

# Northwest Woodlands

A Publication of the Oregon Small Woodlands, Washington Farm Forestry, Idaho Forest Owners & Montana Forest Owners Associations

## FORESTLANDS AROUND THE WEST: WHAT OTHERS ARE DOING

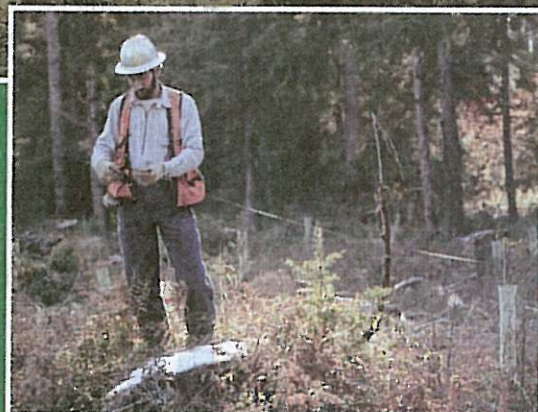
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# An Alternative Approach: Co-production of Timber and Ecosystem Services

By **BETTINA von HAGEN**

**A**t Ecotrust—a regional conservation organization based in Portland, Ore.—we look for “triple-bottom-line” approaches to forest management. This means that our strategies must: (1) be financially viable; (2) contribute to healthy and intact landscapes; and (3) help build vibrant communities. We believe that all economic activity can and should meet this triple-bottom-line test, from managing forests and farms, to constructing buildings and transportation systems, and to manufacturing widgets. We do believe in



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the value of preservation—of protecting viable, representative areas of significant ecosystems, such as old-growth forests. In some cases, protection is the best triple-bottom-line option.

However, in the face of growing population and increased resource demands, protection strategies are insufficient to maintain ecosystem health over the long term and are often prohibitively expensive. How we manage the land from which we derive our food, fuel and fiber—the commodity production lands—is ultimately much more critical to our long-term prosperity.

Moreover, there are few better places to test this approach than in the Pacific Northwest's productive, lush and forgiving forest landscape. Unlike many timber-producing countries, such as South Africa, New Zealand or Brazil, that rely on exotic plantations, our native species are highly desirable commercial species. Unlike most tropical forests, our native tree species diversity is fairly low, simplifying management and commercialization.

Our land tenure is secure; our forest products industry—logging, processing, distributing—is efficient; our population is relatively small and prosperous. Our trees tend to grow tall, straight and old, often not reaching the culmination of mean annual increment until 70 or 80 years or even beyond that with appropriate thinning. Given this, and the persistence of snags, downed logs and belowground biomass, our forests store more carbon than just about any other terrestrial ecosystem. Equally important, our forests have salmon. Commercially valuable, elusive, iconic, beautiful and culturally significant, salmon capture nutrients



*A close-up of a thinning operation on Ecotrust's Garibaldi property in Oregon.*

PHOTO COURTESY OF SAMUEL M. BEERE

from the ocean and deliver them to our forests' doorstep, enriching forest health and sustaining hundreds of plant and animal species.

Why not manage for all of these values, not just on a fraction of the landscape, but as a dominant forest management strategy? Why not explicitly manage for logs; for pulp; for biomass; for carbon; for habitat; for fish; for clean, cold water; for recreational opportunities; for scenic vistas on all of our private lands? Why not manage for older forests with the structure, diversity and productivity to deliver not only timber, but a broad array of nontimber products and ecosystem services?

At this point, one might reasonably ask: If such an approach is financially feasible, why hasn't it become the dominant management model? Doesn't managing for values other than timber sharply decrease timber harvests, profits and jobs?

This seems reasonable, but is only partly true and is mostly wrong. Managing forests for structure and diversity, or ecological forestry, results in: (1) almost as much wood (or in some simulations, as much wood) as industrial forestry; (2) more valuable timber, due to both longer rotations and thinning for log quality; (3) more jobs, given that thinning is labor-intensive and requires more frequent entries than industrial forest practices; and (4) improved ecological outcomes.

One intriguing comparative study was conducted by Dr. Andrew Carey (PNW Research Station scientist, now retired) and his colleagues, who modeled three divergent forest landscape management strategies over a 300-year period in a Pacific Northwest coastal hemlock forest. The study concluded that the biodiversity pathway approach produced 82 percent of the net present value (the sum of the discounted net cash flows

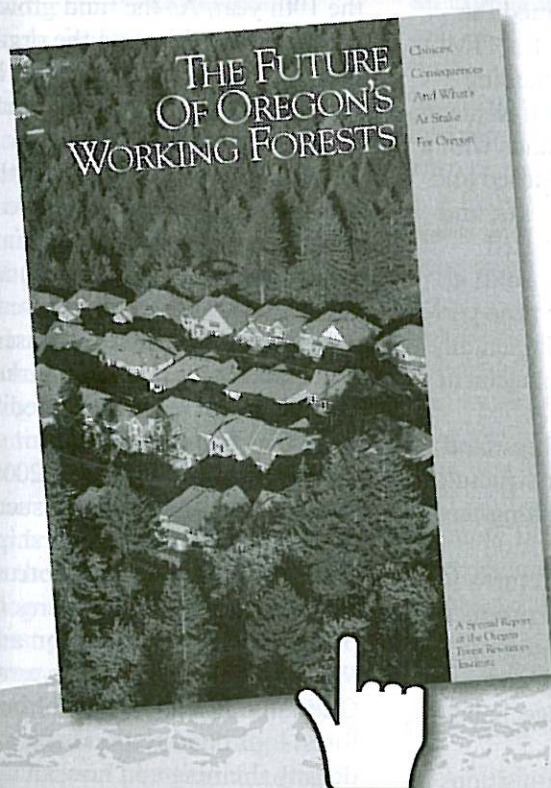
at the present time) of the industrial approach (a net present value of 58 million dollars vs. the industrial approach's 70 million dollars) while achieving 98 percent of the potential ecosystem health of unmanaged forests. This approach also produced a larger variety and higher quality of wood products than the industrial approach.

In another study, Richard Haynes (PNW Research Station scientist, now retired) found much larger differences in net present value. Not surprisingly, the "no-touch" approach generated no revenue; surprisingly, it failed to deliver even close to the level of ecological benefits provided by the biodiversity pathway approach. This illustrates that previously clearcut forests often benefit from active management to more quickly develop older forest characteristics.

Ecotrust's modeling generally confirmed Carey's conclusions, although we found a larger difference in net

present value between the industrial and ecological approach—30 percent versus the 18 percent difference noted by Carey, which we attributed to changes in prices for logs and pulp since Carey's 1999 study. In other words, a forest managed under the ecological regime produces more wood, more jobs and more cash over time, but the harvests come later as rotation age is extended. Given the time value of money, distant cash flows are worth less than those closer in time, so the net present value is 30 percent lower (an average) for ecological forestry than for industrial forestry.

This is an exciting affirmation: If timber managed under ecological forestry could produce 70 percent of the industrial value, then the other forest products and services, such as carbon, biodiversity and scenic values, which increase significantly under ecological management, could produce the other 30 percent of net



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present value to make up the difference. This would allow ecological forestry to be fully competitive with industrial forestry from a financial investment perspective.

Given the recent rapid escalation of ecosystem service markets, such as carbon credits, conservation and wetland banking and water quality trading, as well as longer-standing markets for conservation easements, we see expanding opportunities to monetize and transact in these other forest products and services. With a regional cap-and-trade market for carbon a virtual certainty in the next five years, along with the rapid growth of interest in socially responsible investing—now a \$2.3 trillion market—we see an opportunity to develop more compelling forestland management and investment options, especially in light of what is happening with forest ownerships.

The region's integrated forest product companies, such as Boise Cascade, Crown Pacific and Longview Fibre, have sold or are divesting of their forestlands either voluntarily or through unsolicited hostile takeover bids. The result is a rapid change of ownership from integrated companies to ownership of forestland by financial funds. These new owners value forestland strictly for its financial characteristics—

strong historical financial returns at relatively low risk, a hedge against inflation and diversification from other portfolio assets—and often have weaker ties to forest communities than the integrated forest product companies they replaced.

Although the growing presence of timber investment management organizations (TIMOs) presents new risks, it also presents some new opportunities. Forestland is coming to market at an unprecedented rate, offering buying opportunities not only for traditional TIMOs, but also for new classes of owners with genuine conservation, community and tribal interests.

### **Ecotrust Forests: Seeking Triple-Bottom-Line Returns**

In 2004, Ecotrust created Ecotrust Forests LLC (the fund) to give investors an opportunity to own forests managed for triple-bottom-line competitive financial returns, improved forest health and job generation in rural communities—using the TIMO structure as a template. Although we readily adopted the organizational structure of a TIMO, we had more difficulty assuming some of its other structural elements. TIMOs typically create funds with a 10-15-year life; capital is raised and placed into forest investments, and then the portfolio is liquidated (meaning the forestland is sold) at the end of the designated time period. This structure is fundamentally inconsistent with our management objectives, which are to:

- Purchase industrial forestland and manage it for greater structural complexity, diversity and long-term productivity.
- Provide competitive returns for our investors through the production of high-quality timber and pulp, and the monetization of ecosystem services such as carbon storage, habitat and water quality.
- Concentrate land acquisitions in high-priority watersheds where our management can benefit salmonids

and other species of interest.

- Attempt to influence the entire watershed by co-locating with other landowners that share our management objectives

- Create long-term relationships with local communities and contractors, providing a reliable stream of jobs and opportunities.

- Expand the knowledge, understanding and practice of managing commercial forests for the triple bottom line.

### **Outcomes of Long-Term Management**

Long-term management contributes to an unusual and ambitious fund structure: Ecotrust Forests LLC continuously raises capital, purchases forestland and manages those forests in perpetuity. Financial returns are generated through timber harvests and sales of nontimber forest products as well as ecosystem services.

Exit opportunities are initially limited to private sales of membership interests to other qualified investors and to a limited buyback program of membership interests that starts in the 10th year. As the fund grows, we may consider changing the organizational structure from a limited liability company to a private or public real estate investment trust to increase exit opportunities. Although timber revenues in the first two decades are generally lower than they would be under industrial management, material nontimber revenues, including carbon credits, conservation easements and New Markets Tax Credits (a federal tax credit program that is part of the Community Renewal Tax Relief Act of 2000, [www.cdfifund.gov](http://www.cdfifund.gov)), are pursued in the first five years of ownership.

As of October 2007, Ecotrust Forests managed 12,000 acres in four properties in coastal Oregon and Washington and had 25 investors. One can now see firsthand how the forest looks and responds to variable-density thinning and how an aggressive focus on removing fish passage barriers improves access for salmon

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and overall habitat quality.

We are also exploring and demonstrating the potential of alternative revenue streams; have successfully enhanced timber returns with conservation easements, sale of New Markets Tax Credits, and special forest products (primarily leases for harvest of salal, used in the floral green trade, and salvaging old cedar stumps for production of shakes and shingles); and are structuring forest carbon projects for the voluntary carbon market.

Although these are early days, we have gained valuable insights from pursuing about a dozen acquisitions and successfully acquiring four properties, developing and implementing management plans, and seeking ecosystem service transactions. Some of the early lessons include:

- The fund is most competitive in buying younger properties because mature properties are priced at liquidation value, which favors buyers with aggressive logging plans. Younger properties also provide the opportunity to improve structure and diversity early in the stand's life by thinning.

- Ecological forestry is more sensitive to log and pulp prices than industrial forestry. Thinning is more expensive than clearcutting on a volume basis; the result is smaller net margins and potentially less profit if prices drop or if steep slopes or other factors (for example, distance from roads) increase costs. On the other hand, because the fund is not leveraged and fixed expenses are low, thinning and management expenses can be timed to match well-priced markets. In addition, because the fund has access to nontimber markets for ecosystem services, it can pursue these other revenue streams when log and pulp prices are low.

- Most growth and yield models and forest management systems are designed for the predominant industrial approach of clearcutting, site preparation and planting. Finding modeling and management tools that adequately project growth and natu-



*An aerial view of thinning on Ecotrust's Garibaldi property.*

PHOTO COURTESY OF SAMUEL M. REEBE

ral regeneration following thinning and small patch cuts is very challenging and reflects a significant underinvestment by the research community in forest management approaches that differ from the industrial model.

- Early evidence suggests that our commitment to long-term ownership, an explicit focus on producing jobs and opportunities for local communities, and a broader set of management activities produces more jobs and more reliable employment than current industrial practices.

- Ecosystem service markets are a viable strategy for enhancing returns from timber and making ecological forestry fully competitive with the industrial model. The interest and opportunities in both carbon credit and water quality trading markets have increased significantly since the fund was formed. Particularly significant has been the sale of New Markets Tax Credits—not technically an ecosystem service market, but still a financial incentive from the public sector that provides financial incentives for enhancing the public good.

## Conclusion

A forest management approach that seeks financial returns from both timber production and the enhance-

ment of public values such as carbon storage, water quality and scenic vistas produces high-quality timber and an array of nontimber forest products and services. This plays to the competitive strengths of the Pacific Northwest, where trees grow old while remaining productive and residents value the “second paycheck” that environmental services and amenities provide. Ecological forest management enhances forest diversity and structure on private lands and is likely to create more resilient forests that are better positioned to survive the looming changes in global markets and climate. ■

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