

A New Approach to the Global Environment: Industry, Academia and the General Public Come Together to Protect “The Tropical Rainforests of the Sea”

The Global Coral Reef Conservation Project

MC works closely with universities and environmental NGOs on the “Global Coral Reef Conservation Project,” in an effort to help preserve coral reefs around the world. This project is a conservation-oriented social contribution activity that integrates industry, academia and the general public.

IKUO NAKAMURA

“Bleaching Phenomena” Threatens the Coral Reefs

Coral reefs can be found around the world in shallow tropical and subtropical seas. They are said to be home to approximately 1/4 of the world’s marine life, and many fish species that live in the outer seas use the reefs as places to spawn and raise their fry. This function of providing a home and spawning grounds to a wide range of ocean life has resulted in coral reefs being referred to as “tropical rainforests of the sea,” a comparison that does not overstate their importance to the marine ecosystem.

The coral that makes up the reefs are actually nematocysts, of the same family as the sea anemone and jellyfish, but they have a hard, calcareous skeleton and grow in the shape of branches, tables and rocks. Layers and layers of them build up to form the complex topography of the reef. Living coral is many different colors—brown, purple, green—depending on the color of the microscopic symbiotic algae called zooxanthellae that live inside it. The coral provides a home and the zooxanthellae use photosynthesis to produce sugar that nourishes the coral in turn.

The “bleaching phenomenon” has been observed in many different reefs over the past several years. It is also suspected that the phenomenon is related to global warming, with rising water temperatures causing the symbiotic algae to leave the coral. Unless these zooxanthellae return, most coral will eventually die. As global warming progresses, there is the potential for coral to be destroyed in tropical areas where water temperatures are already warm to begin with.

Support for Coral Reef Research at 3 Locations

In fiscal year 2005, MC embarked on the “Global Coral Reef Conservation Project,” a six-year effort to establish and spread technology for the conservation, maintenance and restoration of coral reefs. The research is conducted in collaboration with universities and NGOs as an industry/academia/general public partnership. In addition to financial support, MC also recruits volunteers from among its employees and members of the general public to participate in research activities and deepen their understanding of environmental issues. In Japan, the project is headed up by Shizuoka University Professor Yoshimi Suzuki, one of the country’s foremost authorities on coral research. The research taking place through the Japan study focuses on the bleaching phenomenon and is conducted at Sesoko Station, which is operated by the University of the Ryukyus in Motobu, Okinawa. The international environmental NGO Earthwatch Japan also provides cooperation and support by assisting MC



to dispatch 10 volunteers to the project twice each year. Half of the volunteers are recruited from the general public with the other half made up of MC staff. The volunteers

participate in a half-day training session before diving into the research. They may, for example, be asked to take samples of seawater every hour simultaneously in different locations around the reef so as to investigate changes in the nutrient and dissolved oxygen content of the water, or may be

sent out late at night so as to observe what happens when sunlight is not a factor. Other projects requiring many hands to complete include measurement of water flow speed and direction to identify tidal currents, investigation of underwater topography and collection of coral samples. The volunteers take care of many of these routine but important tasks. The program lasts for 5 days (4 nights) and includes a meeting to present research findings, making it an extremely valuable experience for all who participate.

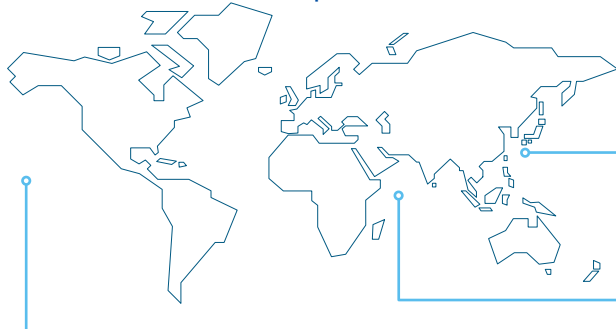
In FY 2006 the North American and Europe/Africa components of the project began, again supported by volunteers recruited from both inside and outside the MC organization. Takuji Ito, Manager of the Environmental & Social Responsibility Office, says, "We hope that by helping with research projects on site, participants will not only deepen their own understanding but will also talk about their experiences and personal feelings towards related issues with their families, colleagues and neighbors."

For participants, this is an opportunity to enjoy experiences and encounters that they would normally never have. It is also a chance for them to be involved in some of the world's leading research that is taking on issues related to global warming.

Using Findings to Help Conserve Coral Reefs Around the World

2008 is the International Year of the Reef with educational and conservation activities scheduled to take place around the world. The three locations where MC sponsors research have begun to produce insights into the impact of different environments and conditions. The findings will be published at academic conferences and in scientific journals and will also be made available to the general public in the form of seminars so as to better assist in the conservation of coral reefs on a global scale.

Global Coral Reef Conservation Project Locations



Midway

Professor Donald Potts of the University of California, Santa Cruz leads this project at a coral reef that has been virtually untouched by past human activity to provide a comprehensive study of the physical, chemical and ecological impact on the coral from global and local climate change.

Okinawa

Professor Yoshimi Suzuki of Shizuoka University leads this project, which is a partnership between Shizuoka University, University of the Ryukyus and Earthwatch Japan (an international environmental NGO) to elucidate the causes and mechanisms of the coral bleaching phenomenon and to establish and spread technologies to maintain and restore the health of coral reefs.

Seychelles

Dr. David Smith of the University of Essex (UK) leads a partnership between the university and Earthwatch Europe to collect data on biodiversity, mangroves and coral living in the coral reefs of the Seychelles Islands in the Indian Ocean.

Stakeholder Dialogue

Understanding the Functions and Benefits of Coral Reefs



Makoto Tsuchiya
Professor, Faculty of Science,
University of the Ryukyus

Coral reefs are a unique ecosystem that is used for many purposes, as fishermen, divers, researchers and academics will attest. Obviously, different purposes also have different levels and types of impact on the environment. For us to coexist with the coral reefs, it is necessary that we have a scientific understanding of how they benefit us and the functions and roles that they play, so that we can interact with them in ways that will help to conserve them.

People Around the World Need to Understand the Necessity of Conserving the Coral Reefs

In its 4th assessment report published in 2007, the Intergovernmental Panel on Climate Change (IPCC) specifically used coral reefs as an example of how ecosystems are being affected by global warming, which helped to raise awareness and interest around the world. In this project, researchers and volunteers work diligently towards the common objective of conserving the coral reefs. Through this project, we hope that participants will spread awareness of the need to conserve the reefs and will talk with others about their valuable experiences. We also hope that our findings will contribute to the conservation of reefs around the world.



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