

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. 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. Beginning in Fiscal Year 2021 the State Forest Division initiated a transition 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.

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 2021. For most districts, the database has been updated to account for all operations completed through December 2020. The Beachie Creek Fire burned 24,357 acres of North Cascade District in September, 2020, which coincides with the timeframe captured by this inventory update. For stands within the burn perimeter, we adjusted standing inventory to reflect fire induced mortality by applying an area-weighted basal area depletion based on the published relationships between the differenced normalized burn ratio, a remotely-sensed index of burn severity, and basal area mortality.

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 2021, there are 12,404 SLI stands, 6,172 of which (50%) have field-based measurements. Inventory data for non-measured stands are imputed 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	136,856	1,958	1,289	65%	134,835	1941	2,005	69	16	1
Coos**	10,986	301	200	66%	8,889	243	2,086	57	10	1
Forest Grove	115,004	1,371	880	64%	114,377	1359	611	22	16	2
Klamath-Lake	105,825	578	437	75%	98,982	501	6,843	81	0	0
North Cascade	47,476	833	190	22%	46,589	813	879	36	8	1
Southwest Oregon**	16,793	326	184	56%	9,350	198	7,443	127	0	0
Tillamook	250,583	5,704	2,215	38%	245,484	5624	5,050	184	49	8
Veneta**	25,257	404	269	66%	24,324	390	932	13	0	0
West Oregon	36,587	929	508	54%	29,813	811	6,748	262	26	8
Totals	745,367	12,404	6,172	50%	712,643	11,880	32,597	851	125	21

**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, 2021. 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, 2021											
District	Net Acres	Total Net Scribner Board Foot Volumes (MBF)									MBF/Acre
		Douglas fir	Cedar	True Fir	Hemlock	Pine	Spruce	Alder	Other	Total	
Astoria	130,112	2,076,638	19,368	47,028	764,469	297	119,754	366,352	47,393	3,441,990	<i>26</i>
Coos**	8,881	271,576	5,201	54	19,038	10	1,617	41,911	11,333	355,875	<i>40</i>
Forest Grove	111,912	3,045,059	17,779	66,240	183,207	251	127	210,483	54,932	3,578,587	<i>31</i>
Klamath-Lake	98,981	13,688	4,266	44,239	0	431,617	0	0	1,097	498,342	<i>5</i>
North Cascade	46,552	897,487	20,890	23,856	106,961	361	0	20,898	23,296	1,095,252	<i>23</i>
Southwest Oregon**	9,180	162,889	3,768	7,106	1,325	4,865	0	606	9,838	212,247	<i>23</i>
Tillamook	242,395	3,036,329	30,480	38,616	878,193	102	224,735	1,460,521	69,916	5,739,836	<i>23</i>
Veneta**	24,228	728,683	5,085	295	83,015	0	0	70,279	78,651	966,453	<i>39</i>
West Oregon	28,871	812,934	2,071	315	17,755	129	1,573	67,594	23,342	925,766	<i>32</i>
Totals	701,112	11,045,283	108,908	227,749	2,053,963	437,632	347,806	2,238,644	319,798	16,814,348	<i>24.0</i>

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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. This report reflects operational activities including regeneration harvests, thinnings, and reforestation on all districts between January 1, 2020 and December 31, 2020. The Beachie Creek Fire burned 24,357 acres of North Cascade District in September, 2020. For stands within the burn perimeter, we adjusted standing inventory to reflect fire induced mortality by applying an area-weighted basal area depletion based on the published relationships between the differenced normalized burn ratio, a remotely-sensed index of burn severity, and basal area mortality.

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, 2021. 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, 2021											
District	Net Acres	Total Net Scribner Board Foot Volumes (MBF)									MBF/Acre
		Douglas fir	Cedar	True Fir	Hemlock	Pine	Spruce	Alder	Other	Total	
Astoria	1,933	28,062	291	497	9,692	4	3,903	4,181	464	47,113	24.0
Coos**	2,084	40,300	854	409	3,922	535	12,510	1,023	4,004	64,718	31.0
Forest Grove	601	13,618	2	18	991	0	0	1,420	269	16,320	27.0
Klamath-Lake	6,843	50	1,164	9,710	0	34,120	0	0	93	47,250	6.0
North Cascade	878	20,277	77	23	814	0	0	864	1,278	23,347	26.0
Southwest Oregon**	7,388	95,961	2,487	4,919	86	12,236	0	106	8,612	137,339	18.0
Tillamook	4,984	78,967	1,417	1,657	42,702	4	13,255	16,677	1,026	155,708	31.0
Veneta**	932	24,591	400	1,031	2,981	0	0	911	2,020	31,937	34.0
West Oregon	6,571	203,205	747	6	9,990	6	1,952	18,569	8,434	242,915	36.0
Totals	32,214	505,031	7,439	18,270	71,178	46,905	31,620	43,751	26,200	766,647	23.8

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