





demand for resources globally. So green eyes turn to other solutions: namely, how economic drivers can accelerate conservation efforts. A key step in making the case for increased public and private investment in conservation is proving the economic benefits of that work.

### Dirt Work is Green

Watershed restoration work is inherently local, and the money and jobs associated with this work generally stay local. Moreover, this work commonly involves actual active, on-the-ground work, which requires skills and machinery available in the local workforce. In 2008, for example, a coastal stream restoration project near Bandon, Oregon employed commercial fishermen out of work due to a federal shutdown of local salmon fishing. More restoration work translates into more jobs, which translates into incentives for business growth in

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the stream restoration sector, which translates into diversification and strengthening of local economies in rural America. This is not just a green dream; existing numbers back it up.

A recent University of Oregon study found that over 80 cents of each project dollar stays in the county where the project is located, and over 90 cents of every dollar spent stays in state — money that is spent on watershed council coordinators, laborers, and heavy equipment operators who live in or near the communities in which the project exists. A similar study in Humboldt County, California determined that natural resource restoration generated about 20 jobs per \$1 million invested, more than twice the value of commercial fishing in that region and greater than some agricultural commodities.

“The restoration economy is real,” notes Harry Hoogestegger, coordinator for the South Coast Watershed Council in Oregon and a veteran manager of restoration projects. “The logger, the truck driver, the excavator operator, the fence builder and the tree planter. They are the ones that provide the supplies and make the project happen — locally.”

Another factor in restoration economics is an indirect albeit still local one. The University of Oregon research found that every dollar spent

on restoration work indirectly generates, on average, an additional \$2.10 to \$2.40 in spending within the county as original project dollars are typically re-spent locally by those who directly earned them. This is called a “multiplier effect”.

“The economic multiplier measures the number of times local spending circulates in the local economy,” says Cassandra Moseley, director of the Ecosystem Workforce Program of the Institute for a Sustainable Environment at University of Oregon and co-author of several studies on economic impacts of restoration. When a contractor lands a job to replant a stream bank, for example, that contractor hires workers to put the trees in the ground (direct impacts), and spends money on trees from local nurseries and shovels from local suppliers (indirect impacts). But the flow of

money does not stop there. The contractors’ employees spend their earnings at a local grocery store, on childcare, and other goods and services (induced impacts). The grocery store, in turn, uses that money to pay its workers and also to purchase

more goods from local farmers and producers, who in turn use the money from the grocery store to purchase seeds, equipment, hay, etc. Both through the sale of goods and supplies and in employment, stream restoration work translates into broad investment in local and regional economies.

### An Emblem of Rural America: Grant County, Oregon

Grant County sits east of the Cascade Mountains, in the heart of Oregon’s ranch country, rich in natural resources. The county is home to the headwaters of all four forks of the John Day River, the second-longest undammed river in the American West (after the Yellowstone). The expansive river ties into to all aspects of Grant County rural life: economic, political, recreational, agricultural, social.

The John Day boasts one of the largest remaining populations of wild spring Chinook salmon and summer steelhead, with no hatchery releases anywhere on its length. These native stocks make restoration investment here very attractive. No dam was ever constructed, but human impacts over the past 150 years remain significant. Large sections of the river were artificially straightened to ease irrigation and navigation, disconnecting floodplains and blocking side channels

critical for spawning. Streamside areas were cleared of shade trees to increase productive acreage, which also increases water temperature. Many ranchers allow cattle to directly access the river and its tributaries for water, sometimes trampling streamside vegetation, muddying the water and depositing manure.

At the same time, Grant County is also a key target for economic revitalization. In many ways, the economic history of this region tells the story of the American West. In 1862, the discovery of gold near Canyon City and later near Granite precipitated a stampede of gold miners into the area, extracting approximately 800,000 ounces by 1900 (about \$16 million at the time). Mining remained the dominant sector of the area’s economy until 1942 when the U. S. War Labor Board strictly regulated gold mining. This effectively led to the abandonment of several mining towns and the decline of the mining industry in eastern Oregon and elsewhere.

Because of Grant County’s wealth of natural resources, however, agriculture, ranching and timber industries eventually grew to replace mining as dominant economic drivers. At one time, the area boasted some of the largest sheep bands in the world, supplying wool to the famous Pendleton Woolen Mills. While livestock and timber remain important sectors of Grant County’s economy today, the overall production and profitability of these industries has declined in recent years because of political and market factors. As a result, the county has experienced the second highest unemployment rate in Oregon for the last 30 years; today, the current unemployment rate is a staggering 15 percent. On the upside, the county has experienced some growth in recreational activities and tourism, as well as cottage industry, but residents still struggle to increase productivity and diversify their economy.

### Green Economics in Grant County

In summer 2006, planning commenced to reconnect altered side channels and plant streamside vegetation along 3.8 miles of the Middle Fork John Day River. Though the project was designed to primarily benefit spring Chinook salmon and summer steelhead, habitat restoration will also benefit other wildlife like the American beaver, western meadowlark and Oregon swallowtail. On-the-ground work began in summer 2009 and was completed in 2010.

The total project budget came to \$1.3 million, with the majority spent in 2009 and 2010. Of that, 62 percent was spent and remained in Grant County, with the remaining 38 percent spent entirely within

## THE END OF “US VS. THEM”?

In 2003, FIRE! (“Fighting Irresponsible Radical Environmentalism”), a non-profit political action group, erected a billboard near Heber, Arizona, site of the 467,000 acre Rodeo-Chedeski wildfire, which read:

Thank You  
**EnvironMENTALists**  
for Making the 2002 Fire Season  
All It Could Be!

According to FIRE!’s press release at the time, “The purpose of the project is to express outrage at the disastrous wildfires largely due to the destructive demands of environmentalists.” During the early 1990s, residents and loggers in Pacific Northwest timber country protested the listing of the spotted owl under the Endangered Species Act with dead owls tacked onto roadside signs and “owl fricassee” fictitiously offered on many cafe menus.

At their core, these protests are not just sociopolitical —they are also economic. Much of the anger toward environmentalists and government regulators built up over decades of frustration and economic decline. The timber industry, for example, was in decline well before the spotted owl wars or the disastrous forest fires throughout the west in 2002 and 2003.

These tensions are exacerbated by the perceived vilification of agriculture and natural resource industries — and by extension, workers within those industries. “City slickers” showing up at a grange hall meeting to lecture farmers twice their age on better water management practices, for instance, do not find an attentive audience. While the environmental impacts of farming, ranching, mining, timber and fishing are real and much of the criticism valid, the effect of increased regulation, combined with the general decline of natural resource availability, changes in consumer behavior and market patterns, has seriously degraded economic activity in rural sectors, with no real replacement provided for lost jobs and investment.

Times, however, may be changing. Green economic investment, from wind farms to improved irrigation infrastructure to conservation projects, bring new jobs and opportunities to rural communities. Of all green economic drivers, watershed restoration may provide the best opportunity to directly tie farmers, ranchers, loggers and fishers to actions that help restore productive land and streams. Most rivers and streams that need restoration run on private land, so the effort requires a cooperative approach between conservation groups, landowners and government regulators. In other words, restoration is only possible with open hands, not closed fists. If restoration investment can be scaled to levels required to make a meaningful difference, cooperation can expand even further, with multiple and expanding opportunities not only for conservation, but also for people who grow things for a living and the towns that support them.



Oregon, primarily in neighboring counties. After applying the average multiplier effect from the University of Oregon studies, the total economic impact of the Middle Fork John Day River restoration projects was \$2.7 million, creating more than 24 jobs.

Steve Lindley, a primary contractor for the Middle Fork John Day river project based in La Grande, Oregon, sees the real economic benefits of restoration work on the ground. “Most of the guys I hire need and appreciate the work. There is not a lot of other work right now. In fact, restoration work fills the void from the slow-down of the timber industry. The work pays well, and the guys enjoy it. They see the benefits to the river, and are proud of the work they do.”

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### A Restoration Economy Vision

The restoration project on the Middle Fork John Day and on rivers and streams throughout the country prove the potential of a restoration economy. Now imagine implementing that concept at scale. The math paints an interesting picture. According to U.S. Environmental Protection Agency, 26 percent of Oregon’s 114,823 stream miles fail to fully support aquatic life — in other words, about 30,000 stream miles need some form of restoration today. At a conservative average cost of restoration of \$50,000

per stream mile in Oregon (including planning and design, implementation, project management, monitoring and maintenance), restoring those 30,000 stream miles would require direct investment of \$1.5 billion. Averaging the figures from the table on page 15, that investment could result in over 28,000 local jobs and overall economic impact of nearly \$3 billion.



On a grander scale, nationwide, 35 percent of our total 3.6 billion stream miles are impaired — that’s 1.26 billion miles requiring restoration. The investment required to fix that many miles is staggering: \$63 trillion. Even restoring only the most critical 5 percent of those miles, and assuming efficiencies of scale bring restoration costs down, the economic impacts are still tens of billions of dollars to local communities, with millions of jobs created.

### Not a Perfect Solution — Yet

Achieving that kind of scale will prove challenging, however. Most restoration projects in the United States today are publicly-funded voluntary projects, and there is an inherent cap on public funding for this work. Restoration at scale will require new revenue streams for restoration, potentially through the development of new environmental markets. Environmental markets are a complex business, but in brief, markets allow for the translation

of ecosystem benefits, such as trees shading and cooling water and providing habitat for species, into “credits” that can be compared with and traded for impacts from wastewater treatment, road construction, development, even industrial production. This allows regulated entities that must offset or mitigate their impacts to do so through watershed restoration. Environmental markets get at those “negative externalities” from commerce noted earlier, by quantifying and requiring polluters to pay for those impacts, providing new revenue for restoration.

Can watershed restoration cure the economic challenges of rural America? On its own, no, but it can be a significant, positive factor. Restoration creates jobs, and from a macroeconomic perspective, restoration also helps reverse ecosystem degradation, necessary for long-term economic strength, and helps restore productive streams and lands, necessary for a robust agricultural sector and expanding the capacity of the fishing and timber sector. As the real values of ecosystems are better understood, investment in their well-being will continue to expand, both as an economic opportunity for private and public capital, and as a requirement for long-term prosperity. 🌱

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