

CORAL CURRENT

The Newsletter of the Coral Reef Alliance

Staghorn Coral's Last Stand

In the shallow waters of Cordelia Banks, off the southwest coast of Roatan, Honduras, exists one of the largest remaining stands of endangered staghorn coral (*Acropora cervicornis*). This branching coral has historically been one of the most important reef-building Caribbean coral species, exhibiting the fastest growth of all known western Atlantic corals.

Since the 1980s, staghorn coral populations have collapsed throughout the Caribbean due to disease outbreaks, bleaching, and numerous other localized impacts. The healthy staghorn reef community at Cordelia Banks is a rare exception, but it faces increasing pressures as Roatan becomes more developed and continues to gain popularity as a premiere tourism destination.

The sensitive Cordelia Banks ecosystem is adjacent to the most developed coast of Roatan. It borders the nearby airport and is located between two cruise ship docks. One reason this coral oasis

remains healthy is that it is separated from the nearest land-based impacts by a deepwater channel that brings strong currents, helping to disperse harmful sediments. Yet its shallow waters make it vulnerable to increased ship traffic.

As one of the largest remaining staghorn coral communities, Cordelia Banks has been identified as a critical source of coral spawn that could potentially allow this endangered species to repopulate reef communities in the region. Staghorn coral is one of the most important Caribbean species because its complex branching provides valuable habitat for marine life. Cordelia Banks is also a sanctuary for important reef species like grouper, snapper, and the Caribbean reef shark.

Realizing the potential for significant ecosystem loss, CORAL has identified Cordelia Banks as a high-priority coral conservation area. Working closely with the Roatan Marine Park and local NGOs, CORAL is making significant progress in



Uniting Communities to Save Coral Reefs

The Coral Reef Alliance (CORAL) unites communities to save coral reefs. We help the people who live near reefs protect their fragile resources by supporting local conservation projects that benefit both reefs and communities.

raising awareness and support for this unique coral community. We are encouraging the adoption of a conservation management plan that outlines steps to eventually incorporate Cordelia Banks as a marine protected area.

In an effort to build momentum for protection in the local community, CORAL has organized educational tours to Cordelia Banks so that participants can see firsthand the value of this unique coral reef ecosystem and learn why protection is necessary.

Grazzia Matamoros, Executive Director of the Roatan Marine Park, has accompanied CORAL staff on several of these tours. "Cordelia is an amazing place, and by protecting this resource now, we are protecting potential banks of staghorn coral for the whole Caribbean," she said. She believes the situation at Cordelia is critical, and that the time to act is now.

An essential partner for ensuring conservation success in the region is the local government. With that in mind, CORAL's Reef Leadership Network recently provided scuba certification training to members of the Honduras Ministry of Tourism. As a result, government aides have had the opportunity to dive among Roatan's reefs and learn about the local marine life.

By establishing collaborative and meaningful relationships among local community members, NGOs, resource managers, government officials, and marine recreation providers, CORAL is building a strong case for the protection of Cordelia Banks. We will continue to move forward with conservation initiatives in the region so that the protection of this endangered reef ecosystem is fully realized.



Left: Staghorn coral colonies are antler-like with cylindrical, straight, or slightly curved branches

Right: Stakeholders prepare to explore Cordelia Banks
Photos by CORAL staff

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For comments, questions, or contributions to **CORAL Current**, please email us at communications@coral.org.



MESOAMERICA

MEXICO: CORAL's international field staff converged in Playa del Carmen, Mexico, for the second annual field staff summit. The week-long summit provided an important opportunity for staff to collaborate and strategize on ways to further advance CORAL's conservation programs while learning first-hand from the work that has been done in CORAL's Mexico project site.

- Since expanding our work to Playa del Carmen, CORAL has completed a total of four Sustainable Marine Recreation workshops and one Environmental Walk-Through assessment.

BELIZE: As part of CORAL's partnership with the National Coral Monitoring Network, local dive operators conducted coral bleaching surveys at Esmeralda and Tres Cocos—two popular dive sites located outside of the Hol Chan Marine Reserve.

- CORAL purchased water quality testing kits for Hol Chan's youth outreach program and plans are underway to teach reef conservation principles to local area school children.
- CRLN leaders have now equipped over twenty dive instructors with specialized spears for culling invasive lionfish.

HONDURAS: CORAL, along with its local partner the Roatan Marine Park (RMP), guided a group of NGO leaders on a trip to Cordelia Banks to raise awareness and secure support for CORAL's conservation interests and initiatives in the region.

- CORAL is training new volunteers to assist with Environmental Walk-Through assessments for companies operating in the Sandy Bay-West End Reserve.
- Working closely with the RMP, CORAL has expanded our Reef Leadership Network outreach efforts to conduct Sustainable Marine Recreation trainings with students at a local tourism trade school.

INDO-PACIFIC

FIJI: Twenty-two participants from the Kubulau Resource Management Committee attended CORAL's second Community Education Network workshop in Savusavu. Participants learned marine wildlife management skills and provided feedback on conservation actions now underway in their village communities. Since the previous training, village participants have conducted beach cleanups, relocated pig farms, and constructed new rubbish waste pits as effective conservation measures.

- CORAL and Partners in Community Development Fiji co-funded a fish handling and fish warden refresher course in Navatu.

INDONESIA: CORAL's Indonesia field manager, Naneng Setiasih, was promoted to Coral Triangle Regional Manager. Among her many new duties, Naneng will implement a global reef resilience to climate change management project as part of the grant awarded to CORAL by the U.S. Department of State's Bureau of Oceans, Environment, and Science (OES).

- CORAL is helping to pilot a new recycling program in Amed, which will work with local dive partners to establish waste management practices that benefit both the local marine ecosystem and local youth.

U.S. STATES AND TERRITORIES

HAWAII: A new reef etiquette sign was installed at Kahekili Beach Park in West Maui as part of CORAL's "Adopt a Sign" program.

- CORAL staff attended the Hawaii Conservation Conference on Oahu and assisted with a course entitled *Communicating Ocean Science to Informal Audiences* on Maui.
- CORAL coordinated local volunteer efforts within the Kahekili Herbivore Fisheries Management Area as part of the International Coastal Cleanup Day; over 140 volunteers from eight local hotels and condos participated.



Global Synthesis Illuminates MPA Impact

Coral reef scene in Raja Ampat, Indonesia
Photo by Jeff Yonover

Evidence for the effectiveness of marine protected areas (MPAs) is not hard to find, as many papers have shown benefits resulting from their establishment. However, it is much more difficult to draw generalizations from these numerous disparate studies. Are findings idiosyncratic, or do they represent trends? Are positive results due to MPA creation or other factors?

In order to make sense of the huge amount of isolated information that has been gathered over the past decade in this emerging field, scientists undertook what is known as a meta-analysis—a systematic review and statistical examination of a collection of related scientific studies. The findings, described in the paper *Biological effects within no-take marine reserves: a global synthesis*, show convincingly that no-take MPAs are an effective global conservation tool.

After synthesizing a rigorously chosen set of studies from 124 different marine reserves located in 29 countries, the study's central finding is that the average biomass, numerical density, species richness, and size of organisms increase significantly inside well-enforced reserves.

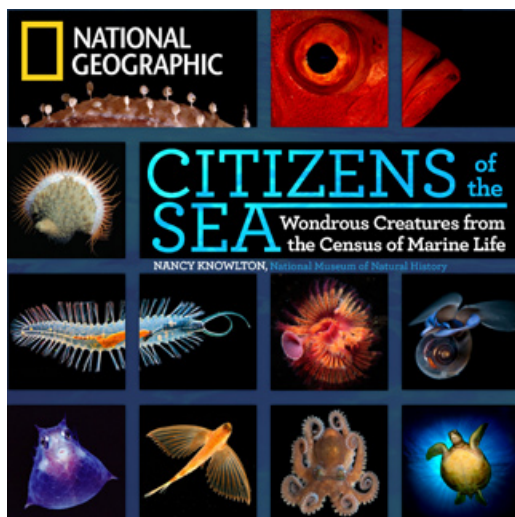
The new analysis also helps to dispel some lingering uncertainties about why these effects are recorded. By analyzing a subset of studies that report data from inside and outside reserve areas, both before and after the reserves were created, the synthesis refutes assertions that positive findings may be due to the placement of reserves in better locations or the displacement of fishing efforts.

This fall, the global synthesis served

as a foundation for discussion at the 2010 Kathryn Fuller Science for Nature Symposium, which drew top marine conservation researchers and practitioners from around the world—including CORAL's Rick MacPherson—for the topic *New Perspectives on MPA Performance: Linking Knowledge to Action*. The study helped establish a high degree of confidence in MPA performance that allowed conversation to move beyond a debate about MPAs themselves onto ways of effectively implementing them. On that front, the message was also clear: the world's most respected marine professionals see CORAL's community-based approach to creating effectively managed MPAs as the best way forward.

Citizens of the Sea

Wondrous Creatures from the Census of Marine Life



Book cover art courtesy of National Geographic

Did you know that there can be 350,000 bacteria in a single drop of ocean water? That there's a deep-sea worm that can release sacks of glowing green liquid from its neck to distract predators? That light sensitivity is spread across the entire body of a sea urchin, letting it function as one big compound eye?

This is just a small sample of the amazing facts you'll read about in *Citizens of the Sea*, a new book published by the National Geographic Society and written by world-renowned marine scientist and CORAL board member Dr. Nancy Knowlton. The book breaks new ground with details gathered from the recently-completed Census of Marine Life, a ten-year global initiative to study the diversity, distribution, and abundance of life in the ocean.

The book's gorgeous full-color, photo-filled pages bring together intriguing one-page stories and "fast fact" boxes that illustrate ecological concepts, scientific methods, and conservation messages. After wowing readers with the incredible adaptations that ocean creatures have developed, Dr. Knowlton reminds us that their value goes far beyond the wonder they inspire. For example, each species of cone snail—and there are about 700, many of which dwell on coral reefs—contains hundreds of potent chemicals that could hold cures for countless diseases and ailments.

Once you pick up *Citizens of the Sea*, you'll soon discover that it is not a book to be read alone. It is packed with facts and photographs that are so cool, so bizarre, and so downright amazing that you'll want to make sure you have some willing company to share them with.

CORAL's Second Annual Field Staff Summit

In early December, members of our international field staff and headquarters' team traveled to Playa del Carmen, Mexico, for CORAL's second annual field staff summit.

The coral-rich waters of the Riviera Maya provided an inspirational backdrop



CORAL field staff summit participants

in Playa del Carmen

Photo by CORAL staff

for a weeklong session of intensive workshops, trainings, and thoughtful discussions about ways to benchmark success, strengthen project site capacity levels based on our Coral Reef Sustainable Destination (CRSD) model, and identify innovative programs to further our conservation goals.

Staff also participated in a coral monitoring dive in the Cozumel Marine Park, where they met with the park's director and discussed MPA effectiveness with critical NGO partners in the region.

The successful summit energized CORAL's field staff and provided a clear roadmap for achieving future success in their respective project sites. We look forward to reporting on each site's ongoing accomplishments in 2011.

CORAL Partners with Expedia® to Promote Voluntary Standards

Earlier this year we reported that CORAL developed a conservation education partnership with the Keauhou Beach Resort in West Hawaii. As part of the alliance, the hotel agreed to place our environmental pledge—developed as part of the West Hawaii Voluntary Standards for Marine Tourism—in every guestroom of the hotel.

The response from guests has been nothing but positive, according to Paul Horner, General Manager of the Keauhou Beach Resort. He said travelers are eager and willing to learn how

they can have a positive impact on the environment.

We are excited to report that this collaboration has now extended to the Expedia® concierge service contracted by the hotel. Expedia® has made available to its customers a handout listing all of their participating companies who have signed on to the West Hawaii Voluntary Standards.

"We are happy to be a part of what CORAL is trying to accomplish—preservation through education," said Johnessa Labrador-Lindsey, Expedia® Concierge Manager. "Travelers nowadays are looking for more in a Hawaii experience; they want to feel that they are doing their part by considering the environment."

Guests can now feel more confident when choosing their marine recreation provider, knowing that the company has committed to adopt business practices that minimize impacts upon the reefs of West Hawaii. CORAL looks forward to expanding this partnership to other hotels and concierge services in the area.



Expedia® staff Patricia Higgins and Margaret Clebsch show off the environmental pledge.

Photo by CORAL staff

Smithsonian Community Reef Opens

To kick off the six-month CORAL-supported exhibition of the Institute For Figuring's Hyperbolic Crochet Coral Reef, CORAL and our partners sponsored a VIP sneak preview event at the Sant Ocean Hall in the Smithsonian's National Museum of Natural History in Washington, D.C.

Over 150 people enjoyed a first glimpse of the stunning exhibition. During the evening, CORAL's Rick MacPherson delivered an inspirational speech that tied the community-driven art project to the community-focused conservation work that CORAL is doing on the ground. It was clear by the end of the event that attendees were truly inspired by the beautiful artwork and the strong conservation message that went along with it.

Throughout the course of the exhibition, CORAL will continue to communicate the importance of coral reef conservation to museum visitors through creative reef education activities conducted by CORAL-trained docents on the exhibit floor.

Be sure to visit the National Museum of Natural History in D.C. before the exhibit ends on April 24, 2011. To learn more, visit www.coral.org/smithsonian_exhibition.



Members of the Smithsonian, Institute For Figuring, Quiksilver Foundation, Embassy of Australia, and CORAL in front of the Smithsonian Community Reef

Photo by CORAL staff

CORAL YOUTH SPOTLIGHT

Recognizing young emerging marine conservation leaders and celebrating their achievements



Top: Riva with a research submersible vessel at the Deep Ocean Exploration and Research facility
Bottom: Riva conducting research on queen conch shells in Belize
Photos courtesy of Riva Kahn Hallock

RIVA KAHN HALLOCK

It all started with a coffee table book, said Riva Kahn Hallock when asked how she initially became interested in coral reef conservation. It was her freshman year in high school, and her assignment was to write a paper about any topic she desired. Sitting in her living room, a colorful book with beautiful coral reef images caught her eye, and she decided to write her paper about coral reef ecology. She never imagined that a simple assignment would launch a new passion that would lead to several exciting adventures and unforeseen encounters.

As part of her research, Riva arranged an in-person interview with Dr. Steve Webster, co-founder of the Monterey Bay Aquarium, who spent time with her explaining the plight of the world's coral reefs. That next summer Riva found herself at the Apple store learning flash animation and building "Reefs First," a creative interactive website that she designed herself to share valuable information about coral reefs (www.reefsfirst.com).

Then, late one night while perusing the internet, she stumbled upon a TED (Technology Education Design) lecture given by world-renowned oceanographer and National Geographic Explorer-in-Residence Dr. Sylvia Earle. A week later, while Riva was at a coffee shop with her family, Dr. Earle walked through the café's entrance. Star struck, Riva mustered up the courage to speak to Dr. Earle and asked if she would be interested in speaking at her school. Dr. Earle graciously accepted, and later Riva became the first intern at her organization—the Sylvia Earle Alliance.

Following her newfound passion, Riva founded an ocean conservation club at her school, learned how to scuba dive, and began volunteering at CORAL and other like-minded organizations. She applied for her school's Global Service Grant, which helps fund students' education and service projects abroad, and won. The grant allowed her to join Earthwatch scientists on the Sapodilla Cayes Marine Reserve off the coast of Belize, where she was able to visit a real-life coral reef and help measure and tag queen conch shells as part of a data collection project.

Riva is now seventeen and a senior at Head-Royce School. She is applying for colleges at the moment, and plans to study ocean engineering. She hopes to one day design submersibles for ocean research.

MICHAEL ROSENFELD

At just ten years old, Michael Rosenfeld became a certified scuba diver. Inspired by the creatures and vibrant colors on coral reefs, he was motivated to capture this mysterious underwater world on film.

Following in his father's footsteps, Michael started shooting with low-level equipment when he was thirteen years old and eventually worked his way up to more sophisticated cameras. In his early teens, his family would vacation in the Caribbean, providing ample opportunity to dive, snorkel, and practice his photography skills. He quickly found that he had a knack for capturing underwater images.

Michael's favorite dive memory is from two summers ago when his family visited Papua New Guinea. Recalling his dives among some of the most beautiful and biologically diverse reefs on the planet, Michael described the Papua New Guinea reefs as stunning.

Michael enjoys entering his photographs into various contests. He is a frequent contributor to CORAL's *E-Current* photo contest, and has generously donated some of his shots for our publications. He was among the top ten finalists whose photos were under consideration for the Professional Association of Diving Instructors' (PADI) new dive card competition.

Michael is eighteen and a senior at Rye Country Day School. In addition to his interest in underwater photography, he is a member of his school's wrestling team and plays saxophone and drums in the school orchestra. He is currently applying to colleges and plans to pursue his interests in computer science, math, and art.



Michael photographing the reef in Sulawesi, Indonesia
Photo courtesy of Michael Rosenfeld



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CORAL CURRENT
The Newsletter of the Coral Reef Alliance

Help CORAL Keep the Magic of the Oceans Alive!



Coral reefs are truly magical places.

They are home to amazing animals that can change color in the blink of an eye and “see” using sound. They cover less than one percent of the ocean floor, but support twenty-five percent of all marine life. They provide food, income, and coastal protection for more than a billion people. And they might hold the cure for devastating diseases such as cancer and AIDS.

But there’s one thing they can’t do alone, and that’s fight against human threats.

They need us for their survival—they need you. So please make a special gift to CORAL to help us protect these magical places. Simply return the enclosed envelope with your donation or give online at www.coral.org/magic.

Thank you!