

# Another Sky Campground- Campfire Smoke Dispersion

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# Presentation Overview

- Discussion of Smoke Dispersion

# Smoke Dispersion

Most resources regarding the subject are wildfire based and not campfire based

**Reviewed Auburn University website:**

**[http://www.auburn.edu/academic/forestry\\_wildlife/fire/smoke\\_guide/smoke\\_dispersion.htm](http://www.auburn.edu/academic/forestry_wildlife/fire/smoke_guide/smoke_dispersion.htm)**

**Factors that most affect smoke dispersion**

- Temperature
- Relative humidity
- Wind at Surface and Aloft
- Atmospheric Stability
- Topography

# Smoke Dispersion

## Temperatures

- Higher temperatures will like increase smoke dispersion.
- Lower temperatures will likely lessen smoke dispersion
- Temperature inversions (surface temps are cooler with warmer air above) hold smoke close to the surface

## Relative Humidity

- Higher RH will likely lessen smoke dispersion
- Lower RH will likely increase smoke dispersion

## Winds at Surface and aloft

- Higher wind speeds at surface and aloft create favorable mixing for smoke dispersion
- Lower winds speeds at

# Smoke Dispersion

## Atmospheric Stability

Smoke dispersion occurs better in Unstable Conditions



### Indicators of Unstable Conditions

- Strong sunshine
- Clear or high, puffy clouds
- Strong, gusty wind
- High smoke columns



### Indicators of Stable Conditions

- Low clouds or overcast
- Stratus type clouds
- Low, steady wind or calm
- Poor visibility
- Low smoke column

# Smoke Dispersion

## Topography

- Radiational heating of the side slopes of hills allows for upslope winds to be generated increasing smoke dispersion
- Cooling of side slopes allows for radiational cooling produces downslope winds decreasing smoke
- Atmospheric Stability
- Wind at Surface and Aloft
- Relative humidity

# Smoke Dispersion

## Conclusions:

- Campfire smoke will be held closer to the ground during:
  - Days with low cloud cover and high relative humidity, stable temperatures and low wind speeds
  - Later evening and early morning with cooler temps with higher RH

*Thank you!*

*Questions?*