

# **Fort Ord Prescribed Burn Program**

**August 2014**

***Presentation by:***

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Prescribed Burn Manager**

**Chenega Support Services for :  
Fort Ord BRAC Office and Presidio of Monterey Fire Department**

# Fort Ord History

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- Fort Ord was in operation from 1917-1994
- National Priorities List site (EPA Superfund) - 1990
- Identified for Base Closure - 1991
- Began Munitions Investigation - 1993
- Prescribed Burning Began – 1994
- Munitions Response Remedial Investigation/Feasibility Study (MR RI/FS) process began 1998

# Background

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## Impact Area Remedial Action CERCLA Cleanup Process:

- Remedial Investigation / Feasibility Study (RI/FS):
  - What is required for clean up and a review of all viable methods
  - Vegetation clearance methods studied as part of cleanup process
  - Habitat Management Plan / Biological Opinions
- 2008 Track 3 Impact Area Record of Decision (ROD)
  - Clean up process selected including vegetation clearance method
- Remedial Design / Remedial Action Work Plan (RD/RAWP)
  - Clean up strategy: Transfer to BLM for habitat reserve for public use

# Why We Burn

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- Part of the selected remedy in the CERCLA ROD
- To clear vegetation so that ordnance removal can be conducted safely, for safe reuse of property.
- Burning promotes healthy Central Maritime Chaparral habitat which is home to many rare, threatened and endangered species. (Cutting is detrimental to chaparral recovery.)
- Required for Army predisposal actions by Biological Opinions issued by U.S. Fish and Wildlife Service in accordance with the Endangered Species Act and for mitigation measures within Critical Habitat for Monterey Spineflower.



# Why We Conduct MEC Removal

## Monterey Peninsula Herald

MONTEREY, CALIFORNIA, MONDAY, APRIL 18, 1949.

### Children Apparently Took Grenades In Restricted Area

A spent grenade cartridge that blew up and injured two nine-year-old children Monday afternoon was apparently taken by them from a restricted area on the post sometime last week, the Fort Ord Information Office reported today.

### East Monterey Boy Loses Legs in Shell Explosion at Ord

MONTEREY PENINSULA HERALD, MONTEREY, CALIFORNIA, MONDAY, APRIL 25, 1949.

### "Dud" Kills Boy of 13

### "Dud" Shell Kills Boy Thirteen

### 11-Year-Old Brother Critically Injured

Visit to Fort Ord Artillery Range Ends in Death, Injury

An excursion to the "forbidden zone" of a Fort Ord artillery range cost the life of a 13 year old Seaside boy and left his 11 year old brother fighting an apparently losing battle for life in a military hospital here today.

### Boy, Girl, 9, Wounded By Exploding Grenade

Two nine-year-old children are hospitalized with shrapnel wounds today following an accidental explosion yesterday afternoon at Fort Ord, the Fort Ord Information Office reported.

### Seaside Boys Awarded \$185,000 by Federal Court for Loss of Limbs in Ord Accident







*Monterey Spineflower*



*Yadon's Piperia*



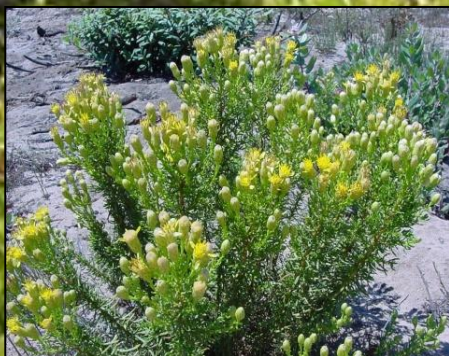
*Sandmat Manzanita*



*Monterey (Toro)  
Manzanita*



*Coast Wallflower*



*Eastwood's Ericameria*



*Seaside  
Bird's Beak*



*Black Legless Lizard*



*Monterey Ceanothus*



*Monterey Sand Gilia*



*California Tiger  
Salamander*



*Coast Horned Lizard*

# Central Maritime Chaparral

## *Rare, Threatened and Endangered Species*



# **Burn Process**

# Burn Goals

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Goal 1: Complete prescribed burn operations with no injuries.

Goal 2: Hold the burn within the established containment lines located around the burn units.

Goal 3: Minimize smoke impacts.

Goal 4: Clear vegetation to facilitate a safe MEC remedial action.

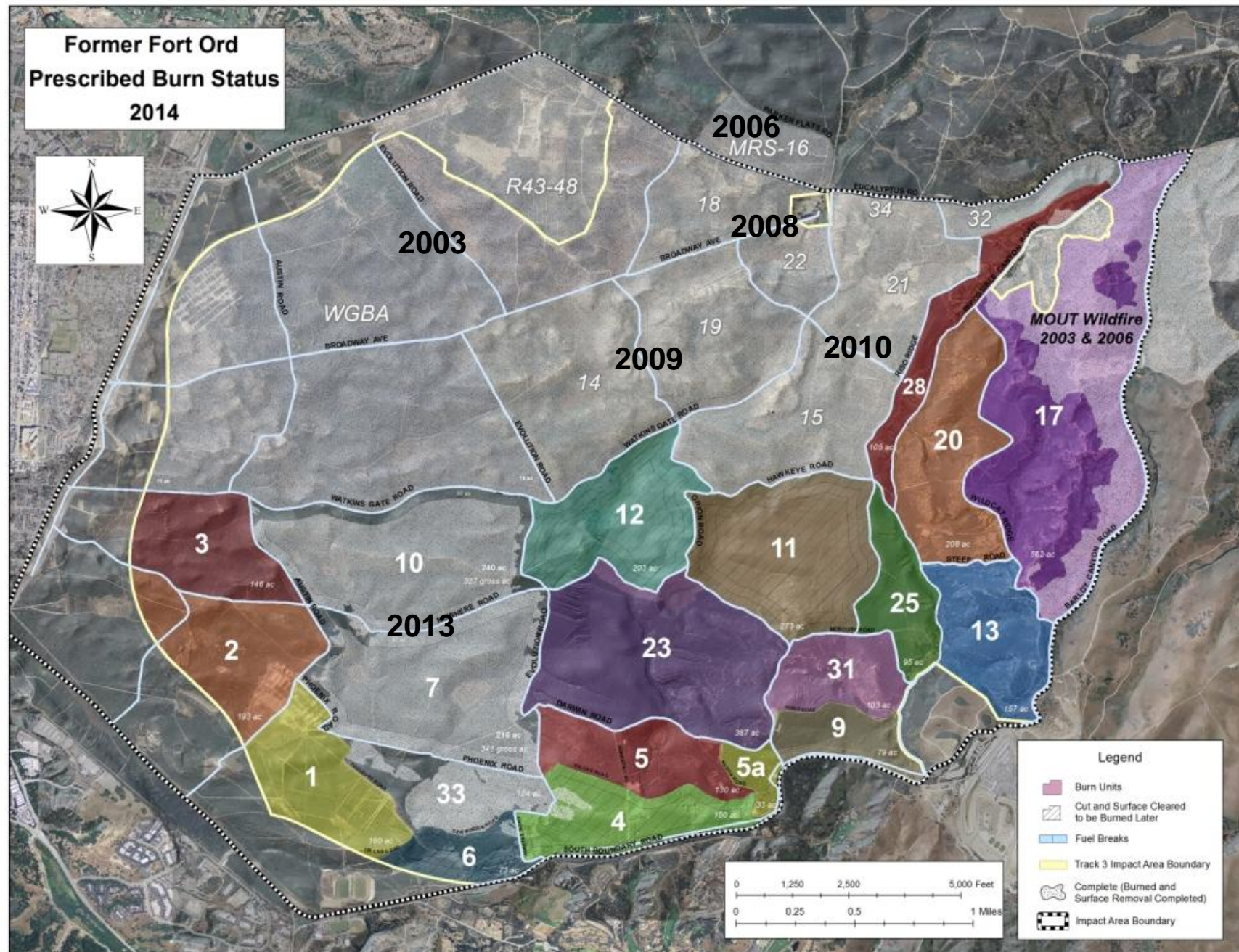
Goal 5: Minimize damage and promote conservation of rare, threatened, and endangered species.

# When Do We Burn?

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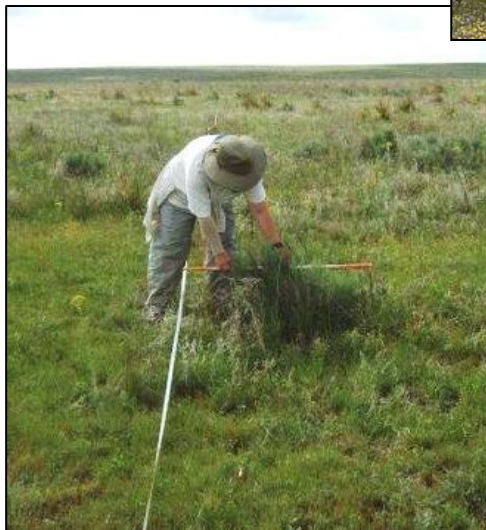
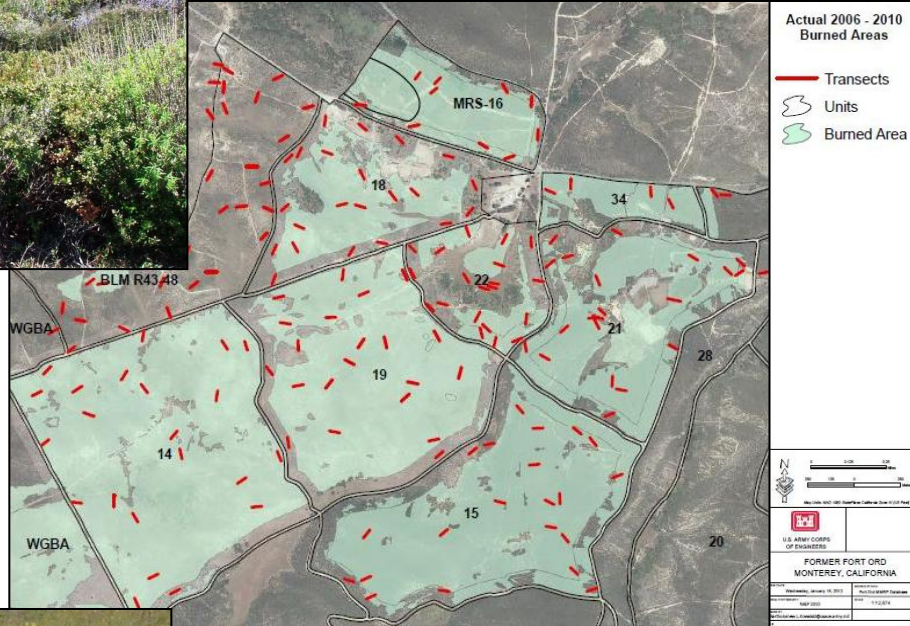
1. Burn Season: July through December
  2. Specific Weather Conditions (Burn Prescription)
  3. Availability of Local Emergency Services
  4. Availability of Contract Resources
- *No Burn Days:*
    - *Certain Community Events*
    - *Red Flag Days* (drought + very low relative humidity + high/erratic winds)

# Burn Status





# Biological Monitoring





# Vegetation Cutting

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**Before**



**After**





# Water Resources



4 – Dip Locations:  
30-50K gal each

180K gal of staged  
and mobile water  
onsite



# Helipad / Helitorch



# Burn Prescription

ENVIRONMENTAL VARIABLES	CONSUMPTION RANGE	
Relative Humidity %	20	80
Temperature (F)	90	45
Live Fuel Moisture %	60	100
Projected Plume Height	1,500 ft	
Surface Wind Speed	7 mph – gusts NTE 12 mph	0 - <5 mph
Surface Wind Direction	Preferred: <i>otherwise:</i>	Light and Variable SE thru N to W
Transport Wind Direction	Preferred: <i>otherwise:</i>	Light and Variable SE thru N to W



# On-Site Meteorological Equipment

## Weather Stations



## SoDAR

(Sonic Detection and Ranging system )





# Aerial Operations

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# Smoke Behavior

**Plume Height:** Plume form with smoke rising vertically and convective inflow all around plume base sweeping smoke up into the column.



# Plume Effects

The two common questions received are regarding ash fall and the sun being temporarily obscured. The sun being blocked by the smoke column is a testament to the density of the smoke column meaning the majority of the smoke is going aloft instead of being ground level and in breathing space.

The ash is too large to be inhaled and it's an indicator of rapid consumption of the vegetation indicating a quick burn and less smoldering.





# Smoke Behavior - Smoldering

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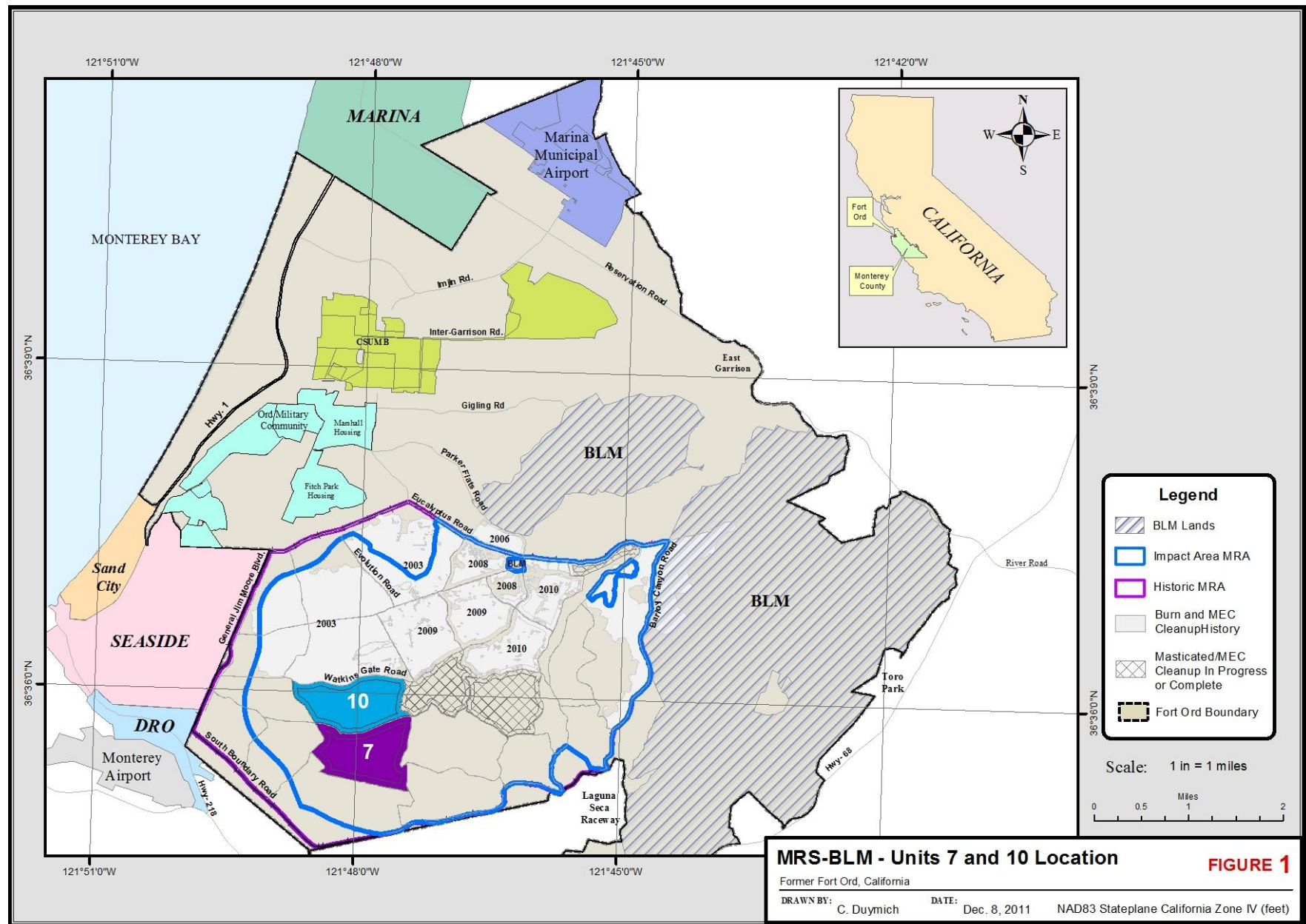
Without the heat of the active ignition and/or active fire the residual smoke from the burn does not have the power to drive the smoke up into a vertical column structure and instead wafts into low lying valleys.





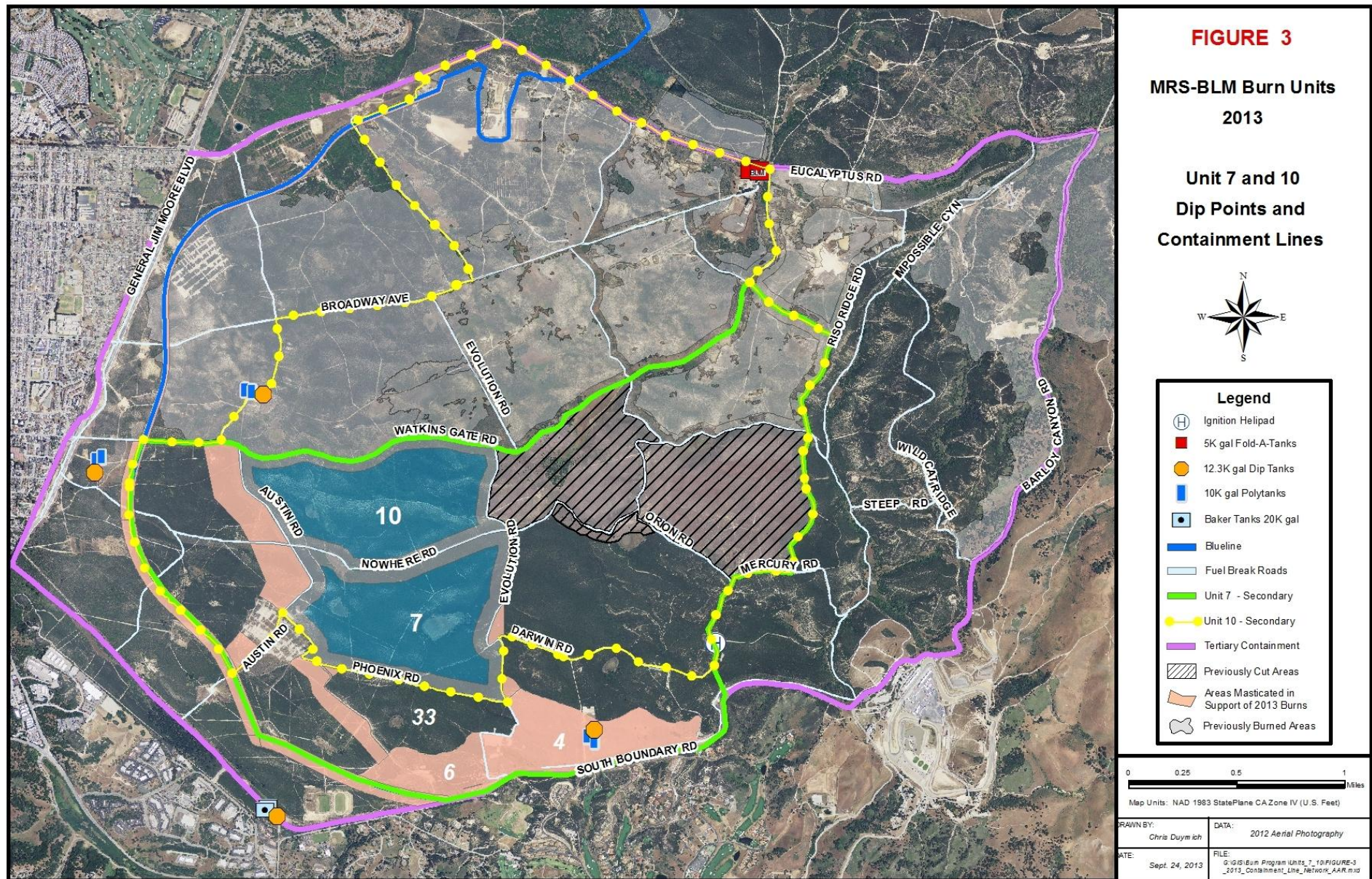
**2013**

# 2013 Burn Unit Locations



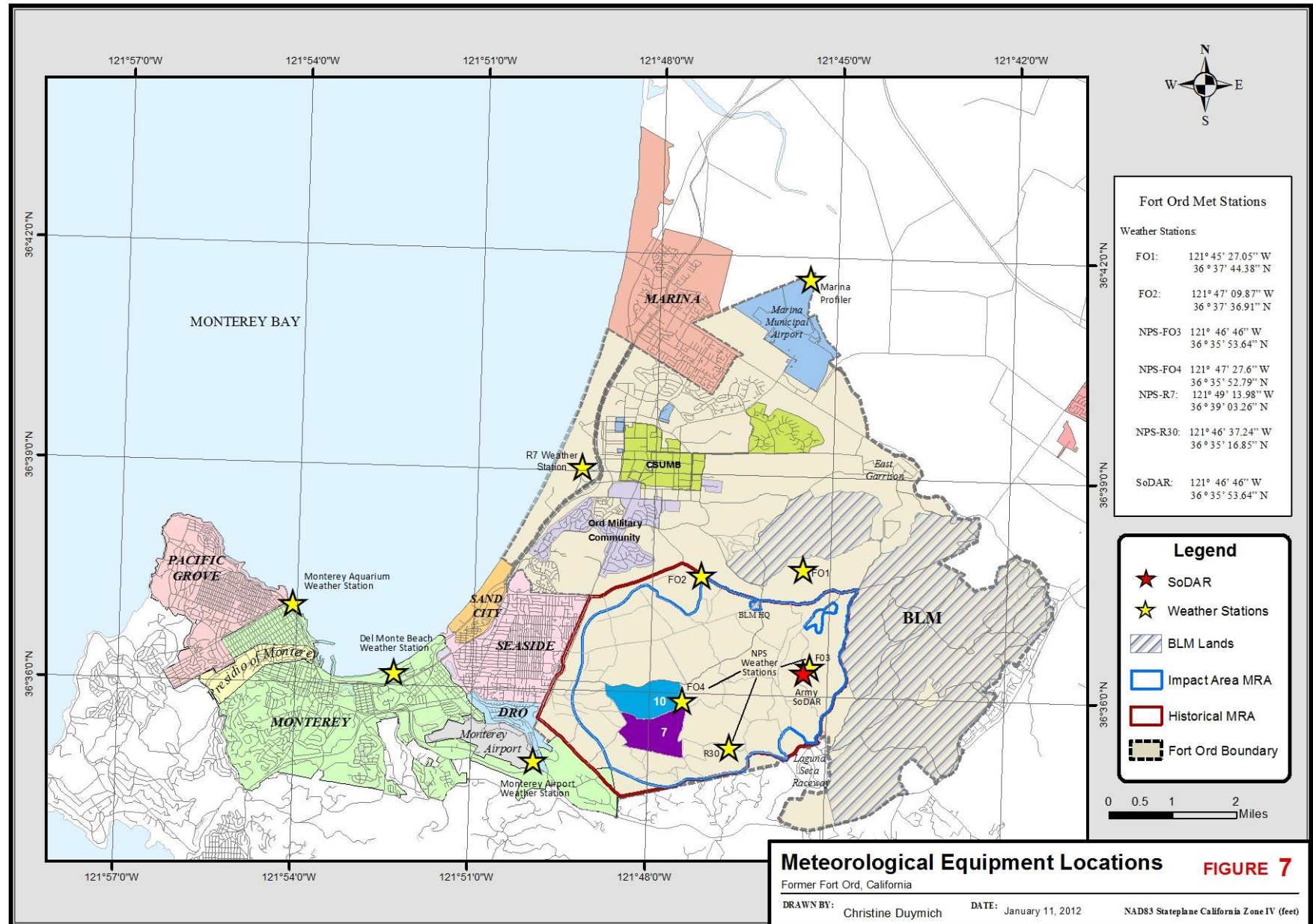


# Containment Network





# On-Site Meteorological Equipment



# MBUAPCD Radiosonde Launch

Monday, 10/14/13





# Unit 10 - Monday 10/14/13

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Test Burn -10:13 a.m.



# Unit 10 - Monday 10/14/13

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Active Ignition:  
10:23 – 12:15 p.m.





# Unit 10 - Monday 10/14/13

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Burn Progression





# Unit 10 - Monday 10/14/13

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# Unit 10 - Monday 10/14/13

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Post-Ignition 12:35 p.m.





# Smoke Behavior



These pictures, from 2013 burns show a clear layer of air underneath the intact base of the plume.

Ideal plume forms are aloft over populations with the well defined base remaining intact.

The Unit 10 smoke plume lofted over 2,500 feet above ground.



# Smoke Behavior - Smoldering

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Without the heat of the active ignition and/or active fire the residual smoke from the burn does not have the power to drive the smoke up into a vertical column structure and instead wafts into low lying valleys.





# MBUAPCD Radiosonde Launch

## Tuesday, 10/15/13





# Unit 7 - Tuesday 10/15/13

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Test Burn 9:27 a.m.





# Unit 7 - Tuesday 10/15/13

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Active Ignition 9:30 a.m.





# Unit 7 - Tuesday 10/15/13





# Unit 7 - Tuesday 10/15/13

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## Burn Progression









# Unit 7 - Tuesday 10/15/13

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## Spot Fires in Unit 33



# Unit 7 - Tuesday 10/15/13

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# Smoke Behavior

During the active ignition and post-ignition, the smoke plume from Unit 7 lofted 1,800 above ground.

Unit 7 smoke plume shows clear cushion of air between and ground surface.



FORT ORD

OCT 15, 2013 18:18 293K

1:18 p.m. -Naval Postgraduate School

# Unit 7 - Tuesday 10/15/13

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## Smolder Phase





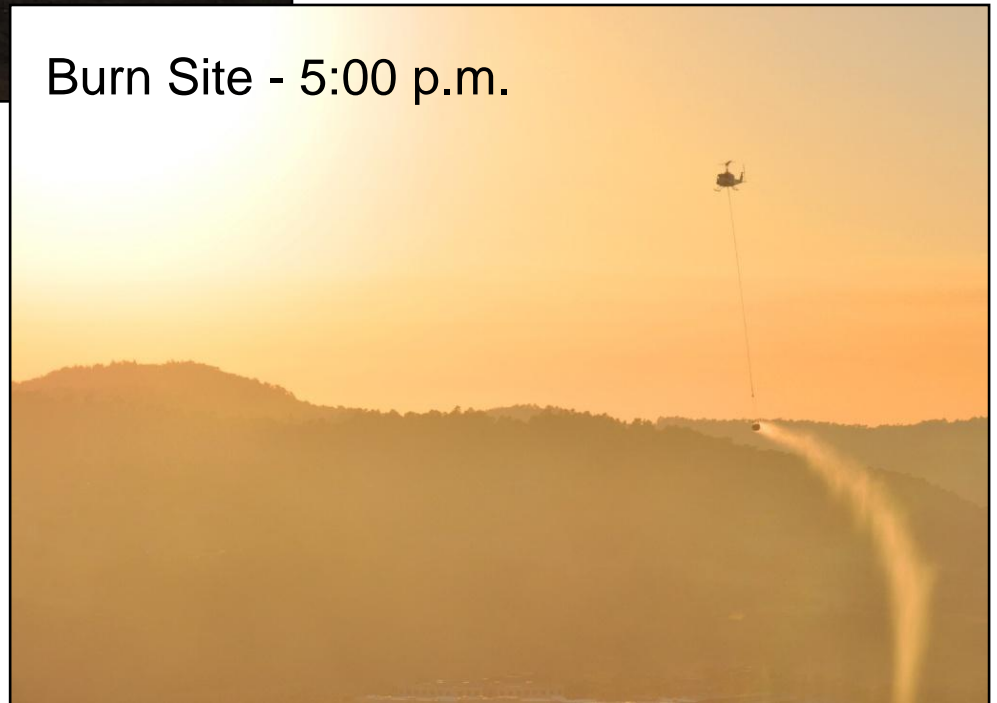
# Unit 7 - Tuesday 10/15/13

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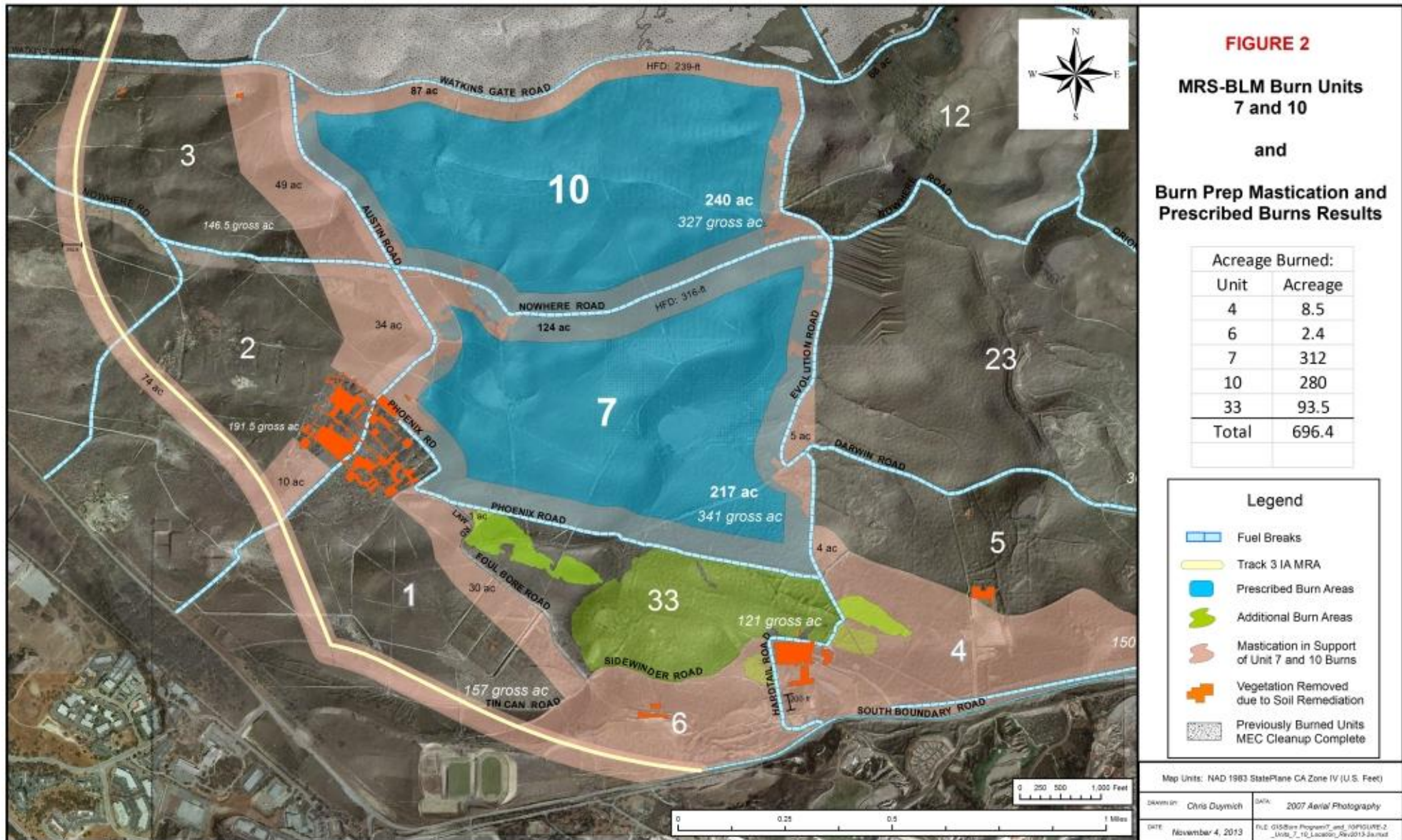
San Benancio - 5:00 p.m.



Burn Site - 5:00 p.m.



# Burn Consumption





# Unit 10

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Before



After



# Unit 7

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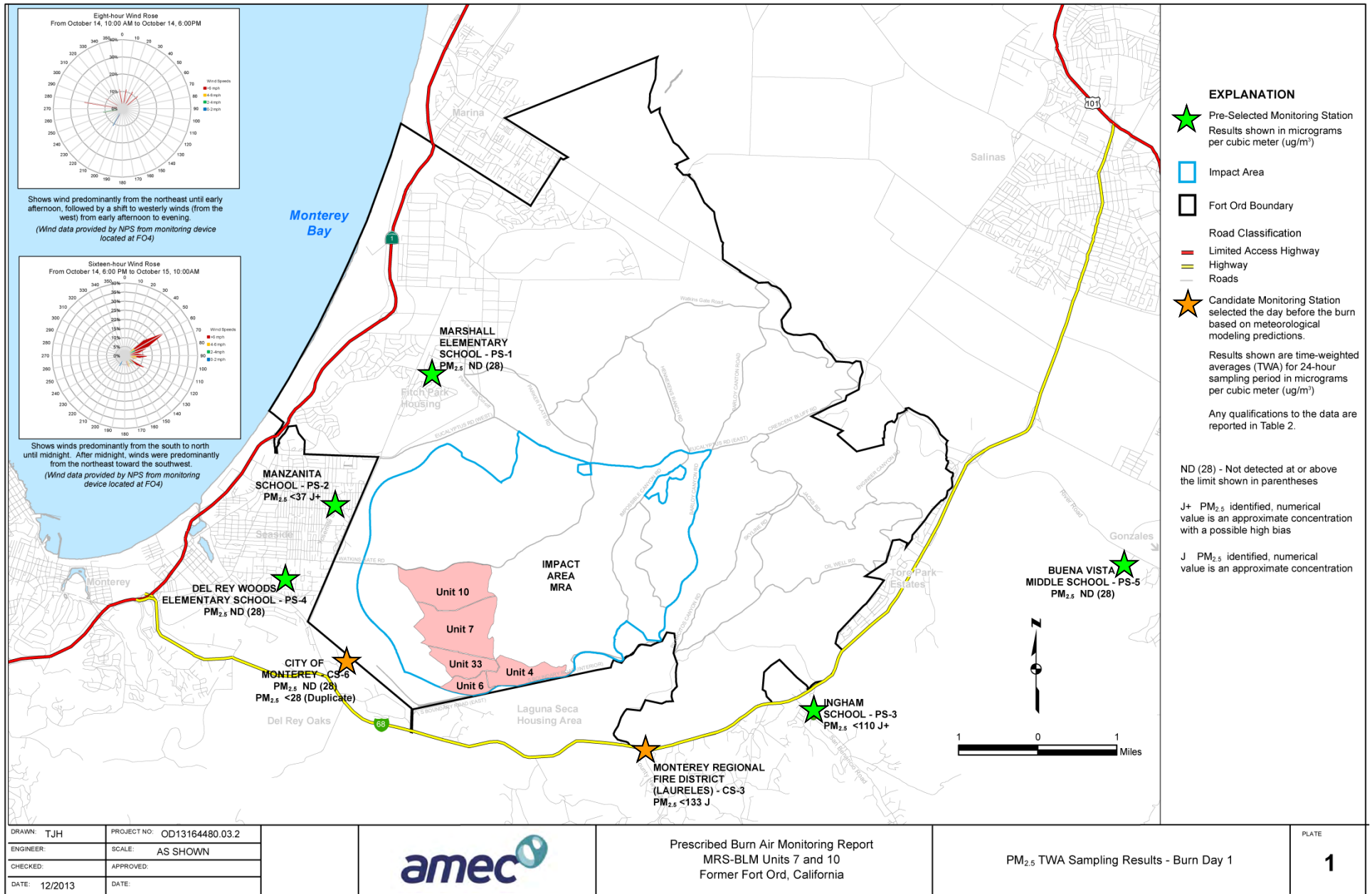
Before



After



# 2013 Air Monitoring Locations



# Related Documents

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- **MRS-BLM Units 7 and 10 Prescribed Burn Plan**
  - Final (Revised) Issued April 2013 (OE-0764C)
- **Prescribed Burn Air Sampling and Analysis Plan, MRS-BLM Burn Units 7 and 10**
  - Final Issued July 2012 (OE-0764A – Attachment F)
- **Site Specific Work Plan, Munitions and Explosives of Concern Remedial Action, MRS-BLM Units 6, 7 and 10**
  - Final Issued July 2012 (OE-0765B)
- **MRS-BLM Units 7 and 10 Prescribed Burn After-Action Report**
  - Draft Final Issued May 2014 (OE-0812A)

[www.fortordcleanup.com](http://www.fortordcleanup.com)



# Overview: Prescribed Burn Outreach

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- Community Outreach
  - Hotline operators and web updates
  - Press releases and newspaper ads: Herald, Californian, and El Sol (in Spanish)  
PUBLISHED: 17JUN13
  - Notify OMC housing, Monterey County Health Department, and other community organizations and agencies
  - Phone calls to key individuals and agencies potentially affected by the burn operations
  - Direct Notification Program: Participants receive personal notification at burn mobilization, ignition, and completion via phone calls, texts, or e-mails, or all three, if that's their choice
  - Burn day information through social media and FortOrdCleanup.com

Updates available at [www.FortOrdCleanup.com](http://www.FortOrdCleanup.com) and **1-800-852-9699**

*QUESTIONS?*