Effects of Global Economic Trends on Sustainable Management of U.S. Forests

What do global economic trends mean for the conservation and sustainable management of US forests? Pinchot Institute President V. Alaric Sample addressed this question at a recent seminar on the outlook for sustainable forest management in the United States.

In 2002, the World Wildlife Fund, the largest environmental organization in the world, shocked the forest products industry (and other environmental groups) by calling upon the ten largest multinational forest products companies to increase the area of intensively-managed forest plantations by ten-fold (Howard and Stead 2001). Their rationale was simple. They reasoned that, through investing in highly-productive forest plantations, more than 80 percent of the global demand for industrial roundwood could be met from less than 10 percent of the world's forests. Concentrating forest production on fewer acres would create greater opportunity for protecting large areas of natural forest for biodiversity conservation.

WWF's forecast for the global forest products industry is coming true faster than even they expected. The forest products industry has consolidated almost overnight, with fewer than ten multinational corporations accounting for more than 90 percent of global trade in forest products. Although several of these companies are still based in the U.S., they are global enterprises that will invest their resources where the factors of production—land, labor and capital—are cheapest. They will continue to gravitate to emerging markets where the prospects for economic growth and market expansion are highest—Latin America, Asia and Eastern Europe—rather than mature markets such as North America and Western Europe where growth prospects are relatively flat and return on investment is comparatively low.

Global economic and demographic trends are changing the fundamental structure and operations of the forest products industry, and they are redefining future opportunities for sustainable forest management in the U.S., on both private and public forests. World population is growing, but mainly in developing countries. U.S. population growth rate is relatively flat (or declining if migration is factored out). More than half the world's current population is less than 25 years of age. Between 60-65 percent of the world's population is in less developed countries, a proportion that is expected to grow.

In spite of economic growth and increases in population, global demand and consumption of roundwood has been essentially flat for the past two decades, with limited increases expected. This is due to a number of compounding factors:

- More efficient wood processing technologies and wood products applications
- Non-wood substitutes such as plastic packaging, and the use of steel, aluminum and concrete in commercial and residential construction
- Far greater use of recycled wastepaper than anyone anticipated
- An aging population in many industrialized nations

Demand for paper, paperboard and other wood-fiber products is shifting, with the highest increases in the rate of consumption in China, India, Latin America, and Eastern Europe, and the lowest in the developed, industrialized countries in Western Europe and North America (see Figure 2) (Parsonson 2005). Manufacturing capacity is fol-

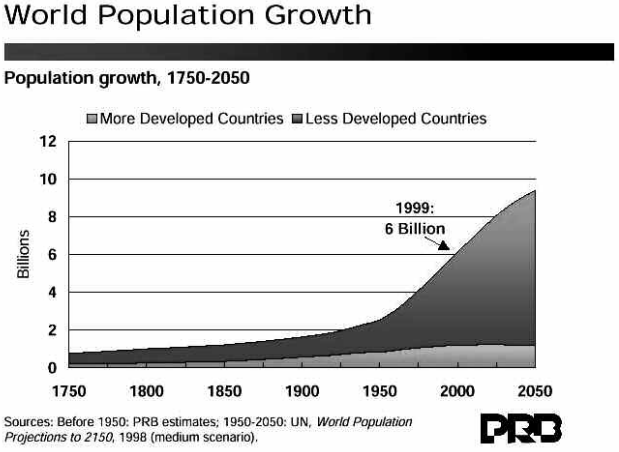

Figure 1. Global population trends.

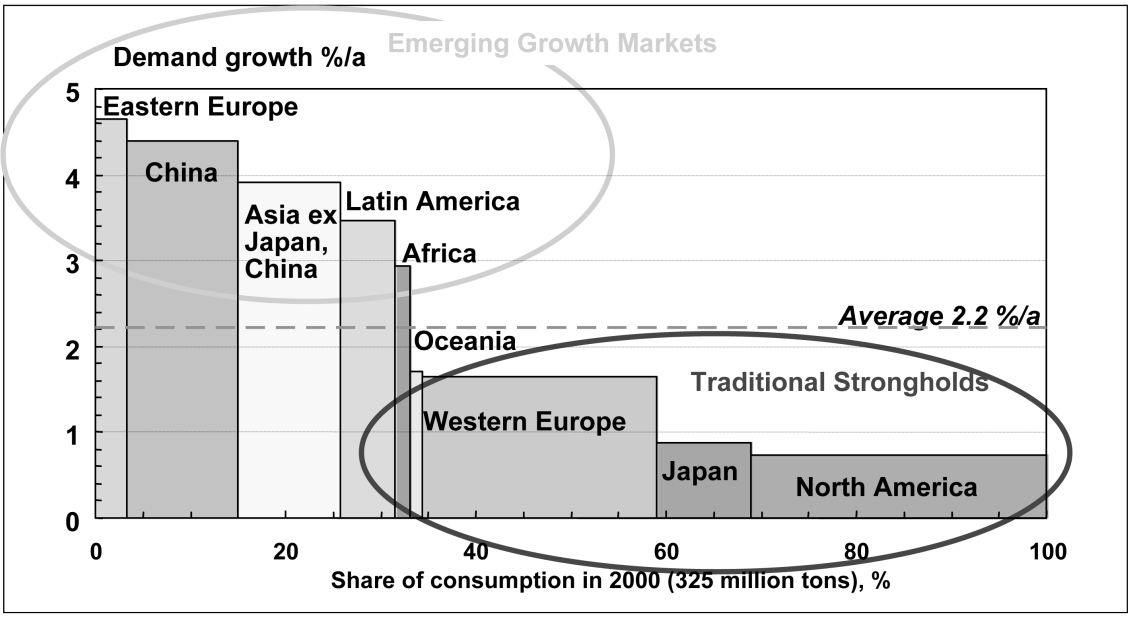

Figure 2. Paper and paperboard demand growth. Source: Parsonson, D. 2005. ***Global Competitiveness of US Forestry and Forest Industry.***

lowing the world's emerging markets as well, with the greatest investments in new production capacity expected to come in Asia, Latin America and Eastern Europe (see Figure 3) (Balter 2005).

Investments in timberland are shifting rapidly to intensively-managed forest plantations of non-native species in the Southern Hemisphere. The area of forest plantations in Latin America alone will soon be double what it was in 1990, from 10 million hectares to 20 million (see Figure 4). Plantations as a proportion of total forest area, forest inventory, and total harvest are expected to be more than double 1990 levels by 2025, and represent almost three-fifths of all roundwood removals worldwide (Balter 2005).

All the major factors of production—land, labor, and capital—are readily available at significantly lower cost than in North America or Western Europe, and less land is required for a given volume of production. Fast-growing trees and short rotations mean that less land area is needed to support a modern pulp mill, using current biological technologies that generally do not yet include genetically-modified trees.

So although worldwide demand for wood fiber-based products is growing, wood supply is growing at least as fast, resulting in projected price trends that are flat or even declining in real terms (see Figures 6 and 7) (Balter 2005, Parsonson 2005). Some important conclusions can be drawn from this analysis:

- Demand for wood products from U.S. forests overall is unlikely to increase during the next 10-20 years.
- There is no business case to be made for companies to invest in a major expansion of forest plantations in the U.S.
- Emerging markets, even immense and rapidly expanding economies like those of China and India, will not significantly modify the current supply/demand situation in the U.S.

There are some important implications for U.S. forests as well:

- Some of the most productive industry timberlands in the U.S., even in the Pacific Northwest and U.S. South, will struggle to compete on price or quality with wood from Southern Hemisphere plantations.
- Less productive private forest lands will have an even greater challenge to compete, leading to increased economic pressure to convert to development or other non-forest land uses.
- The greatest threats to biodiversity and other ecological values in U.S. forests will come not from timber harvesting, but from the growing pressures of forest fragmentation and conversion.
- "Keeping the forest in forest" and protecting the pub-

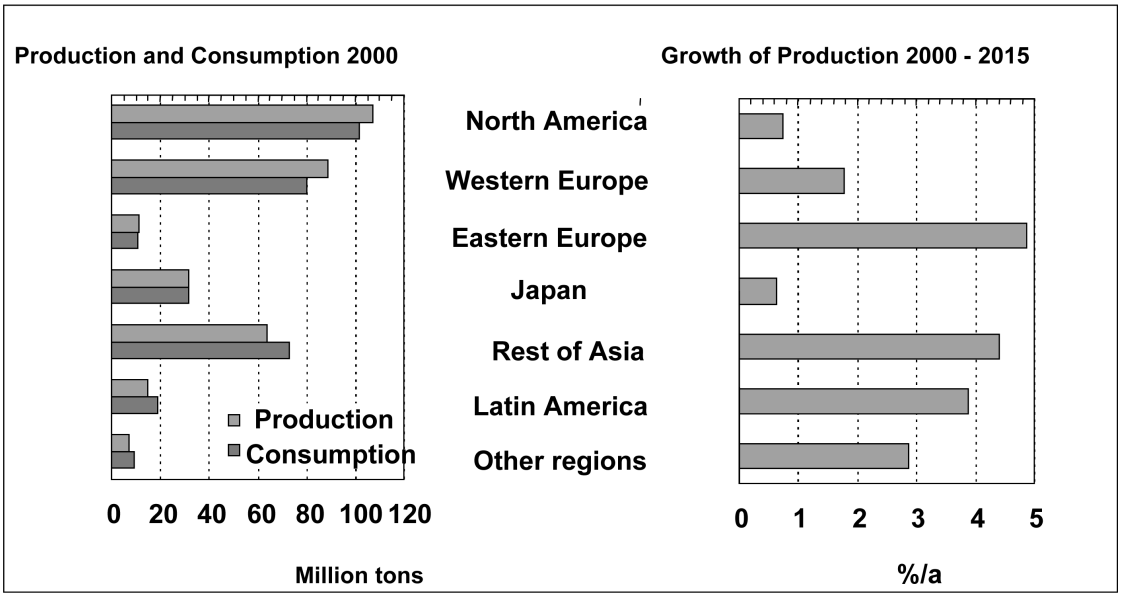

Figure 3. Production growth is also shifting. Source: Parsonson, D. 2005. ***Global Competitiveness of US Forestry and Forest Industry.***

lic values that these forests provide will become even more of a challenge.

Conservation Tools, New and Not-so-New

The question is this: with economic values from forests projected to be flat or declining, how can we maintain forests so that they continue to provide this important array of nonmarket values?

There is much discussion about the development of new market mechanisms to compensate private forest landowners for the "ecosystem services" they provide. Private lands typically provide a range of important public conservation values, a fact that is increasingly being recognized and acknowledged. Thus far, we see an enormous supply of ecosystem services from potential sellers, but very little demand from potential buyers. With a few limited exceptions (e.g., protection of water quality on critical municipal watersheds) income to private owners from the sale of ecosystem services is unlikely to be significant in the near term, particularly when compared to the prices being offered by urban and second-home developers. However, keep a close eye on developments in the area of carbon credit trading, which could become significant if federal or state government is willing to step in and set the kind of targets for greenhouse gas reduction that will create carbon credit markets of meaningful value.

A different sort of *de facto* market has developed on private lands for conservation values such as biodiversity protection. Thousands of individuals, foundations and corporate donors to land trusts and other nonprofit organizations have made it possible for them to protect large areas of forest. Following International Paper's recently announced sale of all its 6.5 million acres of timberlands in the U.S., one of the largest private owners and managers of forest land in the U.S. will be The Nature Conservancy. Much of this forest land, whether in fee-owned preserves or in conservation easements, is managed forest that is off-limits to development but is still producing an array of forest values. There are signs that we may be approaching the limits of the amount of forest land such organizations can handle, particularly as the sheer number of conservation easements strain the ability of land trusts to ensure adequate monitoring and enforcement of easement terms. Continuing divestitures of enormous tracts of valuable forest land, such as the pending International Paper sales, stretch the ability of land trusts and other conservation organizations to raise the capital necessary to purchase these timberlands, or even conservation easements on the lands, in a timely manner.

Sustainably Managing U.S. Forests, Private and Public

While this situation might sound challenging, it is by no means bleak. There are important opportunities on both private and public forest lands to, first, ensure their conservation as forest land, and second, manage these lands in ways that are socially, ecologically and economically sustainable.

On private lands, wood production will have to focus

on products and markets for which we have a natural competitive advantage. U.S. forests will have a difficult time competing in high-volume low-margin markets for commodity fiber products that can be produced far less expensively in Brazil. On the other hand, it will be difficult to substitute for high quality softwood and hardwood lumber, especially the kind that is in high demand in certified-only wood markets. Forest certification is gradually expanding, moving beyond being a new curiosity and becoming a permanent fixture affecting a significant share of the overall wood products market. U.S. producers must aim for competing as effectively as possible within this market segment.

	1990	2000	2025
Forest Area	2%	3%	5%
Inventory	4%	5%	8%
Total Harvest	16%	26%	35%
Industrial Roundwood Removals	23%	44%	56%

Note: Figures relate to operable forest only.

Figure 4. Plantations as a proportion of the global forest resource. Source: Baker, K. 2005. ***Global Timber Trends: Implications for the US Forest Product Sector.***

The rising cost of energy and new technologies for wood-based bioenergy are creating increasingly valuable markets for what was once wood waste. More efficient electrical co-generation technologies make it possible to meet virtually all of a sawmill's energy requirements, with surplus electricity that can be sold back into the regional power grid. Oddly enough, it is not the lack of technology that has inhibited this, but public utility policies that do not require power companies to pay for such surplus generation. This is now turning around, as more states establish targets for the percentage of energy that power companies will be required to generate from renewable sources.

Given the challenges for protecting public conservation values on private lands, what is the potential future role for public forest lands? Public forest land systems in the U.S. were originally developed as an antidote to forest exploitation. Timber was valuable enough to harvest, but not valuable enough to grow. Holding the land and investing in long-term sustainable production was not a competitive use of private capital, given all the alternative investment opportunities in the U.S. as a developing nation—railroads, steel mills, oil fields and all the other financial opportunities that created fortunes like those of the Carnegies, Morgans, Vanderbilts and Rockefellers.

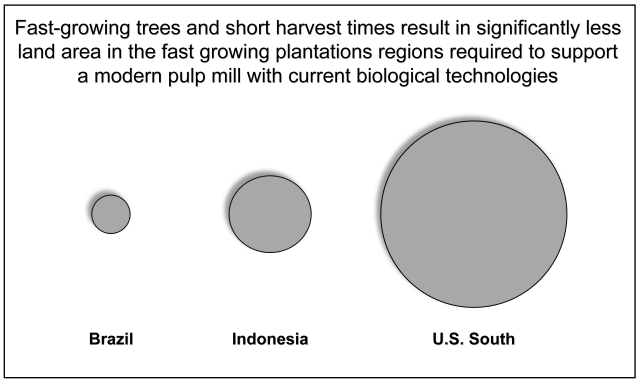

Figure 5. Contrasting land area requirements

Long before there was any discussion of concepts such as biodiversity or carbon sequestration, there was recognition that important public values were being lost as the nation's once extensive native forests were cut over, burned and eroded. Local communities began to experience danger from fire and flood. Focusing first on the need to protect watersheds and guarantee a reserve supply of wood, federal and state governments first reserved forests from the remaining public domain, and later used new authorities such as the Weeks Act of 1911 to accept private lands into public forest systems—private lands whose diminished economic values could no longer support their ownership and sustainable management by private entities. Public acquisition of such lands and the recovery of forests to what they are today is one of the greatest conservation success stories of the 20th century.

Yet today, the perception of public forests is decidedly mixed. Environmentalists are very wary, hardened by three decades of battling over clearcutting, herbicides, endangered species and a host of other environmental concerns. They still don't trust most public forestry agencies, and continue to rely heavily on the courts to decide how public forests ought to be managed. It is still the policy of several of the largest national environmental organizations that there should be a permanent prohibition of any kind of wood production for commercial use on federal lands. Ironically, the degree to which public forests have become hopelessly entangled in politics and litigation has turned forest industry, recreationists, and many local communities against the idea of expanding public forest land systems, especially at the federal level. The difficulty, expense, and unreliability of wood supply from public forests has put many local forestry firms out of business, and made public lands essentially irrelevant to much of the forest products industry.

For many local communities, the political entanglement of federal forest lands

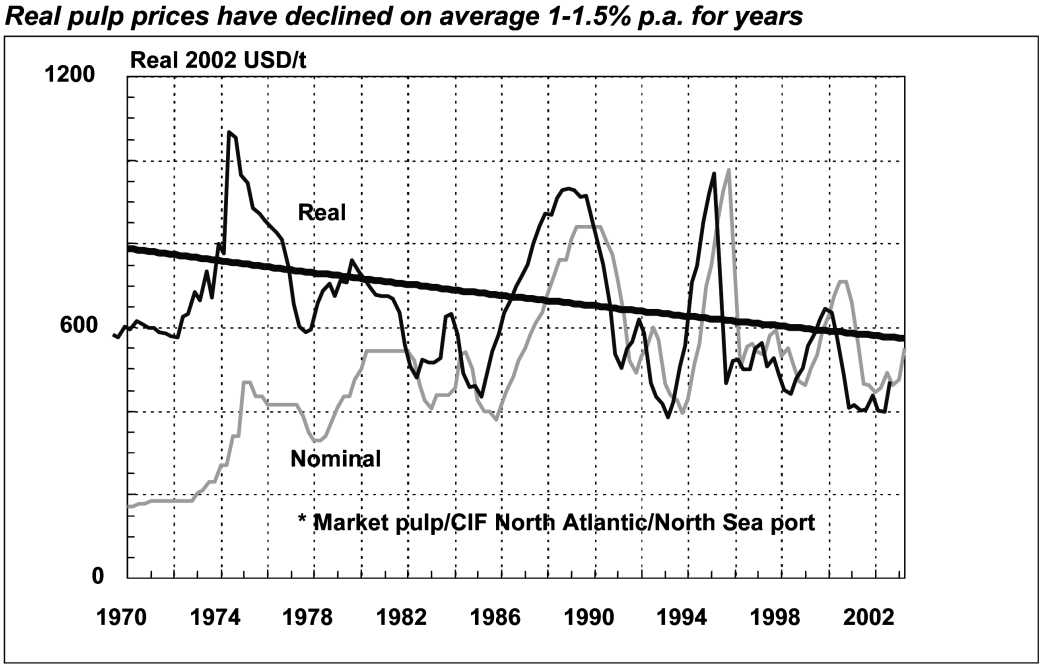

Figure 6. Declining price trends for key wood products. Source: Baker, K. 2005. ***Global Timber Trends: Implications for the US Forest Product Sector.***

has made them essentially impossible to manage for any purpose. There is a growing movement to "devolve" existing federal forests to management—if not outright ownership—by states, counties or even local communities. Would these more local authorities be willing or able to take on such additional management responsibilities, given the degree to which their human and financial resources are already stretched?

Before we kill the goose that laid the golden egg, we should take a moment to consider all that public forest lands could provide—and have provided, for a century or more—and what their potential role is in the future. Public forest lands are generally not subject to development pressures. They are the predominant sources of outdoor recreation opportunities. They provide protection for a wide array of public values and ecosystem services—even those we didn't know about originally—at a surprisingly reasonable cost. It costs the public, on average, less than $16 per acre per year to manage the National Forest System. This expenditure is more than offset by water values alone, and the rest is a huge bonus for the American people.

Forest Conservation as the Common Unifying Goal

Much has changed in the forestry sector in the past decade. These changes are continuing and in some instances accelerating. Development pressures on forests have shown a broader segment of society that intact, well-managed forests provide a wide array of public conservation values, and critically important ecosystem services that can only be replaced at great cost, if at all. These values are lost forever when forests themselves disappear under shopping malls and subdivisions.

There is a growing recognition that private forest lands provide many of these public conservation values, and have done so for many years at little or no cost to the public at large. A great deal of research and creativity is now aimed at creating functional markets for these ecosystem services, making them a commodity for which private landowners can actually receive compensation. Further efforts are needed to find new and better ways to make private forest ownership and management financially viable. We need to take a closer look at the unprecedented shift in private forest land ownership that has taken place in the past decade. New kinds of organizations—e.g. TIMOs and REITs—now own a large proportion of the private forest land in the U.S.. What are their values, incentives, and management objectives, and what does this mean for the conservation and sustainable management of these forests in the future?

There is growing recognition that on some forests, public conservation values are so important that they really ought to be protected in perpetuity as part of some public forest land system, free from the risk of development or fragmentation through continued changes in ownership,

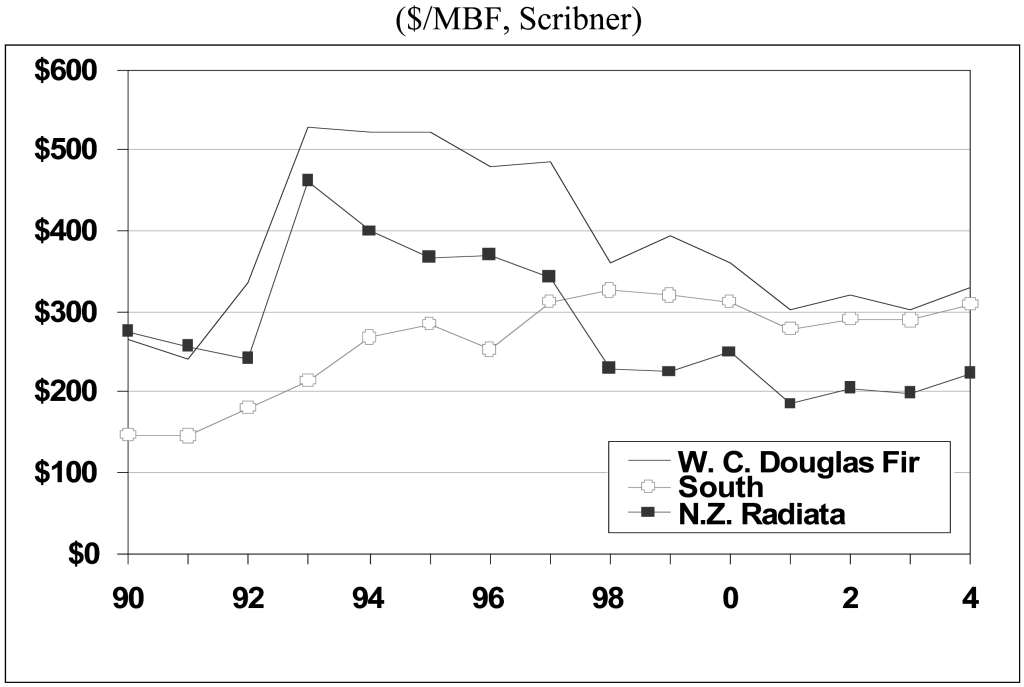

Figure 7. Softwood sawtimber stumpage prices. Source: Parsonson, D. 2005. ***Global Competitiveness of US Forestry and Forest Industry.***

and managed for the broader and long-term public interest under generally accepted principles of sustainable forest management. For this to happen, however, we will need to move beyond the political divisiveness that has made adversaries out of organizations that really ought to see themselves as on the same team.

While it is good and right in a free and democratic society that we continue to debate the values for which forests are to be managed, there is broad agreement that none of these values can be sustained if the forests themselves are lost. The cost of sinking all our resources into continuing the old battles over forest planning may be that, when the smoke clears, the forests that all of the combatants were fighting for, each in their own way, are simply gone. It is time to focus on the big picture, and the longer term factors that will determine the sustainability of our forests. It is time for those who cherish forests, for whatever reason, to focus more on the values that unite them, rather than the parochial concerns that divide them. We in the conservation community, defined in the broadest possible terms, are challenged to build a vision for the future of our forests, and a strategy that utilizes the full range of tools available to us for conservation and sustainable forest management.

The forests of this country are too important in too many different ways for them to be put at risk, and their future left to chance. Forest resource managers are seeing their options become more limited, with the change in economic values of forests and forestry relative to competing land use like urban and second-home development. But new options can created if we are skilled enough to identify them and capitalize on them.

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Parsonson, D. 2005. *Global Competitiveness of U.S. Forestry and Forest Industry.* In: NCSSF. 2005. Global Markets Forum. Summary Report of the National Commission on Science for Sustainable Forests (NCSSF), Washington, DC. Note: Figures 2, 3 and 7 are excerpted from a presentation based on this paper, which can be found at: http://ncseonline.org/NCSSF/cms.cfm?id=424