



Coral Transplantation the Simple and Cheap Solution to Reef Restoration

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It is a question asked by marine scientists from the Gulf of Mexico to the Great Barrier Reef; how best to restore coral reefs and marine habitat once it has been damaged or even killed? Now research published in *Restoration Ecology* reveals how 'transplantation' may be a cheap and simple solution that can be used by conservation volunteers to repair damaged reefs.

The research was carried out by Dr Graham Forrester, from the University of Rhode Island, who led a team of scientists, students and local residents to try and restore a dead, but once vibrant reef, at White Bay in the British Virgin Islands. Their findings revealed that transplanting pieces of coral onto damaged reefs improved coral growth and survival rates.

"Often coral restoration projects are not designed as scientific studies or monitored, so nobody can answer the questions "how well did it work?" or "what's the best way to go about this?," said Forrester. "The scientific community is providing the answers to these questions, and we wanted to contribute by emphasizing methods that are simple and cheap enough to be used by volunteers with little training."

The research focused on a threatened species of elkhorn coral, often damaged naturally by storms. The team used coral fragments broken off by storms and transplanted them onto the restoration site. They found that the transplanted pieces reattached themselves after three months and after 4 years had become large adult corals.

"To use a gardening analogy, the sourced coral is like an orchard of fruit trees," said Forrester. "Storms knocked some twigs off the trees and we replanted them on barren ground. The twigs grow and blossom to form a new orchard. It's the same process."

This simple restoration process requires very little training, meaning that moving and reattaching elkhorn coral fragments can be done by recreational divers and could be woven into public educational activities and adopted by volunteer groups.

"Coral reefs face several threats, some of which are far removed and global in scale," concluded Forrester. "The coral transplantation methods we tested provide a simple, relatively low-cost way for people to improve the quality of their local environment and enhance reefs where natural recovery is slow."