



BOARD OF FORESTRY

State Forests Performance Report

NOVEMBER 2008





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Table of Contents

Introduction	1
Scope of the Report	1
Context	1
Use of performance measure data	4
Performance Measure 1: Net Return on Asset Value	6
Performance Measure 2: Financial Contributions to Communities	10
Performance Measure 3: Financial Contributions to Government Services	18
Performance Measure 4: Forest Health	22
Performance Measure 5: Forest Road Risks and Fish Habitat	28
Performance Measure 6: Wildlife Habitat by Stand Structure Type	32
Performance Measure 7: Recreation and Education	39
Performance Measure 8: Public and Stakeholder Involvement	45
Performance Measure 9: Oregonians Awareness and Support	48
Figures	
Figure 4.1 Swiss Needle Cast on State Forests detected from aerial surveys, 1996-2008	24
Figure 4.2 Swiss Needle Cast on State Forests, as detected by aerial surveys, by District 1998-2008	24
Figure 4.3 State Forest area affected by insect pests, 1998-2007	25
Figure 6.1 Structure type comparisons following the application of a revised algorithm on the Tillamook, Forest Grove and Astoria Districts	34



Tables

Table i.1	Performance Measures	2
Table 1.1	2007 return on asset value	7
Table 1.2	2008 return on asset value	7
Table 2.1	Timber volume harvested (net MBF)	12
Table 2.2	Five-year average timber volume harvested	12
Table 2.3	Net State Forests timber volume (MBF) by community Fiscal Years 2007 and 2008	13
Table 2.4	Oregon covered employment and payroll in wood product companies receiving wood from State Forests	14
Table 3.1	State Forests Division revenue distribution 1999 through 2008	19
Table 3.2	Total revenue transfers to counties Fiscal Year 2004-2008	20
Table 3.3	Indirect contributions to local and State governments	20
Table 5.1	Existing data on hydrologic connectivity of roads in five watersheds on State Forests	29
Table 5.2	Existing data on barriers to fish passage on roads in five watersheds on State Forests	30
Table 6.1	Annual stand structure percent across Districts	35
Table 6.2	Decadal stand structure acreages for seven districts	36
Table 6.3	Amount of snags and downed wood on the landscape by District	36
Table 7.1	Tillamook Forest Center annual visitation, and education and interpretation program participations	40
Table 7.2	Trail project summary in miles for Fiscal Years 2007 and 2008	41
Table 7.3	Number of campers and revenue from campgrounds Fiscal Years 2007 and 2008	41
Table 7.4	Santiam State Forest annual education and interpretation numbers	42
Table 8.1	Volunteer hours for recreation projects and the Tillamook Forest Center Fiscal Years 2007 and 2008	46





Introduction



Scope of the Report

This document reports on the nine Performance Measures adopted by the Board of Forestry for its forestlands. These performance measures span the breadth of the benefits to be provided under “greatest permanent value,” and are an important tool to periodically inform the Board on outcomes resulting from management of these forestlands. The performance measures were adopted in March 2007, and vary in their readiness. The Board will continue improving these tools to ensure they are effective at measuring whether the appropriate balance is achieved regarding the “greatest permanent value” rule’s social, economic, and environmental benefits. This report includes information for all state forestlands where available. However to-date, the emphasis of work with the Board has focused largely on the North Coast forestlands.

Context

The 2003 *Forestry Program for Oregon* (FPFO) is the Board of Forestry’s strategic plan for Oregon’s forests. The FPFO expresses the Board’s conviction that Oregon’s forests can and do support the state’s economic well-being and strengthen its social fabric. At the same time, these forests represent a range of forest ownerships, owner objectives, and natural ecosystems that, together, contribute to sustaining forests across the landscape and through time. The FPFO strategic plan is intended to help Oregonians achieve the “triple bottom line” of sustainable environmental, economic, and social benefits. The 2007 Oregon’s Indicators of Sustainable Forest Management are tools for measuring progress towards the goal of sustainably managed forest resources in Oregon.

The State Forests Division is one of four Department of Forestry divisions that uniquely contribute to achieving the overall mission and vision of the agency, and its statutory mandates. Each division and its associated programs design a vision, mission, and strategies to meet its portion of the agency’s mandates. These strategic documents assist in addressing the strategies and actions outlined in the Oregon Board of Forestry’s strategic plan, the 2003 *Forestry Program for Oregon*. The mission of the State Forests Division is “to manage Board of Forestry lands to achieve greatest permanent value and to manage Common School Forest Lands to maximize revenues consistent with protecting environmental values.” The Board of Forestry performance measures are an important business tool for helping assess and gauge how well management of the forestlands is achieving greatest permanent value.

“Greatest permanent value” on Board of Forestry forestlands is defined as “healthy, productive, and sustainable forest ecosystems that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon” (OAR 62-035-0020(1)). These lands are retained as forests and actively managed in a sound environmental manner to provide sustainable timber harvest and revenues to the state, counties, and local taxing districts, and to



provide indirect contributions to communities (e.g. forest-related jobs and business taxes). This management focus is not exclusive of other forest resources, but must be pursued within a broader management context, as stipulated in administrative rules and described in forest management plans. These other forest resources include: protecting soil, air, and water; providing recreational opportunities; maintaining and restoring aquatic habitats; and protecting, maintaining and enhancing native wildlife habitat, to name a few.

Board of Forestry Performance Measures

The following table includes the nine adopted performance measures, and the targets adopted for the Clatsop and Tillamook State Forests in November 2007. All but three of the measures (Nos. 3, 5 and 6) are general in nature, and were adopted with the understanding that these “general” targets will be refined over time. Discussions related to improving the performance measures and associated metrics, and refining targets are to occur during the Board of Forestry’s 2009 work plan with the Division.

Table i.1: Performance Measures

Measure 1	Net return on asset value (ROAV) on Board of Forestry Lands and Common School Fund land calculated across all state forestlands and for each forest – two metrics.
<i>Clatsop and Tillamook State Forests Target</i>	Achieve a ROAV (five-year average) consistent with the achievement of the target established for Performance Measure 3 (financial contributions to government services). At the next performance measure review, evaluate current information relative to this measure and whether or not a more specific target should be considered.
Measure 2	Direct and indirect financial contributions from the State Forests Division to support communities – eight metrics
<i>Clatsop and Tillamook State Forests Target</i>	Maintain or improve this measure, consistent with other performance measures targets. At the next performance measure review, present the most recent results and/or progress on the ecosystem services/non-market valuation study currently underway in coordination with Oregon State University. Evaluate the most current information relative to this measure and whether or not more specific targets should be considered.
Measure 3	Direct and indirect State Forests Division financial contributions to local and state government services – two metrics.
<i>Clatsop and Tillamook State Forests Target</i>	Increase the annual revenues (five-year average), adjusted for inflation, produced by BOF lands by 30 to 35 percent within the next ten years, and meet or exceed that level for the subsequent ten years.



Measure 4 State forest area affected by, or at risk of, invasive species, pests, disease and fire – two metrics.

*Clatsop and
Tillamook State
Forests Target*

Maintain or improve this measure, consistent with other performance measures targets. At the next performance measure review, evaluate the most current information relative to these measures and whether or not more specific targets should be considered.

Measure 5 Forest road risks to water quality and fish habitat – two metrics.

*Clatsop and
Tillamook State
Forests Target*

Reduce the miles of hydrologically connected roads to less-than 15 percent of the road network within the next ten years, and maintain or improve that level of reduction for the following ten years. Reduce the number of road crossings that are barriers to fish passage to less-than 2 percent within the next ten years, and maintain or improve that level of reduction for the subsequent ten years.

Measure 6 Quantity of habitat by forest management plan stand structure type, habitat components, and the use of those areas by native fish and wildlife – six metrics.

*Clatsop and
Tillamook State
Forests Target*

Increase the percent of the landscape in complex structure to at least 17 to 20 percent over the next two decades, with at least half of the increase occurring within the first ten years. Grow and maintain levels of the other forest types needed to achieve this target. Within the percent of the landscape providing complex structure, achieve the following:

Develop and maintain complex structure in those areas where it is anticipated to result in the greatest benefits to both aquatic and terrestrial species of concern, and complete a process by fall 2008 that identifies specific strategies (including landscape design modifications) to maintain, enhance, and restore habitats for species of concern.

Measure 7 Availability, quality and public use of recreational opportunities and educational programs – four metrics.

*Clatsop and
Tillamook State
Forests Target*

Maintain current recreational benefits consistent with existing and anticipated future resources. At the next performance measure review evaluate results from the “2nd Party Recreation Program Assessment – Follow-Up Project” currently being conducted by the Division, which the Board will receive an update on in January 2008, and whether or not more specific targets should be considered.



Introduction

(continued)

Measure 8 Degree of public and stakeholder involvement in state forestland activities and processes – three metrics.

Clatsop and Tillamook State Forests Target Maintain or improve this measure, consistent with other performance measures targets. At the next performance measure review, evaluate the most current information relative to these measures and whether or not more specific targets should be considered.

Measure 9 Customer awareness and support of the management of state forestlands – two metrics.

Clatsop and Tillamook State Forests Target Maintain or improve this measure, consistent with other performance measures targets. At the next performance measure review, evaluate the most current information relative to these measures and whether or not more specific targets should be considered.

Use of performance measure data

These nine performance measures are a key tool for evaluating the adequacy of forest management plans in achieving “greatest permanent value” (GPV) on Board of Forestry forestlands. Reporting on the performance measures will occur biennially; this 2008 report is the first such report following the June 2007 report. The Board will be able to use the biennial information along with other information (e.g. research and monitoring) to “evaluate,” “learn” and “improve” on the active management approach used for these Board of Forestry forestlands. Following these two-year reviews, the Board also may determine whether outcomes from these forestlands are achieving GPV, or whether adjustments in the management plans might be needed. For example, the Board directed the State Forests Division to assess achievement of the targets established for two of the performance measures, and to provide an analysis of the effects any changes in strategies may have to all nine performance measures. A work group is examining the targets relative to the Clatsop and Tillamook State Forests, with the outcomes of this work to be reported in November 2008. The work group information will assist the Board with determining whether adjustments to forest management strategies are warranted.

External communication of the performance measures is achieved through the Department’s web site at:

http://egov.oregon.gov/ODF/PUBS/publications.shtml#Program_Reports. The State Forests Division also communicates with beneficiaries (e.g. Forest Trust Land Advisory Committee), stakeholders, and the public through meetings, interest group consultations, press releases, and public speaking engagements to promote the work of the Division. These opportunities provide the Division with feedback on these performance measures and serve to help motivate others to assist in improving performance.



Internal communication and sharing of the performance measures with staff is an integral part of the Division's accomplishment review. In sharing and reviewing the performance measure analysis, the staff can better understand how effective our work is at achieving the goals of the program and the forest management plans. This information will help staff identify opportunities for improving on the implementation of these management plans.





Performance Measure 1

Net return on asset value (ROAV) on Board of Forestry Lands and Common School Fund land calculated across all state forestlands and for each forest

About this measure

Return on Asset Value (ROAV) is a financial performance measure that is broadly accepted by the financial community for evaluating economic returns from the timber component of a managed forest resource. ROAV is the ratio of the net income generated by the asset, to the total value of the asset, expressed as a percent.

One common use of ROAV is to allow an investor to compare the financial performance of a forestland tract to other investment opportunities. These state forestlands produce a range of environmental and social benefits not typically expected from forestlands held as investments. Managing for these benefits has the potential to reduce the ability of these forestlands to maximize ROAV. The ROAV that is achieved can be viewed as measuring the inherent financial performance of the management approach for these forestlands. The reported ROAV could measure the “costs” of the State’s current forest management plans compared to one focused primarily on timber production. This measure will allow for determining the appropriate “costs/values” of environmental and social outputs not typically valued on a balance sheet.

While nearly all revenues for these forestlands are currently derived from timber, this measure could incorporate any future revenue-generating commodities, when these generate revenue (e.g. wind energy, carbon credits, conservation easements, etc.).

Status

This metric has declined since the first report on fiscal year 2006. That year was the highest ever revenue year for these forestlands, resulting from high points in the timber markets and a historically high harvest volume.

Metric	2007	2008
a. annual ROAV calculation expressed as a percentage	Decline 0.4%	Decline 0.5%
b. Five- and 10-year averages	N/A	N/A

In fiscal year 2007, ROAV is generally down from fiscal year 2006 with a 0.4 percent decline over all the districts considered. Net revenues declined by 16 percent (\$10.8 million). In fiscal year 2008, ROAV continued its decline by an additional 0.5 percent. Net revenues declined by another 23 percent (\$12.8 million). A five-year average will be reported in the 2010 report. ROAV calculations by district for fiscal year 2007 and fiscal year 2008 are shown in Tables 1.1 and 1.2.

State forestlands produce a range of environmental and social benefits in addition to the economic benefits.



Table 1.1: 2007 return on asset value

	Astoria	Forest Grove	Tillamook	North Cascade	West Oregon	Western Lane	Northwest Oregon FMP	Southwest Oregon FMP	Total
ROAV¹	2.0%	3.1%	0.2%	5.9%	1.5%	1.0%	2.0%	-1.3%	2.0%
District Acres	136,914	115,065	250,586	47,715	37,673	26,101	614,054	18,091	632,145
NPV per Acre (Dollars)	6,347	6,975	2,879	3,207	4,518	3,605	4,577	1,699	4,494

¹ Based on Asset Value of net present value (NPV) of Wood Emphasis H&H Models

Table 1.2: 2008 return on asset value

	Astoria	Forest Grove	Tillamook	North Cascade	West Oregon	Western Lane	Northwest Oregon FMP	Southwest Oregon FMP	Total
ROAV¹	2.0%	2.5%	0.1%	2.5%	0%	1.5%	1.6%	-1.3%	1.5%
District Acres	136,914	115,065	250,586	47,715	37,673	26,101	614,054	18,091	632,145
NPV per Acre (Dollars)	6,347	6,975	2,879	3,207	4,518	3,605	4,577	1,699	4,494

¹ Based on Asset Value of net present value (NPV) of Wood Emphasis H&H Models

Influencing Factors

On an annual basis, ROAV is proportionally influenced by the magnitude of fluctuation in year-over-year revenue as well as changes in the asset value.

Annual revenue is influenced by the market in two ways. First, the market determines stumpage values for timber contracted for harvest on state forestlands in any given year. Because timber sale contracts are typically one to three years in duration, the value of timber harvested and reported in any one year will be some combination of market values for the one to three years prior. Second, purchasers have some flexibility in the timing of harvests. To the extent possible, purchasers will delay harvesting during down markets, especially if sales were bid significantly higher than the current stumpage values. These market influences contribute to lower harvest levels and revenues during the down market-year, followed by increases in the subsequent year when the timber sale contract is nearing expiration and the timber has to be removed. The declines noted in this report for fiscal year 2007 and fiscal year 2008 are primarily due to these market forces.

The quantity and quality of timber being sold annually also influences the annual fluctuation in this measure. These factors are a function of planning and implementing annual timber harvest operation plans to achieve the goals and objectives of current Forest Management Plans (FMP) and individual District Implementation Plans.

Asset value is likely to increase over time due to increases in the volume and quality (size/grade) of standing timber.



Performance Measure 1

(continued)

Changes in asset value over time also will influence fluctuations in this measure. Under the Division's management, timber harvest is less than growth. As a result, the asset value should increase over time due to increases in the volume and quality (size/grade) of standing timber. Increases in the asset value without corresponding increases in timber harvest will lead to a decreasing ROAV.

Data Sources

This measure is supported by one metric: a. annual calculation expressed as a percentage (net returns/asset value) compared against a specific target range, and compared over time to a five- and 10-year average. The data is obtained from the timber revenue accounting system (TRAS), net of costs; stand level inventory; and wood-emphasis model data. The methodology used to calculate ROAV for this report is directly comparable to the methodology used in the June, 2007 report. The calculation of net revenue in these reports subtracts all costs associated with the state forest program including the costs of providing social and environmental values, such as the recreation program and the Tillamook Forest Center (TFC). The asset value is based on the Net Present Value (NPV) of short-rotation (50-year) forestry under Forest Practices Act regulations. The NPV is based on the net revenues for the 150 year planning horizon, discounted at 4.5 percent and including the NPV of the ending inventory. This report is not reporting a changed NPV from the 2007 calculation.

Possible Improvements to Performance Measures

The following is a recommendation for a long-term approach to the calculation of asset value that would be implemented for the 2010 Performance Measure Report. This approach would:

- Use updated inventory and updated growth and yield data;
- Continue to use the set of assumptions from the H&H wood emphasis alternative for the asset value;
- Revisit the 4.5 percent discount rate to replace with current market rates, currently at 5.5 percent; and
- Consider only costs that support forest management activities, and not costs for activities related to other forest management plan goals (e.g. recreation and the TFC).

As the Board discusses establishing a target for this measure, the following could be considered:

1. Set a ROAV rate that a private investor might expect from a timber management industrial model rate. For discussion purposes, 5 percent is used.
2. Recognizing that these forestlands need to provide an array of social and environmental benefits that will conflict with maximizing the economic benefit, the Board could discuss what kind of an economic tradeoff it is willing to make to secure these other benefits. This could be expressed as a percentage of the industrial rate. For discussion purposes, the Board could say "We would like state forestlands to achieve at least 60 percent of the industrial rate." In this example, that would be a 3 percent ROAV. These forestlands are currently averaging about 2 percent.



3. The board could use this tool to evaluate the economic cost of providing the social and environmental benefits called for in the forest management plans, and could then establish its comfort level for how high these costs should be.

Finally, it is recommended that the wording of the performance measure be adjusted. Currently, data collection methods do not support reporting a “for each forest” calculation. Until such time that this capability is provided, the Division recommends deleting these three words from the performance measure wording. The new wording would state: Net return on asset value (ROAV) on Board of Forestry Lands and Common School Fund land calculated across all state forestlands ~~and for each forest (e.g. Elliott, Sun Pass, Tillamook, and Santiam)~~.





Performance Measure 2

Direct and indirect financial contributions from the State Forests Division to support communities

About this measure

Although less than three percent of Oregon's forestland, the forestlands managed by the Division contribute meaningfully to both timber and non-timber sectors of associated forest-based economies. These contributions are realized from timber harvests, recreational opportunities, and environmental qualities provided by these forestlands. Strong rural economies are important to Oregon for helping ensure healthy rural communities. In turn, urban areas benefit due to the economic interdependence between the two.

The five-year average of timber volume harvested is a good measure of the timber output from the forest management plans. Volumes can be used to translate into job contribution in rural communities, at a coarse level. Comparing these numbers to volumes that would be produced under a "wood emphasis" approach is a potential measure of the "costs," as measured in volume, of providing the various social and environmental outputs.

There also may be an opportunity to speculate on the future value that could be derived from non-timber related goods and services, or "ecosystem services" by applying the state's approach to balancing economic, social, and environmental values. Ecosystem services, broadly defined, are products of functioning ecosystems that are often available without direct costs to people who benefit from them. These "services" can include clean air and water, protection of water recharge areas and watersheds, reduction of erosion and sedimentation, retention of floodwaters, biotransformation of nutrients, habitat for pollinators, production of topsoil, and preservation of genetic diversity, among others¹. These ecosystem services are often absent from balance sheets due to a lack of markets and associated revenue streams.

Efforts to provide economic values associated with many ecosystem services are underway in Oregon. However, methodology for measuring and valuing ecosystem services remains challenging, resulting in slow progress. Incorporating many of these forest "products" into this performance measure is still several years out, with the exception of recreation. The Division, in collaboration with the Forest Resources Planning Program, is currently engaged in a study with Oregon State University College of Forestry (OSU) to propose methods that could be used to determine economic contributions derived from recreation. Study results are anticipated in the fall of 2008, after this report.

Contributions are realized from timber harvests, recreational opportunities, and environmental qualities.

¹ USDA Pacific Northwest Research Station, *Defining an Economics Research Program to Describe and Evaluate Ecosystem Services*; Issue 16, December 2006, available at http://www.fs.fed.us/pnw/pubs/pnw_gtr700.pdf.



Status

Direct and indirect financial contributions to support communities have remained generally consistent in pattern, with small declines in timber volume. Many of the remaining metrics are still under development.

Metric	2007 and 2008
a. Total timber volume harvested (net MBF) versus a five- and 10-year average	Slightly less than the five-year average
b. Annual log flow from state forestlands to rural areas (net MBF) versus a five- and 10-year average	Generally consistent in its pattern
c. Number of family wage jobs in local communities	Data not available A substitute data source is reported Changes to metric recommended
d. Economic contributions to local communities from non-timber related activities (e.g. recreation)	Data not available
e. Diversity of employment by industry	Data not available Changes to metric recommended
f. Percent of population unemployed	
g. Percent of persons living below poverty line	Census data no longer available Recommend dropping these metrics
h. Household income inequality	

Volumes of timber harvested in 2007 and 2008 (Table 2.1) are less than the five-year average (Table 2.2). Log flow is generally consistent in its pattern, with harvested volumes going mostly to the same mill locations (note: more recognizable place names have been used here, in place of those used in the 2007 report). Between 2007 and 2008, a number of locations in Washington State took delivery of timber harvested from Oregon state forestlands; however, about 96 percent of the harvested volume remains in Oregon, and 95 percent of that is delivered to rural communities (i.e. outside of the Portland Metro, Eugene-Springfield, Salem and Medford-White City areas). This log-flow data is provided in Table 2.3. Table 2.4 provides a look at mill employment (for those mills receiving State Forests timber volume) in the communities to which logs were delivered in 2007, and the average pay of those jobs.



Table 2.1: Timber volume harvested (Net MBF) ¹

District	2007	2008
Astoria	68,833	82,748
Coos Bay	23,408	19,938
Forest Grove	70,988	59,539
Klamath	8,725	7,947
North Cascade	23,361	17,978
Southwest	1,848	1,301
Tillamook	57,181	52,225
Western Lane	4,554	9,514
West Oregon	12,584	8,893
Total	271,482	259,552

¹ Includes State processed (lump-sum) volume from cash sales not reflected in Metric b.

Table 2.2: Five-year average timber volume harvested (MBF)¹

District	02-06	03-07	04-08
Astoria	83,680	85,058	80,098
Coos	24,273	23,435	23,676
Forest Grove	61,144	62,515	63,237
Klamath-Lake	9,542	8,752	9,773
North Cascade	26,124	26,444	25,428
Southwest OR	1,805	1,547	770
Tillamook	55,783	57,365	59,989
Western Lane	15,219	7,583	7,533
West Oregon	7,633	15,224	13,708
Total	285,203	287,923	284,212

¹ Includes State processed (lump-sum) volume from cash sales not reflected in Metric b.



**Table 2.3: Net State Forests timber volume (MBF) by community
Fiscal Years 2007 and 2008**

Oregon	2007	2008	Oregon	2007	2008	Washington	2007	2008
Bandon	0	47	Lyons	24,265	16,721	Aberdeen	4,209	1,765
Banks	14,030	13,393	Mill City	98	111	Carson	57	0
Brookings	48	7	Molalla	4,443	7,819	Chehalis	1,658	2,643
Cave Junction	0	418	Monroe	170	14	Kalama	0	15
Clatskanie	29,718	23,671	Myrtle Creek	0	173	Longview	1,326	1,612
Coos Bay	3,833	4,902	Noti	5,714	6,929	Montesano	33	0
Coquille	6,512	7,444	Philomath	1,205	3,417	Morton	4,891	348
Cornelius	567	1,461	Reedsport	352	39	Randle	632	1,614
Cottage Grove	1,437	3,736	Riddle	3,589	5,957	Rochester	0	494
Creswell	57	97	Roseburg	1,053	1,240	Shelton	22	198
Dillard	4,419	5,556	Sheridan	591	1,643	South Bend	29	0
Estacada	305	0	Springfield	3,072	2,936	Vancouver	331	882
Eugene	6,041	5,209	St. Helens	6,360	6,577	WA Total	13,188	9,571
Garibaldi	2,325	3,300	Tillamook	28,473	26,505	Wisconsin	7	0
Gaston	21,128	22,569	Toledo	265	780	WI Total	7	0
Gilchrest	564	0	Warrenton	188	126	Scaled volume may differ from TRAS volumes reported above. Includes Utility Volume.		
Glendale	4,853	786	White City	3,851	3,177			
Glide	521	0	Willamina	63,408	62,618			
Independence	383	0	Total	249,486	244,201	Fiscal year volumes span timber sales from multiple annual operation plan years.		
Klamath Falls	6,213	4,823						



Table 2.4: Oregon covered employment and payroll in wood product companies¹ receiving wood from State Forests
Data are for State Fiscal Year 2007 (3rd Qtr 2006 – 2nd Qtr 2007)

Aggregated Community ²	Total Payroll	Avg. Annual Employment	Avg. Pay Per Job
Benton, Lincoln, and Polk counties	\$32,108,248	568	\$56,553
Clackamas and Marion counties	\$10,987,645	306	\$35,946
Clatsop and Columbia counties	\$48,320,092	839	\$57,587
Coos and Curry counties	\$29,328,415	625	\$46,888
Douglas County			
Roseburg	\$12,817,776	315	\$40,713
Riddle	\$36,052,866	940	\$38,341
Other Douglas	\$104,856,346	2,145	\$48,877
Klamath County	\$19,577,533	497	\$39,378
Lane County			
Eugene	\$22,923,309	423	\$54,193
Other Lane County	\$33,152,977	822	\$40,312
Linn County	\$17,833,997	371	\$48,092
Tillamook County	\$21,360,185	396	\$53,963
Washington and Yamhill counties	\$47,790,979	1,010	\$47,340
Total	\$437,110,368	9,257	\$47,218

¹ Total employment and average pay calculated for each mill location receiving State Forests timber volume in FY 2007. For mills with multiple plants or processing facilities, all plants and facilities are included. These figures are not adjusted to reflect employment and pay relative to the percentage of State Forests timber volume versus volume from other sources.

² Individual communities reported in Table 2.3 have been aggregated here to protect the confidentiality of the mills' payroll data.

Influencing Factors

Overall, state, regional and national economic trends and other demographic factors affect all of these metrics. The Division's timber sale contracts span multiple years, and volume harvested in any particular year is dependant on harvest levels provided by Annual Operations Plans and market forces (i.e. demand) during the life of the timber sale contract. Contractors determine where the harvested volume is milled, and thus more directly influence forest sector jobs than can the Division. These timber sale contracts are secured through a state competitive bid process.

State Forests timber volumes certainly influence the forest sector economy of those communities receiving timber (and their overall economy), but the level of influence is not necessarily a direct correlation. Generally speaking, an increase in



volume into the marketplace would translate into an increase in forest-sector jobs. It is reasonable to assume a “sustainable, predictable” level of harvest from state forestlands can contribute to maintaining mill infrastructure and therefore forest sector jobs in those communities that receive a more consistent in-flow of timber volume each year.

Data Sources

This measure is supported in the 2008 report by two metrics: a. Total timber volume harvested (Net MBF) versus a five- or 10-year average; b. Annual log flow from state forestlands to rural areas (Net MBF) versus a five- or 10-year average. Data to support these metrics is obtained from: ODF Timber Revenue Accounting System (TRAS), including un-scaled volumes from “lump-sum” sales; Scaling Bureau data (Oregon and Southwest Washington); and Oregon Employment Department (OED).

Timber volumes are derived from two separate sources: 1) ODF’s TRAS and 2) Scaled timber volumes from third party scaling organizations (TPSO). Reported volumes from these sources differ, due to the inclusion in TRAS of certain lump-sum sales that are not included in TPSO scaled volumes. TPSO volumes are linked to specific delivery points (usually mills) and the communities in which they are located. In most cases, these delivery points represent the final destination where the logs will be manufactured into products. These delivery points are then provided to the OED, which provides information on economic metrics. Information provided by OED is summarized to a level that protects employer confidentiality; this influences the scale at which the data can be displayed.

For this report, data remains unavailable for: c. number of family wage jobs in local communities; d. Economic contributions to local communities from non-timber related activities (e.g. recreation); e. Diversity of employment by industry. Federal census data will no longer be available, making it necessary to recommend three of the metrics be deleted: f. percent of population unemployed; g. percent of persons living below poverty line; and h. household income inequality.

The Division will report a slightly revised metric e: average annual employment at mills receiving State Forests timber volume. Mills receiving State Forests timber volume will be identified using log flow information from TPSO. The OED will provide employment data on these mills, using aggregations of communities to maintain confidentiality of the data. The average pay associated with these jobs also will be reported.

Possible Improvements to Performance Measures

The above metrics provide a clear picture of a) total timber volume harvested from State Forests lands, b) how those timber volumes are distributed among communities and c) the relative size of the forest sector economy within those communities; however, the link between b) and c) is not straightforward. While State Forests timber volumes certainly influence the forest sector economy of those communities (and their overall economy), the level of influence on any individual community is not a direct correlation.

A “sustainable, predictable” level of harvest from state forestlands can contribute to maintaining mill infrastructure and therefore forest sector jobs.



Performance Measure 2

(continued)

A meaningful adjustment to this performance measure may be a comparison between planned and harvested timber volumes from individual annual operation plans (AOP). This would provide a direct measure of how well the State Forests Division is meeting timber volume objectives that have been publicly reviewed and approved. Since a given timber sale may take three years to complete, the metric would likely include: a) planned AOP volume; b) percentage of sales completed; and c) amount of timber harvested. For a AOP still in progress, this would allow the reader to have some estimation of whether a AOP volume target was being met, relative to the amount harvested at the time.

If it is determined that this performance measure will retain metrics b and c, when it will be reported to the Board of Forestry should be adjusted to allow more time (at a minimum one additional month) for the assimilation of OED data.

Adjustment recommendations to this performance measure include:

1. Determining the number of family wage jobs in communities that receive State Forests' timber volumes requires additional processing of OED data and a definition for "family wage." Geo-coding of OED data takes time and results in a delay, relative to the availability of scaling data. Determining the number of family wage jobs requires a more detailed payroll analysis. The Division suggests substituting the average wage associated with the total number of jobs in the mills receiving State Forests' timber volume. This may have the effect of diluting the wages of some jobs due to part-time and seasonal employment. This is defensible, however, in that those seasonal and part-time employment positions are a portion of the overall employment picture for these mills.
2. Information associated with metric d, economic contributions to local communities from non-timber related activities is being obtained through the previously mentioned OSU project. The project is being conducted in collaboration with Forest Resources Planning Program and will support both *Oregon's Indicators of Sustainable Forest Management* and State Forests' performance measures. The original agreement with OSU targeted developing indicators and associated data sources for four values. Following initial work by OSU, they reported back that it would not be possible to develop an indicator for three of the four values: carbon sequestration; water quality; and passive use. Recreation was the one value for which OSU could develop an indicator. The lack of data and methodology for measuring and assigning monetary values are the limitations.

The deliverable has been revised such that OSU will be proposing how indicators could be developed for recreation. Specifically, studies would need to be conducted that could help develop needed tools. Results from this work are due October 31, 2008, which precludes inclusion of study results in this report.

3. A change to metric e: Diversity of employment by industry from original metric to: "number of forest industry jobs"; this change will allow us to more directly link to actual state employment data versus census data, thus providing a better link to these forestlands. The data will primarily be associated with mills and must be summed to protect employee confidentiality. To the extent possible, State Forests' timber volumes to these mills will be used to generally



determine the percentage of the mills' overall production. In turn, this production percentage calculation for the mills will be used to estimate the number of jobs at those mills that result specifically from State Forests' volume. The average wage also will be reported for these jobs. Production data are not available for many of the mills receiving State Forests timber volume; therefore, these data will somewhat underestimate total mill employment related to State Forests timber volume.

4. As reported in June 2007, metrics f-h were tied to census data that is no longer available.





Performance Measure 3

Direct & indirect State Forests Division financial contributions to local and state government

The three percent of Oregon's forestlands managed by the Division play an important role in maintaining and enhancing government services.

About this measure

Declines in natural resource-based industries have constrained the ability of many rural counties to provide needed public services. The three percent of Oregon's forestlands managed by the Division indirectly and directly play an important role in maintaining and enhancing government services, such as Oregon's schools. This role is accomplished by assuring a "sustainable and predictable production of forest products" (OAR 629-035-1120(1)(a)), which includes timber. A portion of the resulting revenue is distributed directly to trust-land counties, local taxing districts and the Common School Fund (ORS 530.110). This also is accomplished by providing revenue indirectly to the state's general fund. These indirect revenues that benefit the economy are derived from corporate taxes paid by businesses that utilize State Forests' timber – the harvest tax, income tax, property taxes on mills, and weight-mile tax. These revenues are distributed among a variety of local funds, and the State General Fund. The breakdown of these distributions are not available, and they are reported here as a single sum.

Status

Revenue distribution has essentially been maintained within normal year to year fluctuation.

Metric	2007	2008
a. Annual distributions to Trust Land counties and Common School Fund, and compared over time to five- and 10-year average	Second highest distributed 4.7% increase over fiscal year 2006	Third highest distributed 1.1% decrease over fiscal year 2007
b. Indirect contributions to state and local governments by operators and mills through business income tax, harvest tax, and weight-mile tax	About \$2 million	Data not Available

Fiscal year 2006 was the highest revenue year ever for the BOF lands, resulting from high points in the timber markets as well as operating at the high end of the implementation plans. County share of revenues for fiscal year 2007 and 2008 are the second and third highest ever distributed from state forestlands (Table 3.1). Since the 2007 report, the 5-year average of county share of revenues has increased from \$49.4 million in fiscal year 2006 to \$52.3 million in fiscal year 2007; in fiscal year 2008 the five-year average dropped to \$51.7 (Table 3.2). However, this is due primarily to market and harvest level highs during the previous several years, a trend that is unlikely to carry into the near future.



Indirect contributions to local and State government via harvest tax, privilege/severance tax, weight-mile tax and corporate taxes on net revenues were estimated to be around \$2 million for fiscal year 2007 (Table 3.3). This estimate is general, based on harvest volumes from State Forests as compared to statewide totals. Please see the discussion in “Data Sources,” below.

Table 3.1: State Forests Division revenue distribution 1999 through 2008

Fiscal Year	County Share¹	Common School Land Transfer²
1999	\$36,186,156	\$17,439,454
2000	\$43,486,541	\$24,377,943
2001	\$36,450,034	\$16,787,101
2002	\$42,690,822	\$13,671,493
2003	\$49,801,650	\$8,550,000
2004	\$47,918,084	\$15,360,073
2005	\$48,589,600	\$19,092,180
2006	\$57,997,327	\$9,656,593
2007	\$57,306,159	\$12,590,076
2008	\$51,183,661	\$9,403,801
Five-Year Average	\$51,692,639	\$13,220,545
10-year Average	\$47,161,003	\$14,692,871

¹ County Share is 63.75 percent of revenue from Board of Forestry Lands, and is distributed to counties where harvest activity occurred.

² All revenue generated is distributed to the Common School Fund. The Division is reimbursed for management costs.



**Table 3.2: Total revenue transfers to counties
Fiscal Year 2004–2008**

County	Acres	2004	2005	2006	2007	2008
Benton	8,194	\$2,596,528	\$792,073	\$1,473,011	\$2,143,721	\$55,626
Clackamas	7,266	\$850,961	\$294,440	\$504,622	\$449,331	\$274,962
Clatsop	146,964	\$19,312,820	\$14,979,101	\$18,966,770	\$18,408,274	\$17,946,402
Columbia	6,459	\$741,227	\$963,567	\$680,851	\$1,288,396	\$2,185,611
Coos	7,220	\$262,816	\$109,904	\$460,526	\$470,557	\$752,990
Douglas	8,625	\$0	\$30,348	\$334,652	\$345,920	\$1,243,976
Josephine	2,482	\$0	\$0	\$0	\$13,926	\$64
Klamath	26,912	\$392,276	\$1,806,073	\$758,077	\$1,246,063	\$1,336,459
Lane	24,734	\$979,385	\$2,741,105	\$1,938,839	\$982,028	\$1,349,267
Lincoln	15,488	\$738,319	\$1,400,617	\$1,439,611	\$599,615	\$824,781
Linn	21,353	\$4,051,916	\$5,342,905	\$3,234,956	\$2,400,178	\$2,298,915
Marion	18,329	\$1,059,923	\$3,057,678	\$3,497,389	\$4,697,828	\$1,560,998
Polk	6,122	\$134,808	\$207,030	\$189,675	\$234,037	\$145,056
Tillamook	310,624	\$10,140,265	\$13,083,756	\$18,190,282	\$14,677,782	\$13,459,129
Washington	46,886	\$6,656,840	\$3,781,002	\$6,328,066	\$9,348,502	\$7,749,425
Total	657,658	\$47,918,084	\$48,589,600	\$57,997,327	\$57,306,159	\$51,183,661

Table 3.3: Indirect contributions to local and State governments

Fiscal Year	State Forests Timber Harvest (MBF)	Statewide Timber Harvest (MMBF) ¹	Approximate Percent of Total Statewide Harvest	"Indirect" Contribution (Dollars)
2007	271,482	3,799	7%	\$2,085,405
2008	259,552	N/A	N/A	N/A

¹ Statewide timber harvest volume across all ownerships based on a calendar year summary. Other values summarized by fiscal year.



Influencing Factors

Revenue distributions in any particular year are dependant on harvest levels provided by State Forests Annual Operations Plans and market forces (i.e. demand) during the life of the timber sale contract, which usually span two to three years. The recent market downturn began to influence harvest revenue in 2008. This influence will continue to be felt for at least the next several years.

Data Sources

This measure is supported by two metrics: a. annual distributions to Trust Land counties and Common School Fund, and compared over time to a 5- and 10-year average; and b. indirect contributions to state and local governments by operators and mills through business income tax, harvest tax, and weight-mile tax. Data to support metric a. is collected annually by the State Forests Division Asset Management Unit. The data is taken from the State Financial Management Application (SFMA). Metric b is tiered from *Oregon's Indicators of Sustainable Forest Management*. Timber volume harvested from State Forests are divided by the total statewide harvest volume, and the resulting percentage is applied to the total revenue generated by these taxes to determine the indirect contributions derived from State Forests timber harvest. These indirect contributions should be viewed as an estimate because: 1) the methodology is generally applied to harvest volumes and overall revenue generated (i.e. these taxes are not tracked by where the timber originates from); and 2) the statewide timber harvest volume is based on a calendar year summary, while the State Forests volume and the various taxes are based on a fiscal year summary.

Possible Improvements to Performance Measures

The only adjustment to this measure would be a minor edit to metric b. This metric is intended to tier directly from data associated with one of *Oregon's Indicators of Sustainable Management* (still under development). The indicator does not include "operators," The new wording would state: Indirect contributions to state and local governments by ~~operators and~~ mills through business income tax, harvest, weight-mile and property taxes. Additionally, data associated with operators is not tracked within the data sources being used.





Performance Measure 4

State Forests' area affected by or at risk of invasive species, pests, disease and fire

Resilient, healthy forest ecosystems provide the full range of goods, services and ecosystems that Oregonians value.

About this measure

Insect and disease outbreaks, weather events, and fire exert great influence on the structure, species composition, and ecological function of forests. As these disturbance events occur, it is important to keep policy makers and the public informed as to whether damage is exceeding historic levels, and what if anything can be done to mitigate the impacts. Forest health is an important component of greatest permanent value since resilient, healthy forest ecosystems provide the full range of goods, services and ecosystems that Oregonians value from forestlands.

Swiss needle cast (SNC) is a disease of Douglas-fir foliage caused by the native fungus *Phaeocryptopus gaeumannii*. It causes needles to turn yellow and fall prematurely from tree, ultimately reducing tree growth and survival. Tree mortality is rare, occurring only after many years of defoliation. Growth loss as a result of Swiss needle cast correlates with the amount of foliage retention – the less foliage retained on the tree, the greater the growth loss. In addition to growth loss and some mortality, Swiss needle cast reduces stand management options, hinders the development of stand structures and wildlife habitat, and may increase the risk of catastrophic fire.

Since the late 1980's, the disease has become particularly damaging to Douglas-fir forests on the west slopes of the Oregon Coast range. Aerial surveys for SNC damage have been conducted each year since 1996 during April and May. The survey depicts the extent of moderate to severe damage, coarsely documents trends in damage over time, and establishes a zone in which forest management should take into account the effects of the disease and additional site specific assessments are warranted. Swiss needle cast occurs in all Douglas-fir stands in western Oregon, but the aerial survey maps only those areas with enough damage to make symptoms visible from the air.

The majority of tree mortality from insects is due to bark beetles. Damage is due primarily to Douglas-fir beetle and fir engraver on the Westside, while on the Eastside outbreaks of fir engraver and Western pine beetle are common. Minor outbreaks of defoliating and sap-feeding insects also occur periodically. In recent years, Western tent caterpillar and spruce aphid damage on Westside state forestlands has been observed, while isolated damage from Pandora moth occurred on the Eastside.

Historically, the predominant damage agents include two conifer bark beetles (Douglas-fir beetle and Fir engraver), a hardwood defoliator (Western tent caterpillar) and non-native sap-feeding insect (spruce aphid), so results are restricted to these agents. While smaller scale (district-level) damage comparisons are possible, these may prove to be misleading due to the relative variation in susceptible area/stands and differences in weather/moisture patterns between districts.



The risk of wildfire can be reduced through the management of downed and standing fuels. Existing wildfire risk models focus on the degree to which current vegetation departs from historic regimes (i.e. LANDFIRE). While this departure may be meaningful in ecosystems that have short fire return intervals, they are often counter intuitive in ecosystems with very long fire return intervals. The majority of lands managed by the State Forests Division lie in the Coast Range, where fire return intervals are quite long. On these forestlands, a young stand generally has less fuel loading and, therefore, is at less of a risk from fire. It appears that the LANDFIRE categories will not be useful for estimating the wildfire risk in this area, and the State Forests Division will be analyzing other potential methodologies to inform a fire risk metric.

Status

Results for pests and diseases indicate general alignment with the target of “maintain or improve.” Forest management strategies that focus on developing structurally and compositionally diverse forests are likely to create a resilient, healthy forest. Further discussion of both disease and insect pests follows. A fire metric remains under development.

Metric	2007	2008
a. Forest area affected by pests and disease	General alignment with the target	
b. Forest area by Fire Regime Class	Still under development; no data available	

Disease

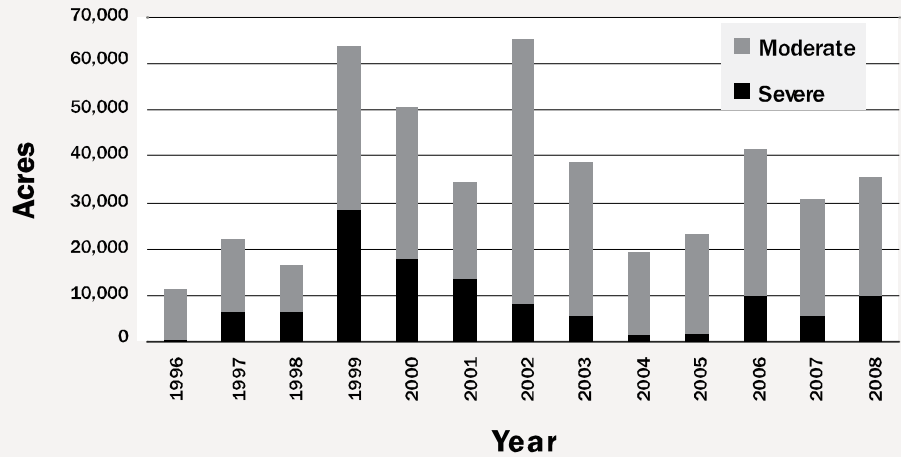
The 2007 SNC survey covered approximately 666,000 acres of State forest in western Oregon. Observers mapped a total of 30,774 acres with SNC damage (25,244 acre Moderate; 5,530 acre Severe), a slight decrease from the 2006 survey (Figure 4.1). The easternmost area with obvious SNC symptoms was approximately 28 miles inland from the coast, with the majority of area with symptoms within 18 miles of the coast. The 2008 survey was incomplete because of weather and aircraft availability. Three sample areas were surveyed (Tillamook, Newport, and Coos Bay) and the results for these areas were used to estimate the area with symptoms of SNC for the remaining survey area. The percentage change in area between 2007 and 2008 for the three sample areas combined was applied to the 2007 data for areas not surveyed in 2008.

Recent inventory information for Swiss needle cast on State Forests indicates a slight downward trend from the 2006 information last reported, about at the five-year average mark of approximately 31,000 acres, and below the 10-year average of approximately 38,000 acres. General district trends are illustrated in Figure 4.2. Comparisons between districts are not meaningful, as the numbers are heavily influenced by geographic location (proximity to coast) and acres of Douglas-fir. However, general trends within a district can be tracked over time.

Developing structurally and compositionally diverse forests are likely to create a resilient, healthy forest.

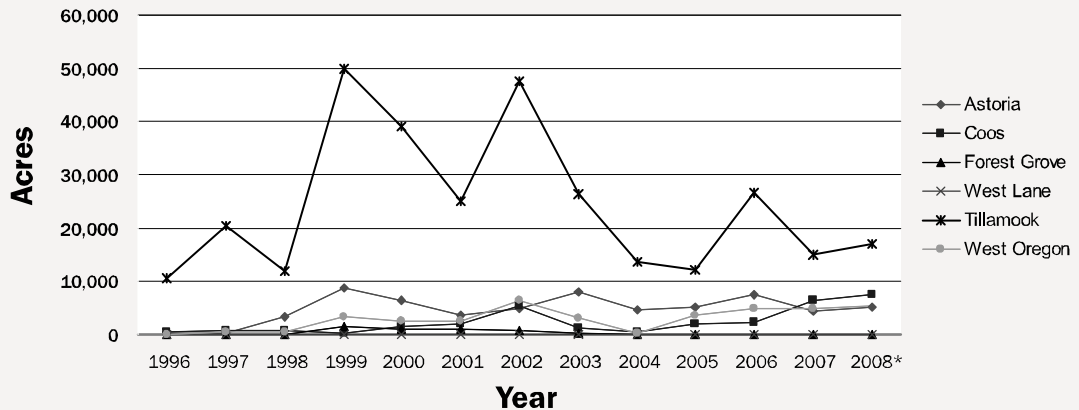


Figure 4.1: Swiss Needle Cast on State Forests detected from aerial surveys, 1996-2008



Note: 2008 results estimated from partial sample survey

Figure 4.2: Swiss Needle Cast on State Forests, as detected by aerial surveys, by District 1996-2008



Note: 2008 results estimated from partial sample survey

Insect Pests

Insect-caused tree mortality, as detected by annual aerial surveys of State forests, is generally quite low, with an average of less than one percent of total State forest area affected annually. The ODF-USFS cooperative aerial survey for the current year is not made available until December, so information from the 2008 surveys is not yet available.

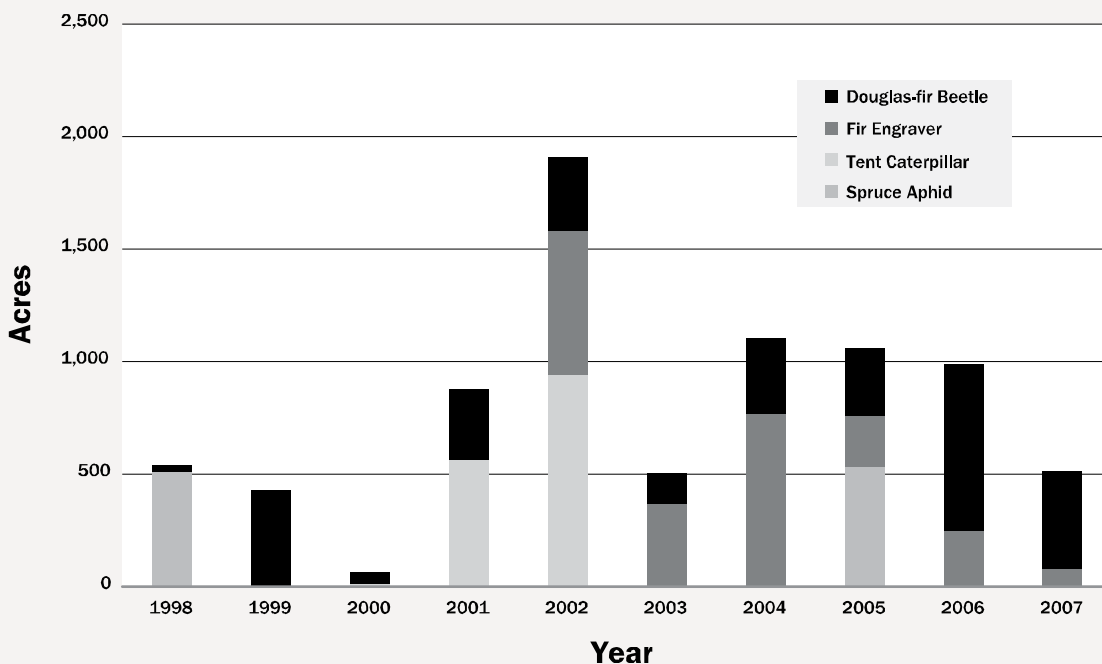
Aerial surveys completed in 2007 detected tree mortality on approximately 500 acres of State forests (Figure 4.3). Over 85 percent of the observed mortality was judged to be due to Douglas-fir beetle, with the majority occurring in the Forest Grove and Tillamook districts. Bark beetle damage tends to be highly variable as it is often driven by weather and moisture patterns. Douglas-fir beetle damage is



closely tied to large windthrow events, while fir engraver and other bark beetles follow periods of drought. No significant damage from defoliating or sap-feeding insects was detected in 2007. The most recent activity observed for these agents include an outbreak of Western tent caterpillar near Astoria in 2001-2002 and damage from spruce aphid along coastal areas of northwest districts in 1998 and 2005 (Figure 4.3).

Overall, tree damage estimates due to insects in 2007 by area and volume were lower than the 25-year average of 1,500 acres. The total damage observed from the earlier described agents over that time has ranged from 50 to 15,000 acres. Long-term pest trends can be useful to inform forest management activities; however, due to the generally limited amount of annual damage observed on State Forests in recent decades, it may difficult to identify specific targets. Although insect outbreaks can kill large numbers of trees and create fuel loading problems in some areas, the endemic levels of activity typically observed on State Forests may assist in the creation of wildlife habitat.

Figure 4.3: State Forest area affected by insect pests, 1998-2007



Influencing Factors

Forest management can influence these metrics to some degree by changing the overall structure and species composition of stands. For example, a lack of tree species diversity can provide ideal conditions for the spread of a disease such as Swiss Needle Cast. Rapid salvage of substantial areas of windthrow can also serve to reduce the risk of damage by certain bark beetles.



Performance Measure 4

(continued)

However, these metrics are not completely within the control of forest management. During periods of drought, any forest type may become vulnerable to extreme fire events. Similarly, many pest population dynamics are outside of direct control as they are largely driven by weather patterns, inherent biological cycles or other factors. Symptoms of Swiss needle cast are most pronounced in April and May just before the new foliage emerges. Weather conditions before and during this period can affect the degree of discoloration and the ability of observers to map SNC damage. Some annual fluctuations in the SNC aerial survey results reflect this.

The greatest threats to the health of Oregon's forests are introduced organisms or native species whose populations and impacts are increased by drought, high stand densities or other factors. Insect and disease epidemics in Oregon have occurred historically and may be expected to continue. In addition, non-native pests as well as changes in climate and human activity have the potential to greatly affect the structure and composition of Oregon's forests in the future.

Data Sources

This measure is supported by two metrics: a. forest area affected by pests and disease; and b. forest area by Fire Regime Class. Data associated with metric a is obtained through annual aerial surveys that have been completed in a generally consistent manner for more than five decades. Spatial information as well as summaries of area, number of trees, and volume affected by particular damaging agents is collected and processed by USFS-ODF personnel and is made available annually. Methods for metric b are still being considered and are not reported.

Possible Improvements to Performance Measures

No changes to the performance measures or targets are proposed as they relate to insects and disease. Developing a specific performance measure target for the combined metrics of invasive species, pests, disease, and fire is very problematic, and would likely not be useful.

For SNC, the best target is a trend that is either flat or descending, rather than a specific level of damage. Because of annual fluctuations due to survey conditions and seasonal development of disease symptoms, the trend line should be viewed very generally over a period of years. At the individual district level, a general trend also is appropriate because at this smaller scale timing of the survey can lead to more variation than actual changes in SNC damage.

For context on insect pest information, the current target trend for statewide Department Key Performance Measure (KPM) 13, "Insect Damage in Eastern Oregon Forests" is to have greater than 96 percent of aerially surveyed forests in Eastern Oregon forests free of insect damage. This KPM target is based on an examination of 50 years of data. The five-year average of damage by insect agents on the approximately 780,000 acres of State Forests is 0.2 percent, with a range of 0.01 percent to 2 percent.

Data remains unavailable for invasive species on state forestlands. The Department holds a seat on the Oregon Invasive Species Council, and is a member of several Cooperative Weed Management Associations. The Department also is beginning to develop an invasive species action plan, and the State Forests Division is doing



work to strengthen its approach to invasive weeds. With these efforts, the State Forests Division will be able to better articulate a metric related to invasive species to inform this performance measure. Program level data collection and information management systems for invasive species do not yet exist and are necessary to support reporting.

The State Forests Division will continue to assess what will be required to report a “fire risk” metric. Data to support the methodology chosen will likely rely on fuels data (e.g. downed wood, standing dead trees) captured in the Division’s Stand-Level Inventory.





Performance Measure 5

Forest road risks to water quality and fish habitat

About this measure

Of all forest management activities, road management has the greatest potential to affect water quality and aquatic habitat. Forest roads have been the focus of best management practices and road improvement conducted under the Oregon Plan for Salmon and Watersheds. This performance measure includes the two metrics that tell the most about how roads directly affect waters of the state. These metrics are suitable for comparison between different geo-regions. The two metrics are hydrologic connectivity of entire road systems and fish passage where roads cross streams.

Hydrologic connectivity to streams is an accepted measure of road system environmental effects in western North America. Hydrologic connectivity is evaluated by determining if road waters on a segment of road drain to a stream or gully, or flow into porous forest soils so sediment and the storm runoff that carries it do not enter streams. New road design standards, combined with road improvements under the Oregon Plan, are greatly reducing hydrologic connectivity on state forestlands. This hydrologic connectivity measure examines the amount of road segments connected to streams, and assesses what action(s) may be necessary to reduce those connections.

Improving fish passage increases the amount and type of habitat available for fish at multiple life stages and, therefore, is an important component of achieving fish-related conservation goals. Barriers to fish passage can result from both natural features, such as waterfalls and steep channels, and from artificial structures, such as stream crossings, tide gates, hatchery facilities, and impoundments. Culverts installed where roads cross fish-bearing streams are the most common artificial barriers associated with forest roads. Present-day culvert installations are eliminating historic installations that passed water as quickly as possible and created barriers to juvenile and sometimes adult fish movement. New culverts are designed to create an environment similar to that of the natural channel so adult and juvenile fish can move into and through the culvert to other parts of the watershed.

Status

For watersheds surveyed to date, the Division is meeting or is very close to meeting the 10-year target of less than 15 percent set by the Board for reducing the hydrologic connectivity of roads. Data indicate work remains to meet the 10-year target of less than two percent set by the Board for reducing road-related barriers to fish passage, although all barriers identified from the surveys completed last year were on smaller streams that have not been verified to have fish present.

To date, information used to evaluate these performance measures has been collected as part of watershed analysis. Road survey results from three completed watershed analyses were summarized in the last performance measure report. Two



Metric	2008 - Five Watersheds
a. Percent of roads that have hydrologic connection to stream networks	Range: 8.7% - 19.8% All surveys: 15% Likely to meet 10-year target
b. Percent of stream crossings with barriers to adult or juvenile fish migration	Range: 3.5% - 9.7% All surveys: 4.7% Likely to meet 10-year target

Roads surveyed to date are performing well with regards to hydrological connectivity.

small watersheds have been completed since the last report (the Kilchis and East Fork Trask watersheds in Tillamook District). Table 5.1 shows hydrologic connectivity as measured on all roads in these five watersheds. Table 5.2 provides results for fish passage at all road crossings of verified (“known”) and assumed (“likely”) fish bearing streams.

These data indicate the Division is meeting or are very close to meeting performance measure targets for hydrologic connectivity. One state forestland watershed is already well below the 10-year target for hydrological connectivity (East Fork Trask); two watersheds are approximately at the target (Nehalem and Wilson), and two are 4.8 percent and 3.6 percent above the target (Miami and Kilchis). Overall, roads surveyed to date are performing well with regards to hydrological connectivity.

Table 5.1: Existing data on hydrologic connectivity of roads in five watersheds on State Forests

	Miami 2005 Tillamook District	Nehalem 2005 Astoria District	Wilson 2007 Tillamook and Forest Grove Districts	Kilchis 2008 Tillamook District	East Trask 2008 Tillamook District	All surveys
Miles hydrologically connected	16.2	96	66.7	36.5	12.1	227.5
Total road miles	81.9	607	430.4	196.6	203.8	1519.7
Proportion hydrologically connected	19.8%	15.8%	15.5%	18.6%	8.7%	15.0%

Of the five State Forests watersheds surveyed, the barriers to fish passage range from a low of 3.5 percent in the Wilson River watershed) to a high of 9.7 percent on the Miami River watershed (Table 5.2). None of these watersheds are at the 10-year targets of two percent. These watershed numbers do not reflect road improvements completed in response to the watershed analysis. At least for the Astoria District portion of the Nehalem River watershed, information indicates the District is now very close to the two percent target. Overall, these data indicate work is needed to meet the targets for fish passage, although all barriers identified



from the surveys completed last year were on smaller streams that have not been verified to have fish present (i.e. may or may not be barriers to fish). This illustrates a strong need to implement consistent and verifiable methods to determine fish presence.

Table 5.2: Existing data on barriers to fish passage on roads in five watersheds on State Forests

	Miami 2005 Tillamook District	Nehalem 2005 Astoria District	Wilson 2007 Tillamook and Forest Grove Districts	Kilchis 2008 Tillamook District	East Trask 2008 Tillamook District	All Crossings
Number of barriers	12	28	19	20	11	90
Adult barrier	7	10	11	19	5	52
Juvenile barrier	5	18	8	1	6	38
Total number of stream crossings	124	587	544	429	216	1900
Percent of total stream crossings that are barriers to adult or juvenile fish passage	9.7%	4.8%	3.5%	4.7%	5.5 %	4.7 %

Influencing Factors

Forest road construction and maintenance can pose risks to aquatic habitat and water quality. Particular risks include the hydrologic connectivity of roads to streams and the presence of fish passage barriers. The hydrologic connectivity and fish passage metrics associated with this measure are directly related to best management practices. When forest roads are not managed in accordance with best management practices, it will be reflected in these metrics. These metrics are very direct measures of road effects on streams and aquatic habitat. The metrics are also sensitive to investments in the road system. Assuming funds for road work continue to be derived from harvest revenues, these investments might be affected by a major decrease or increase in harvest levels but should not be affected by minor adjustments in harvest levels. For example, some sales with significant road project work have not sold during this current period of reduced timber values. When this occurs, some planned hydrologic connectivity and fish passage improvement projects are delayed.

These metrics are somewhat sensitive to flood events. Large floods can remove substrate from culverts and cause outlet drops, or can completely wash-out streams crossings. In addition, high flows can cause gullies that increase hydrologic connectivity. At the same time, repairs after such storm events can improve both of these conditions.



Data Sources

This measure is supported by two metrics: a. percent of roads that have hydrologic connection to stream networks; and b. percent of stream crossings with barriers to adult or juvenile fish migration. To date, information has been collected as part of formal road environmental risk surveys conducted in association with watershed analyses. Road surveys have been completed for all recent and proposed watershed analyses.

Possible Improvements to Performance Measures

No changes to the performance measure or the metrics supporting the measure are proposed at this time. However, over time, the program is working to improve the quality of road information. The program also is working to implement fish presence determination methods. This will improve our ability to assess and report on existing barriers to fish passage.





Performance Measure 6

Quantities of habitat by FMP stand-structure type and habitat components, and the use of those areas by native fish and wildlife

About this measure

A key goal of the Northwest and Southwest Oregon State Forest Management Plans (FMP) is to contribute to sustainable populations of native fish and wildlife through the maintenance and development of forest habitats on which they depend. The goal embodies the statute and rules addressing the relationship of forest and aquatic habitats to native plant and animal populations. Achievement of the goal will occur through providing a diverse array of stand structural types and key habitat components to support dynamic ecosystems using structure-based management (SBM).

Providing an array of stand structure types, properly arranged on the landscape, is expected to contribute to the habitat needs of native species. Stand types are broadly defined categories of the structural characteristics of stands on the landscape. The characteristics of the target stand types – Regeneration (REG), Closed Single Canopy (CSC), Understory (UDS), Layered (LYR), and Older Forest Structure (OFS) – are described in detail in the FMP. The FMP target percentages for different stand types describe a long-range desired future condition across the landscape in each management district.

In addition, the forest landscape is actively managed to incorporate structural habitat components, including snags, residual live trees, downed wood, multi-layered forest canopies, remnant old-growth trees, multiple native tree species, herbs and shrubs, and gaps, into the forest at a landscape level. There are no numerical standards for most of these elements, but FMP targets have been developed for the first three: residual live trees; snags; and downed wood. The Division's approach is to manage for these components at levels approaching known historical levels. The FMP targets are for at least two hard snags per acre at least 15 inches in diameter across the landscape. The Northwest Oregon FMP targets are for 600-900 cubic feet per acre of hard downed wood left in regeneration harvest units, and for the Southwest Oregon FMP targets are 250 to 350 cubic feet per acre of hard downed wood left in regeneration harvest units. These elements are retained and/or created during stand management activities.

Snag and downed wood targets are expressed in terms of size and decay class. Snags at least 15 inches in diameter are more likely to provide adequate nesting habitat for a number of cavity-using species than smaller snags. In addition, large snags generally remain standing for a longer period of time. Recently dead or hard snags (decay class 1 and 2), provide nesting habitat for primary cavity excavators, and will become soft snags (decay classes 3 to 5) over time. Similarly, managing for hard downed wood (decay class 1 and 2) during forest management activities will contribute to the component of soft downed wood over time.

These stand structure and habitat metrics have been in effect and implemented since adoption of the Forest Management Plans in 2001.

The forest landscape is actively managed to incorporate structural habitat components.



Status

Results indicate that structure types REG, CSC and UDS are within the FMP target ranges both as a percentage and as acreage across districts. LYR and OFS types are below both the percentage and acreage FMP targets on all districts except for the Astoria District, which has 20.3 percent LYR. Although snags and downed wood are present on the landscape, levels of hard snags at least 15 inches in diameter, and of hard downed wood, are currently below targets set in the FMP. It was initially expected the landscape levels of snags and downed wood would be below the targets, but that targets would be reached through implementation of the management strategies over time.

Metric	2007	2008
a. Live tree and snag retention and downed wood in harvest units.	Data not available	
b. Stand structure percent	See Table 6.1	N/A
c. Acres of State Forest by FMP structure type	See Table 6.2	N/A
d. Landscape averages of the number of snags and amount of downed wood	Below targets in FMP as expected	
e. Composition and structure of forest vegetation	Data not available	
f. Use of stand structure types and habitat components by wildlife.	Data not available	

New inventory data strengthened our understanding of these stand components.

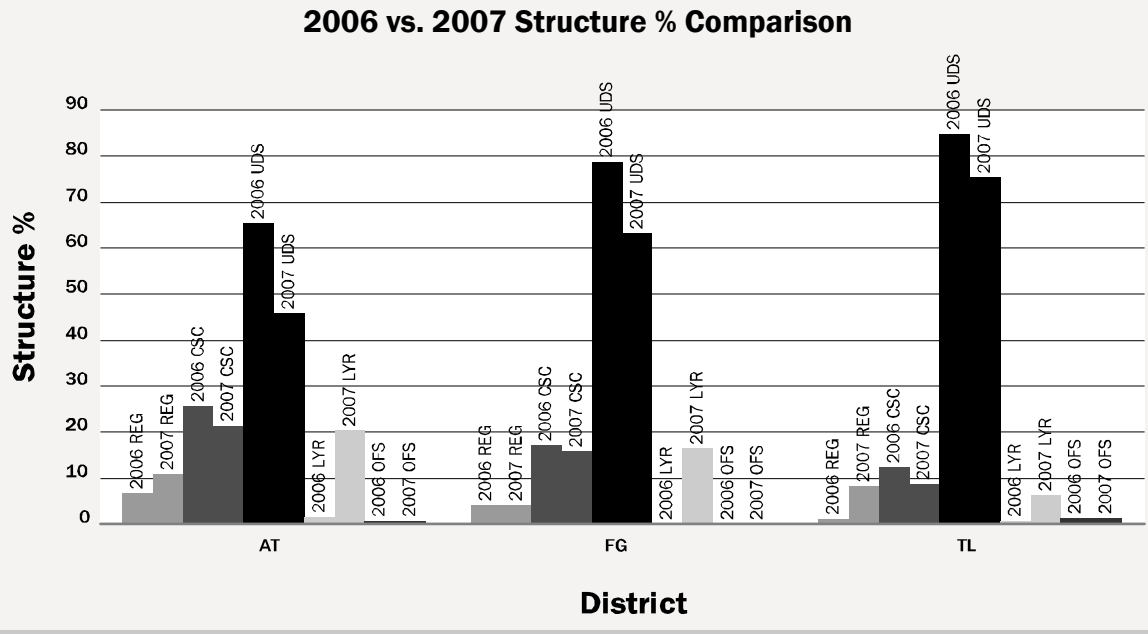
Stand Structure Types

The estimates in this report that are based on stand-level inventory (SLI) data differ from the IP estimates, especially for the CSC and UDS structure types. Initial estimates of stand structure type percentages were made for the 2003 District Implementation Plans (IP) prior to availability of SLI data (data gathering for SLI began in late 2002). The structure algorithm developed for application to SLI data was not in use until after the 2003 IP estimates were made. The plans recognized and described likely errors in the 2003 structure percentage estimates. These errors were recognized to be primarily due to a lack of comprehensive data for understory components, such as small trees, herbs, shrubs, grasses and in measuring canopy layering.

The year-end 2007 (as of June 30, 2008) SLI-based estimate for the combined total of all seven district's CSC is 14.8 percent, much lower than the 2003 IP estimate of 63 percent. And for UDS, there is 64.7 percent rather than the earlier 21 percent estimate. Table 6.1 shows the targeted stand structure percentages by FMP, and the current percentages based on year-end 2007 data. A primary determinant in the SLI algorithm being able to differentiate UDS from CSC is the abundant presence of shrubs, herbs, grasses, and understory trees less than 15 feet tall in UDS. The new inventory data strengthened the Division's understanding of these stand components.



Figure 6.1: Structure type comparisons following the application of a revised algorithm on the Tillamook, Forest Grove, and Astoria Districts



Year-end 2007 structure type percentage estimates compared to year-end 2006 estimates differ in part due to recent adjustments of the SLI structure algorithm used for the Astoria, Tillamook and Forest Grove Districts. The adjustments reflect a more refined assessment of a key element in the algorithm – the DDI (Diameter Diversity Index). In general, the effect of the adjustments resulted in a reduction in UDS percentages and an increase in Lyr percentages, as shown in the Figure 6.1 graph. The adjusted algorithm has not been applied to the other districts.

Comparisons of the year-end 2007 SLI-based estimates to the FMP targets follows, and is summarized in Table 6.1:

- For REG (FMP target range 5 to 15 percent): the total percentage for all districts (7.3 percent) is in the FMP target range; each district percentage is less than the top of the FMP target range; and, the Forest Grove (4.1 percent) and Western Lane (1.3 percent) Districts are below the low end of the REG FMP target range. The Southwest District (15 percent) is within its FMP target range (5 to 20 percent).
- For CSC (FMP target range 10 to 20 percent): the total percentage for all districts (15.7 percent) is in the FMP target range; Tillamook (8.6 percent) is the only district that has CSC percent below the low end of the FMP target range; and Astoria (21.4 percent) and West Oregon (24.2 percent) Districts have a CSC percentage higher than the top of the FMP target range; the Southwest District (46.7 percent CSC) is at the high end of its percent FMP target range (35 to 55%).
- For UDS (FMP target range 15 to 35 percent): the total percentage for all districts is 65.5 percent, nearly twice the top of the FMP target range with all other districts having a UDS percentage above the top of the FMP target range;



the Southwest District (33.3 percent UDS) is twice the FMP target range of 5-15 percent.

- For LYR (target range 20 to 30 percent) and OFS (FMP target range 20 to 30 percent): the combined total of LYR and OFS for all districts (11 percent) is below the low end of the combined FMP target range (40 to 60 percent); the Astoria District (20.3 percent) is within its FMP target range amount for LYR structure, with all other districts falling below the low end of the respective FMP targets for LYR and OFS; the Southwest District also falls below the low end of its respective FMP targets for LYR (10 to 20 percent) and OFS (10 to 30 percent).
- The combined average complex structure (LYR, OFS) on the Astoria, Forest Grove, and Tillamook Districts is approximately 14.3 percent.

Table 6.1: Annual stand structure percent across Districts

Stand structure type	Target ¹	Year-end 2007							Target ²	Year-end 2007	
		AT ³	FG ³	TL ³	NC ³	WO ³	WL ³	Combined Total		SW ³	
REG	5-15%	10.7	4.1	8.3	10.7	8.4	1.3	7.3	REG	5-20%	15.0
CSC	10-20%	21.4	15.8	8.6	13.6	24.2	10.6	15.7	CSC	35-55%	46.7
UDS	15-35%	45.8	63.3	75.3	71.9	57.9	78.5	65.5	UDS	5-15%	33.3
LYR	20-30%	20.3	16.4	6.3	2.3	7.6	6.3	9.8	LYR	10-20%	4.3
OFS	20-30%	0.7	0	1.4	1.4	0.2	3.2	1.2	OFS	10-30%	0.7
	Total Percent⁴	98.9	99.6	99.9	99.9	98.3	99.9	99.5	Total Percent		100

¹ Stand structure targets for the Northwest Forest Management Plan

² Stand structure targets for the Southwest Forest Management Plan

³ AT = Astoria; FG = Forest Grove; TL = Tillamook; NC = North Cascade; WO = West Oregon; WL = Western Lane; SW = Southwest

⁴ Some total less than 100 percent due to non-forest or non-calculable conditions

The acres of FMP structure types were calculated using the current SLI (Year-end 2007) annual estimated percentage reflected in Table 6.1 applied to the total acres of the seven districts, and is provided as an example placeholder (Table 6.2). Plans are in place to provide a better trend estimate of the acres by structure type for a decadal period of 2000 to 2010.

Structural Habitat Components

Because many state forests are young and have been impacted by fires and forest harvest activities, current levels of snags and downed wood were expected to be below historical conditions. SLI data collected since 2003 have allowed quantification of the existing levels of snags and downed wood on the landscape. Table 6.3 shows collected inventory data relative to snags and downed wood in all decay classes (columns one and two), and information on the amounts of hard



Table 6.2: Decadal stand structure acreages for seven districts

FMP structure type	Target in acres	Year-end 2007 ¹
REG	31,656 to 94,967	51,376 acres
CSC	63,311 to 126,623	93,751 acres
UDS	94,967 to 221,590	409,644 acres
LYR	126,623 to 189,934	72,140 acres
OFS	126,623 to 189,934	6,202 acres
Total		633,113 ²

¹ These acres represent application of structure percentages reported for metric a) and are shown for illustrative purposes only; plans are in place to provide a better trend estimate of the acres by structure type for a decadal period of 2000 to 2010.

² SLI annual structure percentage estimates extrapolated to the sum total of the seven districts' acres – Tillamook, Forest Grove, Astoria, North Cascade, West Oregon, Western Lane, and Southwest.

Table 6.3: Amount of snags and downed wood on the landscape by District

District	Total snags/acre ≥ 12" dbh	Total downed wood (cubic feet/ acre) ²	Number snags/ acres ≥ 15" dbh Decay 1–2 ¹	Downed wood (cubic feet/acre) Decay class 1–2 ²
Astoria	4.1	2,795	0.8	302
Forest Grove	5.3	3,207	0.7	190
Tillamook	5.3	3,477	0.6	213
North Cascade	4.8	3,446	0.5	209
West Oregon	2.9	996	0.4	215
Western Lane	5.9	2,652	0.7	360
Southwest	4.3	1,548	1.2	172

¹ The Northwest Oregon and Southwest Oregon FMP targets are 2 hard snags per acre, at least 15 inches in diameter, on average across the landscape on each district.

² The Northwest Oregon FMP target is an average of 600 to 900 cubic feet of hard conifer logs per acre; the Southwest Oregon FMP target is an average of 250 to 350 cubic feet of hard conifer logs per acre.



snags and logs in decay class 1 and 2 (columns three and four) that are associated with the FMP targets. Although snags and downed wood are present on the landscape, they are primarily in more advanced stages of decay. Levels of hard snags at least 15 inches in diameter, and of hard downed wood, are currently below targets set in the FMP. These data reinforce the importance of managing for these habitat components during forest management activities.

Influencing Factors

The quantity of habitat by FMP stand-structure type is influenced by the combination of: forest vegetation growth; mortality stemming from vegetative competition, weather, animals, forest vegetation pathogens, fire; and human silvicultural manipulation. The development and progression of stand-structure types present on the landscape occurs both gradually over time and suddenly following major (often catastrophic) events. Ecological processes continually play out across the biotic and abiotic forest components at large and small scales.

The quantity of structural habitat components including snags and downed wood are also influenced by stand and landscape level disturbances, including fire, disease, and density-dependent mortality, which tend to increase the level of these components, and forest harvest activities, including salvage which tend to decrease these components. By including management specifically for these components during forest management activities, such as protection of existing structures, and creation of new structures, the landscape levels of these components can be increased rather than decreased through forest management.

Quantification of the ever-changing habitat and its components is no small task, often the sheer vastness and dynamic nature of items of interest precludes a readily available assessment. The tools, methods, approach and technologies employed to do so center on forest inventory and monitoring that, in themselves, can influence the measure in tangible ways – statistical uncertainty, measurement errors, stratification and classification of continuous variables inherent to habitat characteristics – to name a few. In order to successfully gauge performance regarding efforts to develop and maintain forest habitats, a focus on key indicators and components, the application of uniform and repeatable assessments and then using the information to support informed decision-making related to adapting plans are all-important.

Use of the habitats by fish and wildlife is the focus of longer-term research and effectiveness monitoring. Due to the nature of those efforts, the information about use of habitats by wildlife is, like the habitats themselves, dynamic. In addition to the ecological and other processes shaping habitat, habitat use by fish and wildlife is influenced by additional factors, such as competition, year-to-year variation in food sources, land management activities on neighboring lands, etc.

Data Sources

This measure is supported by six metrics: a. live tree and snag retention, and downed wood in harvest units; b. stand structure percentage by and across districts; c. acres of State Forests' forestland by FMP structure-type; d. landscape averages of the number of snags and amount of downed wood; e. composition and structure of forest vegetation (non-tree species); and f. use of stand structure types and habitat

*Use of the habitats
by fish and wildlife
is the focus of
longer-term
research and
effectiveness
monitoring.*



Performance Measure 6

(continued)

components by wildlife. Data to support all of the metrics will be obtained from: Stand-level Inventory; Implementation, Effectiveness, and Validation Monitoring; Silvicultural Planning and Tracking system information; and the State Forests Extensive Inventory.

For this report, data remains unavailable for metrics a, e, and f. Implementation monitoring data are unavailable for metric a. Metric e is a decadal measure supported by data obtained from the permanent plots, which are to be re-measured every eight to ten years (scheduled to occur in 2009). Metric f also does not have data available to support reporting on it for this report.

Possible Improvements to Performance Measures

The Division will be recommending a slightly revised metric from “use of stand structure types and habitat components by wildlife” to “habitat suitability for wildlife.” The word “use” in the original wording requires validation monitoring data. This type of monitoring involves surveys for wildlife presence, and will be conducted in the future as funding and personnel permit. By using existing inventory data, an estimate of “habitat suitability for wildlife” will be possible. The Division will continue data-development efforts to support all of these metrics.



Performance Measure 7

Availability, quality and public use of recreation opportunities and educational programs



About this measure

The Forest Management Plans include goals for providing social benefits within working forests. The goals embody statutes and rules related to providing a diverse set of social and economic outputs. These outputs are achieved by providing recreational and educational opportunities.

Monitoring recreation use provides information related to the various resource, management and recreation strategies. As the Division implements district-level recreation management plans and responds to changes in use-levels and behavior, this information is important for testing, assessing and refining those strategies. The objective of this monitoring is to create data that can be compared to an explicit standard or standards. Such standards may include: standards or guidelines from a recreation management plan; desired future conditions (targets); baseline information for a given year; or even a range of conditions over years. A standard may be for a specific site, particular recreation activity, or it may be for an entire planning basin or even the entire state forest.

Diverse educational opportunities are provided by the State Forests Division through districts and the Tillamook Forest Center (TFC). For the TFC, this measure provides quantitative data on the number of people coming to the TFC, including the number of students participating in education programs. The data provides baseline use counts, and aids staff in planning programs. This information provides a sense of the number of people being exposed to the history of the Tillamook State Forest, and to the many benefits derived from state-owned forests and forestlands.

Status

Since fiscal year 2006, the total number of recreation facilities and trails remained fairly constant while staff have focused their efforts on improvements and upgrades to existing facilities/trails and conducted a comprehensive assessment of the recreation program. At the TFC, visitation reflects a slight decrease over the publicity-rich fiscal year 2007. Across all units reporting education and interpretation data, a significant increase in the number of participants occurred in both years.

Fiscal year 2007 marks the eighth year of implementing recreation action plans developed for the Tillamook, Clatsop, and Santiam State Forests. For the West Oregon District, recommendations contained within the Recreation Inventory and Assessment report have been being responded to since its completion and approval. These plans and reports were intended to be 10-year plans under the umbrella of the Northwest Oregon State Forest Management Plan. Throughout the region as new trails (Table 7.2) and developed sites are constructed (Table 7.3; includes available revenue data), the State Forests have evolved into popular recreation destinations attracting visitors from the Portland Metro area, Willamette Valley and coastal communities.

State Forests have evolved into popular recreation destinations attracting visitors from Portland to the coast.



Performance Measure 7

(continued)

Metric	2007	2008
a. Number of facilities and trails developed and maintained for interpretation, education, and recreation	Public benefits maintained while facility/trail upgrades focused on public safety and protection of the resource	
b. Annual visitation to the TFC compared to five- and ten-year averages	First full year of data Five years of data not available	Visitation down slightly following publicity-rich year in 2007 Five years of data not available
c. Annual participation in formal educational programs compared to five- and ten-year averages	31% increase across all units reporting Five years of data not available	21% increase across all units reporting Five years of data not available
d. Annual user days for the various types of recreational use on SF	Camper visitor days increased slightly from FY06	Camper visitor days declined slightly from FY07

Educational opportunities expose people to the many benefits derived from forests.

The TFC has two short, loop trails radiating out from the center. These gravel trails are barrier free and allow visitors to explore the surrounding forests. One loop provides visitors with the opportunity to learn about managed forests, while the other loop invites visitors to explore the ecology of the forest and its history.

At the TFC, annual use counts tell the Division how many visitors are coming to the center, and provide an indication of how many students are participating in education programs (Table 7.3). During the first full school year of TFC operations (2006 to 2007), students participating in education programs totaled 3,997 students. During the 2007 to 2008 school year, the TFC had 5,158 students participating in its education program offerings. Additionally, the participants in the TFC interpretive programs were 3,593 in fiscal year 2007 and 4,409 in fiscal year 2008. The TFC has established a qualitative performance measure for its programs and exhibits that will compliment this existing quantitative measure.

Table 7.1: Tillamook Forest Center annual visitation, and education and interpretation program participation

Reporting Period	Annual Visitation	Education Participation	Interpretation Participation	Five-year Average	10-year Average
Fiscal Year 2006	18,050	2,156	2,519		
Fiscal Year 2007	54,160	3,997	3,593	N/A	N/A
Fiscal Year 2008	45,477	5,158	4,409		

The Clatsop State Forest provides field oriented education and interpretive programs. These programs are based on relationships with the local school districts, the OSU extension program, ODFW, and a variety of forest landowners. Typically 300+ students are reached through these programs and the demand is growing. The programs include annual Sixth Grade School Days which provide outdoor resource education to all sixth grade classes in Clatsop County. Field



Table 7.2: Trail project summary in miles for Fiscal Years 2007 and 2008

Activity	Tillamook State Forest				Clatsop State Forest		Santiam State Forest			
	Forest Grove District		Tillamook District		Astoria District		Cascade District		West Oregon District	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
OHV Trails										
New Trails Construction	1.2	0	0	2.1	0	0	1.0	20	0	0
Trail Upgrade / Improvement	15.3	4.5	10	7.8	0	0	0	0	0	0.1
Trails Maintained	30	30	22.5	58.4	0	0	1.0	2.0	4.2	4.3
Non-Motorized Trails										
New Trails Construction	2.7	2.0	2	1.2	3	1.0	4.7	3.0	1.25	0
Trail Upgrade / Improvement	0.5	0	3	2.0	0	1.0	0.5	0	0.75	0.2
Trails Maintained	48	48	9	21	13	15	19	24	6.2	6.4

Table 7.3: Number of campers and revenue from campgrounds Fiscal Years 2007 and 2008

Campground	District	Campers		Revenue	
		2007	2008	2007	2008
Gales Creek	Forest Grove	2,994	2,165	\$13,704	\$11,147
Brown's Camp	Forest Grove	4,627	3,943	\$22,287	\$19,107
Stage Coach Horse Camp	Forest Grove	134	0	\$498	0
Elk Creek	Forest Grove	1,771	1,457	\$4,500	\$3,783
Reehers Camp (new)	Forest Grove	568	511	\$3,197	\$2,801
Jones Creek	Tillamook	4,330	4,730	\$18,636	\$19,536
Jordan Creek	Tillamook	908	975	\$1,974	\$2,100
Nehalem Falls	Tillamook	2,290	2,560	\$12,976	\$13,342
Spruce Run	Astoria	10,073	8,627	\$27,367	\$24,138
Gnat Creek	Astoria	1,383	1,383	\$2,618	\$2,212
Northrup Creek (new)	Astoria	448	467	\$1,786	\$1,787
Rock Creek (new)	North Cascade	115	370	\$194	\$500
Butte Creek Falls	North Cascade	175	500	\$385	\$410
Santiam Horse Camp (new)	North Cascade	231	450	\$2,105	\$1,538
Total		30,047	29,138	\$112,227	\$102,401



presentations are also provided to the local Star of the Sea private school at Camp Kiwanilong and elementary to middle school students at the district Arboretum and Demonstration Forest and at the Gnat Creek Fish Hatchery.

The Santiam State Forest (North Cascade District) has an active education and interpretation program of both in-class and field programs. The District's success is built on establishing partnerships with a range of other organizations, such as 4-H, Boy Scouts, Oregon Forest Resources Institute and other nonprofits. The District has been able to secure several grants to fund programs. The longer duration programs (e.g. six-week curriculum offered as of 2008) are extremely popular with teachers, and OSU research indicates these longer programs have a significant impact on a student's knowledge, attitudes, etc. Word-of-mouth is the primary form of marketing and is very effective, resulting in a growing demand for these programs. Table 7.4 captures data associated with these opportunities.

Table 7.4: Santiam State Forest annual education and interpretation numbers

		Fiscal Year 2007	Fiscal Year 2008	Two-year Total	Five-year Average	10-year Average
Field Programs	Programs	20	44	64	Data not available	
	Participants	882	1,312	2,194		
In-class Programs	Programs	57	95	152		
	Participants	1,320	1,027	2,347		
Total Programs		77	139	216		
Total Participants		2,202	2,339	4,541		

Sun Pass State Forest, the only Oregon state forest east of the Cascades, is the home of the Klamath Outdoor Science School (KOSS). KOSS provides students an opportunity to learn forest science on the forest, and to gain an appreciation for a forest that is well-managed for multiple uses. The Department's Klamath Lake District is an integral partner in this educational school, providing assistance with classroom activities and a location for KOSS's educational facility on the Sun Pass State Forest. Groups of 30 to 50 students attend KOSS for one to four nights, and participate in field studies, special interest activities and evening programs. Curriculum can be provided to school groups before and after their stay at KOSS to further enhance learning. Single-day camps also can be arranged. Approximately 300 students participated in the KOSS outdoor education school each year in both fiscal years 2007 and 2008.

Influencing Factors

Recreational use of state forests ranges from limited in some areas, to very high levels in other areas. Traditional uses are long-standing, and precede current recreation management plans by many decades. There is general consensus that management in recent years has reduced adverse impacts and eliminated some of the most damaging uses. However, a consistent baseline of resource information to



document historic or current conditions in relation to use and impacts is lacking. The level of recreation use is influenced by many factors including changing demographics, reduction in opportunities in one geographic area, societal changes in lifestyle and technology, the economy (particularly the price of fuel), weather and the extent of summertime fire season restrictions and overall trends in recreation demand.

Recreation use monitoring is both time consuming and expensive. When faced with a long list of additional recreation priorities and issues, this type of monitoring has remained a low priority. Data continues to be collected, but a lack of consistency in these efforts results in less accurate and reliable data and data analysis results. This lack of consistent information makes it difficult to quantify impacts, document accomplishments and determine trends. It has also resulted in a lack of clear performance measures and a strong empirical basis for resource management decisions and the allocation of staffing resources. The need for consistent recreation use monitoring has been noted and identified through a second party assessment. A Division work group is examining methods to create consistent and reliable use monitoring processes and databases.

Prior to opening the TFC, the Department of Forestry engaged in a significant level of marketing to announce the opening of the new center. In addition, the grand opening of the facility attracted a high level of media coverage. This focused marketing effort and elevated media attention generated a correspondingly high level of public interest in the new center during its first year of operation. Since the TFC's opening year, visitation has continued to run high, although visitor totals have not been as high as the opening year.

For the TFC, factors influencing this measure in an adverse way include winter storms, power outages, road closures and high gasoline prices. Each of these factors tends to reduce the number of visitors traveling and planning trips to a site that requires travel, like the TFC. Additionally, as a start-up organization, there also were occasional facility related issues that resulted in closures and affected visitation levels. Factors which can lead to higher numbers of visitors include fair seasonal weather, engaging special events and effective marketing. Currently the TFC is conducting a visitor exit survey and also is developing a new marketing plan, which, together, will provide insights on how best to market the opportunities provided by the center.

Factors influencing education and interpretation outcomes are either curriculum- or resource-related. The KOSS is operating at its current funding and capacity level, while on the Santiam State Forest and Astoria District these programs are delivered in accordance with staffing and resource capability. Adjustments in the educational strategies on the Santiam State Forest resulted in a decrease in attendance numbers. As mentioned, the adjusted curriculum now focuses on delivering a series of focused educational opportunities to the same set of students, who are counted only one time as program participants.

Management has reduced adverse recreational impacts and eliminated some of the most damaging uses.



Performance Measure 7

(continued)

Data Sources

This measure is supported by four metrics: a. number of facilities and trails developed and maintained for interpretation, education, and recreation; b. annual visitation to the TFC compared to five- and 10-year averages; c. annual participation in formal educational programs compared to five- and 10-year averages; and d. annual user days for the various types of recreational use on State Forests forestland. Several approaches have been used to acquire estimates of different types of recreation use, including traffic counters, campground fee envelopes, law enforcement records, organized event records, and limited numbers of user and informal surveys. At the TFC, visitor counts recorded on an hourly basis constitute the data set supporting metric b. Five- and 10-year averages are not yet available, as only three years of data have been collected. Consistent data collection efforts are being developed for each of these metrics that will assure data for the other districts can be reported in the future.

Possible Improvements to Performance Measures

In addition to working on developing data collection methods that can be consistently implemented across all work units for each of the metrics, the following improvements can be anticipated.

Recreation

Over the last 15 years, as districts have developed more recreational opportunities and infrastructure, the types of recreational use and levels of use have increased steadily. During 2006-2007, the Division commissioned a second party assessment of the recreation management program to examine successes and challenges, and to help chart a strategic course for improving recreation program policy, standards and operations. The final assessment report included key findings related to the leadership and management of the recreation program. In 2008, a Division project team developed an action plan with specific tasks and recommendations that address the findings and conclusions in the assessment.

During 2009-2010, the Division will be implementing these actions, which will include carefully examining the role that State Forest recreation plays in a regional context of outdoor recreation opportunities and providers; conducting a recreation program workload analysis that can help ensure that individual units have properly identified the resources they need to get the job done; addressing specific gaps in standards, policies and procedures; and embarking, with participation from the Board of Forestry, on a process to articulate a clear vision for the role of recreation on State Forest lands.

Education

The TFC has established a qualitative performance measure for programs and exhibits that will compliment the existing quantitative measure of number of visitors and number of students in the education programs. The qualitative measure will help determine if people are learning from their experiences at the TFC, and if they value those experiences. Beyond the TFC, the department is developing an agency-wide performance measure that evaluates the outcome and perceived change in knowledge brought about by the agency's forest education work.



Performance Measure 8

Degree of public and stakeholder involvement in state forestland activities and processes



About this measure

Public and stakeholder involvement is attained through committees, the use of volunteers, and through opportunities to provide input on management activities. The committees provide an important advisory service to the Board of Forestry or Division on a variety of topics and issues. The Forest Trust Land Advisory Committee (FTLAC) is a 7-member advisory body to the Board on issues related to the management of these forestlands. The State Forests Advisory Committee (SFAC) is a 12-member advisory body to the State Forests Division on implementation of the Northwest Oregon Forest Management Plan.

The recreation advisory committees play an important advisory role related to the development and management of the recreation program. Volunteers also assist with the many educational and interpretive programs offered by the districts and Tillamook Forest Center (TFC). For recreation projects, organized groups often volunteer their expertise to develop specialized facilities. The horse camps and a specialized mountain biking area are good examples of this relationship. The fact that large numbers of volunteers continue to spend their time working on recreation projects on state forestlands is an indication that the division is seeking input, opinions etc., and that people support recreational management of these lands. Examples of recreation volunteer jobs: camp host; trail construction and maintenance; forest clean-up; trail patrol (e.g. visitor contact, safety and help with search and rescue); and specialized campground planning/building (e.g. horse camp).

At the TFC, volunteers assist with a wide range of work. Some volunteers assist at the front desk, greeting visitors as they arrive, answering visitor's questions, and selling items in the gift shop. Several volunteers serve as "rovers," strolling through the Center, answering questions and sharing the story of the Tillamook State Forest. Other volunteers assist with maintenance work, including building maintenance and grounds work. Finally, during the summer months, a sequence of volunteers serve as site hosts, providing a watchful eye over the center after the center is closed in the evening and before it opens each morning.

Status

While some Districts have experienced a slight drop in volunteer hours associated with recreation, the total hours donated by volunteers has increased significantly (32 percent) since fiscal year 2006. TFC has seen a dramatic increase in volunteer hours over fiscal year 2007.

Volunteer hours tallied in support of recreation projects are reflected in Table 8.1, as are the number of volunteer hours of service provided to the TFC. The number of volunteer hours at the TFC is up over those tallied from April 2006 through June 2006, which totaled 540 hrs.

Large numbers of volunteers continue to spend their time working on recreation projects and at the Tillamook Forest Center.



Performance Measure 8

(continued)

Metric	2007	2008
a. Hours committed by volunteers, community participants and partners, as well as report on progress on specific volunteer projects	Volunteer hours associated with recreation increased by 17% from FY 2006 TFC hours are not comparable to a partial year count	Volunteer hours associated with recreation increased by 13% from FY 2007 TFC volunteer hours increased 45% over FY 2007
b. Annual survey of SFAC and FTLAC members	Input consistent with previous surveys	

The FTLAC meets six times per year at a minimum to discuss forest management issues. Estimated annual hours contributed by the members for their committee service is 500 hours, with each member likely spending additional time outside of meetings on work related to the committee. The committee periodically evaluates how well the Division interacts with the committee, how well the committee accomplishes its mandates, and where opportunities exist for improvement. The committee chose not to conduct a survey this past year, thus new input is not available for reporting.

The SFAC meets a minimum of quarterly, with one field tour annually. The time each member provides for committee service is estimated to be approximately 600 to 720 total annual hours. The SFAC's evaluation comments provide specific input on how well the Division is achieving the goals and objectives of the Northwest Oregon FMP, accomplishing IP outputs, and implementing operations consistent with policy and guidance. Feedback from individual committee members comes with an understanding of how important it is to strive to provide a balance between economic, environmental, and social values. The most recent evaluation indicates the SFAC feels the Division does a good job implementing the Northwest Oregon FMP.

Table 8.1: Volunteer hours for recreation projects and the Tillamook Forest Center Fiscal Years 2007 and 2008

	Tillamook State Forest						Clatsop State Forest		Santiam State Forest			
	Forest Grove District		Tillamook District		Tillamook Forest Center		Astoria		Cascade District		West Oregon District	
	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008	2007	2008
Total Hours	5,846	6,214	2,564	2,250	2,978	4,312	1,900	1,920	1,500	1,870	3,850	4,540

Influencing Factors

The number of volunteers for recreation projects varies from year to year, based on the number of projects and the interest in those projects. The Tillamook Forest Center is an attractive place to volunteer during the summer months due to the beautiful forest setting and typically mild weather. By contrast, cold and stormy



winter weather reduces the number of people interested in volunteering at the Center during the winter months. The Center's remote location (one hour west of Portland and 30 minutes east of Tillamook) is another factor limiting the number of potential volunteers.

Data Sources

This measure is supported by two metrics: a. hours committed by volunteers, community participants and partners, as well as report on progress on specific volunteer projects; and b. annual survey of SFAC and FTLAC members. District staffs monitor projects and report the number of volunteer hours dedicated to those projects. User group organizations also report the number of hours donated to ODF projects on an annual basis. Volunteer hours at the Center are recorded throughout the year by the Office Manager.

Possible Improvements to Performance Measures

In addition to working on developing data collection methods that can be consistently implemented across all work units for both metrics, the following improvements can be anticipated.

For the recreation program, the Division anticipates developing a process and guidance for pursuing partnerships, engaging communities, developing cooperative agreements with other agencies, and pursuing non-traditional volunteer opportunities by the end of FY 2010. A consistent method for tracking volunteer hours and maintaining those records also will be developed.

For surveying advisory committees, the Division needs to develop a methodology for surveying individuals that serve on the various committees for the Division. The methodology should, where possible, help provide a repeatable, consistent source of data to inform this measure.





Performance Measure 9

Customer awareness and support of the management of state forestlands

About this measure

The purpose of this measure is to determine whether Oregonians understand and support the management of state forestlands. Oregon Administrative Rule (629-035-0020) defines Greatest Permanent Value as providing a full range of social, economic and environmental benefits to the people of Oregon. This performance measure relates to the OAR by measuring Oregonians' perception of how well these benefits are being provided.

Status

While it is difficult to say without quantitative data and information specific to the State Forests Division, there is no indication that public support for the Division's forest management has changed in the past 15 months.

Metric	2007	2008
a. Oregonian's responses to biennial survey questions	Opinion poll not scheduled for this year	Opinion poll not conducted by the Division

In the June 2007 report, the responses to a public opinion survey (conducted in March/April 2006 for ODF) were used to show a majority of Oregonians (70 percent) believe ODF does a good job of managing state forests.

The original plan called for surveys every two years. ODF chose not to conduct another public opinion survey in 2008. Several factors contributed to this decision. First, it was difficult to determine in the 2006 survey whether the information received was specific to state forests, or instead about Oregon forests in general. Second, it was doubtful whether a significant change in opinion would occur in two years. Lastly, several Board of Forestry members suggested that ODF should consider cooperating with other organizations to defray costs and seek a broader perspective on forest management.

The Oregon Forest Resources Institute (OFRI) commissioned Davis, Hibbitts & Midghall to conduct public opinion research in June 2008 on "Oregonians' Values & Beliefs About Forest Management." Although ODF did not cooperate in this research, OFRI has agreed to allow ODF to use information it believes to be pertinent to this performance measure. It should be strongly noted, that the responses are not specific to state forests management. Despite this obvious disconnect with ODF's 2006 survey, there are some general trends worth noting.

In the 2008 OFRI survey, Oregonians said they want balance in forest management instead of having environmental values pitted against economic values (a question similar to this was in ODF's 2006 survey). The approval rating (56 percent) for forest management in general is lower than the approval rating for state forests (70 percent) in ODF's 2006 survey.



Water quality topped the list in both surveys as the most important issue. Other issues found to be important in both surveys: protecting wildlife habitat; recreation and public access; and the lumber industry and jobs. One emerging issue cited in the OFRI survey was urban sprawl – forests being converted to urban development.

Both surveys found 47 percent of Oregonians consider Oregon (OFRI survey) and the department (ODF survey) to be world leaders in wise and sustainable forest management. Worth noting: A relatively high number in both surveys (35 percent OFRI and 38 percent ODF) said they were neutral or didn't know.

Influencing factors

The state of the economy can influence public opinion on natural resources. During economic downturns, people perceive jobs and the availability of employment as important. In prosperous economic times when jobs are plentiful, opinions about natural resources can focus on recreation because people have more disposable income. Perceptions also can be more generous toward environmental concerns.

Recent experiences in a forest – either firsthand or heard from trusted others – can influence public opinion. Issues on forest management raised in the media on an ongoing basis can influence public opinion.

Data Sources

“Oregon Residents’ and State Forest Stakeholders’ Knowledge of, Values Regarding, and Attitudes Toward Natural Resource Management in Oregon State Forests” (conducted for the Oregon Department of Forestry by Responsive Management in March/April 2006)

“Oregonians’ Values & Beliefs About Forest Management” (conducted for the Oregon Forest Resources Institute in June 2008)

Adjustments to Performance Measure

As discussions to improve this measure occur, the Board will want to consider what frequency and level of specific questioning of the public might be needed to meet this performance measure. Additionally, whether information specific to state forests management would be necessary, or whether more general information about forest management would be sufficient.

ODF believes two-year increments for public opinion surveys are too frequent to register significant shifts in public opinion. ODF recommends a four-year cycle for surveys. If it is determined that information specific to state forest is required, then independent surveys are recommended. If more general information suffices, ODF recommends cooperating with OFRI and other organizations.

In addition to public opinion surveys, ODF recommends the use of focus groups. In order to gauge public awareness and support of the management of state forestlands in a meaningful way, ODF recommends using “informed” focus groups. Members of these groups would be provided information prior to being asked for their opinions. In this way, the members would be more able to provide informed answers to more directed questions specific to state forests.











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