

The Economic Benefits of Restoring Coastal Ecosystems

Restoring coastal ecosystems produces economic returns beyond job creation and economic stimulus.

Healthy coastal ecosystems provide critical social and environmental benefits. While the existence of these benefits is not in dispute, estimating their economic value is challenging. Yet calculating these dollar values is crucial for the efficient management of coastal resources. The Center for American Progress and Oxfam America collaborated with researchers from Abt Associates to analyze the economic benefits provided by 3 of the 50 coastal restoration projects that the National Oceanic and Atmospheric Administration, or NOAA, funded with grants from the American Recovery and Reinvestment Act, or ARRA, of 2009. These three projects are located in the Seaside Bays of Virginia’s Atlantic coast; Mobile Bay, Alabama; and South San Francisco Bay, California.

Previous research established that a \$1 million investment in coastal restoration creates, on average, 17.1 jobs.¹ In comparison, offshore oil and gas development creates approximately 8.9 jobs per \$1 million investment.² In low-income coastal communities, these restoration jobs can create significant pathways out of poverty. Although one of the sites yielded insufficient data to determine a reliable estimate, the analysis shows that the ecological restoration resulting from these projects can provide long-term economic benefits that far exceed project cost, in addition to the initial economic stimulus. **Averaging the benefit-cost ratios across the three restoration projects studied, each dollar invested by taxpayers returns more than \$15 in net economic benefits.**

Economic benefits of coastal ecosystem restoration at three sites

	NOAA Recovery Act Investment project cost*	Total economic output from spending on project**	Lifetime value of benefits provided by restored ecosystem	Benefit-cost ratio
San Francisco Bay Salt Ponds	\$8.27 million	\$8.07 million	\$68.9–\$220M	18.45
Virginia Seaside Bays	\$2.35 million	\$2.57 million	\$34.9–\$84.8M	26.56
Mobile Bay, Alabama	\$3.18 million	\$3.46 million	Insufficient data	1.08
				Average: 15.36

Note: All values in 2013 U.S. dollars. Lifetime value of benefits provided by restored ecosystem excludes economic output from project spending. In the benefit-cost ratio, benefits equal output plus midpoint of ecosystem benefits. The Mobile Bay study yielded insufficient data to determine a reliable estimate of lifetime value. As such, we counted this value as \$0 for the sake of determining a conservative benefit-cost ratio.

Source: *National Oceanic and Atmospheric Administration, "Restoration Atlas: Marine and Coastal Habitat Restoration Projects Funded Under the American Recovery and Reinvestment Act," available at http://www.nmfs.noaa.gov/habitat/restoration/restorationatlas/recovery_map.html (last accessed March 2014). Values adjusted to 2013 U.S. dollars via Bureau of Labor Statistics' CPI Inflation Calculator; **C. Coyle, "Job Creation through Coastal Restoration: An analysis of projects funded under the American Recovery and Reinvestment Act of 2009." Unpublished IMPLAN analysis (2012); Lifetime value of benefits are the total present value, or TPV, estimates calculated assuming a 40-year project lifespan.

Social and environmental benefits



FOOD: 75 percent of commercially important fish stocks rely on coastal habitats



RECREATION: 200 million Americans visit the coast each year



JOB: 17 jobs are created for every \$1 million invested in restoration



PROTECTION: An acre of wetlands can store 1 million to 1.5 million gallons of floodwater

Society has long recognized that physical capital such as factories and roads can create value for the economy through the production of goods and provision of transport. The full report shows that reefs, estuaries, and other wetlands represent natural capital that also provides long-term support for economic activity. These ecological assets continue to generate value over time for critical coastal industries, including commercial and recreational fishing, real estate, recreation, and tourism, as well as other benefits such as pollution filtration and protection against extreme weather and coastal flooding. The sum of these benefits—including both goods and environmental services—can far exceed the total investment needed to generate them.

Investing in coastal restoration is good policy. It's not just the right thing to do for the environment; it's the right thing to do for coastal communities, vulnerable coastal populations, and the U.S. economy.

Recommendations for future action

- Public and private sector entities should increase their investment in coastal restoration projects and fund ongoing monitoring of restored areas.
- Congress should enact and fund the National Endowment for the Oceans to provide a steady revenue stream for restoration.
- The state and federal agencies distributing BP oil spill related funds should invest in recovery projects that create employment and support long-term ecosystem recovery.
- Federal, state, and local coastal planners should give greater weight to natural solutions such as wetland restoration to help protect at-risk developed areas.
- The Environmental Protection Agency, U.S. Department of the Interior, and NOAA should work with the Economic Development Administration and the U.S. Department of Labor to develop new pathways into crafts, trades, and science, technology, engineering, and mathematics, or STEM, careers related to ecosystem restoration.
- NOAA and its partners should seek funding to apply the evaluation techniques used in this report to the other ARRA coastal restoration projects in order to provide a stronger foundation for future coastal land use decisions.

For the full report visit:
<http://ampr.gs/coastalrestoration>

Endnotes

1 Peter Edwards, Ariana Sutton-Grier, and G.E. Coyle, "Investing in nature: Restoring coastal habitat blue infrastructure and green job creation," *Marine Policy* 38 (2013): 65–71.

2 Quest Offshore, "The State of the Offshore U.S. Oil and Gas Industry" (2011), available at http://www.api.org/~media/Files/Policy/Exploration/Quest_2011_December_29_Final.pdf.



HABITAT: 7 football fields of wetlands are lost every hour in the United States



HEALTH: Wetlands filter water, making it safer for drinking, swimming, and wildlife



INNOVATION: "Geosynthetics" are a \$2 billion industry, and new wetland-friendly levees protect coasts and save money

"Restoring degraded marine and coastal habitat is critical if America's coasts and oceans are to reach their economic and ecological potential."

— Dr. Linwood Pendleton, Senior Fellow of Ocean and Coastal Policy at Duke University's Nicholas Institute for Environmental Policy Solutions

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For citations and references, please see Michael Conathan, Jeffrey Buchanan, and Shiva Polefka, "The Economic Case for Restoring Coastal Ecosystems" (Washington: Center for American Progress and Oxfam America, 2014), available at <http://ampr.gs/coastalrestoration>.