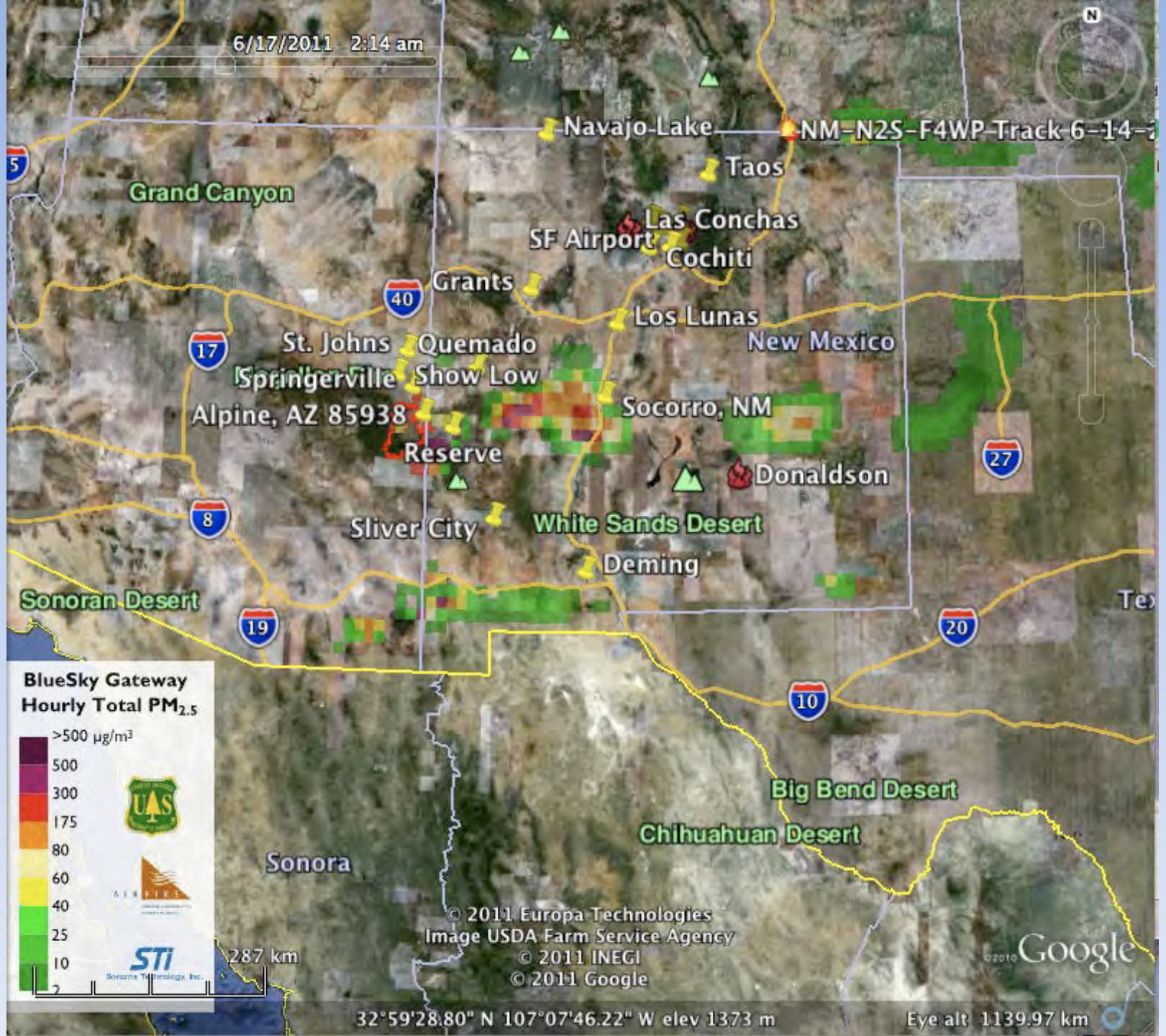
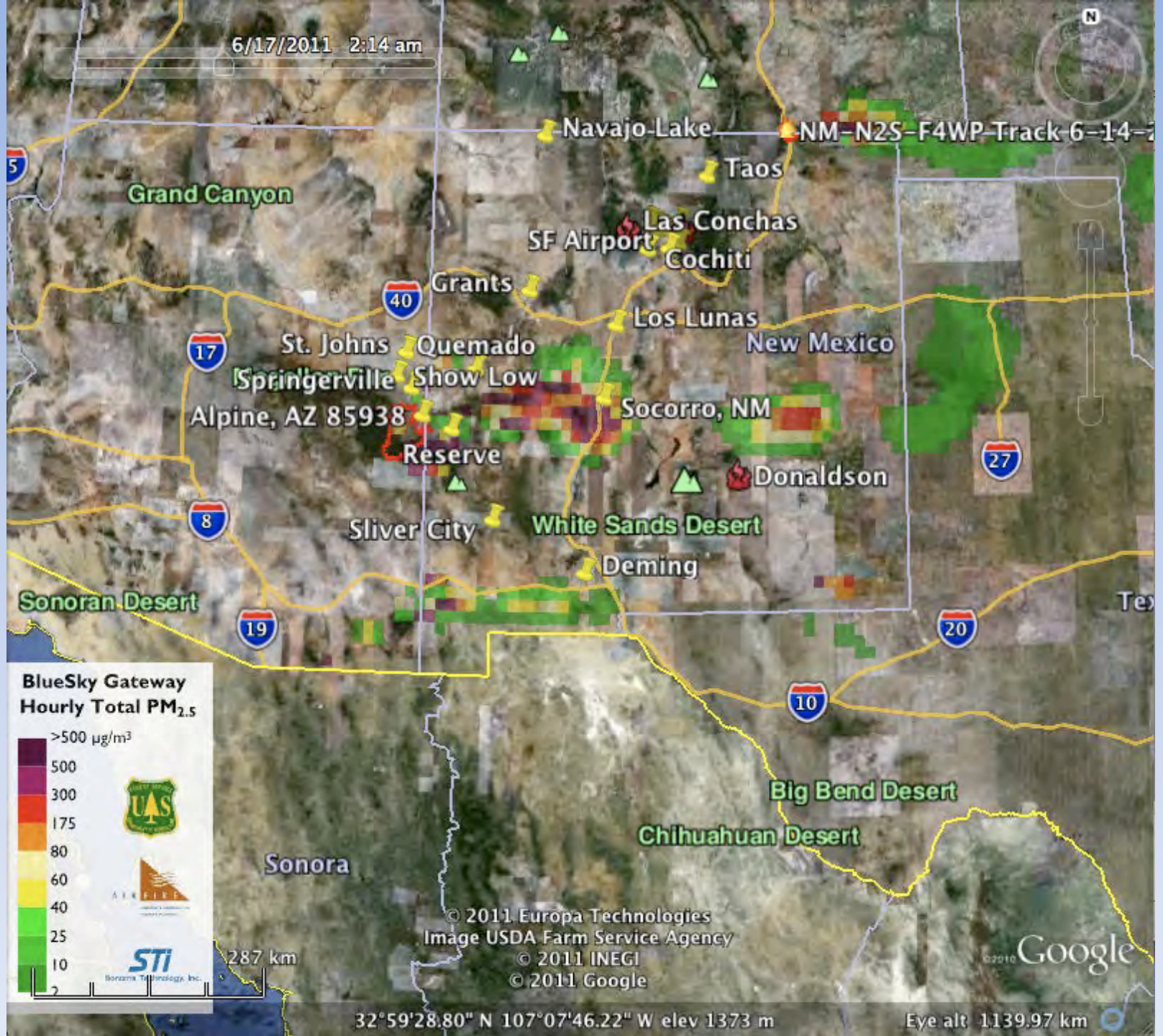
Moderate growth



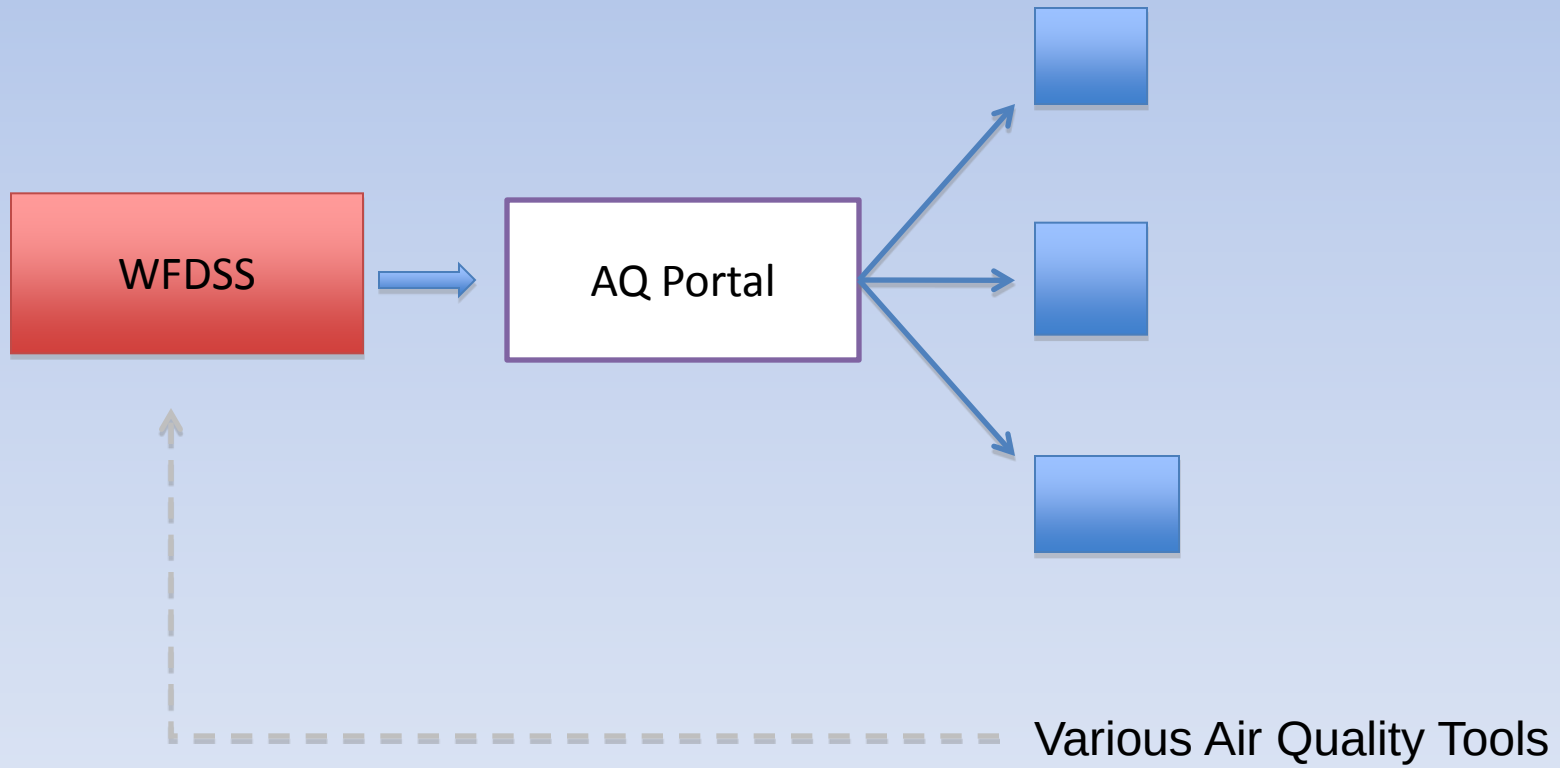
Large growth



# WFDSS Air Quality Tools Integration

http://firesmoke.us

Developed for use in wildfire decision-making process



http://firesmoke.us

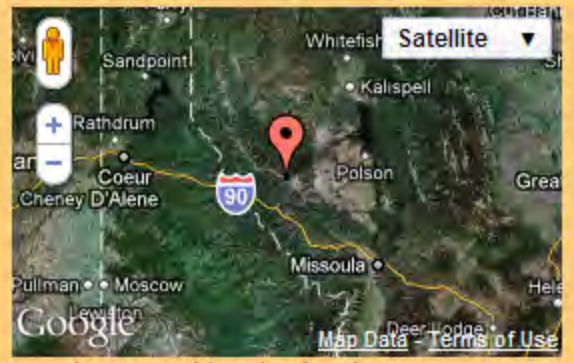
# Wildland Fire Air Quality Tools

## WFDSS Integrated Tools v1.0 (Beta Test)

STATUS: Updated 10/25: 8 of 8 tools linked and running. Help pages online. Products now open in a separate page. 10/19 table fixed. Some additional development work occurring. See notes below each tool for additional information.

STEP 1

### Set your fire location:




*location used for tailored products.*

Latitude 47.50 °N

Longitude -115.00 °E

Default location used.

Click on map or type location.

STEP 2

### Select Your Tool:

- Smoke Guidance Point Forecast
- Smoke Guidance Regional Maps
- Diurnal Surface Wind Pattern Analysis
- Climatological Ventilation Index Point Statistics
- Current Air Quality Conditions Map
- Fire Information & Smoke Trajectories
- Customized Fuels, Consumption, & Smoke Modeling
- Probabilistic Smoke Impacts based on Past Weather

See below for tool description, attributes, and other details.

**Filter by:**

ATTRIBUTE

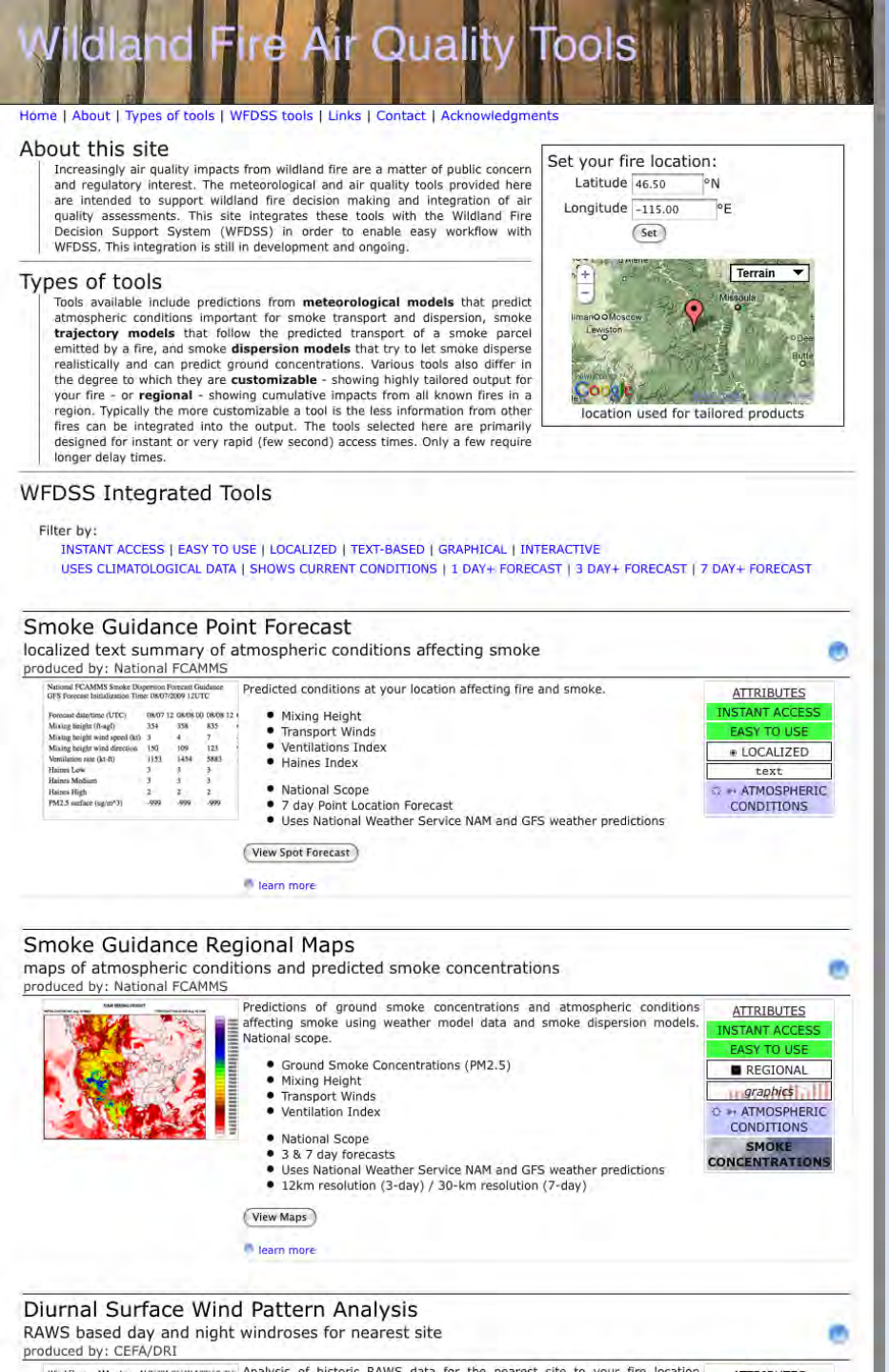
- [any]

## Tool List

Current filter applied: none (viewing all products)

### Smoke Guidance Point Forecast

localized text summary of atmospheric conditions affecting smoke

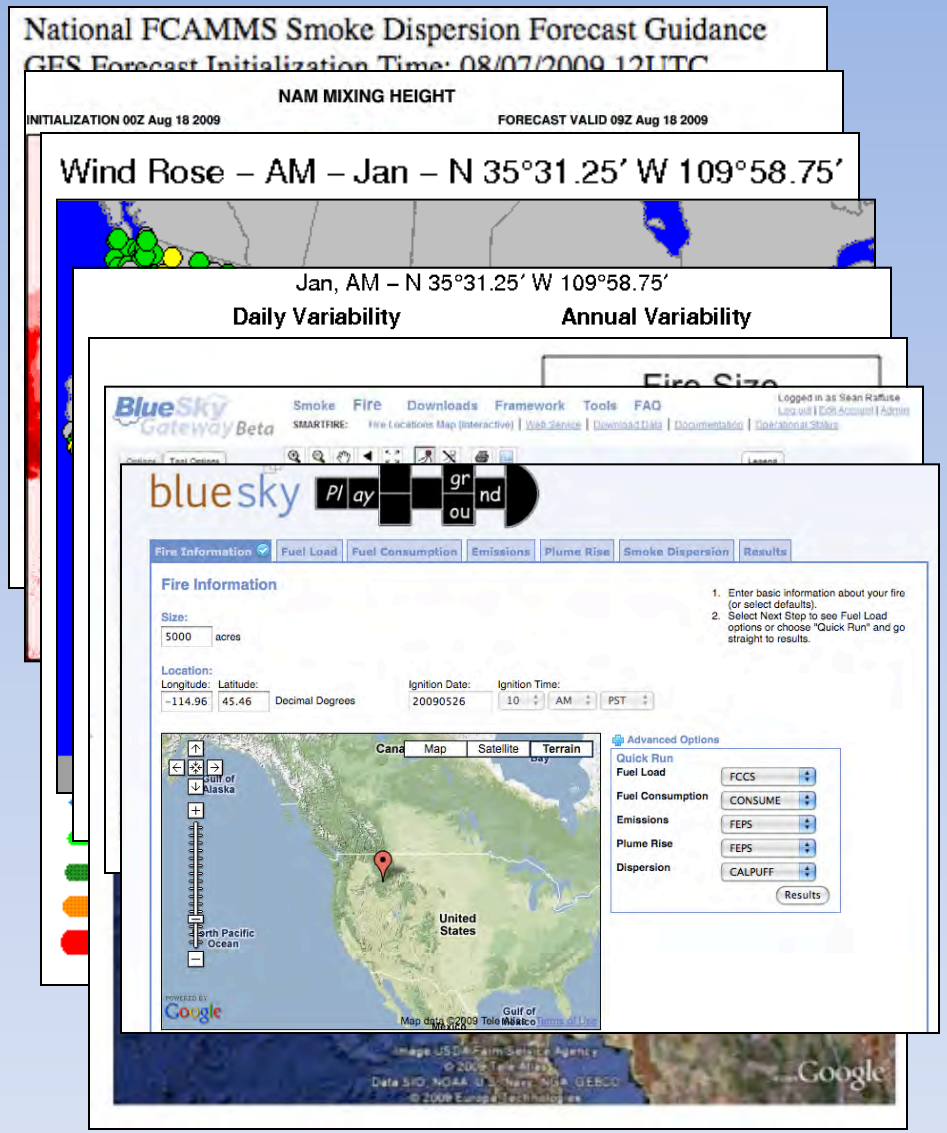



# Goals:

- To provide “one-stop” portal access to the most useful and relevant air quality tools
- To use data from WFDSS to drill-down into existing tools for relevant information
- To modify tools as necessary to better serve WFDSS needs
- To avoid the need for duplicate entry of information
- To provide help and how-to-use instructions

# 8 Tools Identified

- Includes climatologies, current conditions and forecasts
- Many give fire-specific, customized information
- More can be added

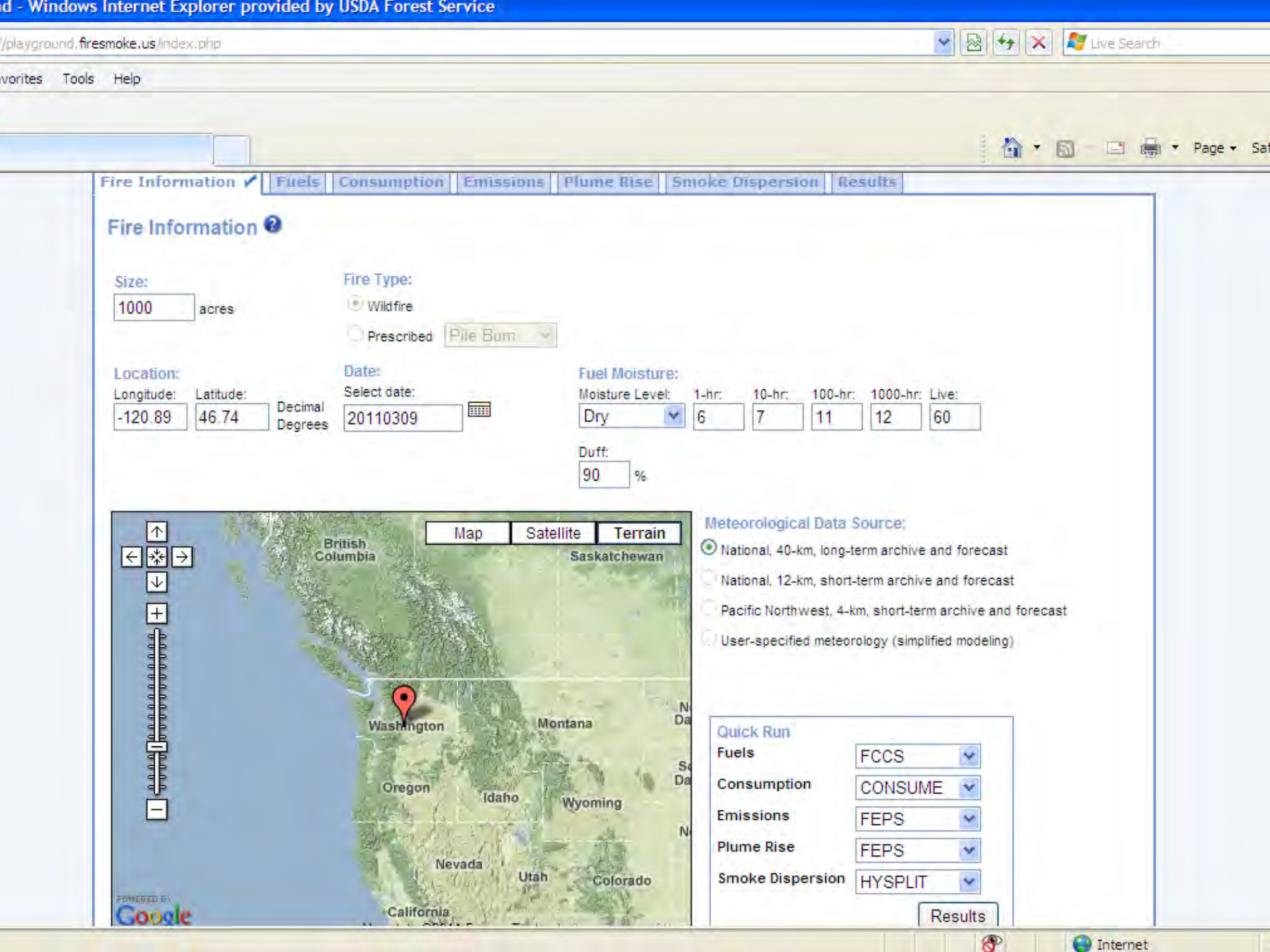



# Tools

- Smoke Guidance Point Forecast
- Smoke Guidance Maps
- RAWS Wind-roses
- Current Air Quality Monitoring Data
- Climatological Ventilation / Mixing Height Statistics
- Probablistic Smoke Impacts based on Climatology
- Custom While-you-wait Trajectories
- Custom While-you-wait Fuels, Fire Consumption, and Smoke Impact Modeling

- Each Tool briefly explained on website
- What is this? & How can I use it? information provided for each tool
- Tools labeled and searchable based on characteristics to help quickly identify what you are looking for

- Tools provided by USFS AirFire, DRI/CEFA, FCAMMS, STI


d - Windows Internet Explorer provided by USDA Forest Service
/playground.firesmoke.us/index.php
Live Search
vorites Tools Help
Page
Fire Information
Fuels
Consumption
Emissions
Plume Rise
Smoke Dispersion
Results
Fire Information
Size:
1000
acres
Fire Type:
Wildfire
Prescribed
Pile Burn
Location:
Longitude:
Latitude:
-120.89
46.74
Decimal Degrees
Date:
Select date:
20110309
Fuel Moisture:
Moisture Level:
Dry
1-hr:
6
10-hr:
7
100-hr:
11
1000-hr:
12
Live:
60
Duff:
90
%
Map
Satellite
Terrain
British Columbia
Saskatchewan
Washington
Montana
Oregon
Idaho
Wyoming
Nevada
Utah
Colorado
California
Google
Meteorological Data Source:
National, 40-km, long-term archive and forecast
National, 12-km, short-term archive and forecast
Pacific Northwest, 4-km, short-term archive and forecast
User-specified meteorology (simplified modeling)
Quick Run
Fuels
FCCS
Consumption
CONSUME
Emissions
FEPS
Plume Rise
FEPS
Smoke Dispersion
HYSPLIT
Results
Internet

# BlueSky Playground Redevelopment

- Better support for prescribed burn planning and operations
  - Higher-resolution meteorology
  - Simplified dispersion
  - Support for broadcast burns by section
  - Support for pile burns
- Automated report generation
- Improved infrastructure to support more simultaneous users (especially during training)
- Redesigned interface for a better user experience
- Additional new features

# 2012 Development Plan

- **Making sure smoke information is fully operational on a 24/7 basis.**
  - Hardening of existing tools;  Fix items identified by user feedback (Playground higher resolution & Rx fire choices, etc…); Specific operations person to be tasked.
- **Development of new help resources (experts) and training materials.**
  - Emphasis on mentoring;  trying to get a specific lead mentor with operational expertise.
- **Development of a new, simple, text based smoke forecast guidance report product.**
  - Suitable for non-experts
- **Beginning development of more integrated smoke modeling system.**
  - Advanced development work with benefits in 2012.

# Model output can be found at:
## (Not a complete list)

- http://firesmoke.us
- http://www.getbluesky.org (login/password)
- http://today.airfire.org/pnw4/ (Pacific Northwest 4-km ouput)
- http://airquality.weather.gov/sectors/conusLoop.php#tabs (NWS-NOAA air quality)
- http://ready.arl.noaa.gov/HYSPLIT.php (NOAA HYSPLIT)



# Thank you

http://firesmoke.us

Wildland Fire Decision Support System

Funding: F&AM, WFDSS, JFSP, NASA, NFP, EPA, ARRA, others

More information:


Miriam Rorig
mrorig@fs.fed.us
206-732-7843

Sim Larkin
larkin@fs.fed.us
206-732-7849

# Scenario #1

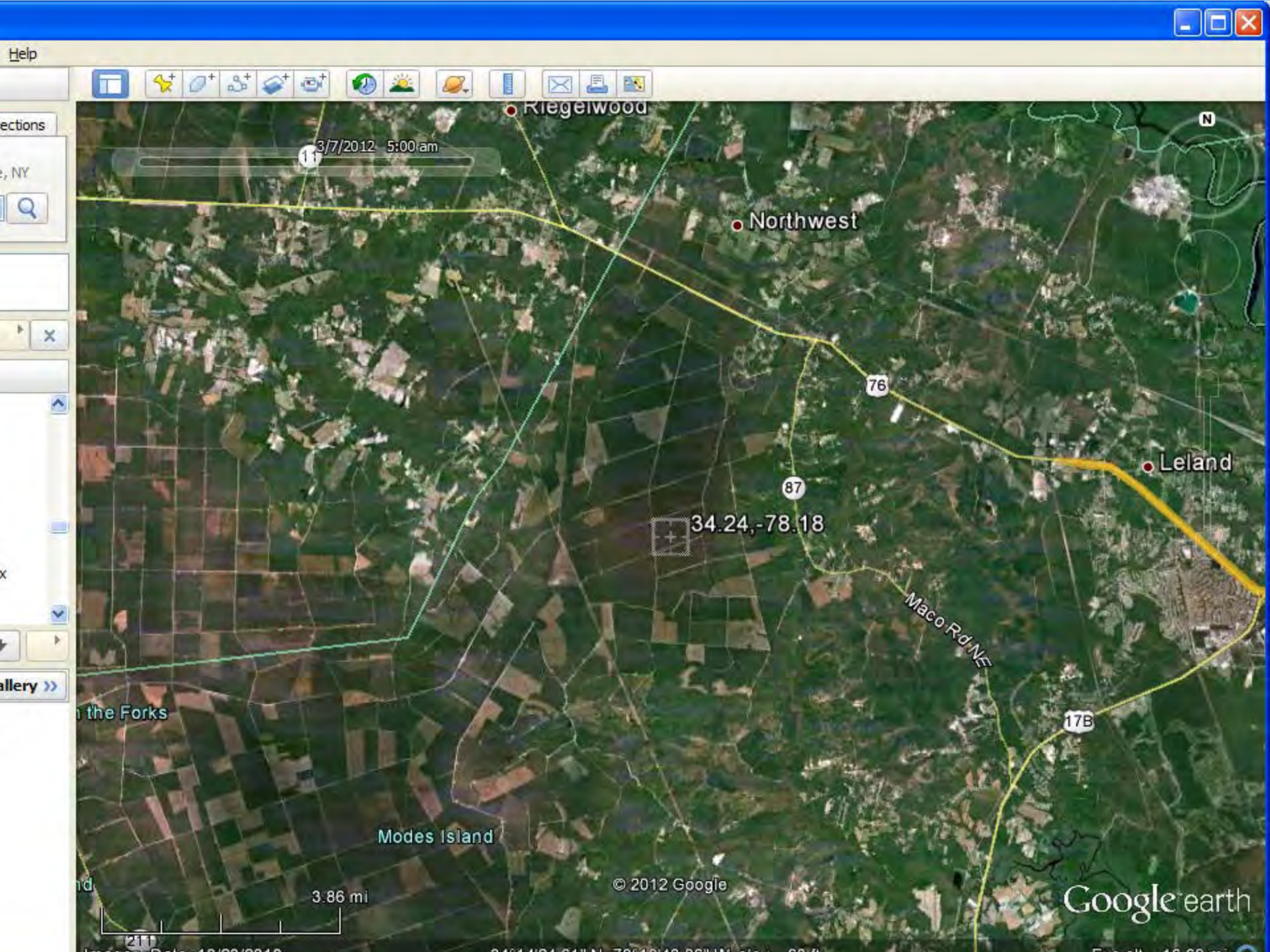
Using your North Creek case study, and assuming you are planning a burn for tomorrow (37.896, -111.771):

- Where would smoke typically go this time of year?
- Where is the smoke likely to go tomorrow?
- What $PM_{2.5}$concentrations would you expect ?
- Other considerations?

# Scenario #2

Use a lat/long of 34.24, -78.18 and planning a burn for today:

- What fuels will you use?
- What are the dispersion conditions?
- Which direction will the wind carry the smoke?
- What might happen with smoke tonight after the burn?
- Other considerations?


Help
Riegelwood
3/7/2012 5:00 am
Northwest
76
Leland
87
34.24,-78.18
Maco Rd NE
17B
the Forks
Modes Island
3.86 mi
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