

**Oregon Department of Forestry  
Certified Burn Manager**

**Smoke Policies and  
Management**

COLLEGE OF FORESTRY

Oregon State University

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**NATIONAL/FEDERAL**

**CLEAN AIR ACT**

- Prevent air pollution
- Protect the ozone layer
- Promote public health
- Called on local, state, federal, and tribal governments to implement the Act in partnership.
- Required EPA to establish the NAAQS

**ENVIRONMENTAL PROTECTION AGENCY**

- Develop and enforce air and water quality standards via the Clean Air Act
- Establish the NAAQS (National Ambient Air Quality Standards): <https://www.epa.gov/naaqs>
- Partner with states and tribes

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**THREE LEVELS OF SMOKE REGULATION**

NATIONAL (FEDERAL)	STATE/TRIBAL	COUNTY/CITY
<ul style="list-style-type: none"> <li>Sets policy and standards</li> <li>Enforces implementation</li> </ul>	<ul style="list-style-type: none"> <li>Implements policy</li> <li>Monitors for compliance</li> <li>Reports (including explaining if standards are exceeded)</li> </ul>	<ul style="list-style-type: none"> <li>May have requirements or standards that exceed those of state</li> <li>Examples:                             <ul style="list-style-type: none"> <li>Lane Regional Air Protection Agency (LRAPA) predates EPA, enforces own standards</li> <li>Counties with agricultural burning "permit" programs</li> <li>Cities with special protection zones</li> </ul> </li> </ul>

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**CLEAN AIR ACT ROLES**

EPA	STATES/TRIBES
<ul style="list-style-type: none"> <li>Establish NAAQS</li> <li>Develop policy and tech guidance</li> <li>Approve SIPs/TIPs and control measures</li> <li>Backup to state enforcement</li> <li>Administer grant opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Develop SIP/TIP to meet CAA req.</li> <li>Implement SIP/TIP programs</li> <li>Develop/maintain emissions inventories</li> <li>Conduct air quality monitoring</li> <li>Establish and operate permitting systems</li> </ul>

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**NATIONAL POLICY**

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**NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)**

- OZONE
- CARBON MONOXIDE
- NITROGEN OXIDES
- SULFUR DIOXIDE
- PARTICULATE MATTER (PM)
  - PM<sub>10</sub> (10 µm and smaller)
  - PM<sub>2.5</sub> (2.5 µm and smaller)

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**PARTICLE SIZE, AMOUNT, DURATION, and ATMOSPHERIC CONDITION MATTER**

Depth of deposition in the respiratory tract is determined by particle size.

Particles greater than 5 µg normally stay in the upper airways causing tears, coughing, and running nose.

Particles from 1 to 5 µg go deep, causing irritation and/or damage to epithelial cells resulting in coughing, wheezing, and other symptoms that may result in a cascading inflammation that can cause cardiovascular or respiratory impairment.

"Damage" function of density/dose and exposure/time.

Illustration of the influence of particle size in lung deposition and phagocytosis by the alveolar macrophages. (Costa, et., al. 2016)

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**"EXCEPTIONAL EVENT"**

**WILDLAND FIRE**

- Defined nationally as an "exceptional event".
- Exempted from air quality standards.
- Not subject to federal or state regulations for air quality.

**PRESCRIBED BURNING**

- Not defined as "exceptional event."
- Strictly regulated (particulate matter).
- Can obtain that EE status if each Rx burn is preapproved by state regulations and consistent with the state's "Smoke Management Plan (SMP)":
- <https://www.oregon.gov/odff/Board/Documents/SMAC/ODF%20Smoke%20Management%20Directiye.pdf>

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**NAAQS: PARTICULATE**

Pollutant	Primary/Secondary	Averaging Time	Level	Form (averaged over 3 years)
PM <sub>2.5</sub>	Primary	1 year	9 µg/m <sup>3</sup>	Annual mean (primary changed from 12 µg/m <sup>3</sup> in Feb 2024)
	Secondary	1 year	15 µg/m <sup>3</sup>	
	Primary and Secondary	24 hours	35 µg/m <sup>3</sup>	98 <sup>th</sup> percentile
PM <sub>10</sub>	Primary and Secondary	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year

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**EPA'S NATIONAL "HAZE RULE"**

REQUIRES THE ELIMINATION OF "MAN-MADE" VISIBILITY IMPAIRMENT WITHIN "CLASS I AREAS"

**NATIONAL PARKS AND DESIGNATED WILDERNESS**

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**RX FIRE TAKE-HOME**

- Permission to burn will be based, in part, on capacity of atmosphere to accept smoke without exceeding PM NAAQS.
- Rx burn smoke is not the only source of PM (industry, transportation, wood stoves)
- Lower allowable PM or more PM from other sources mean fewer opportunities for RX burns

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**OREGON'S RESPONSE**

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### EPA DELEGATES TO DEQ

**OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)**

- Develops and implements the State Implementation Plan
- Consults with the Smoke Management Advisory Committee to identify and designate SSRAs (Smoke Sensitive Receptor Areas)
- Helps SSRAs develop "Community Response Plans"
- Collaborates with ODF, OHA (Oregon Health Authority), ODA (Oregon Dept of Ag)

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### RULES AND REGS FOR FOREST BURNING/SMOKE

Application of the Oregon Smoke Management Plan

**Level 1:**  
Applies to all forestland managed by a federal agency (throughout the State) and all Class 1 forestland in western Oregon within an ODF forest protection unit.

**Level 1: Requires:**

- Prescribed burn registration at least 7 days in advance;
- Fee administration;
- Compliance with smoke management forecast instructions;
- Reporting of accomplishments.

**Level 2:**  
Applies to all Class 2 non-federal forestlands in eastern Oregon and all Class 3 forestlands in western Oregon within an ODF forest protection district.

**Level 2: Requires:**

- Prescribed burn registration;
- Reporting of accomplishments;
- Not subject to fee administration or smoke management forecast instructions.

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### DEQ PARTNERS WITH ODF

**OREGON DEPARTMENT OF FORESTRY (ODF)**

- Adheres to and enforces "Oregon's Smoke Management Plan"
- Administrator and grantor of permits for state rules for smoke management of prescribed burning for forest management within ODF protection districts
- Collaborates with DEQ regarding Community Response Plans and communication with local health authorities

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### MOST FORESTLANDS IN ODF PROTECTION

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### SMOKE MANAGEMENT PLAN

REVISED 2023

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### DEQ PARTNERS WITH ODA AND OHA

**OREGON DEPARTMENT OF AGRICULTURE (ODA)**

- Administers the rules for field burning
- Consults with Lane County's Regional Air Protection Agency (LRAPA)
- Collaborate with Oregon Seed Council
- Delegate enforcement to State Fire Marshall and local fire districts

**OREGON HEALTH AUTHORITY (OHA)**

- Non-regulatory, except for rules regarding heat and smoke for all state employees
- Many health-related information resources

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### DIFFERENT TYPES OF BURNS

PRESCRIBED BURN	FIELD BURN	OPEN BURN
Planned management activity on forestlands to meet specific objectives involving the reduction or removal of forest fuels Includes slash burning by: - Pile burning; or - Broadcast burning On forestlands protected by ODF	Willamette Valley: Coop effort with ODA, DEQ, Seed Council, and grass growers March 1 through June 15 and October 1 through December 15 – except central Lane Co. could be extended Also in other parts of Oregon: - Jefferson County - Umatilla County - Union County Still need to check for DEQ's open burn restrictions	Burning that is doesn't fall into one of the two previous types: - Agricultural (not including field burning within the Willamette Valley) - Commercial - Construction; demolition (includes land clearing) - Domestic (includes "backyard burning" and burning of yard debris) - Industrial - Prescribed burning – but not forest "operation" - Slash (not including forestland slash)

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### CRP EXAMPLES

**COMMUNITY RESPONSE PLAN FOR SMOKE**

ASHLAND'S PLAN FOR THE CITY

**WALLOWA COUNTY SMOKE MANAGEMENT COMMUNITY RESPONSE PLAN**

APPROVED: March 12, 2021

FOR BOTH WALLOWA COUNTY AND THE CITY OF ENTERPRISE

**City of Oakridge Smoke Safety Plan**

FOR THE CITY OF OAKRIDGE, BUT HAS TO BE UNDER LRAPA

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### SPECIAL PROTECTION ZONES (SPZ'S)

**ADDITIONAL PROTECTION FOR:**

- KLAMATH FALLS**
- MEDFORD**
- OAKRIDGE (with LRAPA)**
- LAKEVIEW**

**FROM DECEMBER 1 THROUGH FEBRUARY 15 – NO PRESCRIBED BURNING ON "RED" WOODSTOVE DAYS**

**FROM NOVEMBER 15 THROUGH 30, PRESCRIBED BURNING OK ON "RED" WOODSTOVE DAYS**

**CHECK WITH ODF METEOROLOGIST TO NOT EXCEED INTRUSION LEVELS**

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### COMMUNITY RESPONSE PLANS

- COORDINATED THROUGH THE LOCAL HEALTH AUTHORITY
- DEVELOPED COLLABORATIVELY WITH LOCAL COMMUNITY MEMBERS MOST AFFECTED
- WITH AGENCIES HAVING RESPONSIBILITY FOR PRESCRIBED BURNING
- THE PLAN SHALL INCLUDE STRATEGIES FOR COMMUNICATION AND EDUCATION
- MAY REQUEST AN EXEMPTION FROM THE ONE-HOUR AVERAGE SMOKE INTRUSION THRESHOLD
- REQUEST FOR EXEMPTION MADE BY COUNTY COMMISSIONERS
- DEQ APPROVAL

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## LRAPA

LANE REGIONAL AIR PROTECTION AGENCY

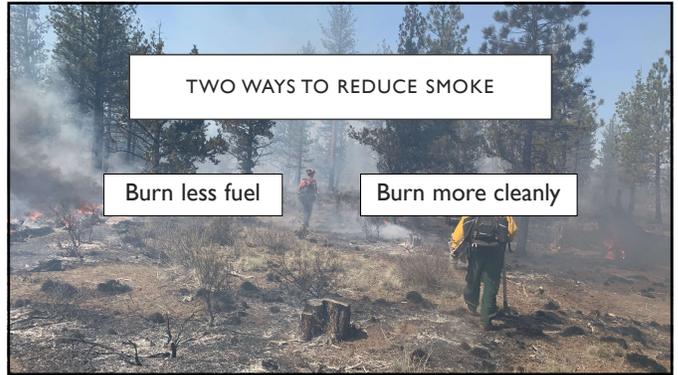
- ESTABLISHED IN 1968 (PRE-DATES THE 1970 CLEAN AIR ACT)
- THE ONLY LOCAL "CLEAN AIR" AGENCY IN OREGON
- AUTHORITY FOR MEETING NAAQS FOR LANE COUNTY
- MONITORS AIR QUALITY
- REGULATES "OUTDOOR BURNING" – WE CALL IT "OPEN BURNING"
- RESPONDS TO COMPLAINTS
- ISSUES PERMITS AND ADVISORIES
- DOES NOT REGULATE SLASH BURNING ON ODF-PROTECTED FORESTLANDS
- DOES REGULATE AND MONITOR NON-SLASH "PRESCRIBED" BURNING
- INTERGOVERNMENTAL AGREEMENT BETWEEN COTTAGE GROVE, EUGENE, OAKRIDGE, AND SPRINGFIELD

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WHO PERMITS WHAT?

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TWO WAYS TO REDUCE SMOKE

Burn less fuel

Burn more cleanly

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**WHO PERMITS WHAT?**

WHO IS THE AUTHORITY FOR SMOKE ON VARIOUS BURN TYPES?

- **PRESCRIBED BURN**
  - ODF
  - Level 1: Registered 7 days in advance
  - Level 2: Registered prior to burning
  - Can require a fee
- **FIELD BURN**
  - ODA AND COUNTY ORDINANCE
  - LRAPA in Lane County
- **OPEN BURN**
  - DEQ (unless delegated to local fire district via the State Fire Marshall's Office)
  - For burning commercial, industrial, slash, construction, or demolition waste and yard debris. Also includes "prescribed burning" – not part of forestland
  - Needs statement from appropriate agency validating Rx burning for other than forestland
  - Can require a fee
  - LRAPA in Lane County

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SMOKE MITIGATION TECHNIQUES

**BURN LESS**

REDUCE THE AREA BURNED (smaller unit, mosaic)

REDUCE FUEL LOAD (mechanical removal, grazing)

REDUCE FUEL CONSUMED (higher MC)

BURN FREQUENTLY

MOP UP SMOKE SOURCES (minimize smoldering)

**BURN CLEANLY**

BURN WHEN DRY

BURN HOT (aerial/mass ignition)

PILE AND WINDROW (and clean piles)

COVER PILES

BURN MORE FREQUENTLY

BURN BEFORE NEW FUELS APPEAR (avoid live fuels)

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REDUCING SMOKE FROM RX BURNS

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OTHER SMOKE MITIGATION

- Burn when winds blow away from sensitive areas/populations
- Burn when smoke lofts and dissipates (mixing height)
- Burn when there is minimal smoke from other sources

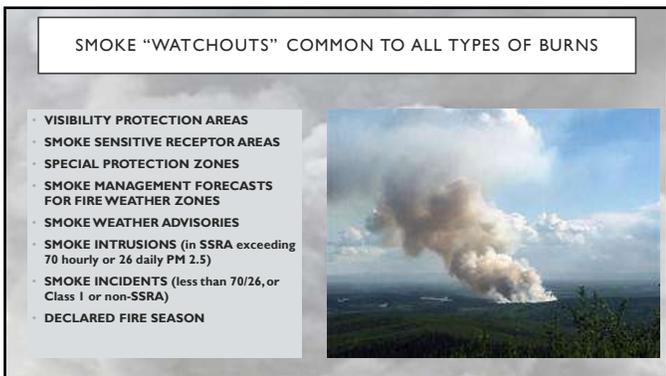
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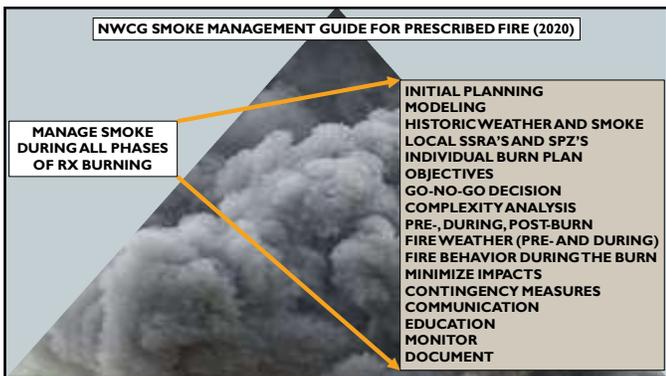
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