



**Reef Environmental Education Foundation
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1998 ANNUAL REPORT

Introduction by REEF's Executive Director

This was a very exciting and busy year for all of us at REEF. The organization continued to grow at a rapid rate both in membership and programs during a critical year for REEF. We are crossing the developmental threshold and moving beyond our grassroots beginnings. This Annual Report highlights many of REEF's achievements for the year. We have increased our outreach and public awareness campaign speaking with thousands of divers and snorkelers; strengthened our membership program with the addition of over 4,000 new 'no-fee' members; added 3,700 fish surveys to our comprehensive data base and marched onwards to meet our goals.

This year REEF formed new, and strengthened old, partnerships. We saw the completion of our first expansion program. The Pilot Project in the Pacific Northwest was a huge success and now paves the way for the future implementation of the Fish Survey Project in other areas. We enjoyed continued success in our Field Survey Program returning to seven previously monitored regions and conducting a project in the Saba Marine Park for the first time. REEF continued to work in close association with NOAA's National Marine Sanctuary Program: REEF's Advanced Assessment Team completing the second Zone Monitoring Project for the Florida Keys NMS; a fifth field survey completed at Flower Garden Banks NMS and expansion projects to include Grays Reef, Channel Islands, Monterey Bay and Olympic Coast National Marine Sanctuaries. REEF also established strong new ties with the Professional Association of Dive Instructors in developing new curricular materials for the dive community. All of our expansion work has helped to further the Fish Survey Project and build on the public success of the Great American Fish Count.

As we enter a new era for volunteer monitoring, let's remember those that have made REEF a success - thank you to our dedicated members, volunteer surveyors, donors, advisors and partners without whose support our projects would not be possible. The REEF staff look forward to continued relationships and counting fish with you soon.

In Thanks

Laddie Akins
Executive Director

REEF 1998 SUMMARY

- Awards received from The Nature Conservancy's Florida Chapter, Keep Florida Beautiful and the Bonaire Tourism Corporation;
- Publication of "Surveying Coral Reef Fishes: A Manual for Data Collection, Processing and Interpretation of Fish Survey Information for the Tropical Northwestern Atlantic" in partnership with The Nature Conservancy. The 84 page manual describes all aspects of data collection, processing and interpretation of fish survey information from the REEF Fish Survey Project. The manual has become a useful tool for volunteers and scientists assisting the amateur and professional in contributing to the study of marine life. So far, "Surveying Coral Reef Fishes" has sold over 35 copies worldwide;
- Strengthening of REEF's organizational structure with the formation of the REEF Advisory Board and the addition of new members to the Board of Directors and REEF staff;
- Completion of 8 Field Survey Projects;
- Organization and participation in the 1998 Great American Fish Count events in partnership with American Oceans Campaign and NOAA's National Marine Sanctuary Program;
- Completion of the 1998 Florida Keys NMS Zone Monitoring Contract using expert REEF volunteers;
- Expansion of the REEF Fish Survey project to include Georgia and the Pacific Northwest;
- Incorporation of REEF methodology, materials and data management into the Atlantic Reef and Gulf Assessment Rapid Assessment Protocol;
- Design and Publication of the poster "Reef Fishes of the Florida Keys National Marine Sanctuary" in partnership with the Florida Keys NMS;
- Addition of over 4,000 'no-fee' members to build REEF membership to 13,500;
- Completion of an additional 3,700 fish surveys by REEF volunteers. The survey data base now holds over 15,000 surveys;
- Use of REEF Fish Survey methodology by scientists Dr Sylvia Earle, Dr Steve Gittings, Dr Ellen Prager and FKNMS Superintendent Billy Causey during NOAA's highly publicized Aquarius Saturation Mission in August. The Aquarius Mission produced the first deep water surveys for the REEF Fish Survey Project.

SPECIAL PROJECTS

1998 REEF Field Survey Projects

The 1998 REEF Field Survey Projects were a huge success. With staff team leaders Laddie Akins, John Pitcairn and Deena Feeley, eight volunteer teams visited seven different areas. Five of the field projects were conducted on Caribbean Islands and two in the National Marine Sanctuaries of the Florida Keys and Flower Garden Banks within the United States. REEF teams returned to monitor the fish populations in the marine parks of Bonaire, Turks and Caicos and Grand Cayman for the fourth year of data gathering. It was REEF's second visit to St Croix gathering information to compliment The Nature Conservancy's terrestrial conservation program. In November, John Pitcairn led the first REEF trip to the Saba Marine Park where his volunteer team also counted fish in Statia and St Kitts from the liveaboard platform of the M/V Caribbean Explorer.

This season REEF gave special invitation to it's seasoned volunteers to join the REEF Advanced Assessment Team. The specially formed team was to complete the Florida Keys Monitoring contract during two consecutive weeks aboard the M/V Whisker.

However, Hurricane Georges had other plans for the hardy sailors. Week one spent in the Upper Keys saw three days blown out by weather followed by the team being chased out of Key West during the Lower Keys portion by Georges.

REEF had increased volunteer participation in 1998 compared with 1997. Field Projects were cut in number from 15 to 8 due somewhat to the coalescence of the Florida Keys Surveys. In total 86 people joined REEF Field Surveys, 35 of whom were first time participants and the remainder of whom had taken part in at least one previous project.

REEF Field Survey Summary

Field Survey	Date	# Volunteers	# Surveys	# Sites	# Species
Turks & Caicos	4/98	8	97	13	163
Bonaire	6/98	28	346	24	228
Grand Cayman	7/98	7	99	20	189
Flower Gardens	8/98	12	159	6	146
FKAAT	9-11/98	19	189	32	220
Florida Keys	9/98	18	83	15	176
St Croix	10/98	12	115	14	171
Saba	11/98	15	181	15	191
TOTALS		120	1169	139	

Florida Keys National Marine Sanctuary Zone Monitoring

In 1998, REEF's Advanced Assessment Team (AAT) conducted the second year of reef fish monitoring within the Florida Keys National Marine Sanctuary (FKNMS). The AAT consists of divers that are highly experienced in field identification and have passed an extensive reef fish identification exam (considered experts in REEF's database). The AAT monitoring supported by the FKNMS complements REEF's larger Fish Survey Project that contains over 4,000 volunteer surveys from the Florida Keys. The monitoring project began in September and was completed in November. Surveys were completed at 31 sites from Key Biscayne National Park to the Dry Tortugas. These sites included 12 Sanctuary Preservation Areas (SPA's), 3 Research Only areas, 1 Ecological Reserve, 6 sites in the proposed Dry Tortugas Ecological Reserve area, and 9 comparison/reference sites.

A total of 220 species were documented during the 190 survey hours. AAT data used in conjunction with the larger REEF database, will provide a more complete picture of pre-zone conditions. In preliminary comparisons of three species of snapper, the effect of harvest restrictions was apparent. All three species of snapper (Gray, Yellowtail and Schoolmaster) showed increases in relative abundance at Western Sambo after the site was designated an ecological reserve. Declines in abundance were seen at Middle Sambo where no changes in harvest regulation occurred. As more data are collected over time, the ability to detect change in most species will become greater.

Expansion of the REEF Program : Pacific Northwest and Georgia

In 1998, working in close association with the National Marine Sanctuary Program, REEF began to expand the Fish Survey Project to include other areas of the United States.

- In August, Laddie and Deena journeyed to Savannah, Georgia to join the maiden voyage of Grays Reef National Marine Sanctuary's research vessel the M/V Jane Yarn. Laddie and Deena joined sanctuary manager, Reed Bohne and staff as well as representatives from the National Undersea Research Center and the National Marine Fisheries Service on a five day exploratory mission. Grays Reef NMS is located seventeen miles off the Georgia shoreline and consists of hardbottom teaming with fish, soft corals and sponges. In association with Grays Reef NMS, REEF produced a 75 slide based fish identification curriculum for the South Atlantic which was previewed later in the year during an ocean celebration in Savannah and at the Discover Diving Show in Atlanta.
- In the summer of 1998, REEF launched a pilot project in the Pacific Northwest, in partnership with the Olympic Coast National Marine Sanctuary, the San Juan County Bottomfish Recovery Project, and British Columbia's Living Oceans Society. The goal of the pilot project was to evaluate the feasibility of implementing REEF's volunteer fish monitoring program to the area. Planning began in January after which

a standardized fish identification course was developed for the Pacific Northwest, and taught to the project's team members in May. Participants then conducted survey dives throughout the summer. By the end of the year a total of 85 divers participated as part of nine teams, and 208 surveys were completed with the data now available on REEF's website. Though some modifications are planned, the project is now open to all interested divers who want to conduct surveys during their dives.

Great American Fish Count (GAFC)

In active partnership, REEF, American Oceans Campaign and NOAA's National Marine Sanctuary Program followed up on their 1997 GAFC event with an expanded 1998 program. REEF volunteer, Brice Semmens established an effective GAFC web site and Ken Marks designed the GAFC data base and data report programs. Over 30 free fish identification seminars were conducted in Washington, California, Texas and Florida. REEF staff and volunteers conducted 13 seminars speaking with over 300. Extensive media attention was given to the two week event and the partners looked forward to building on this success in 1999.

Great American Fish Count Summary

	# Surveys	# Sites	# Participants	#Species
1997 Pacific	224	71	108	109
1997 Atlantic	170	68	79	252
1997 Total	394	139	187	
1998 Pacific	134	41	76	93
1998 Atlantic	171	50	84	226
1998 Total	305	91	160	

Coral Spawning

Each summer over the past four years REEF staff and volunteers have left the dock late in the evening headed for a Key Largo reef to observe the coral spawn. In 1998, REEF went a step further and put together a Coral Reef Ecology Project that included evening seminars and late night dives to watch the coral spawn. Thirty participants from all over the country were involved in the project, some joining REEF for the first time. Seminars addressed the largely unknown phenomenon of coral spawning, as well as fish and invertebrate behavior and reproduction. Dives took place on three nights visiting reefs in Key Largo and Islamorada. The major part of the spawning event occurred on the late on the first night and just about everyone managed to stay in the water for the late spawn.

EDUCATION AND OUTREACH

Throughout 1998, REEF staff spent many hours visiting schools, universities and dive clubs speaking with concerned divers about the REEF program, volunteer monitoring and teaching fish identification courses. REEF also attended major diving shows, both trade and consumer; took part in many environmental and conservation professional conferences; and was present at several dive festivals in the U.S and Caribbean. To facilitate increased participation, REEF designed a traveling information kit including a slide presentation and video to enable volunteers all over the country to give presentations to interested parties about REEF. So far, volunteers have used the loaner kit to give talks in such North Carolina, Georgia, Montana and Iowa.

SCUBA Divers and Snorkelers

- After three years of development, REEF joined the Professional Association of Dive Instructors (PADI) in debuting the Project AWARE Fish Identification Specialty course. Designed for use by divers and snorkelers, the introductory curriculum has 5 separate modules for teaching fish identification and surveying fishes in Southern California, Northern California, Pacific Northwest, Caribbean and South Atlantic.
- REEF continued it's tradition of participation in SCUBA Diving shows around the country, attending five and presenting 11 times to over 400 people.. These shows have allowed REEF to distribute information to thousands; reach hundreds with interactive presentations; meet with it's existing membership and forge relationships within the dive industry. Shows have also been a forum for REEF to form important partnerships with other established non-profit conservation organizations.
- In September, REEF partnered with Sport Diver magazine to produce the Bacardi Festival in Cozumel. The festival was hosted by magazine staff and editor Steve Blount. Laddie Akins and Christy Semmens lead the group of 20 participants on varied activities including fish surveys, treasure hunts and observing the coral spawning. Sponsors included Dacor, Cochran and Kodak;
- In November, Laddie Akins, for a third year, joined with renowned photographer Stephen Frink to conduct the Cayman Islands Nikonos Shoot-Out. Eighty photographers from around the country listened to fish identification seminars and then took part in the REEF designed "Fish ID Challenge" where participants receive points for finding, identifying and photographing different species of fish.
- In November, REEF returned to Bonaire to join CORAL (The Coral Reef Alliance) for their second annual Bonaire Dive Festival. The festival was also attended by Dr Sylvia Earle; renowned photographers Charles Seaborn, Burt Jones and Maureen Shimlock; local biologist Dee Scarr and the Bonaire Marine Park. The Festival was attended by over eighty divers and snorkelers and activities included fish identification and surveys; an underwater clean-up; coral mapping and underwater photography.

- In partnership with the Florida Keys NMS, REEF designed and produced a poster “Reef Fishes of the Florida Keys National Marine Sanctuary. With funding from the Florida Keys NMS, 2500 posters were produced and distributed to 75 dive shops in the Florida Keys.

Schools and Universities

- REEF brought the Fish Survey Project to over 180 high and middle school students from 8 schools during 1998. Local students as well as groups visiting the Florida Keys from as far away as Rhode Island were taught fish and coral reef ecology classes and completed over 50 surveys for the REEF Fish Survey Project;
- Staff took part in a one day ocean festival hosted by the Dolphin Research Center in the Florida Keys and “spoke fish” with over 60 K-12 school children;
- REEF worked with Seaworld to incorporate the Fish Survey Project into a week long camp program that takes place in the Florida Keys throughout the year;
- REEF involved 7 University groups from Florida, Tennessee, Texas and Alaska speaking with over 150 students;
- Executive Director, Laddie Akins, conducted the first remote fish identification course from Grays Reef NMS using satellite transmission to broadcast the presentation across the state.

Committees and Conferences

In 1998, REEF’s directors served on several committees including the Florida Keys NMS Sanctuary Advisory Council, the International Year of the Ocean South Florida Steering Committee and the Atlantic and Gulf Reef Assessment Fish Committee. REEF has also had increased participation in professional conferences around the country and Caribbean:

- Florida Keys Zone Monitoring Meeting (Marathon, FL 2/98)
- PADI Member Forum (Tampa, FL 2/98)
- Department of Environmental Protection Artificial Reef Summit (Fort Lauderdale, FL 3/98)
- Tortugas 2000 Initiative (Key West, FL 4/98)
- The Nature Conservancy Caribbean Team Meeting (Jupiter, FL 5/98): REEF staff were invited to help understand the goals of TNC’s Caribbean Division and work towards strengthening this long standing partnership;
- Atlantic and Gulf Reef Assessment (Miami, FL 6/98): AGRA was created to rapidly assess and identify the occurrences of decline and degradation of the Atlantic and Gulf reefs. AGRA Rapid Assessment protocol was developed to rapidly assess the condition of a large number of coral reefs using standardized methodology. REEF joined 85 scientists from 21 countries to discuss the condition of Caribbean reefs, participate in field applications and review the proposed protocol. Valuable additions to the Protocol included the incorporation of REEF methodology providing a new approach to assessing fish communities;
- Southwest Regional Artificial Reef Coordinators Workshop (New Port Richey, FL 6/98): At the invitation of the Florida Sea Grant program, John Pitcairn led a Gulf of

Mexico fish identification workshop for the county artificial reef program coordinators of southeast Florida. On the following day, Deena Wells Feeley joined John to lead a survey dive on two of the artificial reefs off Pasco County. Florida Sea Grant has asked REEF to put on the program again in 1999.

- Coral Reef Monitoring Workshop: A Tool for Management (Hawaii 6/98): Christy Semmens initiated contacts for REEF's potential expansion to Hawaii and represented the REEF Fish Survey Project in the Role of a community-based monitoring workshop session.
- Coastal Zone Management Conference (St Thomas, USVI 10/98)
- Coral Reef Initiative (Biscayne National Park, FL 10/98)
- Minerals Management Service Information Transfer Meeting (New Orleans 12/98): Dr Christy Semmens presented a paper on the fish assemblages of the Flower Garden Banks and Stetson Bank, the results of which included 395 fish surveys completed by experienced REEF volunteers.

Media

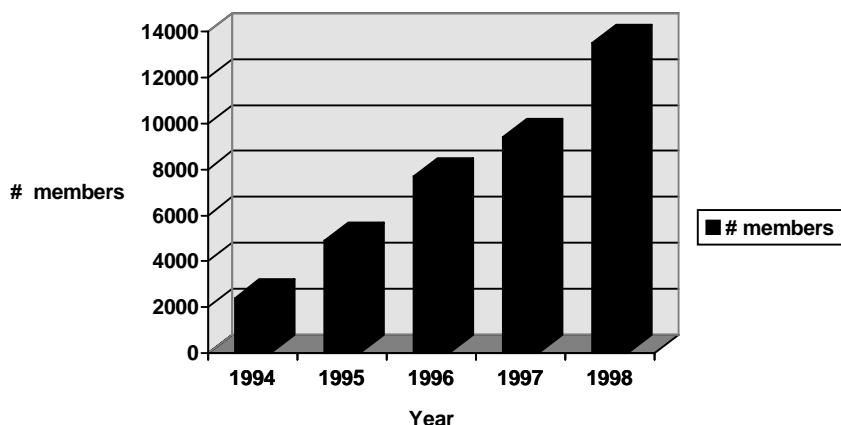
- Since 1997, REEF has been able to reach thousands of divers and marine life enthusiasts through its interactive web site (www.reef.org). On average, the web site experiences 2,500 hits a day and has been accessed by over 125 countries since its inception. Reef.org is home for all REEF data as well as newsletter archives, a discussion page, REEF Information and Gear. Volunteer and Advisory Board member, Ken Marks has continued to maintain and improve the REEF web site. New additions in 1998 include a Pacific page for housing data, display of data collected during the Great American Fish Count, membership sign-up area and an increase in the diversity of data reports available. The REEF web site is fast becoming one of REEF's most valuable tools for communicating with the membership and the thousands that visit the site weekly.
- REEF has also reached the public through media attention. In 1998, REEF was featured in more than 75 publications including major dive magazines, national magazines, local and national newspapers. REEF was featured in several television shows including *Animal Planet* shown on The Learning Channel and *Waterways*, a Florida environmental program. Staff were also interviewed several times on local radio stations Sun 103 and WAVK.
- In August, 1998 Rodales SCUBA Diving Magazine ran a four page article by Paul Humann. One page was devoted entirely to REEF and featured a tear-out membership application. REEF received over 2,100 requests for membership from this single feature.
- ***REEFnotes*** : REEF maintains contact with its membership and other interested parties through its biannual newsletter, *REEFnotes*. Each issue is mailed to over 15,000 and widely distributed at trade and environmental shows. In 1998, *REEFnotes* expanded into a twelve-page information-filled newsletter featuring up to date information on REEF projects, Field Surveys, events and fish identification articles. *REEFnotes* remains one of our strongest educational and outreach materials.

REEF's MEMBERSHIP PROGRAM

'No-Fee' Membership

Since REEF was introduced to the public in 1994, REEF's no-fee membership has grown to over 13,500. With the help of generous donors, REEF has been proud to maintain it's policy of a no-fee membership for four years and has watched the membership grow steadily. REEF has members in all 50 states and 84 countries. One of REEF's goals is to continue to provide free survey membership allowing all concerned individuals to remain active in the conservation and monitoring of coral reefs.

REEF's Membership Growth

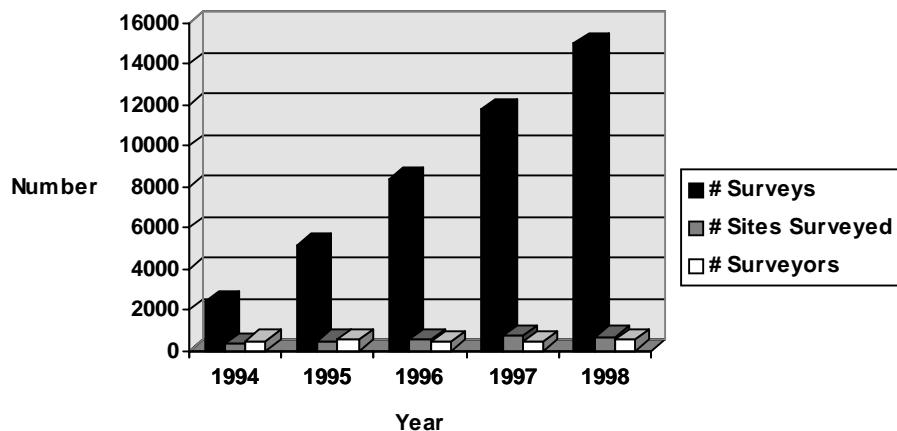


Survey Membership

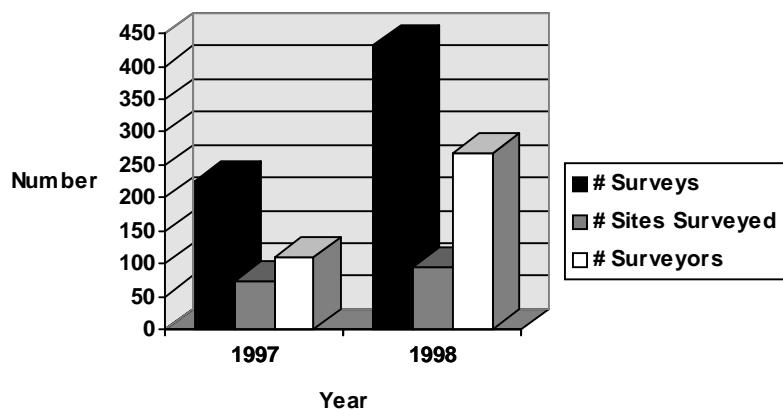
REEF's no-fee membership has enabled thousands to take part in the REEF Fish Survey project. Funding for the printing of the Survey Project data sheets is provided by The Nature Conservancy and allows REEF to furnish them to the membership at no charge. As volunteer monitoring becomes more valuable to the scientific and management community, increasing numbers of volunteers are taking fish counts. By the end of 1998, 1,858 REEF volunteers had conducted 15,582 surveys at 1527 sites throughout Florida, the Bahamas and Caribbean documenting 500 species of fish. On the U.S Pacific Coast, 259 REEF volunteers had conducted 655 surveys at 138 sites documenting 160 species of fish. Users of this valuable data, the like of which has never been gathered before, has already been put to use by NOAA's National Marine Sanctuary Program, National

Marine Fisheries Service, Florida's Department of Environmental Protection, governments and marine park managers throughout the Caribbean.

Annual Survey Summary: Florida, Bahamas & Caribbean



Annual Survey Summary: U.S West Coast & Pacific Northwest



During the course of 1998, REEF implemented Experience Level tests to allow Survey Members to graduate from Novice Observer to Expert Observer. Nineteen of REEF's most experienced volunteers were awarded Expert status of Experience Levels 4 or 5 making them eligible for REEF's Advanced Assessment Team. In the future, REEF hopes to build a on this base of highly trained volunteers to take part in monitoring projects such as the Florida Keys Zone NMS Monitoring.

Contributing Membership

While providing free survey membership to divers and snorkelers, REEF cannot escape the basic expenses incurred by a non-profit organization. In 1997, REEF began an Annual

Fundraising Campaign which, following such success, has continued through 1998. The 1997 Fundraising Campaign resulted in a 5.2% return from the no-fee membership. In 1998, REEF experienced a 38% renewal from previous donors and a 2.5% return from it's no-fee membership. REEF and it's Board of Directors feel encouraged by these results and will continue slowly to build on the donor base through solicitation while remaining true to it's "no-fee" policy.

Field Station Membership

The REEF Field Station Program was introduced in 1995 to help our organization reach the diving community. Field Stations act as REEF sponsors making an annual contribution of \$100 and advertise a "We Speak Fish" policy. Field Stations conduct fish identification courses, sign up new members, conduct regular fish surveys in their area and distribute information about REEF. REEF now has 60 active Field Stations, 30 of which are in the U.S representing 10 different states and 30 of which are located in the Caribbean representing 16 different countries.

ORGANIZATIONAL DEVELOPMENT

- REEF was pleased to have Dr Gina Green accept an invitation to the Board of Directors in January. Dr Green joins the Board from The Nature Conservancy, REEF's partner in the Fish Survey project.
- September saw the inception of the REEF Advisory Board. Seventeen were invited onto the Board, all of whom accepted. The Advisory Board has members offering a variety of expertise including scientists, non-profit professionals, state and government agency representatives, organizational professionals, marine park managers, information technologists and dive industry professionals.
- In 1998, REEF made two valuable additions to it's staff. In November, REEF received long-time supporter and advisor, Dr Christy Semmens onto their staff as Scientific Coordinator. Christy completed her dissertation "Structure and Persistence of the Fish Assemblages of the Flower Garden Banks National Marine Sanctuary" in 1998. Her research involved 395 REEF surveys and 394 stationary fish surveys. Forty-five species of fish were found that had not previously been documented at the banks. Dr Semmens holds a joint position funded in part by NOAA's National Marine Sanctuary Program. Christy will work in association with the Sanctuary Program to produce and disseminate scientific reports and papers using REEF data; represent REEF at scientific symposiums and conferences; expand the REEF Fish Survey Project to new marine protected areas (including the U.S marine sanctuaries) and work with marine managers to include the REEF Program as an intimate part of their monitoring protocols. In October, REEF welcomed Denise Mizell, a prior REEF Volunteer, as Administrative Assistant. Denise's responsibilities include general inquiries, membership requests, merchandise orders and data management. The addition of Christy and Denise will allow REEF to expand and improve existing programs, implement new programs and meet the needs of our growing membership.

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Ned DeLoach, Vice-President
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New World Publications
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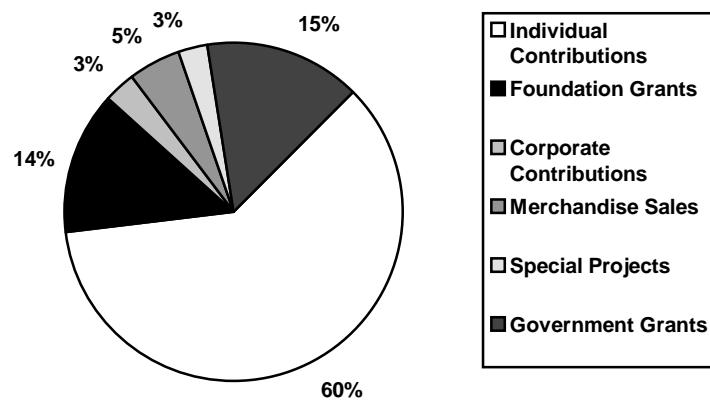
Staff

Laddie Akins, Executive Director
Deena Wells Feeley, Director of Operations
Denise Mizell, Administrative Assistant
John Pitcairn, Director of Administration

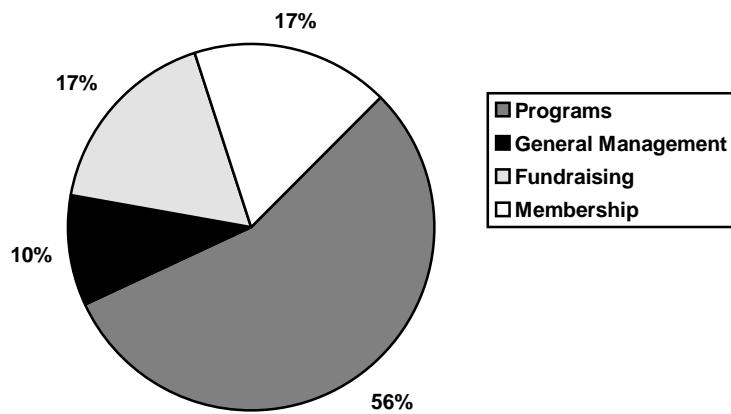
Dr Christy Semmens, Scientific Coordinator

1998 FINANCIAL INFORMATION

1998 Income



1998 Functional Expenses



N.B Complete 1998 Financial Statements are available on request.

MAJOR DONORS

- Grants and Foundations

The Curtis and Edith Munson Foundation
NOAA's National Marine Sanctuary Program
National Fish and Wildlife Foundation

The Henry Foundation
The Nature Conservancy
Project AWARE Foundation

- Platinum Sustainers

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