Restoration & Remediation Working Group

Coral Reef Targeted Research & Capacity Building for Management

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 so that resulting information and tools developed can lead to credible outcomes.

Restoration & Remediation

The world-wide degradation of coral reefs, particularly in the last two decades, has prompted greater attention to the question of remediation and restoration. This has lead to a wide range of initiatives broadly aimed at improving the condition of impacted coral reefs. Some early initiatives focused on the establishment of artificial reefs to enhance fish production where "reefs" functioning mainly as "fish-aggregating devices" were created, often on non-coral platforms.

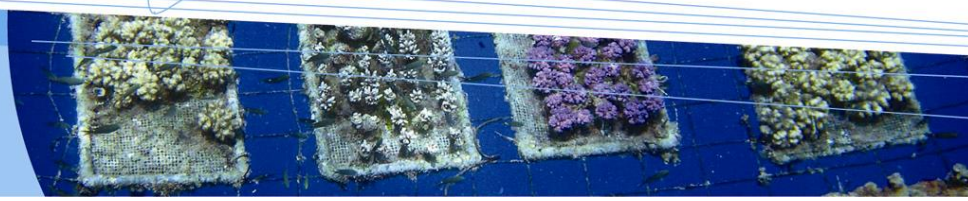
While this approach is continuing, more recent activities have been directed specifically at restoring coral reefs damaged during ship groundings, impacted by coastal development, or decimated by El Niño related warming events..

Reef restoration and remediation will continue to play an increasingly important role and efforts are likely to be expanded. However, viable approaches and technologies are in relatively early stages of development. Present approaches are currently difficult to implement at large spatial scales and are not cost-effective. Levels of understanding are still largely based on personal experiences of particular practitioners.

Objectives

The Restoration & Remediation Working Group (RRWG) under the Chair of Dr Alasdair Edwards (University of Newcastle, U.K) has designed three research programs for Phase One. These programs involve studies of both natural recovery processes and restoration interventions:

1. Integrated long-term monitoring of natural recovery processes and selected restoration interventions on standardised substrata to evaluate efficacy and cost-effectiveness and elucidate key processes driving/hindering recovery. Interventions may include transplantation, enhancing algal grazing, augmenting coral larval supply and enhancing other invertebrate settlement.



2. Enhancing coral larval recruitment – through mass culture in open sea from egg to colony, by using attractants, or by augmenting larval supply to the reef.

3. Enhancing recovery by culture and transplantation of corals – using transplants direct from the reef or transplants derived from nursery reared branches, nubbins or spat.

Two key objectives of the research programs are to improve our understanding of natural recovery processes on reefs, and evaluate and compare the long-term cost-effectiveness of a range of restoration interventions currently on offer. Achieving these objectives will enable us better to advise managers and policy-makers on options for restoration, relative costs of these and likelihood of success in different management contexts.

A major output from this work will be the development of a set of guidelines on reef restoration/remediation based on best available information. The guidelines will be updated over Phase One to take into account new information being investigated under the Group's research programs and other sources. These guidelines for managers on restoration and remediation will be useful in helping them identify pre-requisites for remediation, and be aware of the available restoration and remediation methodologies.

Importance to Management & Policy

Coral reef restoration and remediation is an important area where the results of scientific research are being applied to improve the sustainability of coral reefs. Although it is recognised that tackling the root-causes of degradation through effective coastal management measures is the best way to reduce further damage, there are also opportunities for focused interventions to actively restore injured coral reefs.

At present we only have a rudimentary understanding of the fundamental premises of reef restoration. The lack of information makes it difficult to assess both the natural recovery potential of different sites and the likelihood of success if restoration measures are implemented.

For effective decisions to be made with respect to reef restoration, policy-makers and managers must understand the value of the coral reef resource the degree to which natural recovery is feasible, and the costs and efficacy associated with any proposed restoration action.

Further Information:

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

Dr Alasdair Edwards
School of Biology
University of Newcastle Upon Tyne
Newcastle, NE1 7RU
United Kingdom
Email: a.j.edwards@newcastle.ac.uk

Membership

Dr Alasdair Edwards	*(University of Newcastle)*
Prof Edgardo Gomez	*(University of the Philippines)*
Prof Loke Ming Chou	*(National University of Singapore)*
Dr Richard Dodge	*(Nova Southeastern University)*
Dr Andrew Heyward	*(Australian Institute of Marine Science)*
Dr Baruch Rinkevich	*(National Institute of Oceanography, Israel)*
Dr Aileen Morse	*(University of California, Santa Barbara)*
Dr Tadashi Kimura	*(Japan Wildlife Research Centre)*
Prof Makoto Omori	*(Akajima Marine Science Laboratory, Japan)*

CRTR Project partners include the Global Environment Fund (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

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