Testimony of Ernie Niemi

To the Subcommittee on National Parks, Forests & Public Lands oversight field hearing, "Failed Federal Forest Policies: Endangering Jobs, Forests and Species."
May 21, 2012

The Economic Importance of Federal Forests to the Pacific Northwest's Economy

Contact information (for identification purposes only):
Ernie Niemi
ECONorthwest
99 W. 10th Avenue, Suite 400, Eugene, Oregon 97401
niemi@econw.com 541-687-0051

I. Introduction and Summary

My name is Ernie Niemi. I am testifying on my own behalf before the Subcommittee.

For more three decades I have analyzed the relationship between federal forests and the economy of the Pacific Northwest, as a Senior Economist with ECONorthwest, the oldest and largest independent economic consulting firm in the Pacific Northwest. I live and work in Eugene, Oregon, but have conducted economic research on natural resource management issues throughout the United States and in other countries.

I encourage the Subcommittee, when considering the effects of federal forest policy, to consider the diverse nature of the relationship between federal forests and the economy of Oregon and Washington. In particular:

1. This region's federal forests produce many valuable goods and services that make important contributions to the economic well-being of workers and families, to the productivity of businesses, and to the economic outlook of communities, both rural and urban. These goods and services include wood fiber for the wood-products industry, clean water for communities, mitigation of potential flood damage for downstream property owners, habitat for fish and wildlife, recreational opportunities, the sequestration of carbon from the atmosphere, and many more.

2. This region's federal forests also generate jobs and incomes in many different ways. Not just through the production of products, such as logs for the timber and bio-energy industries, but also through the production of services, such as delivering clean water that lowers the cost of living and doing business in the region, recreational opportunities that support jobs in the tourism industry, and scenic amenities that attract productive workers, entrepreneurs, and investors.

3. Any policies regarding the management of the region's federal forests will have both positive and negative effects on the economy. With a change in policy, some residents of Oregon and Washington will see their economic welfare and job opportunities increase, others will experience a decrease.

All these dimensions of the relationship between this region's federal forests and its economy must be fully accounted for before one can reasonably conclude that the existing forest-management policies have failed, or succeeded. Similarly, all of these dimensions must be considered before concluding that new policies would, on balance, enhance or diminish the federal forests' contribution to the Pacific Northwest's economy.

II. Federal Forests Provide Many Economically Important Goods and Services

From an economic perspective, the Pacific Northwest's federal forests are important not in and of themselves but because they provide goods and services that increase the quality of life for the region's residents and visitors. The list of these goods and services is long and growing, as ecological scientists learn more about the inner workings of the federal forests and people learn more about how they derive benefits from them. Figure 1 provides an illustrative list. Consistent with widely accepted professional standards, this list includes a broad suite of goods and services, including those whose value comes from direct use of forest resources, such as logging, indirect use, such as purification of stream water, or non-use, such as occurs when

people are willing to pay to protect forest characteristics for future generations (USEPA 2000, National Research Council 2004, USEPA 2009). The list may expand or contract depending on the results of future research and changes in human preferences.

A product from a forest is considered an economically important good or service only if humans derive a benefits from it and have a demand for it. Throughout this discussion, I recognize that humans are part of the forest ecosystem: they affect the amount of natural capital in federal forests, the workings of forest processes, and, hence, its ability to provide a set of goods and services.

Figures 2, 3, and 4 illustrate some of the goods and services provided by this region's federal forests. Figure 2 shows the extent to which all forests are currently protecting areas important to the supply of drinking water. The most intense areas in Oregon and Washington are located on federal forests. Forest cover can explain 50 percent of differences in water-treatment costs for

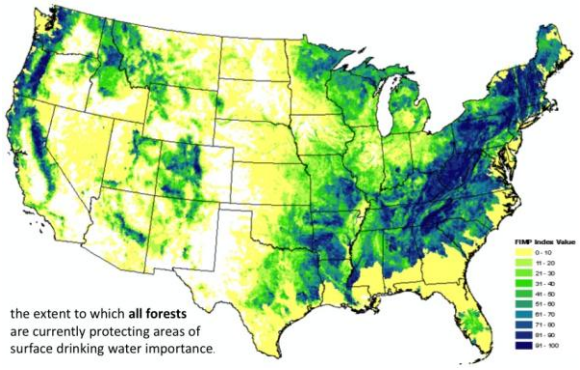
Figure 1. Illustrative List of Goods and Services Derived from Federal Forests

	Forest Processes	Examples of Goods and Services Produced
1	Production and regulation of water	Natural and human-built features of the forest capture precipitation; filter, retain, and store water; regulate levels and timing of runoff and stream flows; and influence drainage.
2	Formation & retention of soil	Forests accumulate organic matter, and prevent erosion to help maintain productivity of soils.
3	Regulation of atmosphere & climate	Forest biota produce oxygen, and help maintain good air quality and a favorable climate for human habitation, health, and cultivation.
4	Regulation of disturbances	Forest wetlands and reservoirs reduce economic flood damage by storing flood waters, reducing flood height, and slowing a flood's velocity.
5	Regulation of nutrients and pollution	Forest wetlands and riparian vegetation trap pollutants before they reach streams and aquifers; natural processes improve water quality by removing pollutants from streams.
6	Provision of habitat	Forest wetlands, riparian vegetation, streams, and reservoirs provide habitat for economically important fish and wildlife.
7	Food production	Forest biota convert solar energy into plants and animals edible by humans.
8	Production of raw materials	Forest biota generate materials for construction, fuel, and fodder; streams possess energy convertible to electricity.
9	Pollination	Insects facilitate pollination of economically important wild plants and agricultural crops.
10	Biological control	Forest-related birds and microorganisms control pests and diseases.
11	Production of genetic & medicinal resources	Genetic material in wild plants and animals provide potential basis for drugs and pharmaceuticals.
12	Production of ornamental resources	Products from forest-related plants and animals provide materials for handicraft, jewelry, worship, decoration, and souvenirs.
13	Production of aesthetic resources	Forest wetlands, riparian vegetation, streams, and reservoirs provide basis for enjoyment of scenery from roads, housing, parks, trails, etc.
14	Production of recreational resources	Forest scenery, streams, reservoirs, riparian vegetation, fish, waterfowl, and other wildlife provide basis for outdoor sports, eco-tourism, etc.
15	Production of spiritual, historic, cultural, and artistic resources	Landscapes serve as basis for spiritual renewal, focus of folklore, symbols of group identity, motif for advertising, etc.
16	Production of scientific and educational resources	Forest wetlands, riparian vegetation, streams, and reservoirs provide inputs for research and focus for on-site education.

Source: Adapted by ECONorthwest from various sources.

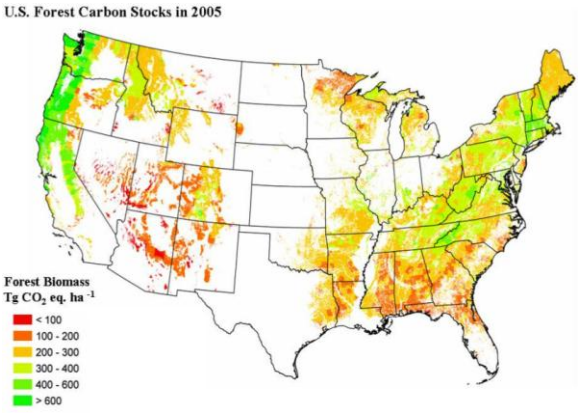
communities in forested versus nonforested watersheds, and, for every 10 percent increase in

Figure 2. Federal Forests Provide Protection for Drinking Water in the Pacific Northwest



Source: Todd and Weidner (2010).

Figure 3. Federal Forests Exhibit the Highest Carbon Stocks



Source: Stein et al. (2009).

forest cover, treatment and chemical costs decrease by 20 percent, with these benefits maximized at 60 percent forest cover (The Trust for Public Land et al. 2002). The map in Figure 3 similarly shows that the greatest sequestration of carbon, represented by the amount of biomass also occurs on federal forests.

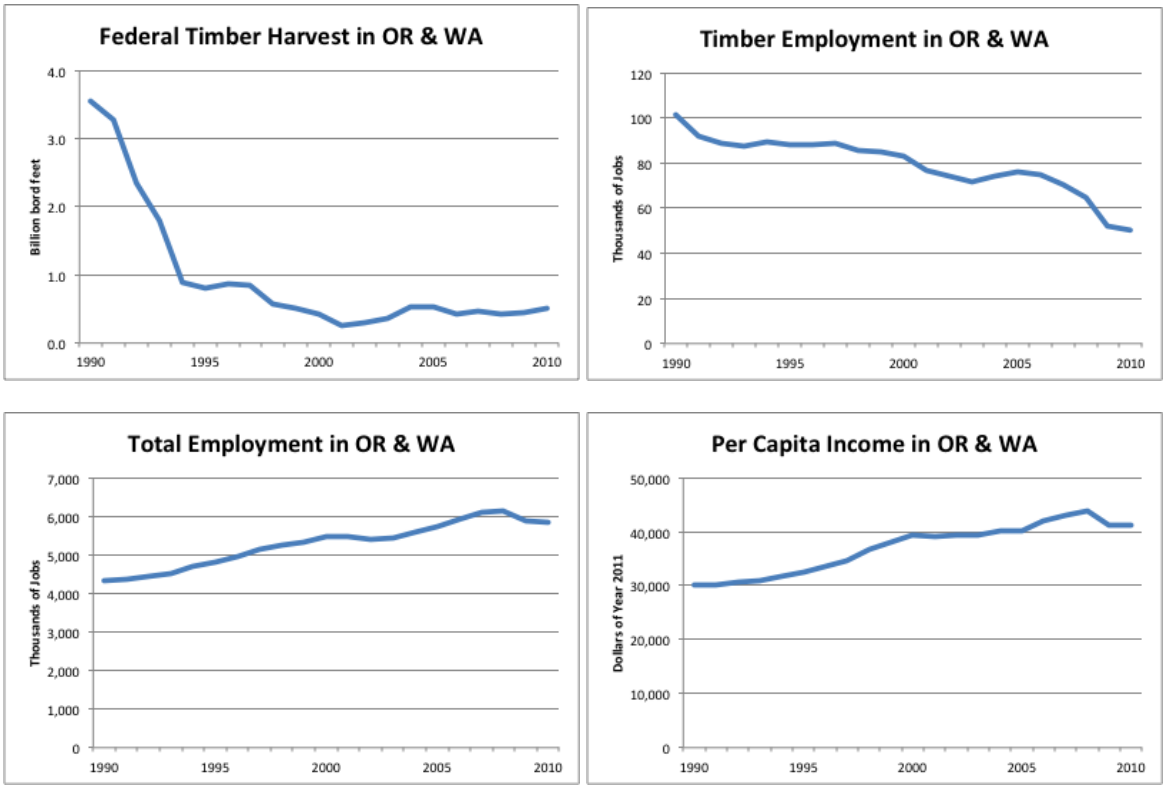
The federal forests of this region cannot be managed to increase the output of all goods and services at the same time. Increasing the output of one set will decrease the output of another. A change in management policies for the region's federal forests would improve the economic well-being of current and future generations only if it would increase the net economic value of all the different types of goods and services produced by the forests on a sustained basis. When weighing the potential change in the net economic value, it is important to consider all the different ways in which society imputes a value to forest goods and services: through direct use, indirect use, and non-use.

III. Federal Forests Generate Jobs and Income in Different Ways

Many residents of this region can remember when federal forests generated jobs primarily through the timber industry. Logging and milling operations provided jobs for workers and supported communities, large and small, dispersed throughout the region. The implementation of the Northwest Forest Plan was accompanied by widespread fear that not just jobs and incomes in the timber industry but the overall the overall regional economy would collapse. The collapse never occurred. Figure 4 shows that, although the amount of timber harvested from federal lands in Oregon and Washington fell by about 90 percent in the 1990s, overall employment in the timber industry declined by only about 30 percent, while total employment and per capita income increased by about one-third. These trends have continued. They strongly suggest that future logging on federal forests will generate fewer jobs and lower

incomes, and have less of an impact on the overall economy than in the past. This conclusion applies especially to small, rural communities. Figure 5 shows that the timber industry has shifted away from a large number of relatively small sawmills dispersed across the region to a smaller number of mills capable of processing large volumes of timber.

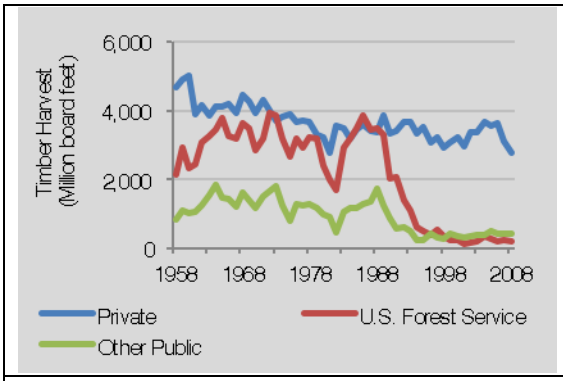
Figure 4. Changes in Federal Log Harvest, Timber-Industry Employment, Total Employment, and Per-Capita Income, Oregon and Washington

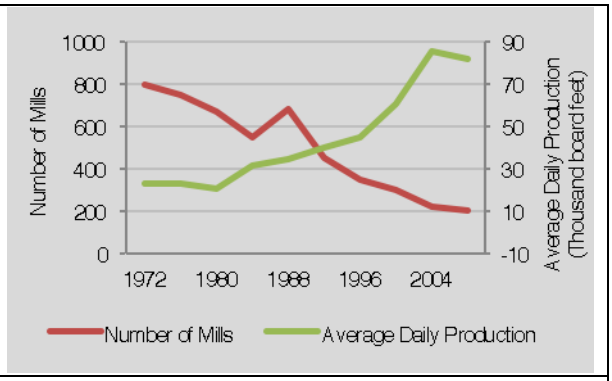


Source: ECONorthwest, with data from Oregon Department of Forestry (2011), Washington Department of Natural Resources (2011), and Bureau of Economic Analysis (2012).

Figure 5. Historical Characteristics of Oregon's Timber Industry

Oregon Timber Harvest by Ownership (1958–2008)	Number of Sawmills and their Average Daily Production (1972–2007)





Source: US Forest Service, Pacific Northwest Research Station. Production, Prices, Employment, and Trade in Northwest Forest Industries, All Years; Western Wood Products Association Statistical Yearbooks.

In today's economy, federal forests generate jobs and income primarily by providing recreational opportunities and other amenities that attract workers, families, entrepreneurs, and investors. The overall economic power of amenities, of all types, is indicated by the findings of research on differences in job growth among the 50 states to distinguish between the two growth processes (Partridge and Rickman 2003). The researchers concluded that industry-driven and amenity-drive growth have roughly the same impact on job growth. This finding indicates, at a minimum, that federal forests may have a greater influence on jobs and income through their amenities and their influence on household-location decisions rather than through the production of logs. This expectation is reinforced by research showing that communities close to undeveloped public lands have experienced faster population growth than those lacking these amenities. (Power et al. 2001 and Kim et al. 2005).

Federal forest generate some jobs and income through direct consumption of recreational amenities. In Oregon, in 2006, the last year for which these data are available, outdoor recreation accounted for 73,000 jobs, $310 million in state tax revenue, and sales that represented 3.4 percent of the state GDP (Outdoor Industry Foundation 2006a). During the same year, the outdoor recreation industry created 115,000 jobs in Washington, $650 million in state tax revenue, and sales that accounted for 3.5 percent of the state GDP (Outdoor Industry Foundation 2006b). Much of this recreation occurred on or was dependent on federal forest lands.

Restoration of ecosystems damaged by past management of federal forests also can generate significant jobs and income. For example, a recent report shows that, for every $1 million invested in restoration projects, 15.7-23.8 jobs are created in Oregon directly and indirectly, with average payroll costs per worker ranging between $31,000 and $55,000 annually (Nielsen-Pinkus and Moseley 2010). The total economic output of the same $1 million investment ranges between $2.2 million and $2.5 million. The reason for the high multiplier effects of investments in forest and watershed restoration projects is that 95-99.5 percent of the initial investment goes towards hiring Oregon-based businesses for contracted work. The indirect impacts on the state's economic output from these types of projects range between about $735,000 and $985,000 for every $1 million spent on restoration.

IV. Any Change in Federal Forest Policy Will have Both Positive and Negative Impacts on the Economy

The demands for goods and services produced by this region's federal forests far exceed the supply. As a consequence, competition—for resources, land-uses, goods, and services—is an essential characteristic of the relationship between federal forests and the Pacific Northwest's economy (Niemi and Whitelaw 1999).

Some of this competition occurs over short time periods. Changes in the amount of logging on federal lands, for example, might alter the price of logs in the regional log market, and induce off-setting effects on logging on other lands. A marked increase in federal log production, for example, might depress log prices so that private landowners receive less for the logs they sell to the market. Or, if activities on federal lands that are the headwaters for municipal water supplies result in higher levels of sediment in the water, the businesses and households will incur additional costs to remove it. This added cost can reduce the funds businesses have available for new investment and force households to reduce their local spending, resulting in further reduction in business investment.

Many of the overall effects on the regional economy of changes in the competition for federal forests play out over longer time periods. Past experience suggests that using federal lands as a source of logs for the timber industry will continue to exhibit a declining ability to generate increases in jobs and incomes, while using these lands as a source of amenities attractive to workers, entrepreneurs, and investors will continue to exhibit a rising ability to generate economic growth. Actions today that increase the supply of logs but reduce the attractiveness of amenities thus can have an overall negative effect on economic growth for decades, an effect that may intensify over time.

V. References

Bureau of Economic Analysis. 2012. *State Annual Personal Income & Employment.* Retrieved May 19, 2012 from http://www.bea.gov/regional/index.htm

Kim, K.-K., D.W. Marcouiller, and S.C. Deller. 2005. "Natural Amenities and Rural Development: Understanding Spatial and Distributional Attributes." *Growth and Change* 36 (2): 273-297.

Nielsen-Pincus, M. and C. Moseley. 2010. *Economic and Employment Impacts of Forest and Watershed Restoration in Oregon.* Institute for a Sustainable Environment, University of Oregon. Spring. Retrieved May 17, 2012, from http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/WP24.pdf

Niemi, E., and E. Whitelaw. 1999. *Assessing Economic Tradeoffs in Forest Management.* U.S. forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-403. July.

Oregon Department of Forestry. 2011. *25-Year Harvest History Data (1986-2010).* Retrieved May 19, 2012 from http://www.oregon.gov/ODF/STATE_FORESTS/FRP/Charts.shtml

Outdoor Industry Foundation. 2006a. *The Active Outdoor Recreation Economy Report: Oregon.* Retrieved May 18, 2012, from http://www.outdoorindustry.org/pdf/OregonRecEconomy.pdf

Outdoor Industry Foundation. 2006b. *The Active Outdoor Recreation Economy Report: Washington.* Retrieved May 18, 2012, from http://www.outdoorindustry.org/pdf/WashingtonRecEconomy.pdf

Power, T.M. and R.N. Barrett. 2001. *Post-Cowboy Economics: Pay and Prosperity in the New American West*. Island Press.

Stein, S.M., R.E. McRoberts, L.G. Mahal, M.A. Carr, R.J. Alig, S.J. Comas, D.M. Theobald, and A. Cundiff. 2009. *Private Forests, Public Benefits: Increased Housing Density and Other Pressures on Private Forest Contributions.* Gen. Tech. Rep. PNW-GTR-795. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. p. 41 Retrieved 8 November 2010 from http://www.fs.fed.us/ openspace/fote/benefits_files/pnw-gtr795_pt3.pdf.

Todd, A.H. and E. Weidner. 2010. "From Forest to Faucet: Drinking Water as and Ecosystem Service." Presentation to *ACES: A Community of Ecosystem Services, Gila River Indian Community, Arizona.* December 6. Retrieved 2 June 2011 from http://conference.ifas.ufl.edu/aces/Presentations/Tuesday/Plenary%20D-G/pm/Yes/0430%20A%20Todd.pdf.

The Trust for Public Land and American Water Works Association. 2002. *Protecting the Source.* Retrieved May 19, 2012, from http://cbey.research.yale.edu/uploads/Conservation%20Finance%20Camp%202011/agenda/Tuesday/protecting_the_source_04-1.pdf

U.S. Forest Service, Pacific Northwest Research Station. various years. *Production, Prices, Employment and Trade in Northwest Forest Industries.*

Washington Department of Natural Resources. 2011. *Washington State Timber Harvest.* Retrieved May 19, 2012 from http://www.dnr.wa.gov/BusinessPermits/Topics/EconomicReports/Pages/obe_washington_timber_harvest_reports.aspx