

GLOBAL CORAL REEF ALLIANCE

A non-profit organization for protection and sustainable management of coral reefs

Global Coral Reef Alliance, 37 Pleasant Street, Cambridge, MA 02139, USA

Telephone: 617-864-4226

E-mail: goreau@bestweb.net

Web site: <http://www.globalcoral.org>

8th International Conference on Coelenterate Biology

Eilat, Israel, December 1-5, 2013

SAVING CORAL REEFS FROM GLOBAL WARMING

**Thomas J. Goreau, PhD
President, Global Coral Reef Alliance**

Coral reefs worldwide are at or just under their upper temperature limit, and can't take further sea surface temperature increase, yet there is little likelihood of global warming being reversed before catastrophic reef coral mortality. To adapt to global warming, new methods are needed that greatly increase coral settlement, growth, budding, branching, survival, and resistance to high temperature stress. Data showing that low voltage stimulation by the Biorock method uniquely does all of these will be presented. Up to 16 to 50 times higher coral survival (1600-5000%) occurs after severe bleaching events. These extraordinary results allow coral reefs to be kept alive when they would die, and new reefs to be grown in a few years in places where there has been no natural recovery. They are due to the Biorock process itself, which creates growing limestone reef frameworks with ideal biophysical conditions for all marine organisms to make biochemical energy for tissue growth, healing, and stress resistance. The Biorock Coral Ark Program aims to maintain viable populations of coral reef organisms as a reservoir against human-caused mass ecosystem extinction. It is now focused at the Karang Lestari Project ("Protected Corals" in Indonesian) in Pemuteran, Bali, where we are currently growing around 80% of all reef-building coral genera and around half of the species, although working with no funding. We are in a race against time: these efforts need to be greatly expanded before the next El Niño strikes if the ecological services of coral reefs, in particular fisheries, shore protection, sand generation, biodiversity, sustainable mariculture, and tourism are to be maintained in the coming decades.