

REEF NOTES



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Protecting Marine Life Through Education, Service and Research

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Fish Count Crossing Geographic Boundaries

The Great Annual Fish Count celebrated its 10th year with great success! The 2002 GAFC included over 90 seminars and 300 scheduled dive events throughout REEF's survey regions. With increased international interest over the past few years, REEF changed the name of the Great American Fish Count to the Great Annual Fish Count and events took place throughout the US, British Columbia, Ontario, Cozumel, Gulf of California, Jamaica, Belize, Honduras, Bermuda, Bonaire, Bahamas, Turks and Caicos, and the Cayman Islands. This year's Fish Count truly grew into an international event with the Living Oceans Society emerging as an international leader as volunteers in British Columbia participated in 11 seminars and 33 scheduled dives.



Bob Michelson, Leda Cunningham, Chris Ostrom, Alex Score, and Peter Mack before a GAFC survey dive at Old Garden Beach in Rockport, Mass.

Created as a companion to the fish-monitoring program in the Pacific Northwest region, the Living REEF Project featured an invertebrate monitoring program. Thanks to the Living REEF Project, invertebrate surveys were included as part of the GAFC for the first time this year. "We found it very exciting to be involved in the GAFC this year. It has definitely raised the profile of the Living REEF

Project in British Columbia, helped to involve new divers and reinvigorated previously trained volunteers," said Dana Haggarty, Living REEF Project Coordinator. "Our involvement in the GAFC has also strengthened the partnership between Living Oceans Society and REEF."

Events to celebrate the GAFC 10 year milestone included: a digital photo contest with NOAA's National Marine Sanctuaries, a kick-off event with the Channel Islands National Marine Sanctuary, a 10-year anniversary celebration with the Stellwagen Bank National Marine Sanctuary, and a closing event in Key West, Florida with the Florida Keys Community College Scuba Club and Artificial Reefs of the Keys (ARK).

To honor the founder of the Great American Fish Count, Dr. Gary Davis, the kick-off event took place in Santa Barbara, CA with the Channel Islands National Marine Sanctuary. Ten years ago, the Great American Fish Count was only an idea by Channel Islands Park biologist Dr. Gary Davis. It became a reality when he

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GAFC surveyors after the kick-off dives in Santa Cruz Island with the Channel Islands National Marine Sanctuary.

Director's Corner

REEF in Brief - What's New

Celebrating 10 years of GAFC! Events to celebrate this milestone included a digital photo contest with NOAA's National Marine Sanctuaries, a kick-off event with the Channel Islands National Marine Sanctuary, a 10-year anniversary celebration with the Stellwagen Bank National Marine Sanctuary, and a closing event in Key West Florida with the Florida Keys Community College Scuba Club and Artificial Reefs of the Keys (ARK).

The third fish and benthic monitoring workshop was held on San Andres Island, Colombia in June. This workshop was coordinated with support from the local environmental agency, CORALINA as part of their Marine Protected Areas (MPA) Project. Participants included dive industry staff, community members, fishermen, and scientists and staff from CORALINA and the Old Providence Marine Life Park. REEF staff and seven AAT members collected approximately 130 expert surveys during the week and reported approximately 224 fish species.

During July, the National Marine Educators Association (NMEA) held its annual conference in Connecticut. REEF's Alex Score and Leda Cunningham attended the conference and presented a seminar on REEF and the Great Annual Fish Count. NMEA participants also conducted a virtual survey at the Mystic Aquarium and Institute for Exploration.

In May 2002, REEF's Laddie Akins traveled to South Africa to participate in the USAID funded Binational Commission on Marine Protected Areas (MPAs) exchange program. REEF represented the only non-profit organization in the exchange program and was selected for its successful partnership efforts and volunteer data gathering programs.

Spiegel Grove is down! REEF is contracted to monitor the structure and nearby natural reefs.

Wellwood restoration begins. REEF will monitor the fish assemblages at the grounding site and two other reference areas.

The power of people.
Never underestimate it.

I recently had the wonderful opportunity to join on the Great Annual Fish Count kick-off in Santa Barbara, CA. The keynote speaker was Dr. Gary Davis. For those of you who don't know Gary, he is a warm and wonderful human being. He used to work for the Channel Islands National Park and in 1992 he had the idea to get local divers involved in a July dive to collect information on local fish populations. Fifty divers in Santa Barbara took part in the first Great American Fish Count.



This year more than 2,000 divers took part in over a hundred such events, not only in California, but throughout many locations around the coastal US, Canada, Central America and the Caribbean, and Hawaii. Data are being gathered at an exponentially increasing rate and the value of the information is frequently bringing scientists, researchers and government management agencies to REEF's website repository. The REEF database is the largest collection of fish sightings in the world.

Additionally, the learning process and the opening of eyes to witness firsthand the status and changes that are taking place under the sea are quite possibly as valuable as the data. Divers who learn to identify what they see during their dives report a "rebirth" of their diving awareness. What used to be a random picture of fish, corals and creatures is now a focused image of the marine ecosystem. Dives become interesting for the diversity of life rather than just the visibility or presence of a big, charismatic shark or ray.

Dr. Davis had this vision in the GAFC. Paul Humann and Ned DeLoach shared the inspiration in developing the REEF program. It seems the diving public thought it a good idea as well - witness the 47,000 surveys in the REEF database and 24,000 members. The success of the July GAFC and the ongoing REEF Fish Survey Project is all due to the participation of you, the people. An increasing amount of emphasis in this country is being placed on community involvement. You are showing the world how it can work and how successful it can be.

Hats off to Dr. Gary Davis, Ned and Paul, and the cast of thousands of REEF members who are bringing a greater understanding of the marine environment to the world.

Best Fishes,

Lad



HAPPENINGS & UPDATES

GAFC Photo Contest Winners



Channel Islands NMS Digital Photo display winner by Bill Kendig, Ventura, CA.



Florida Keys NMS Digital Photo display winner by Doug Perrenod, Houston, TX.



Hawaiian Islands Humpback Whale NMS Digital Photo display winner by Jonathan Chizick, Ann Arbor, MI.

GAFC — from Page 1

gathered 50 divers to participate in July 1992. His vision of gathering people together to conduct fish surveys was based on the Audubon Christmas Bird Count as a way to encourage sport divers to report fish sightings. The kick-off included an inspiring talk by Dr. Gary Davis and a National Marine Sanctuary photo display exhibiting the winners of the GAFC digital photo contest. After a day filled with exhibits and music, the first GAFC dive of the year took place where it all started 10 years ago: Santa Cruz Island. Before getting in the water, divers watched an incredible natural display of feeding humpback whales while porpoises and sea lions joined the festivities.

The 10th anniversary celebration with the Stellwagen Bank National Marine Sanctuary (SBNMS) was well attended with 78 divers representing the New England states. The celebration was centered in Stage Fort Park in Gloucester, Massachusetts with five beach sites selected for surveys. After the early morning dives and snorkel, the fishcounters arrived at Stage Fort Park to discuss the species of fish encountered. Over 45 species were reported with the most popular being the Striped Bass, Winter Flounder, Shorthorn Sculpin, and the Rock Gunnel. In a single afternoon, divers turned in over 130 surveys almost doubling the amount of data in the Northeast region where the REEF program was launched in March 2001. The SBNMS has been critical in the expansion of REEF's Northeast region. "The sanctuary program is supporting the Northeast Fish ID program and the Great Annual Fish Count because we believe fish are

more than just filets," said Craig MacDonald, SBNMS Superintendent. "Valuable fish survey information gathered by volunteers helps divers, scientists and the wider community appreciate and protect natural wildlife wonders that are marine ecosystems."

Many fish and invertebrate identification seminars, kick-off events, and survey dives occurred throughout all of REEF's Fish Survey Project regions thanks to the enormous amount of effort from GAFC local partners, field stations, and many volunteers. REEF would like to thank all who participated and made this year's Fish Count more successful than ever. A special thanks to the GAFC 2002 Challenge Grand Prize donor, Hawk's Nest Resort and Marina, and all the sponsors of prizes and donations that made events a reality.

The GAFC occurs every year for the entire month of July so start planning for 2003. For more information on the GAFC, visit the Fish Count website at www.fishcount.org.

HAPPENINGS & UPDATES

Third in a Series of Fish and Benthic Monitoring Workshops Held on San Andres Island, Colombia

In collaboration with The Ocean Conservancy and funding support from NOAA's Coastal Zone Management (CZM) Program, the third in a series of monitoring workshops was held on San Andres Island in June. San Andres is part of the San Andres Archipelago, a territory of Colombia found 200 km east of Nicaragua (see MPA News in this issue for more information). The week-long program was targeted at local stakeholders and was offered free of charge. A total of 39 people participated in the workshop and the enthusiastic participants included dive industry staff, community members, fishermen, and scientists and staff from CORALINA and the Old Providence Marine Life Park. The workshop featured classroom and field training in taxonomic identification of local fishes, corals, algae, and key invertebrates and in the survey methodologies of REEF's Fish Survey Project and The Ocean Conservancy's Reef Ecosystem Monitoring Program (RECON). As part of the program, seven members of REEF's Advanced Assessment Team were enlisted to assist in the training and collect survey data. The REEF staff and AAT collected approximately 130 expert surveys during the week and reported approximately 224 fish species. These are the first REEF surveys conducted in this area and several unique sightings were documented, including snow bass, striped cardinalfish, and yellowcheek basslet.

This workshop was coordinated with support from the local environmental agency, CORALINA (www.coralina.org), as part of their Marine Protected Areas (MPA) Project. The local CORALINA office was instrumental in recruiting the workshop participants, organizing the participants into the different sessions, and providing logistical support. Additionally, several members of their staff participated in the workshop.



REEF AAT at San Andres.



Heading off for field training.

In preparation for this workshop, REEF translated existing Caribbean training materials into Spanish and printed a new version of underwater survey paper that features Spanish and English common names. The Spanish names list was developed for REEF by Dr. Georgina Bustamante and is based on the published list in *Fishes of Cuba* by Claro, Lindeman, and Parenti. REEF donated six sets of the bilingual training materials. Recipients included two dive shops on San Andres, one dive shop on Old Providence Island, the CORALINA offices on both islands, and the INVEMAR (Inventory and Monitoring agency) office in Santa Marta, Colombia. REEF also donated several fish, coral and creature identification books and CD-ROMs to the local resource library at CORALINA and the dive shops.

These workshops provide REEF an exciting opportunity to involve local divers in the contribution of meaningful information on reef ecosystems in their own backyards. We are looking forward to continuing this program. To find out more about the project, view the final report posted at www.reef.org/data/SAreport.pdf. A special thanks to the staff at CORALINA (especially Marion Howard and Claudia McCormick), Luis Banda and his entire crew, Banda Dive Shop and the Hotel Lord Pierre for hosting the workshop, to Ed Kruse of the CZM, and to the AAT members who participated.



SCIENCE UPDATE

Symposia and Workshops

As part of our ongoing effort to spread the word about REEF's program and database to the scientific, conservation, and management communities, REEF's Scientific Coordinator, Dr. Christy Pattengill-Semmens, attends several scientific symposia and workshops each year. Recent meetings have included:

- Southern California Academy of Sciences Symposium in Claremont, CA. A summary of REEF's work in California was presented during the Rocky Reef Monitoring session.
- American Society of Limnology and Oceanography Annual Meeting in Victoria, BC. Christy presented the work led by researchers at NOAA's Biogeography Office using REEF data to investigate fish-habitat relationships.
- North American Practitioners Workshop on Monitoring and Research of Marine Reefs using Volunteer Divers at the Institute of Ocean Sciences in Sidney, B.C. This workshop brought together coordinators of volunteer monitoring programs from the Pacific Northwest and beyond. REEF's experiences in developing and maintaining a volunteer monitoring program and reviewing our successes and stumbling blocks provided valuable perspective and insight to this 2-day workshop.

Dry Tortugas National Park Monitoring

In the Fall of 2001, REEF was contracted by the National Park Service to conduct fish surveys within the Dry Tortugas National Park (DTNP). The Dry Tortugas are a cluster of seven islands and are located approximately 70 miles west of Key West, Florida. The majority of the Park consists of water, with two permanent land facilities: the historic Fort Jefferson on Garden Key and a collection of buildings and lighthouse on Loggerhead Key. In 1935, the Fort and surrounding waters were set aside as a National Monument. The area was redesignated as DTNP in 1992 to protect both the historical and natural features.

Monitoring began in response to the passage of an updated park management plan that implemented zoning including no-take areas. Surveys were conducted by a group of REEF staff and the Advanced Assessment Team (AAT) members. The primary objective of the project was to assist the park in the evaluation of the efficacy of the management zones upon implementation by establishing a baseline of information on fish assemblages at the 18 sites. As part of the Sanctuary project, ten Dry Tortugas sites are surveyed annually. This project complements a similar zone-monitoring program that REEF has been conducting within the Florida Keys National Marine Sanctuary since 1997.

As part of the DTNP AAT project, 108 expert REEF surveys were conducted and 180 fish species were documented. The summary report prepared for the project is posted online at <http://www.reef.org/data/DTNPpdf>.

MPA News

REEF believes that Marine Protected Areas (MPAs) are an important tool for the protection of marine ecosystems, and we urge our members to stay informed of MPA initiatives. In each issue of REEFNotes, the MPA News feature brings you recent and noteworthy happenings.

The San Andres Archipelago and the Seaflower Biosphere Reserve

The San Andres Archipelago is a territory of Colombia found 200 km east of Nicaragua. It is one of the most isolated island regions in the Americas and is made up of three small inhabited islands -- San Andres, Old Providence, and Santa Catalina -- and several uninhabited cays. The marine area, approximately 300,000 km², covers approximately 10% of the Caribbean Sea and includes one of the most extensive reef systems in the Western Hemisphere. The area is managed by the regional environmental management agency CORALINA, and its broad mandate combines environmental conservation, planning, management, and education. In 2000, the archipelago was declared a UNESCO Man and the Biosphere Reserve. In response to the designation, CORALINA is currently in the process of developing a system of locally managed marine protected areas to address existing issues, threats, and conflicts identified through a series of stakeholder meetings. The Marine Protected Areas (MPAs) will be both coastal and oceanic areas, and multiple zones will be designed to conserve ecosystems together with their functions and resources. The zones will range from small, highly protected reserves that conserve species to large multiple-use areas that join conservation with socioeconomic activities. Over the next two years, CORALINA will continue to develop the MPA plan, collect biological and social data, work towards enacting policy legislation, develop a management plan, and build the community support necessary for the function of an effective reserve.



REEF's Trip Schedule

REEF's last 2002 trip:

Grenada • True Blue Resort & Eco-Dive • November 16-23, 2002
Limit 15 divers. Package: 8 days/7 nights - \$715, includes lodging and 5 days of 2 tank diving (\$371 non diver price).

REEF 2003 Trip Schedule

REEF Field Surveys 2003

Ambergris Cay, Belize • SunBreeze Beach Hotel & Aqua Dives Belize • March 22-29, 2003

Package: 7 nights/8 days - \$740 (per person, double occupancy), includes lodging, 5 days of diving (2-tank boat dives), r/t transportation from Belize City airport (\$552 non-diver price).

Monterey Bay National Marine Sanctuary Monterey Plaza Hotel & Cypress Charters • April 15-20, 2003 - Limit 15 divers

Package: 4 nights/5 days - \$775 (per person, double occupancy), includes lodging just minutes from the Cannery Row, 4 days diving (three 2-tank AM boat dives, one day 3-tank dive, and optional shore dives) with Cypress Charters, and breakfasts. We will also get a behind-the-scenes tour of the Monterey Bay Aquarium. (non-diver price \$454, diving-only price \$321) *REEF Fee is \$100.

Fernando de Noronha Islands National Park, Brazil • Atlantis Divers & Pousada do Rocha • April 25-May 3, 2003

Package: 8 days/7 nights, \$885 (per person, double occupancy), includes accommodations at a pousada guest house, breakfast, 5 days of 2 tank diving, accommodations in Guarulhos, Brazil on April 25th, and r/t transportation from Recife, Brazil; additional costs will include park fees, airfare from home town to Guarulhos and Guarulhos to Recife, short taxi ride in Guarulhos (non-diver price \$635).

Cat Island, Bahamas • Hawk's Nest Resort • June 7-14, 2003

Package: 8 days/7 nights, price \$1,463, includes accommodations, 5 days of 2 tank dives, all meals, and r/t air and ground transfers from Nassau (non-diver price \$1,010).

Kona Coast, Hawaii • Eco-Adventures Diving & King Kamehameha Kona Beach Hotel • June 21-28, 2003

Package: 8 days/7 nights - \$947 (per person, double occupancy), includes accommodations, 5 days of 2 tank dives, r/t airport transfers.

Coiba National Park, Panama (Pacific side) • M/V Coral Star • July 18-26, 2003

Package: 10 days/9 nights - \$1,800, includes lodging, 6 days of diving, r/t transportation from Panama City airport, and all food except on the first and last nights.

Channel Islands National Marine Sanctuary • M/V Conception • September 17-21, 2003

Package: 4 days/3 nights - \$540, includes all meals, diving and lodging on liveaboard dive boat. *REEF Fee is \$100.

Southern Gulf of California/Sea of Cortez • M/V Don Jose • October 19-26, 2003 - Limit 14 divers

Package: 8 days/7 nights - \$1,522, this trip will feature a custom itinerary of locations in the southern portion of the western Gulf including Los Frailes, Cabo Pulmo, and Gordo Banks, includes lodging, food, and diving, aboard an 80 foot long liveaboard dive boat.

Quadra Island, British Columbia • Abyssal Diving & Lodge Fish & Invertebrates • October 4-11, 2003

Package: 8 days/7 nights, \$690 USD, includes lodging, all meals, and 5 days of 2 tank diving.

Barbados • High Tide Watersports • November 8-15, 2003

Package: 8 days/7 nights, price and details TBA.

REEF Discovery Tour 2003

Provo, Turks & Caicos REEF Discovery Tour (led by Paul Humann) Big Blue Unlimited • November 1-8, 2003

Package: 8 days/7 nights, price and details TBA.

This week is for divers and snorkelers who are interested in learning more about marine life and seeing more in the water, several short slide presentations will be scheduled during the week to teach and discuss reef fish and creature identification and behavior.

www.reef.org/fieldsurv/2003.htm



GAFC seminar participants at the Pt. Defiance Zoo and Aquarium in Tacoma, Washington.

REEF's 2003 Grouper Moon Project Needs You!

REEF will be leading its second Grouper Moon Project in January 2003 in Little Cayman. In 2002, REEF volunteers and staff from the Cayman Islands Department of the Environment (CIDOE) documented a Nassau grouper aggregation off the western tip of Little Cayman. The Project also monitored Nassau grouper abundance, movement, and color phases at reefs around the island. REEF will continue documenting this important event when returning to Little Cayman with a small team of scientists, videographers, CIDOE staff, and REEF expert fishwatchers.

Additional help is needed from other REEF volunteers to collect data from the surrounding reefs of the island. If you would like to volunteer for this project by conducting surveys on Little Cayman's reefs such as along the famous Bloody Bay Wall, please call Southern Cross Club's reservation office at 800-899-2582 for availability. The dates most needed are January 13-24.

Please mention the Grouper Moon Project when booking. Some of the proceeds from each package booked will be directed to the Grouper Moon Project.



GAFC with ReefNet team in Laguna Beach Resort in Utila, Honduras surveyed over 300 species!!! Photo credit: Photo courtesy of ReefNet.

HAPPENINGS & UPDATES

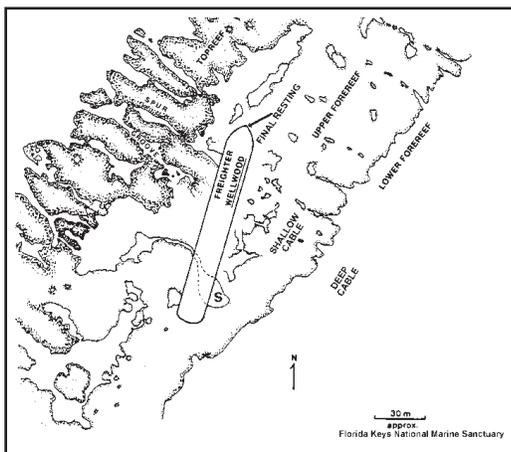
Wellwood Restoration

What happens when a ship nearly a football field in length runs hard aground on a prolific coral reef? The immediate effects are easily evident. The long-term impact, however, is not so easily discerned. In 1984 the freighter *Wellwood*, a 284 foot Cypriot registered vessel, ran aground on Molasses Reef in Key Largo, Florida. It rocked around on the reef for 12 long days before being pulled free. The resulting damage at the grounding site was one of the motivating factors in establishing the Florida Keys National Marine Sanctuary. It has also been a natural laboratory in the study of how a reef regenerates after such a devastating event.

Current evaluation indicates that Molasses has yet to recover. Loose rubble caused by the grounding continues to break loose during heavy sea conditions. This, together with continued erosion of impacted areas, has left little opportunity for new coral recruitment or even successful transplantation.

The latest attempt to help restore the area is now being spearheaded by NOAA scientists in an effort to stabilize the bottom and create habitat and structure similar to pre-grounding conditions. The restoration effort incorporates reef modules made of limestone sections with high topographical complexity to encourage recruitment of fish and creatures.

The effort began this past May and placement of the modules concluded in late July. By monitoring the fish assemblages at the grounding site and two other reference areas, REEF is playing a key role in assessing the effectiveness of the deployed modules. Initial baseline data were gathered before restoration took place, then every month for the first quarter. The effort will continue quarterly for the first year, then bi-annually thereafter for five years. The data gathered during the project will be used to compare the restoration area with nearby undamaged reef areas. REEF's Advanced Assessment Team has taken on the project and has documented significant differences in the sites before and after restoration efforts began. Data summaries will be drafted into a report at the end of year one and will be available on the REEF website. Stay tuned for more updates as the modules age.



Map of the Wellwood freighter grounding site on Molasses Reef.



The LSD Spiegel Grove in action before its placement in Key Largo as the world's largest intentionally placed artificial reef.

Spiegel Grove Finally Down! REEF Watches Recruitment...

After six years, thousands of man-hours and over a million dollars, the world's largest intentionally sunk shipwreck is resting peacefully on the sea floor. The *Spiegel Grove*, a 510-foot Landing Ship Dock (LSD), was sunk off Key Largo, Florida as the newest in the increasing number of artificial reef structures in the State. Florida leads the nation with more than 1,700 artificial reef structures intentionally placed for fisheries or diving interests.

As part of the permit to place the ship in National Marine Sanctuary waters, REEF was contracted by Monroe County, the permit holder, to conduct assessments of the structure and nearby natural reefs. The objective of the assessments is to document the recruitment of fish to the ship and compare it to recruitment and changes at the reference sites nearby. Monitoring events, conducted by REEF's Advanced Assessment Team, are scheduled monthly for the first three months following the sinking, then quarterly for the remainder of year one.

Initial results are promising. Even before the ship hit bottom, (there was a delay in getting the ship all the way down) divers reported seeing juvenile Purple Reeffish in the structure. A few weeks later, during the first REEF monitoring event, the Advanced Assessment Team recorded abundant Scad, Purple Reeffish, Blue Runners, and numerous Planehead Filefish, Bluelip Parrotfish, Striped Grunts and others inhabiting the artificial structure. It is anticipated that the numerous small fish will attract large grouper and jacks in the near future. Surveys at nearby natural reefs documented grouper and snapper that, depending on the appeal, may migrate to the ship or remain on nearby natural reefs.

Divers can follow the results of the surveys on the *Spiegel Grove* by visiting the REEF website at www.reef.org. For more information contact Laddie Akins at Lad@reef.org.

REEFNOTES

REEF Joins Binational Commission in South Africa



Sea Goldies swarm over Aliwal Shoal, south of Durban, South Africa.

REEF Executive Director, Laddie Akins, recently took part in the USAID funded Binational Commission on Marine Protected Areas (MPAs) exchange program with South Africa. Over the last three years, South Africans working on Marine Protected Areas in the Kwazulu Natal (KZN) Province have visited US National Marine Sanctuaries to exchange information and ideas on how to implement the various aspects of marine resource management. In May 2002, the US sent a delegation of 8 to South Africa for three weeks as the final leg of the

exchange. REEF represented the only non-profit organization in the exchange program and was selected for its successful partnership efforts and volunteer data gathering programs.

During the program, the delegation worked with South African KZN Parks staff, local communities and national fisheries officials to develop a management plan for the Aliwal Shoals MPA. The shoals, located about 30 minutes south of Durban, on the southeast coast of the African continent, are home to numerous tropical and temperate fish and the winter home of ragged tooth sharks, "raggies" as they are called locally. Although the site is small, South Africans from around the country travel by the hundreds for weekend holidays to dive the shoal, even when the "raggies" are not in. The current estimate is that more than 40,000 dives per year are conducted on the small reef system.

With multiple uses vying for the limited resources, both the community and the government felt it time to develop a plan to reduce user conflict, protect the resources and provide for opportunities of previously disadvantaged communities. Other areas to be addressed are education, research and monitoring, enforcement, and legal framework.

Over the three-week period both groups worked together to draft out a management plan for the shoals that would incorporate lessons learned from each country. Traditional South African MPAs have included strong government restrictions and stringent enforcement regulations. US MPAs were traditionally laden with beauracrcy, though they provided much in the way of education and public involvement.

As an added side benefit of the project, the team was able to dive on Aliwal shoals as well as other MPAs along the eastern coast of KZN. The team also visited terrestrial parks and spoke with local communities to gain a broad perspective and incorporate the needs of those communities into the management plan. All participants felt that not only the plan, but the process of cooperation in developing the plan, were extremely valuable and it is hoped that there will be continued exchange of staff and ideas in the future.

REEF Dives into the Public Eye/Public Awareness

Each year REEF participates in the largest dive trade shows across the U.S. This year REEF has exhibited at Beneath the Sea (Seacaucus, NJ), Our World Underwater (Rosemont, IL), OceanFest (Fort Lauderdale, FL), and SeaSpace (Houston, TX). You can also look for REEF at the upcoming DEMA (Dive Equipment and Marketing Association) show in Las Vegas, NV, October 22-25. Unlike many commercial exhibitors at these shows, REEF occupies an important educational niche outside of the 10' X 10' booth space. At Our World Underwater, Office Manager Leda Cunningham presented a seminar on REEF methodology in the Environmental Awareness room of the show. At OceanFest, Education and Outreach Coordinator Alex Score presented two seminars on the Great Annual Fish Count (GAFC). Field Operations Coordinator Leslie Whaylen presented two "fishy" seminars at SeaSpace.

During each show, a team of representatives (usually one staff member and several volunteers) and the REEF exhibit offer visitors an alternative to the neighboring dive equipment and travel sales by engaging them in a dialogue about marine conservation. The most common topics of discussion include promoting the REEF Volunteer Fish Survey Project at the local level and participation in REEF Field Surveys. Booth volunteers actively recruit new members and sell merchandise while staff recruit new Field Stations and build partnerships with existing Field Stations. Each show can draw over 50,000 divers from the local community, presenting a unique opportunity for REEF to reach a diversity of potential fish watchers.

The organizing committees for all of the dive shows generously provide exhibit space to REEF for either a reduced or a waived fee. For a detailed list of the dive shows in which REEF is involved, visit www.reef.org. To volunteer at a dive show near you, please contact Leda Cunningham at Leda@reef.org.



REEF volunteer Robyn Osborn holds down the fort at Our World-Underwater dive show in Rosemont, Illinois.

REEF NOTES

REEF Internship

Lauren Bunnell arrived in Key Largo in early May 2002 following a semester abroad in Kenya, East Africa with the School for Field Studies. She is working on a liberal arts B.A. with a concentration on natural sciences at the University of Arizona and plans to graduate in May 2003. During her time with REEF she was able to attend a Field Survey in Chinchorro Banks, Mexico where she learned to identify over 100 fish species and conducted 20 surveys. Lauren worked on a project based on the National Marine Sanctuary Wellwood Restoration project. She participated in the initial fish monitoring of two modules, which were recently placed in June. She was able to visit the National Undersea Research Center's (NURC) Aquarius habitat located on Conch Reef under 60 feet of water, and helped the Advanced Assessment Team (AAT) work on Upper Keys monitoring. Lauren also helped manage the member database and online store, and assisted with the creation of an educational tool for a teacher's conference in Mystic, Connecticut. After her internship she will be attending a language study abroad program in Sevilla, Spain.

In May 2002, Jay Gardner joined the ranks of REEF's interns. He holds a B.S. in Marine Biology, with a minor in both Chemistry and English. He will be finishing his M.S. in Marine Biology with an emphasis in Fisheries in December 2002 at Texas A&M University in Corpus Christi. Jay dove in quickly when he joined the Chinchorro Banks Field Survey the first week he was here! After picking up the basics, Jay taught several fish ID seminars, one with the Keys



Jay, Basia, Leda, Kari, and Lauren enjoy on an afternoon of diving and fishwatching.



A special thanks to our generous sponsors of the annual REEF Silent Auction at OceanFest dive show in Fort Lauderdale, FL May 17-19, 2002:

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Divers Direct Outlet • Atlantis Pins • Tom Isgar
Subway • John Novak • Peanut Butter Productions
Liquid Fit • Jim Abernathy's Scuba Adventures
Dive Aeris • Ikelite • Henderson
Dive 44 • Shipwreck Treasures

Marine Lab as well as with the local Horizon Divers Field Station. In addition to the "normal" office duties, Jay assisted in what turned out to be the largest GAFC event to date, helping with press releases and the tidal wave of scanforms at the new REEF headquarters. He tested regularly and achieved level 5 fish-watcher before the end of his term. He was able to visit the UNCW/NURC Aquarius habitat, and helped with various REEF monitoring projects including the Wellwood, the Spiegel Grove, and the AAT Florida Keys project. Jay is currently pursuing a career in Marine Fisheries/Marine Ecology Education.

Kari Forrest arrived at REEF HQ at the beginning of June (just in time to help Leda repaint her office). She is a junior at the University of North Carolina at Chapel Hill, majoring in international and environmental studies. Kari joined REEF through a scholarship with the John Motley Morehead Foundation. A Coral Reef Ecology course at Chapel Hill focused her search for a summer internship in reef conservation. Since her arrival at REEF, she worked with the Carolina Environmental Program to increase student awareness and interest in coral reef ecology. Kari taught a Beginning Fishwatching course during the Great Annual Fish Count in July. She recently worked with Christy to complete REEF's online Fish Gallery, adding Northeast Fish and Pacific Northwest Invertebrate descriptions to the site. She also got the opportunity to dive in Little Cayman and Cayman Brac during REEF's Field Survey—adding lots of new species to her list and nearly doubling her number of surveys. Kari is back in North Carolina for school and hopefully will be doing some diving in the Outer Banks.

Basia Hajduczek came to REEF eager to learn the fishes of the Atlantic coast and to dedicate her energies to supporting a worthy non-profit organization. She arrived in early June and has helped REEF design a brochure for an exciting new Field Survey schedule, collect fish data, and process orders and memberships for new REEF members. Her favorite summer moments in Key Largo include the seven spotted eagle rays she saw at Elbow Ledge with Horizon Divers, and the bioluminescent ostracods she saw while night diving. The bioluminescent male ostracods appear as a collection of bluish lights that ignite in rising strands from the reef at night. They are amid their mating ritual - luring females to the top of the strand where they will spawn. Magic! Basia was able to join the REEF team this summer thanks to the generous support of the Our World Underwater Scholarship Society. She came to Key Largo from California, where she is pursuing a M.S. degree in Environmental Engineering at UC Berkeley. She enjoyed being a part of the inner workings of REEF, and upon her return to the golden state, Basia will continue to conduct REEF surveys in the chilly kelp forests that border the Pacific shore.

The interns want to give special thanks to the dive operators and crew that generously supported their underwater exploration and data gathering in the Keys. Thank you Horizon Divers, Amy Slate's, Lady Cyana, and Kelly's Aquanut Divers for filling this summer with great dives! And thank you to Scott Fowler for generously supporting their efforts to become better divers in his scant free time!



MEMBER ARTICLE

Fish Surveying in the Northeast Atlantic

By Clive Wood, REEF member since 1998

Every walk in the woods is different, regardless of how many times you have followed a particular trail. Every one is precious, even if you only occasionally see that rare bird or butterfly. My "walks in the woods" are fish surveying dives centered around Gloucester, Massachusetts on the rocky shores of Cape Ann on the edge of the Gulf of Maine. I am fortunate to be able to take underwater strolls regularly, and much of the pleasure comes from comparing the changes in fish and invertebrate populations as the seasons and conditions change. I am even luckier now that it is a REEF survey area!



A pretty goosefish. Photo courtesy of Dave and Sue Millhouser.

My personal highlights have included being circled by a school of Spiny Dogfish as I descended to a mooring at over 100 feet and then headed into a narrow trench a few feet wide, whose walls are covered in glorious arrays of invertebrate life and whose rocky base was studded with Sea Ravens, Sculpin, Flounder and Rose Fish. Finding a Northern Puffer on a shallow, sandy bottom adjacent to a near century-old warship wreck, and being graced with Ocean Sunfish and Atlantic Torpedo Rays near rocky islands far from shore certainly count as highlights. Equally precious were the eight large Striped Bass swimming around me in a beautiful sandy cove one morning, accompanied by Cunner, Winter Flounder and Little Skate.

Of course these sightings are in the "rare bird or butterfly" category, and all too infrequent. But to mention only the fish in our nutrient-rich waters would be to deny a phenomenal wealth of invertebrate life and the critical importance of the area to marine mammals and birds. In an article in the Favorite Fish Spot Section of the REEF website, I have tried to sum up an exciting wall dive at Halfway Rock. Nonetheless, it is difficult to do justice to the ledges crammed with anemones, sponges, tunicates, and bryozoans, and decorated with a diversity of sea stars, crustacea, annelids and lampshells. Some visiting divers expect only green pea soup conditions and dark and dingy sea life. They can be surprised to find that New England divers frequently encounter two species of soft coral and one species of stony coral.



An ocean pout in search of lunch or lipstick. Photo courtesy of Dave and Sue Millhouser.

Those divers who do venture into and become comfortable with the colder water and lower visibility conditions of the Northeast Atlantic waters discover a marine fauna and flora, underwater topography and history that are outstanding. I highly recommend it!

Thanks to all who helped get REEF started in the Northeast US and Canada.



EDUCATION CORNER

One Fish, Two Fish, Red Fish, Blue Fish

The National Marine Educators Association (NMEA) held its annual conference entitled 'The Race to Hell Gate: Estuaries to the Abyss' in New London, Connecticut July 20-26. In REEF's debut participation at the annual NMEA meeting, Education and Outreach Coordinator Alex Score and Office Manager Leda Cunningham attended the conference and presented 'One Fish, Two Fish, Red Fish, Blue Fish: Fish Counts in the National Marine Sanctuaries.' The presentation served to inform NMEA participants about REEF's programs and the Great Annual Fish Count.

Collaborating on the presentation were representatives from three National Marine Sanctuaries celebrating their 10th anniversary this year: Anne Smrcina and Bob Michelson from Stellwagen Bank; Jennine Fowler from Flower Garden Banks, and Lisa Emanuelson from Monterey Bay. Sue Nourse, a teacher at Tabor Academy in Marion, Massachusetts also joined the group and presented ways to involve high school students in coral reef monitoring using REEF's Volunteer Fish Survey Project. The seminar ended with a rousing game of Fish-O, an educational game similar to BINGO developed by REEF volunteers to teach fish identification to young students. Seminar attendees found the talk extremely useful and reported a keen interest in helping REEF to develop more educational materials for the classroom.



Leda Cunningham explains the Virtual Fish Survey at Mystic Aquarium during the National Marine Educators Association

In the true REEF spirit of following every seminar with a fish watching experience, REEF hosted a Virtual Fish Survey at Mystic Aquarium and Institute for Exploration during the final social evening of the conference. Participants counted fish never-before found in the REEF database (including a Mandarin Goby) while indulging in wine and conversations about integrating the Roving Diver Technique into classroom activities on data collection and analysis. Virtual surveyors were entered into a raffle for the coveted last three GAFC tee shirts available in the northeast region. With the exposure gained by our presence at NMEA, REEF hopes to develop partnerships with marine science educators, develop educational materials and expand educational programs making them available to the next generation of fish watchers.

FIELD STATIONS

Field Stations are instrumental as centers for dissemination of REEF information and materials. Field Stations regularly promote and teach Fish Identification Courses, organize dives built around fish watching and taking surveys, promote REEF membership, and serve as distribution centers for REEF materials and survey forms.

Visit the REEF website for direct links and more information on REEF's Field Stations • Contact alex@reef.org to become a Field Station

TGCC – Texas Gulf Coast Council – offers a smorgasbord of travel and social events centered around diving and the marine environment. Texas style, they brag TGCC is like belonging to the biggest scuba club in the world. Fact is they've roped in 18 Texas clubs, with loose ties to many more clubs and individual members, who keep in touch via the Deep Sea Digest and the website, www.tgccdiveclubs.org.

Lately, TGCC's efforts include teaching REEF's basic fish identification classes, using the Tropical Western Atlantic slides and the brand new Flower Gardens module. To date, the Council has trained over 50 divers in the Houston area, and in September, Charles and Sharon Kerr, members of TGCC, are taking the show on the road to Dallas/Ft. Worth clubs. Have slides, will travel.

Those who have seen the muddy brown waters off Galveston may wonder if Texans will dive in anything. The answer is YES, just thirty miles offshore the water is as clear and blue as the Caribbean, with the same tropical species inhabiting everything that offers shelter, including oil platforms and rigs. As you go south along the Texas coast, the distance to diving becomes closer and closer. In September when the currents are just right, you can sometimes dive the Laguna Madre, inside the South Padre barrier islands.

Divers come from all over the world to see the Flower Gardens Banks National Marine Sanctuary, acres of healthy coral growing on a salt dome and home to over 250 species of tropical fish, 110 miles south of Freeport (www.flowergardens.nos.noaa.gov). Winter months are known for schooling hammerheads and

eagle rays, but weather often hinders trips. Summer trips may include visits with mantas and the occasional passing whale shark.

Thanks to REEF's training program, the species list for the Flower Gardens is expanding. Recently spotted was a lime green frogfish, a first for the Flower Gardens. A recent REEF expedition led by Laddie Akins found a pipefish on Stetson Bank, also part of the marine reserve. Are these little guys moving north with global warming, or have they always been around? Maybe we're just now putting enough trained observers in the water to spot them.



USA and Canada Field Stations

California

Oceanside – Under Water Schools of America 760-722-7826 usascuba.com
Riverside - Scuba Schools of America 909-689-2422 www.ssa-riverside.com

Connecticut

New England Ski & Scuba LLC 860-872-0013 www.newenglandskiandscuba.com

Florida

Bonita Springs – Eagle Ray Dive Center 941-992-2237 divenfishinfo.com
Gainesville – Water World 352-377-2822 www.H2Oworld.com
Islamorada – Lady Cyana Divers 800-221-8717 www.ladycyana.com
Key Largo – Diver's Direct Outlet 305-451-8034 www.diversoutlet.com
Key Largo – Kelly's On the Bay/ Aquanaut Divers 305-451-1622 www.aqua-nuts.com
Key Largo – Amy Slate's Amoray Dive Resort 305-451-3595 www.amoray.com
Key Largo – Horizon Divers 305-453-3535 www.horizondivers.com
Key Largo – It's A Dive 305-453-9881 www.itsadive.com
Marathon – FL Keys Nat'l Marine Sanctuary 305-743-2437 www.fknms.nos.noaa.gov
Riviera Beach – Jim Abernethy Adventures 561-691-5808 www.scuba-adventures.com
Tavernier – Conch Republic Diver, Inc. 305-852-1655 conchrepublicdivers.com

Gulf Coast States (LA, AL, FL)

New Orleans – REEF Field Station of Northern Gulf of Mexico 504-276-4887 www.reefngom.org

Hawaii

Honolulu – Island Divers Hawaii 808-947-6583 www.islanddivershawaii.com
Kona – Eco Adventures 808-329-7116 www.ecodive.com
Maui – Project S.E.A.-LINK www.projectsealink.org
Midway – Midway Island Station 808-599-5400 www.midwayisland.com

Maryland

Baltimore – National Aquarium 410-576-3800 www.aqua.org

Michigan

Ann Arbor – Huron Scuba Adventures 734-994-3483 www.huronscuba.com

Minnesota

Rochester – MDC Sports 507-288-8802 www.mdcsports.com

New Jersey

Belle Mead – The Scuba Connection 908-359-1250 www.tscscuba.com

New York

Rome – Delta Divers 315-337-2300 www.deltadivers.com

Texas

Houston – Texas Gulf Coast Council 281-651-1277 www.tgccdiveclubs.org
Humble – WW Diving 281-540-1616 www.wwdive.com

Washington

San Juan and Orcas – Island Dive and Sports 800-303-8386 www.divesanjuan.com
Vancouver – Odyssey Ocean Scuba Center 360-883-2621 www.diveodyyssey.com

Canada, British Colombia

Victoria – Living Oceans Society 250-920-0733 www.livingoceans.org

Overseas Field Stations

Bahama

Cat Island – Dive Cat Island 800-688-4752 www.hawks-nest.com
Nassau – Custom Aquatics 242-362-1492 www.bahamasvg.com/aquatic.html

Belize

Seasports Belize 501-2-35505 www.seasportsbelize.com

Bermuda

Flats - Bermuda Aquarium, Museum & Zoo 441-293-2727 www.bamz.org

Bonaire

Kralendijk – Buddy Dive Resort 599-717-5080 www.buddydive.com
Kralendijk – Green Submarine 599-717-2929 www.greensubmarine.com
Kralendijk – Plaza Resort Bonaire 599-717-2500 www.plazaresortbonaire.com

British Virgin Islands

St. Thomas – Peter Island Divers 284-493-2935 www.scubamom.com/bvi/
Tortola – Baskin in the Sun 284-494-2858 www.baskinthesun.com

Cayman Islands

Little Cayman - Southern Cross Club 345-948-1099 www.southerncrossclub.com
Grand Cayman – Wall to Wall Diving 345-942-6608 www.walltowalldiving.com

Cuba

Salty Dog Adventures 636-677-7504 www.sdadive.com

Honduras

Utila – Utila Lodge Resort 504-425-3143 www.roatan.com/utilalodge.htm
Utila – Laguna Beach Resort 800-668-8452 www.utila.com

Mexico

Chinchorro – Maya Ha Resort 512-891-9812 (US) www.mayaharesort.com
Cozumel – Aqua Safari 011-52-987-872-0661 www.aquasafari.com
Puerto Aventuras – Dive Aventuras 011-52-987-35129 www.diveaventuras.com
Yucatan Peninsula - Akumal Dive Adventures 505-992-3333 www.akumaldiveadventures.com

Netherlands Antilles

Curacao – Curacao Sea Aquarium 0599-9-461-6666 www.curacao-sea-aquarium.com

Puerto Rico

Culebra – Reeflink Divers 787-742-0581 www.diveguide.com
Rincon – Oceans Unlimited 787-823-7436 www.oceans-unlimited.com

Turks and Caicos

M/V Wind Dancer (Peter Hughes Diving) 800-9DANCER www.worlddive.com
M/V Sea Dancer (Peter Hughes Diving) 800-9DANCER www.worlddive.com
Providenciales – Big Blue Unlimited 649-946-5034 www.worlddive.com

US Virgin Islands

St Croix – Ultimate Blue Water Adventures 340-773-5994 www.stcroixscuba.com
St Thomas – Aqua Action Dive Center 340-775-6285 www.AADivers.com
St Thomas – St. Thomas Diving Club 340-776-2381 www.st-thomasdivingclub.com

Venezuela

Puerto La Cruz - Horisub 58-81-814878 www.horisub.com
Los Roques – M/V Antares (Peter Hughes) 800-9DANCER www.worlddive.com

West Indies

St. Vincent – Dive St. Vincent 784-457-4928 www.divestvincent.com

SURVEY NUMBERS

(as of September 6, 2002)

TWA (Tropical Western Atlantic)

Over 100

Laddie Akins (807)
Linda Schillinger (682)
Leslie Whaylen (620)
Deena Wells (542)
Joe Thomas (497)
Judie Clee (459)
Jean Kirkpatrick (450)
Christy Semmens (445)
Sheryl Shea (432)
Cathy Coughlin (410)
Linda Baker (347)
Jessica Armacost (317)
Monty Doyle (311)
Emily Schmitt-Lavin (308)
Peter Leahy (307)
John Pitcairn (303)
Edwin Steiner (293)
Ken Deaver (288)
Brice Semmens (284)
Elaine Morden (275)
Joyce Schulke (253)
Bruce Purdy (247)
Clive Petrovic (234)
Darlene Gehringer (227)
Patricia Ayers (224)
Ken Marks (224)
Will Ruggles (204)
Douglass Rankin (203)
Tom Isgar (202)
Doug Rorex (201)
Ann Knollenberg (198)
David Preston (194)
Carol Lorenz (193)
Kris Wilk (193)
Robert Doyle (192)
Jerry Ligon (185)
Sharon Hauk (178)
Douglas Harder (176)
Clint Whitaker (170)
Kathie Comerford (162)
Margaret Cowin (159)
Mark Kaehler (159)
Scott Fowler (157)
Bob Bishop (151)
Julie Overing (149)
Barbara Modafari (144)
Dave Grenda (136)
James Brooke (136)
Randy Keil (135)
Tracy Siani (134)
Rhian Lewis (134)
Betsy Saunders (132)
Carol Whitaker (131)
Hillary Harder (129)
Tracy Hamilton (125)
Chris Koepfer (124)
Patricia Chandler (117)
Jim Morabito (115)
Tim Gurney (112)
Matt Hoelscher (110)
Kitty Philips (109)
Denise Mizel (109)
Kathleen Scott (107)
Pamela Bezuidehout (107)
Cindy Snell (105)
Any Wilk (104)
Neil Ericsson (104)
Cheri Arnold (101)
Don Buck (100)



Long Island, Bahamas Field Survey –
April 28-May 5, 2002. Back row:
Mark Boardman, Margaret Cowin,
Linda Schillinger, and Carol
Whaylen. Front row: Neil Ericsson,
Karen Florini, and Leslie Whaylen.
Photo by Mark Boardman.

Over 50

Currier Randall (98)
Carol Reichert (98)
Greg Bunch (96)
Nathan Gates (94)
Karen Florini (94)
Kevin Henke (93)
Lauren Penner (91)
Connie Bishop (90)
Andy Dehart (90)
James Vaughn (90)
Michele Vaughn (90)
Pug Pugliese (90)
Stephen Gittings (90)
Brenda Hitt (89)
Clive R. Wood (89)
Lorraine Sommer (88)
Wayne Manning (88)
Paul Humann (87)
Rob McCall (86)
Gail Tomei (86)
Shelley Tyre (85)
Jim Modafari (84)
Robyn Osborn (84)
Tony Sebastian (81)
Annie Glasspool (81)
Cassandra Weith (80)
Kirsten Bassion (80)
Karen Garcia (80)
Pamela Cefaratti (80)
Kern Spencer (79)
Jean Gasen (77)
Denny Howley (76)
Rick Halpern (74)
Wes Nicholson (73)
Walter Briney (73)
Kandie Vactor (73)
Michael Phelan (73)
Audrey Smith (72)
Melody Hamilton (71)
Ralph Dickerson (71)
Susan Thompson (69)
Kathy Aguilar (69)
Ann Outlaw (69)
Andrea Valerioti (68)
Corinne Halberg (68)
Richard Hitt (68)
Connie Dolan (66)
Lillian Kenney (66)
Dave Downs (64)
Craig Scott (64)
Jane Rorex (63)
Dennis Schneider (63)
Monica Vega (63)
Leda Cunningham (62)
Janet Earnshaw (62)
Jacquie Tinker (61)
Alex Score (60)
Ditte Preker (60)
Edgar Tomei (60)
Robert Antonelli (59)
Marjorie Nelson (59)
Gustavo Vazquez (58)
Charles (Bob) Hersey (58)
George Owens (57)
Gibran Tuxpan (57)
Chris Ostrom (57)
Pat Lommel (56)
Anthony Kajfez (56)
Joe Meyer IV (56)
Bobbil Cartwright (56)
Anna DeLoach (55)
Julie Dutcher (55)
Jo Ann Nucifora (55)
Amy Fowler (54)
James Lommel (54)
Gijs Van Hoorn (54)
Linda Meyer (54)
Woody Brooks (53)
Brenda Berliner (53)
David Mulvey (53)
Chuck Jirka (52)
Noreen Downs (52)
Sanford Robbins MD (52)
Glen Thiel (51)
Jonathon Tromm (51)
Tony Ramirez (51)
Art Hulse (50)
Mark Messersmith (50)
Jose Kirchner (50)
Janet Phipps (50)
Franklin Neal (50)

Over 25

Robert Winters (49)
Jonathan Edwards (48)
Rosalinda Garcia (48)
Sara Thomas (48)
Sandra Percell (47)
Les Wilk (47)

Patrick Gaughran (47)
Donella Wilson (47)
Jesse Meyer (47)
Todd Aikins (46)
Barbara Kirchner (45)
Stephen Vinitzky (45)
Lauren Bunnell (45)
Joseph Froelich (44)
Norris Boone (44)
Cristi Korbeck (44)
Susan Cable (43)
Peter Rennemann (43)
Kevin Buch (43)
Eric Riesch (42)
William Horn (42)
Steve Ganon (41)
Emma Hickerson (41)
Mark Springer (40)
David Stewart (40)
Lin Creel (40)
Chris Jeffrey (40)
Robert Grist (39)
Mike Chambers (39)
Robert Burnett (39)
Gail Rose (39)
Shawn Edwards (38)
Phyllis Robinson (38)
Lisa Canty (37)
Denny Lutz (37)
Susan Siegel (37)
Gail Klepper (37)
Basia Hajduczek (37)
Carolyn Kennedy (37)
Jill A. Mashburn (37)
Donna Gerrard (37)
John Kelly (37)
Wade Bevier (36)
Jennifer Stuart (36)
Robert Draper (36)
Ed Gerrard (36)
Randy Holley (35)
Kathleen Gunderson (35)
Kari Forrest (35)
Brett Sussman (35)
Jeana Hodges (34)
Michaela Dethlefsen (34)
Gaylynn Dickerson (34)
Lynn Hubert (34)
Muns Farestad (34)
John Lane (34)
Dolora Wetherington (33)
David Colvard (33)
Steve Boutelle (33)
David Siegel (32)
Eddie Gerrard (32)
Ken Smith (32)
John Stuart (32)
Melissa Keyes (32)
Lynn Carey (32)
Joseph Thomas (32)
Robert Schauer (31)
Karel Cantelar Ramos (31)
Arnold Walker (31)
Nicky Pallot (31)
Laura Doran (30)
Mark Bailey (30)
Luis Betancourt (30)
Katia Pronzati (30)
Beth Bruton (30)
William J. Martin (30)
Mary Evans (29)
Jay Gardner (29)
Ronald Moss (29)
Jennifer Adams (29)
Edward Sullivan (29)
Roger Wiandt (29)
Gary Lenning (29)
Shannon Lyday (29)
Kathleen Wean (29)
Van Duncan (29)
Laurence Kaye (29)
Will Wasserstrom (29)
Cathy Springer (28)
Bob Bonanno (28)
Sascha Steiner (28)
Seymour Halberg (28)
Patricia Pachuta (28)
Bryan Nichols (28)
Cheva Heck (28)
Roxanne Chavanne (27)
John Summey (27)
Judy Keller (27)
Kathy Bonanno (27)
Christy Sims (27)
Sarah Henke (27)
Cassandra Warn (27)
Keith Phillips (27)
Ari Borbrow (27)
Lana Smithson (26)
Pete Wyman (26)



Chinchorro, Mexico Field Survey –
May 18-25, 2002. Back row: Joe
Meyer, Linda Meyer, Maya Ha
Divemaster, Sheryl Shea, Lad Akins,
and Don Higbie. Front row: Michael
Paller, Lauren Bunnell, Ed Steiner,
and Jay Gardner.

Edith Summey (26)
Belal Hansrod (26)
Claudia Campos (26)
Rebekah Moore (26)
Alyssa Klepper (26)
Thomas Jenkins (26)
Mark McAlpin (26)
Jeffrey Nehms (26)
Blair Bertaccini (26)
Matthew S. Kendall (26)
Marshall Harris (26)
Victor G. Brito (25)
Dillon Harder (25)
Sharon Stockholm (25)
Roger Stockholm (25)
Jessica Lorek (25)
Kristi Klomp (25)
David Wienecke (25)

PAC (Pacific)

Over 100

Rachid Ferretti (166)
John Williams (106)

Over 50

Kirby Johnson (88)
Wes Nicholson (73)
John Wolfe (61)
Alan Dower (57)
Janna Nichols (53)

Over 25

Bruce Higgins (46)
Olga Khainova (46)
Alex Khain (46)
Matthew Dowell (43)
Christy Semmens (40)
Bryan Nichols (40)
Kurt Steinbach (35)
Tom Dakin (34)
Dana Haggarty (32)
Sarah Tambllyn (29)
Kim DeCrane (27)

TEP

(Tropical Eastern Pacific)

Over 100

Richard Baker (111)

Over 50

Kandie Vactor (76)

Over 25

Beth Bruton (45)
Paul Humann (35)
Warren Hinks III (28)

HAW

(Hawaii)

Over 25

James Vaughn (44)
Michele Vaughn (44)
Fred Litt (34)
Liz Foote (32)
Lynn Hodgson (26)
Wayne Batzer (25)

THANK YOU

GAFC Foundation Support

The Curtis and Edith Munson Foundation
The National Fish and Wildlife Foundation
PADI Project AWARE Foundation

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New World Publications
Ocean Management Systems (OMS)
PrincetonTec Lighting
ReefNet
Scubapro
Sherwood/Genesis
Shipwreck Treasures
Sport Diver Magazine
Underwater Photo-Tech

GAFC Local Partners

Amy Slates Amoray Dive Resort, Key Largo, FL
Aqua Safari, Cozumel, Mexico
Aquarium of the Pacific, CA
Aquatic Safari, Wilmington, NC
Atlanta Reef Dwellers Scuba Club, Atlanta, GA
Bay Area Divers, Houston, TX
Bermuda Aquarium Museum and Zoo
C&G Sporting Goods, Panama City, FL
Cabrillo Marine Aquarium, San Pedro, CA
Cape Anne Divers, Gloucester, MA
Captains Corner, Key West, FL
Channel Islands National Park
Charleston SCUBA, Charleston, SC
Chuck's Dive World, Destin, FL
Desert Dolphins Scuba, Tucson, AZ
Dive and Surf, Torrance, CA
Dive Boat Liberty, Ventura, CA
Desert Divers, Tucson, AZ
Dive Shop Too, Nogales, AZ
Diver Dan's, Santa Clara, CA
Diver's Den, Pensacola, FL
Dixie Divers, Panama City, FL
Down Under Dive Club, Raleigh, NC
Fifth Dimension, Seattle, WA
Florida Aquatic & Marine Institute, Inc.
Florida Keys Community College Scuba Club
Florida Oceanographic Society
Gulf Coast and Gulf Breeze Dive Pros, Pensacola, FL
Greater LA Council of Divers, Torrance, CA
Horizon Divers, Key Largo, FL
Huron Scuba, Ann Harbor, Michigan
Hydrospace Dive Shop, Panama City, FL
Innerspace Explorer Dive Club, Tampa, FL
It's A Dive, Key Largo, FL
Laguna Beach Resort, Uila, Honduras
Living Oceans Society, BC
Long Beach Aquarium of the Pacific
Marine Park Volunteer Group, Bonaire
Marine Park/REEF Volunteer Team, Cozumel, Mexico
MBT Divers, Pensacola, FL
Mermaid's Cove Diving, Vancouver, BC
Montego Bay Marine Park, Jamaica
Monterey Bay Dive Center, Monterey, CA
Monterey Bay Sea Otter and Kelp Klinger Dive Clubs
Museum of Man and Sea, Panama City, FL
M/V Spree, TX
Mystic Aquarium, CT
New England Aquarium, MA
North Shore Frogman Dive Club, Beverly, MA
Northwest Community College, Prince Rupert, BC
Ocean Odyssey Scuba, Vancouver, WA
Ocean Watch Foundation, Lighthouse Point, FL
Ogden Point Dive Center, Victoria, BC
Organization for Artificial Reefs, Tallahassee, FL
Pacific Rim National Park Reserve of Canada, Ucluelet, BC
Pacific Scuba Center, Oxnard, CA
Pacific Watersports, Aloha, OR
Pan Aqua Diving, Brookfield, CT

Panama City Marine Institute, FL
Peace Dive Boat, Ventura, CA
Pennekamp Coral Reef State Park, FL
Port Townsend Marine Science Center, WA
Poulsbo Marine Science Center, WA
Pt. Defiance Zoo & Aquarium, WA
REEF Field Station of Northern Gulf of Mexico, Arabi, LA
San Diego Oceans Foundation, CA
Scuba Shack, Pensacola, FL
ScubaTech Dive Shop, Destin, FL
Sea Otters Dive Club, Monterey, CA
SeaSports, Belize
Sonoran Sea Aquarium, AZ
South Carolina Aquarium, SC
Southern Cross Club, Little Cayman
Sport Chalet, in Diego, CA
State of Florida, Artificial Reef Program
Sundown Diving, Nanaimo, BC
Sun Fun Divers, Port McNeill, BC
Tackle Shack Divers, St. Petersburg, FL
The Caribbean Marine Research Center, Bahamas
The Dive Shop, Tucson, AZ
The Eugene Dive Club, Eugene, OR
The Truth Aquatics Dive Boats, Santa Barbara, CA
Vancouver Aquarium, BC
Viking Diving, Inc, Pensacola, FL
Vortex Spring and Camp, Ponce de Leon, FL
WW Diving, Humble, TX
World Wildlife Fund, Canada
Wild Women on the Water, Upper Keys, FL

And a very big thanks to all the individual REEF members who made this year's GAFC possible by coordinating local seminars and dives, teaching seminars, and helping advertise the event. Their names are too many to list here, but please know how much we appreciate your work and support of the GAFC and REEF!

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