



Smoke Management Program

Monterey Bay
Air Resources District
December 7, 2017 ¹

Types of Burning

Agricultural (Pile) Burns



Clean ag waste burned under permissive burn day conditions.

Range Improvement



High emission events objective is to move smoke above or away from populations.

Wildland Vegetation Management



Reduce hazardous fuel build-up along the Wildland-Urban Interface, in parks and other public lands.

Smoke Management Program

Air Districts are required by State law to manage smoke from large outdoor burns:

- Smoke management permit
- Smoke management plan
- Favorable meteorology

Purpose of SMP

- Protect public health!
- Avoid public nuisance
- Avoid exceeding air quality standards
- Support land management needs

Regulatory Background

- **California Health and Safety Code**
 - “It is the intent of the legislature...that agricultural burning be reasonably regulated and not be prohibited.”
- **California Code of Regulations**
 - Ensures that air districts develop programs to accommodate agricultural and prescribed burning in their areas.
- **Rule 438**
 - Allows burning while minimizing smoke impacts on the public.

Permit Process

- Free!
- Small Pile Burns – Use on-line System
- Large Pile Burns (10 Acres) and Prescribed Burns
 - Contact District
 - Smoke Management Plan
 - Prescribed Fire Information Reporting System (PFIRS)
 - Field inspection
- Contact District to renew or modify

Permits – Pile Burning

- Always Check with Local Fire Agency!
- Need an Air District Permit if Fire District Doesn't Issue a permit
- Do not Need an Air District Permit if Fire District Issues a Permit

Pile Burns - Ag Burn Webpage

• www.mbard.org

The screenshot shows a webpage with a navigation bar at the top containing links for HOME, AIR QUALITY, NEWS, PROGRAMS & RESOURCES, DISTRICT, and CONTACT. Below the navigation bar is a section titled "Smoke Management". On the left side of this section, there is a vertical list of links: "Monterey Bay Air Resources District > Programs & Resources > Planning > Smoke Management > Smoke Management Permits for Ag Burning", "Permit Application", "Request Daily Authorization", "Pile Burn Emission Calculator", and "Burn Day Forecast". The main content area on the right features a prominent red text alert: "ATTENTION! CALFIRE has suspended ALL burning in Monterey and San Benito Counties where CALFIRE has jurisdiction. CLICK HERE for CALFIRE press release." Below this alert, there is a paragraph of text explaining that the information is intended for stack burning of vegetation from agriculture and land management, and that agricultural burn permits are not intended for backyard burning. A link to "Backyard Burn Permits" is provided. A final paragraph mentions that land management burning is used to dispose of woody waste cleared from wildland areas.

HOME AIR QUALITY NEWS PROGRAMS & RESOURCES DISTRICT CONTACT

Smoke Management

Monterey Bay Air Resources District > Programs & Resources > Planning > Smoke Management > Smoke Management Permits for Ag Burning

Permit Application

Request Daily Authorization

Pile Burn Emission Calculator

Burn Day Forecast

ATTENTION! CALFIRE has suspended ALL burning in Monterey and San Benito Counties where CALFIRE has jurisdiction. [CLICK HERE](#) for CALFIRE press release.

The information on this page is intended to address stack burning of vegetation from agriculture and land management. If you are planning to conduct broadcast burning, development burning, or other burning activities, please contact the Air District at (831) 647-9411. **Please note that agricultural burn permits are not intended for Backyard Burning. If you need a backyard burn permit please follow this link: [Backyard Burn Permits](#).**

Agricultural burning is used to dispose of agriculture waste generated in the process of growing of crops, or the raising of fowl, animals, or bees by a legitimate agricultural operation.

Land management burning is used to dispose of woody waste cleared from wildland areas

On-Line Ag Burn System

MONTEREY BAY

AIR RESOURCES DISTRICT _____ SMOKE MANAGEMENT/AGRICULTURAL BURN PERMITS
24580 SILVER CLOUD COURT * MONTEREY, CALIFORNIA 93940 * 831/647-9411 * FAX 831/647-8501

LOG IN

Please enter your username and password. [Register](#) if you don't have an account.

Account Information

Username:

Password:

Keep me logged in

Log In

[Forgot password](#)

Prescribed Burns

- www.mbard.org

HOME AIR QUALITY NEWS PROGRAMS & RESOURCES DISTRICT CONTACT

Smoke Management

Monterey Bay Air Resources District >
Programs & Resources > Planning >
Smoke Management > Smoke
Management Permits for Rx Burning

Permit Application

Burns Currently Planned

Pile Burn Emission
Calculator

Burn Zone Map

Fire District Map



Smoke Management Permits for Rx Burning

The District permits the use of broadcast burns for the purposes of managing wildlands, range improvement, or improving wildlife habitat in accordance with state regulations and District Rule 438.

For information on prescribed burning at the former Fort Ord please visit [Fort Ord Cleanup](#).

Fire agencies may also require burn permits for Rx burning. Please contact your local fire agency to obtain permits and for further

Smoke Management Plan - PFIRS

PFIRS Prescribed Fire Information Reporting System

Front Page ARB Products Local Agencies Support

Current Ignitions in PFIRS Username: Password: [Log In](#) [Forgot Password?](#)

View Ignitions By: Agency Burn Status Select Start Date: Select End Date: [View](#) [Larger Map](#)

NPS USFS BLM USFWS CalFire CA Parks Tahoe Conservancy Local Fire Local Non-Fire Private

Map Satellite

Smoke Management Plans

- Provide clear and accurate maps
- Identify location of smoke sensitive areas
- Identify favorable wind direction
- **Manageable burn unit size** – Complete one before moving on
- Escaped fire and extinguishing plan
- Avoid flare-ups on days following the burn

Smoke Management

GOOD SMOKE MANAGEMENT

*Smoke jettisoned vertically 1,000's of feet
in the air, far above population.*



BAD SMOKE BEHAVIOR

*Smoke tracking along the ground where it
can impact nearby communities.*



Approach to Smoke Management

- Minimize duration of burn and smolder
 - Quick, hot and complete burn with minimal smolder.
 - Bulk of smoke emissions before sunset.
- Vertical plume rise
 - Hot fire lofts smoke high above the surface.
 - Meteorological conditions that develop a vertical plume, directing smoke away from populated areas.



Avoid Significant Smoke Impacts

Authorize a burn based on consideration of...

- Meteorology
- Size/Area
- Vegetation Type
- Location
- Proximity to population

Improving Meteorological Tools

- Utilize improved modeling tools for forecasting
- On-site Remote Automated Weather Station
- Provide earlier forecasting
- No cost spot weather forecast from National Weather Service
- On-site weather balloons or drones



Radiation Inversion

Altitude

Temperature increasing with height in the inversion layer

Temperature reduces with height above the inversion layer

Warmer layer of air above remains unaffected by the cold surface

Lower layer cools by contact with the cold surface

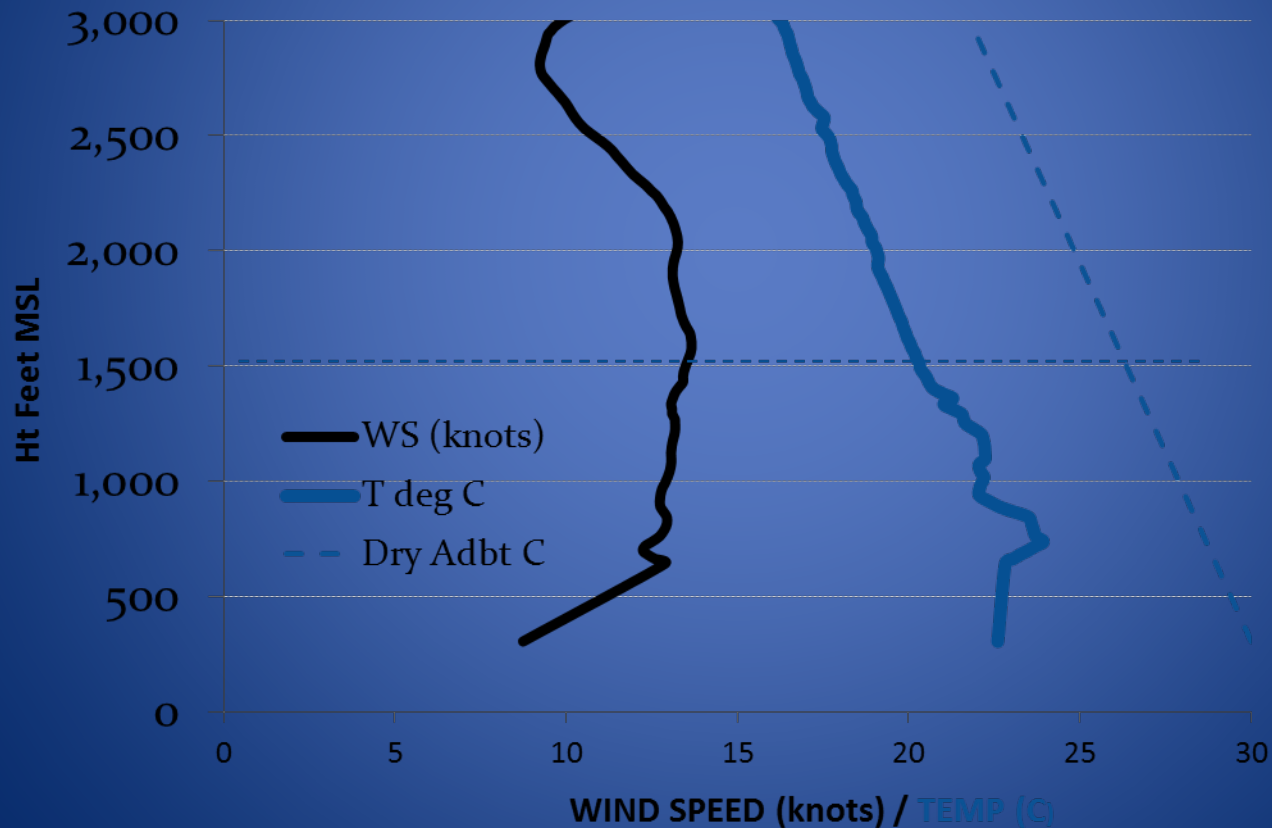
Temperature



Example: Vertical Observations

Radiosonde Plot

10:58 am PST 5/29/2013





Smoke Behavior in Marine vs. Inland Settings



Marine - Smoke becomes trapped under the marine inversion and is pushed to the ground-level.

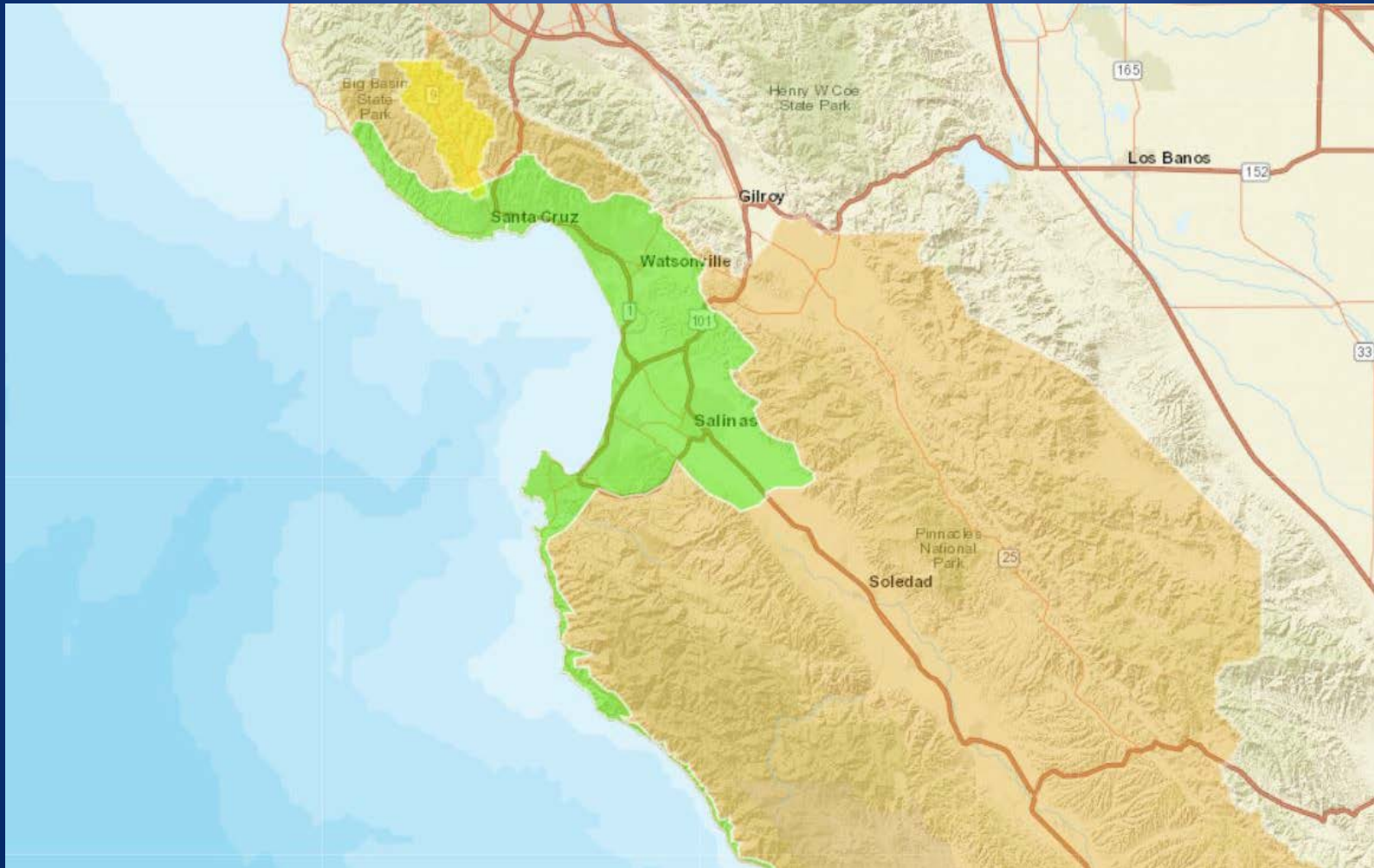
Inland – Plume rise tends to be much less restricted, generally allowing smoke to rise more vertically.



Met Challenges

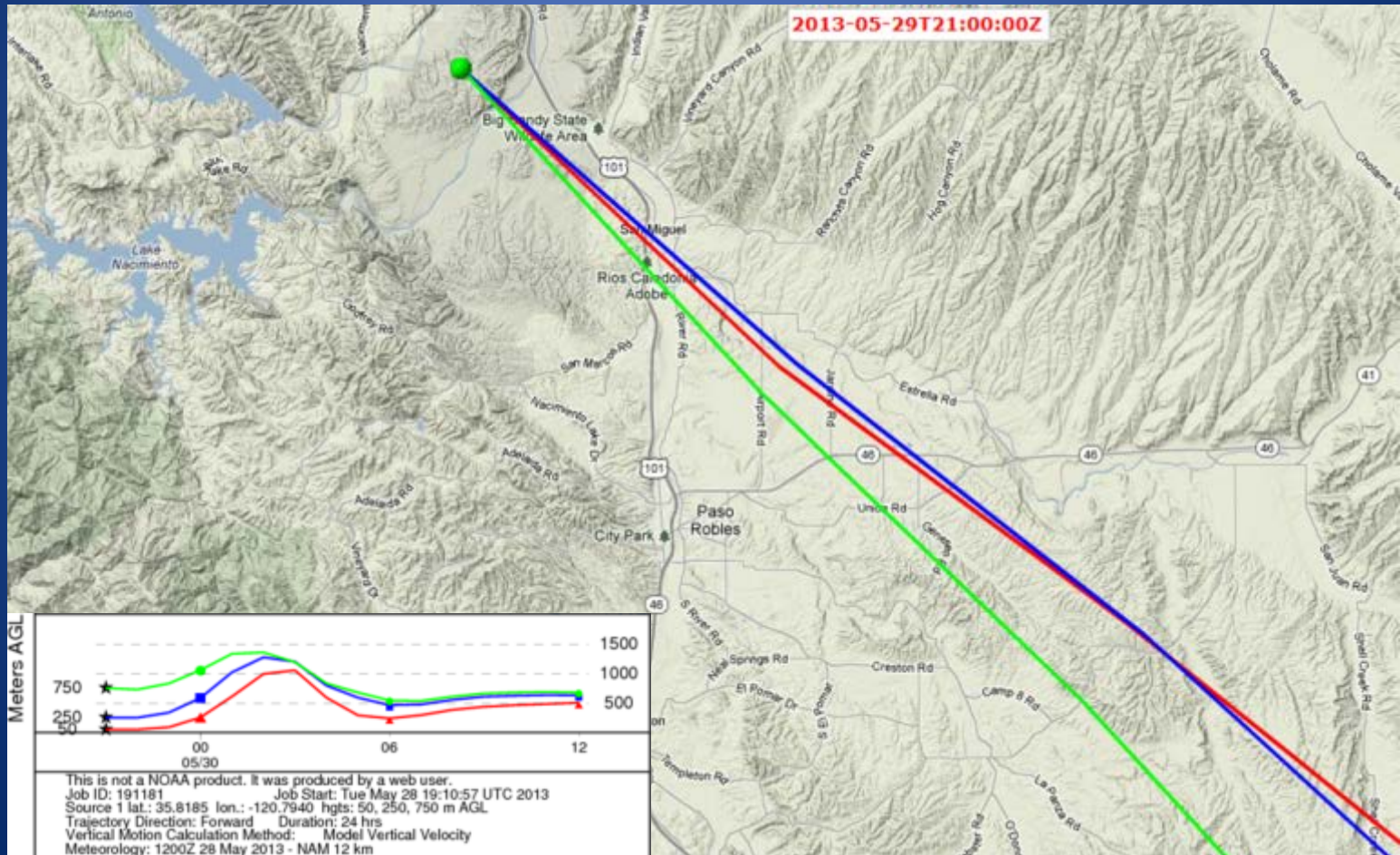


Burn Zone Map



Example: Forecast Trajectory

Camp Roberts Burn – Forecasted Smoke Trajectory



Smoke management and fuel moisture

- Higher fuel moisture means:
 - Decreased combustion
 - Increased smoke production

Smoke management and fuel moisture

- For a cleaner, more complete burn, anticipate seasonal and annual changes in fuel moisture
 - Burn when brush is dormant
 - Burn when brush is past new growth and flowering stages

CAL FIRE Uses of Fuel Moisture Data

- Fire Uses:
 - Hire and Layoff of Seasonal FFs
 - Transition & Peak Staffing
 - Staffing Patterns
 - Burn Ban
 - Prescribed Burn Planning/Implementation
- Other Uses:
 - Research
 - Remote Sensing Calibration

A Successful Burn...

- Minimal impacts on populated areas
- No public nuisance complaints
- No exceedance of Air Quality Standards
- Rx Burn objectives achieved

La Macchia Rx Burn







CARL MOYER GRANT PROGRAM APPLICATION WORKSHOP



FUNDS AVAILABLE TO REPLACE YOUR OLD ENGINE OR EQUIPMENT

Engines/equipment funded by the District include:

- Irrigation pumps
- Commercial fishing/research/charter vessels
- Agriculture and construction equipment
- Other off-road equipment



January 10, 2018
19 Upper Ragsdale Dr
#200 (MST Boardroom)
10:00 a.m. — 12:00 Noon
Monterey, California 93940



APPLICATIONS ACCEPTED
January 16 – March 16, 2018

For more information please contact
Hanna Muegge at hmuegge@mbard.org
or call (831)718-8021



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