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AUSTRALIAN INSTITUTE  
OF MARINE SCIENCE

# International Coral Reef Initiative *Ad Hoc* Committee on Reef Restoration 2020 Report





**Dr Ian McLeod**  
Co-Chair ICRI Restoration  
Committee  
RRAP Science Coordinator  
(JCU/AIMS)



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Lead Consultant  
MER Research & Consulting  
UN Consultant coral  
restoration



# SPEAKERS





1. To establish an **inventory of existing and future reef restoration** activities throughout the world
2. To identify **leading and innovative practices**, techniques and strategies (including their limits, conditions of implementation, financing, and an assessment of their results)
3. To **revise the 2005 ICRI resolution on coral reef restoration** in light of new scientific and management knowledge
4. To **seek active collaboration and participation** with organisations in the field including International Coral Reef Society (ICRS), Commonwealth Blue Charter, the Coral Restoration Consortium (CRC), and Australia's Reef Restoration and Adaptation Program (RRAP)



**Chairs:** Ian McLeod, David Souter

Ahmed Mohamed (UNEP)

Alicia McArdle (Mars)

Amanda Brigdale (Australia)

Anastazia Banaszak (ICRS)

Aurore Leocadie (France)

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Chloe Harvey (Reef-World)

David Mead (RRAP)

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Didier Zoccola (Monaco)

Elizabeth Shaver (TNC)

Firdaus Agung (Indonesia)

Francis Staub (ICRI Secretariat)

Gabriel Grimsditch (UNEP)

Hazel Thornton (UNEP-WCMC)

Jenn Loder (GBRF)

Jennifer Koss (USA/NOAA)

Leanne Poussard (USA/NOAA)

Margaux Hein (UNEP)

Peter Davies (SPREP)

Sylvain Pioch (France)

Tabashi Kimura (Japan)

Vivian Ramnarace (Belize)

Coral Restoration Consortium (2021)

# ICRI Ad Hoc Committee



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Committee aims to assess and document:

- global **needs and priorities** for current and future reef restoration and adaptation programs
- global **research and development priorities** to deliver the methods, productivity and cost breakthroughs needed to support restoration and adaptation program objectives
- **priority drivers** and areas for reef investment (including mitigation policy)

... and to:

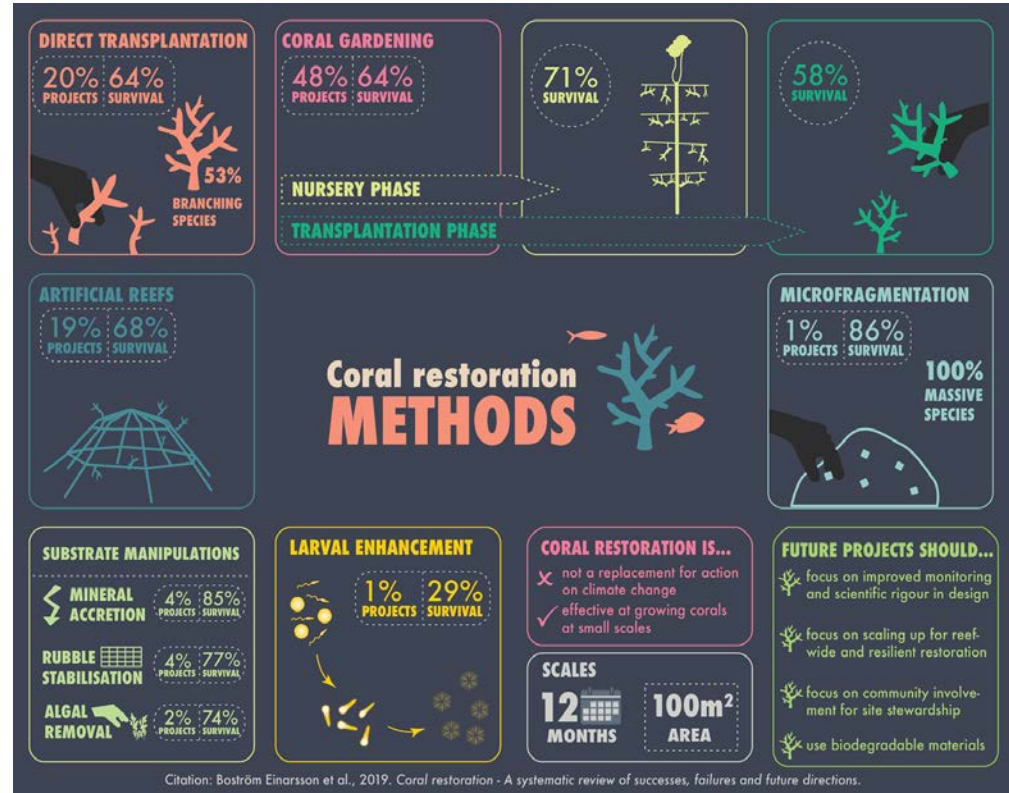
- identify mechanism(s) to improve **joint planning and delivery** of reef restoration and adaptation research and development
- identify (at a high level) **opportunities to partner** on reef restoration and adaptation research and development activities





2019

# Coral Restoration Review



Citation: Boström-Einarsson et al., 2019. Coral restoration - A systematic review of successes, failures and future directions.

2019

# Global landscape



## Mapping Current and Future Priorities for Coral Restoration and Adaptation Programs

International Coral Reef Initiative (ICRI) Ad Hoc Committee  
on Reef Restoration 2019 Interim Report



2019

# Updated resolution



Initiative Internationale pour les Récifs Coralliens  
International Coral Reef Initiative

[www.icriforum.org](http://www.icriforum.org)

## Resolution to update the 2005 ICRI resolution on artificial coral reef restoration and rehabilitation

*adopted on December 2019, at the 34<sup>th</sup> ICRI General Meeting (Australia)*

**Acknowledging** that coral reefs have a vital role providing food security, livelihoods and coastal protection for millions of people in the tropics and that they are now one of the most threatened ecosystems on the planet as a result of both climate change and local anthropogenic pressures;

**Noting** the Intergovernmental Panel on Climate Change Special Report on Oceans and Cryosphere in a Changing Climate which was accepted by the IPCC in September 2019

**Recalling** the 2001 ICRI Decision on Reef Restoration, which called for the urgent development and publication of a handbook (or guidelines) on reef restoration and enhancement techniques;

**Recalling** also the 2005 ICRI Resolution on Artificial Coral Reef Restoration and Rehabilitation, which acknowledged that there is often an urgent need to restore and rehabilitate coral reefs and associated ecosystems following major damage, but raised concerns about the lack of adequate scientific evidence about the ecological and economic effectiveness of artificial rehabilitation and restoration;

**Aware** of the 2019 United Nations Environment Assembly Resolution 4/13 on “Sustainable coral reefs management”, which requests the Executive Director of the United Nations Environment Programme in collaboration with ICRI to assist with the compilation of best practices manual for coral restoration, for maintenance of ecosystem services, including coastal defense and/or restoration of fish nursery areas;

**Noting** that 2021-2030 is the UN Decade of Ecosystem Restoration;



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United Nations Environment Programme



2020

## Updated terms of Reference 2020



- continue to assess and document **global needs and priorities**
- continue to **assess and document global research and development priorities**
- provide a **coordinating mechanism** for international collaboration on coral reef restoration research and development
- advocate for the use of **best-practice restoration techniques**
- facilitate the **transfer of new knowledge** of restoration techniques to managers and restoration practitioners
- **update the global database on coral restoration methods** and integrate it with the ICRI website



# CORAL REEF RESTORATION

AS A STRATEGY TO IMPROVE ECOSYSTEM SERVICES

A guide to coral restoration methods



## UNEP and ICRI Report



United Nations  
Environment Assembly of the  
United Nations Environment  
Programme

United Nations Environment Assembly of the  
United Nations Environment Programme  
Fourth session  
Nairobi, 11–15 March 2019

Resolution adopted by the United Nations Environment  
Assembly on 15 March 2019

Distr.: General  
28 March 2019  
Original: English



### Authors

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### Advisory Committee

Austin Bowden-Kerby (*Corals for Conservation*), Emily Corcoran (*Independent consultant*), Alasdair Edwards (*Newcastle University*), Jessica Levy (*Coral Restoration Foundation*), Jennifer Loder (*Great Barrier Reef Foundation*), Joanie Kleypas (*National Centre for Atmospheric Research-USA*), Jennifer Koss (*NOAA*), Elizabeth McLeod (*The Nature conservancy*), Phanor Montoya-Maya (*Corales de Paz*), Buki Rinkevich (*National Institute of Oceanography-Israel*), Francis Staub (*ICRI*), David Suggett (*University of Technology Sydney*), Didier Zoccola (*Centre Scientifique Monaco*).



# Coral Restoration Database: Visualization

About

The review

History

Spatial &amp; Temporal

Corals

Survival

Harvest &amp; Attachment

Monitoring

**How to use:** Select a topic to explore in detail, by clicking in the ribbon above. Hover over any figure to view more details. Click on any detail and the rest of the figures will be filtered by that value. Click again to reset the filters.

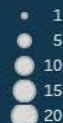
You can **reset each page** by clicking on the reset symbol in the ribbon above.

Each page has a **table of references** at the bottom which will link to the sources for that page. Scroll down to see the table.

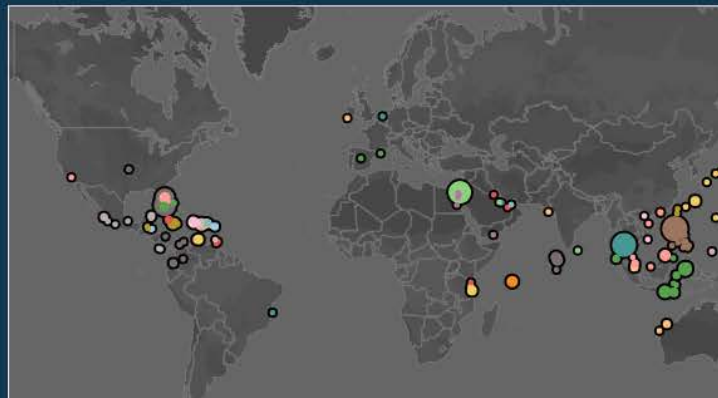
For more details about the project, visit:

<https://www.gbrcoralrestoration.org/restoration-database>

Number of ...



Locations



© 2021 Mapbox © OpenStreetMap

Overall, there are **407** unique case studies in the review.

Explore the figure below to see which data sources they come from.



English translation for 「改訂 有性生殖によるサンゴ増殖の手引き」

A guidebook for coral propagation through asexual reproduction (revised version)

March 2019  
Fisheries Agency - Fisheries Infrastructure Department

# 有性生殖による サンゴ増殖の手引き



平成 31 年 3 月

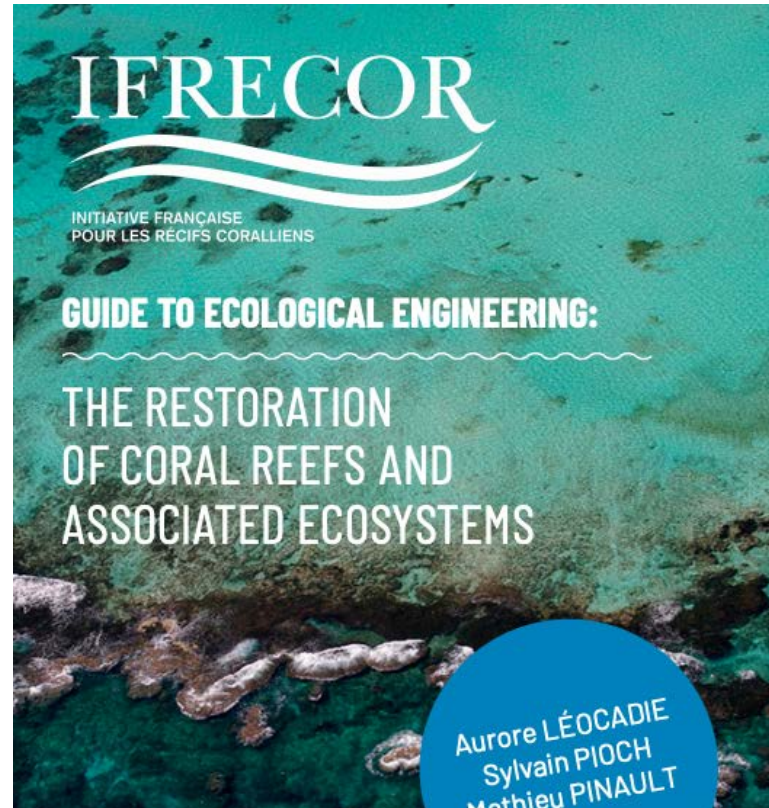
# IFRECOR

INITIATIVE FRANÇAISE  
POUR LES RÉCIFS CORALLIENS

## GUIDE TO ECOLOGICAL ENGINEERING:

## THE RESTORATION OF CORAL REEFS AND ASSOCIATED ECOSYSTEMS

Aurore LÉOCADIE  
Sylvain PIOCH  
Mathieu PINAULT





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A large underwater photograph showing two divers in a deep blue sea. One diver is in the foreground, reaching down towards a coral reef. The other diver is slightly behind and to the right. Bubbles are visible rising from their tanks. The text "Restoration Hub" is overlaid in white on the center of the image.

# Restoration Hub

2021

## 2021 Proposed Terms of Reference

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- provide a **coordinating mechanism** for international collaboration on coral reef restoration research and development
- advocate for the use of **best-practice restoration techniques** as part of a broader strategy that involves traditional management and reducing carbon emissions to maintain coral reef functioning and resilience
- facilitate the **transfer of new knowledge** of restoration techniques to managers and restoration practitioners





2021

## Opportunities in 2021



- share existing knowledge with new initiatives
  - G20, RRAP, Coral Reef Fund, IUCN
- work with Resilience-Based Management AHC
- support the UN Decades of Ecological Restoration and Ocean Science
- support mapping of funding research
- link with other coral or associated ecosystem restoration committees and groups





**Thank you**