



National Wildlife Federation

Employment & Economic Benefits of Natural Climate Solutions

Background

Natural climate solutions are strategies that support or enhance the ability of natural systems to both mitigate climate change (by enhancing the removal or storage of carbon) or to increase the resilience of human communities and wildlife populations to the impacts of climate-related natural hazards. Beyond these benefits, strategies for enhancing the health of forests, watersheds, coastal areas, grasslands, farmlands, and other natural systems have noteworthy job creation potential, which is competitive with other markets including the non-renewable energy market. Restoration jobs can support up to 39 jobs per million dollars invested, compared with only 5 jobs supported per million invested in the oil and gas industry.^{1,2,3} The number and quality of restoration jobs depends greatly on the type of restoration and on the location. For instance, labor-intensive restoration can create more jobs for the same investment when compared with equipment-intensive restoration.⁴ This factsheet discusses what is known about the job creation and economic benefits of investing in a few types of natural climate solutions.

Federal funds have been used to support restoration, job creation, and value added to the economy with great success. In FY2010, the Department of the Interior invested \$156 million in ecosystem restoration activities in the Chesapeake Bay, Great Lakes, and Everglades, which supported more than 3,200 jobs and contributed more than \$427 million in economic outputs.⁵ Further, NOAA received \$167 million from the American Reinvestment and Recovery Act (ARRA) of 2009 to fund shovel-ready projects that restore habitats and stimulate economic growth. Per million dollars spent, the projects supported 15 jobs on average, or 30 jobs on average for labor intensive restoration such as invasive algae removal or building oyster reefs. In total, ARRA supported 2,280 jobs, added \$147.3 million in new or expanded economic activity nationwide, and restored over 25,000 acres of habitat. The projects now generate \$260.5 million annually.⁶

Coastal Restoration

U.S. coasts are highly productive and economically valuable. In fact, more than 40% of the nation's jobs come from coastal counties.⁶ However, climate change, human development, pollution, and other stressors threaten the health of important coastal resources.⁷ Restoring coasts and blue carbon systems including wetlands, beaches, reefs, and sea grasses can provide massive protective benefits, strengthen wildlife populations, create jobs, and generate recreational, fishing, or other economic benefits. Blue carbon systems like these are also significant carbon sinks—capable of sequestering as much as ten times more carbon dioxide than forests per acre.⁸

The ARRA funds spent on coastal restoration generated an additional 60 cents in the local economy for every dollar invested while supporting between 14 and 33 jobs per million dollars invested, depending on the type of coastal restoration.⁹ The rebuilt fisheries and increased local tourism resulting from these projects led to immediate job benefits, and can continue to spur job growth and benefit coastal economies for the long term.

As well, in Plaquemines Parish, Louisiana, the construction of two sediment diversions (expected to be complete by 2028) will help alleviate coastal land and wetland loss at a cost of \$1.85 billion. The projects are predicted to increase sales at businesses in the 4-parish region by over \$3.1 billion, support 2,255 construction jobs per year, and increase the household earnings of citizens in the region by more than \$809 million.¹⁰ More broadly, a \$25 billion investment in Gulf Coast wetland restoration could create 74,492 jobs in the first ten years, for an average of 7,449 jobs per year and over 29 jobs per million dollars invested.¹¹



Forest and Watershed Restoration and Management

Reforestation, climate-smart forest management, and watershed restoration all have the potential to bolster natural carbon sequestration, benefit wildlife, and provide economic benefits including job creation. In fact, reforestation, land and watershed restoration, and sustainable forest management have some of the highest job creation potentials per investment for all restoration efforts.¹²

In Oregon, each dollar of public investment in forest and watershed restoration is multiplied in economic activity between 1.7 and 2.6 times as it cycles through Oregon's economy. And, per million dollars invested, between 14 and 24 jobs are created.¹³ As well, projections for the Everglades in Florida indicate a \$11.5 million investment in restoration could spur substantial job creation and economic benefit. The U.S. Army Corps estimates that these restoration projects will create nearly 23,000 short- to mid-term jobs. Further, Everglades restoration projects yield a 4:1 return-on-investment.¹⁴

The Legacy Roads and Trails (LRT) program is one great example of the employment benefits of forest and watershed stewardship. The U.S. Forest Service program works to decommission roads, especially where roads negatively impact water quality of ecologically sensitive streams. As well, the workers remove fish passage barriers and conduct trail maintenance. LRT helps to create or sustain between 697 and 1,115 jobs on average per year, which translates to about 15-24 jobs per million spent.¹⁵ The program also helps to protect public access to forests and facilitate local collaboration.



Credit: Doug Kerr

Mine Land Reclamation

Mine reclamation is the process of bringing degraded mined lands back to a more natural state. The process has unique value for job creation as employment benefits occur in the same locations where communities are impacted by the decline of coal, and reclamation jobs can go directly to out-of-work miners. Estimating reclamation job hours and creation can be tricky since most mines do work in-house and data is reported variably or not at all. However, in a 2018 report, the Powder River Basin Resource Council was able to quantify that 1.5 hours of work per acre is required for the re-vegetative work alone. These hours would translate to between 19 and 28 full time jobs across the 14 Wyoming coal mines studied in the report. However, revegetation is just one part of the reclamation process, which also requires backfilling and regrading mines.¹⁶ Further, after mines are reclaimed, the land can be used to provide value to the community; in Ohio, a 5,735-acre State Park named for Olympian Jesse Owens sits on reclaimed land.¹⁷

The Abandoned Mine Land Reclamation Economic Development Pilot Program (AML Pilot) is a federal program to help reclaim abandoned mine land for reuse or other community goals. Data from the AML Pilot indicate the benefits of reclaiming and converting mine land. It was estimated that projects from the only first year of the AML Pilot, which cost less than \$30 million, would create 3,000 jobs, generate over \$140 million in revenue, provide workforce training to more than 225 students, and attract over 600,000 visitors to the region in Kentucky alone.¹⁸

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