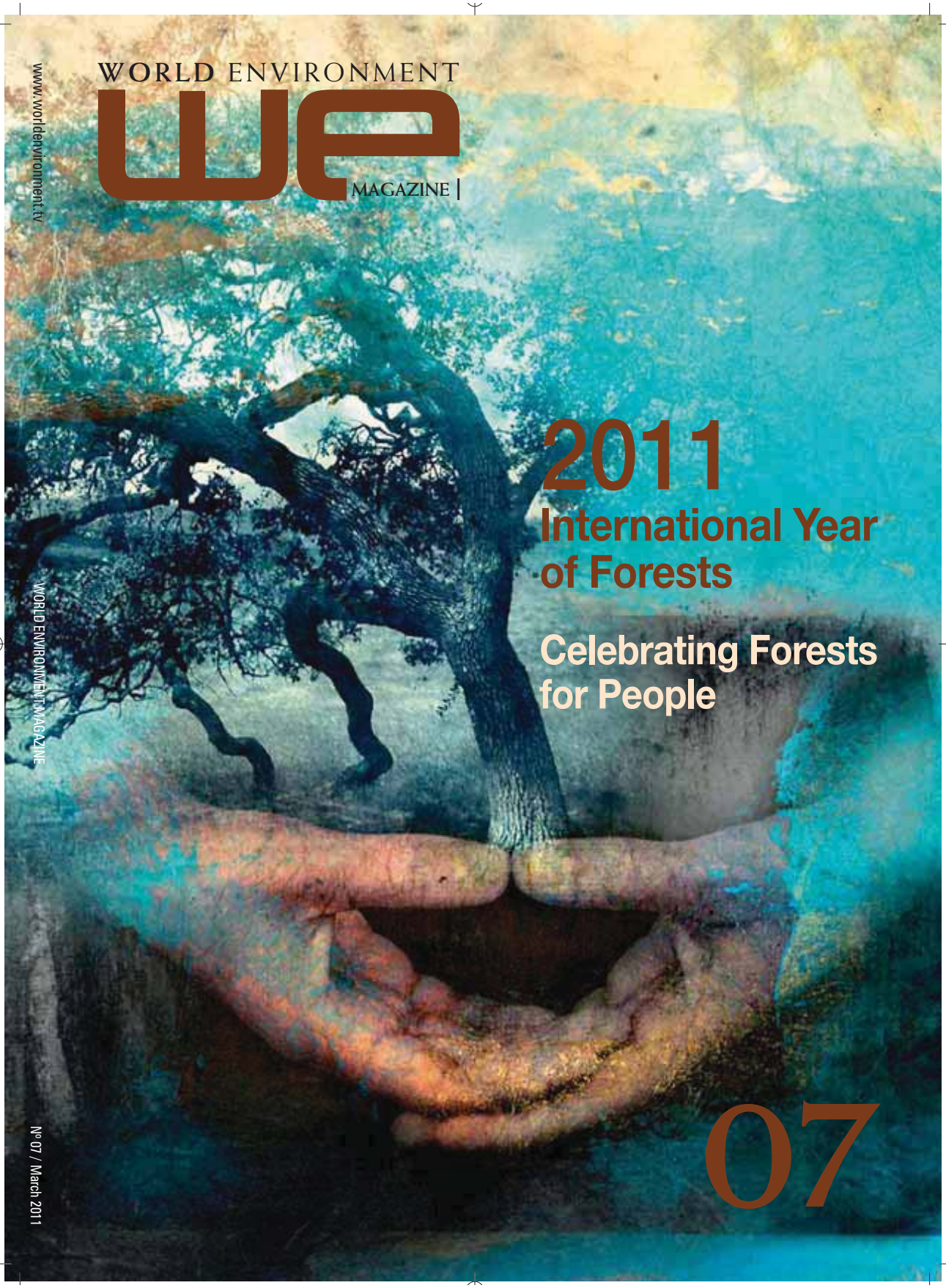

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Fadi G. Comair

Director of the General of Hydraulic and Electrical Resources of the Lebanese Ministry
Born in 1960 He graduated from American universities of Texas and Harvard and French: Ecole Nationale des Ponts et Chaussées and UniversityClaude Bernard Lyon I with a PhD in energy. Mr. Comair is distinguished by work experience unique in France, the research centers affiliated to the Ministry of Industry, working actively in various technical committees responsible for drafting the European Eurocodes, and was also co-editor of the French seismic rules between 1992 and 2000. Returned to Lebanon in 1993, he was appointed first as CEO of the National Office of Litani (ONL) and then as Director General of Water Resources and Electricity.
His many interests as the main negotiator on the Wazzani and Hasbani main tributaries of the Jordan and on transboundary rivers of Onronte and Nahr el-Kebir with Syria and its role in the formation of several delegations from the Middle East hydrodiplomatie make him the undisputed expert on water issues.

Mariejoe Raidy

Growing up in a region known for political upheaval and uncertainty, MarieJoe advocates for doing business in Lebanon in a way that is environmentally responsible and ethically driven. As creative director and as a shareholder in Raidy Printing Group s.a.l, she spearheaded an effort to adopt innovative, eco-friendly printing techniques. When she succeeded, she had created the only printing company in the Arab world recognized by the renowned publishing house, Rotovision, UK.
MarieJoe is not only focused on environmentally responsible businesses, but also establishing a norm of individual and corporate ethics. Working with the American Lebanese Chamber of Commerce, she helped create the "Better Business Group" in Beirut, which encourages Lebanese individuals and corporations to adhere to a code of business ethics.
In recognition of her demonstrated leadership and trailblazing ways, MarieJoe was also recently asked to serve as Chair of Communication Committee in the Lebanese League of Women in Business, a Network Hub of the MENA Businesswomen's Network.

Hala Habib

Was born and raised in Nigeria. She studied Communication Media and Business Management at BUC and has since worked in the field of communication. She has established and headed as editor-in-chief several English-language magazines and contributes and edits magazines from different fields.
She worked at the United Nations Children's Fund (UNICEF) from 2003 till 2010 as Communication Officer and was in charge of a TV program for youth called SAWTNA.

Piercarlo Crachi

Was born in Italy, graduated in Architecture in 1991 from Rome and proceeded to obtain a PhD in Environmental Design from the University of Rome "La Sapienza" in 1998. His professional work focuses on architectural design, restoration, decoration and recovery of industrial design. Some of his major achievements included works on the Art gallery of the Capitol in Rome, the Napoleonic Museum in Rome, the Teatro Torlonia and the Museum Manzù as well as works on garden theme in Ardea, Alcamo Wine Museum and the Museum of Libya in Tripoli. He has published several essays and articles on architecture and design including Pisanti Castrucci and architects in Naples; Enzo Frateili: Architecture, Technology, Design; Three Projects Made in Rome; and The New Museum of Libya in the People's Palace of Tripoli. He has held several honorary and distinguished posts amongst which are the Register of Journalists since 1997, professor at the Faculty of Architecture at the University of Rome "La Sapienza" from 1998 to 2004, and professor at the Faculty of Communication, at the same university from 2005 to 2007.

Mimo Khair

Was born in Lebanon. She graduated from The American University in Beirut and moved to New York at age 21, where she first discovered her passion for art overall, and photography in particular. She attended the Parsons School of Design and later apprenticed with Vietnamese photographer Noc Nol.
Since 1996 Mimo's photography has spanned the globe. Her photo exhibits mostly feature her favorite subjects: children, ancient monuments, and landscapes from her travels. Since 1997, Mimo has led summer art camps for children in Europe, the United States and the Middle East. She founded the acclaimed Blue Star Youth Movement to foster budding talents in art and photography for teenagers. She currently lives in Shanghai with her husband and young daughter and exhibits her work internationally and locally in Shanghai.

Amy Sim

Is Senior Programme Officer for Asia at ARTICLE 19, a human rights organization protecting and promoting the rights to freedom of expression and freedom of information. She currently manages the Access to Environmental Information project in China, and freedom of expression campaigns in the region.
Prior to joining ARTICLE 19, she has worked at the World Bank on community driven development programmes in Indonesia.
In particular, she has designed and managed a pilot initiative using cultural resources to support poverty reduction and community empowerment. She has also worked as a journalist with the Singapore Press Holdings.

Abigail Kingsley Alling

Co-founder and President of Biosphere Foundation
Abigail Alling co-founded the non-profit organization, Biosphere Foundation (BF), in 1991 and continues today as its President. Biosphere Foundation primary goal is to inspire intelligent stewardship of our biosphere.
At present, BF is based onboard its research vessel in Asia where its team has initiated coral reef, sea turtle and marine mammal conservation programs.
Its projects over the past two decades have included: a planetary coral reef expedition, a coral reef satellite mission, an ecological wastewater treatment system called Wastewater Gardens, and Mars On Earth – an R&D project to simulate a sustainable habitat for a manned mission to Mars.
Abigail has sailed the world's oceans including a voyage to the Antarctic Peninsula to study humpback whale population genetics (in collaboration with the National Cancer Research Institute).
At Biosphere 2 (1986-1994), Abigail created a million gallon coral reef and marsh ecosystem, served as Scientific Chief for more than 60 research projects and was one of 8 " biospherians" to live inside the closed system for two years.
She is a graduate of Middlebury College (Biology) and she also received an M.S. degree in Environmental Studies from Yale University.

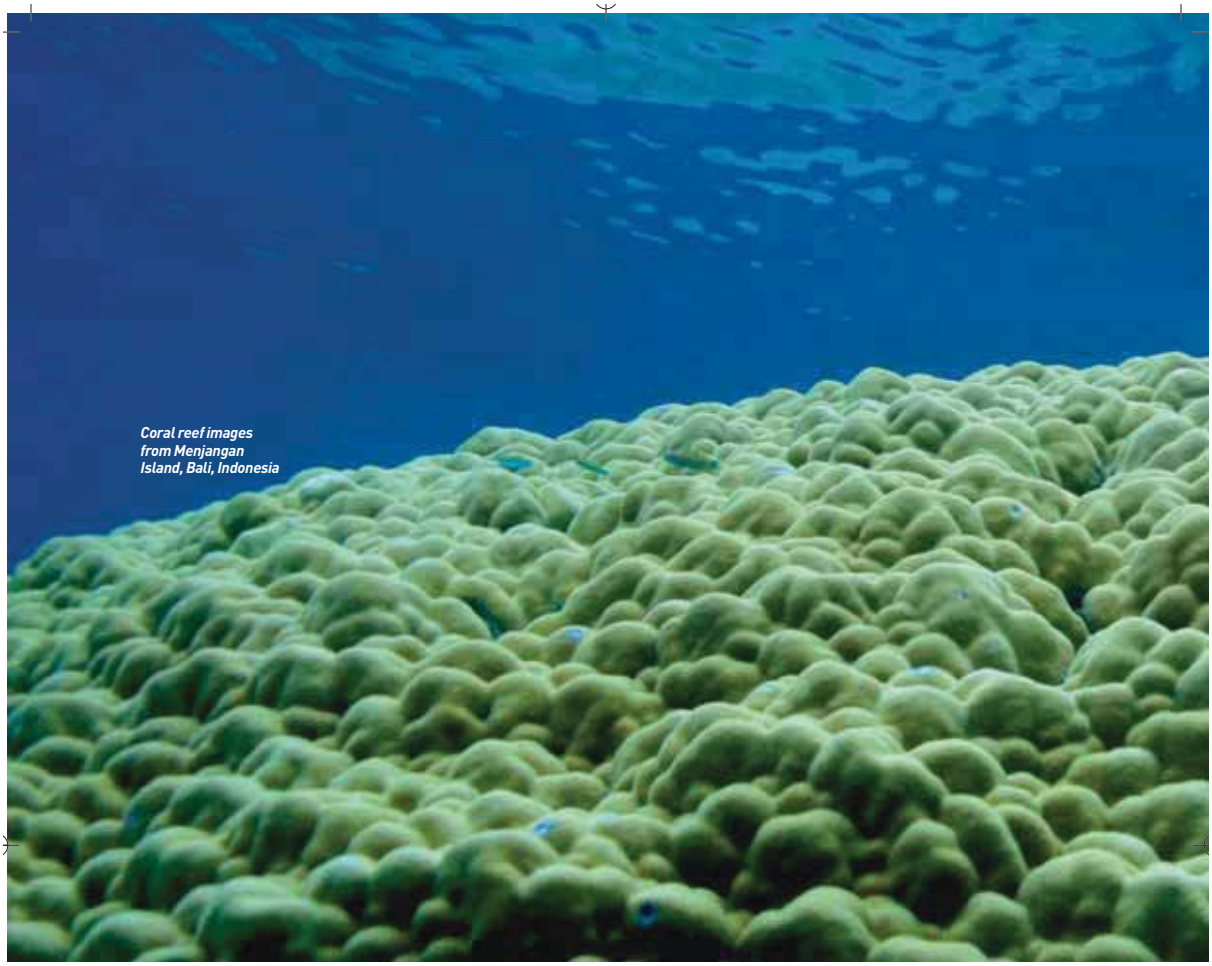
Rony Mecattaf

Rony is an Executive Coach and Business Consultant with a unique international and multi cultural background.
He has had a wide range of clients, from global corporations to small businesses to whom he delivers one to one or group executive coaching, seminars and workshops.
His coaching approach benefits from an 18-year corporate experience as Sales and Marketing Manager, and as Business Development Consultant, as well as from his training as a Coach (CoachU) and various modalities (NLP, Systemic Approach, Gestalt Therapy).
Born and raised in Lebanon, he studied and lived in the U.S. and France for over thirty years.
He recently moved back to Lebanon, where he is now based, but he travels extensively to France, the rest of Europe and within the Middle East.
Rony believes that his coaching style benefits tremendously from his background, both professional and personal.
He is able to understand the pressures that limit the personal growth and performance of today's managers, and can be a great catalyst in their transformation towards excellence.
His style is non-intrusive in that he will ensure his client's development pace corresponds to what is needed at that specific time.
While coaching, Rony is fully in service of his client's exploration of their full potential as a manager and as a human being.

By Abigail ALLING

THE RACE AGAINST TIME
SAVING CORAL

Coral reefs are disappearing at twice the speed of rainforests! This dangerous fact is mainly due to human activity. The 'Coral Triangle' that stretches from Indonesia to the Solomon Islands is an example of such perilous threat after having lost about 40% of its reefs and mangroves. If immediate and drastic measures are not taken in the very near future, most of the world's coral reefs will disappear by the year 2050 or a total extinction by the end of the century. ›



Coral reef images from Menjangan Island, Bali, Indonesia

In the five mass extinctions that have occurred on planet Earth since life began, coral reefs have been the first ecosystem to descend into ecological freefall.

Ocean conditions are currently changing faster than at any other time in almost the last half a billion years. As a result, coral reefs are disappearing around the world at twice the speed of rainforests, possibly indicating that we are fast approaching the 'sixth extinction'. Threatened by pollution, over-fishing, dynamite and cyanide fishing, sedimentation as well as bleaching caused by climate change, coral reefs are endangered on a planetary scale. It is estimated that 20% of coral reefs have already disappeared, 27% of the world's species of reef-building corals were listed as threatened on the International Union for Conservation of Nature Red List of Species, and an estimated two-thirds of all coral reefs are at risk today. If immediate action is not taken, coral reefs could disappear from Earth within this century.

THE PROSPECTS OF A WORLD WITHOUT REEFS ARE DEVASTATING FOR THE GLOBAL ECONOMY, FOR A HUNGRY AND EVER GROWING WORLD POPULATION FOR THE SUSTAINABILITY OF THE OCEANS AND FOR THE LIFE OF ALL FUTURE GENERATIONS

Coral reefs are the "rainforest of the seas," the most biodiverse marine ecosystem and the greatest expression of ocean life. Although coral reefs occupy 0.1% of the ocean's surface, they provide habitat to 25% of life in the ocean and 10% of the food for the world's population. About a sixth of the planet's coastlines depend on coral reefs for protection from storms and waves. The above attributes of reefs, including their aesthetic beauty, have been estimated to have a total economic value of US$ 375 billion per year across more than half the world's countries, both developing and developed (World Resources Institute, 1998). Additionally, coral reefs are an integral part of the earth system biogeochemical processes, including primary production, carbon and calcium storage, and geological for-

mations that facilitate water flow and upwelling. Research has demonstrated that coral reefs respond more quickly than any other ecosystem to environmental changes -even to the slightest changes in water temperature- because of their extremely high sensitivity. For this reason, they are considered an indicator or early warning system for the world's oceans.

The prospects of a world without reefs are devastating - for the global economy, for a hungry and ever growing world population, for the sustainability of the oceans and for the life of all future generations. Faced with the magnitude of the problem, one small organization with big ideas has a vision to stop the destruction of the world's coral reefs by 2020 and restore their beauty, health and abundance within this century.

Since its inception in 1991, the Planetary Coral Reef Foundation (PCRF), a project of the Biosphere Foundation (BF), has pursued an unprecedented global mission to preserve coral reefs through innovative programs in science, education and technology. From 1995 - 2008, PCRF led an expedition at sea alongside a youth leadership program that was dedicated to mapping and monitoring remote coral reefs around the world. During those years PCRF's ship crossed the globe 60,000 nautical miles and completed 49 comprehensive coral reef studies in 23 countries. It's Studio of the Sea project (www.studiooftheseа.org) produced more than 50 web films -about the state of our oceans, the decline of coral reefs, and the life of island cultures around the world- with the aim of inspiring people to make a difference in stewarding our ocean planet. Perhaps the most important contribution PCRF ›

GOALS & ACCOMPLISHMENTS

PCRF launched its Coral Reef Science Program in 1995 to initiated baseline studies for coral reef health worldwide. The project uses innovative research protocols developed with Dr. Phil Dustan, former advisor to the EPA and Professor of Biology at the College of Charleston.

PCRF furthers the work of other environmental groups by providing a trusted source of data online free of charge.

More than 150 volunteers from around the world have joined PCRF's Youth Leadership Program and apprenticed in seamanship, coral reef science, community living and cultural exchange.

PCRF's online education-outreach hub provides an interactive program for people of all ages to learn about the coral reef crisis and to identify ways that the individual can make a difference and become a steward of the earth's biosphere.

PCRF developed a Google geo-referenced program to illustrate its archive of data from 49 reef studies and helped Immersive Media to innovate a 360° visual mapping program for reefs.

PCRF s developed Wastewater Gardens , an ecological wetland recycling system to process black and grey water.

PCRF is on the frontline of key challenges such as global warming and tsunami destruction because it is often in remote and unexplored locations.

PCRF's Studio of the Sea produces films about the state of our oceans, the beauty and decline of coral reefs, and the life of island cultures around the world. Perhaps the most important film made to date documents PCRF's discovery of massive coral reef mortality in the Phoenix Islands in 2004 due to global warming, which was used in the film An Inconvenient Truth.

PCRF has learned in its youth leadership program, that a basic primer for coral reefs is needed - especially for people in Southeast Asia. PCRF's "A Guide to Coral Reefs" will be published in Malay-Indonesian in Jakarta, 2011.

photos: Orla Doherty & Abigail Alling

Crew of the PCRF boat

PCRF campaigner Orla Doherty, underwater

› made with film was when PCRF provided critical imagery and data for "An Inconvenient Truth" that illustrated the demise of reefs due to global warming. Additionally, logs, imagery and data is featured online at www.pcrf.org to provide a comprehensive world map with reef data, a Google Earth demonstration project representing a planetary sea voyage, immersive 360° underwater videos, and an educational and informative hub with films, photos, and expedition logs for the public.

Faced with the overwhelming fact that reefs were in a global decline, PCRF recognized that the most important next step was to help protect reef habitat and encourage people to learn about the coral reef crisis and to get involved in their preservation. Thus in 2009, PCRF turned its attention to the 'Coral Triangle', also known as 'the Amazon of the Seas'. This is the epicenter of marine biodiversity and abundance. It stretches from Indonesia to the Solomon Islands in the Pacific Ocean and is considered a hotspot of an ecological crisis. Already scientists have estimated that 40% of its reefs and mangroves are gone and the level of continued threat to the region is a staggering 88%. Lying just off Bali's northwest shore within Barat National Park, the uninhabited island of Menjangan is truly a jewel. The island is named after an indigenous deer with a long neck and large ears that swim each year across the channel between the mainland and Menjangan Island. The narrow island stretches nearly three kilometers in length and is graced by four temples to which the Balinese come to make offerings of flowers, incense and prayers an exquisitely beautiful practice and a reflection of the sacredness that the people of Bali hold for this island. PCRF was invited to help further a long-term interest to protect the coral reef surrounding this island and enforce a "no-take" fishing zone.

THESE PEOPLE ARE THE NEXT COUSTEAU. IT MAY SEEM THAT THEIR WORK IS INSIGNIFICANT ONE SMALL BOAT, ONE SMALL TEAM IN THE MIDDLE OF THE OCEAN BUT IT IS NOT. IT IS THE MOST IMPORTANT THING ANYONE CAN DO TO MAKE A DIFFERENCE

The Menjangan reef is considered the most spectacular of the Balinese reef systems. While most coral reefs in the region have suffered significant devastation, Menjangan's are a comparative treasure of biodiversity, with a wealth of hard corals, sea fans and soft corals. It is home to some of unusual species; from the miniature pygmy seahorse and ghost pipefish to the more substantial hawksbill turtle and black-tip reef shark.

The island is small, but underwater the reef feels enormous, with walls smothered in sea fans and sponges, long slopes tapering off into the deep blue and shallow reef flats, bursting with hard corals. One of the most mesmerizing sights is a large population of garden eels who live on the southwest side of the island. As the water flows up and over the sandy bottom, these eels emerge, swaying gently while they face the current to enjoy a meal as they filter out passing plankton.

Sadly, although Menjangan's reefs are officially protected by the national government in Jakarta, they are now increasingly threatened by dynamite fishing, poorly managed tourism, trash, plastics pollution, disease, anchor damage and bleaching caused by climate change. To address these challenges, PCRF commenced a ›

PRIMARY THREATS TO MENJANGAN'S CORAL REEF

DYNAMITE FISHING

Many fishermen in southeast Asia use dynamite to stun fish, thereby enabling them to make large catches swiftly. Dynamite fishing has been in use at Menjangan Island and its neighboring reefs for many years. The bombs are homemade, from fertilizer and fuses. The blast either kills the fish instantly or the shockwave stuns them. They float to the surface or fall to the reef bottom, but also breaks up an area of coral reef substrate, creating a zone of rubble on which new corals cannot settle and grow. The fertilizer component of the bomb continues to act like a fertilizer on the reef, encouraging the growth of algae, which then overgrows and chokes the shattered substrate, preventing further the settlement of new coral. Dynamite fishing is therefore extremely destructive to coral reefs in both the short and long-term. A single beer-bottle bomb can create a crater of 5 m2. Dynamite fishing occurred in broad daylight, in peak tourist season, in May 2009.
The shallow zones of Menjangan's reefs have suffered most of the damage, as evidenced by paucity of living coral in many places where one might expect lush reef development. At these sites the rubble from past degradation has accumulated in the shallow zones where it is broken into smaller particles by physical and biological forces (wave action, grazing, sponge boring, bioturbation, etc.). This broad size spectrum of rubble (from sand to coral fragments) drains down-slope, often enlarging the width of existing sand chutes and/or carving new pathways down the reef face. The materials frequently accumulate on deeper living corals, causing the ongoing death of coral tissue. Thus, past conflagrations such as dynamite fishing in shallow water continue to be a forcing function for ongoing reef degradation.

photo: Abigail Alling

Menjangan island

CLIMATE CHANGE

Climate change has become the greatest threat to coral reefs today. Increasing the amount of greenhouse gases in our atmosphere has led to the phenomena of increases in sea surface temperature and increases in ocean acidity.
Both of these changes, but especially increased temperature, have already affected coral reefs and will become even more prominent in the future. Abnormally high seawater temperatures or large increases in ultraviolet radiation cause the coral colony to either forcibly eject or unwillingly lose its zooxanthellae. These symbiotic algae cells are where most of the coral's color comes from, hence the term bleaching as the bone-white calcium carbonate skeleton is revealed through the transparent tissues of the coral's polyps.
The coral's polyps are still alive in their bleached state, but they are seriously weakened. Up to 90% of their energy comes from the zooxanthellae and, without them, a coral is very susceptible to infection by disease or algal smothering. It has barely any energy left for growth or reproduction.
It is possible for the polyps to regain their zooxanthellae and for life to return to normal, but this window of opportunity is only open for so long. If the conditions do not return to normal to allow re-entry of zooxanthellae within this window, the coral will die. Even if all appears to return to normal, the coral has lost energy and therefore has a reduced capacity to grow, to reproduce and, possibly most significantly, to fight off disease.

PLASTICS POLLUTION

Plastics pollution has become a horrendous problem in all our seas, killing an estimated 1.5 million marine animals every year. The most famous oceanic collection of plastic debris is the Great Pacific Ocean Garbage Patch in the North Pacific. Plastics are a grave threat to many species of marine life who become entangled on abandoned plastic fishing gear, turtles that choke eating a plastic bag because they think it is a jellyfish, and the still unknown effects of the breakdown of plastics into deadly PCBs on coral reef organisms. In Indonesia, plastic debris is a serious problem with discarded fishing gear caught on reefs, plastic bags trapped on branching corals and plastic trash in general filling the beaches and shallow waters. Menjangan Island is no exception and huge amounts of plastic wash up onto the beaches and shallow coral reefs every day. This threatens not just the marine life but also the value of the economic goods and services provided by Menjangan Island as a tourist attraction.

› long-term program that will be a cornerstone of marine conservation education in the region. Because the success of this initiative requires accurate and up-to-date information about the ecology of the reef and its change over time, PCRF is also working with scientists and other NGOs to initiate a scientific study. The data will be used as part of an overall community conservation and education-outreach program to provide information about what threatens the corals and fish as well as to provide alternative choices for future management of the reef's health.

PCRF SERVES THE PEOPLE OF THE PLANET THROUGH EDUCATION AND OUTREACH, DIRECT PROGRAMS TO DIVERSE ISLAND PEOPLE, ON-SHIP CONSERVATION TRAINING TO YOUTH FROM MORE THAN A DOZEN COUNTRIES, AND ONLINE WEB RESOURCES THAT RECEIVE MORE THAN ONE MILLION HITS A YEAR

The success of this program lies in the handover of knowledge, both science and community outreach, to a local team that will have the capacity to continue to protect the reef far into the future. It is PCRF's task in the next few years to work with the local community in skill-based training such as reef observation and fisheries management, dive training and options for alternative technologies such as waste management. ■

JOIN THIS INTERNATIONAL EFFORT ONLINE AT:
www.biosfirindonesia.org

THE PLANETARY CORAL REEF FOUNDATION

PCRF has pursued an unprecedented approach to preserve and protect the earth's coral reefs through pioneering programs in science and education-outreach. At the heart of PCRF's work is our dedication to helping the people most gravely affected by the death of coral reefs.

The beauty of our earth's coral reefs is without equal, and the world's reefs are on a course of unprecedented destruction. In support of its mission to conserve biological diversity, PCRF has done an unprecedented 49 comprehensive coral reef studies through 23 countries since its origination. PCRF's CORAL REEF SCIENCE program has crossed the globe to map and monitor coral reefs across 60,000 nautical miles since 1995. PCRF's STUDIO OF THE SEA (www.studiooftheSea.org) project achieves the organization's mission by producing films – including more than 30 web films - about the state of our oceans, the decline of coral reefs, and the life of island cultures around the world with the aim of inspiring people to make a difference in stewarding our ocean planet. Perhaps the most important film made to date is PCRF's portion of the film "An Inconvenient Truth."

PCRF's RESEARCH AND YOUTH LEADERSHIP programs spurs participants to conserve coral reefs through an onboard educational apprentice program and an online "Join The Voyage" educational outreach hub. SCIENTIFIC WEB OUTPUTS through www.pcrf.org achieve the organization's mission by providing a comprehensive world map with data from 49 science study sites, a Google Earth demonstration project representing a planetary sea voyage, immersive 360° underwater videos, and an educational and informative hub with films, photos, and expedition logs for the public. The site receives more than one million hits per year.

PCRF's primary goal is to inspire conservation efforts through Information, Inspiration and Action. PCRF's prime organizational value is sharing information. PCRF embodies the belief that information about coral reefs belongs to everyone on the planet. Encouraging others to use it by providing free data online is central to promoting information sharing amongst governments, scientific institutions, organizations and foundations.

PCRF's collaborative approach provides new inspiration for the conservation movement: volunteers and stakeholders understand that they can make a difference and identify the contribution they can make to the preservation effort. Naturally, researchers use PCRF's information and contribute to the effort, but inspiration reaches beyond scientists to community members who have been so moved by our work that they have joined us in the field.

PCRF also turns this inspiration into action by giving people hands-on ways to help save coral reefs and to lend a hand to the inhabitants who rely on the reefs. The organization reflects its values by providing online ways to make a difference; by ensuring its place as a trusted source of data for scientists and conservationists; through educational programs that are accessible to the students who will become tomorrow's preservationists; and through the culturally rich, hands-on collaboration with island peoples. At the heart of PCRF's programs is the organizational value that everyone who participates can play a part in the solution.