

# ***REEF RECOVERY INITIATIVE***



*The Chair of the IUCN's Species Survival Commission cited corals as one of the planet's three major species extinction crises.*

## ***Who we are:***

We are an international group of coral and cryopreservation scientists known as the **Reef Recovery Initiative** who have joined forces to build new tools for the continued protection and propagation of coral around the world. We focus on the conservation of coral through the use of cryopreservation and long-term banking of coral reefs, the development of restoration strategies using our banks, the maintenance of live fragment banks and international training and capacity building.

In 2004, Smithsonian and University of Hawaii scientists began applying modern human reproductive techniques to create the basic knowledge to preserve coral sperm and larval cells. These fundamental studies were carried out in a natural coral laboratory in Kaneohe Bay, Hawaii. In collaboration with in-country scientists, the results were quickly applied to the Caribbean and the Great Barrier Reef.

## ***The problem we are trying to solve:***

Throughout the world coral reefs are dying. Locally, reefs are damaged by pollution, nutrients and sedimentation from poor land-use, fishing and mining practices. Globally, increased levels of greenhouse gases are warming and acidifying oceans, making corals more susceptible to stress, bleaching and newly emerging diseases, and causing a widespread and well-recognized reef crisis.

## ***Why should we care?***

We need healthy ocean ecosystems to live, as they produce 80% of the air that we breathe. Reefs are one of the most important ecosystems in the oceans, because they nurture over 25% of all life in the ocean, protect our homes and cities from storms, maintain livelihoods by adding as much as 300 billion dollars annually to our global economy, shelter the fish we eat, and are a source for future pharmaceuticals to help fight diseases.



**Our strategy and vision:**

Although *in situ* conservation practices, such as marine protected areas, may help reduce the loss of genetic diversity on reefs, the global effects of climate change may continue to erode these areas causing continuing declines in population numbers. Novel *ex situ* conservation techniques, such as genetic banks using frozen samples, or live fragment banks hold strong promise to help offset these threats.

The Reef Recovery Initiative addresses the global loss of coral ecosystems with timely, innovative solutions drawn from modern reproductive technology. We will help maintain the genetic diversity of reefs through frozen and live collections and develop partnerships to build capacity around the world.

**Our needs:**

This capacity-building project urgently needs staff-support to conduct basic and applied conservation research. We are in need of funding to provide core salary to support 2 staff, 1 postdoctoral fellow and 1 graduate student. We also need funds to support fieldwork and maintenance for the banks. We welcome volunteers with experience in coral husbandry. Our annual budget is \$300-400K.

**Our successes to date:**

- ❖ Created the first basic studies to successfully cryopreserve coral sperm and dissociated larval cells.
- ❖ To date, these cryopreservation methods are uniformly successful with all coral species, making these practices widely applicable and extremely practical.
- ❖ Successfully banked 6 coral species, specifically the two US endangered species, *Acropora palmata* and *Acropora cervicornis*, Hawaiian species, *Fungia scutaria* and *Montipora capitata*, and Australian species, *Acropora tenuis* and *Acropora millepora*.
- ❖ With partners, established the first frozen repositories for coral in the US and Australia.
- ❖ Wide international media exposure detailed on our web ([www.reefrecovery.org](http://www.reefrecovery.org)).

**Donations can be made to:**

Reef Recovery Initiative  
 c/o Hilda Mauck  
 Smithsonian Conservation Biology Institute  
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