

Conservation Finance Project – Developing Sustainable Funding Strategies for Coral Restoration

Background:

Coral reefs have deteriorated on a global scale due to environmental changes, pollution, exploitation, invasive species, and disease. In the United States, reefs are owned in the “public trust” with unlimited, open access, creating a “tragedy of the coral commons” problem. Estimates show that coral reefs provide annual human welfare benefits totaling billions of dollars, a case example of Pavan Sukhdev’s recent remark on the panel “What Is Nature Worth” at *Fortune’s* Brainstorm Green Conference, “we use nature because it’s valuable, but we lose nature because it’s free.”

Since 2009, \$3.3 million in grants has supported the development of coral nurseries for threatened Staghorn and Elkhorn corals in South Florida and the U.S. Virgin Islands. These two corals are the primary “architectural” corals of the Caribbean, and both have faced an approximately 80-99% decline in the past 30 years. The project is administered by The Nature Conservancy (TNC) with one-time American Recovery and Reinvestment Act (ARRA) funding through the National Oceanic and Atmospheric Administration (NOAA). The work is demonstrating that active reef management has the potential to restore reefs to approximately their original biodiversity and stability. Additional information about the project can be found at: http://www.reefresilience.org/Toolkit_Coral/CCR_Florida.html.

Problem:

Attempts to conserve reefs have focused on education and reliance on voluntary activities, rather than applying market-based approaches that would protect reefs based on their economic value. While the ARRA-funded coral nurseries are demonstrating that reefs have substantial intrinsic capacity for resilient recovery and that active management can enhance the propagation of corals, the grant funding approach is unsustainable. Conversations with senior NOAA and TNC representatives indicate that at most one more year of grant funding is available to keep the current nurseries operational. A successful pilot of conservation finance is required to demonstrate that coral restoration efforts can be self-sustaining.

Reef restoration efforts may benefit significantly from the application of principles of Ecological Economics (EE), wherein monetary values are determined for ecosystem services provided by a restored reef, and then a market is created for those services in such a way that revenue streams can be used to expand reef restoration and management efforts. EE suggests that if a previously degraded coral reef is actively managed back to health, the newly restored reef, which is richer in coral and fish species biodiversity, is worth more than a degraded reef which is not actively managed. This expanded biodiversity could translate into an increase in value (i.e. income) for user groups such as SCUBA operators, eco tours and fishermen, among others. Revenue streams could be generated from users by applying a property rights concept called Marine Payments for Ecosystem Services (MPES). This approach can potentially result in self-sustaining conservation efforts by creating a market for the “product” of enhanced reef biodiversity. Buyers may be willing to pay for active management of these previously “free” reef resources, given the level of degradation and potential total collapse of the natural asset on which an individual or business income relies.

In the U.S. the basic enabling regulations and rights needed for an MPES (i.e. exclusivity, security and enforcement) are absent, creating a “coral commons” problem. The purpose of this project is to explore how to attract and incentivize private capital in the U.S. (i.e. other than government grants/loans and philanthropic dollars from foundations, businesses, individuals, etc.) to participate in coral restoration when there are vague lines of ownership and limited ways to keep “free riders” from benefiting from ecological restoration without paying for it. While other countries, such as Jamaica, Australia, and Indonesia, have enabling regulations that may allow for a successful test of an MPES, the objective is to identify a solution applicable in the U.S.

Appendix:

The following challenges to conservation finance strategies in South Florida have been identified since the project began in October 2011:

Access Fees:

- It is illegal to charge a fee to access the Florida Keys National Marine Sanctuary, as established by NOAA Final Regulations published in June 1997. Additionally, it is the opinion of NOAA's Office of General Counsel that the authority to charge user fees to individual users does not currently exist. Specific statutory language authorizing user fees would have to be established. By contrast, the National Park Service specifically does have this authority from Congress.

Corals & Nurseries:

- Evidence about the long-term success of corals raised in a nursery and replanted to a reef is currently limited. At present only approaches to grow corals successfully in nurseries have been demonstrated.
- The most efficient NGO growing coral currently estimates that it costs between \$75-135 to grow and outplant each piece of coral to a reef (including checking on outplanted coral twice a year). Their operating budget was ~\$330K last year.
- Many people do not understand that coral is a living organism under significant threat from anthropogenic impacts. For example, coral is presently a popular interior design product; thankfully at least Pottery Barn and Target are selling faux corals (see http://www.potterybarn.com/products/faux-prickly-coral-objects/?catalogId=69&cm_src=AutoRel and <http://pinterest.com/pin/146718900330745863/> as examples).

Demographics:

- There were almost 3.8 million visitors to the Florida Keys in 2010, with just under 3 million of them to Key West. Comparatively, the resident population was 60,000. Approximately 40% of residents live in the Upper Keys, with 60% in the Lower Keys.
- Recreation related to reef use in the Keys fell by 1.16 million days of activity 1995 to 2007, from 5.99 million to 4.83 million. Historical research data is not in-depth enough to test if the change in use was due to declining coral conditions.
- SCUBA/snorkel operators are a cottage industry in the Florida Keys. Some operators feel that they should contribute funds to coral restoration as an investment in the future of their business; others do not.