Statement in Support of HB 3226

Ernie Niemi, President

Summary

- 1. Current forest-management practices on most private forestlands impose a net harm on Oregonians by favoring timber-production methods that:
 - Jeopardize public health, safety, and welfare.
 - Impede sustainable economic development.
- 2. HB 3226 is necessitated because the current industry/regulatory structure can't prevent future harm to the Oregonians' health, safety, and welfare:
 - Wall Street, not local owners, control industrial forestland with a focus on short-term profits and a disregard for harms imposed on Oregonians.
 - The Board of Forestry and Department of Forestry do not demonstrate the ability and willingness to curtail this harm.
- 3. HB 3226 establishes the foundation for efficient and equitable management of private forestlands that will:
 - Protect Oregonians' health, safety, and welfare.
 - Support the development of diverse and robust revenue streams for landowners.



Supporting Material

I. Net Harm to Oregonians from Current Industrial Timber Practices

Common practices associated with industrial timber production on private lands harm Oregonians by:

- A. Negative impacts on public health, safety, and welfare.
- B. Impeding sustainable economic development.

A. Current Industrial Practices Harm Oregonians through Negative Impacts on Public Health, Safety, and Welfare

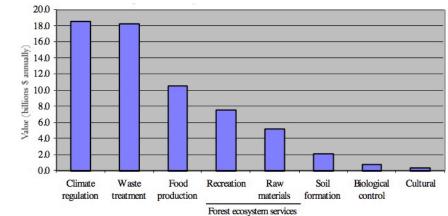
- 1. General harm: reduction in ecosystem services. Forest ecosystems contribute to public health, safety, and welfare by producing many services (benefits for humans). Monoculture (single-species) forests reduce the supply of these services (Figure 1).
- **2. Specific harms.** Common practices associated with industrial timber production reduce the supply or value of specific ecosystem services that underlie the health, safety, and welfare of Oregonians. Three examples:
 - a. Diminish welfare by exacerbating damage from climate change (Figure 2).
 - **b.** Diminish welfare by destroying high-value trees to produce low-value logs (Figure 3)
 - c. Increase risks to health and safety by reducing and degrading the supply of drinking water in streams (Figure 4).
 - **d.** Increase risks to health and safety by increasing the risk of landslides (Figure 5).

Others not shown:

- Reduced ability to control floods and other disturbances.
- Increased risk of exposure to airborne pesticides (humans, livestock, pets, wildlife, fish).
- Increased risk of wildfire.
- Reduced biodiversity.
- Reduced supply of nonwood forest products (berries, ornamental greens, and mushrooms, etc.)
- Reduced cultural and spiritual values.
- Etc.

Figure 1. Forests Provide Many Ecosystem Services that Contribute to Public Health Safety, and Welfare

a. Value of Ecosystem Services from U.S. Forests—Timber and Other Raw Materials Are a Small Portion of the Total



Krieger, Douglas J. 2001. Economic Value of Forest Ecosystem Services: A Review. http://www.cfr.washington.edu/classes.esrm.465/2007/readings/ws_valuation.pdf

b. Monocultural Forests Reduce the Supply of Ecosystem Services "Our study, which accounts for important environmental conditions, shows consistent positive relationships between tree species richness...and multiple ecosystem services. It also highlights the importance of conserving a variation of tree species, to safeguard a future potential of high levels of multiple ecosystem services.... We show that moving towards multi-species management can better realize the full potential of several economically, ecologically and culturally valuable ecosystem services.

Gamfeldt, Lars, and others. 2013. "Higher Levels of Multiple Ecosystem Services Are Found in Forests with More Tree Species." Nature Communications. http://www.nature.com/articles/ncomms2328 a. If Unchecked, Climate Change Will Destroy Most Habitat for Cold-Water Fish in Oregon

> It Will Have Similar Destructive Effects on Other Water-Related Assets and Services

b. Continuation of Current Industrial Timber Production Practices Will Exacerbate the Damage from Climate Change by Reducing Streamflow and Degrading Water Quality Cold- and Warm-Water Fish, 2100 Without

Climate Warming



Cold- and Warm-Water Fish, 2100 With Climate Warming



EPA. 2015. Climate Change in the United States: Benefits of Global Action. United States Environmental Protection Agency, Office of Atmospheric Programs, EPA 430-R-15-001

"Analysis of 60-yr records of daily streamflow from eight pairedbasin experiments in the Pacific Northwest of the United States (Oregon) revealed that conversion of old-growth forest to Douglas-fir plantations had a major effect on summer streamflow.... Average daily streamflow in summer (June through September) in basins with 34 to 43-yr-old plantations of Douglas-fir was 50% lower.... Reduced summer streamflow in headwater basins with forest plantations may limit aquatic habitat and exacerbate stream warming, and it may also alter water yield and timing in much larger basins."

Perry, Timothy P., and Julia A. Jones. 2017. Summer Streamflow Deficits from Regenerating Douglas-fir Forest in the Pacific Northwest, USA

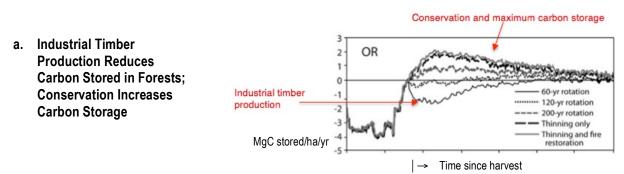
"One of the largest and longest studies done in Oregon on the impact of timber harvest on stream temperatures has found no average temperature increases on state forest lands, but a 1.3 degree increase on private timber lands."

Oregon State University. 2011. "Study Outlines Stream Temperature Changes Following Timber Harvests." Referring to Groom, Jeremy D. 2013. Stream Temperature Responses to Timber Harvest and Best Management Practices

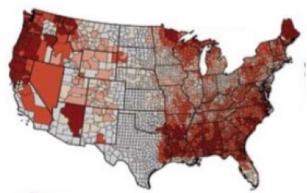
c. The Loss of Salmon, Alone, Will Reduce Oregonians' Welfare by Billions of Dollars The total economic value of the fish-related costs to Oregonians of actions that would reduce salmon populations in the Columbia River by 180,000 - 470,000 adult fish per year is [more than] \$1.9 billion for the low-end increase and \$2.8 billion for the high-end.

ECONorthwest, Natural Resource Economics, and ESA. 2012. Yakima River Basin Integrated Water Resource Management Plan: Four Accounts Analysis of the Integrated Plan. U.S. Bureau of Reclamation and Washington Dept. of Ecology

Figure 3. Industrial Timber Practices Diminish Welfare by Destroying High-Value Trees to Produce Low-Value Logs



Krankina, O.N, M.E. Harmon, F. Schnekenburger, and C.A. Sierra. 2012. "Carbon Balance on Federal Forest Lands of Western Oregon and Washington: The impact of the Northwest Forest Plan" Forest Ecology and Management.



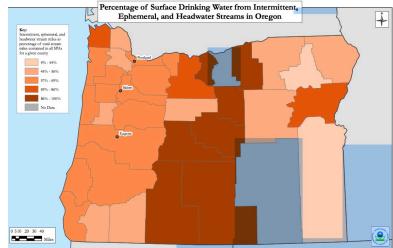
Woodall, Christopher W., and others. 2015. The U.S. Forest Carbon Accounting Framework: Stocks and Stock Change, 1990-2016. U.S. Forest Service, Northern Research Station. General Technical Report NRS-154.

C. Logging Trees in Oregon Can Produce Climate-Related Damage that Far Exceeds the Value of the Logs "The BLM expects to realize timber-sale revenues of...\$6,370 per acre logged...but current research findings suggest that...logging an additional acre will generate climate-related damages of...\$370,000."

Niemi, Ernie. 2016. Below-Cost Timber Sales on Federal and State Lands in Oregon: An Update.

Figure 4. Industrial Logging Practices Increase Risks to Health and Safety by Diminishing and Degrading Oregon's Drinking Water Supplies

a. Most Surface Drinking Water Comes from Intermittent, Ephemeral, and Headwater Streams



Environmental Protection Agency. https://www.epa.gov/sites/production/files/2015-06/documents/2009_10_15_wetlands_science_surface_drinking_water_surface_drinking_water_or.pdf

b. Industrial Timber Practices Have Direct, Negative Impacts on the Flow and Quality of Water from These Streams



"Human factors [negatively] affecting water quality include:

Recently managed forestland that has been harvested, replanted, treated with herbicides, etc."

Oregon DEQ and Oregon Health Authority. 2015. Oregon Coastal Drinking Water Protection Planning: Final Draft

c. These Impacts Negatively Affect Oregonians' Health, Safety, and Welfare Costs from reduction in streamflow, especially in summer: \$800/acre logged....

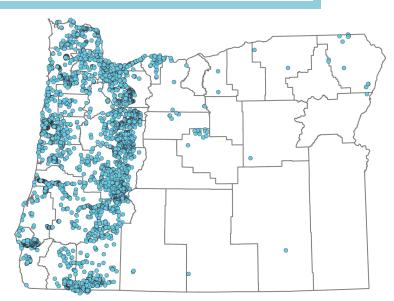
'Costs from reduction in water quality of streamflow: \$500/acre logged."

Niemi, Ernie. 2016. Below-Cost Timber Sales on Federal and State Lands in Oregon: An Update.

Figure 5. Industrial Logging Practices Increase Risks to Health and Safety by Increasing Risks of LandsIdes

a. Historic Landslides.

More than 1/3 of Oregon Has High or Very High Landslide Susceptibility



O'Boyle, Desmond. 2016. New map Examines Oregon's Landslide Areas. http://klcc.org/post/new-map-examines-oregons-landslide-areas

b. Industrial Timber Production Practices Increase the Risk of Landslides "Most research indicates that clearcut logging can increase the risk of landslides.... What about roads? Researchers have known for a long time that roads can cause landslides"

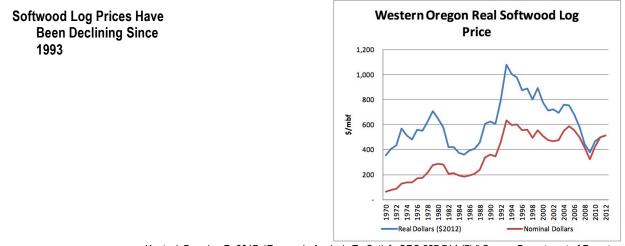
Oregon State University School of Forestry. 2017. "Do Clearcuts and Forest Roads Cause Landslides?" http://www.cof.orst.edu/cof/newfmc/product_examples/ forestlearn/watershed/landslide/landslide.htm



B. Industrial Timber Production Harms Oregonians by Impeding Sustainable Economic Development

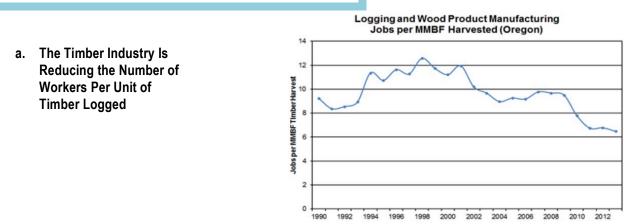
- **1.** The economic benefits to Oregon from industrial timber production are rapidly declining. The timber industry's positive impacts on Oregon's economy are getting smaller and smaller:
 - a. Declining log prices shrink the cashflow per acre (Figure 6).
 - **b.** Declining timber jobs shrink the number of jobs per acre (Figure 7).
 - **c.** Declining timber wages shrink the household income per acre (Figure 8).
 - **d.** Timber correlates with reduced social well-being in nearby communities (Figure 9).
- 2. Increasing spillover costs to the rest of the economy. In contrast, as it degrades streams and fish habitat, diminishes biodiversity, and negatively affects other natural resource amenities, the timber industry's negative impacts on other sectors of Oregon's economy are getting bigger and bigger:
 - a. Industrial timber's negative impacts on forest amenities could negatively affect in-migration that is critically important to Oregon's economy (Figure 10).
 - **b.** Industrial timber's negative impacts on forest amenities could cripple Oregon's rural communities (Figure 11).





Kaetzel, Brandon R. 2017. "Economic Analysis To Satisfy ORS 527.714 (7)." Oregon Department of Forestry. http://www.oregon.gov/ODF/Board/Documents/BOF/20170104/BOFATTCH_20170104_04_01.pdf





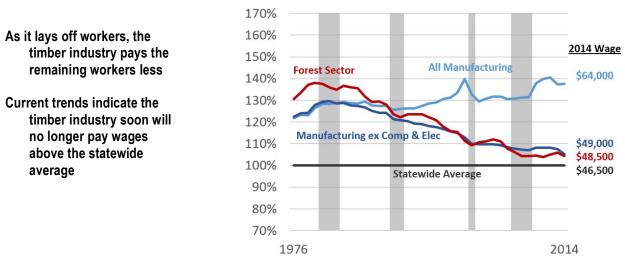
Nick Beleiciks. 2014. "Jobs per Board Feet of Timber Harvests in Oregon." Oregon Employment Department. https://www.qualityinfo.org/-/jobs-per-board-feet-of-timber-harvests-in-oregon.

b. Timber Industry Employment Has Been Declining for Almost Four Decades



Lerner, J. 2012 (updated 2014). "Historical Look at Oregon's Wood Product Industry." Oregon Economic News, Analysis, and Outlook.

Figure 8. Declining Timber Wages Are Shrinking the Household Income per Acre



Josh Lerner. 2015. "Manufacturing Wages." Oregon Office of Economic Analysis. November 3

Figure 9. Timber Correlates with Reduced Social Well-Being

A rigorous review of relevant research found that communities with more timber have more problems

"In most cases, timber dependency seemed to hurt rather than help communities."

- Higher unemployment.
- Lower income.
- More poverty.
- Lower levels of education.
- Lower birth rates.
- Higher death rates.
- Higher infant mortality.
- Poorer health care.
- Fewer churches.
- More arrests.

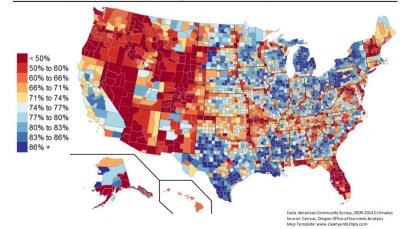
National Research Council, Committee on Environmental Issues in Pacific Northwest Forest Management. 2000. Environmental Issues in Pacific Northwest Forest Management. National Academies Press.

Figure 10. Industrial Timber's Negative Impacts on Forest Amenities Could Negatively Affect In-Migration that Is Critically Important to Oregon's Economy

a. Migration is a key driver to Oregon's economic growth.

Places that are the darkest red are more than 50% migrant.

U.S. Born Population Living in State of Birth, 2014



Oregon Office of Economic Analysis. 2016. STEM+ Trends in Oregon: Migration and Educational Attainment by Degree Type among Young Oregonians

 Oregon's ability to attract young, skilled people is a key determinant of its ability to sustain healthy economic development. "While Oregon sees net population gains among all age groups, most new migrants into Oregon are in their 20's and 30's....This age group is also vital for longer run economic growth. Once a regional economy is able to attract such workers, they rarely leave.... As such, a place like Oregon is able to grow its working age population through migration and raise the productive capacity of the regional economy.... Being able to attract young, skilled workers is very important for the health and future growth of Oregon's economy."

Oregon Office of Economic Analysis. 2016. STEM+ Trends in Oregon: Migration and Educational Attainment by Degree Type among Young Oregonians

c. Oregon's natural amenities reinforce its ability to attract young, skilled people. "Results suggest that students consider natural amenities in their migration to college decision."

Dorzel, Kathryn R. 2016. "Do Natural Amenities Influence Undergraduate Student Migration Decisions" Annals of Regional Science.

"It has been found that natural amenities tend to attract knowledge workers, and is increasingly playing a stronger role in where these workers decide to locate.... The value of amenity services that natural amenities provide has heavily influenced decisions regarding recreation and tourism, household location, and business location."

Hill, Elizabeth, John Bergstrom, H. Ken Cordell, and J.M. Bowker. 2009. Natural Resource Amenity Service Values and Impacts in the U.S. A DEMOGRAPHIC Research Report in the IRIS Series. USDA Forest Service.

Figure 11. Industrial Timber's Negative Impacts on Forest Amenities Could Cripple Oregon's Rural Communities

a. Negative impacts of logging on amenities, such as drinking water supplies and outdoor recreational opportunities could directly cripple inmigration in rural communities. "[R]ural Oregon, like its national counterparts, faces population losses among young working- age households.... However, unlike national trends, rural Oregon offsets these losses with a strong influx of older migrants from other states [and] people keep moving in. In fact...rural Oregon experienced just as strong of a net migration influx as did urban Oregon, after adjusting for population size, and considerably higher than in the typical state or region nationwide.... Such migration trends are particularly strong in coastal, central and southern Oregon. Furthermore, many bring with them not only a lifetime of experience but also wealth, often in the form of California home equity."

Oregon Office of Economic Analysis. 2015. Rural Oregon: Analyzing Demographic and Economic Trends Across Rural Oregon and a Look Ahead

b. Rural communities also could be injured when the negative environmental impacts of industrial timber production deters in-migrants from locating in Oregon's cities. "Overall, there is a substantial net flow of resources from the metropolitan area to the remainder of Oregon [about \$500 million per year for schools alone]. It seems apparent that the availability of public services in much of nonmetropolitan Oregon hinges vitally on the economic health of the Portland metropolitan area."

Cortright, Joseph. 2011. Who Pays, Who Benefits? An Analysis of Taxes and Expenditures in Oregon." In Michael Hibbard, Ethan Seltzer, Bruce Weber, Beth Emshoff (eds). Toward One Oregon

"[U]rban and rural Oregonians are also linked by the state's revenue-sharing system that is used to equalize the services available for the citizens of its state, especially for education and health care. This linkage is critical, because it means that economic vitality in one part of the state provides benefits to citizens in other parts. In effect, we all benefit from economic success in one part of the state because state tax revenues are shared statewide."

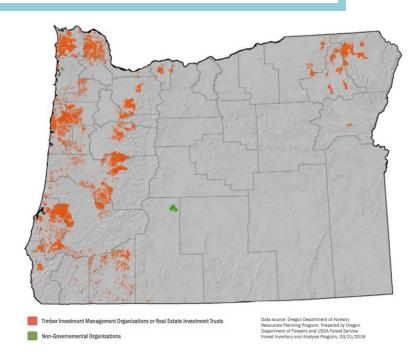
Martin, Sheila. 2011. "Critical Linkages: Strengthening Clusters in Urban and Rural Oregon." In Michael Hibbard, Ethan Seltzer, Bruce Weber, Beth Emshoff (eds). Toward One Oregon

II. Harm To Oregonians' Health, Safety, and Welfare Will Intensify Under the Current Industry/Regulatory Structure

Future harm can't be prevented without fundamental change in the institutional structure that currently allows it to occur. This conclusion is supported by many factors, but these two stand out:

- A. Wall Street, not local owners, control a large portion of Oregon's industrial forestland and manage it for short-term profits with disregard for the harm to Oregonians' public health, safety, and welfare (Figure 12).
- **B.** The Board of Forestry and Department of Forestry remain largely unconcerned about the harm industrial timber practices impose on public health, safety, and welfare (Figure 13).

- Figure 12. Wall Street Control a Large Portion of Oregon's Industrial Forestland with Disregard for Harm to Oregonians' Health, Safety, and Welfare
- a. TIMOS (Timber Investment Management Organizations) and REITS (Real Estate Investment Trusts) control almost half (2,733,000 acres) of the large private forestlands in Oregon.



Lettman, Gary, and others. 2016. Forests, Farms & People: Land Use Change on Non-Federal Land in Oregon 1974-2014. U.S. Forest Service, Pacific Northwest Research STation

b. TIMOs and REITs focus on generating short-term revenue from logging, with disregard for the impacts on Oregonians' health, safety, and welfare. "Beginning in the 1980s, large blocks of timberland began to be purchased by firms managing financial investments for large institutional clients, such as pension funds... Under the laws governing REITs, whose shares are publicly traded on a stock exchange, 90 percent of timberland returns must be distributed to shareholders annually. Therefore – like industrial timberland owners and unlike TIMOs – REITs seek to raise current income for shareholders [and] a great deal of the income for both TIMOs and REITs will come from sales of timber for manufacturing."

> Washington Department of Natural Resources. n.d. Washington's Forests, Timber Supply, and Forest-Related Industries.

"TIMOs and REITs are attractive to investors because of the combined cash flow that can be gained from timber sales and the security and stability of land value appreciation. Unfortunately, these factors do not account for the various environmental and social considerations involved in the management of a natural resource."

Fernholz, K., J. Bowyer, and J. Howe. 2007. TIMOs & REITs: What, Why, & How They Might Impact Sustainable Forestry. The BoF and DoF have a statutory obligation to consider the positive economic impact of rules that restrict the harm from industrial timber practices "...the board shall, prior to the close of the public comment period, prepare and make available to the public a comprehensive analysis of the economic impact of the proposed rule."

ORS 527.714(7)

But the BoF and DoF fail to meet this obligation.

They Have Not Measured Non-Timber Economic Impacts.

Their Failure to Measure Non-Timber Impacts Sets the Stage for Disregarding Adverse Impacts of Industrial Timber Practices on Oregonians' Health, Safety, and Welfare. "[T]he Board's response to the obligation of ORS 527.714(7)...does not provide a comprehensive analysis of the economic impact of the proposed rule. It does not even come close. Instead, it totally overlooked the potential positive economic impacts of the proposed improvements in streamside protections:

- Water quantity.
- Water quality.
- Biodiversity and sensitive species.
- Recreation.
- Aesthetics.
- Traffic.
- Air quality.
- Carbon storage.

Niemi, Ernie. 2017. Comments to the Oregon Board of Forestry re Stream Rules.

III. HB 3226 establishes the foundation for protecting Oregonians' health, safety, and welfare while supporting the development of diverse and robust revenue streams for landowners.

HB 3226 would limit industrial timber production that relies on practices that harm Oregonians' health, safety, and welfare. At the same time, by promoting sustainable uses of forestlands, it would yield these substitute benefits:

By eliminating disincentives arising from the spillover costs from current industrial timber practices, HB 3226 will stimulate the development of new markets for non-timber ecosystem services. It also will increase the profitability of those who produce timber without harming Oregonians' health, safety, and welfare (Figure 14).

Figure 13. HB 3226 Will Stimulate the Development of New Markets for Non-Timber Ecosystem Services

Industrial timber producers disregard the market opportunities associated with non-timber products because the current Forest Practices Act allows them to avoid paying the full costs of timber production. By forcing them to account for the full costs, HB 3226 will give them incentives to develop and participate in new markets

These and other sustainable producers of timber are currently disadvantaged because large industrial timber producers do not have to bear the full costs of their activities, but can impose these costs on Oregonians. HB 3226 will level the playing field and increase profitability for those who produce timber in a sustainable manner. "[T]he economic drivers for timberland investments may expand significantly if environmental and social concerns are included in the process. [For example,] if payments for carbon sequestration, watershed protections, or other ecosystem services become more common and more lucrative, these markets could also impact investments and land management practices."

Fernholz, K., J. Bowyer, and J. Howe. 2007. TIMOs & REITs: What, Why, & How They Might Impact Sustainable Forestry.

Examples of sustainable forest operators who will benefit from HB 3226:

- Zena Forest (Polk County).
- Corvallis City Watershed (Benton County).
- Shady Creek Forest Resources (Lane County).
- Camp Forest (Josephine County)
- Downing Family, Forest Resource Farm (Josephine County)
- Elvenwood Enterprises LLC (Josephine County)
- Walker Forest (Josephine County)
- Jerry Allen (Josephine County)
- Etc. (Figure 14).

TROUT MOUNTAIN FORESTRY FSC GROUP							
Client Members		month of the local data and the local data					
Owner	Parcel name	Nearest town	Acres	Year added			
	Alpha Farm	Deadwood, OR	220				
	God's Valley	Nehalem, OR	552				
	Aldrich Point	Knappa, OR	178				
	Beazel	Wren, OR	586				
	Finton	Philomath, OR	308				
	Hoskin	Wren, OR	126	1998			
Berry, John	Berry	Scio, OR	200				
Berry, John	Berry Home	Philomath, OR	40				
	Burgoine	Yamhill, OR	65				
Campfire USA	Camp Namanu	Aims, OR	550				
Canfield, Chris	Cerro Gordo	Cottage Grove, OR	415				
	Ching	Corvallis, OR	150				
City of Corvallis	City of Corvallis Forest	Philomath, OR	2,400				
City of Forest Grove	City of Forest Grove	Forest Grove, OR	4,345				
Conley	Conley	Philomath, OR	60				
Duncan	Duncan	Curtin, OR	40				
Eric Lemelson	Lemelson	Carlton, OR	150	2007			
Ferguson	Trout Mountain	Eddyville, OR	80	2007			
Gessert	Gessert	Crow, OR	100	1999			
Girl Scouts	Camp Arrowhead	Stevenson, WA	266	2008			
Girl Scouts	Camp Mountaindale	North Plains, OR	50	2008			
Girl Scouts	Homestead	Rhododendron, OR	32	2006			
Haden Family	Green Hills	Blaine, OR	155	2006			
Hauck	Hauck	Timber, OR	160	1998			
Hopkins Family	Hopkins	Scappoose, OR	80	2005			
Imbler	Imbler	Walton, OR	38	2006			
Kimball, Shirley	Kimball	Yamhill, OR	39				
Kunkel	Kunkel	North Plains, OR	74				
Lehman, Tom	Lehman	Corbett, OR	108				
Marple	Marple	Sandy, OR	55				
Martin	Martin	Corvallis, OR	90				
Metro	Metro - Cooper Mountain	Beaverton, OR	256				
Morris	Morris	Alsea, OR	40				
Nordstrom	Nordstrom	Beavercreek, OR	80				
Novick	Novick	Eugene, OR	256				
	Oregon Parks Foundation		70				
Parker, Gail and Paul	Parker	Portland, OR	5				
Picht	Picht	Corvallis, OR	172				
Quale	Quale	Summit, OR	40	and a second sec			
Rose, Joanne	Rose	Gaston OR	60				
Rung	Rung	Corvallis, OR	80				

Figure 14. Partial List of Forest Operators Who Are Disadvantaged When Industrial Timber Producers Harm Oregonians' Health, Safety, and Welfare

Runkel	Runkel	Creswell, OR	50	2007
Schroeder, Neil	Siletz	Siletz, OR	120	2007
Spott, Peggy	Spott/Fishel	Corbett, OR	77	2005
Tilbury	Tilbury	Oakland, OR	1,400	1998
Trappist Abbey	Trappist Abbey	Lafayette, OR	885	1998
Washington County	Washington County	Forest Grove, OR	300	2008
Webb	Webb	Caras, OR	40	1999
Willamette University	Willamette University	Zena, OR	305	2003
Winter	Winter	Lafayette, OR	250	1998
	Client Member Total		16,198	

Owner	Parcel name	Nearest town	Acres	Year
John and Carol Belton	Belton	Sandy, OR	204	
Barrett Brown	Brown	North Plains, OR	110	2004
Eve Lonnguist	Cedar Row Farm	Birkenfeld, OR	184	2005
Sarah Deumling	Deumling/Zena	Zena, OR	1367	2005
Dave Eisler	Eisler	Walton, OR	67	2003
Ted Gahr	Gahr Farm	McMinnville, OR	350	2007
Charles Laird	Laird	Vernonia, OR	113	2000
Lyal Purinton	Purinton	Buxton, OR	80	2004
Jon Stewart	Raincloud Tree Farm	Sandy, OR	120	2007
Carey Renzema	Renzema	Manning, OR	50	2004
Paul Seamons	Seamons	Scappoose, OR	40	2007
Pacific Forest Trust	Van Eck Forest	Toledo, OR	7,200	2008
Don South	Don South	North Plains, OR	160	2008
Ed Weisensee	Weisensee	Dallas, OR	384	2007
Hayco LLC	Timber & Manning	Timber, OR	295	2008
Mt. Richmond Forest Inc.		Gaston, OR	555	2008
Jaqua/TNC	Coburg Ridge	Eugene, OR	1,244	2007
	Associate Member Total		11,279	
	Grand Total		27,477	