



# SMOKE MODELING

Smoke Workshop  
November 2014  
Albuquerque, NM



# Why model?

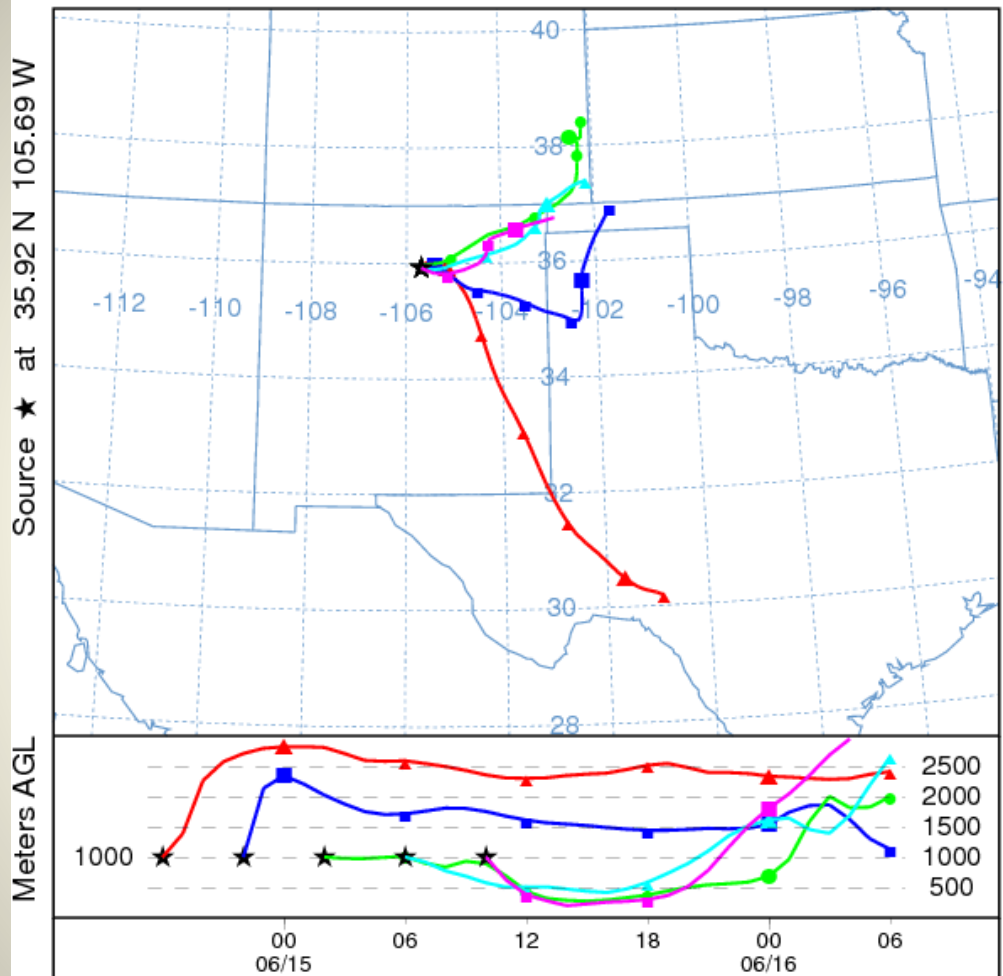
- Ability to predict impacts at many locations
- Monitors can't predict future impacts
- Inexpensive
- Analyze varying scenarios
  - Type of burn
  - Fuel type
  - Moisture
  - Timing



# HYSPLIT-what is it?

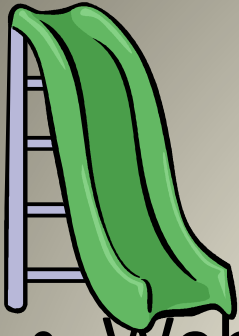
- Model to determine trajectory a parcel of air will follow
- Free to public
- Links to readily available meteorological data
- Options for dispersion, deposition, instantaneous or continuous emissions
- Forward or back in time
- User-friendly

NOAA HYSPLIT MODEL  
 Forward trajectories starting at 1800 UTC 14 Jun 13  
 06 UTC 14 Jun NAMS Forecast Initialization

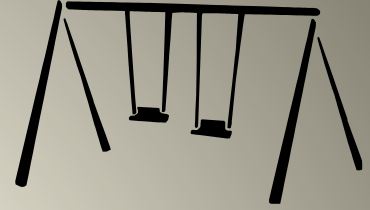


This is not a NOAA product. It was produced by a web user.  
 Job ID: 18895 Job Start: Fri Jun 14 13:45:38 UTC 2013  
 Source 1 lat.: 35.92 lon.: -105.69 height: 1000 m AGL  
 Trajectory Direction: Forward Duration: 36 hrs  
 Vertical Motion Calculation Method: Model Vertical Velocity  
 Meteorology: 0600Z 14 Jun 2013 - NAM SWfile





# Blue Sky Playground



- Web tool combining:
  - Fuels information data (FCCS and LANDFIRE)
  - Consumption models (CONSUME)
  - Emissions factors and models (FEPS)
  - Dispersion models (HYSPLIT and VSMOKE-GIS)
  - Meteorological forecast data (NAM, NW Regional Modeling Consortium, CA/NV Smoke and Air Consortium)




# Blue Sky Playground options

- <http://playground.airfire.org>
- Fun factor—graphics and animations
- Create emissions scenarios and model
- Daily runs:  
<http://www.airfire.org/data/bluesky-daily/>




# Create your own emissions scenario

 playground 2.0 beta [Home](#) | [My Emissions](#) | [My Dispersions](#) | [Feedback](#) | [Help](#) | [Credits](#) Logged in as maryuhl | [Log Out](#)

**Home » My Emissions » My Emissions (Piles)**

[Size and Location](#) | [Fuels](#) | [Consumption](#) | [Timing](#) | [Emissions](#) | [Notes](#)

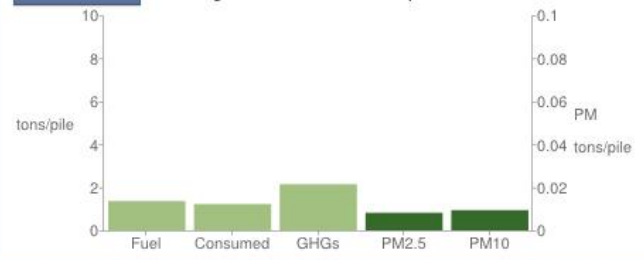
Daily Activity (Number of Piles)



Latitude:   
Longitude:


[Discard Changes](#) [Apply](#)

[View Totals](#) Average Fuels & Emissions per Pile



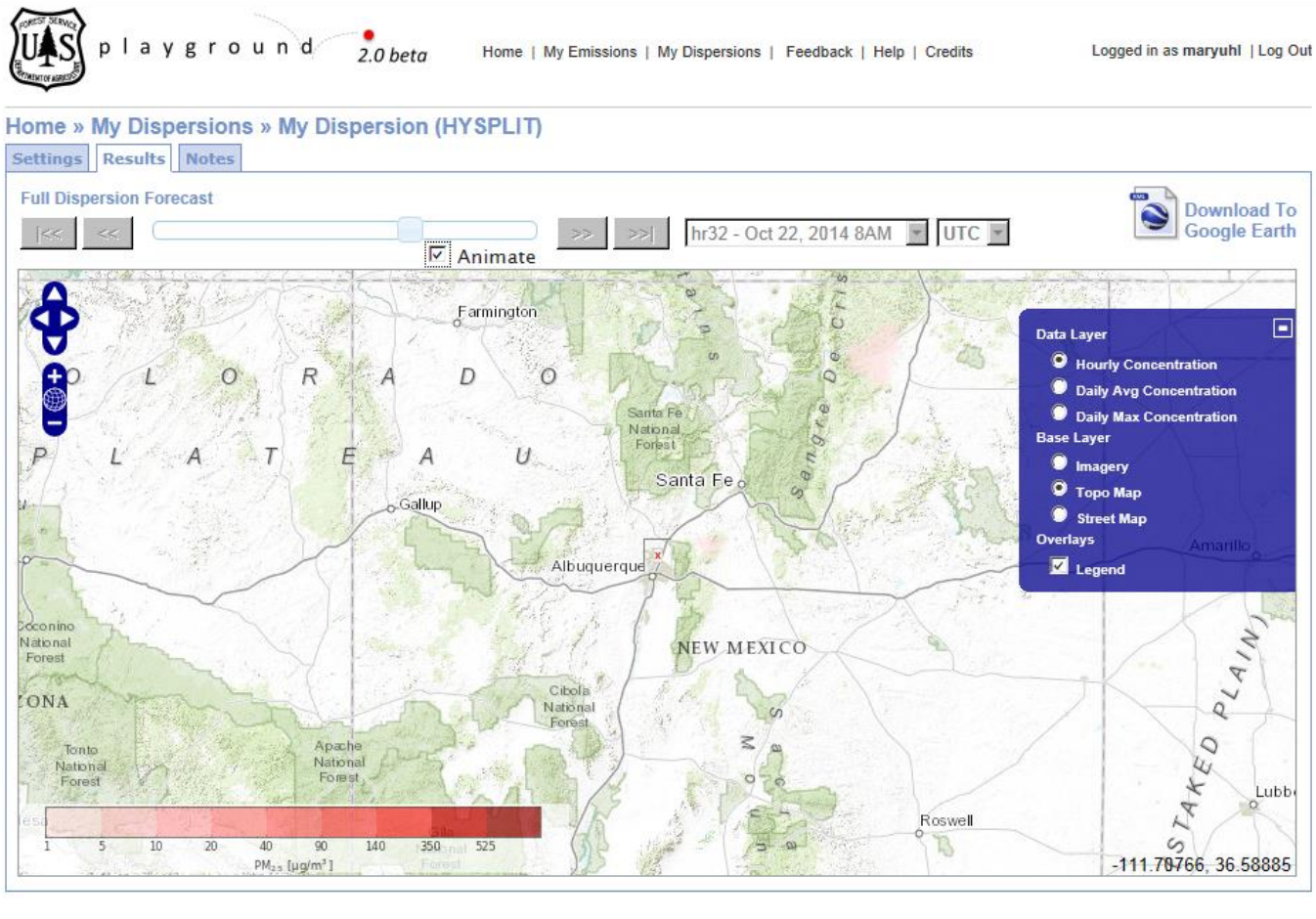
Category	Value (tons/pile)
Fuel	1.5
Consumed	1.2
GHGs	2.2
PM2.5	0.8
PM10	0.8

Diurnal Profile of % Total Consumption Day 1



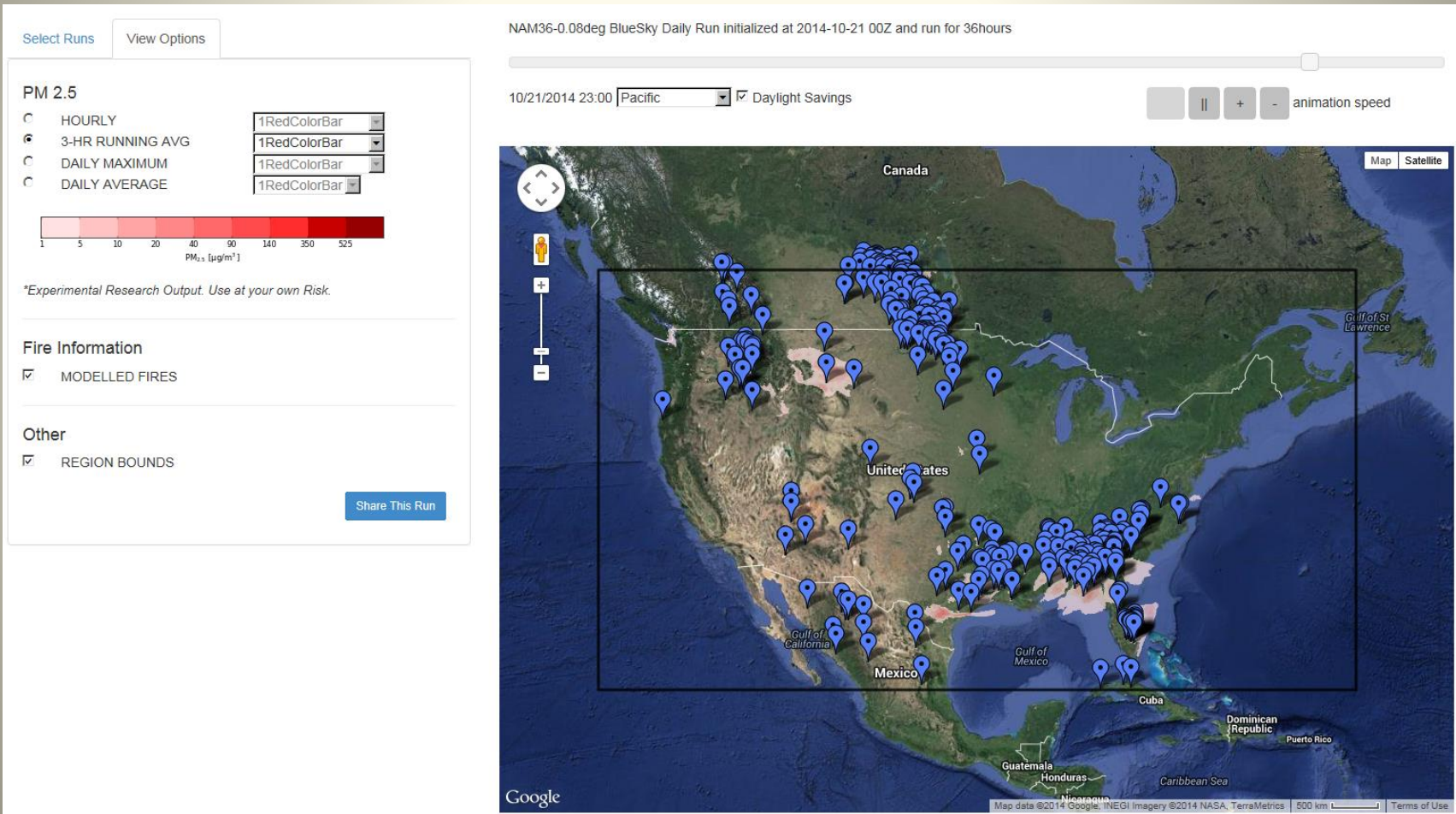
Hour (local time)	Flaming (%)	Smoldering and Residual (%)
10	0	0
12	4.5	4.0
16	4.5	4.0
18	0	0

# Visualize the impacts





# Blue Sky Daily Runs





# QUESTIONS?

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