



News from the Reef Check Global Network

International Declaration of Reef Rights

All coral reefs have the right to be free from:

- Over-fishing and destructive fishing
- Pollution
- Human caused coral bleaching and ocean acidification
- Direct damage from divers, snorkelers and boaters
- Damage due to poorly planned coastal development
- Coral diseases

In recognition of these rights, I pledge to:

- Ask if my seafood is sustainably caught and to only eat fish and shellfish that are from well-managed stocks and caught in a sustainable manner
- Use products that will not pollute the sea and dispose of all wastes properly
- Reduce greenhouse gas emissions and support efforts to reduce global climate change
- Not disturb, damage or collect corals and other reef organisms
- Ask tour operators, cruise lines, hotels and restaurants in coral reef areas what their policy is towards coral reef protection and to support reef-friendly businesses and best practices
- Patronize tour operators that use mooring buoys or anchor away from living corals
- Support environmentally friendly development that does not damage coral reefs.
- Support government efforts to improve sewage treatment, promote sustainable land use practices and to protect and restore coastal open space and coral reefs.
- Encourage my friends and family to sign this INTERNATIONAL DECLARATION OF REEF RIGHTS

As a citizen of planet earth, I pledge to abide by the principles of this INTERNATIONAL DECLARATION OF REEF RIGHTS

www.reefcheck.org

Volume 7, Issue 1

Spring/Summer 2007

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**Reef Check dedicates
this issue to
Chris Haugen
see page 2**

In March, Reef Check unveiled the International Declaration of Reef Rights, a tool to promote action to save the world's ravaged coral reefs in conjunction with the International Year of the Reef in 2008. With a goal of one million signatures, the Declaration will be presented to the Heads of State of all 101 countries with coral reefs in early 2009.

The Declaration asks signers to pledge to take practical action to stop human impacts on coral reefs, such as choosing seafood that is caught in a sustainable manner and supporting reef-friendly hotels and tourism operations.

"On a global scale we are winning some key battles but losing the war to save coral reefs," said Gregor Hodgson, Reef Check Executive Director. "Many of the reefs I enjoyed 30 years ago have lost their living corals and are now sponge and algae reefs. The good news is that in cases where we stop abusing the reefs, they can recover naturally."

Reversing the coral reef crisis is technically simple, but requires a large number of people worldwide to raise their voices and take personal action in united support of this mega-biodiversity ecosystem. Reef Check invites everyone to sign the International Declaration of Reef Rights, both to convince governments and international agencies that the citizens of planet earth care about the world's coral reefs and to give voice to our pledge to better protect this invaluable legacy for our children and for generations of ocean lovers to come. The Declaration of Reef Rights may be signed by visiting: www.reefcheck.org/petition/petition.php. The Declaration is off to a great start with over 2600 supporters from over 100 countries. The Declaration is also available in Chinese, German, French, Spanish, Japanese, Malay, and Swahili. In addition to signing, please pass the link on to friends, family and colleagues who might be interested in doing the same.

California Corner

By Reef Check California Director, Dr. Craig Shuman

This has been a great year so far for both the Reef Check California Program and for California's coastal resources. Early in the year, ruling on an issue that is close to my heart, the Second Circuit U.S. Court of Appeals stated that the Environmental Protection Agency cannot allow power plants to kill trillions of fish and larvae each year by sucking them through their cooling water intakes. Withdrawing billions of gallons of water from our coastal waters for cooling, these intakes can have devastating impacts on local populations of marine organisms. Hopefully this decision will be the beginning of the end of once-through cooling and help push our society to generate electricity through environmentally friendly means. In February, the California Ocean Protection Council adopted a resolution to reduce and prevent marine debris'. Led by new Council member Lieutenant Governor John Garamendi, the Council adopted a series of far reaching goals that will significantly reduce the amount of trash, especially plastic, in California's waters.

In April, the California Fish and Game Commission approved a new and expanded network of Marine Protected Areas (MPAs) along California's central coast². The new network includes 29 MPAs representing approximately 204 square miles (or approximately 18 percent) of state waters with 85 square miles designated as no-take state marine reserves along the Central Coast from Pigeon Point in San Mateo County to Point Conception in Santa Barbara County. Reef Check California survey sites in this region were designated with this proposed network in mind and are going to be an



Central California
Volunteer Coordinator
Kristy Finstad

integral part of the long-term evaluation of these new MPAs. In addition, RCCA surveys in northern and southern California will provide critically needed baseline data to help assist this MPA designation process when it expands throughout the entire State.

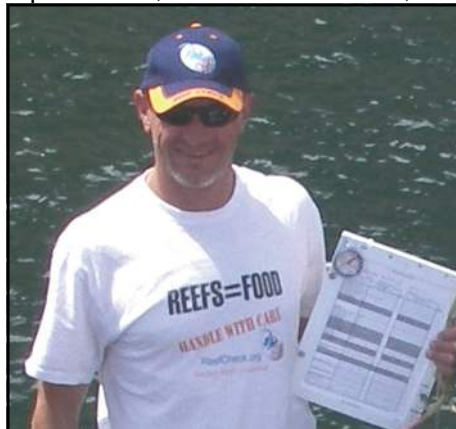
On the program side, it gives me great pleasure to announce that we have signed a Memorandum of Understanding (MOU) with the California Department of Fish and Game. This MOU formalizes the relationship between Reef Check and the Department and specifically recognizes the scientific rigor and importance of data collected by Reef Check California trained divers. Please visit our website to view the full MOU. We have also obtained funding to support the expansion of our program into southern California. Not only will this funding allow us to hire a southern California Program Manager to complement Cyndi Dawson's efforts on the central coast, but it will also enable us to begin working on our web-based interactive database to help disseminate our findings. Speaking of the web, we have updated our website with a suite of new tools to help you, our Reef Check members and divers, stay connected. Please sign up for our forum and photo gallery so you can contribute your stories and photos and plan surveys with your Reef Check family. Last but very certainly not least, I would like to welcome Kristina Finstad as our newest Reef Check California staff member. A very experienced research diver and dive instructor, Kristy will help coordinate our research and training efforts on California's central and north coasts.

1 http://resources.ca.gov/copc/02-08-07_meeting/Adopted_Marine_Debris_Res_0207.pdf
2 <http://www.dfg.ca.gov/MRD/mlpa/ccmpas.html#menuHd>

Reef Check California Loses the Perfect Volunteer

Christopher Haugen

September 26, 1959 ~ November 11, 2006



Chris proudly displaying his Reef Check gear during training at Santa Cruz Island, April '06

Reef Check California volunteer Christopher Haugen was lost in a sailing mishap on Nov. 11, 2006. A former commercial diver with extensive experience on and in the water, Chris was exactly the type of person the Reef Check California Program was designed for. Chris' extensive knowledge of the marine environment and passion for conservation led him, along with partner Dida Kutz, to complete the first Reef Check California volunteer survey on the central coast at Lucas Pt. in Monterey Bay. Geared up with their custom data slates and small Boston Whaler, Chris and Dida were an inspiration to Reef Check volunteers across the state and around the world. Finding a way to give back to the ocean he cared so much about by joining Reef Check, Chris was rarely seen without his Reef Check hat and trademark smile. Chris' love of adventure, tremendous sense of humor, and extensive knowledge will be deeply missed by his Reef Check family.



Chris taking a break from the rigors of diving during an abalone survey at San Miguel Island, August '06

Reef Check Champion: Ben Goldhirsh



In January, the Reef Check Foundation had the pleasure of acknowledging Ben Goldhirsh for his generous philanthropic support of our organization and its work to save the reefs of the world. The Goldhirsh Foundation made a \$50,000 contribution to Reef Check in support of securing additional administrative staff to further the work of our organization.

Ben Goldhirsh is the owner and founder of Reason Industries which owns and operates GOOD magazine and Reason Pictures. Established in 2004, Reason Pictures is a production company committed to developing and financ-

ing projects that combine commercial entertainment with relevant content. GOOD is a bi-monthly publication profiling and examining the people, ideas, and institutions affecting change in the world.

Ben Goldhirsh is also active in both regional and international philanthropic endeavors. As a director of The Goldhirsh Foundation, he supports dynamic social programs, environmental initiatives, innovative medical research, and leading cultural institutions.

Reef Check is grateful to Ben and The Goldhirsh Foundation for this important leadership contribution, which we hope will inspire other individuals, corporations and foundations to invest in strengthening the Reef Check Foundation worldwide.

Reef Check News

EcoAction Program Update *by Reef Check Program Manager, Cori Kane*

Reef Check's new EcoAction program is well on its way with over 140 certified trainers worldwide. In less than six months, Reef Check training teams have certified dive-masters, instructors and scientists in more than 10 countries, including Mexico, Belize, Dominican Republic, Guatemala, Philippines, Indonesia, Germany, Thailand, Malaysia, and Australia. Certified trainers are starting to offer the Discover Reef Check and EcoDiver courses through their own dive shops in various countries.

We've also had our first workshop in the US for divemasters and instructors to learn the new Reef Check training methods, allowing them to offer these courses on expeditions to coral reefs around the world. Please check the EcoAction page (<http://www.reefcheck.org/involved/ecoaction.php>) on our website to see all associated dive centers currently offering the Reef Check training courses and materials, and go take an EcoAction course on your next diving vacation! If you do not see a Reef Check facility in your region, ask your local dive shops to become a Certified Reef Check Facility.



Participants of Reef Check Malaysia's 1st Instructor Training Course, Tioman Island, February 27th—March 1st 2007

We are also happy to announce that the Caribbean Underwater Reef Guides are hot off the press and will be available for sale shortly in Spanish and English. Take one underwater on your next dive to help identify common fish, invertebrate and substrate types. It also includes a data slate and pencil, so you can collect valuable species data and submit for inclusion via the website to our global monitoring database. Each time you conduct a survey, you will learn a great deal about each coral reef and assist in conservation processes to help ensure your favorite reefs are still around for future generations. Check out the SeaStore on our website to order your copy today.

For US based divemasters and instructors, we are holding one more instructor training session this year in Long Beach, CA. Check the training of trainers calendar on the website homepage for current dates or contact ckane@reefcheck.org for information and to reserve your spot. Spaces are limited, so sign up early! You can find all our Training of Trainers dates on the TOT calendar on our homepage; check back often for new dates.

Pasadena's Vertical Wine Bistro Hosts Reef Inhabitants Preview



RC Board Member Russ Lesser presents Tara Roth McConaghy with artwork from Balinese children
Photo: Helen Cherry

On January 30, 2007, Reef Check supporters were treated to a special sneak preview show of Reef Inhabitants at Gale Anne Hurd's Vertical Wine Bistro in Pasadena, California. Paolo Santos, cellist Marc Langis and a select group of dancers from the Celine Dion Show in Las Vegas previewed their unique dance and multimedia show which will be an integral part of the Reef Check International Ocean Festival in Malibu on September 15th.

Gale Anne Hurd and Tara Roth McConaghy, on behalf of Reason Pictures and Good Magazine founder Ben Goldhirsh (see Reef Check Champion) were presented with artwork from Balinese children for their support of Reef Check and its efforts. The event was attended by a number of Reef Check Foundation's Board members and new friends who all enjoyed the wine, food and hospitality of Vertical Wine Bistro. Two beautiful pearl necklaces from Tahiti Pearl Market and Maui Divers Jewelry were also auctioned off. Thanks to all who attended and helped raise funds for Reef Check.



Jennifer Pietro, Kelly Hu, Gregor Hodgson, Gale Anne Hurd, Daryl Hannah, and Penelope Ann Miller *Photo: Helen Cherry*

A "Run For The Reefs" Weekend in Honolulu



Kelly Hu during the marathon
Photo: Paolo Santos

On December 10, 2006, film and television star Kelly Hu made a "Run for the Reefs", collecting sponsorships for Reef Check Hawai'i for her run in the 34th annual Honolulu Marathon. With coaching from Olympian Carl Lewis, Kelly finished the marathon in 04:56:19, placing 381st in her age division— an excellent result for a first timer!

After the marathon, Kelly Hu and Carl Lewis hosted a celebrity luau fundraiser sponsored by Vonage for Reef Check Hawai'i at the Sheraton Waikiki. Attendees included celebrities from Hawaii, Hollywood and Japan: Daniel Dae Kim, Jason Scott Lee, Jonathan Silverman, Lance Bass, Reichen Lehmkuh, Victoria Pratt and Mimi Rogers.

In all, the Run for the Reefs weekend raised over \$100,000 for Reef Check Hawai'i. These funds are being used to hire the first Reef Check Hawai'i coordinator. Mahalo to everyone who participated and supported this event!



Chris Harrison, Victoria Pratt, & Carl Lewis enjoy the luau
Photo: Twain Newhart

Reef Check Teams in Action

Reef Conservation International Looks Back On A Successful Year in Belize

By April Ridlon and Bryan Bugler

Reef CI is a private, non-profit organization which is in its fourth year of partnership with Reef Check. In 2006, Reef CI conducted Reef Check surveys at four sites within the Sapodilla Cayes Marine Reserve in Belize. In addition to assessing the overall health of the barrier reef, commercially important fish species and potential water quality impacts are also of special interest to Reef CI. These factors are also monitored so the data is as useful to the local management of the SCMR as possible.

The reefs at Reef CI's four survey sites are characterized by rock/algae, hard coral, and sand substrate in that order. The two least frequent substrates recorded at most sites were silt and nutrient indicator algae. The near absence of both of these substrate types at nearly all sites is an indication of good health for these reefs. One trend from the Reef Check substrate data shows that sites further from the continental shelf had a higher frequency of hard coral, possibly indicating higher negative impacts or environmental conditions that affect coral tolerance limits in areas of close proximity to the wall. This could be influenced by fresh water effluent from Honduras and Guatemala, although it would not account for the same fresh water effluent from mainland Belize itself. Water quality testing planned for the 2007 monitoring year may provide more in-depth analysis of water quality trends within the cayes and their possible effects on the reefs in these areas.

In comparison to other reef systems, the Sapodilla Cayes have a relatively high abundance of gorgonians. At all sites, gorgonian species were by far the most abundant invertebrate recorded in 2006, numbering in the hundreds at each site. Banded Coral Shrimp, Long-spined Black Sea Urchin, and Flamingo Tongue, in that order, had the highest abundances for invertebrates beside gorgonians. The fact that the aquarium and curio trades are virtually non-existent in the park probably plays a significant role in the relatively high abundance of these species.

At half of our sites, all fish families recorded by Reef Check were present during at least one survey, showing a relatively high biodiversity for all sites in the Sapodilla Cayes. The family of fish with the highest abundance for all sites was Parrotfish, followed by Grunts and Butterflyfish, with the family with the lowest abundance being Grouper. In fact, zero Grouper other than Nassau Grouper were found at all sites in 2006, and no Grouper species at all, including Nassau, were recorded at one site. Despite these results, Reef CI divers regularly see many species of grouper including Tiger, Black and Nassau Grouper as well as Red Hind and Rock Hind; several of these sites are known spawning aggregations for these species. However, these species are typically seen at depths greater than 20 meters, and often on wall sites. To resolve this, in addition to regular Reef Check fish surveys, Reef CI has begun a new survey technique specifically aimed at recording population numbers for grouper and other commercially important species. If you are interested in getting involved with Reef CI, please visit www.reefci.com for more information.

Coral Restoration In Old Providence Atoll After Hurricane Beta

By Giovanna Peñaloza, Nicasio Howard, Harvey Robinson, Andres Talero, Renato Robinson, Mike Sanders, Martha Prada, Fanny Howard, Delis Hernandez & Elizabeth Taylor

Old Providence atoll is part of the San Andres Archipelago, located 480 miles northwest of the Caribbean coast of Colombia, and constitutes the central section of the Seaflower Marine Protected Area (MPA), one of the largest MPAs in the Americas at over 65,000 km². This elongated atoll covers an area of 255 km² and has well developed reef habitats, including an extensive barrier reef and high coral cover and species richness at coral patches.

Unfortunately, high water temperatures in 2005 resulted in coral bleaching and coral diseases such as white plague, particularly at the coral patches. The stressed corals in Old Providence also suffered additional damage due to Hurricane Beta, which crossed its northern end on October 27-28, 2005. Beta was a category one hurricane with 110 km/hour (70 mph) sustained winds. After the hurricane, Reef Check coordinator Giovanna Peñaloza participated in a rapid evaluation of the corals and found that the two Reef Check survey sites had little damage, while the corals to the north suffered more damage. Approximately 20% of the coral colonies at lagoonal coral patches, in the first 5 m of depth, were dislodged, fractured and subjected to erosion and up-side down positioning.

CORALINA, the MPA manager, with the support of the Ministry of Environment, contracted trained personnel as well as recreational divers and artisanal fishermen to conduct a rapid assessment on the coral damage and to perform coral restoration. A total of 186 coral colonies of sizes ranging from 15 to 65 cm in diameter were re-attached and have been monitored every two months. Results have been used in several education activities conducted by CORALINA. To the right are pictures of one coral colony showing coral recovery after coral restoration actions. Please contact Giovanna Peñaloza (giovannapen@gmail.com) for more information.



Photo: Reef CI



Photo: Reef CI



February 2006



June 2006

Reef Check Dominican Republic Receives 2006 CEMEX Environmental Award

Reef Check Dominican Republic was recently awarded the 2006 CEMEX Environmental Award for its dedicated work towards environmental conservation. CEMEX is a global cement industry leader which works to provide products of consistently high quality and reliable service to customers and communities around the world promoting a sustainable future. The award consists of US\$5,000 in cash and 50 "Conservacion Transfronteriza" books which can be sold to produce a similar amount in profits for a total of US\$10,000. RCDR will use these funds to support the national coral reef monitoring program and to promote the establishment of no-take zones.

Reef Check Réunion Teams Up With the Quiksilver Initiative

by Jean-Pascal Quod



Local Reef Check Réunion team with Tom Curran

After participating in the Quiksilver Crossing with Kelly Slater, Jack Johnson, and other professional surfers at the remote island of Europa in 2002, marine scientists from ARVAM-Réunion started a participatory project with local surfers from Saint Leu, Hermitage, and Etang Salé as part of the Quiksilver Initiative in Réunion, a French island in the Indian Ocean.

The Quiksilver Initiative aims to raise environmental awareness among boardriders about environmental issues that directly affect them, such as polluted water and the destruction of fragile reef systems. In addition to Reef Check Réunion, the Quiksilver Initiative has supported organizations like Surfrider Foundation Europe and Surfers Against Sewage.

Réunion coral reefs have been facing natural and human threats for two decades and need urgent management actions to save corals. Reef Check surveys have been conducted with local boardriders on surf spots for the last four years and will continue in 2007 with the involvement of other target stakeholders such as schools and dive clubs. Reef Check coordinator Jean-Pascal Quod has requested that bacterial levels also be surveyed at 10 coral reef locations. This can now be done with gear provided by the Quiksilver Initiative and will contribute to the local Blue Flag (www.blueflag.com) certification process.

After 4 years of monitoring the surf spots, results show that there is no significant variation in benthic communities and that fish populations, especially carnivorous fish, at the 3 sites are poor and correlated to overfishing. The formation of a Marine Natural Reserve is not finalized, so there are no restrictions on fishing. ARVAM is also involved in providing the CoReMo (Coral Reef Monitoring) database entry and analysis system which will include the Reef Check protocols for fixed benthos, fish and invertebrate targets. This database should ensure interoperability between various monitoring activities as well as various skill levels. Please contact Jean-Pascal Quod (jpascal.quod@arvam.com) or Harold Cambert (Harold.cambert@arvam.com) for more information.

Coral Cay Conservation Continues Its Partnership With Reef Check

By Jan-Willem van Bochove

Coral Cay Conservation (CCC) is a UK-based non-profit organization at the cutting edge of community-based marine and tropical conservation, dedicated to providing resources to help sustain livelihoods and alleviate poverty through the protection, restoration and sustainable use of coral reefs and tropical forests. CCC is proud to be a regular contributor to the Reef Check global reef health monitoring program. CCC volunteers from around the world are trained to conduct Reef Check surveys in some of the most pristine and healthy reef environments found in the Indo-Pacific and has recently completed over 30 surveys in the Philippines where over 80% live hard coral cover, more than two thirds of the Indo-Pacific's hard coral species and some of the highest fish diversity can be found on the fringing reefs of Sogod Bay, Southern Leyte. Unfortunately, the coastal area is under threat from overfishing and sedimentation effects from upland deforestation. This is why CCC spends considerable time working with the local community, organizing workshops for fishermen and teachers, housing open days for children at the expedition site and replanting mangrove forests. CCC has also been pivotal in the establishment of four marine protected areas in the municipality of Padre Burgos.



Coral Cay has recently started an exciting new project, the Tobago Coastal Ecosystem Mapping Project, in Tobago, working closely with the Tobago House of Assembly and the Buccoo Reef Trust as part of the 'Caribbean-wide Integrated Watershed and Coastal Area Management project' (IWCAM) that sees 13 Caribbean island countries all committed towards managing their aquatic resources and ecosystems on a sustainable basis. Following the Caribbean-wide coral bleaching event which affected the coral reefs of Tobago in late 2005, CCC provided technical assistance, resources and manpower to undertake a survey of the extent of this event on the coral reefs of Tobago. As part of this partnership, which has also received financial support from the United Nations Development Programme (UNDP), Coral Cay will be monitoring the recovery and assess the general state of Tobago's coral reefs, thereby contributing to our understanding of the underlying processes that are threatening the local reef ecosystem.

The project, which starts in April 2007 for a period of two years, also includes a large education and community awareness program that includes training in scuba diving and reef species identification for local counterparts to create in-country technical capacity.

If you want to step in and help conserve and protect the reefs of Tobago or the Philippines, please check out www.coralcay.org or e-mail info@coralcay.org to find out how you can join one of the CCC expeditions.

Kosrae Village Ecolodge Celebrates 10 Years of Reef Conservation

By Katrina Adams



Photo: Kosrae Village

Kosrae Village Ecolodge recently marked their 10-Year anniversary as the recipients of the 2006 AWARE Foundation Environmental Achievement Award. Other 2006 highlights included a two-week coral monitoring survey session, the formation of the Kosrae Reef Protection Community Action Committee and the restoration of the mooring buoy system, all characteristic activities of the 10-year campaign to preserve and protect Kosrae's critical coastal resources.

Although the 2006 activities are significant in themselves, the positive changes that have occurred on Kosrae over the past 10 years as a result of the Reef Protection Project are truly impressive. Kosrae Village was founded with conservation and environmental issues in mind and opened for business in September 1995. The formal Reef Protection Project got its start in 1996. That fall the first of the annual groups of volunteer divers joined Kosrae Village owners and staff in the very first coral monitoring session utilizing sport divers on Kosrae's pristine reef.

Continued from Page 5

Kosrae Village was instrumental in the 1997 mooring buoy system installation, which placed 56 buoys on 43 miles of reef. This community project brought together fishermen, Kosrae State staff and dive operators to plan the installation, raise funds, acquire the equipment and install the buoys. In 1998, the Kosrae Conservation and Safety Organization was founded as an NGO focusing on marine and terrestrial environmental protection and conservation.

Coral monitoring has continued to be the cornerstone of the Reef Protection Project; every year since 1996 Kosrae Village has recruited a group of volunteer divers to join local divers in surveying the current state of the reef. Over the years this continuing effort has created a profound change on the island. In 1996, coral monitoring and reef conservation and protection as a whole were seen as activities that had little or no meaning for the Kosraean community. That attitude has changed over the years so that almost anyone on the street can now explain the value of the reef resources and the importance of using the resources in a sustainable manner. As PADI instructors, owners Bruce and Katrina have been responsible for most of the dive training on Kosrae Island. Additionally, a strong environmental message is incorporated in their scuba training as the Kosrae Island Reef Check coordinator Katrina has trained many local and visiting divers in the Reef Check survey techniques.

Most recently, after feeling the need to more directly involve the community in reef protection activities, Kosrae Village organized the "Kosrae Reef Protection Community Action Committee" with an overwhelming response from environmentalists, dive operators, resource managers, State legislators, community leaders and fishermen. If you would like more information about the Reef Protection Project and how you can get involved, please contact Katrina at kosraevillage@mail.fm

Reef Check Dives Into the Marine Ornamental Industry Using the Marine Ornamental Trade to create Marine Protected Areas

By Reef Check Executive Director Gregor Hodgson



Ornamental fisher using the barrier method of catching fish in Marcilla, Coron, Calamianes, Philippines *Photo: Pepo Pasigna*

Home aquaria have come a long way in the past 10 years and hobbyists from Tokyo to Los Angeles can now reliably keep hundreds of fish, corals and other invertebrates for many years. Some 80% of the organisms traded in this \$300 million global industry are caught by poor fishermen in the Philippines and Indonesia and exported to the US, Europe and East Asia. Organisms are also collected in a dozen other countries in the Pacific and

Caribbean. Unfortunately, without proper management, this fishery can damage the coral reef ecosystem through overfishing, fishing unsuitable species that will quickly die in captivity and by use of poisons, especially cyanide, that can damage the surrounding reef.

For the past three years, Reef Check has been working with two partners to create and implement a certification program for the trade in aquarium species to make it sustainable. Community Conservation Investment Forum (cciforum.org) is working on making the business more efficient, while the Marine Aquarium Council (aquariumcouncil.org) has designed the certification program to cover the entire supply chain from collection to sale. This work has been supported primarily by grants from the International Finance Corporation through the Global Environment Facility, and by USAID, Packard and MacArthur Foundations.

The Reef Check 'niche' in a sustainable trade

Reef Check has developed a tool kit of scientific and management activities to help transform the marine ornamental industry into a sustainable trade. The four main components are resource assessment, management planning and rehabilitation and establishment of Marine Protected Areas.

Resource Assessment

The starting point for managing marine resources is to determine the extent of the existing resources – in this case the coral reef and related ecosystems as well as the numbers and sizes of the organisms living there. Reef Check

designed the Marine Aquarium Trade Coral Reef Monitoring protocol (MAQTRAC) to carry out baseline surveys and regular monitoring of collection areas. The results of the surveys are analyzed using fisheries stock assessment models to determine what level of catch can be allowed without damaging the populations or the ecosystem as a whole. These numbers are then used to recommend catch limits to the local council responsible for managing the resources.

While the detailed MAQTRAC surveys and stock analyses are carried out by Reef Check marine biologists, they also train local fishermen to carry out standard Reef Check surveys. By collecting their own data, the fishermen can see for themselves the status of the existing fish and invertebrate stocks and buy into the process of resources management.

Coastal Management Planning

For coastal management to succeed, it must be formally adopted by the local government and include a cross-section of stakeholders – the people affected by management decisions. Stakeholders include marine ornamental collectors, other coastal users, and staff from environmental groups, academic institutions, government agencies and businesses. Reef Check helps to set up a legally recognized council comprised of local stakeholders with clearly defined functions. Reef Check scientists and coastal planners work with the local stakeholders to identify management problems and to identify possible solutions.



Reef Check staff reviews monitoring protocol with fishermen on board a local boat, Bohol, Philippines

Reef Check helps the stakeholders to draft a resource management plan for the areas. The management plan is a comprehensive document that defines the area to be managed and establishes rules for managing the resources. Reef Check focuses not only on creating the management plan but also in assisting the local stakeholders to implement the plan. For example, if one area is being too heavily fished a recommendation might be made to reallocate fishing effort to other areas. If poachers are fishing in the area, a deterrent system would be recommended.

Marine Protected Areas

A major goal of the management plan is to identify areas of coral reef and surrounding ecosystem that can be set aside in perpetuity as no-fishing zones i.e. Marine Protected Areas (MPAs). The boundaries of the MPAs need to be selected, recorded and marked. A scheme for managing and enforcing the new MPA is required.

When properly managed and enforced, Marine Protected Areas lead to fish biomass build up, increased spawning capacity and fish catches, as well as



Reef fish larvae collected in special light traps are grown out in aquaria until they reach a size and swim speed that helps to increase their survival when released back onto the reef

income from activities such as tourism.

Unfortunately, few of the declared MPAs in Southeast Asia have been successful due to a lack of financial incentives to maintain them. By giving the reef more value, the marine aquarium trade provides leverage to set up and maintain MPAs next to the collection areas.

By the end of 2006, using this system, Reef Check helped to establish sustainable management systems at fourteen collection areas in seven provinces, in ten municipalities and districts encompassing 229 square kilometers of reef area in the Philippines and Indonesia. Seven MPAs with a total area of 2 square kilometers were strengthened in the provinces of Bohol and Palawan and these include sea-grass and coral reef ecosystems. To help evaluate the MPAs, Reef Check uses an MPA rating system (www.coast.ph) to check on the quality of the management (White et al, 2006).

Coral Reef Rehabilitation

In some cases, coral reefs have been damaged to such an extent that rehabilitation is required. When coral reefs are damaged on a small scale (tens of square meters), it may be possible to stop the cause of their initial demise (e.g. pollution, diver damage) and then physically replant

small corals and attaching them to the substrate. This method is expensive and labor intensive and does not address the typical problem of a lack of fish diversity and abundance. Usually, the area of damaged reefs is large, on the order of tens of square kilometers, therefore replanting is not practical. Reef Check has been working with a French company, Ecocean, to rehabilitate coral reefs by restoring fish populations to their natural equilibria. By restoring the fish populations, the corals will return naturally. This Reefhab© technique involves using special traps to capture fish post-larvae that arrive on the reefs at night to settle, and then growing them to a larger size. It is inexpensive to grow such small fish (0.5 to 1 cm long) and after 1 to 3 months they can be returned to the reef where they can have a higher chance of survival due to their increased swimming speed. This Reefhab method is being implemented in Bohol and holds promise of large-scale and rapid reef rehabilitation that will last.



Following a one-month grow out, Reef Check scientists and local fishermen prepare to release juvenile fish on to a coral reef in Bohol, Philippines to measure survival

Mark Your Calendars

2007 Clean Oceans Conference: June 9-10, 2007

On June 9th and 10th, Save Our Seas (of Kaua'i, Hawai'i) and Reef Check Foundation will cosponsor the "The 2007 Clean Oceans Conference", which will be held at the Princeville Resort in Kaua'i, Hawai'i.

1997 was the first International Year of the Reef, and was an awareness building year for the world's oceans and coral reefs. The 2007 Clean Oceans Conference support the International Coral Reef Initiative, NOAA and Reef Check Foundation in choosing 2008 as the International Year of the Reef.

This year marks the 10th anniversary of the first ever Reef Check in the world, which was completed in Kaua'i on the reef adjacent to the Princeville

Hotel. The Clean Oceans Conference will mark this anniversary by presenting scientific papers comprised of data secured through Reef Check coordinators throughout the world, and the opening presentation of the scientific session will be delivered by Reef Check's own Dr. Gregor Hodgson, who will address the topic "Finding Effective Solutions to Coral Reef Conservation." In that presentation, Dr. Hodgson will address current problems on the world's reefs, review where we have come over the last ten years, and propose various ways that we can save the world's reefs through research, education and conservation.

Should you wish to attend the event, please contact us at rcinfo@reefcheck.org

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Support Reef Check



Pacific Underwater Guide with Slate & Pencil
\$26.95 Quantity _____

Looking to make the most of your diving and snorkeling experience? Then take the Reef Check Underwater guide with you. More than just a standard fish ID sheet, the RC Underwater Field guide has photos and key facts on over 50 different reef species, allowing you to fully explore and understand life on the world's coral reefs. It's like taking a marine biologist with you on every dive. There is also a slate and pencil so you can record what you see and contribute valuable data on the health of the world's coral reefs. Order yours today. Your diving will never be the same.

Reef Check Adventures \$11.45 Quantity _____
This exciting and challenging activity book will bring kids 7-12 the dazzling and diverse world of coral reefs!



Reef Check Hats: \$16.50
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* Prices include shipping

A tax deductible gift of \$25 or more entitles you to all the benefits of a Reef Check Membership: The Transect Line, RC sticker, RC Annual Report, and Invitations to trainings & special events

Sign up for a \$50 membership & receive a free t-shirt or hat!

Name _____

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Credit Card No. _____ Check Enclosed _____ Exp. Date _____

\$25 \$50 \$75 \$100 \$250 \$500 \$ _____

Signature X _____

By signing here, I agree to the above charges being made to my credit card.

Detach & Mail to: Reef Check | P.O. Box 1057 | Pacific Palisades, CA 90272-1057 | USA | Tel 310-230-2371 | Fax 310-230-2376

Reef Check International Ocean Festival: September 15, 2007



Photo: Paolo Santos

Join Reef Check in beautiful Malibu for the Reef Check International Ocean Festival: A Day in Paradise. The daytime festivities will be free to the public and will feature educational games, demonstrations and performances from many nations, including Thailand, Indonesia and Brazil, and a special tribute to our own Eddy Medora. We will dedicate the Eddy Medora Memorial Reef, which will be monitored in perpetuity in his honor.

There will be lots of fun activities for families and children, and each child will receive a copy of our children's book, "Reef Check Adventures", and will be treated to a special movie screening of a Sony Pictures animated feature film, with the title to be announced in early summer.

The evening program will include a special VIP reception, silent auction, dinner and a performance of "Reef Inhabitants", a multi-media extravaganza of dance, music and multi-media art to raise awareness about the crisis affecting our oceans and coral reefs. The live show features performances by the Celine Dion danc-

ers and cellist Marc Langis, with musical score and video by Paolo Santos and choreography by Caroine Sicard. The **Poseidon Award** will be presented to internationally renowned marine biologist and current "explorer-in-residence" at National Geographic **Dr. Sylvia Earle**. **Dr. Earle** was named Time Magazine's first "hero for the planet", and has pioneered research on marine ecosystems through more than 50 expeditions totaling over 6000 hours underwater. The **Reef Rescue Award** will be awarded to Malibu's **Daryl Hannah**, and the new **California Reef Rescue Award** will be presented in memoriam to Eddy Medora and invited honoree **Jeff Bridges**, both for their contributions as custodians of the local California coastal environment. The evening will be capped with a concert on the beach, cosponsored by GOOD Magazine.

To reserve your place at the event or for information on how to sponsor a table, please contact Reef Check at (310) 230-2371 or reefrescue@reefcheck.org.

2008: International Year of the Reef

Ten years ago, 1997 was declared the International Year of the Reef (IYOR) in response to the increasing threats and loss of coral reefs and associated ecosystems, such as mangroves and sea grasses. IYOR was a global effort to increase awareness and understanding about coral reefs, and support related conservation, research and management efforts.

IYOR 97 proved to be very successful with over 225 organizations in 50 countries and territories participating, over 700 articles in papers and magazines generated, hundreds of scientific surveys undertaken, and gave rise to new marine protected areas as well as numerous local and global coral reef conservation dedicated organizations.

Recognizing that ten years later there continues to be an urgent need to increase awareness and understanding of coral reefs, and to further conserve and manage valuable coral reef and associated ecosystems, the International Coral Reef Initiative designated 2008 as the International Year of the Reef (IYOR 2008).

International Year of the Reef 2008 will:

- Strengthen awareness about the ecological, economic, social and cultural value of coral reefs and associated ecosystems
- Improve understanding of the critical threats to coral reefs and generate both practical and innovative solutions to reduce these threats
- Generate urgent action at all levels to develop and implement effective management strategies for conservation and sustainable use of these ecosystems.

Celebrate IYOR 2008 by planning a Reef Check activity: conduct a survey, join a Reef Check team, collect data using the Reef Check Indo-Pacific or Caribbean Underwater Guide, hold a Reef Check membership drive, or have people sign the International Declaration of Reef Rights. There are many ways you can get involved with Reef Check and show your support for coral reefs!

Please visit www.iyor.org for more information on IYOR 2008.



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