are being used to document changes in key rocky reef fish and invertebrate species. 2011 was the ninth year of consecutive data collection in both of these marine protected areas.

- **Great Annual Fish Count**
  In 2011, we celebrated the Great Annual Fish Count (GAFC)'s twentieth year. REEF coordinates this annual event each July to mobilize and train volunteers to identify and document fish diversity and population trends. Dozens of GAFC events were held across all REEF regions, including free identification seminars and organized survey dives. The largest GAFC event continued to be a week-long survey blitz throughout the US Northeast, in which 90 divers conducted 124 surveys at 25 sites in 4 states.

[www.REEF.org/programs/volunteersurvey]
REEF’s Lionfish Program is leading the way on research, response strategies, and control programs for this intruder. Invasive Lionfish, endemic to the Indo-Pacific and Red Sea, are posing serious threats to western Atlantic marine ecosystems. First sighted in the waters of southeastern Florida in 1985, lionfish have now become established throughout the western Atlantic, Caribbean, and Gulf of Mexico.

2011 was a busy year for REEF’s Lionfish Program. We focused on increasing education and outreach, applied research, and control programs. REEF also expanded these efforts to a broader Caribbean-wide audience. Highlights of the year included:

- Authoring and producing the first Lionfish Cookbook, which sold out of its first printing of 3,000 copies in just over a year;
- Highlighting the lionfish issue in major media, including two Emmy award-winning features and a special segment with Dan Rather;
- Conducting regional training workshops for more than 20 Caribbean countries;
- Creating a full-time lionfish research and education program manager position in partnership with the Cape Eleuthera Institute;
- Co-organizing and hosting the fourth annual lionfish session at the Gulf and Caribbean Fisheries Institute conference;
- Initiating groundbreaking research on lionfish by-catch in the lobster fishery;
- Removing 3,562 lionfish through derbies, which REEF expanded to the Florida Keys, Bahamas, and Southeast Florida;
- Authoring research papers on lionfish foraging behavior and nutritional analysis;
- Serving on the Gulf and South Atlantic Regional Panel on Aquatic Invasive Species;
- Conducting bimonthly lionfish collecting, handling, and permitting workshops in South Florida; Advising the Federal Aquatic Nuisance Species Task Force and the National Park Service in development of their lionfish response plans; and
- Continuing research on lionfish removal success, trapping, movement, and impacts as well as facilitating the research of others through training and consultation.

REEF has focused on lionfish control and researching new ways to address the invasion. Our partnerships with NOAA, US Geological Survey (USGS), the National Aquarium (Washington, DC), universities, dive industry organizations, and other local groups have provided significant resources towards furthering our understanding of the invasion and how best to minimize lionfish impacts.

www.REEF.org/programs/exotic/lionfish
The Grouper Moon Project, a collaboration between REEF and the Cayman Islands Department of the Environment (DOE), aims to study and conserve the endangered Nassau Grouper. Historically, Nassau Grouper represented one of the Caribbean’s most economically important fisheries. Due to intense harvest on spawning aggregations, populations have dwindled. Through cutting-edge research, Grouper Moon scientists are documenting the importance that marine reserves and seasonal closures play in the long-term recovery and conservation of this endangered species.

In 2011, REEF and our collaborators helped to solidify progressive management of this endangered species in the Cayman Islands.

- Guided in large part by Grouper Moon research findings, the Cayman Islands Marine Conservation Board extended an eight-year ban on fishing aggregation sites. This ban was due to expire at the end of 2011.
- The Cayman Islands Ministry began considering permanent protections for the species during the spawning season.

Other highlights included:
- Finding evidence through monitoring that spawning site reserves have resulted in more fish and that new “teenagers” continue to show up to spawn;
- Conducting ground-breaking research using satellite-linked current drifters released at the aggregation site. REEF tracked movements of the drifters to better understand why Nassau Grouper aggregate and spawn when and where they do;
- Developing a dynamic website to share results of the drifter project – Baby Grouper Adrift! The Adrift website featured a map that continually updated the location of the drifters as they completed a 45-day path that grouper larvae may take. Watching the paths conveys regional connectivity, as well as the self-recruiting nature of the Cayman Island grouper populations;
- Spreading the word about the Grouper Moon Project and the impending expiration of existing management protections, REEF worked with the North America Our World Underwater scholar, Josh Stewart, to produce a video short, “Grouper’s Last Stand.” The powerful three-minute video was posted on YouTube (http://www.youtube.com/user/WeSpeakFish) and shared through many social media outlets;
- Drafting an integrated, marine science curriculum, designed to raise students’ awareness and understanding of Nassau Grouper; and
- Partnering with noted marine artist and conservationist, Dr. Guy Harvey, to begin work on a documentary, “Mystery of the Grouper Moon.”

www.REEF.org/groupermoonproject
REEF’s Volunteer Survey Project generates valuable data on ocean populations, while expanding scientific awareness among its participants. The extensive REEF data set is an important source of information for documenting changes in populations and community structure as well as cataloging biological diversity. REEF provides data to many scientists and researchers from academic institutions and resource management agencies each year. In 2011, REEF fulfilled 18 requests for data files, from scientists at institutions such as NOAA, Oregon Department of Fish and Wildlife (DFW), Seattle Aquarium, the Gilbert Ichthyological Society at the Burke Museum at the University of Washington, Washington DFW, University of Connecticut, University of North Carolina Wilmington, Centro de Ecología Marina, Living Oceans Foundation, and Florida Fish and Wildlife Conservation Commission.

In 2011, researchers published the following articles based on REEF data and projects:


Researchers from the Centro de Ecología Marina de Utila used data on snapper and grouper species to assist in the development of an ecosystem approach to managing Caribbean coral reefs in the face of climate change;

REEF’s AAT members joined the Living Oceans Foundation’s (LOF’s) Global Reef Expedition in the Bahamas, and scientists from LOF used REEF data collected to generate species distribution maps for remote areas of the region;

Researchers used data on yelloweye rockfish frequency of occurrence in the San Juan Islands in Washington to evaluate population status for the San Juan County Community Development and Planning Department; and

A task-force of scientists and management officials from NOAA’s Gulf and South Atlantic Fisheries Council and the Florida Fish & Wildlife Commission made a decision, based in large part on REEF survey data, that harvest restrictions on Goliath Grouper should remain in effect.
In 2011, education and outreach efforts continued to be a priority. REEF presented at conferences, attended dive shows, added Field Stations, continued Fish and Friends, introduced Fishinars, conducted lionfish workshops, brought the ocean to the classroom, and expanded our internship program.

**Conferences**
REEF staff presented results at five scientific conferences, including: Public Participation in Scientific Research Workshop (New York, NY); Rockfish in the Salish Sea Workshop (Seattle, WA); International Marine Conservation Congress (Victoria, BC); Salish Sea Ecosystem Conference (Vancouver, BC); and Gulf and Caribbean Fisheries Conference (Puerto Morales, Mexico). Director of Special Projects, Lad Akins, also participated in numerous lionfish working groups.

**Dive Events**
REEF reached out to the scuba and dive travel community by attending and often presenting seminars at the following events: Beneath the Sea (Secaucus, NJ); Diving Equipment and Marketing Association Show (Orlando, FL); Northwest Dive & Travel Expo (Tacoma, WA); Our World Underwater (Chicago, IL); SCUBA Show 2011 (Long Beach, CA); and Divers Day (Vancouver, BC, and Long Beach, CA).
**FIELD STATIONS**
25 new Field Stations signed up to act as local representatives and promote REEF in their area. Each Field Station serves as an active center of outreach and education for our organization. Most offer REEF Fish Identification Courses, organize survey dives, and may sell underwater paper, slates, and related fishwatching materials.
► www.REEF.org/resources/fieldstations

**FISH AND FRIENDS**
Now in its third year, REEF continues to attract a standing room only crowd at this monthly social event and marine science seminar that is presented at Headquarters in Key Largo, FL on the second Tuesday of every month.

**FISHINARs**
REEF introduced these interactive, fun webinars in 2011 to spread our marine conservation programs and fish identification training to a world-wide audience. Marine life ID classes help new surveyors learn fish identification and keep experienced surveyors’ skills fresh. Other topics have included the lionfish invasion and fish behavior. These short and convenient sessions are available to members for free from the comfort of their own home. ► www.REEF.org/resources/webinars

**MARINE CONSERVATION INTERNSHIP**
In 2011, REEF selected six individuals for participation in this competitive program. This experience introduced them to working in the non-profit sector of marine conservation through hands-on experience. Interns worked on projects related to biological assessment fieldwork and data analysis, community education and outreach, writing, and artwork.

**REEF IN THE CLASSROOM**
Several US high schools used the Volunteer Fish Survey Project to provide students a firsthand experience on how to conduct fish surveys and analyze their results. In 2011, teachers from Vermont, Minnesota, California, and Nelson (BC) incorporated REEF into their classroom and field programs.
Financials

INCOME:

- $219,865 - Individual Contributions
- $236,461 - Grants, Contracts, & Program Revenue
- $79,276 - Merchandise
- $535,602 - Total Income

Complete and professionally prepared financial statements will be available by August 1, 2012

EXPENSES:

- $435,295 - Program Services
- $54,480 - Administration
- $45,003 - Fundraising
- $534,778 - Total Expenses

44%

41%

15%

9%
REEF members are essential in achieving the accomplishments listed throughout this report and help drive our future endeavors. With their support, we look forward to reaching many more important milestones in 2012 as we continue to fulfill our mission through marine conservation programs.

Reflecting on our successes in 2011, we are inspired and excited to look forward. In 2012, we will continue to have a positive impact on the environment through the expansion of our marine conservation and education programs. REEF is working diligently to protect marine environments and fulfill our mission by:

**Partnering with diverse constituents**
We plan to: help develop an International Best Practices for Lionfish Control and Management document that includes input from resource managers from 14 countries; and continue collaboration in the Grouper Moon Project with the Cayman Islands Government, as well as Caymanian businesses, educators, and fishermen.

**Diversifying education and outreach programs**
We plan to: expand Fishinars to include more advanced topics and specialized guest speakers; and grow the Marine Conservation Internship program at Headquarters in Key Largo, FL.

**Empowering volunteers**
We plan to: develop volunteer training programs and expand methods for volunteers to get involved in ways that are engaging, fun, and convenient.
Benefactors: $2,500+
Ned and Anna DeLoach
Peter Fox and Sheryl Shea
Terry and Pam Hillegas
Jim and Judy Kewley
Murray and Jeanie Kilgour
The Spitznagel Family
John and Bonnie Strand

Supporters: $500-$999
Anonymous Donor
Foster Bam
Martha Barrow
Rich and Kathy Bruch
Rachel Capoccia
Barbara Chu
Seth and Diane Davidson
Andy and Jessica Dehart
Glen Donaho
Fred Drennan
Pieter Dykema
Carlos and Allison Estape
Cynthia Flynn and Deirdre Boyle
Deborah Fulton
Karen Garcia and Christina Rudman
Heather George and Scott Valor
Craig and Susan Grube
Cher Hager
Jill Haley
Wolcott Henry
Randy Holley
Peter Hughes
Hideko Kawabata
Pat and James Lommel
George Lindley
Kreg and Margaret Martin
Adrian Mason
Wendy McIntroy
Brian Miller
Doug Miller
Patricia Richardson
Pamela and Ken Roberts
Doug and Jane Roxer
David Rosen
Julie Rosenfeld
Linda Schillinger
Christian Seifert and Megan Gleason
Marcia Senna
Richard Setterberg
Lisa and Charles Sipe
Mike Snow
Sheri and Jeff Tonn
Craig Wood

In-Kind Support
Keith and Linda Beatty
Todd Bohannon
Brenda’s Dive Center
Brown’s Distributing
Coconuts Restaurant and Club
Czech Republic Divers
Dive Key West, Inc
Divers Alert Network
Divers Direct
EcoWeek
Fiesta Key Resort
Peter Hillenbrand
Horizon Divers
Peter Hughes
Joanne Kidd Designs
Bobbie Lindsay and Doug Buck
Keys Diver

Foundations, Agencies, and Other Partners
Anonymous Foundation
Bahamas’ Department of Tourism
The Cape Eleuthera Institute
Caradonna Worldwide Dive Adventures
The Carrow Foundation
Guy Harvey Ocean Foundation
JBG Charitable Fund
The Korein Foundation
City of Layton
Lenfest Ocean Program
The Meyer Foundation
The Donaldson Trust
New World Publications
Florida Coastal Management Program
Florida Keys National Marine Sanctuary
Cayman Islands Department of the Environment
Florida Department of Environmental Protection
Robert J. & Helen H. Glaser Family Foundation
Miami-Dade County Florida SeaGrant Extension Program
NOAA Center for Coastal Fisheries and Habitat Research
Sanctuary Friends Foundation of the Florida Keys

Thank you to all the photographers who donated pictures in 2011!

To donate online, please visit REEF.org/contribute

Contribution from 1/1/2011 and 3/31/2012

Donors

Keys Weekly
Chris MacGregor
Hurricane Hole Restaurant, Bar, and Marina
Little Cayman Beach Resort and Reef Divers
M/V Spree
The New England Aquarium
Ocean Reef, Inc.
Quiescence Diving Services
Peggy and Michael Rafferty
Rainbow Reef Dive Center
Scubapro
Cynthia Shaw
Amy Slate’s Amoray Dive Resort
Southern Cross Club
Wayne Sullivan
Tortugas Liveboard
Ben Weintraub

Foundations, Agencies, and Other Partners

NOAA Coral Reef Conservation Program
NOAA National Marine Sanctuaries
The Ocean Reef Conservation Association
Elizabeth Ordway Dunn Foundation
The Sailfish Marina on Singer Island
Cayman Prep and High School
Disney Wildlife Conservation Fund
The Curtis & Edith Munson Foundation
The National Fish and Wildlife Foundation
Sensational Seas Project
United States Geologic Survey (USGS)
Monroe County
The Green Turtle Club Resort and Marina
National Park Service
Now more than ever, REEF needs your financial support to ensure that we are able to continue critical marine conservation programs. Please consider making a donation, using our secure online donation page at https://www.REEF.org/contribute, or by calling REEF HQ at 305-852-0030.

Photo Credits:

Page 1 - Cover:
Reef Scene by Paul Humann

Page 2:
Diver by Janna Nichols

Page 5:
Lionfish on Reef by Rich Carey

Page 6:
Grouper Aggregation by Paul Humann

Page 7:
Surveyor by Nathan Brown
Yellow-eyed Rockfish by Janna Nichols
Goliath Grouper by Armando Jenik
Yellowtail Snapper by Anna DeLoach
Kelp Greenling by Pete Naylor

Page 8:
Background Surveyor by Brian Slopey
Divers by Janna Nichols

Page 9:
Rock Beauty by Jonathan Lavan

Page 10:
Razorfish by Ken Marks

Page 12:
Grunts by Ned DeLoach

Page 13:
Surveyor by Beth and Al Bruton

REEF 2011 Annual Report Designer: Joanne Kidd
Copyright © 2012 REEF