

ODF Spring Mitigation Training

2026





Smoke Management Program Overview

Oregon's smoke rules are designed to balance the active use of fire for forest health with the protection of human health

The rules apply to prescribed burning of forest fuels for forest management purposes within any forest protection district in Oregon

- Forest Protection & Risk Reduction
- Public Health Protection
- Air Quality & Visibility Compliance
- Community Coordination





Smoke Management Program History

The Oregon Smoke Management Plan was the first program of its kind

1969 - Voluntary program to manage smoke from forestland burning

1972 - Mandatory program adopted as a regulatory program by the State Forester and the Environmental Quality Commission (EQC)

1988 - The Environmental Protection Agency (EPA) approved the plan as part of Oregon's State Implementation Plan (SIP) under the Clean Air Act

1989 - The state legislature established the Smoke Management Advisory Committee (SMAC) to advise the agencies

*The SMAC still meets twice a year and is a 5 member committee



Smoke Management Program

The Oregon Smoke Rules and the State Implementation Plan are jointly overseen by the **Oregon Department of Forestry (ODF)** and the **Department of Environmental Quality (DEQ)**, which monitors air quality standards.

- The rules are reviewed every 5 to 10 years
- Last review completed in March 2019
- Beginning to review rules this Spring
- New rules adopted early 2027



Oregon Smoke Rules

2019 – Major rule updates included:

- Changes to SSRA's
- Allowance for some smoke into SSRA's
- Created smoke impacts -
 - Intrusion
 - Incident
- SSRA's are encouraged to create Community Response Plans (CRPs)
- SSRA's can apply for a 1 hour exemption
- Changes were estimated to allow for an 80% increase in burning





Regulatory Authorities

In addition to the mandate for ODF to manage smoke from prescribed forestry burns, there are also other authorities responsible for monitoring and regulating broader air quality across the state:

- DEQ
- LRAPA
- EPA
- Tribal Air Programs
- OHA
- Local Jurisdictions





Smoke Management Program

OAR 629-048-0001 thru 0500 & ORS 477.552 thru 477.562

The State Implementation Plan consists of the Rules, Statutes, and ODF Policy

Level 1

West of the Cascades (inside ODF districts)

Level 2

East of the Cascades (inside ODF districts)

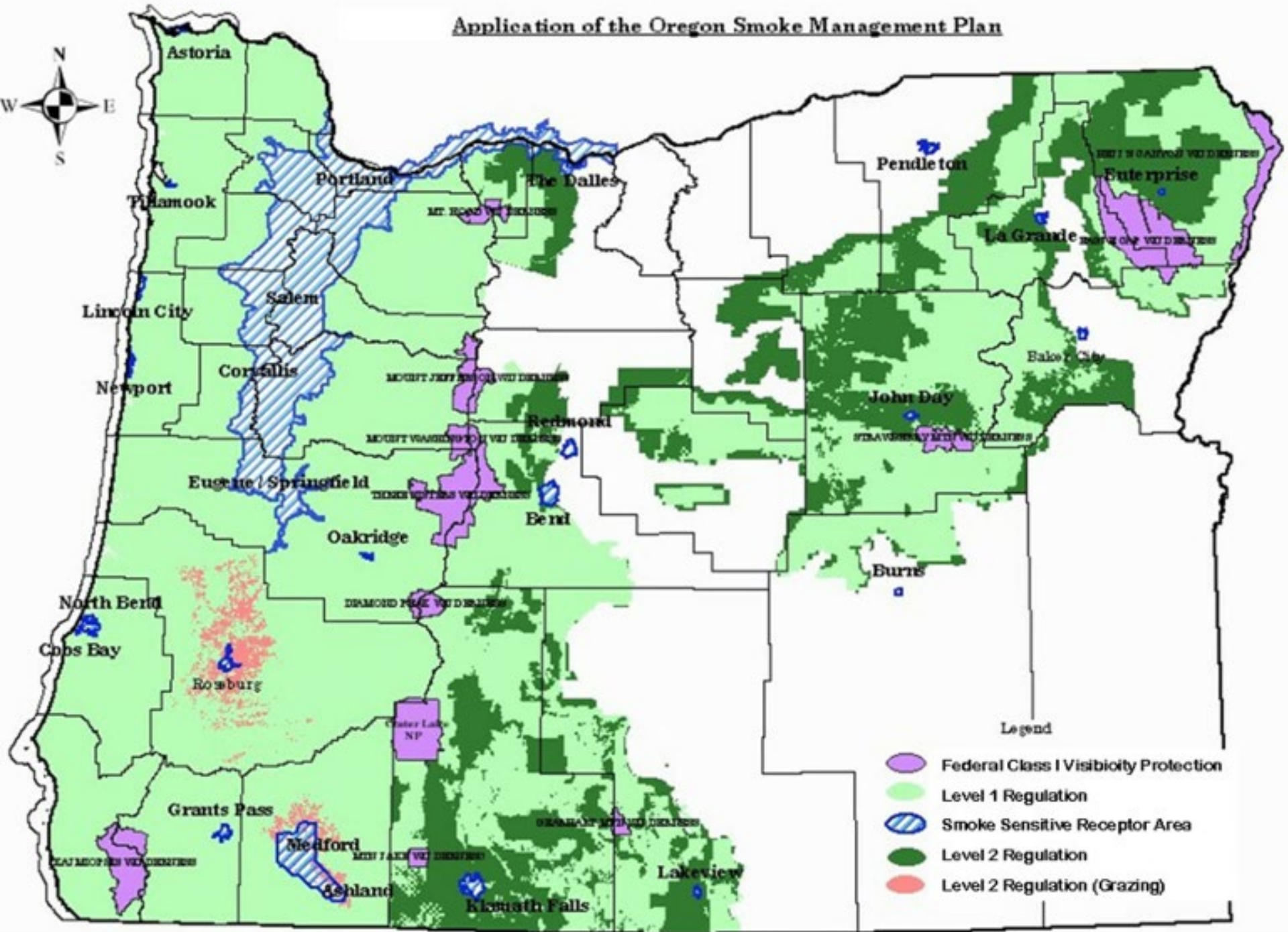
Federal agencies statewide within an ODF district are all level 1

OAR: <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2849>

ORS: https://oregon.public.law/statutes/ors_477.552

ODF Policy: <https://www.oregon.gov/odf/board/Documents/smac/ODF%20Smoke%20Management%20Directive.pdf>

Application of the Oregon Smoke Management Plan





Smoke Rule Requirements

You must Register 7 days in advance of your burn
(this can be waived, if needed by ODF)

Level 1

You plan the day before or no later than the morning of each ignition
You must accomplish in the database no later than one business day after each ignition

Level 2

No planning required

You must accomplish by the 1st day of the following business week

You have 3 years from registration date to burn your unit as many times as you need to



Smoke Burn Fees

Fees are collected to fund the administration and operation of the Oregon Smoke Management Plan.

These fees ensure that the state can manage the environmental and public health impacts of intentional forest burning without placing the entire financial burden on general taxpayers.

Fees pay for:

- Program Administration - Overall annual costs
- Meteorological Services - Specialized weather forecasting
- Monitoring and Enforcement - Air quality monitoring
- Data Management - Maintaining the Smoke Management Data System
- Public Communication - Efforts to keep the public informed



Burn Types & Fees

No fees charged to Level 2

Registration Fees

\$.50 per acre invoiced upon registration (non refundable)

Burn Fees

Landing acres only - \$.50 per acre

"landing" means any location logs are yarded to for processing (trimming ends or limbs and tops remaining after yarding) and assembling for forwarding or loading onto trucks, including each loading site that may occur along a road. Consequently, a landing pile contains only those residues resulting from the processing, and not additional forest fuels accumulated from growth on the site or the felling process.

Right of way acres only - \$.50 per acre

"right-of-way piles" means any accumulated forest fuels that come only from the area cleared in the pioneering stage of road construction after appropriate utilization.

Enter the total acres of material contained within all landing and right of way piles that will be burned.

Maintenance burns - \$.50 per acre

"forest health maintenance" is when significant fuel reduction has been accomplished through underburning within the last five years and where there are no piled forest fuels on the site.



Burn Types & Fees

Burn Fees Continued

Broadcast, underburn or piles - \$3.10 per acre

Combination Burns - \$2.60 per acre

The registration includes any combination of burn treatments that include landing or right-of-way piles with broadcast or in-unit pile burning

Burn fees are invoiced when first ignition of any part of the unit is accomplished in the database

Minimum charge is \$30 and registration and burn fees are invoiced all together at the time of registration

*Failure to pay fees after 90 days results in vendor suspension



Escaped Burns

Areas burned resulting from escaped fires that are outside the description of the registered burn area shall not be assessed fees if the fire outside of the described area is **immediately attacked** for wildfire suppression.

If the fire outside of the described area is managed as a prescribed fire, then every additional acre burned shall incur a registration fee of \$.50 per acre and a burn fee of \$3.10 per acre.





Smoke Management Database

Smoke Database - <https://apps.odf.oregon.gov/Smokedatasystem/#/home>

Federal users authorized by their unit to input smoke registrations need to request a user ID and password through Stacy McCarter - stacy.mccarter@odf.oregon.gov

Passwords will expire every 90 days

Please contact the ODF Help Desk to have it updated
503-480-4333 or email to: helpdesk@odfit.freshservice.com

System training can be accessed on YouTube at the following links:

<https://youtu.be/im9ukzCHCI0>

<https://youtu.be/OE4Af5usNRw>

<https://youtu.be/AoABqrVtHGc>

<https://youtu.be/nxtyMkqpaZg>

Smoke Management Database



The Registration Number consists of a 12-digit combination of numbers and is a required field. Page 23 of the user guide.

Private registration numbers come from the FERNS database

Federal registration numbers are created by the burner using the Federal Smoke Numbering Guide

All registration numbers should begin with the last two digits of the current calendar year – 2026 registrations should all start with 26

Be sure your numbering is correct before saving as this field cannot be modified after saving

POSITION	DATA NAME	EXAMPLE
1-2	2-digit current year	2016 would be entered as 16
3-5	3-digit District ID (for activity Burns)	954 (for Central Oregon/The Dalles)
	<i>OR</i>	
	406 (for non-activity burns)	406
6-10	NOAP# or Region, Forest, District/unit	84001 or for Federal i.e. 61503 (Region 6, Forest 15, district 03) R6 Umpqua NF Diamond Lake RD. <i>*Note, if burn will be during fire season, then a Notice of Operation Application Permit (NOAP) must be obtained and the NOAP # would be used instead.</i>
11-12	Rolling Counter	01, 02, 03, etc. (starting at 01 not 00)

Using the example above, the resulting Registration Number is **169548400101** for an activity burn or **164068400101** for a non-activity burn.



Smoke Management Database

IMPORTANT

The treatment summary must equal the unit acres

For all burn types, unit acres should be the total acres of the unit from which the forest fuels to be burned are accumulated

*you can add acreage at any time to your registration, but the 3 years you have to burn it will still be from the date you first registered it

Eastside burners use - "Exempt Eastside Pvt Burners" as the vendor

Registration

**are required fields*

Unit Identification		Treatment Summary	
*Date Registered	2/4/26	Operator Name	Smokey Bear
*Registration Number	264060690001	*Fuel Species	D Douglas Fir Hemlock
*District ID	015 Deschutes NF Siste	*Landing R/W Acres	5
*Sale name	Smokey Burn	*Landing R/W Tons	1-99999
Unit Information		*Pile Acres	45
*Township	36S	*Pile Tons	90
*Range	11E	*Broadcast Acres	0
*Section	5	Piles Covered	<input type="checkbox"/>
*Latitude	44.0111		
*Longitude	-121.2776		
*County	9 Deschutes		
*Distance to SSRA	20		
*Unit Acres	50		



Smoke Management Database Contacts



For all questions about registration entry or the use of the system please contact: **Stacy McCarter**
stacy.mccarter@odf.oregon.gov or 503-701-0236

For questions about tonnage or fuel calculations contact: **Christina Clemons**
christina.t.clemons@odf.oregon.gov
or 503-856-2718

For technical issues with the database please contact the **ODF helpdesk**
helpdesk@odfit.freshservice.com or 503-480-4333



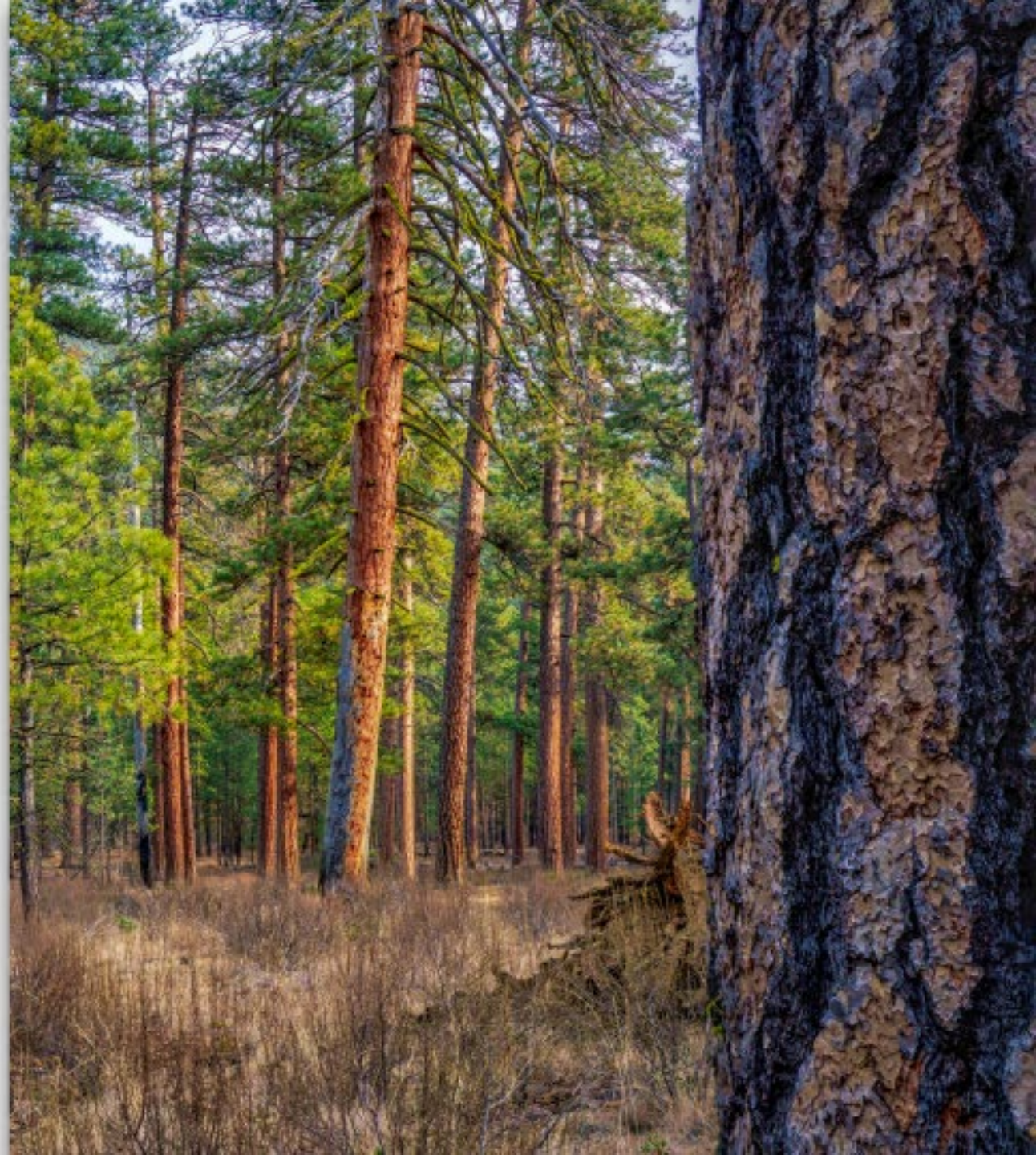
Smoke Management Process

Burners check written daily forecasts for their zone. If questionable or you have concerns, you can call and talk to the ODF forecasters:

503-945-7401

Please coordinate with your local ODF office the day before you want to burn.

They work to ensure the air shed is shared based on the forecast, tonnage, other burners and proximity to SSRA's





Compliance & Audit

Daily checks are completed for all burn notifications with follow up with local unit if plans are not in the smoke database or there are questions on tonnage

Annual audits are conducted on all burns reported by
USFS, BLM & ODF

- Ensure burns are registered, planned and accomplished per rules
- Ensure that all invoicing is correct
- Ensure burn type is correct
- Ensure corrections are made

Spring and fall field audits are conducted by Christina Clemons on site



Oregon Smoke Management

Questions?



Stacy McCarter 503-701-0236 or stacy.mccarter@odf.oregon.gov

Training Materials: <https://www.oregon.gov/odf/fire/pages/burn.aspx#training>

OREGON 2026 SMOKE MANAGEMENT PROGRAM

BEST BURN
STRATEGIES &
REPORTING

DAILY OPERATIONS
2019 UPDATES





What if...

You could apply best management practices to every acre...

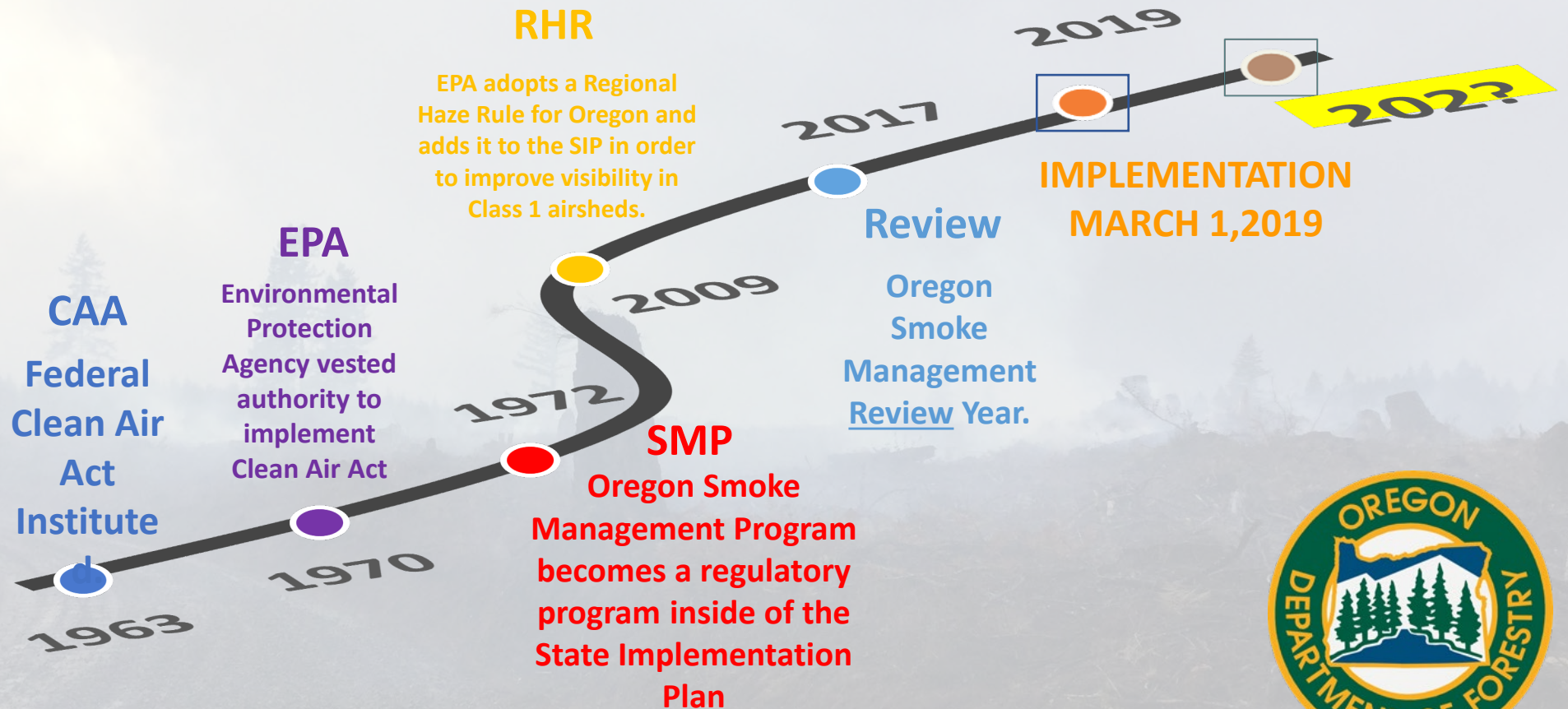
What if the solution is just waiting to be seen by you?

Would you rise to the occasion?



Overview of Federal & State Regulations

Timeline





FIELD OPERATIONS

- On-site ground truth of burns as well as technical application of SMP.
- Monitoring and audit of prescribed fires.
- Fire season harbingers; share intel of trends and anomalies.
- Liaison between burners and ODF forecasters/Smoke Management

On-site GROUND TRUTH

- Partner with EPA, OSU, Missoula Fire Labs, NRCS, etc.
- Collecting data with high tech equipment like the “flyer” equipment to practical ground application for the burners in the field.



ESCAPED RX!

- Fuel Load Estimation Low – large, complex unit with various aspects.
- Long drought – more fuel consumption than anticipated.
- Fire Season Harbinger – more large fires in the area that summer.
- Smoke Intrusion Thresholds exceeded.



SMOKE AUDIT PROGRAM

- Researched and created best SOP's for the state.
- Developed a fuel-loading calculator to estimate tonnage
- Monitor smoke to ensure burners are doing due diligence in keeping Oregon air quality good.



CODED WOODY DEBRIS (CWD)

(> 3" FUELS ON GROUND NOT ATTACHED TO A LIVE TREE)

Woody loading for diameters > 3" (see Brown 1974):

$$\text{Original Loading} \left(\frac{\text{tons}}{\text{acre}} \right) = \frac{11.64 * \sum d^2 * s * a * c}{N\ell}$$

Where:

$\sum d^2$ = sum of squared diameters.

The SIMPLE Fuel-Loading calculator has modified the equation to the following:

$$\text{SIMPLE Loading} \left(\frac{\text{tons}}{\text{acre}} \right) = \frac{11.64 * n * d^2 * s * a * c}{N\ell}$$

Where:

all variables are the same as above except,

n = total number of pieces crossing the transect (user input).

d = Average diameter of all pieces crossing the transect. We chose to use this equation for the sake of sparing user input of each log diameter and species. The SIMPLE formula (above) may return a smaller tonnage than Brown's original equation, depending on the number and size of the pieces in the transect, but still reasonably

Table: (Click on Group No./Name to edit given group) [Export inputs to text]

No. Piles	Pile Type	Pile Shape	Pile Dimensions	Soil %	Packing Ratio	Pile Composition	Pile Quality	Consumption	
321	Machine	Paraboloid	W1: 14 H1: 10	10%	20%	Douglas-fir (70%); red maple (30%)	Clean	95%	[Remove]

[Add more piles] [Start over (clear all piles)]

[Print-friendly report] [Export results to text]

	Gross Volume (cubic ft)	Adjusted* Volume (cubic ft)	Pile Biomass (tons)	Consumed Fuel (tons)	Emissions by pollutant (tons)						
					PM	PM ₁₀	PM _{2.5}	CO	CO ₂	CH ₄	NMHC
321	247,070.55	44,472.70	772.9355	734.2887	8.0405	5.6907	4.9564	27.8931	1,221.6406	2.0578	1.66
	247,070.55	44,472.70	772.9355	734.2887	8.0405	5.6907	4.9564	27.8931	1,221.6406	2.0578	1.66

*Adjusted volume for hand piles is corrected to account for the difference between the gross volume of a pile and the actual volume of the pile.
The adjusted volume of solid wood is determined by subtracting the amount that is soil from the gross volume and applying the appropriate packing ratio.

Fire and Environmental Research Applications Team
Pacific Wildland Fire Sciences Laboratory
USDA Forest Service Pacific Northwest Research Station
400 N 34th Street, Suite 201, Seattle, WA 98103 (206)
732-7800

Contact: Clint S. Wright (cwright@fs.fed.us)

We acknowledge funding from the Joint Fire Science Program

under Projects JFSP 07-2-1-57 and JFSP 10-S-0





Fuel-Loading Tool Home Page

Click on Burn Type Below:



Video Tutorials Showing How To:

[Use the Piles Calculator](#)

[Use the Broadcast & Underburns Calculator](#)



Simple Fuel-Loading Tool Broadcast & Underburns

Video Tutorials Showing How To:

Do a Transect

Use this Simple Fuel-Loading Calculator

Simple Fuel-Loading Tool Technical Files:

Transect Instructions/Tally Sheet

Reference Guide (Equations)

Unit *name*:

1. What is the *primary fuel species* for downed woody debris (DWD)?

2. How many *feet* is your transect for

0.0" 0.4" DWD

FEDERAL

STATE

CLASS 1 AIRSHED

REGIONAL HAZE RULE

LEVEL 1 REGULATION

LEVEL 2 REGULATION

LOCAL

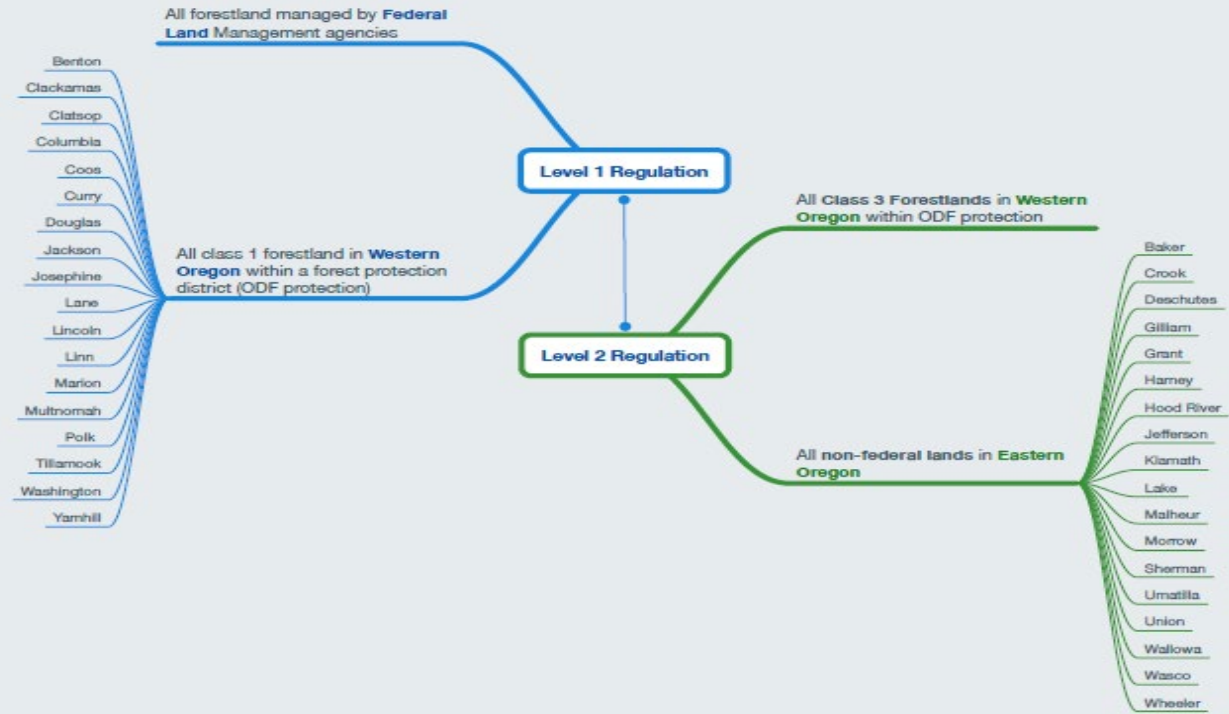
Class 1 Timber

Class 2 Timber & Grazing

Class 3 Agriculture



Subject to visibility protection by Congress in 1977 under EPA's Federal Clean Air Act & Regional Haze Rule.



BURNOSS RESPONSIBILITIES

Make provisions to be informed if the forecast or instructions are changed.

Validate that forecast conditions are consistent with actual on-site conditions prior to ignition of burns

Plan large or extended burns for capability to cease lighting and hold the existing burn within smaller compartments if needed

Terminate ignition if an SSRA is adversely affected by the burn or by additional burning; or air in the entire state or portion thereof will be adversely affected by smoke

- Obtain current smoke mgt forecast & instructions before ignition



BURN BOSS RESPONSIBILITIES

REGISTER your unit
as required by the
Oregon Smoke
Management Plan 😊

(OAR 629-048-0100(2)). These requirements include burn registration at least seven days in advance.

“Smoke Sensitive Receptor Area or SSRA” means an area designated for the highest level of protection under the Smoke Management Plan, as described and listed in OAR 629-048-0140

PLAN your unit
before you
burn and
know your
tonnage 😊

ACCOMPLISH
your unit
immediately
after you burn.

Compliance with Smoke Management forecast instructions (629-048-0230), and reporting of accomplishments (629-048-0320).



What if I have an intrusion?

- Notify Salem immediately.
- Forecast office will send out a preliminary report.
- Forecast office will complete section A–E of final report and send to responsible district/ forest.
- District/forest will complete section F of final report and return to forecast office who will send to all interested stakeholders.
- Intrusion form located at: www.oregon.gov/ODF/Fire/Pages/Burn.aspx





BEST BURN WINDOW STRATEGIES

BE FLEXIBLE, PREPARED, & READY

Advanced seasonal
PLANNING

FUELS & FORECAST TRACKING

LARGE/DIFFICULT?
COMPARTMENTALIZE

FREQUENT FORECASTER COORDINATION

Questions?
Christina.t.clemons@odf.oregon.gov

