Electrically stimulated corals in Indonesia reef restoration projects show greatly accelerated growth rates

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Indonesian coral reefs have experienced intense degradation in the last few decades not only from anthropogenic factors e.g. destructive fishing, overfishing, coral mining, sedimentation, anchoring, and pollution, but also due to global warming that caused many Indonesian reefs to experience serious coral bleaching. In addition to the classical approach in saving the reefs through integrated/co-management, here we present alternative methods in accelerating the recovery of degraded reef through "Biorock" system. Corals of different reef building species were grown on electrically stimulated Biorock reefs at different locations in Southwest Sulawesi and Northwest Bali, Indonesia. All species of corals were found to grow significantly faster on Biorock at all sites than nearby controls. This increase ranged from 1) 4.01 times faster growth for Biorock *Acroporanobilis* versus controls in Bali at 4 and 6 m depth, 2) 2 to 3 times faster growth of *Acroporanobilis* at Biorock sites compared to controls in southwest Sulawesi at different voltages, and 3) 2 to 4 times faster growth of *Acroporaformosa* on Biorock than controls at another southwest Sulawesi site at depths of 5 and 9 meters. These results show clearly that coral growth rates can be greatly increased with electrical trickle currents for habitat restoration. The method shows clear utility for restoring coral reefs and fisheries habitat in degraded reef areas. Since the specific benefits differ between species, location, and charging conditions, further work is needed to optimize the method for different species.

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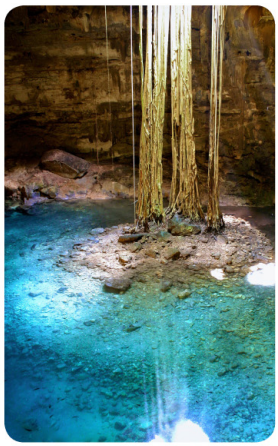


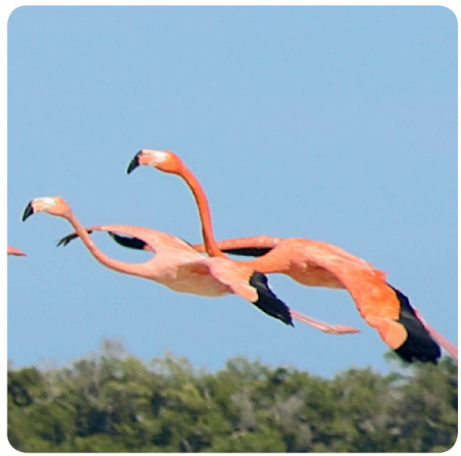

Book of Abstracts

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