

Oregon Smoke Management Annual Report

2018



"STEWARDSHIP IN FORESTRY"

**OREGON DEPARTMENT OF FORESTRY
FIRE PROTECTION DIVISION
SMOKE MANAGEMENT AND FUELS**

OREGON SMOKE MANAGEMENT
ANNUAL REPORT
2018

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TABLE OF CONTENTS

	Page
2018 Summary.....	1
Program Overview.....	1
Program Summary.....	1
Audits.....	1
Meteorological Services.....	2
Program Accomplishment Data.....	2
Alternatives to Burning and Emission Reduction Techniques Tracking.....	2
Prescribed Burning Statistics.....	2

FIGURES

1 Smoke Management Regulated Areas.....	3
2A Intrusion Density.....	4
2B Length of Intrusion.....	4
3A Intrusion Summary.....	5
3B Accumulated Intrusion Hours.....	5
4A Prescribed Burning Emissions Estimate (PM2.5).....	7
4B Wildfire Emissions Estimate (Carbon and PM2.5).....	7
5 Total Forestland Burning Emissions (PM2.5).....	8
6 Historical Accomplishment -- Total Acres Burned (Statewide).....	11
7 Historical Accomplishment -- Total Tons Burned (Statewide).....	11
8 Monthly Prescribed Burn Acres Burned.....	12
9 Piled vs Broadcast vs. Underburn Acres Burned.....	12

TABLES

1 2009 - 2018 Accomplishment Summary.....	3
2 Smoke Intrusion Summary -- 2018.....	6
3A Broadcast Burning PM2.5 Emissions by District.....	9
3B Pile Burning PM2.5 Emissions by District.....	9
3C Underburning PM2.5 Emissions by District.....	10
4 Burn Summary by District -- 2018.....	13
5 Tons Burned by Month by District -- 2018.....	14
6 Acres Burned by Month by District -- 2018.....	15
7 2018 Burn Data by Owner Type.....	16



Spring prescribed burning on private land in the northern Coast Range.

OREGON DEPARTMENT OF FORESTRY

SMOKE MANAGEMENT 2018 ANNUAL REPORT

2018 SUMMARY

- **Acres burned** – Statewide 185,702 acres were ignited. This is the highest total acres burned in the last 10 years. The 10-year average is 169,779 acres.
- **Intrusions** – There were 18 smoke intrusions into Smoke Sensitive Receptor Areas (SSRAs). The 10-year average is nine intrusions.
- **Smoke impacts** – Most intrusions impacted SSRAs east of the Cascades and were usually associated with nighttime drainage flow.
- **Emissions** -- Emissions were 12,459 tons of PM 2.5, which was greater than the 10-year average of 11,447 tons.

PROGRAM OVERVIEW

The Oregon Smoke Management Plan was developed as a voluntary program in 1969 and adopted as a regulatory program by the State Forester and the Environmental Quality Commission (EQC) in 1972. The plan has gone through several major revisions since then. The last revision to the plan is in the process of completion. Implementation will occur in 2019.

Key elements of the proposed plan include:

1. A change in the definition of a smoke intrusion to include a threshold for a short-term (hourly) intrusion and a threshold for a 24-hour average smoke impact.
2. Development of a communication and community response plan. Approved community response plans will allow for an exemption to the one-hour threshold of a smoke intrusion.
3. Increasing the amount of polyethylene (PE) sheeting allowed to cover burn piles to keep them dry in order to reduce smoke emissions.

The plan's overall purpose is to keep smoke from prescribed burning in forestland from being carried to Smoke Sensitive Receptor Areas (SSRAs) and other areas sensitive to smoke, and to provide maximum opportunity for essential forestland burning while minimizing emissions. The plan is a framework through which emission reduction goals are achieved. The State Forester administers the plan, in cooperation with landowners, land management agencies, and air quality agencies. The plan applies to all lands classified as forestland and

all federally managed forestland, whether or not classified, within a forest protection district. In general, all federal forestland and Class I forestland in western Oregon is regulated at a higher level but all forestland owners and managers must comply with most or all aspects of the program.

The Oregon Smoke Management Plan contains six principle objectives. These objectives are to:

1. Protect public health,
2. Minimize smoke intrusions into designated population areas,
3. Reduce emissions from prescribed burning,
4. Protect visibility in Class I Wilderness Areas,
5. Maximize burning opportunities while minimizing emissions, and
6. Coordinate with other state smoke management programs.

PROGRAM SUMMARY

Audits:

The Oregon Smoke Management Plan goal is an annual audit of approximately one-percent of the prescribed burns conducted in the Regulated Area (see

map on page 3). Approximately half of the audits are conducted on the day of the burn and half are conducted prior to the burn. The purpose of these audits is to maintain consistent data reporting and monitor the effectiveness of the Oregon Smoke Management program.

The Smoke Management Field Coordinator devotes significant time to overseeing the audit program and improving the compliance for conducting audits. This year 54 audits were completed, for a total of 30,347 audited tons. The audit breakout was 29 pre-burn audits and 25 burn-day audits. Forest Service, BLM, state, and private units were audited. One of these audits was mutually agreed upon and performed on a non-regulated neighboring agency in a successful relationship building and information-sharing visit.

Trends show that reported tons are generally within the acceptable range of audited tons. This is an improvement from the under reporting of tons last year. The Smoke Management Field Coordinator continues to teach both agency and non-agency personnel in the proper techniques to estimate fuel loading through on-the-job training during site visits, burn boss refresher training courses, and fuel load estimation briefing papers. An entire series of video tutorials on how to do a fuels transect, estimate tonnage, and use tools to help burners have also been created and improved based on feedback from the field this year. In addition, the SIMPLE fuel-loading calculator has been accepted by Forest Service and BLM researchers. Research and testing are ongoing as the field continues to use the new fuel-loading tool. Some forests have adopted its use into their standard operating procedures. It's anticipated this outreach and education effort will lead to more precise fuel-load estimates.

Meteorological Services:

Oregon Department of Forestry meteorologists give three daily Smoke Management forecasts and burning instructions for western Oregon, northeast Oregon, and south-central Oregon. Through a cooperative agreement with DEQ they are making the open burning forecast for the Willamette Valley north of Lane County throughout the year. In addition, ODF provides the Department of Agriculture field burning forecasts for the north Willamette Valley, Jefferson County, and Union County during the summer field burning season (July 1- October 15).

Other forecast services include weather support for significant weather events (heavy rain, wind, etc.) and

for weather events that may increase the chances for wildfire and its spread. In addition, the meteorologists provide daily quality control of weather stations for the National Fire Danger Rating System.

PROGRAM ACCOMPLISHMENT DATA

Alternatives to Burning and Emission Reduction Techniques Tracking:

As part of a recommendation from the 2013 review of the Smoke Management Plan, the program is tracking acres of treated forestland where alternatives to burning were employed instead of using prescribed fire. In addition, emission-reduction techniques of prescribed burn units are also tracked. See results:

Total statewide acres of alternatives to burning: **45** (minimal data provided by both federal and private land managers).

Total statewide acres using emission reduction techniques including landing, grapple, hand-piled, and right-of-way piles: **136,478**.

Total statewide acres of covered piles: **3,463**.

Alternative to burning techniques include: biomass removal, scattering material, chipping, crushing, firewood removal, non-treatment, or other techniques for reducing fire hazard and/or creating planting spots without using prescribed fire.

Emission reduction techniques include: piling clean piles instead of broadcast or underburning, use of rapid ignition techniques, covering piles with PE to keep the piles dry, and other techniques used to reduce particulate and gaseous emissions while burning.

The goal is to show the program is not exclusively focused on prescribed burning but all treatment methods that most effectively reduce fire hazard, maintain productive and resilient forests, and keep or improve air quality.

Prescribed Burning Statistics:

The following tables and figures provide detailed information about the Smoke Management program. The data details accomplishments for 2018 and compares them with previous years.

Figure 1

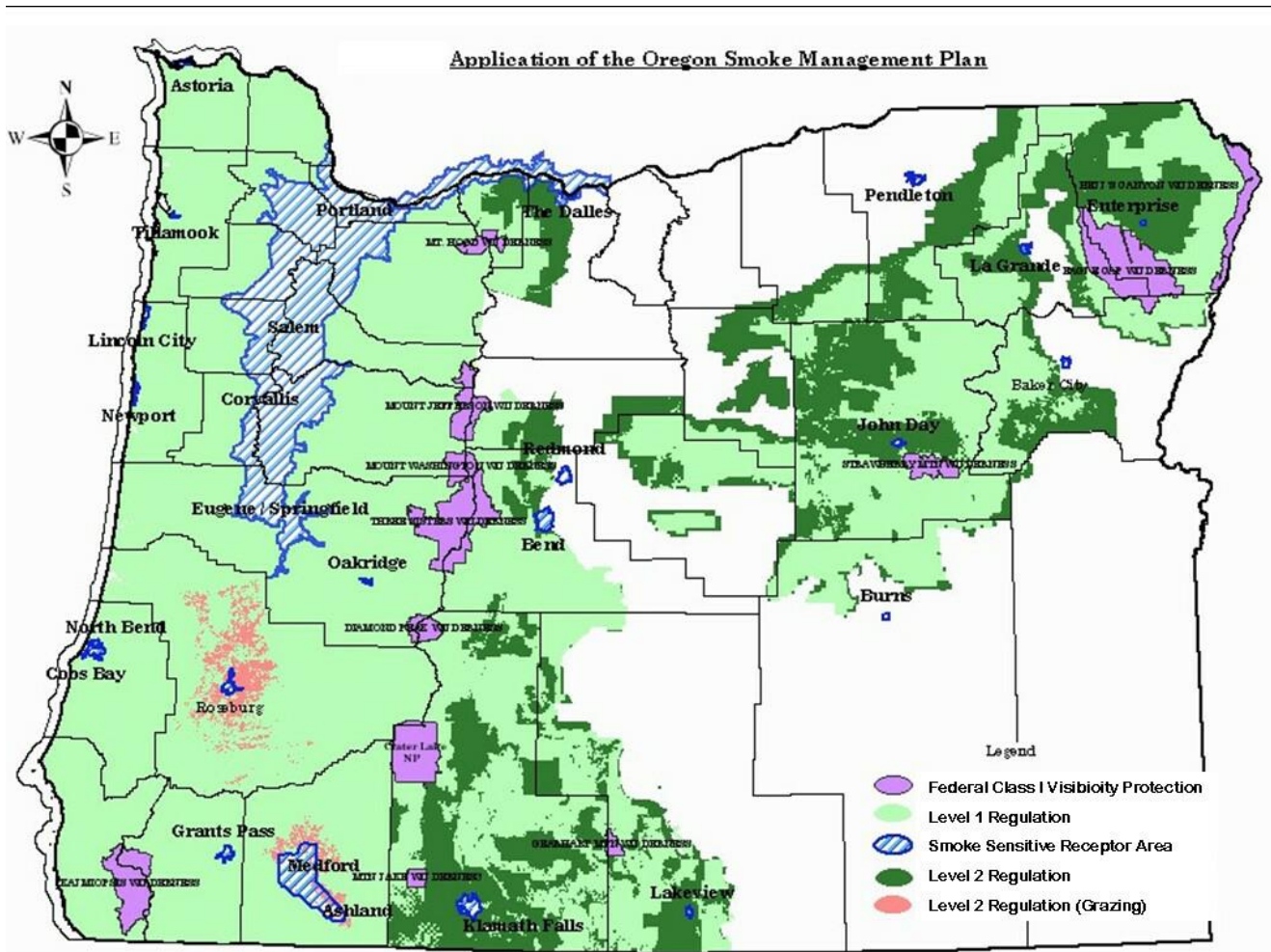


TABLE 1
2009-2018 ACCOMPLISHMENT SUMMARY

Year	Total No. Units	No. Units Burned	Acres Burned	Tons Burned	No. Intrusions	Unit/Intrusion %
2009	3,222	2,492	139,000	1,117,650	5	.20
2010	3,471	2,451	157,224	1,171,239	8	.33
2011	3,544	2,880	162,154	1,370,113	6	.21
2012	3,651	3,092	141,892	1,086,214	7	.23
2013	3,890	3,104	182,189	1,308,114	3	.10
2014	4,095	3,443	208,593	1,405,349	13	.38
2015	3,601	3,076	179,613	1,371,114	9	.29
2016	3,484	2,868	181,800	1,228,107	11	.38
2017	3,597	2,849	159,624	1,004,108	10	.35
2018	4,307	3,382	185,702	1,270,725	18	.53
Average	3,686	2,964	169,779	1,233,273	9	.30

Figure 2A

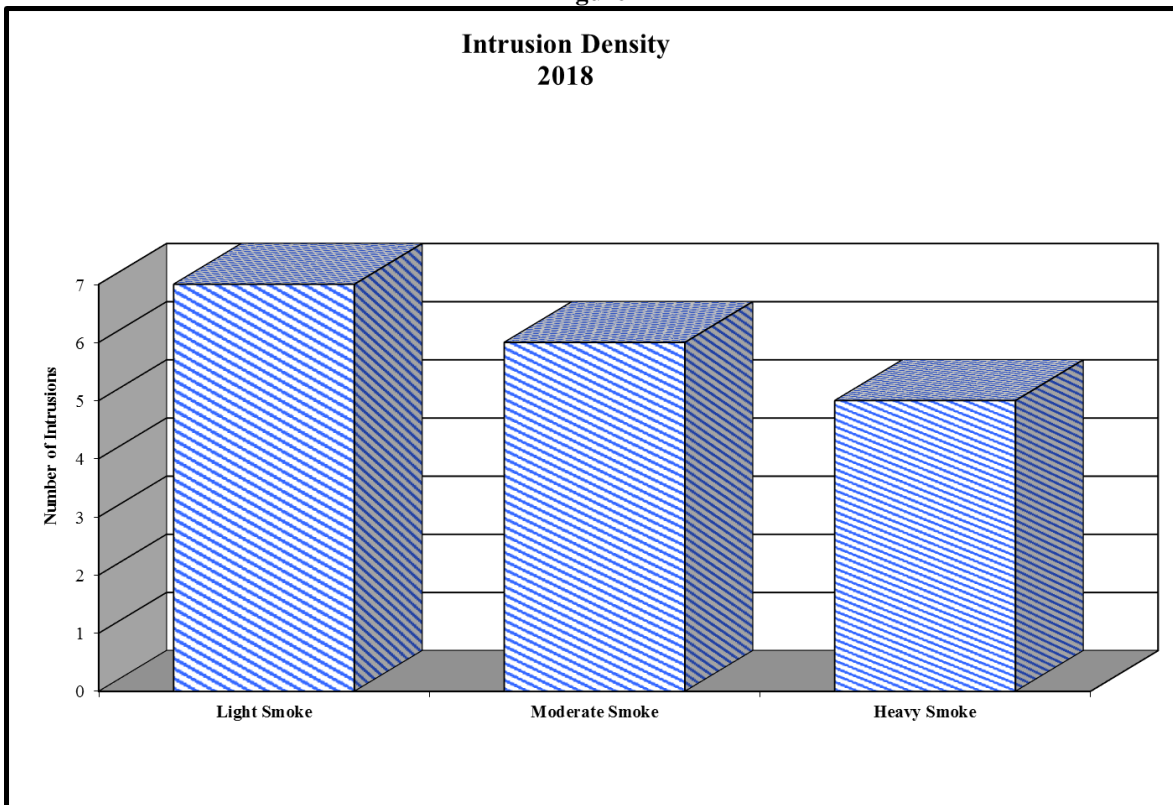


Figure 2B

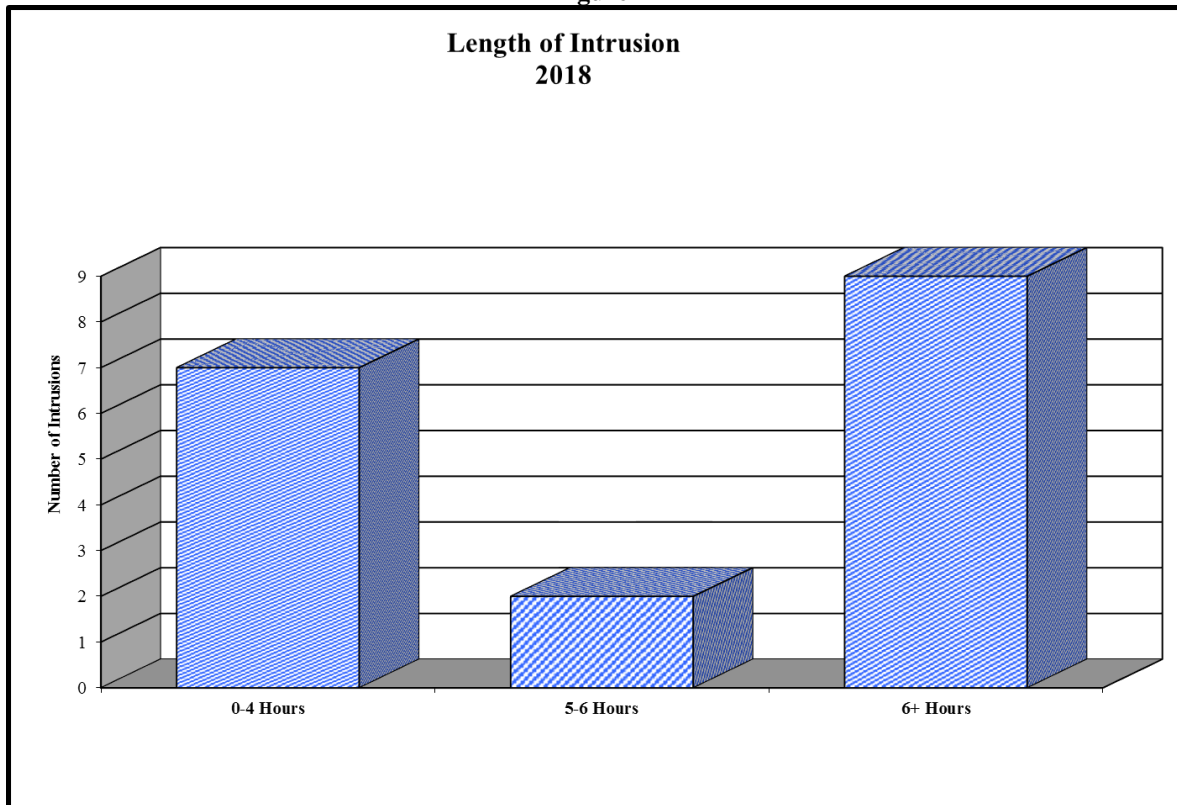


Figure 3A

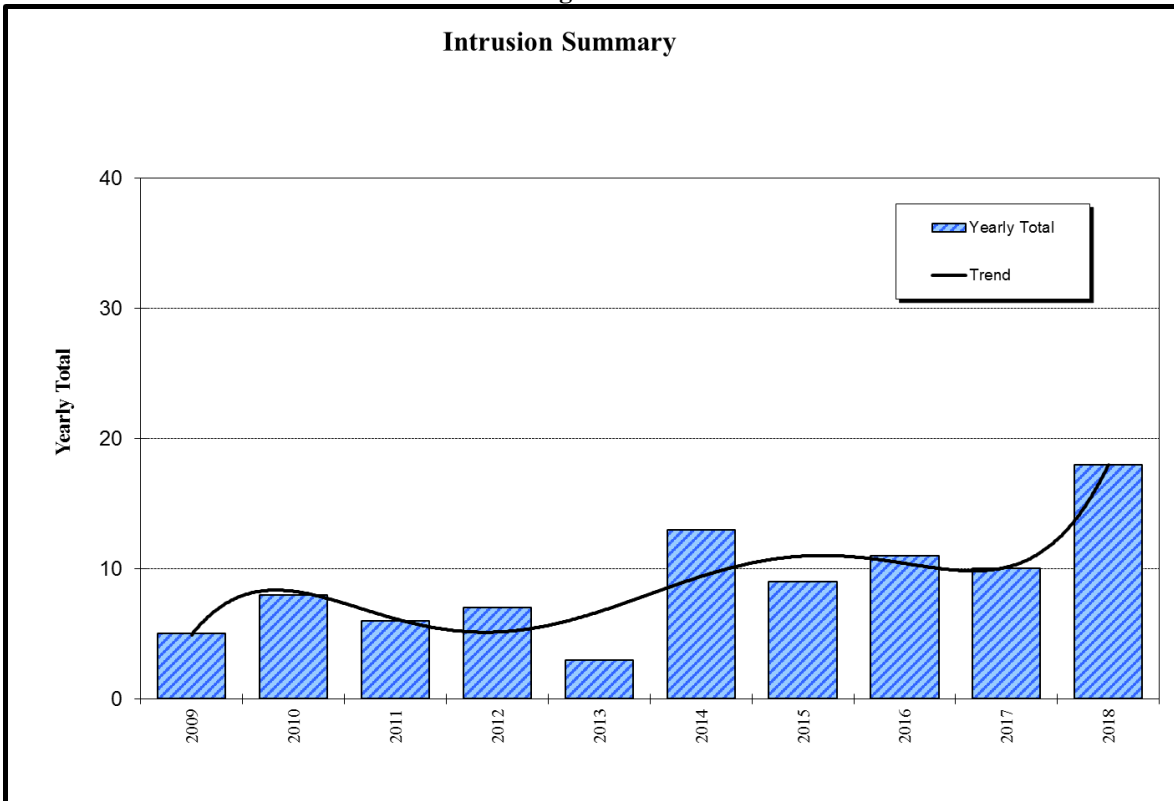
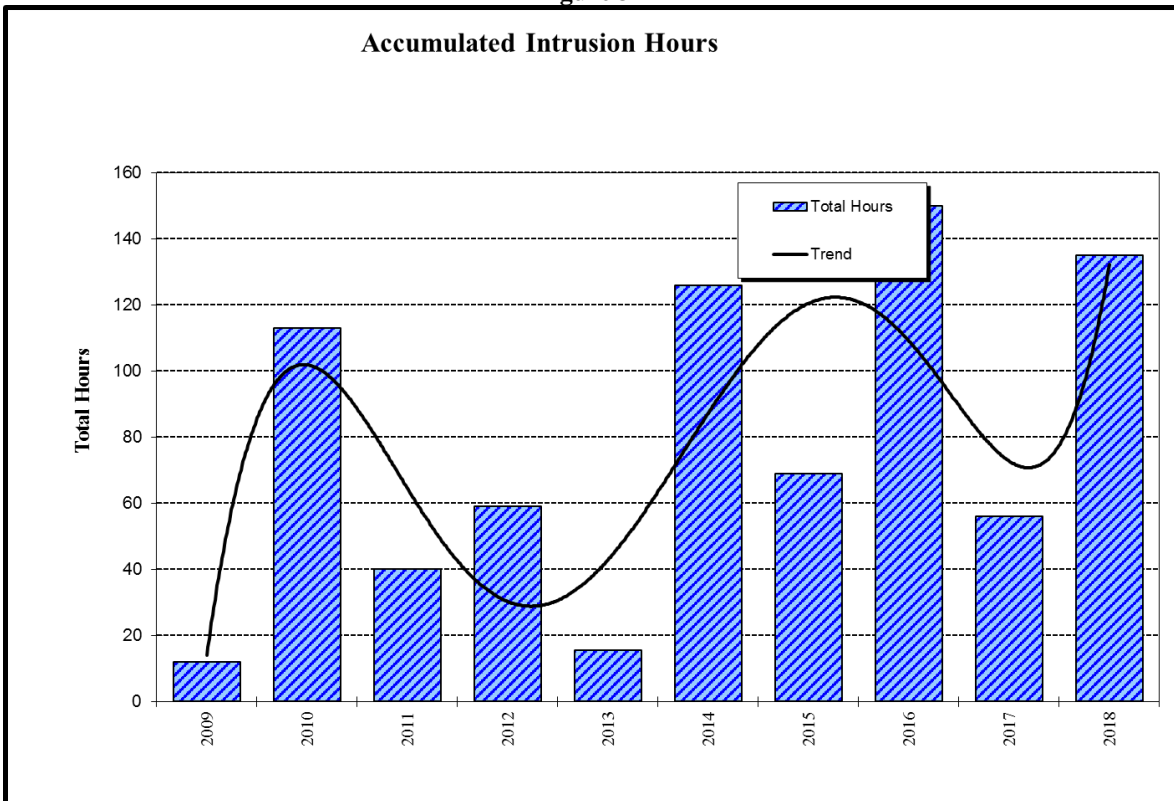


Figure 3B



**TABLE 2
SMOKE INTRUSION SUMMARY – 2018**

Date	District/ Forest	Primary Area Affected	Unit No.	Owner Class	Intensity	Length
Apr 23-24	Deschutes NF	Bend	174060110012	USFS	Heavy	14 hours
Apr 24	Wallowa- Whitman NF	Baker City	174061630010 174061630012	USFS	Moderate	8 hours
Apr 25-26	Deschutes NF	Bend	154060110013	USFS	Heavy	12 hours
May 3	Western Lane	Cottage Grove	177811214806	Private	Light	3 hours
May 3-5	Deschutes NF	Bend	174060110006 174060110007 174060110008	USFS	Light	11 hours
May 7	Malheur NF	Burns	174060420001	USFS	Heavy	12 hours
May 8	Deschutes NF	Bend	184060220009	USFS	Light	3 hours
May 8	Fremont- Winema NF	Lakeview	184060220001	USFS	Light	3 hours
May 8	Deschutes NF	Bend	184060110009	USFS	Moderate	7 hours
May 9	Deschutes NF	Redmond	184060150006	USFS	Light	3 hours
May 14	SW Oregon Rogue-Siskiyou NF	Ashland	177110460304 174061010007	State, County, Municipal – city, and USFS	Moderate	13 hours
May 15	Malheur NF	Burns	184060420002	USFS	Moderate	5 hours
May 14	Western Lane	Cottage Grove	177810120001	Private	Light	2 hours
May 20	Willamette NF	Oakridge	171850421902	USFS	Moderate	6 hours
May 22	Western Lane	Roseburg	177811214807	Private	Light	3 hours
May 23-24	Deschutes NF	Bend	174060110011	USFS	Moderate	12 hours
May 22	West Oregon	Corvallis	165530006801	Other Federal - tribal	Heavy	1 hour
Nov 8	Deschutes NF	Bend	174060110069 184060110035	USFS	Heavy	17 hours

Figure 4A

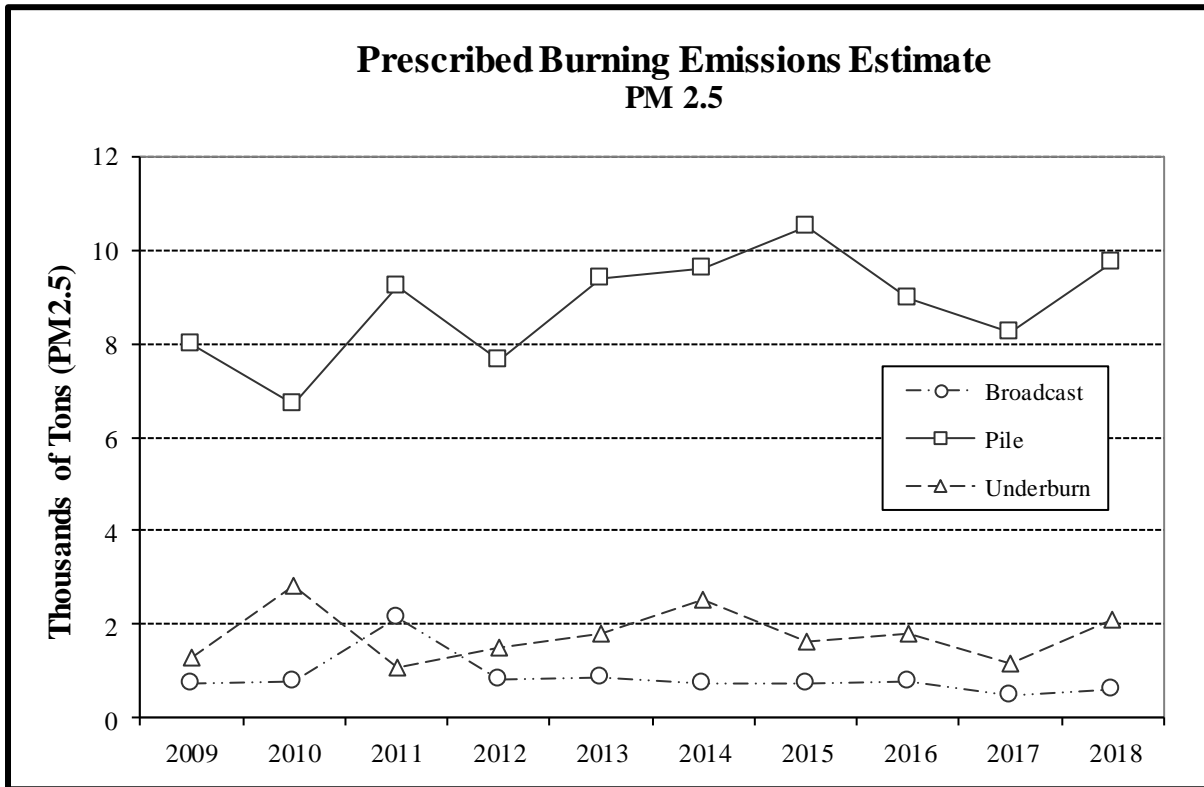


Figure 4B

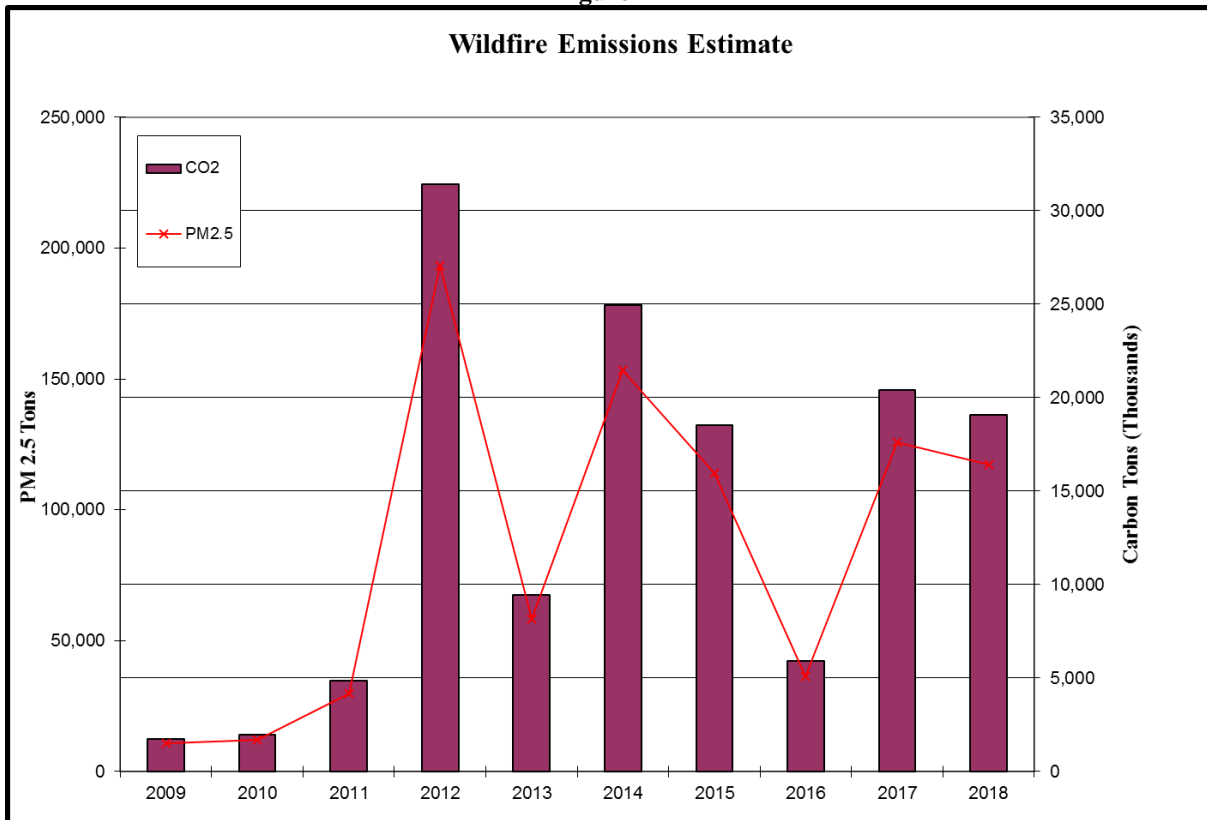
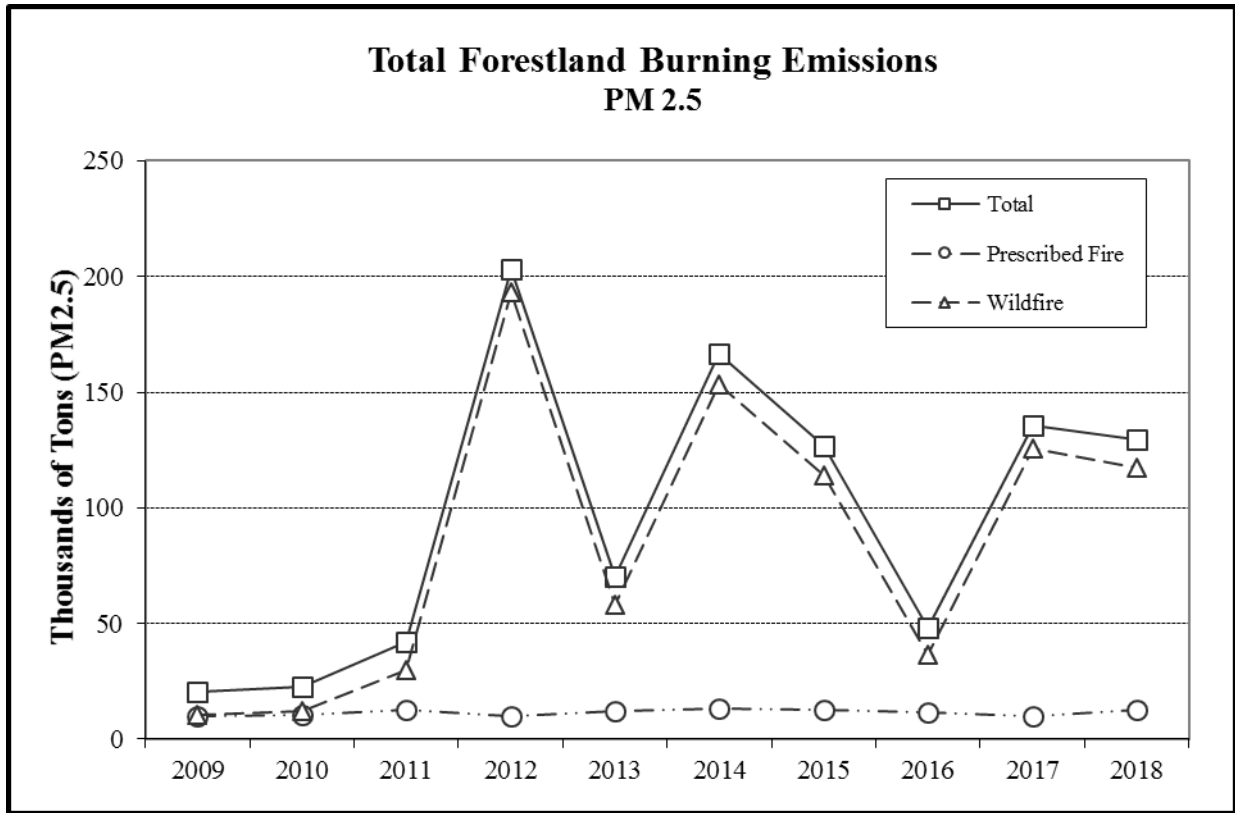


Figure 5



Demonstration of a new model Air Curtain Burner, "The Carbonator", showing how small-scale burning can be done near populated areas with minimal smoke impact.

Table 3A

PM 2.5 Emissions (Tons) Broadcast										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Astoria	5	0	0	0	0	0	4	0	0	0
Central Oregon	0	0	916	0	3	13	15	8	0	0
Coos FPA	398	340	773	221	307	170	289	66	131	191
Douglas FPA	65	21	27	56	45	0	105	60	27	20
Forest Grove	28	5	13	0	10	0	0	9	0	0
Klamath-Lake	26	40	1	0	0	0	0	0	0	0
North Cascade	0	0	0	0	0	0	0	0	0	0
Northeast Oregon	29	204	68	106	0	0	0	68	24	0
South Cascade	11	0	1	1	1	0	0	0	0	0
South west Oregon	0	18	12	0	2	3	8	3	9	0
Tillamook	0	0	0	0	5	0	0	0	0	22
Walker Range	0	0	0	0	0	0	0	0	0	0
West Oregon	114	81	44	15	38	9	5	0	49	50
Western Lane	57	25	50	1	36	6	69	15	129	156
Columbia Gorge SA	1	0	0	0	0	0	0	0	0	0
Crater Lake NP	0	11	0	0	0	0	0	0	0	0
Deschutes NF	4	3	0	0	68	0	12	13	0	0
Fremont NF	0	0	0	0	0	0	0	133	59	75
Klamath NF	0	0	0	0	0	0	0	0	0	0
Malheur NF	4	0	0	357	0	371	0	1	0	0
Mt. Hood NF	0	0	0	0	0	0	0	0	0	0
Ochoco NF	0	0	0	3	17	8	0	8	0	0
Rogue/Siskiyou NF	1	0	1	4	65	9	22	0	11	0
Siuslaw NF	0	0	0	0	0	0	0	0	0	0
Umatilla NF	0	31	143	19	0	44	53	85	0	0
Umpqua NF	1	4	41	12	0	0	17	0	8	0
Wallow a-Whitman NF	0	9	68	20	243	89	52	308	40	92
Willamette NF	1	2	2	12	20	9	98	0	1	10
Winema NF	0	0	0	15	30	0	0	1	0	0
Total	745	794	2160	842	890	731	749	778	488	616

Table 3B

PM 2.5 Emissions (Tons) Pile										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Astoria	121	142	305	490	525	326	377	446	559	654
Central Oregon	121	128	151	174	148	295	256	294	48	72
Coos District	0	0	0	0	0	0	0	4	1	5
Coos FPA	801	748	837	915	1125	1266	1259	1130	1122	1289
Douglas FPA	1173	720	533	515	815	1223	1180	934	1065	1281
Forest Grove	282	273	250	311	545	351	299	196	311	318
Klamath-Lake	62	107	139	54	80	292	871	338	59	93
North Cascade	144	164	213	283	465	306	405	216	196	687
Northeast Oregon	1075	288	1436	312	1276	829	438	952	823	813
South Cascade	896	994	1130	754	886	778	934	708	596	780
South west Oregon	703	411	453	632	463	683	576	519	483	505
Tillamook	278	114	235	138	296	236	236	144	211	174
Walker Range	0	1	0	0	0	1	0	0	0	0
West Oregon	788	873	918	898	1117	1230	1261	917	1012	1184
Western Lane	159	195	149	119	118	196	156	90	477	562
Columbia Gorge SA	1	0	0	0	0	0	0	0	0	0
Crater Lake NP	0	0	0	0	1	0	3	2	0	0
Deschutes NF	100	312	253	230	185	208	306	170	245	377
Fremont NF	1	7	8	10	24	73	83	117	3	2
Klamath NF	10	2	4	2	6	10	5	14	5	1
Malheur NF	203	127	722	185	251	309	389	603	323	89
Mt. Hood NF	6	33	51	21	33	74	51	23	47	18
Ochoco NF	0	0	1	105	75	0	21	6	3	0
Rogue/Siskiyou NF	527	599	601	741	261	346	521	241	87	225
Siuslaw NF	36	29	34	23	22	33	22	22	4	2
Umatilla NF	0	26	18	25	15	30	150	75	58	167
Umpqua NF	81	153	46	201	115	83	133	75	32	23
Wallow a-Whitman NF	319	200	559	353	327	244	165	388	266	227
Willamette NF	20	38	72	128	143	107	280	252	126	113
Winema NF	82	12	101	37	49	89	118	65	59	76
Total	7989	6696	9219	7656	9366	9618	10495	8941	8221	9737

Table 3C
PM 2.5 Emissions (Tons) Underburn

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Astoria	0	0	0	0	0	0	0	0	0	0
Central Oregon	6	277	0	20	1	10	0	0	0	0
Coos FPA	0	0	0	0	0	0	0	0	1	0
Douglas FPA	0	0	0	0	0	0	0	0	0	0
Forest Grove	0	0	0	0	0	0	0	0	0	0
Klamath-Lake	35	1	9	0	0	0	0	0	0	0
North Cascade	0	0	0	0	0	0	0	0	0	0
Northeast Oregon	7	0	0	0	0	0	0	0	0	0
South Cascade	0	0	0	0	0	0	0	0	0	0
South west Oregon	21	22	11	26	31	5	17	17	2	11
Tillamook	0	0	0	0	0	0	0	0	0	0
Walker Range	0	0	0	0	0	0	0	0	0	0
West Oregon	0	0	0	0	0	0	0	0	0	0
Western Lane	0	0	0	0	0	0	0	0	0	0
Columbia Gorge SA	0	0	0	0	0	0	0	0	0	0
Crater Lake NP	0	0	0	0	0	0	0	0	0	0
Deschutes NF	159	174	129	58	143	292	200	129	225	307
Fremont NF	430	677	248	190	142	209	680	294	233	389
Klamath NF	0	0	0	0	0	0	0	0	0	0
Malheur NF	214	541	34	524	514	533	11	481	268	549
Mt. Hood NF	2	61	28	14	43	8	1	20	0	0
Ochoco NF	14	46	91	0	89	79	103	65	99	123
Rogue/Siskiyou NF	30	103	157	4	25	49	59	88	48	23
Siuslaw NF	0	0	0	0	0	0	0	0	0	0
Umatilla NF	0	247	170	232	355	411	267	1	0	108
Umpqua NF	48	106	0	33	58	139	10	60	28	57
Wallow a-Whitman NF	207	320	83	228	330	495	162	475	67	306
Willamette NF	95	37	59	45	40	164	81	92	97	108
Winema NF	10	227	76	116	45	138	34	68	97	125
Total	1278	2839	1095	1490	1816	2532	1625	1790	1165	2106



Burn crew gets started lighting to reduce fuel hazard as part of the Central Oregon Training Exchange program.

Figure 6

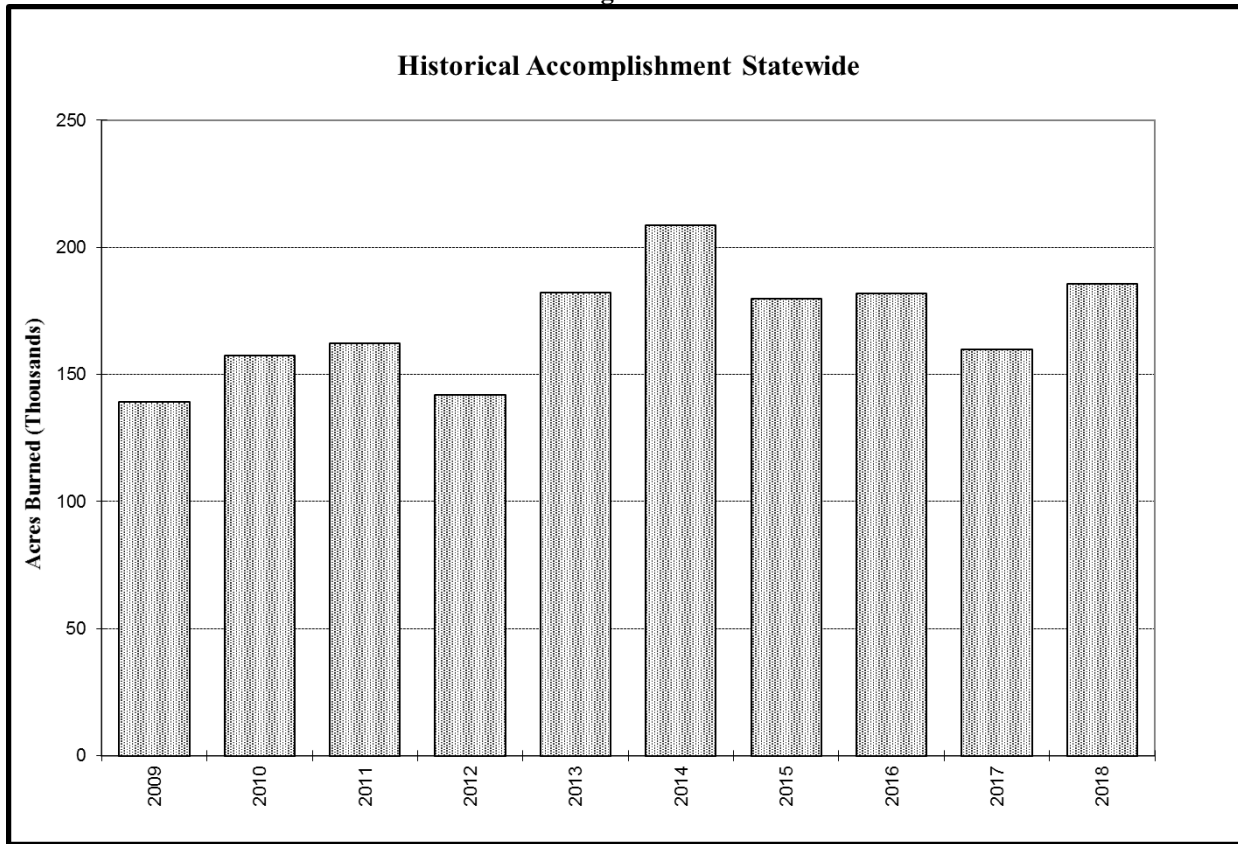


Figure 7

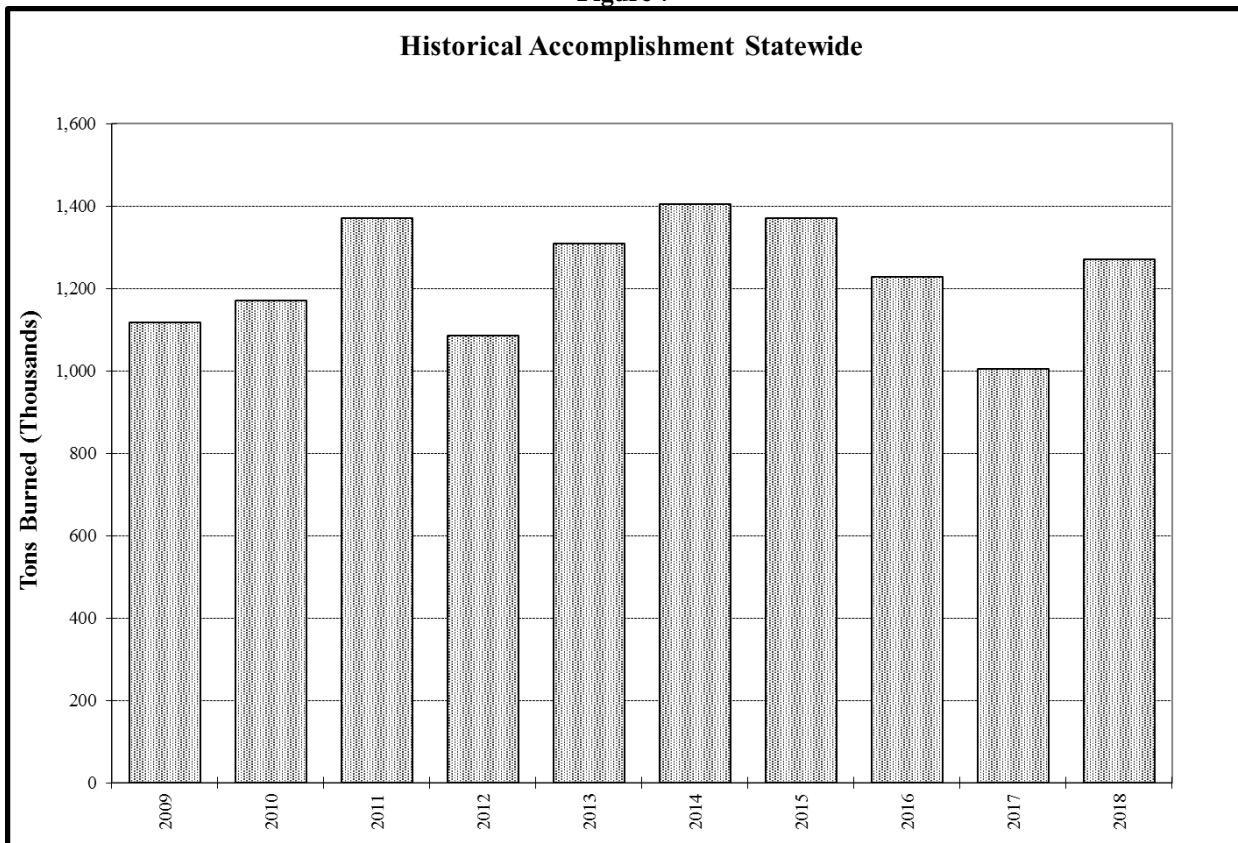


Figure 8

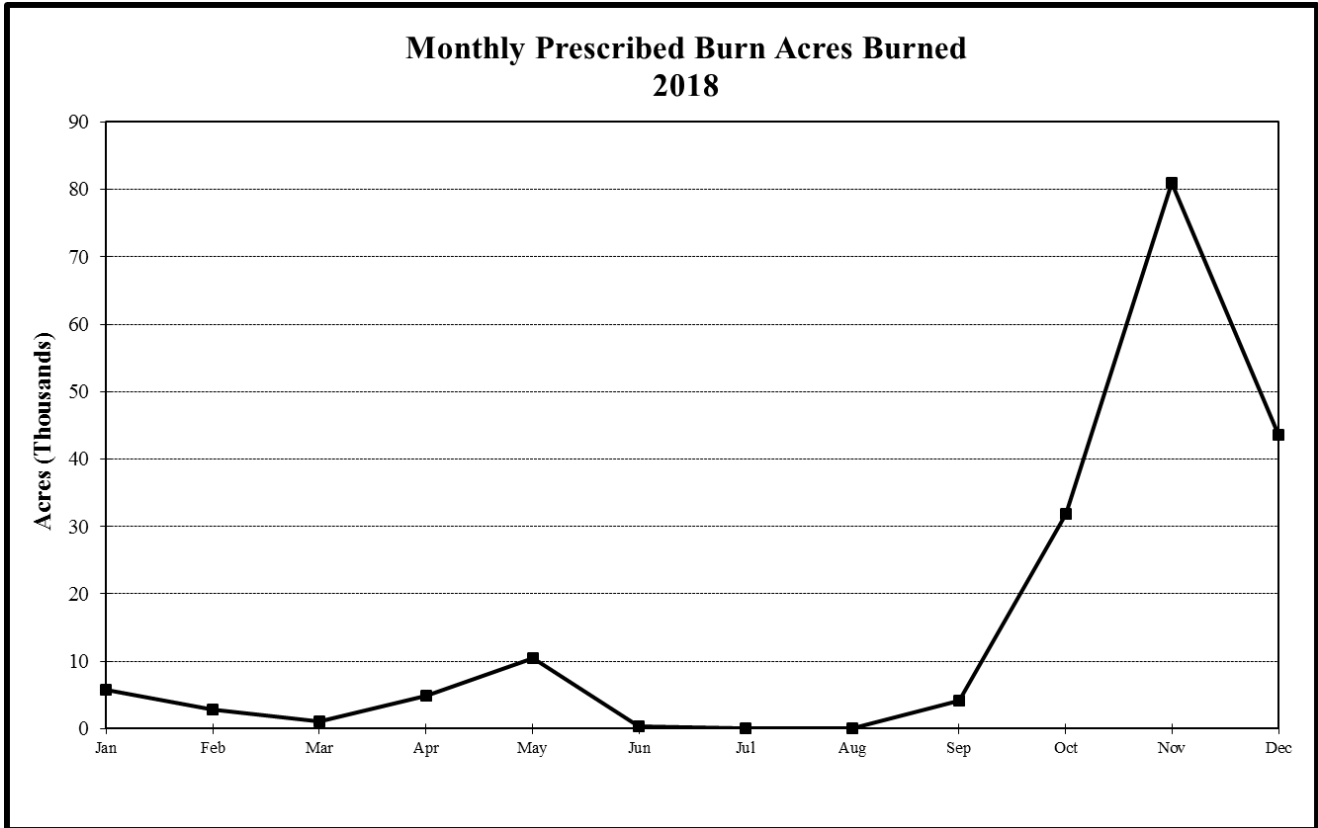
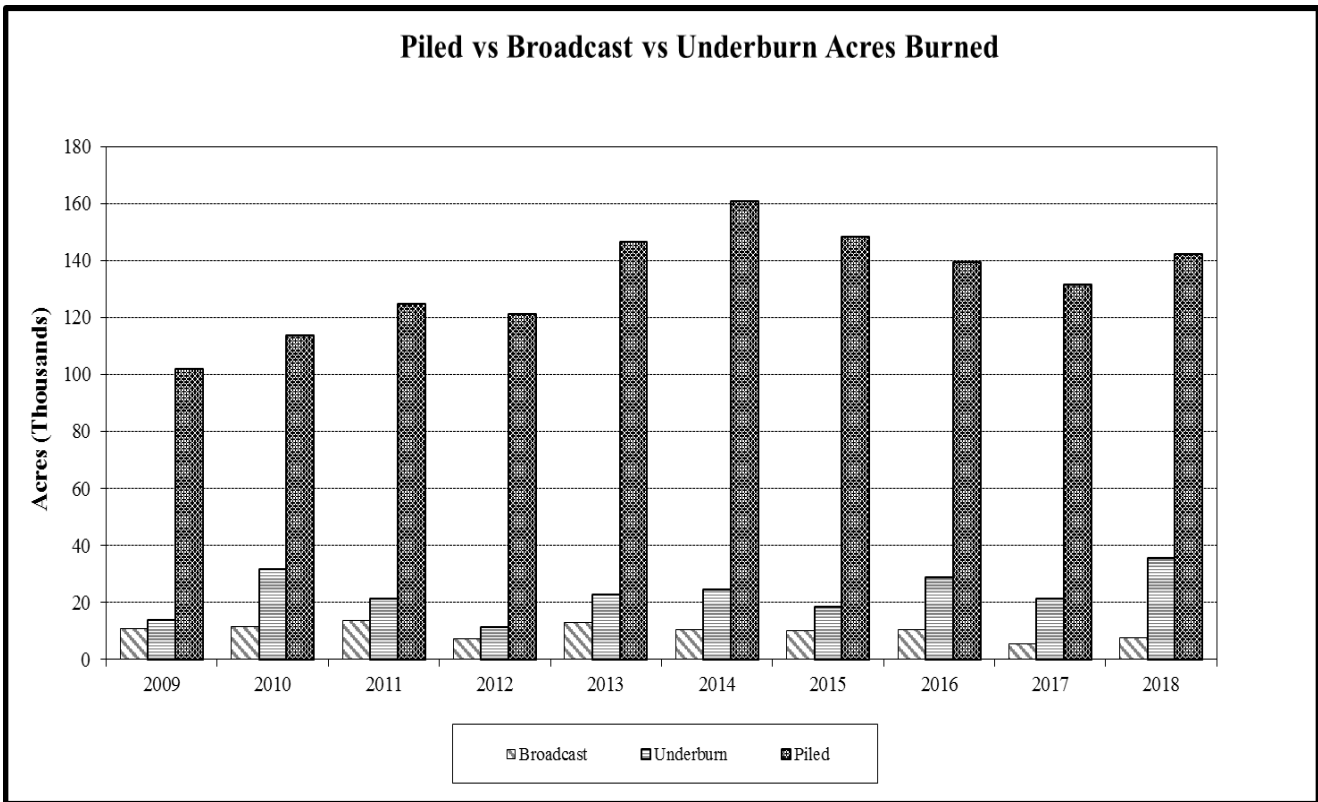


Figure 9



**Table 4
Burn Summary by District -- 2018**

District/Forest	Units burned	Acres burned	Tons burned
Astoria	95	3,249	63,734
Central Oregon	50	2,765	15,105
Coos District	1	32	400
Coos FPA	341	15,749	154,055
Douglas FPA	350	15,920	127,772
Forest Grove	143	5,165	32,421
Klamath-Lake	6	2,455	10,365
North Cascade	186	6,924	59,219
Northeast	88	10,264	107,593
South Cascade	349	14,270	71,194
Southwest	154	8,679	59,177
Tillamook	59	3,299	19,342
Walker Range	0	0	0
Western Lane	274	9,043	68,096
West Oregon	383	12,246	119,194
Crater Lake NP	2	45	20
Deschutes NF	243	18,610	66,001
Fremont NF	20	4,742	45,571
Klamath NF	1	10	135
Malheur NF	138	21,410	61,441
Mt Hood NF	72	1,166	2,632
Ochoco NF	9	3,027	14,394
Oregon Caves NM	2	31	135
Rogue River\Siskiyou NF	93	4,967	28,278
Siuslaw NF	22	571	220
Umatilla NF	21	3,788	30,742
Umpqua NF	70	1,032	7,564
Wallowa-Whitman NF	91	8,637	63,744
Willamette NF	61	2,852	21,459
Winema NF	58	4,754	20,722
District Total	2,479	110,060	907,667
Forest Total	903	75,642	363,058
Grand Total	3,382	185,702	1,270,725

**Table 5
Tons Burned by Month by District
2018**

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total by District
Astoria	1,540			1,900						25,976	27,031	7,287	63,734
Central Oregon	208	3,032									7,571	4,294	15,105
Coos District											400		400
Coos FPA	6,122	2,088	600	934	270					5,447	90,238	48,356	154,055
Douglas FPA	5,048	55		265						2,962	69,846	49,596	127,772
Forest Grove	156	29	215	64	30	15				6,164	21,897	3,851	32,421
Klamath-Lake	385	3,330								80	3,802	2,768	10,365
North Cascade	1,050	466	150	25						700	35,483	21,345	59,219
Northeast	25		200							12,453	92,375	2,540	107,593
South Cascade	132		132	17	26					15	51,394	19,478	71,194
Southwest	2,547	186	1,139	24	1,139					100	22,276	31,766	59,177
Tillamook	1,178	24								9,503	8,517	120	19,342
Walker Range													0
Western Lane	2,045	868	435	6,426	7,770					80	35,381	15,091	68,096
West Oregon	650			224	3,552					10,588	88,271	15,909	119,194
Crater Lake NP					2					3	15		20
Deschutes NF	2,604	195		8,440	13,159	320				10,255	23,307	7,721	66,001
Fremont NF				4,620	24,345					8,275	8,327	4	45,571
Klamath NF											135		135
Malheur NF	635			210	8,880	260			14,398	29,044	6,269	1,745	61,441
Mt Hood NF	30									102	1,967	533	2,632
Ochoco NF	1,500	1,494		2,000						9,400			14,394
Oregon Caves N.M.		14	1									121	136
Rogue/Siskiyou NF	2,700	784	5,469	4,626	2,470				194	15	8,182	3,838	28,278
Siuslaw NF				2					36	182			220
Umatilla NF		160								12,094	18,468	20	30,742
Umpqua NF	115			1	3,339	1,928				480	672	1,029	7,564
Wallow-Whitman NF				6,915	1,025				7,900	35,530	12,374		63,744
Willamette NF					4,009	511				10,853	4,936	1,200	21,509
Winema NF			480	1,568	4,599					5,263	6,981	1,831	20,722
District Total	21,086	10,078	2,871	9,879	12,787	15	0	0	0	74,068	554,482	222,401	907,667
Forest Total	7,584	2,647	5,950	28,382	61,828	3,019	0	0	22,528	121,496	91,633	18,042	363,109
Grand Total	28,670	12,725	8,821	38,261	74,615	3,034	0	0	22,528	195,564	646,115	240,443	1,270,776

Table 6
Acres Burned by Month by District
2018

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total by District
Astoria	77			95						1,362	1,378	337	3,249
Central Oregon	66	445									1,314	940	2,765
Coos District											32		32
Coos FPA	769	308	23	43	10					485	8,094	6,017	15,749
Douglas FPA	512	6		13						130	8,072	7,187	15,920
Forest Grove	15	2	32	5	4	1				613	3,067	1,426	5,165
Klamath-Lake	55	750								20	898	732	2,455
North Cascade	599	53	3	2						25	2,956	3,286	6,924
Northeast	10		45							1,432	8,036	741	10,264
South Cascade	284		10	1	2					5	10,050	3,918	14,270
Southwest	518	45	247	13	276					10	2,434	5,136	8,679
Tillamook	40	5								1,947	1,282	25	3,299
Walker Range													0
Western Lane	372	219	137	403	498					17	4,524	2,873	9,043
West Oregon	118			15	171					939	9,204	1,799	12,246
Crater Lake NP					5					2	38		45
Deschutes NF	1,264	65		1,137	2,561	64				2,667	6,390	4,462	18,610
Fremont NF				680	2,378					1,085	596	3	4,742
Klamath NF											10		10
Malheur NF	242			35	3,005	133			2,979	10,712	3,636	668	21,410
Mt Hood NF	49									171	737	209	1,166
Ochoco NF	400	747		500						1,380			3,027
Oregon Caves N.M.		6										25	31
Rogue/Siskiyou NF	326	69	472	586	247				54	30	1,104	2,079	4,967
Siuslaw NF				1					8	562			571
Umatilla NF		160								959	2,664	5	3,788
Umpqua NF	28			1	121	107				240	201	334	1,032
Wallowa-Whitman NF				1,047	175				1,050	4,797	1,568		8,637
Willamette NF					333	30				1,365	1,084	40	2,852
Winema NF			80	268	676					852	1,570	1,308	4,754
District Total	3,435	1,833	497	590	961	1	0	0	0	6,985	61,341	34,417	110,060
Forest Total	2,309	1,047	552	4,255	9,501	334	0	0	4,091	24,822	19,598	9,133	75,642
Grand Total	5,744	2,880	1,049	4,845	10,462	335	0	0	4,091	31,807	80,939	43,550	185,702

**Table 7
Burn Data by Owner Type
2018**

	Private			State, County, Muni			Federal (Except USFS)			USFS		
District/Forest	Units	Acres	Tons	Units	Acres	Tons	Units	Acres	Tons	Units	Acres	Tons
Astoria	51	1,705	34,118	44	1,544	29,616	0	0	0			
Central Oregon	28	1,035	6,681	7	346	1,667	15	1,384	6,757			
Coos District	1	32	400	0	0	0	0	0	0			
Coos FPA	305	13,959	148,498	4	263	945	32	1,527	4,612			
Douglas FPA	303	14,461	123,782	4	112	487	43	1,347	3,503			
Forest Grove	127	4,052	27,333	12	394	4,353	4	719	735			
Klamath-Lake	0	0	0	0	0	0	6	2,455	10,365			
North Cascade	174	5,658	56,286	6	275	2,340	6	991	593			
Northeast	83	10,016	94,244	0	0	0	5	248	13,349			
South Cascade	339	12,006	68,584	0	0	0	10	2,264	2,610			
Southwest	132	7,092	49,018	5	214	557	17	1,373	9,602			
Tillamook	35	1,486	13,975	24	1,813	5,367	0	0	0			
Walker Range	0	0	0	0	0	0	0	0	0			
Western Lane	262	7,894	66,219	2	123	762	10	1,026	1,115			
West Oregon	365	11,724	112,837	11	248	4,057	7	274	2,300			
Crater Lake NP							2	39	20			
Oregon Caves NM							2	31	135			
Deschutes NF										243	18,610	66,001
Fremont NF										20	4,742	45,571
Klamath NF										1	10	135
Malheur NF										138	21,410	61,441
Mt Hood NF										72	1,166	2,632
Ochoco NF										9	3,027	14,394
Rogue/Siskiyou NF										93	4,967	28,278
Siuslaw NF										22	571	220
Umatilla NF										21	3,788	30,742
Umpqua NF										70	1,032	7,564
Wallowa-Whitman NF										91	8,637	63,744
Willamette NF										61	2,852	21,509
Winema NF										58	4,754	20,722
Totals	2,205	91,120	801,975	119	5,332	50,151	159	13,678	55,696	899	75,566	362,953