

REEF NOTES



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Protecting Marine Life Through Education, Service and Research

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NEWSFLASH!

REEF Headquarters Relocates to Its Own Building



The new REEF headquarters.

Thanks to a successful capital fundraising campaign, REEF has acquired a new home. Attending the closing on September 14th were Chairman of the Board Paul Humann, staff members Alex Score and Leda Cunningham, and intern Shannon Lyday. In mid-October, the REEF migration south (approx. 8 miles) of computers, scan forms, and REEF paraphernalia occurred. Stay tuned in to this story as it unfolds in the next edition of REEFNotes.



Celebrating REEF's new home with Chairman of the Board, Paul Humann are (pictured from left) Alex Score (Education and Outreach Coordinator), Leslie Whaylen (Field Operations Coordinator), Leda Cunningham (Office Manager), and Shannon Lyday (Fall '01 Intern).

**Effective October 15, our
phone number will change to
305 852-0030**

Director's Corner

REEF in Brief - What's New

In collaboration with other conservation organizations, REEF has developed two additional components to the Fish Survey Project: a Pacific Northwest Invertebrate monitoring program and a Sea Turtle Sightings Program.

In science and monitoring, REEF has been busy with new papers, scientific conference attendance, documenting a range expansion, and exciting discoveries during SSE dives.

In August, REEF received the prestigious Chevron Conservation Award.

GAFC 2001 was a great success with over 90 seminars and 1500 surveys submitted from 100 survey dives held throughout the US and four Caribbean countries.

REEF and the National Marine Sanctuary System created educational materials for the 2001 Boy Scout Jamboree.

The annual REEF Sustainer's Event and Advisory Board Meeting was held in June. REEF member, Audrey Smith, was named Volunteer of the Year.

Lately, it seems that the wave of marine conservation energy is beginning to reach a critical mass. For most of our known history the underwater environment has been hidden from view and therefore hidden from the forefront of conservation action. Now on all levels, a flurry of environmental activity is gaining momentum. From the grassroots public all the way up to the Office of the President, those concerned are looking very closely at current environmental and fisheries practices.



Within the last 5 years, marine conservation success stories have made national headlines. We have seen the establishment of the first no-take zones in the Florida Keys National Marine Sanctuary; President Clinton's Executive Order designating the formation of the Coral Reef Task Force and its subsequent recommendation to protect 20% of our coral reefs by the year 2020; the establishment of the first large no-take marine reserves, nearly 160 square miles, as part of the Dry Tortugas Ecological Reserve; and a host of management plan reviews that are beginning to look at no-take marine reserves as one of the most forward thinking measures of protection available.

However, even with all of this new momentum, the wave could still dissipate. Despite successful partnership efforts between government and local stakeholders to establish acceptable management plans for threatened fisheries, recent movements and legal wrangling by special interest groups have forced the rescinding or modification of marine reserve measures. Such tactics to curtail the conservation momentum are causing the wave to back up dangerously high.

Of course we all know that managing the entire ocean on a species by species basis is impossible. The immeasurable and poorly understood relationships among species, and between species and habitat, turn the equation into a spider web of complexity. Your efforts, however, can help move effective conservation and volunteerism efforts forward. Make your voice heard and become involved in ocean conservation issues. REEF Fish Survey Projects, the Great American Fish Count, REEF Field Surveys, and other projects enable you to gather data helping to support our understanding and preservation of underwater environments. They also help show those in decision-making positions that the support for effective conservation is not going away and that constituents now know firsthand what is working and what is rhetoric. Keep the wave moving and keep on diving!

A handwritten signature in black ink, appearing to read 'L. Akins'.

Laddie Akins



REEF NOTES

Divers and Snorkelers Make the GAFC a Great Success!

This year, the Great American Fish Count was bigger and better than ever! Over 90 seminars and 100 dives were scheduled throughout the nation and Caribbean! Many GAFC dives were conducted within National Marine Sanctuary areas with kick-off events held in Stellwagen Bank, Florida Keys, Channel Islands and Monterey Bay. We estimate over a thousand divers and snorkelers participated this year and over 1500 surveys were completed during the July event. In just one year, the GAFC has grown by more than 300%!



Ron Richman, a PADI Instructor with "The Dive Shop" in Tucson Arizona conducting a GAFC fish survey in the Gulf of California at Lighthouse dive site next to Isla San Pedro Nolasco. *Photo by Ren Hicks*



Members of The New England Aquarium Dive Club participated in a GAFC Challenge dive at Fort Weatherill, located in Jamestown, Rhode Island.

tioned GAFC dive events were entered into a grand prize drawing. Sponsors for the Grand Prizes included REEF Field Stations: Southern Cross Club on Little Cayman, www.southerncrossclub.com, and Aqua Safari, www.aquasafari.com, in Cozumel, Mexico.

Congratulations go to Gijs van Hoorn of Bonaire who won the grand prize to Little Cayman and Tina Fisher of Terre Verde, FL who won the package to Cozumel.



Volunteers for the Hawaiian Islands Humpback Whale National Marine Sanctuary complete REEF's survey scan forms after their GAFC dive.

Regional prizes were also awarded. Sponsors included Dive Training magazine, Bonica Precision Inc., REEFNet, New World Productions, Divers Direct of Key Largo, and special limited edition prints by Paul Humann and Tom Isgar. A special thanks goes out to all of our sponsors whose support helped make this year's GAFC event a huge success.

The GAFC occurs every year for the entire month of July. The event serves to educate, inspire and encourage divers and snorkelers to complete fish counts not only during the month of July but all year round. Many people believe they can only do fish counts during



GAFC participants on their way to do a fish survey in new areas within the Channel Islands National Marine Sanctuary.

July. Not true!!! REEF needs dedicated fishwatchers all year round! So, while you're waiting for the next GAFC to come around, attend a REEF fish ID seminar, practice your fish-watching skills, keep doing surveys and join us next year!

The planning will soon begin for 2002! For more information on the GAFC, visit the fishcount website at www.fishcount.org.

To learn more about the REEF Fish Survey Project visit www.reef.org.



Volunteers from the Poulsbo Marine Science Center survey at Point White Pier on Bainbridge Island, WA.

REEF Goes to the Boy Scout Jamboree!

Every four years, thousands of scouts converge at Fort AP Hill, Virginia, for the National Boy Scout Jamboree. During the 10-day Jamboree, scouts have the opportunity to experience many activities such as scuba diving, rappelling, archery and kayaking. This year's Jamboree took place July 23-Aug. 1 and over 32,800 boyscouts and nearly 8,000 staff members attended.

At this year's jamboree, REEF and the National Marine Sanctuary System teamed up to develop educational materials for scouts visiting the scuba and snorkeling activities area. Posters were developed showcasing four of the National Marine Sanctuaries—Florida Keys, Flower Garden Banks, Channel Islands and the Hawaiian Islands Humpback Whale Sanctuary—and illustrating fish that are commonly found. Posters were placed throughout the scuba area and a card similar in design was given to each scout to take home. For the scuba or snorkel experience, each scout entered one of four pools representing a designated sanctuary. The dive instructor for each pool welcomed the scouts to the designated sanctuary and once in the pool, scouts were given a chance to try out the scuba or snorkel equipment. Plastic underwater photos of fish buoyed by a float were placed within each sanctuary pool giving the young visitors the illusion of a real dive or snorkel. Not exactly the real thing... but you get the idea!

Additionally, all of the participating national marine sanctuaries donated such items as posters, lapel pins, videos, nature guides, T-shirts, dive flags etc. to be given away during the Jamboree. It was a great event!

We hope through this experience, the scouts gained an appreciation of the value and beauty of our National Marine Sanctuary resources. Most of all, we hope they had fun, learned a fish or two, and will become future fish-watchers! To find out more about the Boy Scout Jamboree visit www.bsajamboree.org. To learn more about fish in the Sanctuaries, visit www.reef.org/sanctuaries.

HAPPENINGS & UPDATES

REEF Adds New Components to the Fish Survey Project

As REEF's survey effort continues to expand, many additional ideas have arisen regarding the use of volunteers for underwater data collection. While REEF's main focus is marine fish, two additional components were incorporated into the Fish Survey Project through collaborations with other organizations. In the summer of 2001, an invertebrate monitoring program for the Pacific Northwest and a sea turtle sighting program were launched.



The giant nudibranch is one of the 44 invertebrates being monitored as part of the new program in the Pacific Northwest. This spineless wonder can grow to 10", can be variable in color from white to gray to red, and is distinguished from others by the many long, branched gill tufts. It is a predator of tube-dwelling anemones and displays an incredible stalking behavior - the nudibranch will rear up and literally pounce into the tube, emerging with a mouth full of tasty tentacles. Photo by Mikael Eriksson.

Jewfish Now Called Goliath Grouper

Earlier this year, the committee responsible for naming fish in the Americas changed the common name of the largest Atlantic grouper species from jewfish to goliath grouper. It is a rare change by the Committee of Names of Fishes of the American Fisheries Society, which has resisted altering common names of fish unless according to society rules the names "violate the tenets of good taste."

The origin of the name jewfish is unknown; however, the Committee felt that a name change was warranted given that some may find it offensive. REEF will begin using goliath grouper in our online materials and will change the name on printed survey materials during the next reprinting.

To read the AFS decision, visit www.fisheries.org/fisheries/F0105p31.PDF.

Pacific Northwest Invertebrate Monitoring

A new invertebrate monitoring program will serve as a companion to the existing fish monitoring program for the Pacific Northwest. The project grew from a partnership between REEF and the Living Oceans Society, a non-profit organization based in British Columbia committed to the preservation of marine biological diversity and creation of sustainable fisheries through the establishment of a network of marine protected areas and ecosystem management. (For more information, visit www.livingoceans.org). The Living Oceans Society was an important partner in REEF's initial expansion to the area, and thanks to the urging of Pacific Northwest surveyors eager to learn more about these fascinating spineless creatures and the work of Living Oceans Society in developing the program, the invertebrate program became a reality in the summer of 2001.

As part of the new program, invertebrates are monitored using the same Roving Diver Technique survey method used in REEF fish surveys and the data are scanned into the existing REEF database that is accessible on REEF's Website. Specifically, 44 invertebrates are being monitored using either the four abundance codes (Single, Few, Many, Abundant) or 'Present,' depending on the species. Species that tend to be present in aggregations rather than as discrete individuals, such as sand dollars and strawberry anemones, are recorded as 'present' if seen during the dive rather than assigning an abundance category. Divers can now conduct a fish survey, an invertebrate survey, or both during each dive. The list of invertebrates included is available at <http://www.reef.org/data/pac/invertsp.htm>.

New survey materials have been created, along with a new training curriculum module, "Introduction to Identification of Pacific Northwest Invertebrates," written by Living Oceans Society. Survey and training materials are available through our online store or from REEF HQ. Please feel free to contact REEF with any questions about this new program.



A Pacific Northwest REEF surveyor, Jan Honda, observing a lingcod. Photo by Kirby Johnson.



REEF would like to extend a big thanks to the Living Oceans Society for leading this effort, to Susan Francis and Dana Haggarty for putting together a great training curriculum, and to the following local photographers who donated their images: Rick Harbo, Rob McMurty, Steve Horvat, Marli Wakeling, Dana Africa, Mikael Eriksson, Tony Cohen, Susan Francis, Karlista Rickerson, Aaron Tinker, David Haggarty, and Carol Valkenier.

HAPPENINGS & UPDATES

Sea Turtle Sightings Program

As part of its expansion to Hawaii earlier this year, REEF included green sea turtles (healthy and those afflicted by fibropapilloma tumors) in the survey protocol. In collaboration with Seaturtle.org, REEF has recently decided to include sea turtle sightings in all of its regions.

What do I do if I see a turtle during a REEF dive?

Applicable in all regions, REEF surveyors are now asked to include sea turtle sightings as an additional species on the back of the survey form. If the turtle can be identified to species its common name and/or scientific name should be given, otherwise the surveyor should just mark 'Sea Turtle sp.' The same abundance codes should be used (S,F,M,A) for this program. In Hawaii and the Caribbean, additional information on green sea turtles with Fibropapillomatosis (FP) tumors is also being recorded.

Why sea turtles?

- 1) It is well known that sea turtles are increasingly threatened as their populations continue to decline. Unfortunately, as with all aspects of the marine environment, scientists and resource managers simply do not have the means to adequately monitor the status and distribution of sea turtles. Sighting data provided by the Roving Diver Technique will be useful and valid.
- 2) The search image for turtles is compatible with that of fish and most, if not all, divers who see a turtle while diving regard it as a significant find and make a note of it on their slate and in their dive log.
- 3) Seaturtle.org will provide a means to manage and disseminate the information to the sea turtle research community.

What will happen to the sea turtle data?

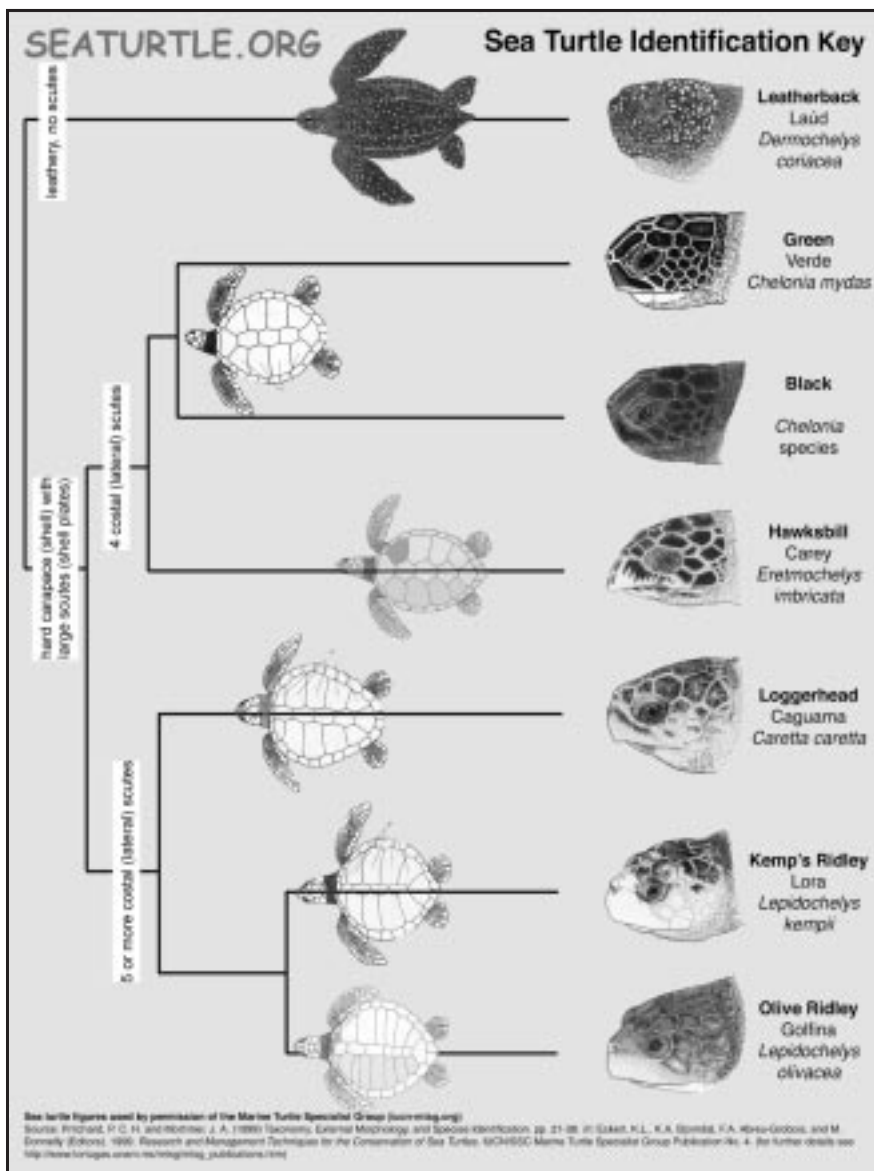
The data will be housed in REEF's database. This fall, a sea turtle interface will be created to allow visitors to view summary reports similar to those generated for fish. Through Seaturtle.org, Dr. Michael Coyne will also provide the data to the sea turtle research and conservation communities.

Who is Seaturtle.org?

Seaturtle.org is a non-profit organization based in Maryland whose mission is to support research and conservation efforts in the sea turtle community by providing online resources and solutions. Seaturtle.org's founder and Executive Director, Dr. Michael Coyne, works for NOAA's Biogeography Program and is REEF's Database Programmer. For more information visit www.seaturtle.org.

How can I get started?

Created by Seaturtle.org, a sea turtle identification card will be posted on REEF's website and distributed with REEF survey kits.



Modified version of the sea turtle identification card. Visit www.reef.org/data/seaturtle.htm to download the complete product.



The loggerhead sea turtle is one of six sea turtles found in the Caribbean, and one of the most likely to be encountered by REEF surveyors. It is distinguished by its large head and the somewhat humped, reddish brown shell.

MEMBER ARTICLE

Hawaiian Parrotfish... Not Your Typical Fish Story

by Liz Foote, Executive Director,
Project S.E.A.-Link (REEF Hawaii local partner)

Aloha from Maui! Since the official Hawaii launch of REEF this past February, REEF has been gaining momentum in the Islands. Since February, Project S.E.A.-Link has been conducting frequent surveys involving the Maui community and Hawaii Coral Reef Network members. Many local dive shops and tour operators (Pacific Dive, Maui Dreams, Ed Robinson's Diving Adventures, Mike Severns Diving, Trilogy Excursions to name a few) have become local partners and participated in the first official Hawaiian Great American Fish Count this July.

Among the sightings included the ubiquitous yet often difficult to identify parrotfishes, or "uhu" as they are referred to in Hawaii. Parrotfishes belong to the Family Scaridae, and there are seven species in Hawaii that include three endemics.

Most beginning REEF surveyors will agree that the parrotfish family is a collective identification nightmare, with color patterns differing within as well as between species and according to sex and age. Some species can even change their patterns and colors at will! As frustrating as this may be to a REEF surveyor, the ecology behind the source of frustration is quite interesting. Parrotfish are protogynous ("first female") sequential hermaphrodites, with some individuals beginning life as females then changing into terminal-phase males with altogether different colors and patterns. These ex-females then enjoy the benefits of harem ownership, while the initial-phase males (which are small and match the females' drab coloration) must resort to more sneaky tactics for procreation.

Any REEF member will recognize that this family's common name is derived from the bright coloration of the terminal-phase males and the characteristic "beak" possessed by all parrotfish. However, the Hawaiian family name "uhu" requires further explanation. It means "loose bowels," and refers to the fact that parrotfish are often seen nonchalantly excreting mass quantities of sand as they swim about the reef. Parrotfish are in fact the dominant biological sand producers on coral reefs, due to a herbivorous feeding specialization that allows them to ingest, grind up, and excrete coral rock as sand while extracting algae in the process.

This reef fish family is also featured prominently within old Hawaiian legends. According to Hawaiian scholar Mary Pukui Kawena, it was said that the behavior of the uhu could tell a fisherman what his wife was doing at home... "if the uhu capered and frolicked in the water it was a sure sign of too much levity... if two uhu seemed to be rubbing noses, it was a sure sign that there was flirting going on at home." In addition, a wily person was referred to as a "slippery uhu."

While Hawaii may only have half the number of parrotfish species as the Caribbean, its cultural affinity to the uhu certainly makes up for the reduced diversity! What's more, the uhu are arguably the most conspicuous and charismatic of Hawaii's reef fish, since the Hawaiian angelfishes are typically smaller and less impressive visually than their Caribbean counterparts. Hawaii's seven species of parrotfishes are the Stareye, Bullet-



Hawaii's spectacled parrotfish.

head, Palenose, Redlip, Spectacled, Yellowbar and Regal; the latter three are endemic to the Islands. Most are quite common, particularly the Bettlehead & Palenose, although the Yellowbar is more abundant in Northwest Hawaiian Islands and is rarely encountered in the main islands. Of the endemic species, the Spectacled is the most common and is profiled below.

Spectacled Parrotfish (*Chlorurus perspicillatus*)

Identification characteristics:

Terminal Phase: uhu uliuli ("dark")

- Terminal males with lavender blue-edged bar across forehead (the "spectacles")
- Terminal males w/ blue-green body with anterior orange-pink dots & posterior orange-pink edges on scales; bright yellow mark at base of pectoral fin

Initial Phase: uhu 'ahu'ula ("feather cape")

- Initial phase males & females dark reddish to grayish brown with red fins & broad white bar at base of caudal fin extending into fin; can display series of pale blotches along the back

Chevron Conservation Award

On August 22nd, REEF was the honored recipient of a 2001 Chevron Conservation Award, the nation's oldest and most prestigious tribute celebrating achievement in environmental protection. Since 1954, the award annually recognizes the outstanding contributions of individuals and organizations to the conservation of natural resources. REEF was one of 6 recognized from the more than 300 applicants nationwide at the Sacramento, CA ceremony. REEF directors and staff accepted the award during a formal awards gala held in the Golden State Museum. More than 200 distinguished guests attended the event.

Sponsored by Chevron since 1996, the \$10,000 award recognizes outstanding citizen volunteers, professionals and nonprofit organizations for protecting our air, water, land and wildlife. This recognition plays an important role in motivating people to continue their conservation efforts. An important factor in the success of honorees, and of all nominees of this program, is their ability to work effectively with diverse organizations to achieve consensus and meet difficult environmental challenges in practical ways.

"Recognition of these achievements and a sharing of ideas educates and inspires others to preserve natural resources," said B.J. Griffin, one of five distinguished conservationists on the panel of judges selecting award winners.

REEF members David Preston and Carol Lorenz nominated REEF for the award early this spring. Recognition for REEF's international Fish Survey Project and a focus on the groundbreaking work in partnership with NOAA's National Marine Sanctuary Program provided a strong foundation for the independent judges' decisions. In recognizing the REEF program, judges made it clear that the involvement of REEF's volunteers in protecting marine resources was key to their decision making. Funding from the award will play an important part in helping to establish a new REEF Marine Conservation Center in Key Largo. Way to go REEF members!

SCIENCE UPDATE

REEF has been keeping busy in the science and monitoring department. Here are some highlights:

- In May, REEF's Scientific Coordinator, Dr. Christy Pattengill-Semmens, attended the annual Environmental Monitoring and Assessment Program (EMAP) meeting in Pensacola. She presented a paper on the success of REEF's partnerships, which will be published in an upcoming issue of the EMAP Journal.
- In July, Brice and Christy Semmens attended the Society for Conservation GIS meeting in Borrego Springs, CA. Christy presented 'Utilizing GIS in the REEF Fish Survey Project,' highlighting two REEF GIS projects - the work of Chris Jeffrey and NOAA's Biogeography Office with the FKNMS data and the concept of developing a Species Distribution Atlas with tropical western Atlantic REEF data. Brice's presentation, 'Habitat Mediated Behavior in Reef Fish,' featured results from a pilot study conducted in the Bahamas last summer investigating home range size in blue tang over different habitat types. REEF received a Conservation Technology Support Program grant from the society last year to assist in GIS applications of REEF data.
- A new paper about the benefits of the REEF Fish Survey Program, titled "Learning to See Underwater," was published in the March issue of the Underwater Naturalist. A PDF version is available on REEF's website.
- During this year's Sustainable Seas Expedition, REEF Executive Director Laddie Akins and Advisory Board Member Dr. Steve Gittings conducted fish surveys during submersible and SCUBA dives. While diving off Belize, Steve witnessed an amazing site of hundreds of snapper (mostly cubera) in a spawning aggregation. While diving off the Yucatan coast of Mexico, Laddie found what are believed to be three new species. Experts are currently evaluating images of a bass (*Serranus* sp.), a chromis (*Chromis* sp.) and a hogfish (*Decodon* sp.).

Marine Protected Area 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 and funding issues. In each issue of REEFNotes, the MPA News feature brings you recent and noteworthy happenings.

Aid for Fish at Risk: the Fisheries Recovery Act

Managing from crisis to crisis — unfortunately, this has been the historical approach toward ocean resources by the United States fisheries management agencies. A new bill introduced in July by Representative Sam Farr, the Fisheries Recovery Act (HR 2570), will hopefully change that. The act was introduced on the heels of a report titled Fish at Risk, released by the Marine Fish Conservation Network (of which REEF is a member), which revealed that 31 US-managed fish species are at risk of extinction. The list included many species that REEF surveyors look for — canary rockfish, lingcod, ten species of Atlantic grouper (including the goliath, the Nassau, and the black), and the thorny skate. Additionally, 107 of the fish stocks that are federally managed are overfished or are approaching overfishing.

How have we reached this point?

While a lack of scientific knowledge about fish life history, under-funded fishery observer programs, and a lack of ecosystem focus all contribute, the two biggest contributors are likely bycatch and habitat destruction.

- **Bycatch:** Each year, 2.7 billion pounds of non-targeted ocean wildlife are wastefully killed in the US alone and it is estimated that one-fourth of the world's catch is thrown back as bycatch.
- **Destructive Fishing Practices:** An area about twice the size of the lower 48 states is dredged or dragged by bottom trawling vessels annually in US waters, often destroying habitat essential to juvenile fishes.



You can join REEF's member list serve by visiting www.reef.org.

What will the Fisheries Recovery Act do?

The Fisheries Recovery Act of 2001 will change fish management law to:

- Stop overfishing,
- Avoid the killing of non-target ocean wildlife,
- Protect ocean food webs,
- Protect fish habitat from damaging fishing gear and practices,
- Reform the Regional Fisheries Management Council membership process,
- Fund the introduction of less damaging fishing gear and practices, and
- Fund improved research and reporting, including fisheries observers.

What can you do?

To take action to protect, conserve and restore our marine resources, please write, call, or fax your Representative and tell them to cosponsor HR 2570, the Fisheries Recovery Act of 2001. For more information visit the Marine Fish Conservation Network's website at www.conservefish.org.

Bycatch is the result of non-selective fishing equipment that does not discriminate between desired fish and those that are too small to sell or eat, are of limited commercial value, or are illegal to keep. Shrimp, tuna, and swordfish fisheries have particularly high amounts of bycatch.

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Third Annual Event Celebrates REEF's Success

On June 2nd REEF advisors and supporters once again gathered at Paul Humann's "Mango Manor" to talk fish and reflect on REEF's successes of the previous year. The third annual Sustainer's Event was hosted by Humann and Ned and Anna DeLoach and sponsored by ScubaBun Enterprises. The day's activities included the staff's annual report of REEF happenings and presentations on REEF projects by four REEF partners.



Audrey Smith, REEF's Volunteer of the Year.

Speakers included Craig Faunce from Florida Audubon who spoke about the development of a new volunteer fish monitoring program in Florida mangroves based on REEF's program; Bill Horn of the Florida Fish and Wildlife Conservation Commission who presented three programs where the agency is currently using REEF's data and programs; Chris Ostrom from the National Marine Sanctuary System who provided an overview of the Team Ocean project; and Tracy Hamilton from the Florida Keys Community College who presented their efforts to involve divers from the college to monitor the upcoming artificial reef, the *USS Vandenberg*. Once the afternoon wrapped up, the evening festivities kicked off with a cocktail party, a dinner catered by Jacksonville's Happy Chefs, a raffle for door prizes, and a slide presentation featuring new additions to the third edition of Reef Fish Identification, which is due out later this year. The evening was highlighted with the presentation of REEF's Volunteer of the Year Award to Audrey Smith.

REEF Member Audrey Smith Named Volunteer of the Year

For over two years, Audrey Smith has been an invaluable addition to the REEF team. Volunteering two days each week in the Key Largo REEF office, Audrey is responsible for keeping track of inventory, shipping orders, organizing the office, membership, and much, much more. Formerly a 5th grade teacher in Harrisburg, Pennsylvania for over 30 years, she and her husband, Ken ("Smitty"), relocated to the Keys after retirement in 1998. Audrey became SCUBA certified 5 years ago and enjoys diving throughout the Caribbean as well as in her backyard, the Florida Keys. The REEF Boards and Staff would like to extend a special thanks to Audrey and the countless other volunteers who help make REEF a success.

REEF's 2000 Annual Report is available online at www.reef.org/annual00.pdf.



Kitty Philips, Julie Dutcher, and Jim Dalle Pазze at Mango Manor.

REEF Internship

Molly Myhr, one of two REEF interns for the summer of 2001, arrived at REEF from Memphis, Tennessee in late May. Molly will graduate in May 2002 from Vanderbilt University with a B.S. in Biology. Over the summer with REEF, Molly quickly got involved in conducting fish surveys primarily with Lisa Canty, REEF's other summer intern. She also conducted numerous surveys on a trip to Grand Cayman's East End in mid-June. Throughout the summer, she aided the Florida Audubon's Mangrove Ecosystem Research Project (MERP) conducting fieldwork and fish surveys in the Florida Bay mangroves. Molly periodically helped in the efforts of a dolphin ecology project learning about dolphin habitats and feeding patterns with a local dolphin researcher, Laura Engelby. Molly plans to continue her education in the biology arena after graduating from college, possibly focusing on a career in veterinary medicine.

REEF's other summer intern, Lisa Canty, is a Florida native. Born and raised in Orlando, Lisa has visited many beaches along the coast of Florida but loves nothing better than the aquamarine waters of the Keys. Nearly every summer she and her family spend a week in Marathon so Lisa relished the opportunity to become familiar with a different Key this year. Lisa is a recent graduate of the University of Hawaii at Hilo. She has a B.A. in marine science and plans to tackle an M.S. degree in the same field someday. . . but not just yet. With experience being the best teacher of all, Lisa wants to have a little more under her belt before making any big decisions. REEF has given her a good start! In addition to her 30-something fish surveys, Lisa has been volunteering at Gumbo Limbo Nature Center in Boca Raton, dolphin monitoring with Laura Engelby, and had the opportunity to meet Sylvia Earle when the Dry Tortugas was proclaimed an ecological preserve this past July.



Lisa and Molly, Summer '01 interns.

REEF NOTES

Fairy Basslet Sighted in Florida Keys

On June 5, 2001, Leslie Whaylen, Molly Myrh, and Lisa Canty conducted fish surveys with Lady Cyana in Islamorada. After the first morning dive Captain Rick suggested Alligator Reef as the second dive site. With the *LC III* moored on the most western ball on Alligator Reef, Leslie, Molly, and Lisa entered the water and began their fish count. Sighting glasseye snapper, blackbar soldierfish, and a large school of glassy sweeper at the first ledge, Leslie called REEF interns Molly and Lisa over to see the fish. As Leslie peered under the ledge, she soon forgot all about those species and instead focused in on a tiny purple and yellow fish, hanging upside down under the ledge. A Fairy Basslet! Screaming into her regulator, Leslie hurriedly pointed to the basslet to show her dive buddies and then swam off in pursuit of underwater photographers. Finding two divers with cameras, she cajoled them back to the ledge anxious to have photographic evidence of this rare discovery.



Frazier Nivens of Ocean Imaging photographed the fairy basslet at Alligator Ledge.

Often mistaken for the similarly colored juvenile Spanish hogfish, fairy basslets have never been reported in Florida. Although both bluish purple and yellow in coloration, the basslets can be simply distinguished from the Spanish hogfish. While the yellow on the back half of the Spanish hogfish continues onto the stomach, the yellow color on the fairy basslet is demarcated on a vertical axis from the purple color. Their differing behaviors and habitat also lend clues. Juvenile Spanish hogfish are cleaners when young and as mature adults, they patrol a territory along the reef.

Sustainable Seas Expedition 2001

The Sustainable Seas Expeditions (SSEs) are a path breaking partnership between the National Geographic Society and the U.S. National Oceanic and Atmospheric Administration (NOAA) to explore the United States' last frontier: the ocean. The five-year program has been investigating, conducting research in, and promoting the 13 U.S. National Marine Sanctuaries, which range in size from a tiny bay in far-off American Samoa to a 5,328-square-mile (13,800-square-kilometer) expanse of ocean off the California coast. Famed ocean scientist and National Geographic Explorer-in-Residence Sylvia Earle serves as the project's director, and former National Marine Sanctuaries program director Francesca Cava oversees its day-to-day operations. Funding is provided by a five-million-dollar grant from the Richard & Rhoda Goldman Fund.

With the help of a revolutionary one-person submersible called DeepWorker, the expedition's scientists have been documenting the plants and animals that inhabit the uncharted regions of the sanctuaries. REEF's involvement in SSE missions began in year one and has continued each year with fish surveys and assessments at numerous sanctuary sites.

This year's missions, dubbed "Islands in the Stream", explored protected and non-protected coral reef and hard bottom communities—the "islands"—of Belize, Mexico and the United States, as well as the currents—the "stream"—that connects the different habitats. The Loop Current, its associated gyres, and the Gulf Stream connect underwater communities throughout the Gulf of Mexico, as well as those in the western Atlantic along the coast of Florida and Georgia. Beginning off the coast of Belize, the expedition team followed the clockwise "stream" along the eastern edge of the Yucatan Peninsula, into the Flower Garden Banks Sanctuary off Texas, continued downward along the west coast of Florida, through the Florida Keys Sanctuary, and will continue up the east coast of Florida, and conclude off North Carolina in the Monitor Sanctuary.



REEF Director Laddie Akins took part during dives in two locations in Mexico and in the newly established Ecological Reserves in the Dry Tortugas. The focus was to explore fish assemblages in these deeper areas of Mexico and to revisit sites from last year in the Tortugas Reserves. Lad's first Mexico

dive was on the southern end of Chinchorro Bank. Over 75 species of fish were documented including four potentially undescribed species. The second Mexico dive was on the southern end of Cozumel, at a site known to scuba divers as Maracaibo Reef. Forty-four species were documented in this area on a 5-hour dive to over 500 feet. Most notable in the Mexico dives were the unique soft corals at 500 feet and the lack of grouper at depth.

The two dives in the Tortugas provided high contrast to the Mexico dives. A 140-foot dive on the northwestern edge of Sherwood Forest in the Tortugas North reserve found an abundance of species that were not present at all in the previous year. The change in species composition reflected mostly planktivores including yellowtail reeffish, sunshinefish, school bass and chalk bass. Other researchers conducting work in the area have expressed concern over nutrient laden upwellings over the last year. The presence of these abundant planktivores may well be a result of a change in current patterns and could lend stronger evidence to the theory. Numerous nets, lines and other shrimp trawling gear were also found draped over the corals on the short ledge. Heavy fishing pressure may well account for the low number of grouper species in the area.

The final dive in the Tortugas was a 5 hour 45 minute foray into the Millers Ledge area of the Tortugas South reserve. Thirty-two species were documented, and the species closely reflected prior year's data. Abundant rougtongue bass dominated the fauna and many large scamp congregated around the top of the ledge. Red Snapper and Greater Amberjack were also seen, though less frequently than in the previous year. The great abundance of grouper in this area strongly substantiates the establishment of the Tortugas Reserve

Data from these dives and other SSE fish survey dives conducted by Steve Gittings in Belize and Emma Hickerson in the Flower Garden Banks and West Florida Shelf are now posted on the REEF website in the deep purple offshore sections of the Geographic report. Data will be used in establishing current baselines of these areas as well as for comparison to data collected in future years. Online dispatches live video and audio links, and chat rooms have enabled ocean enthusiasts to share in the aquanauts' voyage of discovery. To follow activities of the Islands in the Stream SSE Missions, visit the new NOAA website, NOAA Ocean Explorer, at <http://oceanexplorer.noaa.gov/>.

REEF NOTES



REEF Website Provides Members a Wealth of Resources

In addition to housing our database, the REEF Website features many online resources that we want you to know about.

- Member Forum with Member Articles, Fish of the Month, Favorite Fish Spot features, the Field Survey Log, Identification Articles, and a Cool Fish Sighting page*
- Data Reports that include summaries of your data, geographic data, species distributions, comparisons among areas, and diversity
- Discussion Board
- Fish Gallery and Quizzes
- Online Store where you can securely purchase ID books, REEF gear and survey materials

Have you been to www.reef.org lately? As REEF's Web presence, we are continually adding to and improving the content of our site to better serve you, our members. Just over a year ago, REEF launched its revamped site and new data reporting programs. And now we want to hear from you. If you haven't already, please take time to explore the site and then let us know what you like, suggestions for additions, what you think about the data reports, and any other comments you may have. Please send them to webmaster@reef.org. Thanks!

*We are always looking to add new features to our Member Forum. Please consider writing up your favorite fish spot or a fish-watching experience. We look forward to hearing from you.

CONTRIBUTIONS TO REEF - HOW YOU CAN HELP

by James P. Dalle Pазze, Esquire

Individual gifts to REEF by its members and other supporters are its lifeblood. There are no membership dues and without donations REEF would be unable to sustain its operations. REEF takes great pride in the extremely high percentage of its funds that go to its programs and activities. That success attests to the dedication of its staff and volunteers to the mission of REEF.

This article provides a summary of the more common types of charitable gifts available and the tax benefits they can provide to you. You should keep in mind, however, that your primary reason for contributing to REEF should be the benefit you will be providing to the ocean environment and to the furtherance of REEF's programs and activities. The tax benefits are important, but hopefully are secondary to the goals and motivations that inspire you to help REEF carry out its mission.

Opportunities for gifts to REEF, all of which can reduce your income taxes, include traditional gifts of cash or personal property (such as computers and office equipment) as well as more sophisticated arrangements that can provide significant economic benefits to you and to REEF.

Cash Gifts. Gifts of money (by check, of course) are REEF's most important source of support. You receive an income tax deduction equal to the amount of your gift.

Gifts of Equipment and other Personal Property. Gifts of computers, printers, photocopies, scanners, and other office equipment are very helpful to REEF and generate an income tax deduction for you generally equal to its value.

Gifts by Will. Gifts of money and of personal property can also be made by will. These gifts, of course, are effective at your death and so do not cost you anything during lifetime. But they are a huge benefit to REEF. There is no estate or gift tax on any amount you leave to REEF, and so you are benefiting REEF while reducing your estate taxes.

To make such a gift, all that is needed is language in your will similar to this: "I give and bequeath to Reef Environmental Education Foundation of Key Largo, Florida, for its general use, the sum of _____ dollars." If you prefer that your gift be used for a particular program, the following language is appropriate: "I give and bequeath to Reef Environmental Education Foundation of Key Largo, Florida, for use in its [Fish Survey Project] if it is in operation at the time of my death, otherwise for its general use, the sum of _____ dollars."

Charitable Trusts. Two types of trusts are available that allow you to make donations to REEF while keeping a significant economic advantage for yourself and your family members. The first is a charitable remainder trust. You make a gift to the trust

which then pays you (and such family members as you might choose) an annuity each year (or more frequently) for the rest of your lifetime or for a set number of years if you prefer. At the end of the time period, the trust terminates and whatever remains in it goes to REEF. You get a substantial income tax deduction in the year you fund the trust (generating even more savings for you) and the cash or property you put into the trust will escape estate and gift taxes.

While this technique is a win-win for you and for REEF, it is especially valuable if you have stocks that have appreciated greatly and would generate a large capital gains tax if sold. The trust is tax-exempt and can sell the stocks without any tax, leaving all of the proceeds available to generate a larger return for you than the stock has been paying.

The charitable lead trust is the mirror image of the charitable remainder trust. You contribute cash or other assets to the trust and it pays an annuity to REEF for the number of years you select. At the end of that term, the assets in the trust are distributed to your family members as you instructed when you created the trust.

The charitable lead trust is a great technique if you have a large sum you want to leave to children who are too young to handle it today. The trust can allow you to provide a huge benefit to REEF, give you a significant income tax deduction each year, and then give the funds (assets) to your children once they are older.

You can create these two types of charitable trusts either during your lifetime or at your death (by utilizing your will). Each method has specific advantages in addition to those discussed above. If you are interested in creating a charitable remainder trust or a charitable lead trust for REEF, please contact Laddie Akins at REEF Headquarters.

Bargain Sales. A type of charitable gift that is surprisingly straightforward but immensely helpful to charities such as REEF is the bargain sale. This is simply a sale of property to REEF at a reduced price. The amount of the price below fair market value is the amount of your contribution and is deductible.

The following is an example of a typical bargain sale. You own land that you bought for \$200,000 and which is now worth \$300,000. You sell it to REEF for \$200,000, put the \$200,000 in your pocket, pay no tax on the sale (because you sold it for the same amount as you originally paid for it), and get a \$100,000 income tax deduction to boot!

The advantage to REEF is that it gets property worth \$300,000 for a price of \$200,000. REEF can then either keep and use the property or sell it and keep the "profit" (in this case, \$100,000) for its general use. This technique is used usually for either real estate or big ticket personal property items such as computers, boats, or cars.

Charitable Gift Annuities. A charitable gift annuity is a gift of money or property in return for annual pay-

ments by the charity back to the donor, usually for the balance of his or her life. This provides the donor with some economic return, and is particularly helpful where the gift is property that is not generating much, if any, income to the owner. The charity can sell the property without tax. The amount of the donor's income tax deduction is equal to the amount of money (or fair market value of the property) given to REEF minus the value of the annuity to be paid to the donor. The value of the annuity is calculated based upon the age of the donor and the amount of each annual payment he or she will receive from REEF.

Gifts of Remainder Interests. A useful but unusual gift is a gift of a remainder interest. This is a gift of property that is "made" today but is actually "delivered" at the time of your death. You continue to own and use the property until your death, but at that time it automatically goes to REEF.

So how is this any different than a gift made in your will? The difference is that this gift is complete when you sign the papers, whereas a gift in your will is not effective until your death and can be changed or revoked by you at any time until then. Your benefit for a remainder interest gift is twofold: you get an income tax deduction today, usually equal to a very high percentage of the property's value (and so save substantial income taxes today) and the property avoids estate and gift taxes at your death.

Pooled Income Funds. A pooled income fund is a collection of donations from many different donors that is held by the charity. The charity pays interest back to the donor based upon the amount the donor gave and the investment performance of the fund. In addition to the payments you get back from REEF, you get an income tax deduction equal to the actuarial value of your gift to the fund.

One of the big benefits of the pooled income fund is its simplicity. The creation of the fund is (or has been) done by the charity. REEF is in the process of establishing a pooled income fund. For more information, please call Laddie at REEF Headquarters.

Not all of the benefits noted in this article are equally applicable to all individuals. For example, different individuals are in different tax brackets, some individuals do not itemize deductions, and the estate tax is not applicable to all estates. Consult your own tax advisor whenever you have questions in this regard.

If you would like to know more about any of these giving opportunities, please email Laddie (lad@reef.org) or Leda (leda@reef.org) or call REEF headquarters at 305-852-0030. They will be happy to help you learn more about planned giving as you consider ways to help REEF. They will also be glad to speak with your tax advisor about any questions he or she has. Reprints of this Article are available from REEF.

FIELD SURVEY & STATIONS

REEF 2002 Trip Schedule

REEF Field Surveys are your opportunity to take a vacation that counts! These week-long diving adventures are not only fun, but educational and environmentally important. And there is no better way to improve your fish identification skills.

Dates, lodging and diving accommodations are given for each trip. Prices do not include airfare. An additional \$200 REEF fee will be added to each trip to cover the cost of the trip leader(s), seminars, and survey materials needed throughout the week. The \$200 REEF fee is tax-deductible since REEF is a nonprofit organization.

Visit the REEF website for the complete schedule or contact the REEF office. You can call Dive Reservations, Inc. at 888-363-3345 (toll free) or e-mail them at reef@diveres.com to learn more about a specific trip or to reserve a spot.

REEF Field Surveys

February -	Maui
March -	Grand Cayman (East End)
April -	Long Island, Southern Bahamas with Stella Maris
May -	Monterey Bay 4 day weekend
June -	Chinchorro Bank, Mexico with Maya Ha
July -	Guanja
August -	Little Cayman with Southern Cross Club
September -	Flower Garden Banks NMS
October -	Research Expedition
November -	Midway Island, NW Hawaiian Islands
	Key Largo, coral spawning
	British Colombia
	Venezuela
	Channel Islands NMS with Truth Aquatics
	Baja, Mexico with Don José
	Grenada

REEF Discovery Tour

November -	Puerto Rico, led by Paul Humann
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Visit the online Field Survey Log to read past trip reports:
www.reef.org/member/forum/fslog.htm



REEF's Field Survey to Utila in June 2001.



REEF's Discovery Tour to Bonaire in July 2001.

Field Stations are instrumental as a center 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 a distribution center for REEF materials and survey forms.

Visit the REEF website for direct links and more information on REEF's Field Stations.

USA and Canada Field Stations

California	Riverside - Scuba Schools of America	909-689-2422
Connecticut	New England Ski & Scuba LLC	860-872-0013
Florida	Bonita Springs - Eagle Ray Dive Center	941-992-2237
	Islamorada - Lady Cyana Divers	800-221-8717
	Juno Beach - Marine Life Center	561-627-8280
	Key Largo - Diver's Direct Outlet	305-451-8034
	Key Largo - Amy Slate's Amora Dive Resort	305-451-3595
	Key Largo - Horizon Divers	305-453-3535
	Marathon - FL Keys Nat'l Marine Sanctuary	305-743-2437
	Riviera Beach - Jim Abernethy Adventures	561-691-5808
Hawaii	Honolulu - Midway Phoenix Corporation	808-599-5400
	Kailua-Kona - Eco Adventures	808-329-7116
Louisiana	New Orleans - REEF Field Station of Northern Gulf of Mexico	504-276-4887
Michigan	Ann Arbor - Huron Scuba Adventures	734-994-3483
Minnesota	Rochester - MDC Sports	507-288-8802
New Jersey	Belle Mead - The Scuba Connection	908-359-1250
New Mexico	Sante Fe - Akumal Dive Adventures	505-992-3333
Texas	Lancaster - Island Time	972-227-6678
Washington	San Juan - Emerald Seas	360-378-5040
	Vancouver - Thunder Reef Divers	360-573-8507
	Vancouver - Ocean Odyssey Scuba Center, Inc.	360-883-2621
Canada, Alberta	Lethbridge - Anderson Aquatics	403-328-5040
Canada, British Colombia	Victoria - Living Oceans Society	250-920-0733
Overseas Field Stations		
Aruba	Paradera - Windie's WaterSport	297-87-2281
Bahamas	Nassau - Custom Aquatics	242-362-1492
Belize	M/V Wave Dancer (Peter Hughes Diving)	800-9DANCER
	Seasports Belize	501-2-35505
Bermuda	Bermuda Aquarium, Museum & Zoo	441-293-2727
Bonaire	Kralendijk - Buddy Dive Resort	599-717-5080
	Kralendijk - Plaza Resort Bonaire	599-717-2500
	Kralendijk - Green Submarine	599-717-2929
	Kralendijk - Sand Dollar	800-288-4773
British Virgin Islands	Tortola - Baskin in the Sun	284-494-2858
Cayman Islands	Little Cayman - Southern Cross Club	345-948-1099
Honduras	Utila - Utila Lodge Resort	504-425-3143
Mexico	Cozumel - Aqua Safari	529-872-0101
	La Paz - Baja Quest	521-123-5320
	Chinchorro - Maya Ha	529-831-0065
Netherlands Antilles	Curacao - Curacao Sea Aquarium	0599-9-461-6666
Puerto Rico	Culebra - Reeflink Divers	787-742-0581
	Rincon - Oceans Unlimited	787-823-7436
Turks and Caicos	M/V Wind Dancer (Peter Hughes Diving)	800-9DANCER
	M/V Sea Dancer (Peter Hughes Diving)	800-9DANCER
	Providenciales - Big Blue Unlimited	649-946-5034
US Virgin Islands	St Croix - St Croix Ultimate Blue Water Adventures	340-773-5994
	St Thomas - Aqua Action Dive Center	340-775-6285
Venezuela	Puerto La Cruz - Horisub	58-81-814878
	Los Roques - M/V Antares (Peter Hughes)	800-9DANCER

SURVEY NUMBERS



REEF members Bob Grist, Doug Harder, and George Owens enjoying themselves on the Belize Field Survey.

TWA

(Tropical Western Atlantic)

Over 100

Laddie Akins (715)
Linda Schillinger (585)
Joe Thomas (457)
Deena Wells (448)
Leslie Whaylen (445)
Christy Semmens (393)
Jean Kirkpatrick (378)
Cathy Coughlin (356)
Sheryl Shea (310)
Emily Schmitt Lavin (300)
John Pitcairn (300)
Peter Leahy (274)
Edwin Steiner (271)
Monty Doyle (256)
Brice Semmens (237)
Judie Clee (237)
Clive Petrovic (234)
Ken Deaver (228)
Ken Marks (224)
Elaine Morden (221)
Joyce Schulke (211)
Patricia Ayers (195)
Ann Knollenberg (190)
Carol Lorenz (185)
David Preston (184)
Jessica Armacost (173)
Tom Isgar (171)
Darlene Gehringer (169)
Jerry Ligon (163)
Will Ruggles (163)
Douglass Rankin (162)
Bruce Purdy (159)
Doug Rorex (156)
Julie Overing (149)
Randy Keil (135)
Linda Baker (134)
Clint Whitaker (127)
Barbara Modafari (121)
Betsy Saunders (116)
Douglas Harder (116)
James Brooke (113)
Pamela Bezuidehout (107)
Bob Bishop (106)
Cindy Snell (105)
Jim Morabito (104)
Kathie Comerford (100)
Don Buck (100)

Over 50

Hilary Harder (99)
Currier Randall (98)
Carol Reichert (98)
Denise Mizell (97)
Margaret Cowin (96)
Mark Kaehler (95)
Tracy Siani (93)
Chris Koepfer (91)
Kitty Phillips (89)
Dr. Stephen Gittings (88)
Carol Whitaker (88)
Andy Dehart (87)
Shelley Tyre (85)
Jim Modafari (84)
Kathleen Scott (83)
Greg Bunch (82)
Dave Grenda (82)
Kirsten Bassion (80)
Pamela Cefaratti (80)
Jean Gasen (77)
Robyn Osborn (77)
Kern Spencer (77)
Paul Humann (76)
Tony Sebastian (76)
Lorraine Sommer (76)
Cheri Arnold (75)
Neil Ericsson (75)
Connie Bishop (74)
Kris Wilk (74)
Scott Fowler (71)
Rick Halpern (70)
Lauren Penner (69)
Karen Garcia (69)
Karen Florini (66)
Dave Downs (64)
Monica Vega (63)
Connie Dolan (62)
Janet Earnshaw (62)
Jacquie Tinker (61)
Ditte Preker (60)
Gail Tomei (60)
Edgar Tomei (60)
Robert Antonelli (59)
Marjorie Nelson (59)
Rhian Lewis (58)
Cassandra Weith (58)
Ralph Dickerson (58)
Charles Hersey (58)
Richard Hitt (58)
Corinne Halberg (58)
Pug Pugliese (57)
Anthony Kajfez (56)
Brenda Hitt (56)
Anna Deloach (55)
Woody Brooks (53)

Brenda Berliner (53)
David Mulvey (53)
Chuck Jirka (52)
Jane Rorex (52)
Michael Phelan (52)
Audrey Smith (52)
Noreen Downs (52)
Julie Dutcher (52)
Glen Thiel (51)
Jonathon Tromm (51)
Tracy Hamilton (50)

Over 25

Robert Winters (49)
Jonathan Edwards (48)
Donella Wilson (47)
Sara Thomas (47)
Sandra Percell (47)

Dennis Schneider (46)
Todd Aikins (46)
Cristi Korbeck (44)
Joseph Froelich (44)
Walter Briney (43)
Peter Rennemann (43)
Sanford Robbins M.D. (43)
Eric Riesch (42)
Lillian Kenney (41)
Steve Ganon (41)
Kathy Aguilar (41)
Robert Grist (39)
Mike Chambers (39)
Robert Burnett (39)
Patricia Chandler (38)
Emma Hickerson (38)
Shawn Edwards (38)
William Horn (38)
Ann Outlaw (38)
Joe Meyer IV (38)
Denny Lutz (37)
Donna Gerrard (37)
John Kelly (37)
James Vaughn (37)
Michele Vaughn (37)
Linda Meyer (37)
Mark Springer (36)
Ed Gerard (36)
Wade Bevier (36)
Robert Draper (36)
Wes Nicholson (36)
Kathleen Gunderson (35)
Jo Ann Nucifora (35)
Muns Farestad (34)
Lynn Hubert (34)
Kandie Vactor (34)
Jeana Hodges (34)
Brett Sussman (33)
Gibran Tuxpan (33)
Joseph Thomas (32)
Melissa Keyes (32)
Kevin Buch (32)
Eddie Gerrard (32)
Jill A. Mashburn (32)
Jose Kirchner (31)
Robert Schauer (31)
Karel Cantelar Ramos (31)
Arnold Walker (31)
John Stuart (31)
Steve Boutelle (30)
Kevin Henke (30)
Tim Gurney (30)
Mark Bailey (30)
Tony Ramirez (30)
Beth Bruton (30)
Jesse Meyer (30)
Gijs Van Hoorn (30)
Katia Pronzati (30)
Melody Hamilton (30)
Gary Lenning (29)
Ronald Moss (29)
Mark Messersmith (29)
Van Duncan (29)
Cathy Springer (28)

Bob Bonanno (28)
Edward Sullivan (28)
Denny Howley (28)
Stephen J Vinitzky (28)
Sascha Steiner (28)
Barbara Kirchner (28)
Patricia Pachuta (28)
Roxanne Chavanne (27)
Cassandra Warn (27)
Kathy Bonanno (27)
Keith Phillips (27)
Gustavo Vazquez (27)
Christy Sims (27)
Bryan Nichols (27)
Pete Wyman (26)
Blair Bertaccini (26)
Rebekah Moore (26)
Claudia Campos (26)
Matthew S. Kendall (26)
Leda Cunningham (26)
Jeffrey Nehms (26)
Belal Hansrod (26)
Lisa Canty (26)
Mark Mcalpin (26)
Lana Smithson (26)
John Lane (26)
Jessica Lorek (25)
Sharon Stockholm (25)
Roger Stockholm (25)
Susan Siegel (25)
Kathleen Wean (25)
Kristi Klomp (25)
Roger Wiandt (25)
Matt Hoelscher (25)
Randy Holley (25)
Dillon Harder (25)

PACIFIC

Over 100

Rachid Feretti (141)

Over 50

John Williams (86)
Kirby Johnson (60)

Over 25

Matthew Dowell (36)
John Wolfe (29)
Sarah Tamblyn (29)
Kurt Steinbach (28)
Christy Semmens (25)

TEP

(Tropical Eastern Pacific)

Over 25

Richard Baker (45)
Kandie Vactor (38)



Glover's Reef, Belize Field Survey Participants - Capt. Pete, Doug Harder, George Owens, Ralph Dickerson, Cathy Coughlin, Susan Cable, Diana Reischel, Norris Boone, Bob Grist, and Christy Semmens.

Reminder: please fill out surveys in pencil only and erase thoroughly

THANK YOU

BRONZE SUSTAINERS

(\$100 or more)

NANCY ABEL
BARBARA ABELES
DANA AFRICA
MARY ALEXANDER
ROGER ANDERSON
ROBERT ANTONELLI
BRUCE ASMUSSEN
KEN BAILEY
BARRY BAIN
MARY LYNN BALLANTINE
DAVID BARR
BARBARA BAUCOM
MICHEL BAUMEISTER
CHRIS BEAMER
DOUG BECKER
IRA BELL
RUSS BERGER
DENNIS BERNIER
PAUL BILODEAU
BOB BISHOP
DAVID BISHOP
KENT BLUMBERG
MARK BOARDMAN
MARK BOEHM
NORRIS BOONE
ALLEN BOORSTEIN
CHRISTIN BOYD
EDWIN BOYNTON
MARGARET BRADLEY
PHILLIP BRADLEY
CHRIS & MARLA BRANAS
BECKY BRENNER
WENDY BRODY
ANN BROOKE
BETH BRUTON
MICHAEL BRYANT
DON BUCK
STEVEN BUNN
JOHN BURDAKIN
W.D. BURROWS
ANGUS CAMPBELL
KAREN CAMPBELL
LYNN CAREY
WAYNE CAWTHORN
BEV CHADWELL
MIKE CHAMBERS
STEPHEN CHANDLER
ALBERT L. CHAPIN
PARK CHAPMAN
ANDREW CHESSON
DOUGLAS O. CHINN
RICHARD CHINN
CHRIS CLARK
WILLIAM S. CLINE
ROBERT COAKLEY
JEFFREY CONE
FRED CORN
COY CORRELL
JOSEPH COULTER III
BOBBY CRAVEN
WILLIAM CRAWFORD
JONATHAN CREIGHTON
BRUCE CUNNINGHAM
MICHAEL DALEIDEN
SUSAN DASHER
DAWN DAVIS
KENNETH J. DAVIS
BRUCE DICKSON
CHARLES S. DIEDERICH
ROBERT DONALDSON
MONTY DOYLE
PIETER DYKEMA
BARBARA EATON
DONN ELLERBROCK
NEIL ERICSSON
NAOMI ESMON
DENA EVANS
DON EVANS
KEVIN FAGER
MARTIN FARBER

LIZ FINLAY
MIKE FINLAY
GARY FINN
JAMES L. FOGHT
CHARLES FRIERSON
DR. JULIAN FUERST
MICHAEL GAGLIANO
DR. BARRY GALISON
KAREN GARCIA
LYDIA GARVEY
DARLENE GEHRINGER
FRED GENTRY
ROBERT GERZOFF
ANNE C. GIBSON
LARRY A. GILBERT
BOB GILLMAN
DR. STEPHEN GITTINGS
BARBARA GOLDSTEIN
WILLIAM GOODALL
PATRICE GOUEVEIA
ASTOR GREEN
DON E. GREGORY
JONATHAN GROSS
THOMAS GRUBBS
DAVE HAGEMEIER
CORINNE HALBERG
SEYMOUR HALBERG
DON HALL
MICHAEL HANEY
L.G. HANLEY
GARY HARTSTEIN
DAVE HAUPT
C. KEITH HAYDEN
GORDON HENDRICKSON
CALVIN HILL
KEITH HILL
MARTA HILTON
BRENDA HITT
DIANE HOFBAUER DAVIDSON
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