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Published on *Solutions* (http://www.thesolutionsjournal.com)

Forestry Balances Profit and Conservation in the Pacific Northwest

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Volume 2: Issue 6: Page 57-63: Jan 02, 2012

In Brief:

For more than half a century, the forests of the Pacific Northwest have been intensively managed and heavily degraded. These forests are capable of providing multiple community and environmental benefits, which are critical to the resilience of our region. These benefits, or ecosystem services, include the production of clean and abundant drinking water, clean air, biodiversity habitat, wood products, recreational opportunities, and more. By investing in the restoration of these forests, we can create new employment opportunities, move beyond the political battles that regularly call for either "locking up" the forest or cutting it all, and build a diverse, local, and strong forest products industry. An increasing number of companies and forest landowners in the Pacific Northwest are adopting and profiting from ecological forest management. However, additional public and private investment in the development of integrated and efficient ecosystem service markets and incentive programs is required to make a significant impact on communities and the forest.

Key Concepts:

- Ecological forestry, emphasizing ecosystem services, can produce economic, community, and environmental stability. This type of forestry manages forests for the full range of services they provide.
- Before ecological forestry can take root, we need to develop incentive programs and new markets that will make sustainable forestry financially competitive and profitable for foresters.
- In the Pacific Northwest, promising examples are emerging of the successful use of markets—such as carbon markets—and other innovations for encouraging sound forest management.

The temperate rainforests that hug the coasts of Oregon and Washington are some of the most productive forests in the world.[1] Temperate rainforests sequester more carbon per hectare than any other ecosystem on earth, are rich sources of biodiversity, and provide the people of Oregon and Washington with the majority of their drinking water as well as employment and recreational opportunities.[2–5] In addition, the tree species native to the forests of the Pacific Northwest—including Douglas fir and western red cedar—are among the world's most valuable for building and construction.

For more than half a century, the Pacific Northwest forests have been managed like an agricultural crop to produce timber.[6] In general, industrial management replaces diverse forest with a monoculture plantation, uses herbicides to reduce as much of the competing vegetation as possible and applies pesticides to kill potential pests, harvests the trees as soon as possible, burns the slash and debris, and then replants and starts the cycle (or rotation) again.

The management of these highly productive forests has been a contentious issue in the region for decades. The controversy has polarized communities, with just two management options capturing most of the debate: (1) minimize logging of the public forests to restore old-growth forest ecosystems and the species that depend on them; and (2) rely on the intensively managed privately owned forests to produce most of the region's wood and sustain the forest products industry.[7]

The Northwest Forest Plan, instituted in 1994, applies to more than half of the forested area in Oregon and Washington and

protects most of the timber in federal forests from harvest in order to allow those ecosystems to recover.[8] Meanwhile, management of public forests on state lands has been hotly debated in the state legislatures, via ballot measures, and through public protests in the forests. Just last summer, the Oregon Department of State Lands released plans to nearly double the harvest in the Elliott State Forest, causing a new wave of tree sitters to take to the forest to protest cutting rare, older temperate rainforests.

Recent changes on private lands have also fueled the political debate. Global economic pressures have resulted in significant shifts in ownership that have increased the intensity of industrial forest management. According to U.S. Forest Capital (an Oregon-based forestry and financial services company), 84 percent of the 60 million acres (24 million hectares) of industrial timberland in the country changed ownership between 1996 and 2007.[9] With these changes in ownership has come a new class of institutional investor. These new owners are generally less connected to the land than the local, family-owned operations that preceded them and are primarily interested in maximizing short-term profits. The strategy of both timber investment management organizations and real estate investment trusts—consolidating and shortening rotation lengths (the amount of time between timber harvests)—has reduced the incentive for corporate owners to diversify management techniques.[10] Over the last few decades, the average rotation age of industrial timberland in forests west of the Cascade mountains in Oregon and Washington has dropped from about 60-80 years to about 45 years. While private forests account for only a third of the total forest cover in Oregon and Washington, recent harvest data show that they generate more than 75 percent of the timber harvests in these states.[11,12]

Meanwhile, the mills needed to process this timber supply have become increasingly automated and are being consolidated into larger mills along the Interstate 5 corridor.[13] This trend has reduced the number of employed workers and frayed the social fabric of communities across the region. Over the past year, demand for logs in Asia has risen sharply, making it much more profitable to export logs than to sell them to local mills. This puts regional wood processors, and their local employees, at an even greater economic disadvantage.

There was hope that, after the passage of the Northwest Forest Plan in 1994, conservation objectives for particular species could be met substantially by federal lands, but these goals will not be achieved without management changes on private lands.[14] While Oregon and Washington are among the few states in the country with forest protection acts, many argue that these protections do not go far enough to adequately protect public resources such as clean water and fish and wildlife habitat. The industrial forest management regime has degraded millions of hectares of native forest, dotting the region with huge areas of young single-species stands of trees. Compared with healthy forest ecosystems, young monocultures are far more susceptible to major outbreaks of fire (as seen in southern Oregon a few years ago) and disease and pests (e.g., the Swiss needle cast epidemic on the Oregon coast and the mountain pine beetle infestation in Montana, northern Idaho, and British Columbia).[15] Intensive industrial management has also degraded water quality, decreased the amount of carbon dioxide the region is capable of sequestering from the atmosphere, and negatively affected habitat for Pacific salmon and many other forest-dependent species. These are costs to society that are not reflected on the industry's balance sheets.

Changes to private industrial forest land management can help us achieve our goal of supporting a profitable forest products industry while maintaining an ecologically healthy, diverse forest landscape and resilient local economies.

The Solution: Ecological Land Management

Forestlands offer a range of natural assets, or ecosystem services, including timber, clean and abundant water, biodiversity habitat, carbon sequestration, and employment and recreational opportunities. But forest landowners are currently able to easily monetize only a small fraction of these benefits. By managing forests for the full suite of services they provide and thus by capturing more value for these forest products, we could shift the dominant management regime for millions of hectares of forests from an industrial approach that has depleted our bank of natural capital to an ecological forest management approach that will restore the forests' natural portfolio of assets. By expanding public awareness and support for emerging ecosystem service markets and incentive programs, we can repair these rare and valuable forest systems, replenish our natural asset accounts, and make the region more resilient to change and disturbance.

For land managers, it is much simpler to manage forests with one or two species of the same age and to harvest using large-scale clear-cuts. But an ecological forest management approach that capitalizes on the natural diversity of species, ages, structures, and functions of Oregon and Washington's temperate rainforests has the potential to improve landowners' bottom lines. Prescriptions for this alternative, ecological forest management style—sometimes called conservation forestry, sustainable forestry, natural forest management, or continuous canopy—include maintaining the natural mix of tree species and age classes; removing many of the smaller and less healthy trees by "thinning" while retaining diversity; harvesting small, between two- and ten-acre (up to four-hectare), patches of forest (with the majority being less than six acres, or 2.4 hectares) between about 60 and 90 years old and designing these patch cuts to mimic natural disturbances, such as those created by windstorms, insects, and fires; leaving generous buffers around streams and wetlands; and minimizing harvests on steep and unstable slopes and

retaining big trees on these slopes to reduce the frequency and size of landslides.

Ecological forest management takes advantage of natural diversity and function instead of eliminating it. Society benefits in many tangible and intangible ways from forests on private, tribal, and public lands. Yet land managers are rarely compensated for their efforts to produce and maintain these public benefits (e.g., clean water, carbon sequestration, species habitat, flood protection), and this lack of economic compensation makes it difficult for many landowners to adopt ecological forest management practices.

There is a solution: we can invest in the regrowth of the region's naturally productive forests. Monetizing more of these public benefits will make ecological forestry more profitable and, thus, more appealing to many landowners than intensive industrial management. This solution will create a more resilient region by recognizing the true costs and benefits of ecosystem services.

Using Certification to Showcase Good Behavior

One important first step is to create clear standards for responsible ecological forest management and to reward forest managers who adhere to these standards. This can be accomplished, in part, through certification. For the last 20 years, the nonprofit Forest Stewardship Council (FSC) has helped ecological forest managers receive recognition for good forestry. The FSC certification program is voluntary, and it is the forest certification most widely accepted by environmental groups and most desirable for achieving rigorous green building standards, such as those advocated by the U.S Green Building Council's Leadership in Energy and Environmental Design (LEED). In the Pacific Northwest, there are 400,000 hectares of forest certified through the FSC program (see map). Forest managers in Oregon and Washington who follow FSC principles harvest on longer rotation cycles and use fewer chemicals, and their forests have wider buffers around streams, greater biodiversity protections, and smaller harvest sizes than is standard practice for industrial timber management companies. (The maximum clear-cut allowed under FSC rules is 40 acres, or 16 hectares, while under Oregon law a private forest landowner can clear-cut up to 120 acres, or 48.5 hectares—or more under certain circumstances.) The main benefit of FSC certification for forest landowners is gaining, holding, and expanding market access. In an increasingly globalized marketplace, the cheapest mass-produced products often win. FSC certification is way to differentiate between wood products: consumers rely on the rigorous, third-party review and monitoring of forest management that includes environmental, social, and economic considerations to guarantee the integrity of their wood products.

Many forest landowners in the Pacific Northwest practice ecological management. Native American tribes, for instance, have a long history of ecological land management. While tribes have not historically received financial compensation for the production of ecosystem services, the Confederated Tribes of the Warm Springs Indians in central Oregon certified their forest through the FSC and have received a price premium for their wood products. The Coquille Indian Tribe on the southern Oregon coast received its FSC certification in July of this year, and other tribes are currently considering certification. The land, resources, and environmental services director of the Coquille Tribe, Tim Vredenburg, says the tribe sought FSC certification in order to access expanded markets for its wood products and for third-party verification of its forest management activities.[16] Others, such as the Confederated Tribes of the Colville Reservation in northeastern Washington, are analyzing how best to use forest carbon protocols in Indian Country.

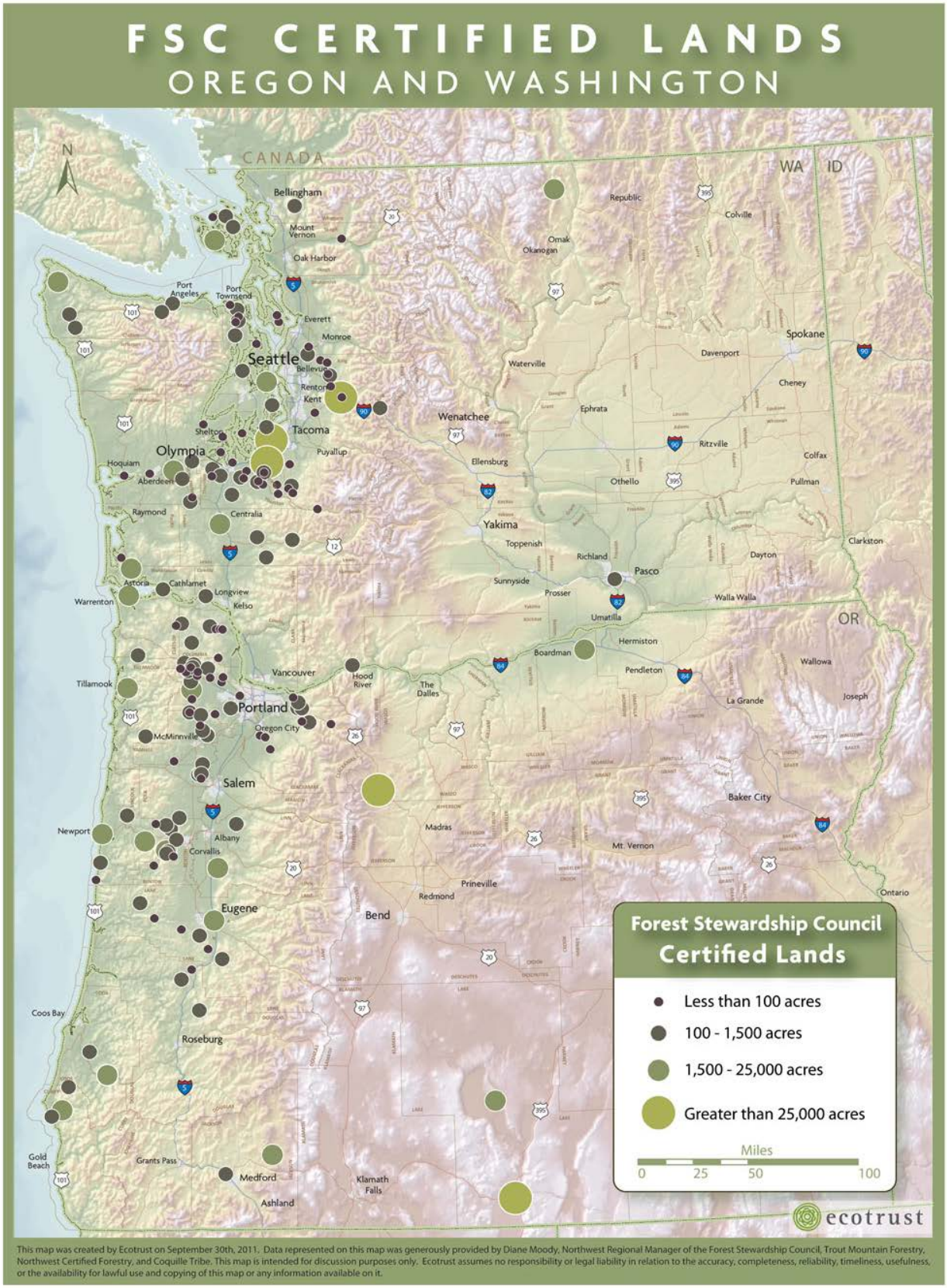
Meanwhile, just southwest of Portland in the center of Oregon's prime wine country, monks at the Our Lady of Guadalupe Trappist Abbey are practicing ecological forestry on 900 acres (364 hectares) of the abbey's land, which they have certified under the FSC. In recognition of the land's long-term value to the public, the Bonneville Power Administration purchased a conservation easement from the monks for $9.75 million. This easement will prohibit the conversion of the forest to other uses, such as housing developments or vineyards, and ensure permanent ecological management while providing the monks with an additional source of income. The long-term protection of a healthy, native forest helps guarantee the provision of public benefits, such as clean water, biodiversity habitat, and carbon storage, for generations to come.

Finding Markets for Forest-Based Ecosystem Services

The international market for carbon credits is a good example of a relatively new market for a forest-derived ecosystem service. In 2009, the global market traded 7.7 billion metric tons of carbon credits, and Bloomberg New Energy Finance predicts that this could result in excess of $2.4 trillion by 2020. This growing demand for carbon credits comes from increased interest in offsetting the effects of greenhouse gas emissions, either voluntarily or to comply with new laws. A large part of the estimated growth in the market in the Pacific Northwest is anticipated to come from the implementation of California's cap and trade system, which is due to start in January 2013.

The capture and storage of atmospheric carbon dioxide through the process of photosynthesis can help mitigate anthropogenic climate change. A forest carbon credit (measured and traded in metric tons of carbon dioxide) can be created when the financing for an offset project results in permanently storing more carbon in the forest than would have occurred without the project. A landowner might, for example, choose to forgo harvesting trees if the revenue generated by the forest carbon project meets his or her financial goals. The current average price for high-quality forest carbon credits (verified through accepted registries such as

the Verified Carbon Standards or the Climate Action Reserve) is around $9 per metric ton. Forest carbon projects that demonstrate a range of additional public benefits can attract a better price than carbon projects that result from, for example, the installation of a scrubber on a factory smoke stack.



Analisa Fenix, Ecotrust 2011
Forest Stewardship Council certified lands in Oregon and Washington in 2011.

But there are also other potential incentive programs for ecosystem services. Take, for example, the case of the Branscomb

brothers, Allan and Elbert, whose forest is near the town of Elkton, just southwest of Eugene, Oregon. The Branscomb brothers secured funding from a USDA program to help them conserve their forest. The Healthy Forest Reserve Program (HFRP) is a competitive program that uses easements to pay landowners to voluntarily restore and protect forest resources. In addition to the HFRP easement, the program offered the Branscombs the opportunity to enter into a Stewardship Agreement and Safe Harbor Agreement between the Oregon Department of Forestry, U.S. Fish and Wildlife Service, and the USDA Natural Resources Conservation Service. Under this arrangement, the Branscombs are managing their forest to maintain and enhance native wildlife habitat with a focus on creating quality habitat for the northern spotted owl and marbled murrelet (a small seabird). Their management plan specifies that they will "manage stands with an economic motive in balance with protecting habitat diversity and ecological integrity." By allowing for active ecological forest management, the Branscombs are able to generate revenue from their FSC-certified forest while providing net conservation benefits to the public. In addition, funding from the HFRP allowed the Branscombs to purchase an adjacent high quality forest property of several hundred acres. Had the Branscombs not been able to purchase this neighboring forest, which is home to at least one pair of nesting northern spotted owls, the forest would have been heavily logged. Under the rules of the HFRP, the Branscombs are allowed to seek payments through other sources for their forestland's ecosystem services.

Investing in Our Forests

An emerging class of investors seeks to profit from a range of forest products and services, not just timber. Ecotrust Forests (www.ecotrustforests.com) was the first such investment fund. It is a forestland investment fund that seeks to enhance the community and environmental benefits generated by forests while providing financial returns for its investors. The fund currently holds 12,500 acres (5,059 hectares) of FSC-certified forestland on the Oregon and Washington coasts. The fund is attracting interest from green building developers and is currently planning a harvest that will help meet the specifications for a LEED-certified development in Portland, Oregon. The fund has also benefited from the sale of a conservation easement on one of its forests. This easement will conserve a streamside forest buffer zone to protect aquatic resources. By lengthening rotations, expanding riparian reserves, protecting areas with exceptional value, and reducing harvest on steep and unstable slopes above and beyond what is required by government regulations, the fund has also developed the first forest carbon transaction listed with the Climate Action Reserve outside of California.

Ecotrust Forests has also added value for local communities by creating jobs and has improved financial returns through use of the federal New Markets Tax Credit (NMTC) Program. The NMTC Program was established in 2000 to help stimulate job growth in economically distressed communities. The program rewards investment in qualified low-income communities with a 39 percent tax credit spread out over seven years. Financial institutions with large tax liabilities buy the tax credits with up-front cash, providing qualifying entities with the funds for working capital, land acquisition, or construction.

Ecotrust Forests was the first investment fund of its kind, but with the launch of similar investment funds, such as Working Lands Investment Partners, it is no longer alone. The growth of these funds is a positive development for the restoration and protection of many public benefits, or ecosystem services. To make a significant impact on the landscape and improvement in forest-based ecosystem services, there needs to be a rapid and significant increase in the size and scale of these socially and environmentally responsible investment funds.

However, public investment in our forestlands is also needed. The recent economic climate has made it difficult to raise the large sums of private capital needed to acquire and manage forestland in the Pacific Northwest, where the average sales price of productive land ranges between $2,000 and $5,000 per acre. Public investment in the development of integrated and efficient ecosystem service markets and incentive programs could spur public-private innovation in market development; promote cooperation between government agencies, thereby facilitating project development while reducing costs; assist land managers with rigorous and transparent tools that help them visualize, assess, quantify, monitor, and value how changes in land management can affect the productivity of ecosystem services; and compensate landowners for producing public benefits.

By investing in our forests and monetizing more of the forest's public benefits (through markets for ecosystem services and incentive programs), we can make ecological forestry more profitable for foresters. The benefits are substantial—both for the long-term health of the forests and for the communities that depend on them.

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