
STAND LEVEL INVENTORY

The Stand Level Inventory (SLI) is a forest inventory developed by the Oregon Department of Forestry (ODF) that serves as the information source on forest conditions for all lands managed by the State Forests Division. The information is used for forest management analysis, assessments, activity planning, and status reporting. Field measured sampling occurs in a carefully selected representative portion of forested inventory stands. These inventory cruise results are used to extrapolate inventory information in a supervised way to stands which do not have field-measured data, a process known as imputation. This provides site-specific information on trees, snags, down woody debris and understory vegetation in the cruised stands, statistically derived information about all stands for forest modeling purposes, and the ability to aggregate the information to report district and state-wide inventory totals for State Forests and lands managed by the Division under agreement.

The ongoing assessment of inventory quality is dependent upon many factors, but inventory investments remain important for efficient and effective forest management decision-making. The long-term goal for SLI is to maintain between 25% and 50% of all stands with relatively recent field measured cruise information. ODF routinely conducts annual inventory cruising projects in order to maintain those targets. After a hiatus of several years due to budgetary constraints, the Division has now made it a priority to reinvest in SLI data acquisition as a Core Business Function. During the period from July 2018 through June 2019, 240 SLI stands were field sampled on the Astoria, Forest Grove, North Cascade, Southwest Oregon, Tillamook, West Oregon, and Western Lane districts. Beginning in Fiscal Year 2021 the State Forest Division will begin transitioning to a LiDAR based inventory coupled with a densified grid of Forest Inventory and Analysis permanent plots. This LiDAR inventory is part of a strategic investment to provide more statistically robust data across all lands managed by the Division, and will form the basis for planning, monitoring, analysis and reporting in the future. Individual stand exams will continue to be part of the Division's inventory system, used for more localized planning efforts and specific effectiveness monitoring questions. This new inventory is expected to be ready for use in Fiscal Year 2023.

New SLI cruise data acquisition is only one part of the process required for maintaining a current, reliable forest inventory database. Actively managed forests are always changing due to a variety of factors including new harvest operations, natural disturbances, reforestation efforts, and tree growth. Regular inventory database updates are necessary in order to keep up with these changes. At this time, those updates are being completed on an annual cycle. This year all district updates have been completed, with all forest stand data grown forward through June 2019. The database has been updated to account for all operations on all districts completed through December 2018.

Due to the dynamic nature of ecological systems and the inherent challenges associated with sampling extensive natural resources, all inventory information, including volume, is an estimate. Annual forest inventory database updates provide snapshots in the form of inventory reports that represent our best estimates of the current forest conditions at a given point in time. Because ODF is constantly working to adjust and improve our inventory system, these annual reports should not be viewed as a monitoring system to report on year-to-year trends. Instead, the changes resulting from the annual update process reflect our change in understanding of the forest as much as actual changes across the landscape. The result is a comprehensive, up-to-date forest inventory that serves as an essential tool for the purposes of stand-level management, landscape-scale planning, and district-wide reporting.

STAND LEVEL INVENTORY DETAILS FOR ALL LAND OWNERSHIP CATEGORIES

Statewide, as of the end of June 2019, there are 12,583 SLI stands, 6,668 of which (53%) have field-based measurements. Inventory data for non-measured stands is extrapolated from the measured stands. Stands are delineated along differences in general timber characteristics – boundaries are drawn to group together areas with similar tree species, size and stocking. SLI boundaries often coincide with administrative boundaries, but individual stands may include more than one land ownership category such as Board of Forestry Lands (BOFL), Common School Fund Lands (CSFL) lands, and Other lands managed by the Division under agreement. The table below shows the total number of SLI stands and acres by ODF District, the number and percentage of stands with field-based measurements, as well as the number of stands (* having one or more acre) of BOFL, CSFL and Other landowner class lands.

District/Unit	All Lands with SLI				BOFL		CSFL		Other Lands	
	Total SLI Acres	Total Stands	Measured Stands	Measured Stands %	Acres	Stands*	Acres	Stands*	Acres	Stands*
Astoria	136,840	1,953	1,324	67%	134,835	1934	2,005	68	0	0
Coos**	10,985	307	205	66%	8,889	248	2,086	57	9	1
Forest Grove	115,004	1,357	910	67%	114,377	1345	611	23	16	2
Klamath-Lake	105,819	590	474	80%	95,954	506	6,843	81	3,022	12
North Cascade	47,466	797	462	57%	46,586	782	879	30	0	0
Southwest**	16,793	330	185	56%	9,350	198	7,443	130	0	0
Tillamook	250,582	5,885	2,310	39%	245,483	5800	5,050	188	48	7
Veneta**	25,256	402	276	68%	24,324	388	932	13	0	0
West Oregon	36,673	962	522	54%	29,813	833	6,748	271	112	9
Totals	745,418	12,583	6,668	53%	709,611	12,034	32,597	861	3,207	31

**These are units within Southern Oregon State Forests

CSFL and Other landowner class lands, even though fewer in number and acreage in the SLI, benefit significantly with respect to the quality of inventory information by “participating” in the broader inventory effort done for all lands. Potential for the best application of field-measured stand data to the non-field-measured stands is enhanced by the availability of more numerous field-measured stands from the entire dataset – without incurring the additional expense of measuring them (field-measurement costs are shared on a total acres percentage basis by district).

STAND LEVEL INVENTORY TIMBER VOLUME ESTIMATE FOR BOFL LANDS

The table below shows the SLI-based estimate of merchantable net board foot volume by species for BOFL lands as of June 30, 2019. The acres information is net of area in roads – other non-forested acres are not removed, but the volume estimate does reflect the effect of low or non-stocked acres outside of roads.

Timber Inventory Estimate for State Forests Board of Forestry Lands, June 30, 2019											
District	Net Acres	Total Net Scribner Board Foot Volumes (MBF)									MBF/Acre
		Douglas fir	Cedar	True Fir	Hemlock	Pine	Spruce	Alder	Other	Total	
Astoria	134,835	2,171,017	18,958	48,065	786,617	276	120,760	389,305	49,935	3,585,736	26.6
Coos**	8,889	259,220	4,772	52	17,976	11	1,511	40,836	10,719	339,589	38.2
Forest Grove	114,377	3,050,771	16,505	63,094	176,370	204	129	208,414	53,989	3,569,994	31.2
Klamath-Lake	95,954	14,345	4,383	57,412	0	428,069	0	0	1,060	509,575	5.3
North Cascade	46,586	1,141,973	18,056	40,067	136,030	314	0	28,310	29,491	1,396,161	30.0
Southwest Oregon**	9,350	162,379	3,736	7,769	1,290	4,761	0	623	10,147	212,567	22.7
Tillamook	245,483	3,076,356	29,352	37,628	855,991	102	220,753	1,451,255	70,156	5,742,483	23.4
Veneta**	24,324	736,503	4,801	279	78,789	0	0	71,203	77,049	969,047	39.8
West Oregon	29,813	797,601	1,946	300	16,309	116	1,460	67,668	22,751	908,201	30.5
Totals	709,612	11,410,165	102,509	254,667	2,069,371	433,852	344,613	2,257,615	325,297	17,233,353	24.3

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SLI data is updated annually, typically just prior to the end of June each year – in time for using the updated data for this report. For Astoria, Coos, Forest Grove, North Cascade, Southwest Oregon, Tillamook, Western Lane, and West Oregon, this year's updates have been completed and the information included in this report is up-to-date.

For Klamath-Lake, staffing and workload limitations this year combined to impact completion of the updates. Klamath-Lake's most recent update was completed in July 2009. That data was grown forward for this report using the inventory growth model. No operations updates have been included since July 2009.

STAND LEVEL INVENTORY TIMBER VOLUME ESTIMATE FOR CSFL LANDS

The table below shows the SLI-based estimate of merchantable net board foot volume by species for CSFL lands as of June 30, 2019. The acres information is net of area in roads – other non-forested acres are not removed, but the volume estimate does reflect the effect of low or non-stocked acres outside of roads.

Timber Inventory Estimate for State Forests Common School Fund Lands, June 30, 2019											
District	Net Acres	Total Net Scribner Board Foot Volumes (MBF)									MBF/Acre
		Douglas fir	Cedar	True Fir	Hemlock	Pine	Spruce	Alder	Other	Total	
Astoria	2,005	28,654	281	433	10,000	4	3,897	4,927	461	48,674	24.3
Coos**	2,086	37,756	833	391	3,597	504	11,891	983	3,831	60,852	29.2
Forest Grove	611	13,935	3	1	192	0	0	1,335	277	15,743	25.8
Klamath-Lake	6,843	65	1,115	9,216	0	36,224	0	0	117	48,729	7.1
North Cascade	879	27,234	83	22	965	0	0	1,035	1,686	31,042	35.3
Southwest Oregon**	7,443	93,199	2,354	4,735	85	11,819	0	105	8,573	133,646	18.0
Tillamook	5,050	76,263	1,368	1,622	42,516	3	13,043	16,356	1,012	152,183	30.1
Veneta**	932	23,504	384	985	2,790	0	0	878	1,912	30,453	32.7
West Oregon	6,748	199,379	701	6	9,515	7	1,815	18,675	8,385	238,484	35.3
Totals	32,598	499,989	7,122	17,411	69,659	48,562	30,647	44,293	26,255	759,808	23.3

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