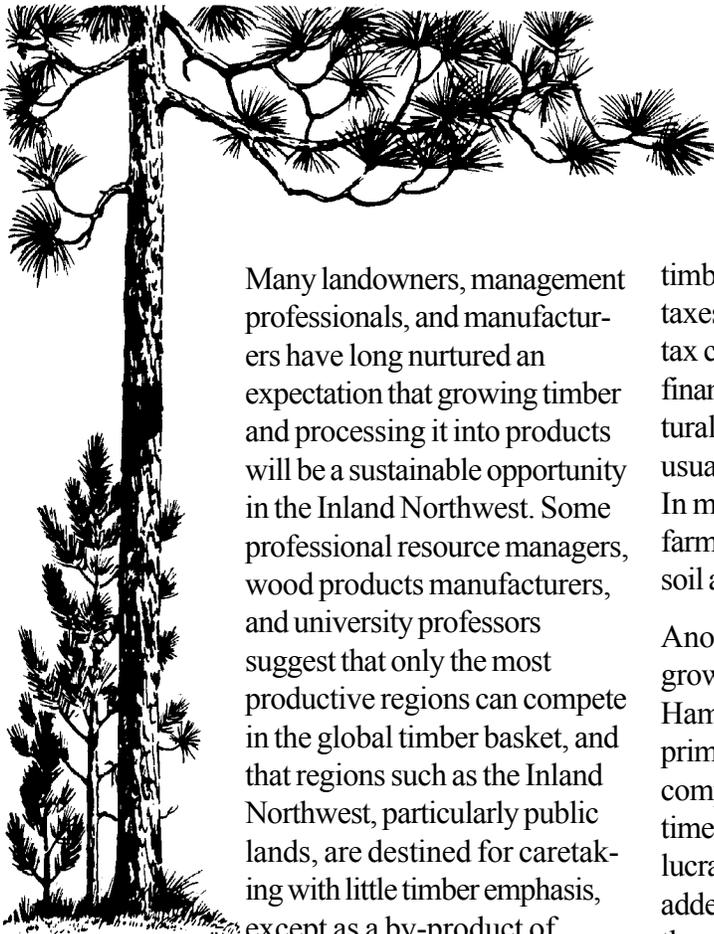


UI Extension Forestry Information Series

Silvicultural Decisions X: Is There a Future for Growing and Processing Timber in the Inland Northwest?

Ron Mahoney and Robert F. Powers



Many landowners, management professionals, and manufacturers have long nurtured an expectation that growing timber and processing it into products will be a sustainable opportunity in the Inland Northwest. Some professional resource managers, wood products manufacturers, and university professors suggest that only the most productive regions can compete in the global timber basket, and that regions such as the Inland Northwest, particularly public lands, are destined for caretaking with little timber emphasis, except as a by-product of ecosystem management.

One only has to look at truly marginal U.S. timber regions such as the Mid-South and Northeast to challenge these statements. There, timber productivity is about 1/3 that of Inland Northwest forests, yet they have viable timber manufacturing industries and significant acreages of family forests managed for timber. Why are they choosing to grow timber in such a low-productivity environment (compared to global regions) and why has timber remained economically

viable in these low-productivity regions? The answer is complex, and stems from alternatives to wood use and land use, entrepreneurial incentives and opportunities, and private owners' greater response to market economics than public lands. Family forests are often closer to main roads, mills, and markets, making their timber ventures more profitable. Favorable timberland taxes, reforestation and management cost sharing, and tax credits for forest production provide additional financial incentives. Productivity on formerly agricultural family forests is often enhanced by soils that are usually as good as or better than local "wild" forests. In most of the U.S., any land that could be farmed at some time, usually based on having tillable soil and relatively gentle terrain.

Another part of the answer is the species of trees grown and the scale of processing facilities. In New Hampshire and Tennessee, for instance, private forests primarily grow furniture-grade hardwoods. They compete with global furniture production and sometimes export their best logs, but still find a financially lucrative niche because of their small-scale, high value-added mills and furniture manufacturers. Because these mills are near the supply AND markets, escalating global transportation costs strengthen their market position and the incentives to grow and process timber. While the softwood species that dominate the higher production areas of the Southeast and Northwest have more global competition, some of these same factors still apply.

Other forces attempt to discourage wood use, especially opposition to using trees for products. Many studies document that all of the current alternatives to

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wood as a building material, especially metal, plastic and concrete, use vastly more energy with additional environmental costs. This applies to a lesser but significant extent to straw and adobe as well. Wood-based composites also use more energy and chemicals (usually bonding agents), but they have superior engineering properties and lower financial and environmental costs than non-wood alternatives. ***Wood, grown well, is the most environmentally friendly resource on the planet.***

In our region, we average about ½ the productive capacity of West Coast and Southeast commercial forests, although our better sites come close to their top sites, especially compared to the Southeast. There, early productivity for fiber or small sawlogs greatly exceeds many Interior Northwest sites, but this high productivity peaks by about 30 years, and longer rotations producing higher quality products in our region can rival long-term Southeastern returns on investment. In fact, our current productivity statistics are based on our largely natural forest stands that have had little or no management to optimize growth and value. We are just beginning to explore high-production, short-rotation plantations here. The forests along the Pacific Northwest coast boast exceptional growth and exceptional quality. However, the species mix is limited and is dominated by Douglas-fir for construction lumber. In the Interior Northwest, we also grow lots of Douglas-fir and other construction lumber species, but western redcedar and western white pine grow in greater abundance than in other areas, and traditionally command the top market price for their specialty properties.

The number and size of Inland Northwest mills and their distribution has certainly been impacted by global competition and federal timber withdrawals from the market. Some forest-dependent communities, primarily those in less productive areas of drier, higher elevation timber sites, have seen mills decline to the point where the last commercial lumber mill accepting logs in Idaho south of the Salmon River is closing. Little public timber is harvested, and private timber is insufficient to sustain the old-style mills requiring 60 million board feet or more of logs to sustain a single mill that produced construction lumber

but no final products. However, based on other rural states such as New Hampshire and Tennessee, smaller-scale mills with value-added manufacturing could be sited in these areas where wood quality is high and landowners and skilled labor desire to sustain their timber-based lifestyle. In this region, local and global economic realities demand more value-added to pay the higher costs of growing and manufacturing timber. Sometimes it takes awhile to move from large, high-volume mills to smaller, locally operated value-added mills, but this is already happening in the Inland Northwest where at least eight new or remodeled mills have come into production in the last 10 years, and one is in the works for the mill-deficient area of SW Idaho mentioned above.

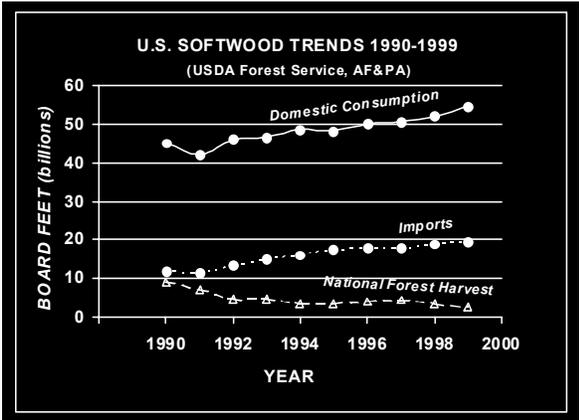
The impacts of global wood production and global economies on the demand and price for our wood products are large, real, and are increasing. We must consider the full context of global competition and our domestic situation, before drawing conclusions about the future of timber in our economy. ***Ultimately, successful planning for an economically viable, socially and environmentally acceptable Inland Northwest forest industry using local wood will require a global perspective on what we grow, where and for how long, and how we process wood and make it into higher-value products.***

Imports provide a significant percentage of our domestic wood consumption, dominated by softwood construction lumber from Canada. Most people think softwoods from Asia and Central/South America are the second largest source of imports. In fact, the second leading imports are hardwoods from Germany! Some believe that cost efficiency makes this possible, but the truth is that German wood is a high-cost, but very high quality, consistent product destined for fine furniture manufacturers.

To put some current aspects of the global “wood basket” into perspective, consider these figures showing the status of global land bases and USA wood demand:

DECADAL CHANGES IN FOREST COVER (FAO FRA 2000)

Region	Forest Cover (millions ha)		
	1990	2000	Change (%)
Africa	702.5	649.9	-7.4
Asia	551.5	547.7	-0.7 ...
Oceania	202.0	201.1	-0.4
Europe	1,030.8	1,039.5	+0.8
North America	466.7	470.6	+0.8
Central America and Caribbean	88.3	78.7	-10.8
South America	910.5	874.2	-4.0
The World	3952.2	3861.8	-2.3



Notably, Europe, Canada and the USA have increased forest cover slightly (Mexico has lost forest cover). Some forest is lost to urbanization in the USA, but other areas, primarily abandoned or converted farms, are increasing forest cover. More critical is the significant (nearly 11%) decline in forest cover of Central America and the Caribbean due to shifting agriculture, and poor management of ecologically fragile tropical forests. South America and Africa also show significant declines.

U.S. demand for softwoods, primarily housing construction lumber, continues to rise, but currently imports and private family forests make up for the decline in harvest on national forests. As transportation and other import costs continue to rise due to energy scarcity and rising standards of living in developing countries, domestic timber production and processing become more financially attractive. In addition, green certification standards should shift global wood production to the most environmentally resilient regions, such as the Inland Northwest.

WORLD POPULATION MAY RISE TO 10 BILLION BY MID CENTURY

	1990	2000	2010	2050
Population (billions)	5.3	6.2	7.0	10.0
Consumption (m^3 per capita yr^{-1})	0.60	0.56	0.54	0.50
Wood use (billion m^3)	3.2	3.5	3.8	5.0

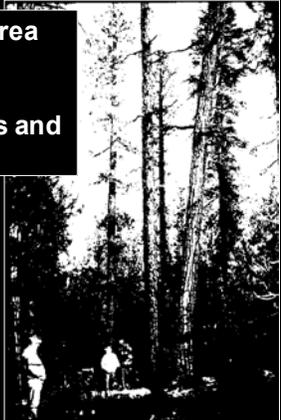
This means a one-third increase in wood supply to meet the demand of another 4 billion people

Per capita wood consumption is gradually declining, primarily due to reduced use of wood as fuel in developing countries and better utilization of wood resources. However, wood use will dramatically increase with population growth. We will need about 1/3 more wood by the middle of this century – just 45 years from now! Where will we get this wood? An area the size of Europe would have to be reforested immediately and produce this wood on a short rotation, to meet the demand with average “natural” forests.

How much forest area would we need for another 4 billion close friends and relatives?

1. Status Quo:
At natural forest MAI of $2 m^3 ha^{-1} yr^{-1}$ (30 ft^3/ac), 5 billion ha.

An area equivalent to the size of Europe.
(< 4 billion ha in world)



There is no foreseeable possibility that a new area the size of Europe will become a thriving forest. There also no evidence that this demand will be reduced or met by wood alternatives, and little expectation that resistance to using trees, in the long run, will cause a

more expensive shift to wood alternatives, because their environmental costs will be increasingly unacceptable. *Ultimately, we need to grow more wood, more efficiently under close environmental guidelines, to sustain our economies and accommodate inevitable global changes in populations and standards of living.*

The answer to this apparent dilemma lies in plantations - only 1/5 of this area would be required if it was in plantation, not natural forest. Even more possible, this plantation target can be met only if 13% of **current** global forests were in plantations. Today, only 5% of world forests are plantations (slightly higher in the U.S., but only 8% of our western forests are plantations). In our next article, we will discuss where these plantations might be located, and environmental aspects of plantations including biodiversity, sustainability, global economics, and the potential and desirability of plantations in the Inland Northwest. We'll also include some facts and figures of our current plantations. In the meantime, consider this: New Zealand recognized as early as 1914 that their small country could not meet its wood needs from natural forests. Their early pioneering of establishing plantations to meet their wood needs resulted in preservation of about 35% of their original natural forests, with money available to study and manage these national treasures. They are also net exporters of timber. Much of the globe no longer has this opportunity, but here in the Northwest we still do, by focusing our timber operations on a smaller, appropriate land base, by more intensively managing some of our current forest stands, and by expanding our forests by replanting once forested marginal farmlands. We must understand and respond to global changes if we want our forests and forest dependent communities to be economically and environmentally sustainable.

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Introducing Co-author Bob Powers

Dr. Robert F. (Bob) Powers is Program Manager and Senior Scientist, at the USDA Forest Service PSW Research Station in Redding, California. The tables and figures in *Silvicultural Decisions IX*, and much of the content, are drawn from Bob's recent presentations and articles. Bob has researched and documented solid evidence that growing trees and manufacturing wood products is a bright, sustainable, and environmentally responsible activity with a competitive future in our region. In addition to the information outlined in this article, Bob has published:

- *World Trends in Forests, Forest Use, Wood Supply: The Irony of California – The Challenge to Our Profession.*
- *On the Sustainable Productivity of Planted Forests.*
- *The Role of Planted Forests in a “Green Certified” Century.*

If you would like a printed, mailed copy of any of these articles, please contact Ron Mahoney, as they are not available electronically. These articles provide thoughtful, documented evidence on the question of the future of timber, as well as introduce the topic of our next Woodland Notes article for the Fall/Winter edition *Silvicultural Decisions X: Sustainable Forestry in the Inland Northwest: Do Plantations have a Role?*

