



2004 Annual Report

The Reef Environmental Education Foundation (REEF) is an international marine conservation organization supporting hands-on grassroots activities designed to educate and engage local communities in conservation-focused activities. Since 1993, REEF has trained and involved over 8,000 divers and snorkelers in marine life identification and the collection of useful population and distribution data. In addition, REEF coordinates outreach and education activities for a wide audience of non-divers, including K-12 students, seniors, fishermen and armchair explorers. This report documents REEF's growth and success in 2004.

MISSION

To educate, enlist, and enable divers and non-divers alike to become active stewards in the conservation of coral reefs and other marine habitats.

At-a-Glance

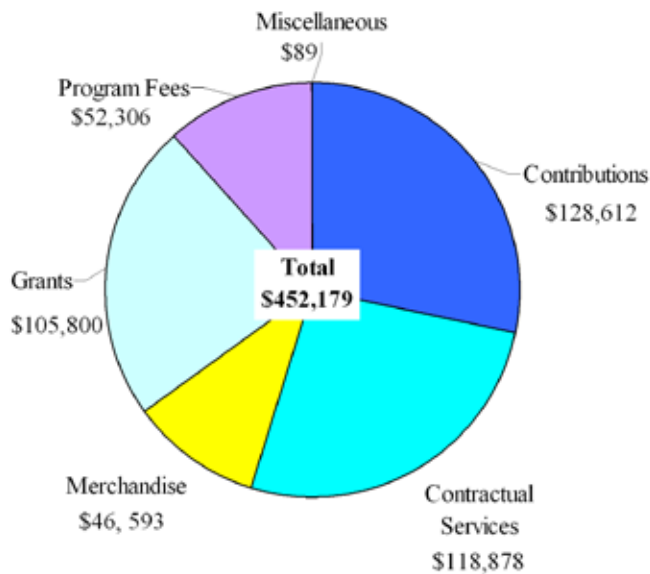
2004 Membership – 28,927
Surveys Submitted in 2004 – 12,461
Fish Surveys Conducted Since Inception – 81,707
2004 Operating Budget – \$452,179
Offices: Key Largo, FL and Seattle, WA
Website: www.reef.org
Incorporated: 1990



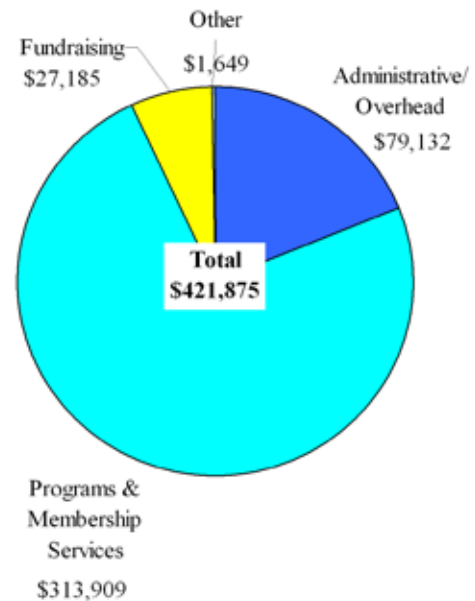
FINANCIAL REVIEW

REEF obtained funding primarily through member donations, foundation support and monitoring and reporting contracts and grants. The annual operating budget for 2004 exceeded \$450,000. Despite our no-fee membership, membership contributions continued to serve as the cornerstone of our support, providing 30% of our operating budget. We continually strive to insure that all member contributions are applied directly toward supporting REEF's programs; overhead expenses were less than 20% in 2004.

REEF 2004 Income



REEF 2004 Expenses



SPECIAL CONTRIBUTORS

Foundations

Calvert Social Investment Foundation
 Community Foundation of Western North Carolina
 Curtis and Edith Munson Foundation
 Disney Wildlife Conservation Fund
 Glenmede
 Henry Foundation

J. Edward Mahoney Foundation
 The Meyer Foundation
 The Robert J. & Helen H. Glaser Family Foundation
 Schult Foundation
 Seaspace
 Triad Foundation

Platinum Sustainers

REEF members who contributed \$1,000 or more in 2004.

Timothy Aldrich
 Paul and Martha Bonatz
 Estate of Marjorie Burkett
 Mindy Cooper-Smith
 David DaCosta and Françoise Giacalone
 Jim DallePazze
 Ken and Sherri Deaver
 Ned and Anna DeLoach
 Steven and Mary Dingeldein
 Rosemary Duke

Neil Ericsson and Karen Florini
 Chatten Hayes
 Peter L. Hillenbrand
 Paul Humann
 Murray Kilgour
 Kathleen Kingston
 Rob Mougey and Darcy Charlier
 Franklin Neal
 David L. Orr
 Ole Peloso

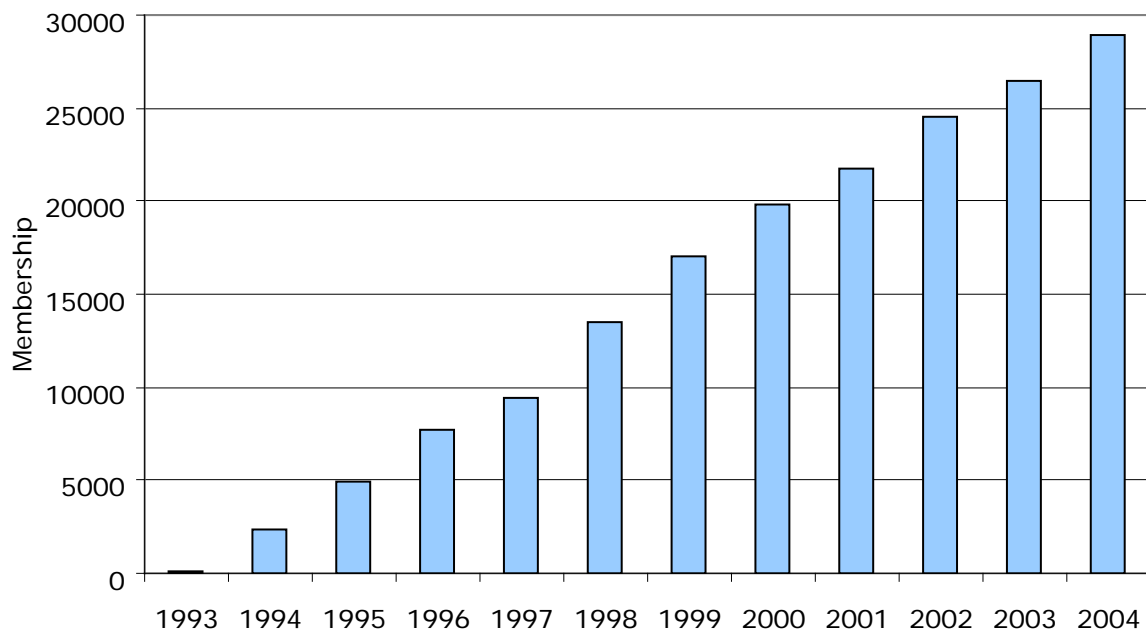
Kitty and Jeffrey Philips
 Tony Ramirez and Kathy Aguilar
 Dennis Schneider
 Fred Silvester
 Ed and Doris Steiner
 John and Bonnie Strand
 Anne Walton
 Clive and Stella Wood

*This financial information has been compiled from computer bookkeeping systems and not in a review or audit. Complete and professionally prepared financial statements will be available by August 1, 2005.

MEMBERSHIP

Since REEF's debut in 1993, our membership has swelled with interested and passionate marine conservation supporters. Currently, the organization includes over 29,000 members from all 50 US states and territories and 96 different countries. These dedicated members provide the backbone of our organization by conducting surveys, teaching identification classes, spreading the word about REEF's programs and contributing financially to ensure the sustainability of our programs. Special members include our Platinum Sustainers, who annually contribute more than \$1,000 and our Advisory Panel who provide expertise on related organizational or scientific issues. In 2004, 2,295 new members joined the organization.

REEF Membership



REEF members having fun in the Turks and Caicos (left) and in Brazil (right).



EDUCATION and OUTREACH

Education and outreach are at the core of REEF's activities. Through public talks, the development of educational materials, outreach tools, and our Field Station Program, we increase public awareness about marine ecosystems. In addition to divers and snorkelers, our programs reach a wide audience of non-divers, including K-12 students, seniors, fishermen and armchair explorers. In 2004, we were pleased to hire a Director of Outreach and Education, Brian Dias, in order to more effectively meet our outreach goals.

The REEF newsletter and website serve as our two primary outreach tools. Dive show attendance and REEF Field Stations also help us spread our message to the diving community. In 2004 REEF staff and volunteers conducted dozens of public talks to dive clubs, school groups, nature centers, aquaria, and at dive shows. In addition, the Great Annual Fish Count event (held each July) served as a focused event to introduce the public to REEF's programs.



WWW.REEF.ORG

REEF's website is a key component of our program. In addition to providing summaries of fish survey data for geographic areas, species distribution reports, and personal life lists for REEF members, the Website contains galleries and quizzes, an expanded Member Forum site with articles and mystery fish identification, an online store to purchase survey materials and guidebooks, and a section on the research and monitoring applications of the database. In 2004, the site received an average of 3,300 page views per day and approximately 30,000 visitors each month.

Newsletter

The full color REEFNotes newsletter was mailed free of charge to over 25,000 US and Canadian households in 2004. It is published bi-annually and features stories on recent REEF projects, science achievements, and fish identification columns. The Nielsen Company in Florence, Kentucky makes this publication possible through an in-kind donation of printing.



Field Station Program

REEF Field Stations are dive shops, aquaria and other institutions that regularly promote and teach fish identification courses, organize survey dives, encourage REEF membership and serve as distribution centers for REEF information and survey materials. Field Stations pay an annual fee and are listed in REEF's newsletter and website as places our members can "Speak Fish." In 2004, we instituted a new type of Field Station category designed for non-profit organizations and academic institutions. REEF recognized the importance of non-profit and academic relationships as well as the special financial constraints on such organizations. To address this, the Non-Profit/Academic Field Station (NAFS) category enables groups with a strong track record of marine conservation and dedication to implementing REEF programs into their work to receive Field Station status without fee through sponsorship by a REEF patron. At the end of 2004, there were 74 Field Stations in the program, from eleven US states, Canada, and seventeen Caribbean nations.

EDUCATION and OUTREACH

Dive Shows

REEF attends dive shows each year, displaying our booth and materials and conducting seminars. In 2004, REEF participated in the following shows:

OceanFest, Ft. Lauderdale, FL - May
SeaSpace, Houston, TX - June
DEMA, Houston, TX - October



GAFC Participants in British Columbia

REEF Internship

Despite our small staff, in 2004 REEF Headquarters processed dozens of membership requests and survey material orders each week and thousands of data survey forms each month, as well as taught dozens of public seminars. These tasks could not have been completed without the help of the REEF interns. REEF's Marine Conservation Internship program is designed to introduce college-age individuals to working in the non-profit sector of marine conservation. The internship program was formally implemented in 1999. Through the program, REEF provides two interns with housing, a \$500 stipend and diving opportunities three times a year (winter, summer, fall). REEF also hosts Our World Underwater scholars each summer. The program has been a significant win-win situation for both REEF and the interns by providing extra staff assistance in the office and in the field while exposing up and coming students to marine conservation and non-profit organizations.

GAFC - 13 Years!

The Great Annual Fish Count (GAFC) is REEF's signature yearly event held each July. Through free public seminars on fish identification and organized survey dive and snorkel activities, the event raises awareness about marine conservation and introduces participants to our citizen science program- the Fish Survey Project. The event also serves to introduce the public to the US National



Marine Sanctuary System, as many of the events are focused near or in one of the thirteen Sanctuaries. Every year, more and more individuals get involved with REEF after being introduced to the critical work that we do through the GAFC. In 2004, 2,100 surveys were generated during the month of July and the GAFC boasted 82 individual events throughout our survey regions.

Great Annual Fish Count Sponsors

Peter Hughes Diving
Divers Direct
New World Publications



A REEF volunteer helps out at the booth during a dive show.



SCIENCE and PUBLICATIONS

REEF's Scientific Coordinator, Dr. Christy Pattengill-Semmens, works as a liaison between the volunteer activities and science and management applications of the data. In addition to the summary information below, a full publication list and PDF documents are available on REEF's website.

Papers

Auster, P.J., B.X. Semmens and K. Barber. 2004. Pattern in the co-occurrence of fishes inhabiting the coral reefs of Bonaire, Netherlands Antilles: implications for planning networks of marine reserves. Research Poster. International Coral Reef Symposium.

Burke, L and J. Maidens. 2004. Reefs at Risk in the Caribbean. World Resources Institute. 80 pp

Jeffrey, C.J. 2004. Benthic Habitats, Fish Assemblages, and Resource Protection in Caribbean Marine Sanctuaries. Ph.D. Dissertation. University of Georgia.

Kingsley, M.C.S., ed. 2004. The Goliath Grouper in southern Florida: assessment review and advisory report. Report prepared for the South Atlantic Fishery Management Council, the Gulf of Mexico Fishery Management Council, and the National Marine Fisheries Service. Southeast Data and Assessment Review. vii + 17 pp.

Pattengill-Semmens, CV and L. Akins. 2004. Volunteer Fish Monitoring of a Coral Reef Restoration Site in the Florida Keys. Research Poster. Coastal & Estuarine Habitat Restoration Conference, Seattle, WA

Pattengill-Semmens, C.V. and L. Akins. 2004. M/V Wellwood Grounding Restoration Fish Assemblage Monitoring Year 1 Report, submitted to the National Marine Sanctuary Program. http://www.reef.org/data/wellwood_yr1fishl.pdf

Semmens, B.X., E.R. Buhle, A.K. Salomon, and C.V. Pattengill-Semmens. 2004. Tankers or fish tanks: what brought non-native marine fishes to Florida waters. Marine Ecology Progress Series. 266: 239-244.

Whaylen, L., Pattengill-Semmens, C.V., Semmens, B.X., Bush, P.G. and M.R. Boardman. 2004. Observations of a Nassau Grouper (*Epinephelus striatus*) Spawning Aggregation Site In Little Cayman, Including Multi-Species Spawning Information. Environmental Biology of Fishes. 70: 305-313.

Symposia

In 2004, REEF presented talks or posters at the following symposia:
 International Coral Reef Symposium, Japan
 Coastal & Estuarine Habitat Restoration Conference, Seattle
 The Coastal Society, Rhode Island

Advisory Boards and Panels

REEF staff served on several advisory boards and panels in 2004, including:
 Channel Islands National Marine Sanctuary Research Advisory Panel – Christy Pattengill-Semmens
 Florida Artificial Reef Advisory Board – Lad Akins
 Florida Keys NMS Blue Star Organizing Committee – Lad Akins
 Gray's Reef National Marine Sanctuary Research Area Working Group – Lad Akins
 The Ocean Conservancy RECON Program Advisory Board – Christy Pattengill-Semmens
 US Coral Reef Task Force Outreach and Education Working Group - Bryan Dias



DATA

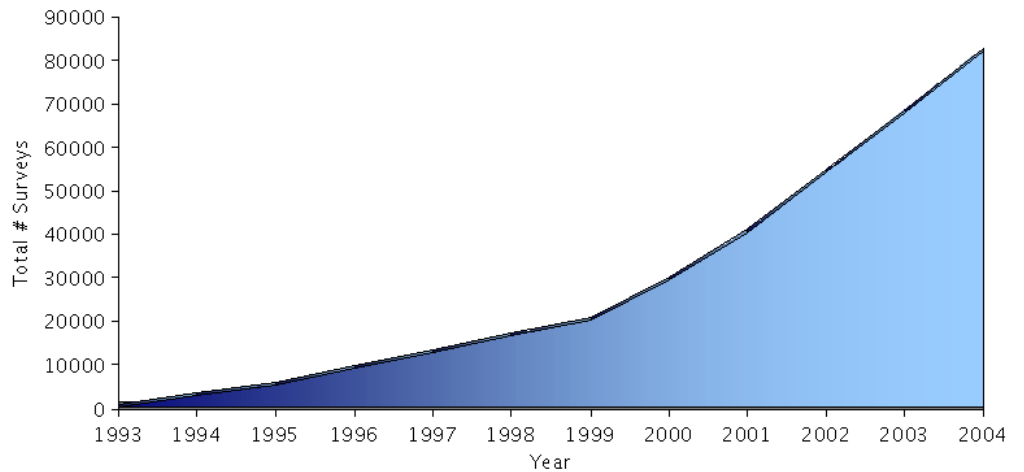
REEF's Fish Survey Project has become one of the most successful marine citizen-science programs in the world. The dedication of REEF members has enabled the creation of a database that is second to none in its usefulness for addressing a variety of research and management questions. Beyond the basic information of species distribution and abundance patterns, applications of the data have included evaluating the effects of harvest restrictions, analyzing trends over time, identifying areas of high diversity for eco-regional planning, fisheries-independent assessments of populations, evaluation of the biogeography of fishes, and the discovery of rare, new, and non-native fishes.

By the end of 2004, the database contained 81,707 surveys.

During 2004, REEF volunteers conducted a total of 12,461 surveys. The breakdown by region was:

- TWA - 8,951
- TEP - 556
- PAC - 1,644
- HAW - 1,310

Cumulative Number of REEF Surveys by Year



REEF surveyors in the Caribbean, Pacific Northwest and Hawaii.

ADVANCED ASSESSMENT TEAM PROJECTS

Surveying members who achieve Expert status are extended an invitation to REEF's Advanced Assessment Team (AAT) and are invited to participate in special surveying opportunities. REEF initiated and continued several monitoring and assessment projects in 2004 using members of the AAT. In 2004, members of the AAT participated in annual assessments of several National Marine Sanctuaries, as well as monitoring of the Wellwood restoration site and the Spiegel Grove artificial reef in the Florida Keys.

National Marine Sanctuary Assessments

Gray's Reef NMS Assessment of Fishes

Located 17.5 nautical miles off Sapelo Island, Georgia, Gray's Reef is one of the largest near shore live-bottom reefs off the southeastern United States. It is composed of 17 sq. nautical miles of intermittent sandstone outcroppings with an attached carpet of sponges, barnacles, sea fans, corals, and sea stars. These "live-bottom" reefs support a variety of invertebrates and fish. REEF initiated an annual monitoring effort of Gray's Reef fish assemblages in 2002. In the Fall 2004, REEF took a major step in our continuing effort to provide data that are useful for GRNMS marine management. A team of eight REEF experts undertook a 9-day project to document the fish species and their respective sizes at sites off the Georgia coast using both REEF Roving Diver surveys and point count surveys. This was predicated by the potential creation of a fishery closure area.

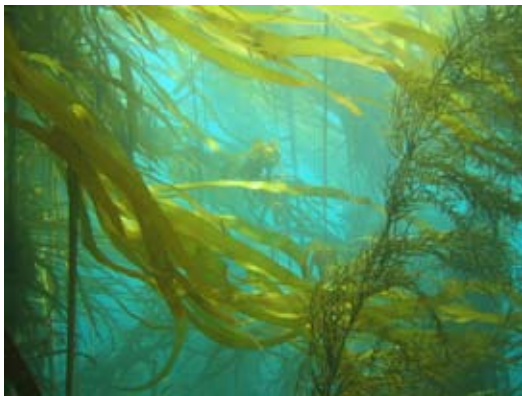


The bottom habitat at Gray's Reef is a rich assemblage of colorful invertebrates, such as these sponges.

Zone Performance Monitoring

In response to the implementation of no-take zones in the Florida Keys NMS in 1997, REEF's AAT has conducted annual assessments at 37 sites in the FKNMS from Key Largo to the Dry Tortugas. Thanks to funding from the Disney Conservation Fund, this project was continued in 2004.

In 2003, no-take zones were established around the Channel Islands NMS. REEF subsequently worked with the CINMS and the California Fish & Game to establish a set of sites inside and outside of the reserves in order to focus annual survey efforts. In 2004, the CINMS provided in-kind field support for REEF's Advanced Assessment Team during three cruises aboard the CINMS vessel, the Shearwater. During these cruises, 26 of the 33 sites were surveyed and the teams conducted 152 surveys.



Kelp forests dominate the landscape at three West Coast National Marine Sanctuaries where REEF conducts annual monitoring.

Other National Marine Sanctuary Projects

In 2004, REEF's AAT members also participated in assessment projects at the Flower Garden Banks NMS, Olympic Coast NMS, Hawaiian Island Humpback Whale NMS, and the Monterey Bay NMS. These data collection efforts were all aimed at generating long-term datasets that can be useful in answering a variety of research and management questions, while at the same time engaging the public in data collection and increasing stewardship of these public resources.

ADVANCED ASSESSMENT TEAM PROJECTS

Spiegel Grove and Wellwood Restoration Monitoring

Monitoring projects on an artificial reef and on a restoration site in the upper Florida Keys were continued in 2004.

In May 2002, the 510' long Spiegel Grove was sunk as an artificial reef between Molasses Reef and Elbow Reef in Key Largo. The vessel is the largest ship ever intentionally scuttled to create an artificial reef. REEF has been contracted to conduct pre- and post-deployment monitoring on the Spiegel Grove for a period of 5 years. The project involves periodic assessments by members of the AAT on the wreck itself and on 7 nearby reference sites. Preliminary results show much higher variability in the fish communities found on the Spiegel Grove as opposed to those on nearby ledges and shallow reef systems. The project has also documented several commercially targeted species utilizing the wreck in increasing numbers.



A REEF surveyor swims past the prop of the Spiegel Grove.



A REEF surveyor conducting a roving diver survey around one of the restoration modules at the Wellwood grounding site.

The M/V Wellwood was a 112-meter freighter that ran aground in 1984 on Molasses Reef. The grounding destroyed 1,285 square meters of living coral. In an effort to restore habitat structure and stability to the grounding site, restoration began in 2002. REEF was contracted by the National Marine Sanctuary Program to document recruitment of fishes onto the site as well as the subsequent changes, if any, to surrounding reefs. As part of this project, REEF's AAT are conducting both Roving Diver REEF surveys and belt transect surveys over a period of 5 years. Preliminary results have indicated an increase in the number of species found using the restoration modules, including increased size and biomass of parrotfish and surgeonfish.

Advanced Assessment Team members were rewarded with a whale shark sighting during a project to the Flower Garden Banks NMS in 2004



SPECIAL PROJECTS

Grouper Moon Project

The Grouper Moon Project is a collaboration between REEF and the Cayman Islands Department of the Environment (CIDOE) to monitor and study the largest known spawning aggregation of Nassau grouper. In 2002, REEF coordinated a ground-breaking expedition to Little Cayman Island to observe the aggregation and to develop a protocol for monitoring the aggregation. REEF staff and volunteers have returned each winter to continue the monitoring program, which includes determining the size of the spawning aggregation, documenting spawning behaviors and colorations, and recording other species utilizing the spawning site. Findings were published in 2004 in the scientific journal *Environmental Biology of Fishes*. A research grant was also received from the NOAA International Coral Reef Conservation Program in 2004 to initiate an acoustic tagging component that will address many of the unknowns about fish that visit the aggregation, such as “do fish attend the aggregation every year”, “where do the aggregating fish come from, ie. where is their home reef”, “what is the sex ratio of the aggregation”, and “what do the fish do during the aggregation cycle”. This study will also provide evidence (or lack thereof) that harvest restrictions on the aggregation are warranted and merit extension beyond the current 8-year sunset clause. REEF is very proud of the Grouper Moon Project and we look forward to continuing this important work to protect and conserve the groupers of the Cayman Islands and beyond.



Thousands of Nassau grouper gathering to spawn off Little Cayman Island.

Exotic Species Sighting Program

In 2002, as a result of a growing incidence of reports of non-native species by REEF volunteers, we developed the Exotic Species Sighting Program, which includes a special online report form, a website with a gallery of images, and an educational brochure. Non-native species can be ecologically and economically devastating. Once established, they are virtually impossible to eradicate. Therefore, identifying invasions early on is crucial. Recreational divers and snorkelers are a valuable resource for identifying the presence of exotic marine fish. REEF divers are especially adept at noticing rarities and unusual occurrences. An analysis of data submitted through the new sighting program was used to evaluate potential vectors of the non-native species. Results indicated that it is likely that that hot-spot of non-native species in South Florida is the result of releases from aquaria. In 2004, REEF continued to encourage divers to report non-native sightings through the program and distributed educational materials to aquarists and the public about the dangers of introducing non-native species into marine waters. In collaboration with the Florida Keys National Marine Sanctuary and the Florida Aquarium, REEF also organized a collection effort in 2004 to remove two non-native Indo-Pacific orbicular batfish from Molasses Reef in Key Largo. The fish are now on display in a non-native species exhibit at the aquarium.



REEF volunteers and staff from the Florida Aquarium capture one of the non-native Indo-Pacific Batfish living on Molasses Reef in Key Largo.

identifying invasions early on is crucial. Recreational divers and snorkelers are a valuable resource for identifying the presence of exotic marine fish. REEF divers are especially adept at noticing rarities and unusual occurrences. An analysis of data submitted through the new sighting program was used to evaluate potential vectors of the non-native species. Results indicated that it is likely that that hot-spot of non-native species in South Florida is the result of releases from aquaria. In 2004, REEF continued to encourage divers to report non-native sightings through the program and distributed educational materials to aquarists and the public about the dangers of introducing non-native species into marine waters. In collaboration with the Florida Keys National Marine Sanctuary and the Florida Aquarium, REEF also organized a collection effort in 2004 to remove two non-native Indo-Pacific orbicular batfish from Molasses Reef in Key Largo. The fish are now on display in a non-native species exhibit at the aquarium.

SPECIAL PROJECTS

American Samoa Expansion

Coincident with REEF's continued success are continual requests for the expansion of the Fish Survey Project to new regions. Broadening the reach of the Fish Survey Project always requires careful planning and partnership building, as well as much staff time and funds. So it is with slow and steady progress that we move toward our next geographic region – the South Pacific Seas. As part of our strong relationship with the National Marine Sanctuary Program, REEF has been working with the Fagatele Bay National Marine Sanctuary (FBNMS) to expand the Fish Survey Project to American Samoa. This tiny cluster of islands just east of Fiji is the southern most US territory and is home to rich coral reefs. After a preliminary visit by REEF's Executive Director in 2002, a team of REEF staff and representatives conducted a week-long visit to American Samoa in 2004 to field test draft training and survey materials and conduct a two-day REEF workshop. The workshop included both classroom time as well as field training with survey dives at two local Samoan villages, Vatia and Alofau. Twenty-five local divers and snorkelers participated, including staff from FBNMS, the Department of Marine and Wildlife Resources, the American Samoa Community College and the Coral Reef Advisory Group. The trip was a great success. Over 60 surveys were conducted (which will be entered into the REEF database when we launch the program), we were able to refine the materials based on the field-testing, and key partnerships were formed. We are currently finalizing the survey and training materials for American Samoa and plan to officially launch the REEF Fish Survey Project in early 2006. We are excited about this move and see it as the first step in developing a South Pacific program, which will include Fiji, the Cook Islands and the Tuamotos.



REEF Workshop participants in American Samoa.

Partnership with Marine Parks in Mexico



REEF surveyors discovered this undescribed species of goby, now called the Jarcho goby, during a project in Veracruz Marine Park in 2003.

REEF takes great pride in working with many partners. Our relationship with Mexican marine parks have been some of our most active and successful. Beginning with the Cozumel Marine Park in 1999 and expanding our partnership to include the Veracruz Marine Park in 2003, local REEF volunteers have generated thousands of valuable fish surveys from these regions. REEF staff typically conduct annual training and assessment programs for park staff. During the 2004 workshop in Veracruz, volunteers collected two undescribed species of goby and identified a wrasse species over 1,000 miles outside its previously known range in a new body of water. REEF is now working with taxonomic experts to formally describe the new goby species. In celebration of the Veracruz Marine Park and the regional uniqueness of the species, the first goby to be described will be named *Elacatinus jarochus*, or the Jarcho goby, for the colloquial name of Veracruz locals. REEF looks forward to continuing our strong relationship with the Mexican Marine Parks and exploring more of the Western Gulf coast in 2005.

FIELD SURVEYS

REEF Field Surveys are dive vacations that count! Each year, REEF coordinates 10-15 trips at various locations throughout our Survey Project regions. These trips feature daily fish identification talks and an opportunity to learn more about the marine environment. Experts in fish identification and marine ecology lead each project. Field Survey participants range from the beginning fishwatcher to the most experienced, but all enjoy the experience and appreciate being able to learn and dive with folks who share similar interests.

In 2004, 172 REEF members participated in fourteen Field Surveys at eleven locations (some locations had two weeks of trips), conducting a total of 1,643 surveys. The year also marked the first year of the REEF Behavior Tour led by Ned and Anna DeLoach, which focused on the fascinating marine life behaviors that divers can find underwater, including predation and reproduction. This series complements the annual REEF Discovery Tour, led by Paul Humann, which features identification seminars and discussions on corals, creatures, and fish.

Students from Century High School in Minnesota enjoy a week in Maui.



Participants on REEF's 2004 Field Survey to Lee Stocking Island.

2004 Field Survey Locations

Virgin Gorda, BVI
 Monterey Bay, CA
 Lee Stocking Island, Bahamas
 Maui, HI
 Dominica
 Key Largo, FL (Discovery Tour)
 Bonaire (Behavior Tour)
 Sea of Cortez, Mexico
 Nassau, Bahamas
 Bequia, SVG
 Cozumel



REEF members of all ages enjoy Field Surveys.

"REEF survey trips are the perfect way for me to take a dive vacation with a great group of people, go places I might not go on my own, improve my fish ID skills and do something good for the planet." B. Brown, Field Survey Participant



FISH SURVEY PROJECT ENHANCEMENTS

CD-ROM Curricula

As a result of many requests, REEF began the process of transferring our standardized, slide-based training curriculum onto CD-ROM in 2004. As more and more facilities replace their slide projectors with digital LCD projectors, many of our partners were having difficulty finding the equipment necessary to teach the identification classes. There are currently eleven regional Introduction to Fish Identification modules. As the CD-ROM programs are created, REEF instructors will have a choice of using the slides or the CD. REEF also plans to create enhanced versions of some of the modules, which will include video clips and self-testing features.



King angelfish are one of the species taught in the introductory tropical eastern Pacific curriculum, which is now on CD-ROM.

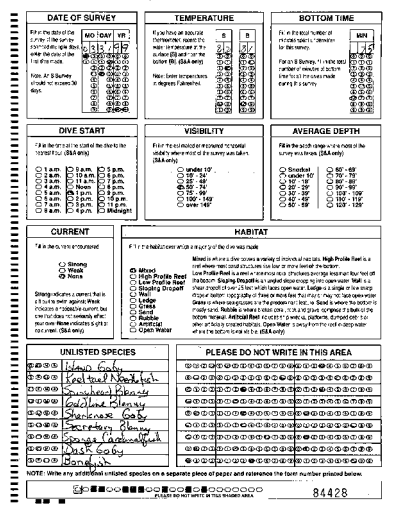
Online Data Entry

In 2004, REEF initiated work on the development of online data entry for the Fish Survey Project. Thanks to support from the National Marine Sanctuary Program and the Mahoney Foundation, REEF worked with the online division of Pearson National Computing Services, the company that produces our paper scanforms, as well as Dr. Michael Coyne, our volunteer database specialist, to develop an interface that would mesh seamlessly with our existing data management system. This new service will both improve the efficiency and reduce rising costs of processing data. The interface will allow volunteers to log on and complete data entry during one or multiple sessions, and it will eliminate many of the common clerical errors made on forms (missing information, incorrect codes, etc.). The program should also reduce identification errors through a flagging system based on existing REEF data. Data entered online is not immediately input into the REEF database, but instead is first reviewed by REEF staff and run through quality control programs, the same as data submitted with paper forms.

Climate Data Modernization Program Archiving Project

As REEF's database grew, the storage space at REEF Headquarters dwindled. With over 2,000 forms submitted a month, we rapidly ran out of space to archive and file scanforms after processing. Additionally, we were concerned that 1) archiving data in paper form was not viable over the long-term and 2) storing them in Key Largo (a hurricane zone) was probably not wise. So what was the solution?

Thanks to a grant from NOAA's Climate Data Modernization Program (CDMP) in 2004, awarded to REEF through the National Marine Sanctuary Program, all of our historical dataforms have been archived in an image database; the archiving will continue as new scanforms are submitted. All pages of each scanform (4 pages to a form) are scanned to create a digital image. These images are then indexed and stored in a searchable database, and the original dataforms are stored in a NOAA long-term storage facility. Not only are the forms in a more secure medium, REEF staff can easily query the database to review forms when questions arise rather than having to riffle through thousands of forms in a file cabinet.



An image from an historical REEF survey form, which will be archived in a database.

STAFF, BOARD OF TRUSTEES, and ADVISORS

2004 REEF Board of Trustees

Paul H. Humann
REEF co- founder, Marine life author and
photographer

Ned DeLoach
REEF co-founder and President New World
Publications

James P. Dalle Pазze, Esq.
Herdeg, du Pont & Dalle Pазze, LLP

Karen L. Florini,
Environmental Defense

Buck Butler
Rodale's Scuba Diving Magazine

Ken Deaver
Ethnoscience

REEF Liaison to NOAA

Dr. Jim Bohnsack
National Marine Fisheries Service

2004 Interns

Danyel Addes
Jamie Gigante
Carly Grimm
Kate Guerena
Gwenn Kubeck
Mollie Mclver
Steve Prutzman
Josh Wittmer



REEF 2004 Annual Report, Published 07/2005
All Rights Reserved

Photo credits:

Page 6 (bottom, left-right): Paul Humann, Kirby Johnson, Ned DeLoach
Page 7 (top-bottom): Greg McFall/GRNMS, John Wolfe
Page 8 (bottom): Paul Humann
Page 9 (top-bottom): Phil Bush, Andy Newman
Page 12 (top): Paul Humann
Back Page: Janna Nichols
All others: REEF

REEF Advisory Panel

The members of the REEF Advisory Panel are distinguished members in their fields and contribute their expertise to the REEF board and sta .

Billy Causey, Florida Keys National Marine Sanctuary
Kalli De Meyer, Coral Reefs Park program, Coral Reef Alliance

Stephen Frink, Rodale's Scuba Diving/ Stephen Frink Photography

Professor Robert Ginsburg, Univ. of Miami's Rosenstheil School

Dr. Steve Gittings, Marine Sanctuaries Division, NOAA
Wolcott Henry, The Henry Foundation and Curtis and Edith Munson Foundation

William Horn, Florida Fish and Wildlife Conservation Commission

Peter Hughes, Peter Hughes Diving

Dr. Tom Isgar, Seluera, Inc.

Jennifer Lash, Living Oceans Society

Ken Marks, Bytes and Pieces Computer Consulting

Chris Ostrom, Marine Sanctuaries Division, NOAA

Dr. Emily Schmitt-Lavin, Nova University

Dr. Edwin Steiner, Chemist, Dow Chemical, retired

Dr. Kathleen Sullivan Sealy, The University of Miami

Anne Walton, Marine Sanctuaries Division, NOAA

Deena Wells, Florida Department of Environmental Protection

2004 REEF Sta

Laddie Akins - Executive Director

Christy Pattengill Semmens, Ph.D. - Scientific Coordinator

Leslie Whaylen - Field Operations Coordinator (Jan-May)

Joseph Cavanaugh - Field Operations Coordinator (June-Dec)

Bryan Dias - Director of Outreach and Education

Andrea Fullman - Director of Development (Jan-May)

REEF Office Volunteer

Audrey Smith

