

Fine Particulates from Smoke and Diesel Emissions

Our Goal: To protect public health and the environment by reducing emissions of small particulate matter from agricultural burning and diesel engines.

Background

Small particles of air pollution – fine particulates – have been linked to respiratory problems that include aggravated asthma, chronic bronchitis, and decreased lung function. In the Pacific Northwest, smoke from agricultural burning practices and emissions from diesel engines are significant sources of these particulates. Population growth in rural communities near agricultural burning and increased levels of toxic pollutants from transportation sources in major cities have made addressing these risks to human health a significant priority.

The Focus of Our Efforts

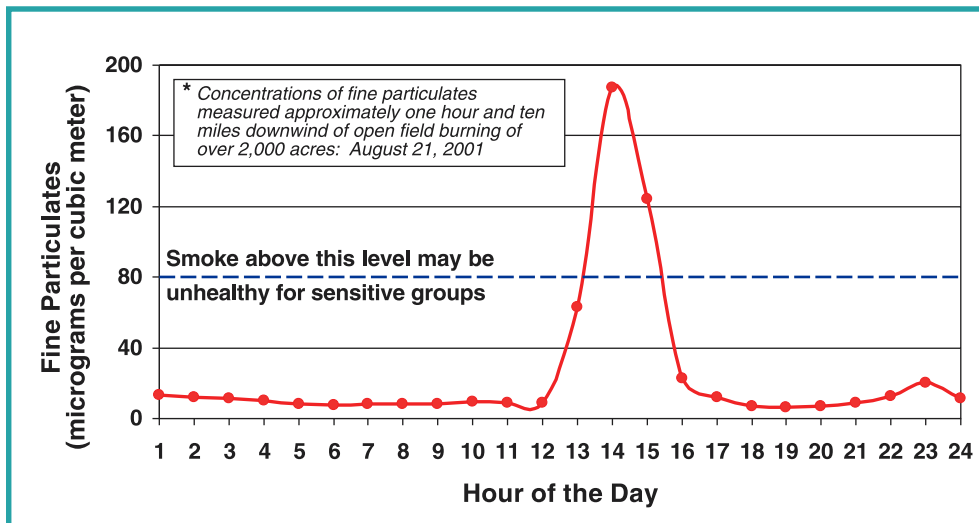
Our focus is on working with state, local and tribal agencies to reduce emissions of fine particulates:

- in Northern Idaho, Eastern Washington and Oregon (from agricultural burning), and
- in the Seattle, Washington metropolitan area and in Oregon, with an emphasis in the Portland metropolitan areas (from diesel emissions).

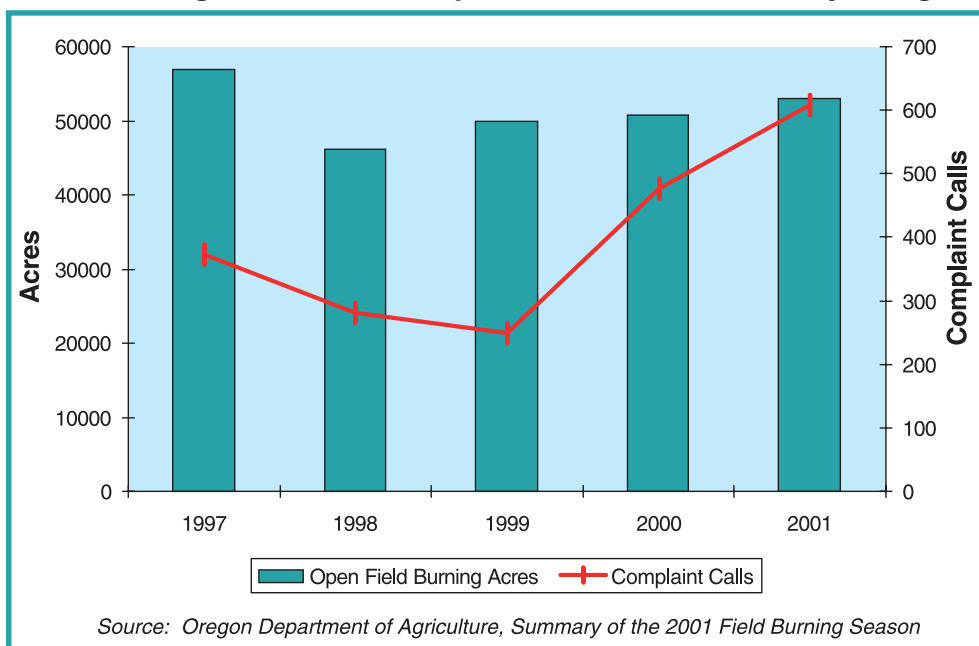
Environmental Outcomes by 2007

- ✓ Agricultural field burning no longer threatens human health and the environment, as determined by:
 - no measured exceedances of health-based air quality standards or action levels
 - smoke does not increase regional haze problems
 - fewer complaints from the public about impacts from smoke
 - less burning in the region as growers use more alternatives
 - burning and smoke emissions are better managed and tracked by responsible authorities
- ✓ Human health risks from diesel particulates are substantially reduced by reducing emissions, as determined by:
 - widespread use of ultra low sulfur diesel
 - purchase of alternative fuel vehicles with adequate access to these fuels
 - more fleets installing diesel retrofits
 - improved maintenance in major diesel fleets
 - reduced idling for school bus and transit fleets
 - more efficient route planning and combined trip uses to reduce vehicle miles traveled
 - increased local production and use of biodiesel
 - more locomotives and diesel haul trucks using auxiliary power units while idling

Air Quality Impact from Field Burning*



Field Burning Acres and Complaints: Willamette Valley, Oregon



Environmental Indicators for Measuring Success

- Air quality levels of particulate matter (monitoring and surrogate indicators)
- Emission levels estimated from number of acres burned per day and throughout a burn season
- Smoke problems measured by number and nature of public complaints
- Particulate emissions from diesel vehicles
- Cancer/non-cancer risk levels from exposure to diesel vehicle particulate emissions

Key Actions: Next 1-2 Years

EPA will provide technical and financial support to state, local and tribal agencies who have primary responsibility for various activities, including:

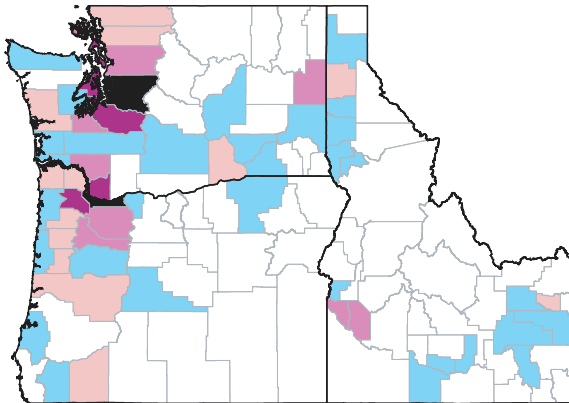
- new air quality monitors near field burning areas
- research into feasible alternatives to burning
- studies that quantify and characterize the emissions from field burning

Smoke from Idling Schoolbuses

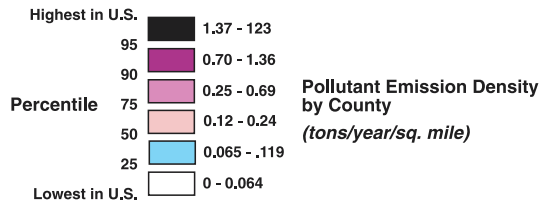


Source: The Puget Sound Clean Air Agency

1996 County Emission Densities Diesel Particulate Matter - EPA Region 10 Counties



Distribution of U.S. Emission Densities



Source: U.S. EPA / OAQPS
NATA National - Scale Air Toxics Assessment

Air Source Contribution of Air Toxic Cancer Risks

Beacon Hill (Seattle) Monitoring Data

