Coral Disease Working Group

Fact Sheet

Program Overview

The Coral Reef Targeted Research & Capacity Building for Management (CRTR) Program has been established to address fundamental information gaps in our understanding of coral reef ecosystems, so that management options and policy interventions can be strengthened globally.

Its goal is to:

"*Build scientific capacity necessary to provide the information needed for management and policy, so that coral reef ecosystems under threat from climate change and multiple human stressors can be sustained for current and future generations*".

In achieving this, the Program's targeted research framework will systematically define information gaps of strategic importance

Coral Disease

Over the last 20 years, coral reefs have been under increasing stress from natural and anthropogenic causes, including climate warming, poor water quality and over-fishing. Over this same period, an unprecedented increase in coral disease has contributed significantly to the loss of coral. Disease outbreaks cause not only coral loss, but they can cause significant changes in community structure, species diversity and abundance of reef-associated organisms.

In order to determine what has prompted this relatively recent emergence of coral disease current research is focusing on the connection between climate warming and disease.

Coral reefs have a very narrow thermal threshold for coral health. This along with deteriorating environmental conditions may influence the timing and extent of disease by altering host/pathogen interactions.

Under the Chair of Professor C. Drew Harvell (Cornell University, USA), the goal of the DWG is to fill critical information gaps about coral reef disease to assist in the development of management and conservation strategies that protect reef ecosystems from damage due to disease.

The DWG has prioritised the research so that direct outcomes assist the management of reefs under disease threat and take advantage of opportunities for global capacity building in coral epidemiology, disease ecology.

Objectives

To achieve this, the four priorities of the Disease Working Group are to:

1. Conduct a global assessment of coral diseases and anthropogenic facilitators.

2. Pinpoint the ongoing impacts of coral disease on coral biodiversity, coral community diversity and population growth.

Disease Working Group

3. Advance understanding of epidemiology (origins, vectors and spread rates) of coral diseases).

4. Evaluate major mechanisms of coral disease resistance.

The Group will test specific hypotheses regarding climate and anthropogenic changes threatening coral reef sustainability.

A priority for evaluating the impacts of coral disease is to complete an initial coral disease assessment worldwide. Before the causes of disease can be fully explained, there needs to be a better understanding of its geographic distribution and prevalence of coral diseases. The global assessment is designed to catalogue disease syndromes worldwide for the first time and reveal whether disease outbreaks are correlated with climate warming anomalies.

In concurrence with the development of the global assessment the research undertaken by the DWG aims to be able to confirm if disease produces significant changes in population and community structure and composition and what is the impact on the reproductive output of corals. Through these activities, the DWG will develop techniques that could facilitate rapid assessment of disease in corals.

Importance to Management & Policy

Coral disease plays an increasing role in changing the structure and therefore the function of some coral reefs. Consideration needs to be given to how the management of human actions influence coral disease outbreaks.

Integrated research will lead to an increased understanding of the potential impacts of coral disease, and the development of rapid assessment tools.

The end results will be an increased capability to predict disease outbreaks 6-12 months in advance of an event can lead to better management responses.

Further Information:

Further information on the Disease Working Group and its activities can be obtained from:

Professor C. Drew Harvell
Section of Ecology and Evolutionary Biology
E321 Corson Hall, Ithaca
Cornell University
NY 14853 USA

Email: cdh5@cornell.edu

Membership

Prof. C. Drew Harvell	*(Cornell University)*
Dr Garriet Smith	*(University of South Carolina)*
Dr Bette Willis	*(James Cook University)*
Dr Farooq Azam	*(University of Southern California)*
Dr Eric Jordan Dahlgren	*(Universidad Nacional Autonoma de Mexico)*
Dr Eugene Rosenberg	*(Tel Aviv University)*
Dr Ernesto Weil	*(Universidad de Puerto Rico)*
Dr Laurie Raymundo	*(University of Guam)*

CRTR Project partners include the Global Environment Facility (GEF), World Bank (WB), The University of Queensland (UQ), United States National Oceanic and Atmospheric Administration (NOAA), UNESCO-Intergovernmental Oceanographic Commission (IOC/UNESCO) and approximately 50 research institutes & other third parties around the world.

Global Coral Reef Targeted Research & Capacity Building Project
c/o Centre for Marine Studies
The University of Queensland
Brisbane Qld 4072 Australia
phone: +61 7 3346 7330
fax: +61 7 3346 9987
email: info@gefcoral.org

January 2006