

Mobile Monitoring and AIRNow-Tech During the 2008 Northern California Wildfires

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Outline

- Introduction
- Mobile monitor deployment
- AIRNow-Tech



Basin Complex 2008

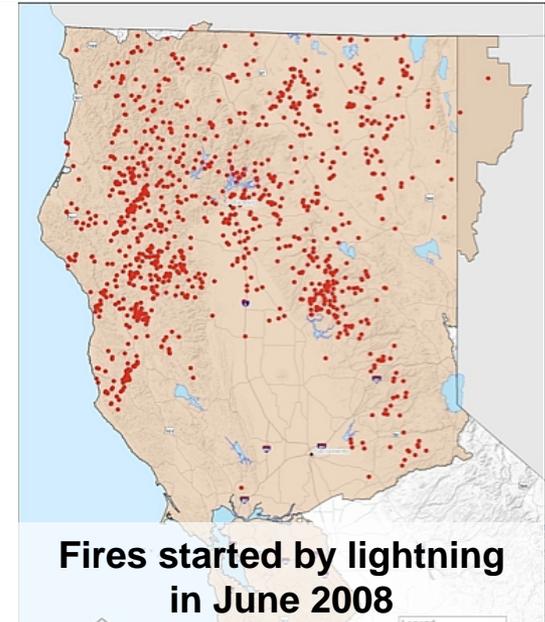


Indians Fire 2008

Introduction

Summary of fires

- 1 million+ acres burned
- 2,000+ individual fires burning at the same time
- 25,000+ firefighters
- Thousands of tons of $PM_{2.5}$ emitted each day
- Millions of people affected by smoke
- **Unhealthy** to **Hazardous** AQI levels observed (ozone and $PM_{2.5}$)



June 23, 2008 6PM (PDT)

| Site Name | Current Ozone AQI | Max Ozone AQI (PDT) |
|-------------------------------|-------------------|---------------------|
| Cool | 127 | 127 at 6PM |
| Davis | 40 | 74 at 2PM |
| Elk Grove | 71 | 87 at 4PM |
| Folsom | 189 | 230 at 5PM |
| Grass Valley | 104 | 104 at 6PM |
| North Highlands | 48 | 48 at 5PM |
| Placerville | 177 | 177 at 6PM |
| Roseville - N.Sunrise/Douglas | 137 | 140 at 5PM |
| Sacramento - Airport Road | 50 | 132 at 3PM |
| Sacramento - Del Paso Manor | 11 | 16 at 5PM |
| Sacramento - T Street | 51 | 104 at 2PM |
| Sloughhouse | 122 | 147 at 3PM |
| Yacaville | 38 | 45 at 5PM |
| Woodland | 49 | 90 at 4PM |
| Yuba City | 47 | 47 at 6PM |

Source: www.sparetheair.com

Mobile Monitor Deployment (1 of 6)

Motivation

- Fires and widespread regional air quality impacts were expected to continue for weeks or months
- Supplement to existing air quality monitoring network needed to assess wildfire impacts

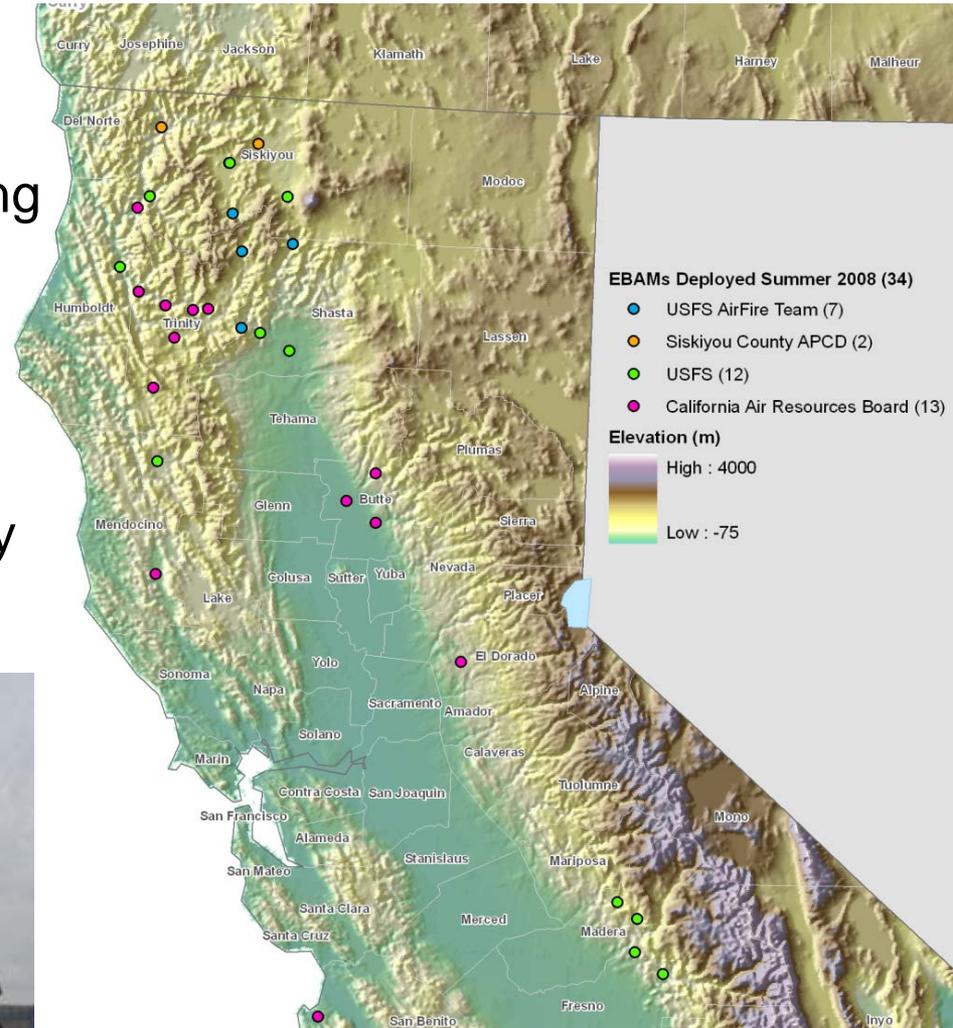


Smoke on July 11, 2008

Mobile Monitor Deployment (2 of 6)

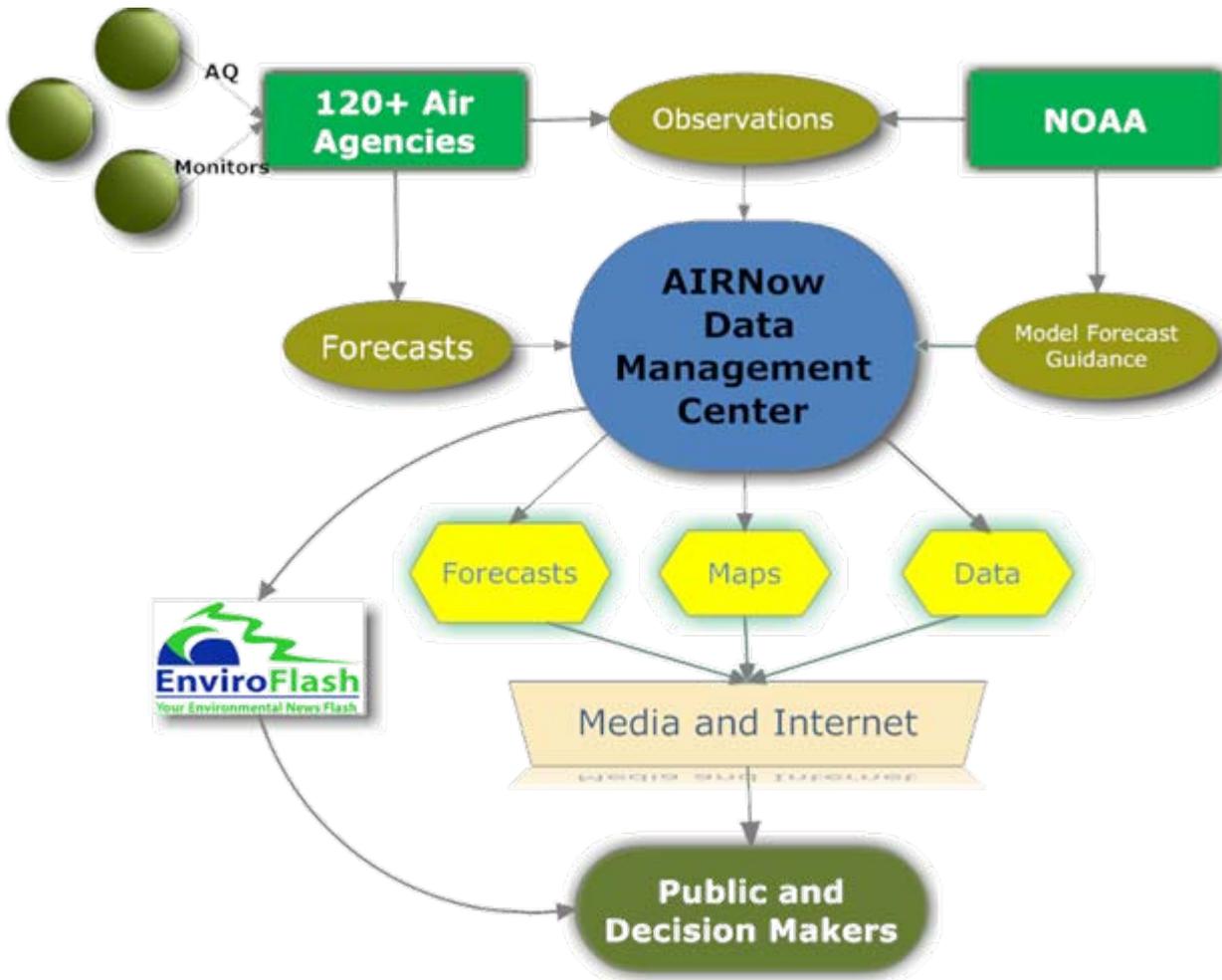
Purpose

- Focus on areas of Northern California with sparse monitoring coverage
- Assess smoke impact
- Support fire management and incident command teams
- Provide resources for air quality agencies



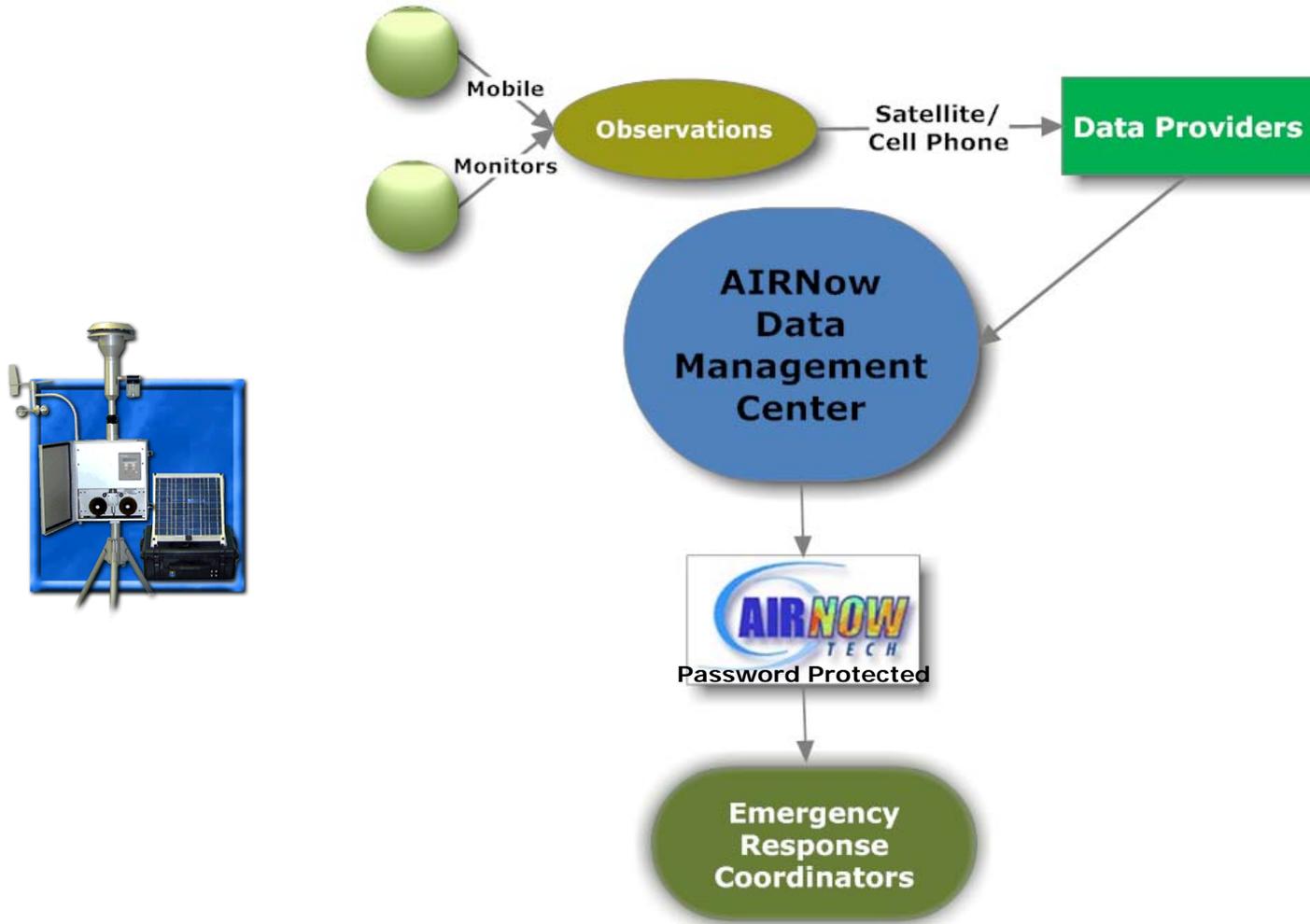
Mobile Monitor Deployment (3 of 6)

Data Flow of Stationary Monitor Data



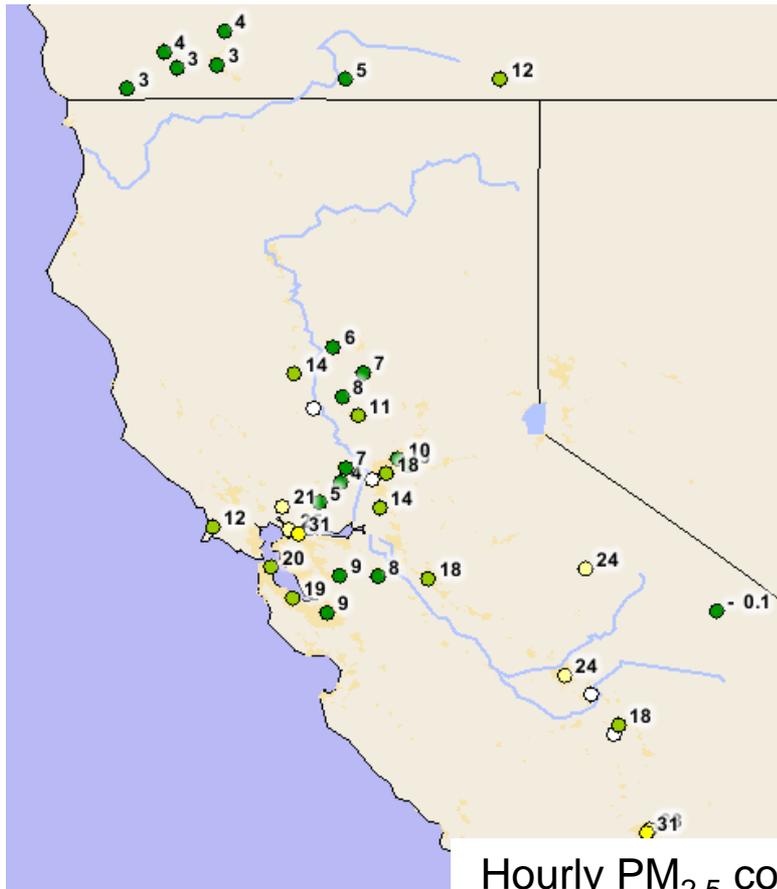
Mobile Monitor Deployment (4 of 6)

Data Flow of Mobile Monitor Data



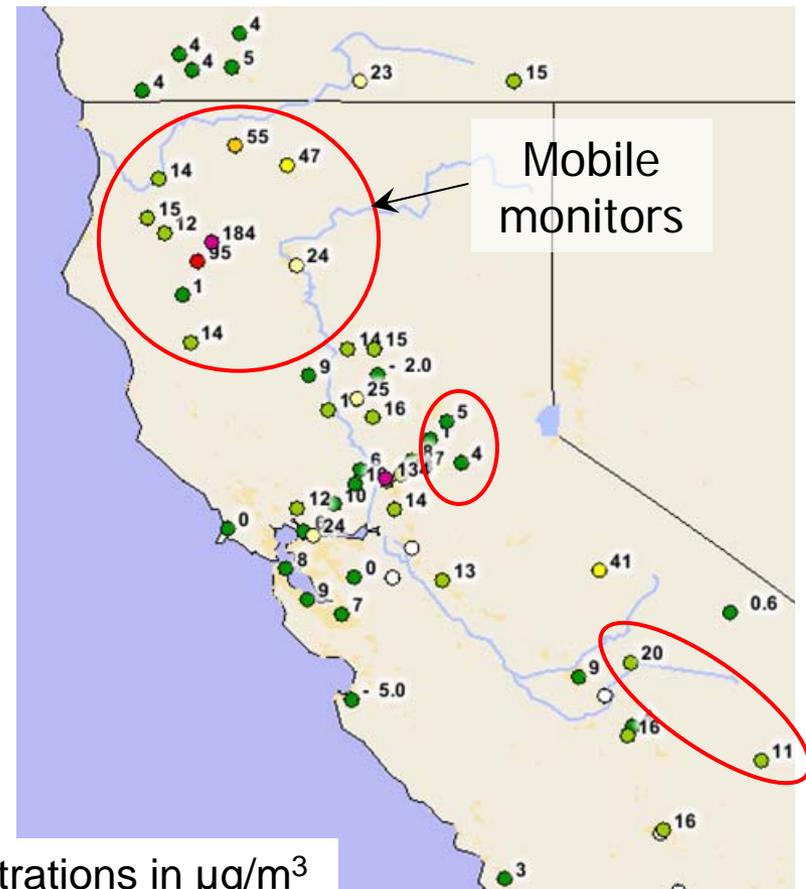
Mobile Monitor Deployment (5 of 6)

Real-time data stream to EPA AIRNow and AIRNow-Tech



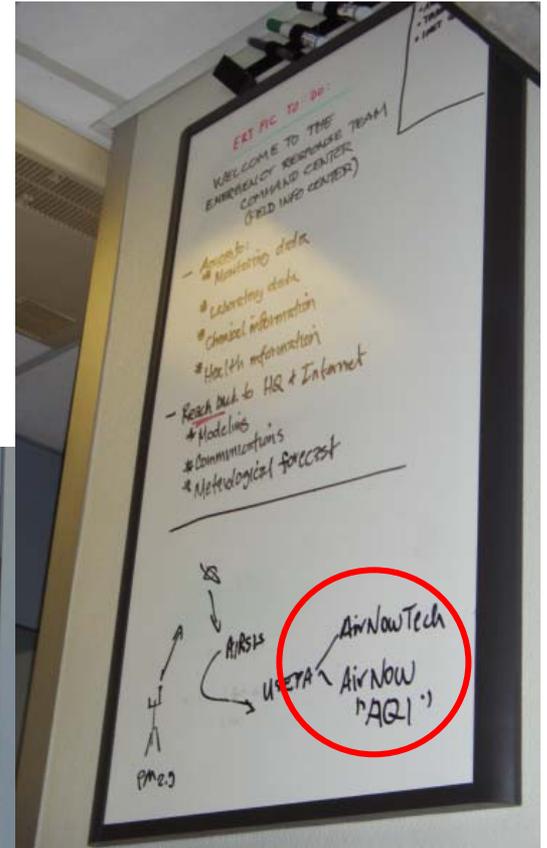
Hourly PM_{2.5} concentrations in µg/m³

Early June 2008



Late July 2008

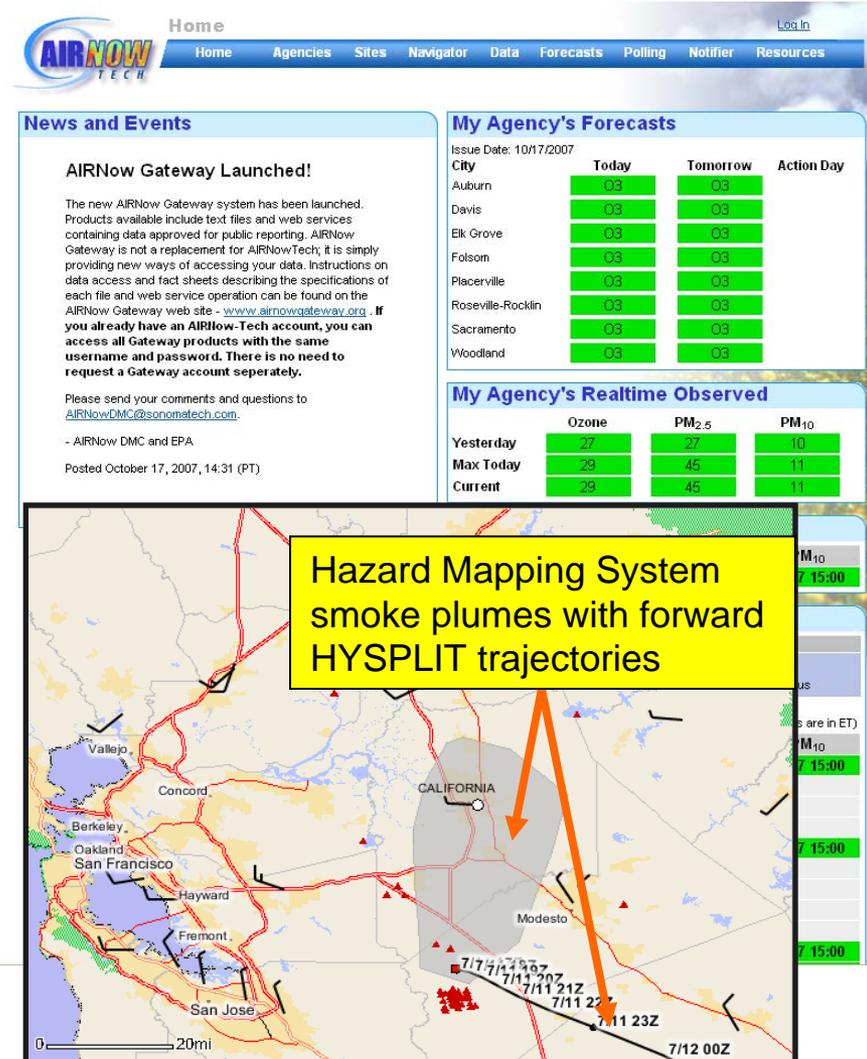
Mobile Monitor Deployment (6 of 6)



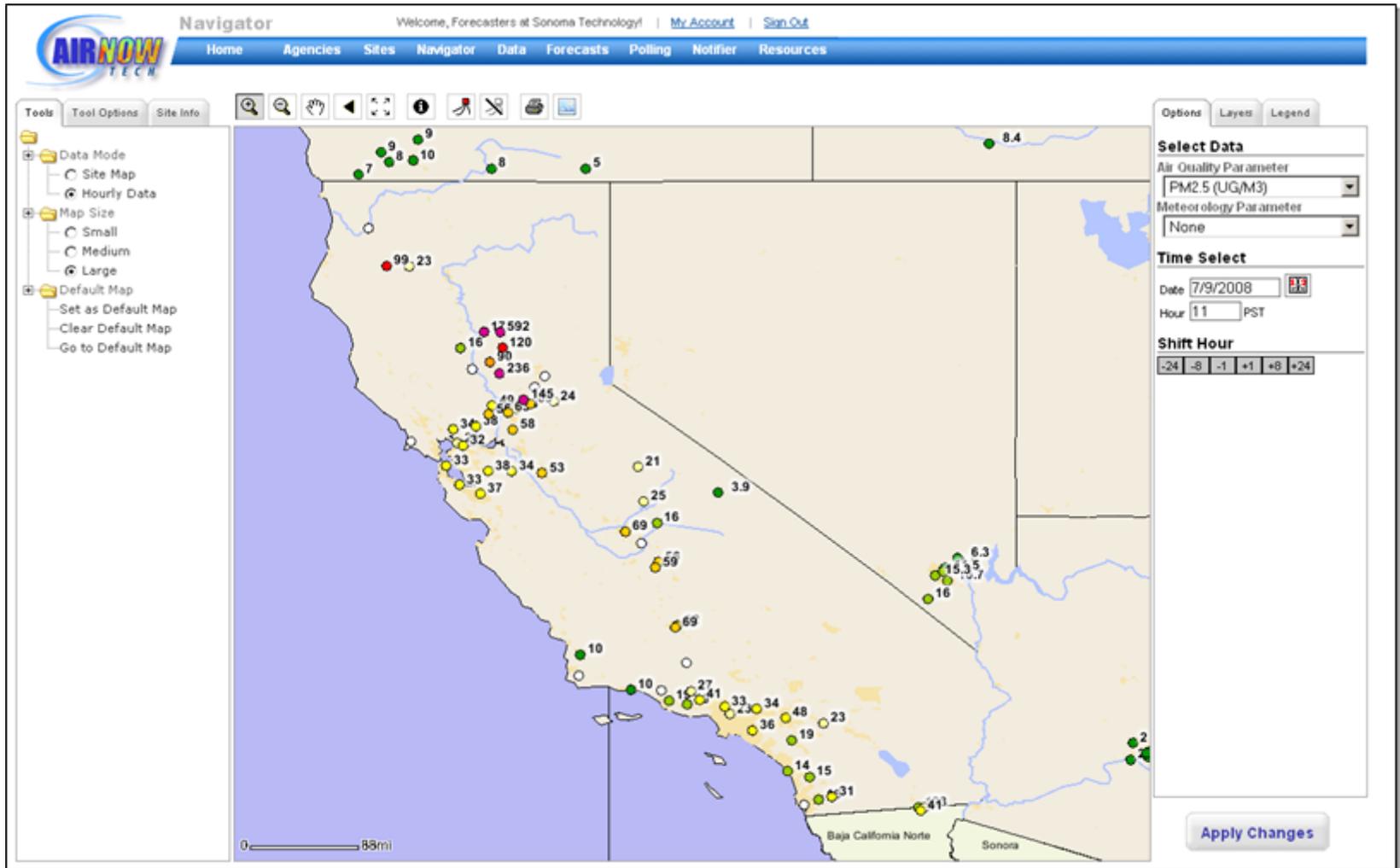
AIRNow-Tech (1 of 5)

AIRNowTech.org

- Decision Support System – management and analysis tool for the AIRNow Program
- Password protected website
- GIS functions – HYSPLIT trajectory tool, satellite, and smoke products
- Data queries, personalized tools, preferences, and services
- Ability to view meteorological and air quality data

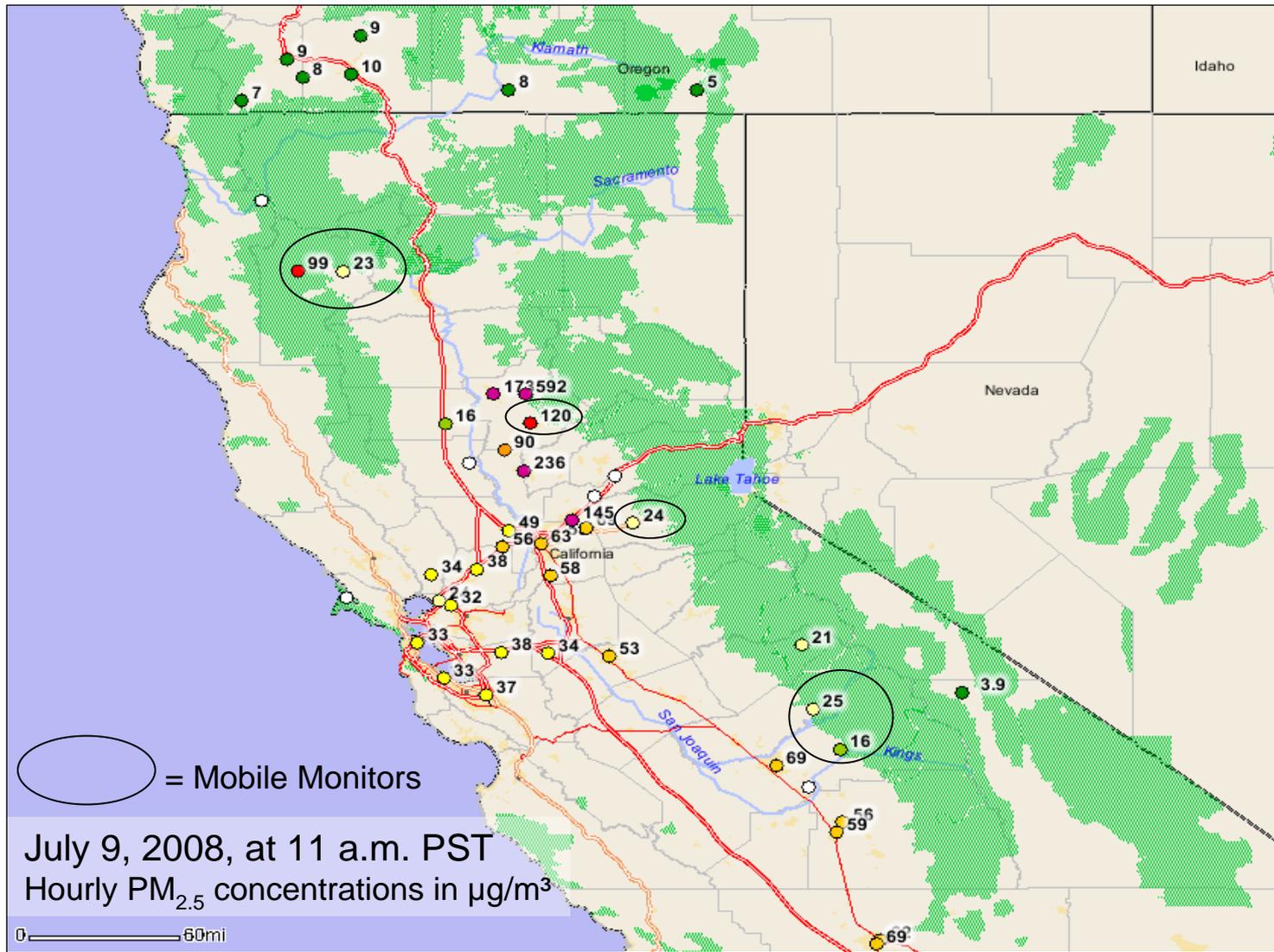


AIRNow-Tech (2 of 5)

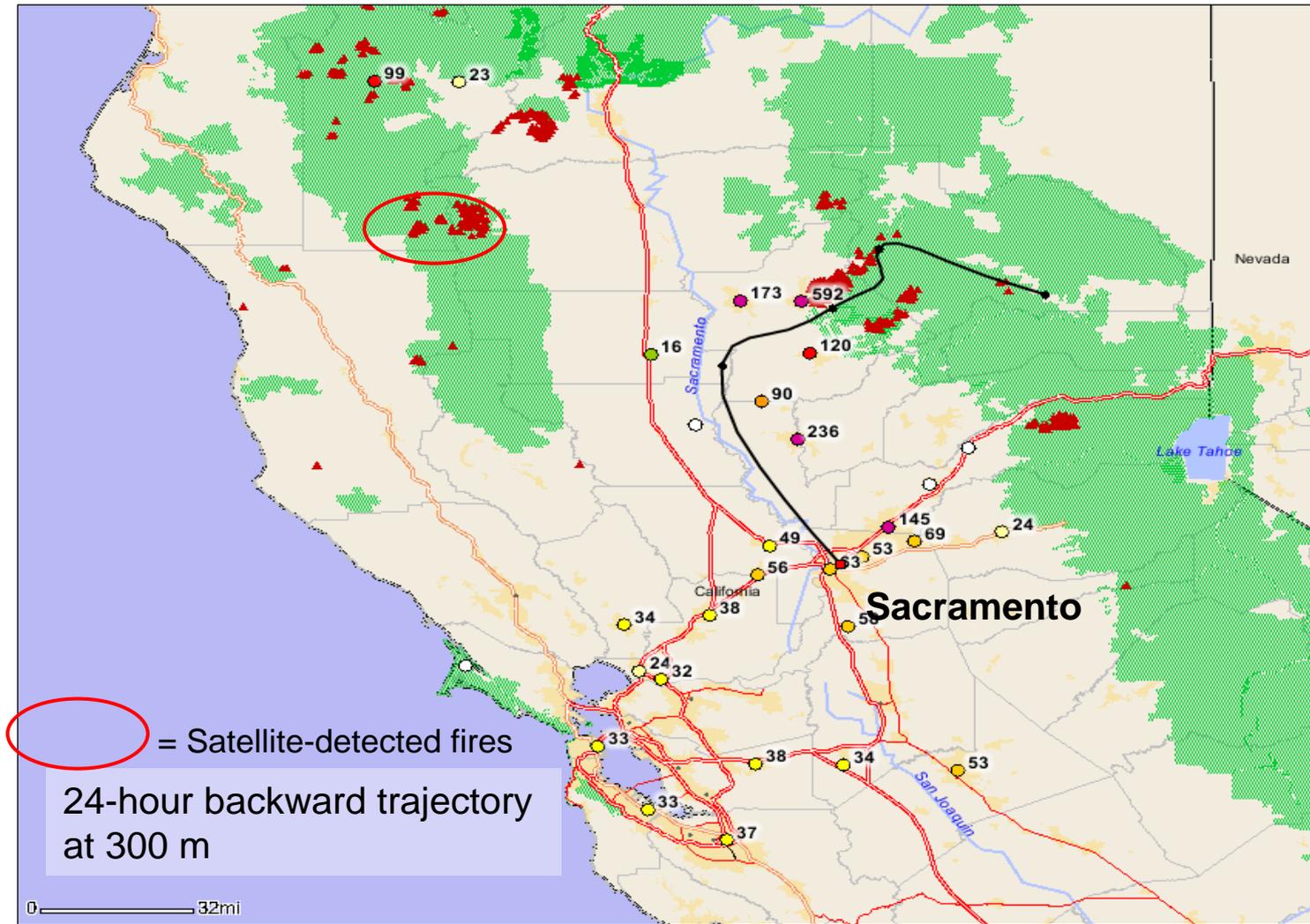


PM_{2.5} concentrations in $\mu\text{g}/\text{m}^3$ in AIRNow-Tech's Navigator

AIRNow-Tech (3 of 5)



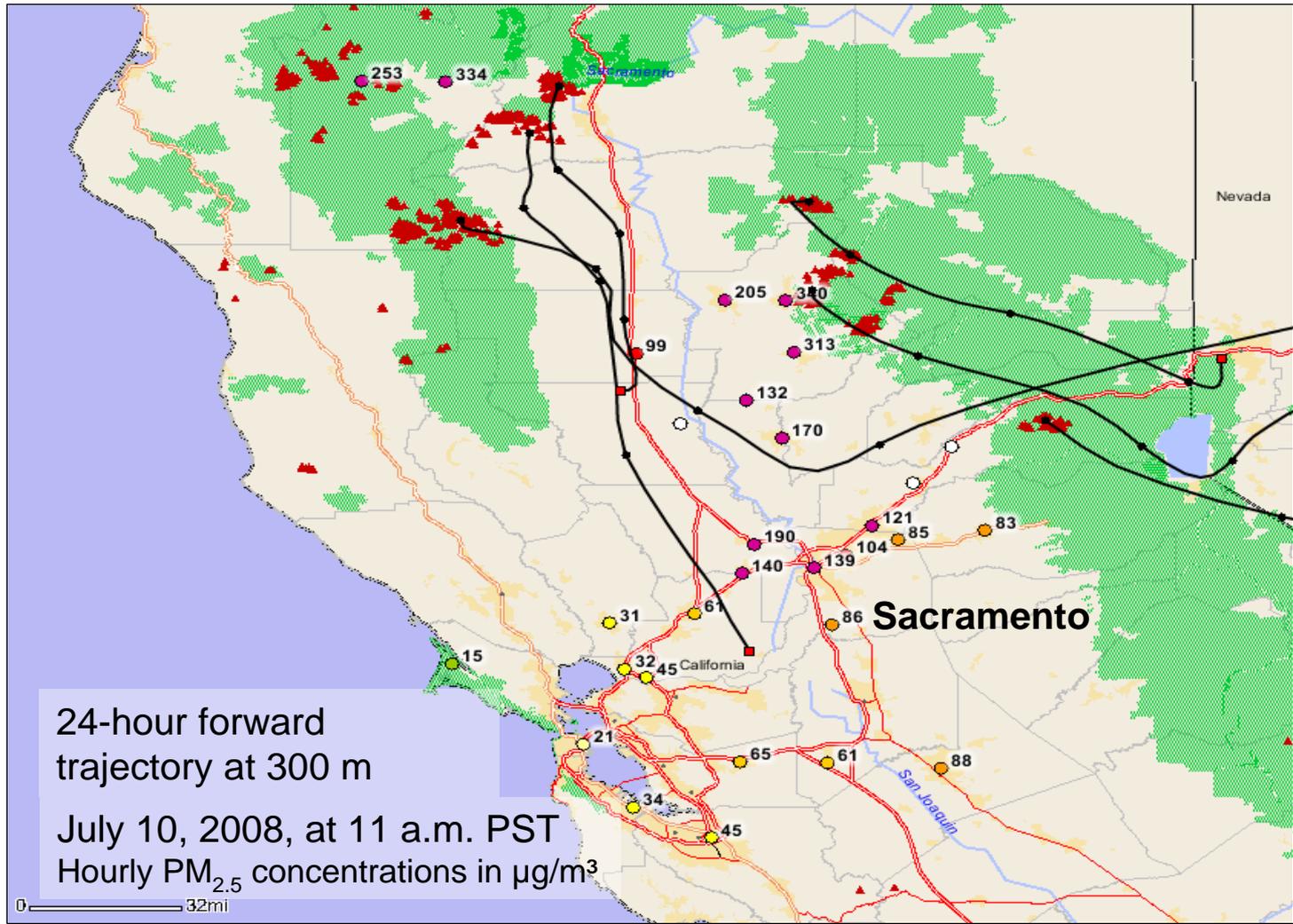
AIRNow-Tech (4 of 5)



 = Satellite-detected fires
24-hour backward trajectory
at 300 m

Backward trajectory showing where Sacramento's air came from during the last 24 hours

AIRNow-Tech (5 of 5)



Questions?

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