



# Where There's Fire...

## Smoke, Health and Public Outreach

Alison Davis

EPA Office of Air Quality  
Planning & Standards



# What We'll Cover



- **Types of fires**
- **EPA fire policy**
- **Reaching the public**
- **Alaska 2004**
- **An upcoming tool**

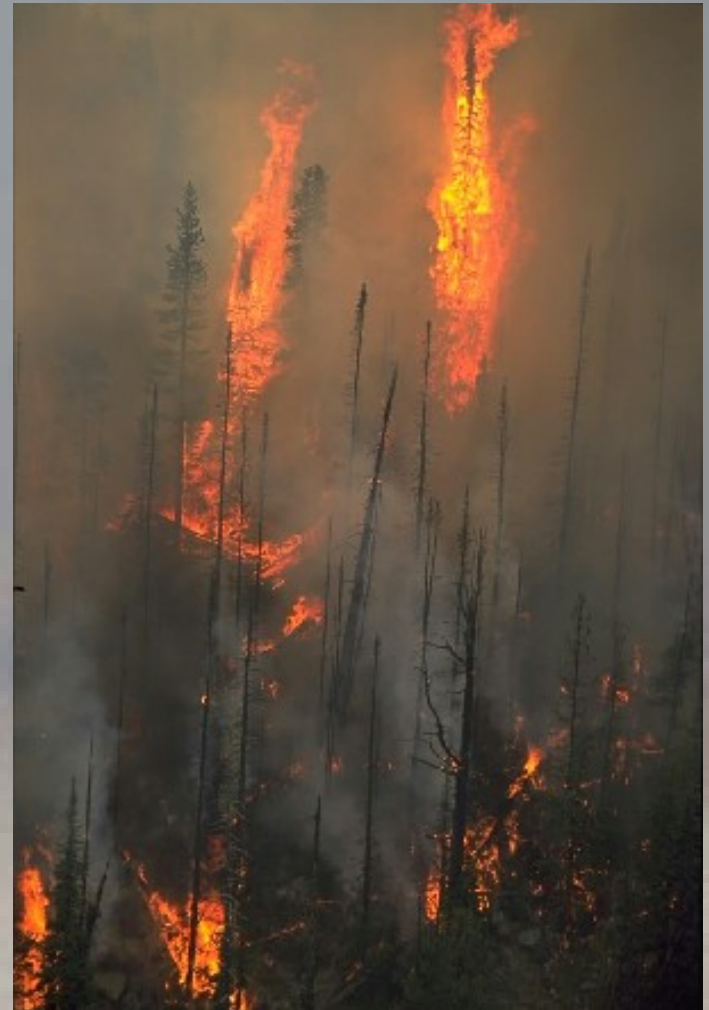
# Prescribed Fire

- **Many uses:**
  - Reducing hazardous fuel loads
  - Managing forest/rangelands
  - Managing agricultural land for crop production
- **More opportunities to limit smoke**



# Wildfire

- **Unwanted**
  - Free-burning
  - Not designated & managed as prescribed
  - May require suppression
- **Smoke can be significant**



# EPA Policy

- **1998 Interim Air Quality Policy on Wildland and Prescribed Fires**
  - Addresses public health and welfare impacts
  - Encourages use of smoke management plans
    - Goal to minimize the impacts of fire on air quality and visibility impairment.
- **Agricultural burning policy (*future*)**
  - Working with USDA Agricultural Air Quality Task Force to develop



# Wildfire Smoke Issues



- **Public Safety**
  - 1988 Oregon I-5 accident
    - 7 died, 38 injured
- **Visibility**
  - Over long distances
- **Economic impact**
  - Business, tourism, real estate
- **Health**
  - Significant short-term effects

# Smoke & Health

- **Groups at risk: Same as for PM 2.5**
  - People with heart or lung disease
  - Older adults
  - Children
- **Symptoms**
  - **Everyone:** eye & airway irritation
  - **People with heart disease:** chest pain, palpitations, shortness of breath, fatigue
  - **People with lung disease:** breathing not as deep or vigorous as usual, coughing, phlegm, chest discomfort, wheezing, shortness of breath.

# Key Public Messages

- Use air quality reports
  - Visibility guides in some areas without monitors
- Use common sense
- Keep indoor air clean
- Dust masks or bandanas... a little protection, but not enough
- **Heart disease? Doctor**





# Getting the Word Out

**Air Quality Outlook for July 3-5, 2004**  
www.epa.gov/airnow

**Particle Pollution and Your Health**

**How Smoke from Fires Can Affect Your Health**

Smoke diminishing gradually improving Air Quality  
Fairbanks  
Southwest winds

**AIR NOW**

What Is Particle Pollution?  
You at Risk?  
How Can You Protect Yourself?

The collage features several EPA logos and the AIR NOW logo. It includes a map of the western United States with yellow and orange smoke plumes, a map of Alaska showing smoke from fires near Fairbanks, and various photographs: a doctor examining a child, a child with a pacifier, a city skyline at dusk, a car on a road, a cabin in a forest, and a tree in a smoky environment.

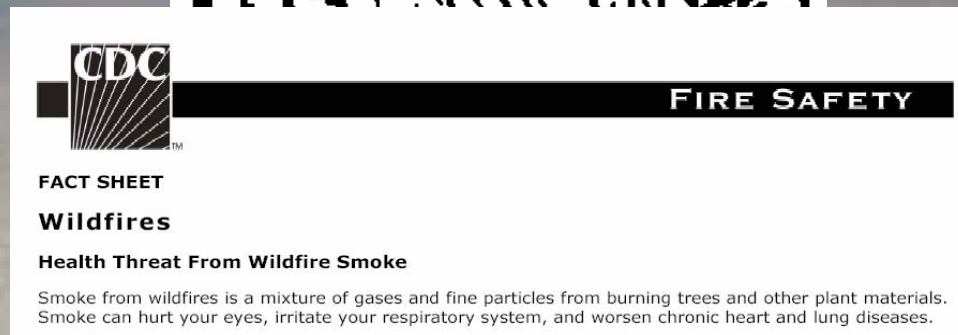
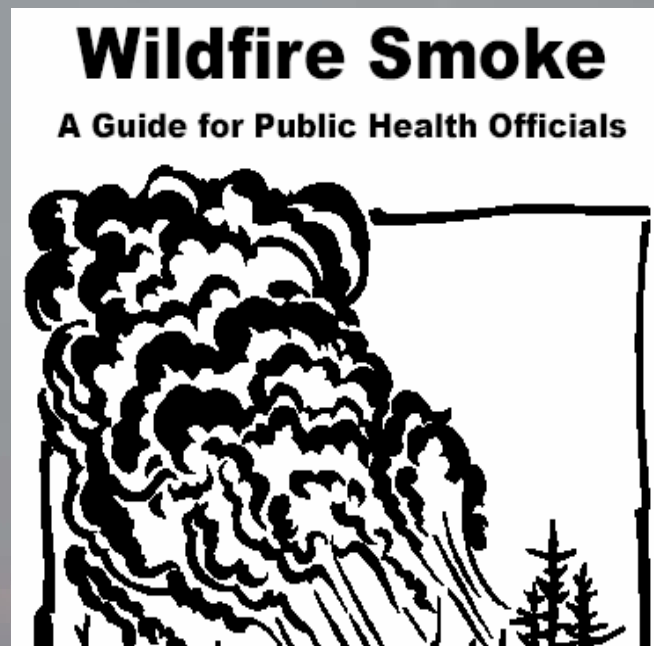
# Use Every Channel You Can

- **Work with other agencies**

- USFS ongoing
  - On-site work with USFS/Montana 2000
  - Fire information officers kit with USFS
- Fact Sheet with CDC
- Public Health Officials' Guide
  - With Calif., Wash., Missoula

- **Direct-to-public work**

- Smoke brochure
- PM & health brochure
- PM AQI
- AIRNow



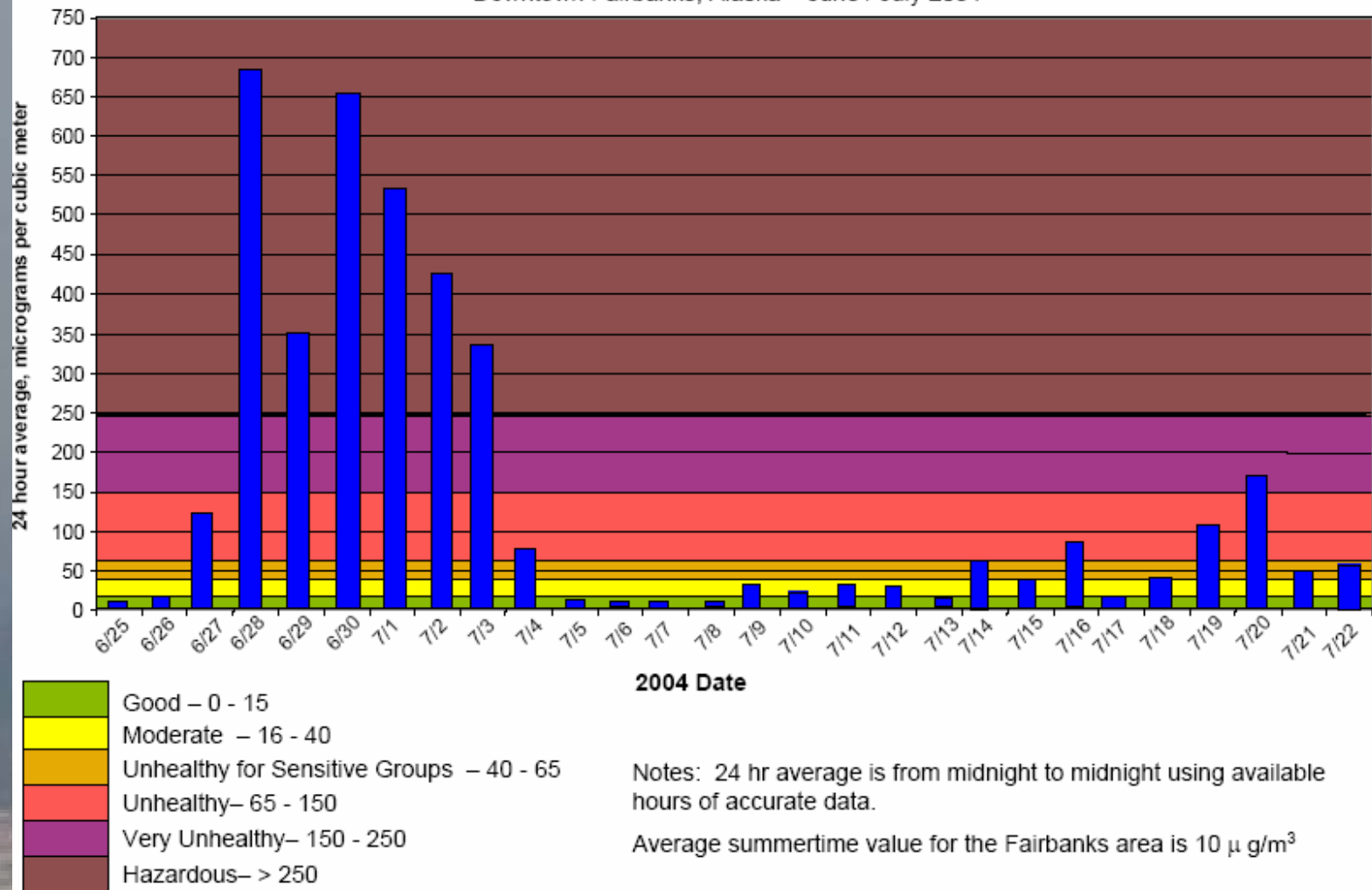
# Alaska Fires 2004

- Major smoke “event” late June/early July
  - PM 2.5 levels reached as high as 1,000  $\mu\text{g}/\text{m}^3$
- Affected large and small communities
  - Remote areas with no evacuation option
  - Downtown Fairbanks



# Fairbanks PM 2.5 levels June/July 2004

24 hr average - 2.5 micron Airborne Particulate Matter  
Downtown Fairbanks, Alaska – June / July 2004





# Alaska 2004: EPA Response

EPA - AIRNow - Top Story - Microsoft Internet Explorer

File Edit View Favorites Tools Help

U.S. Environmental Protection Agency

**AIRNow**

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EPA Home > Air & Radiation > Air Quality Planning & Standards > AIRNow > Newsroom

## Alaska Department of Environmental Conservation (DEC) Issues Statewide Air Quality Advisory

The AQI levels have been steadily increasing from Moderate to Unhealthy. Dense smoke advisory has been issued by the National Weather Service for the Fairbanks area for today and tonight. Poor air quality conditions are expected to persist for the next several days as a high pressure system to the northeast drives easterly winds and smoke to the Fairbanks area.

**Smoke Plume Source: NOAA**

**Isolated Hazardous**

**AQI AIR QUALITY INDEX**

Good
Moderate
Unhealthy for Sensitive Groups
Unhealthy
Very Unhealthy
Hazardous

**Air Quality Outlook for July 17-19, 2004**

[www.epa.gov/airnow](http://www.epa.gov/airnow)

**Health Tip:** Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly, and children should remain indoors.

**Source:** Alaska Department of Environmental Conservation and United States Environmental Protection Agency

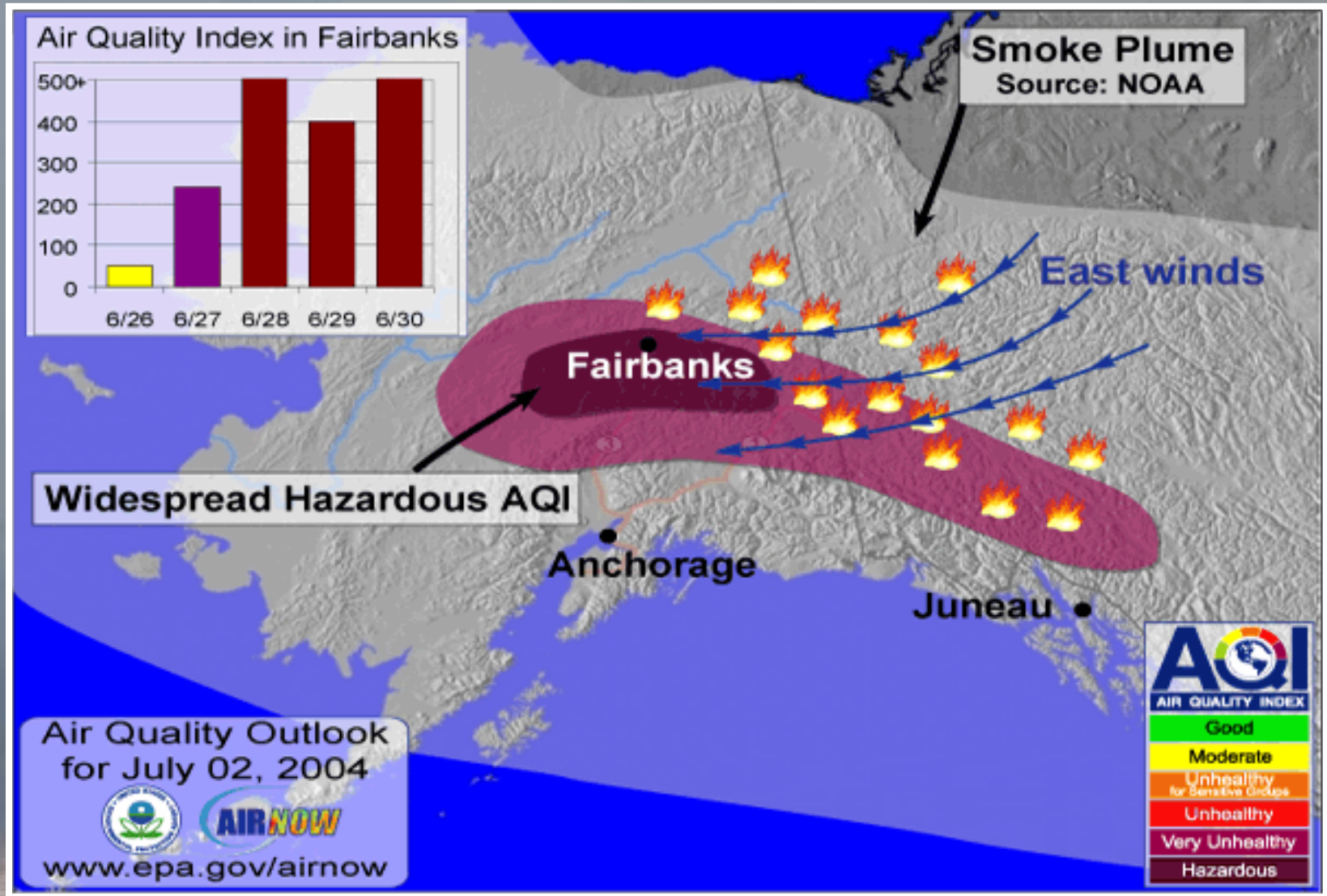
**For further information:**  
[Smoke from Fires and Health Effects Information](#)

[EXIT disclaimer >](#)

[Alaska Department of Environmental Conservation \(DEC\)](#)  
[Alaska DEC - Wildfire Smoke](#)  
[August 16, AK DEC Air Quality Advisory](#)  
[Press Release - Fairbanks North Star Borough](#)  
[Alaska DEC - Wildfire / Particulate Information](#)

start | Sametime Conn... | EPA - AIRNow - ... | ColdFusion Stu... | Volume Control | Lori Tussey - In... | Adob

# Alaska Smoke 2004





# Coming Up: New Tools

- **Smoke forecasting tools**
  - USFS, NOAA, others have capability
  - Not for public use
- **Blue Sky Rains**
  - Web-based, real-time smoke concentration predictions
  - Currently for use by fire managers, air quality agencies & public (Northwest only)

# Blue Sky Rains: Washington State 8/30/04

http://westernblueskyrains.epa.gov/website/bluewest/viewer.htm?Box=-607566.0:941158.0:-207566.0 - Microsoft Internet Explorer

**WESTERN BLUE SKY RAINS** Information about Potential Wildfire Smoke Impacts

Display Data For:  
 Aug 30 1 pm  
 2004 EDT

-3HR -HR Refresh Map +HR +3HR  
 Auto Refresh

**Data Layers**  
[Data Status](#)

- Burn Information (36km)
- Predicted Weather (36km)
- NOAA Fire/Smoke Information
- Mt St Helens Information
- Other Pollution Sources
- Observed Air Quality
- Receptors
- Base Map Data

**Layer Help**

- A closed **group**, click to open.
- An open **group**, click to close.
- A hidden group/layer, click to make visible.
- A visible group/layer, click to hide.
- A visible layer, but not at this scale.
- A partially visible group, click to make visible.
- An inactive layer, click to make active.
- The active layer.
- Hyperlink toolbutton available.
- Meta** Link to Metadata (click to view)
- A map layer.

Specified Date Data for 30 Aug 2004 13:00 EDT  
**CAUTION: Actual Impacts May Deviate From Mapped Displays**

**Map Legend**

Default Traj Hourly Pts  
 Hours From Start  
 0 2 4 6 8 10 12

Meters Above Surface  
 < 100 750-1000  
 100-250 1000-1500  
 250-500 1500-2000  
 500-750 > 2000

Default Traj Lines  
 NOAA Observed Smoke  
 Early Day  
 Late Day

**+** NOAA Fire Detects

**NOAA Hysplit Soot Forecast**  
 Air concentration ug/m3  
 Boundary Layer Average  
 0 m to 3000 m

- Less than 0.01
- 0.01 - 0.1
- 0.1 - 1.0
- 1.0 - 10.0
- Above 10.0

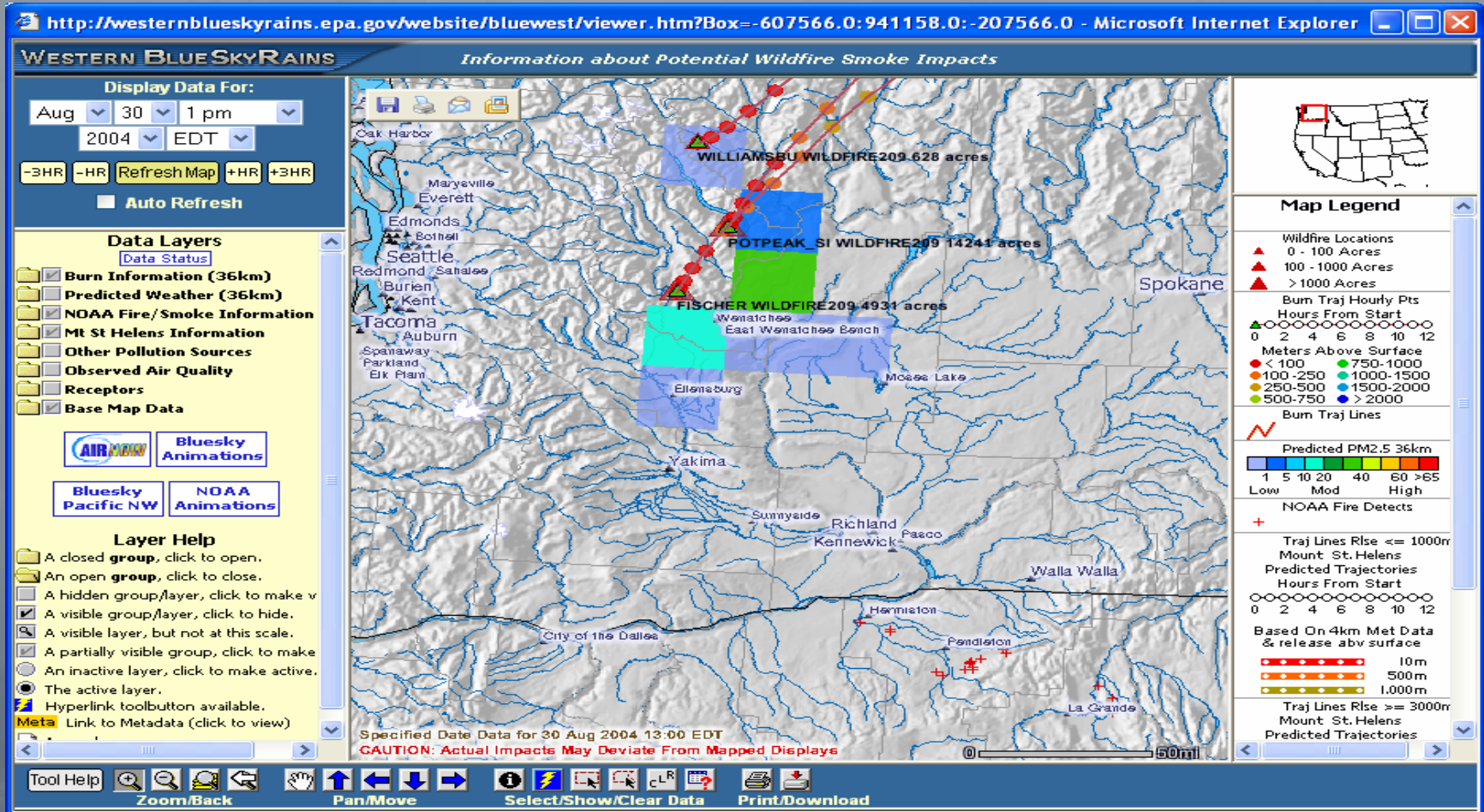
**AirNow PM2.5 Monitors**  
 WA PM Air Monitors

**Streams**

Tool Help | Zoom/Back | Pan/Move | Select/Show/Clear Data | Print/Download

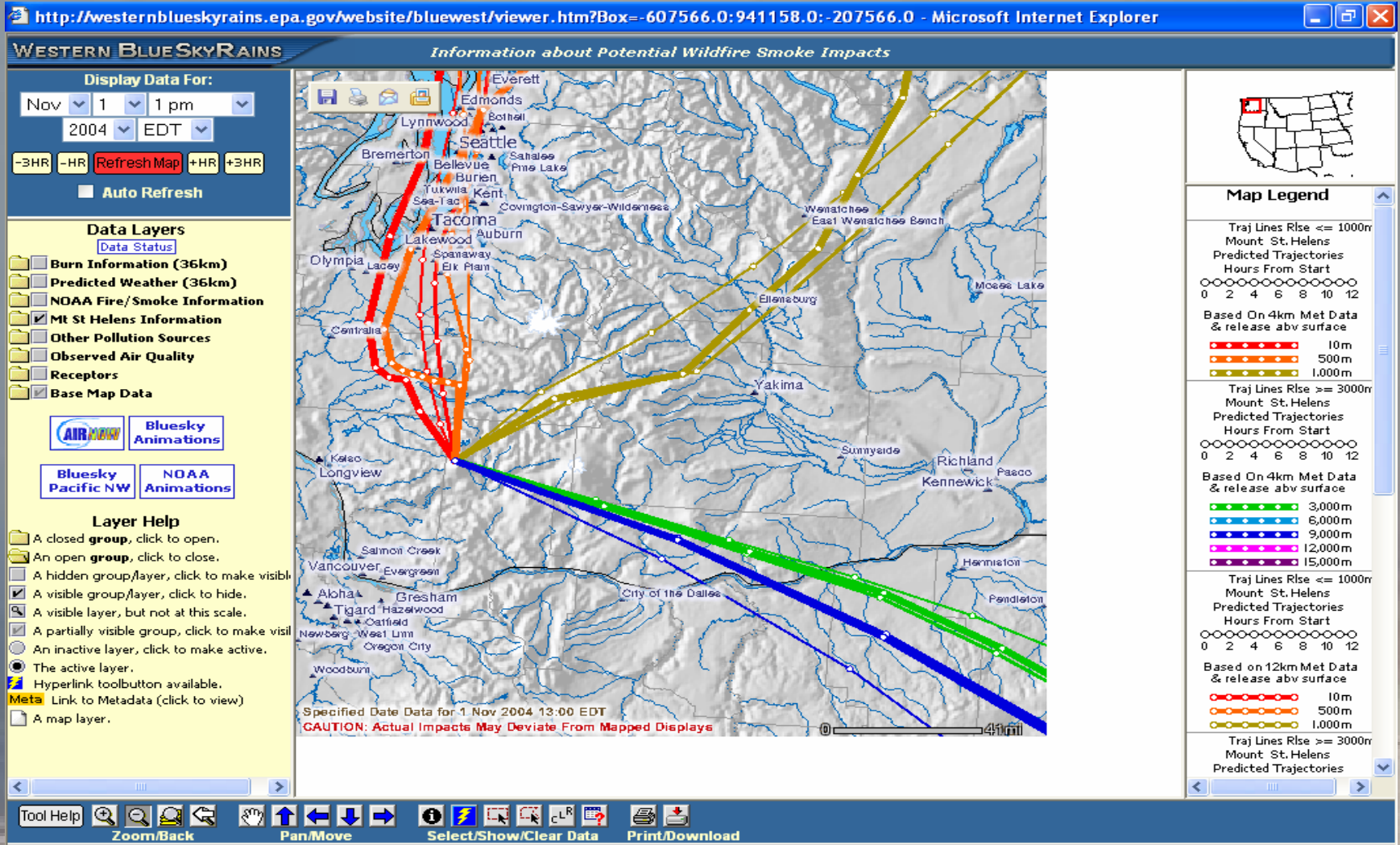
start | W... | 2f | 2f | 51 | M... | 58° | 2:23 PM

# Blue Sky Rains: Washington 8/30/04





# Blue Sky Rains: Mt. St. Helens





**Want more info?**

**Alison Davis**

**919-541-7587**

**[davis.alison@epa.gov](mailto:davis.alison@epa.gov)**









# Activities

- Air Quality Monitoring Project

- Purpose: Provide appropriate monitoring data to better protect public health from the effects of wildfire smoke
  - Develop consistent fine particulate air monitoring guidance and protocols and evaluate portable smoke monitors during wildfire events
  - End-users: EPA, State/local and tribal air agencies and FLMs
- Participants
  - States: New Mexico, Arizona, California, Oregon, Washington, Alaska, Montana, Colorado, Idaho, Nevada
  - FLMs: Fish and Wildlife Forest Service