

Las Conchas Fire @ Los Alamos

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- **Combination of two presentations:**
 - **Preparing for the Next Big Fire... and Getting It: The Las Conchas Fire and Los Alamos National Laboratory**
 - **Las Conchas Fire Response**

Outline

- Los Alamos Wildland Fire History
- Cerro Grande Lessons Learned
- Establishment of LANL Wildland Fire Program
- 2011 Fire Conditions at Los Alamos
- Fire Start and Progression
- LANL On-Site Actions
- LANL Successes & Lessons Learned

Los Alamos Topography



Los Alamos Wildfire History

- 1954: Water Canyon, 6,000_{acres}
- 1977: La Mesa, 15,444_{acres}
- 1996: Dome, 16,516_{acres}
- 2000: Cerro Grande, 48,000_{acres}
- 2011: Las Conchas, 150,000_{acres}



Wildland Fire History

1954 Water Canyon Fire – ~ 6000 acres

1977 La Mesa Fire – 15,444 acres

1996 Dome Fire – 16,516 acres

1997 Lummis Fire – 1,500 acres

1998 Oso Fire - 5,185 acres

2000 Cerro Grande Fire – 45,000 acres

2002 Lakes Fire - 3,900 acres

2008 Ancho Canyon Fire – 17 acres

2009 San Miguel Fire - 1,635 acres

2010 South Fork Lake Fire - 17,100 acres

2011 Valle Canyon Fire – 95 acres

2011 Las Conchas Fire - ~156, 000 acres



Dome fire exploded on April 26, 1996, starting from an improperly extinguished campfire and continued until 16,516 acres in Capulin Canyon and the Dome Wilderness were burned.

Cerro Grande, May 2000

- “Uncontrolled Burn”
- Burned 39 buildings and 7500 acres on LANL



LANL Wildland Fire Program

- Lull in wildland fire activities after Cerro Grande
- 2007 DOE IG Report criticizes LANL's lack of a wildland fire program.
- LASO & LANL partner to incentivize establishment of the wildland fire program in FY2008-2010.

LANL Wildland Fire Program

- Fire Road inspection and maintenance



Wildland Fire Program



Wildland Fire Program

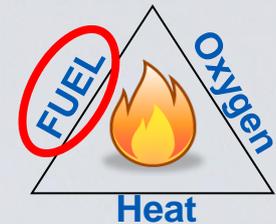
- Fire Break Inspection & Maintenance



Fire Road and Fire Breaks



Risk Mitigation Overview



- **Focus on reducing fuels—mechanical and personnel thinning**
- **Work was performed on 6 main areas to protect the laboratory and community**
 - Power lines
 - Dozer lines and mastication lines
 - Thinning process between gates
 - Removal of vegetation on roadways
 - Removal of vegetation and trees around bunker (Alternate EOC)

Risk Mitigation Continued

- Efforts to ensure protection of archaeology sites, habitats, and utilities are completed prior to mitigation work.

10/04/2009

Wildland Fire Program

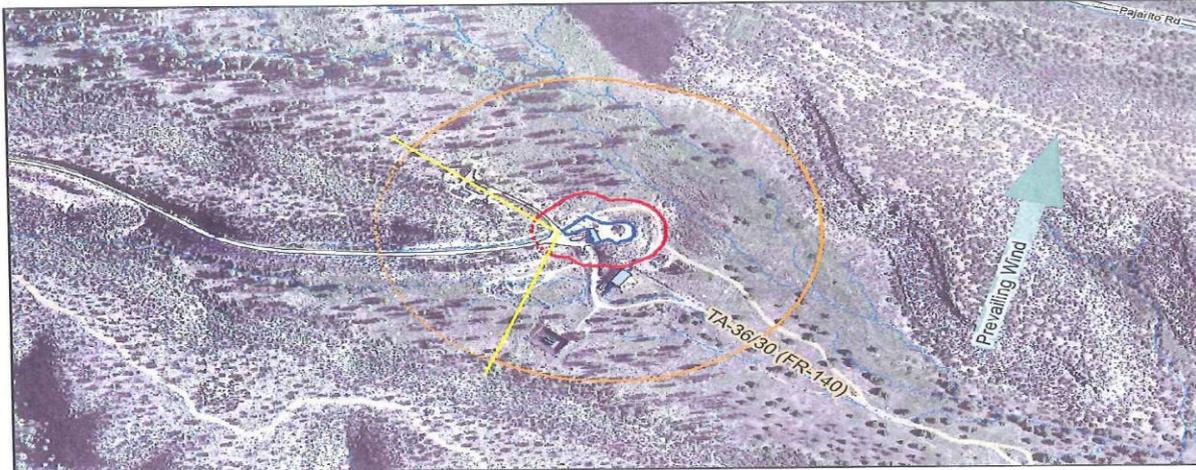


OFFICIAL USE ONLY

FUELS PRESCRIPTION LOWER SLOBBOVIA FIRING SITE LOS ALAMOS NATIONAL LABORATORY



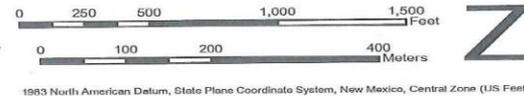
Map Reference # 20090506



LEGEND

- | | |
|---------------------|---------------------------------------|
| Prevailing Wind | Paved Road |
| Topographic Effects | Firing Point Mound |
| Slope Effects | Mowed Area - vegetation 6 in. or less |
| Site Drainage | Ladder Fuels Removed / Thinning |
| Fire Road | Building |

SCALE: 1:7,000



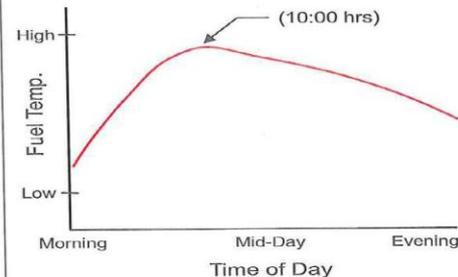
NOTES

Based on "Urban-Wildland Interface Code 2000"
The fuel-mitigated area will be maintained as follows:
Vegetation within the firing mound will be removed and the area maintained as bare mineral soil. The mowed area, which is a distance of 120-feet outward from the perimeter of the firing mound, will be cleared of combustible trees and brush; fine fuels (grasses) will be maintained at a 6-inch maximum height. The thinned area, which is the next 600-feet from the perimeter of the mowed area, will be thinned to a tree density of no more than 50/acre and limbs will be removed from the lower 8' on all remaining trees.

The Firing Site Leader will consider the Flammability Curve when scheduling shot activity during periods of HIGH or above fire danger. Every effort to schedule shot activity four hours prior to and or two hours after the peak burn period will be made.

Based on the size of the shot, engineering controls shall be used to minimize the dispersal of fragments to the area east of the firing mound as shown by the yellow line in the above map.

Flammability Curve



Wildland Fire Program

- Interagency Fire Center partnership

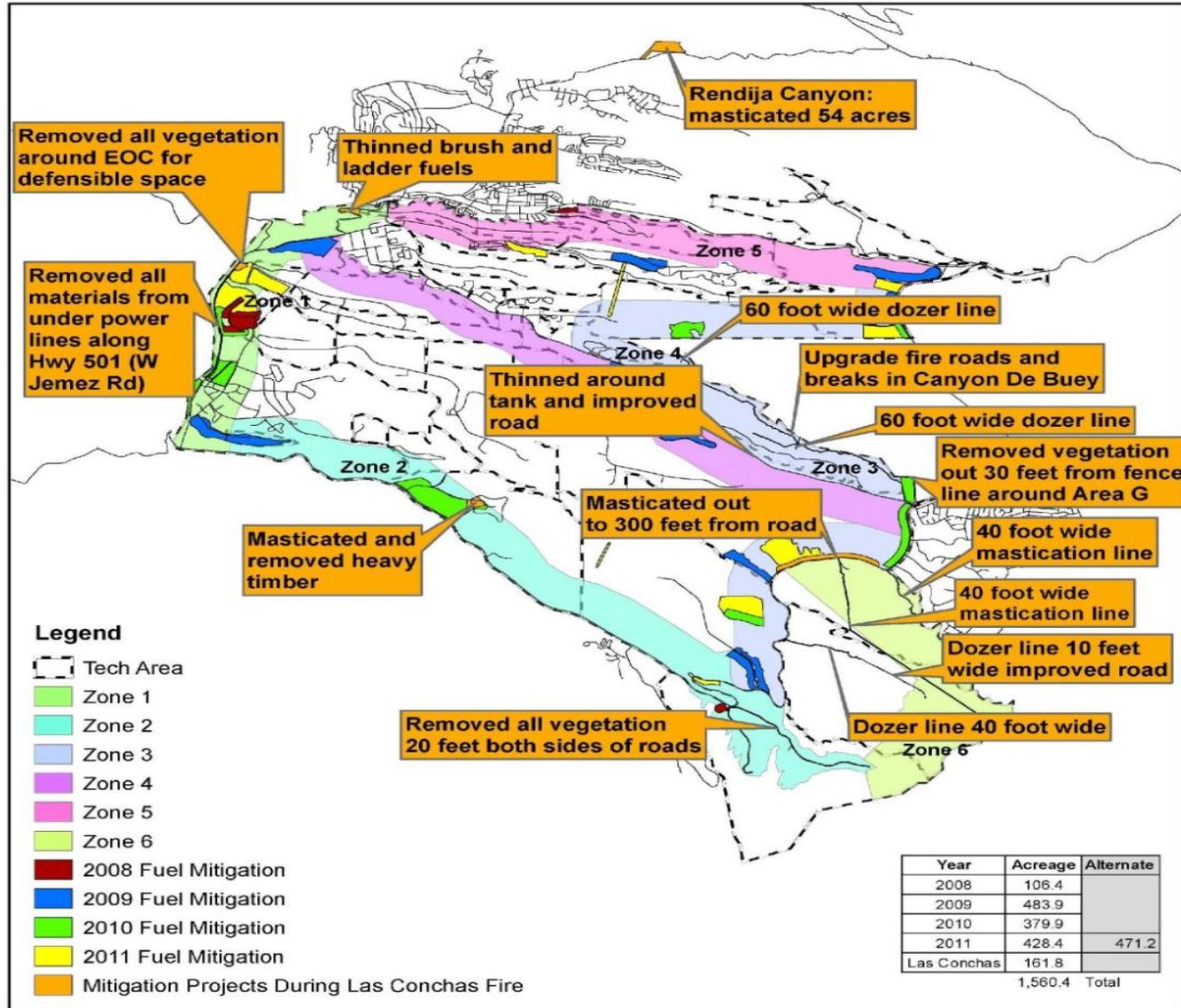


Wildfire Mitigation Plan

Fire roads
 Fire breaks
 Vegetation removal
 Defensible space



OVERVIEW MAP WILDFIRE MITIGATION PLANNING LOS ALAMOS NATIONAL LABORATORY

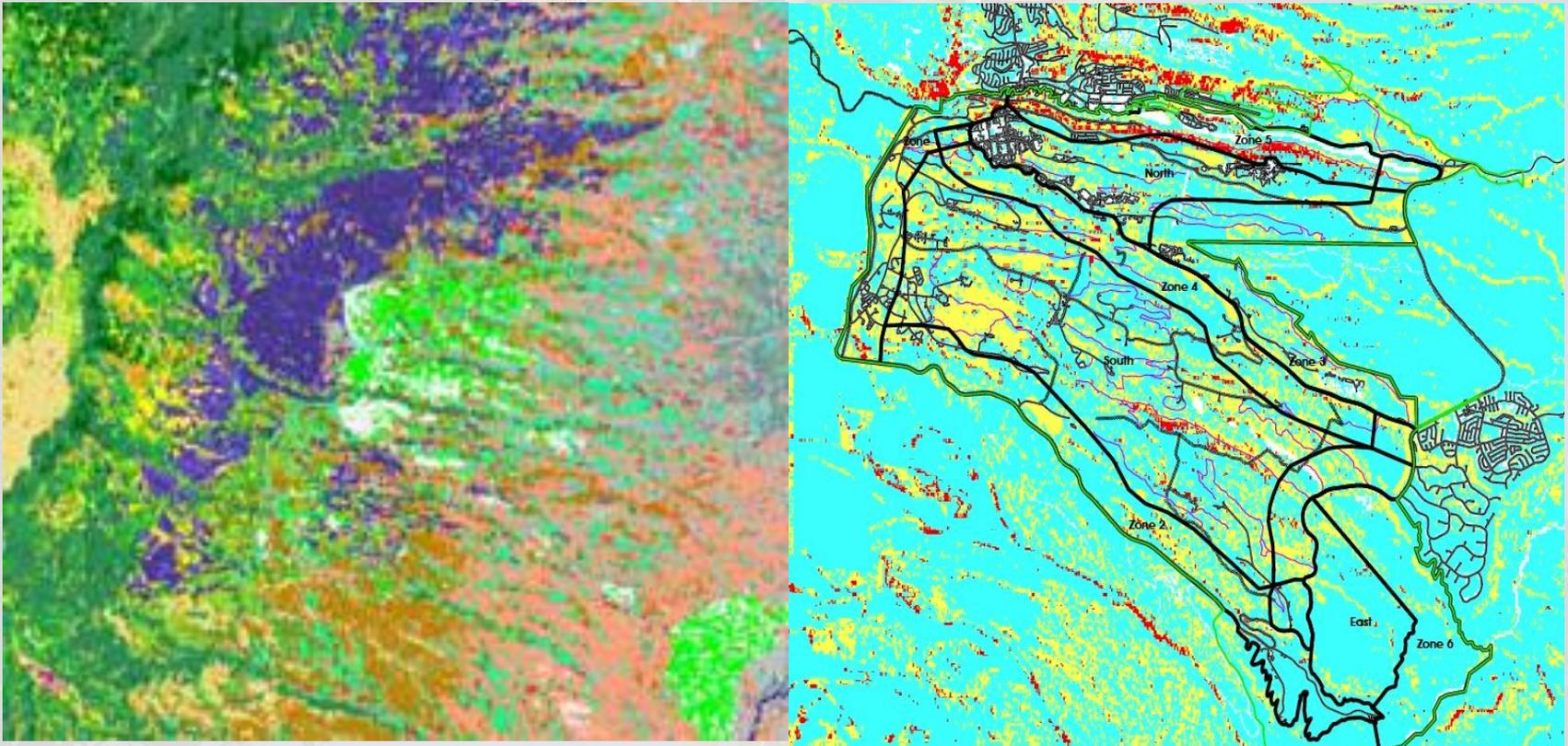


Emergency Management & Response
 Date: 20110707
 Map ID: 20071001-008



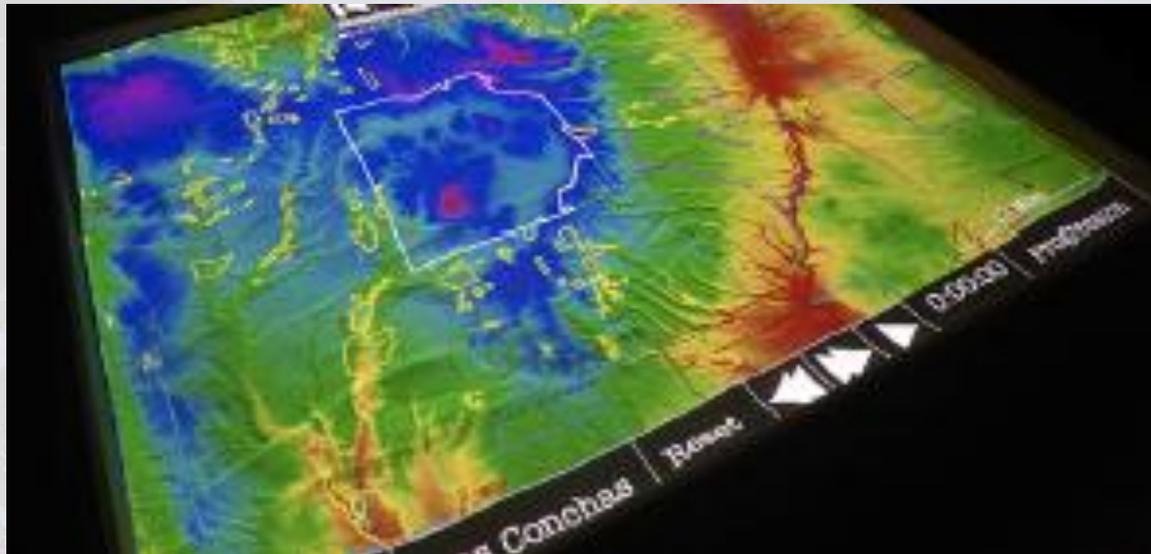
Wildland Fire Program

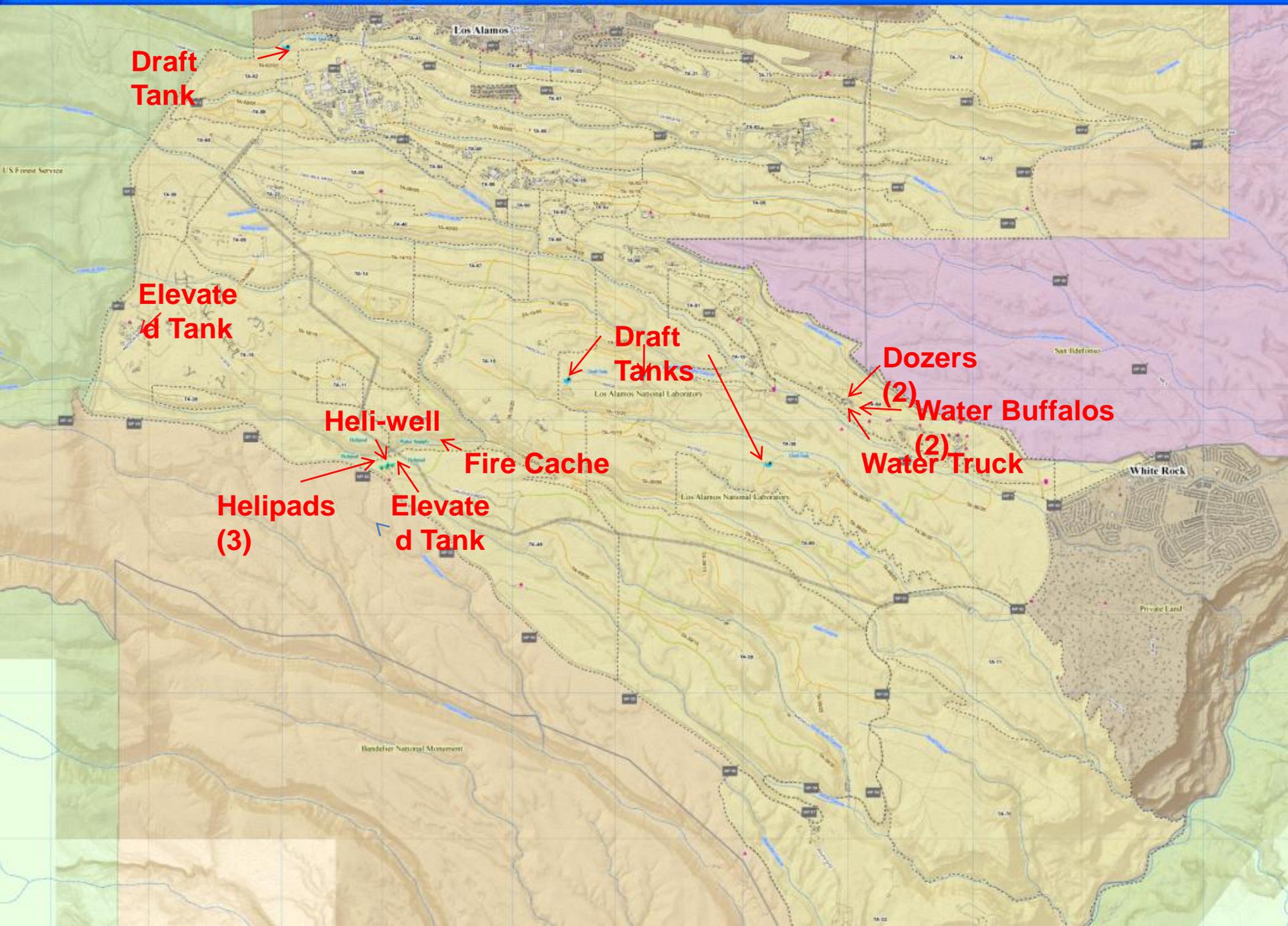
- Land Cover map
- Risk assessment



Wildland Fire Program

- Exercise Activities
 - Sandbox exercises with the Nat'l Park Service and US Forest Service
 - EOC Exercises (Full Scale & Quarterly Functional) with wildland fire nexus.





Thinning Projects @ LANL



Wildland Fire Program

BEFORE

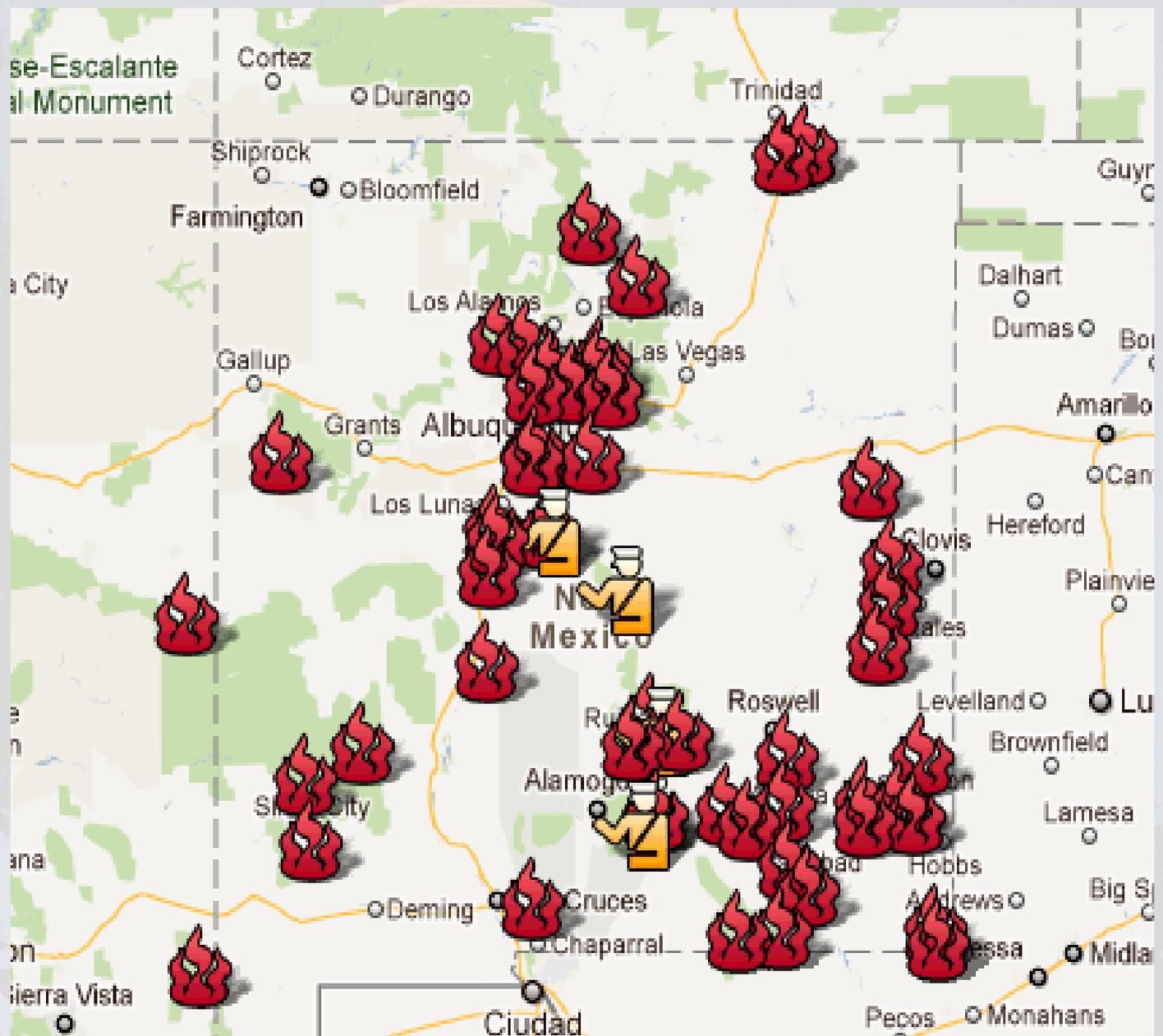
AFTER





NM in 2011

NM 2011 Wild Fires (Large Fires only)



Conditions

Dry, windy spring

Daily Fire reports – 100% ignition potential

Public Lands closed (Forest Service, NPS, State lands)

Evacuations

Smoke

Point of Origination.....

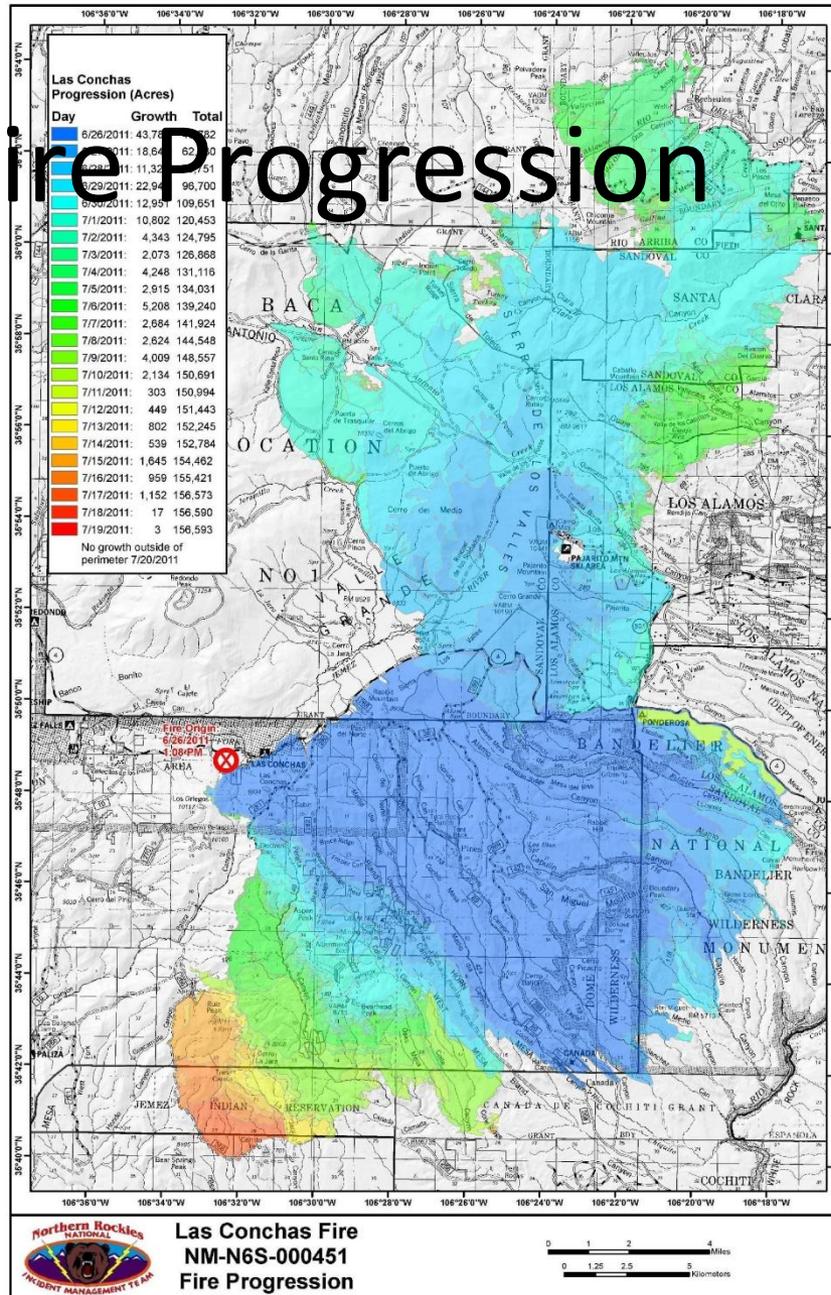


Statistics

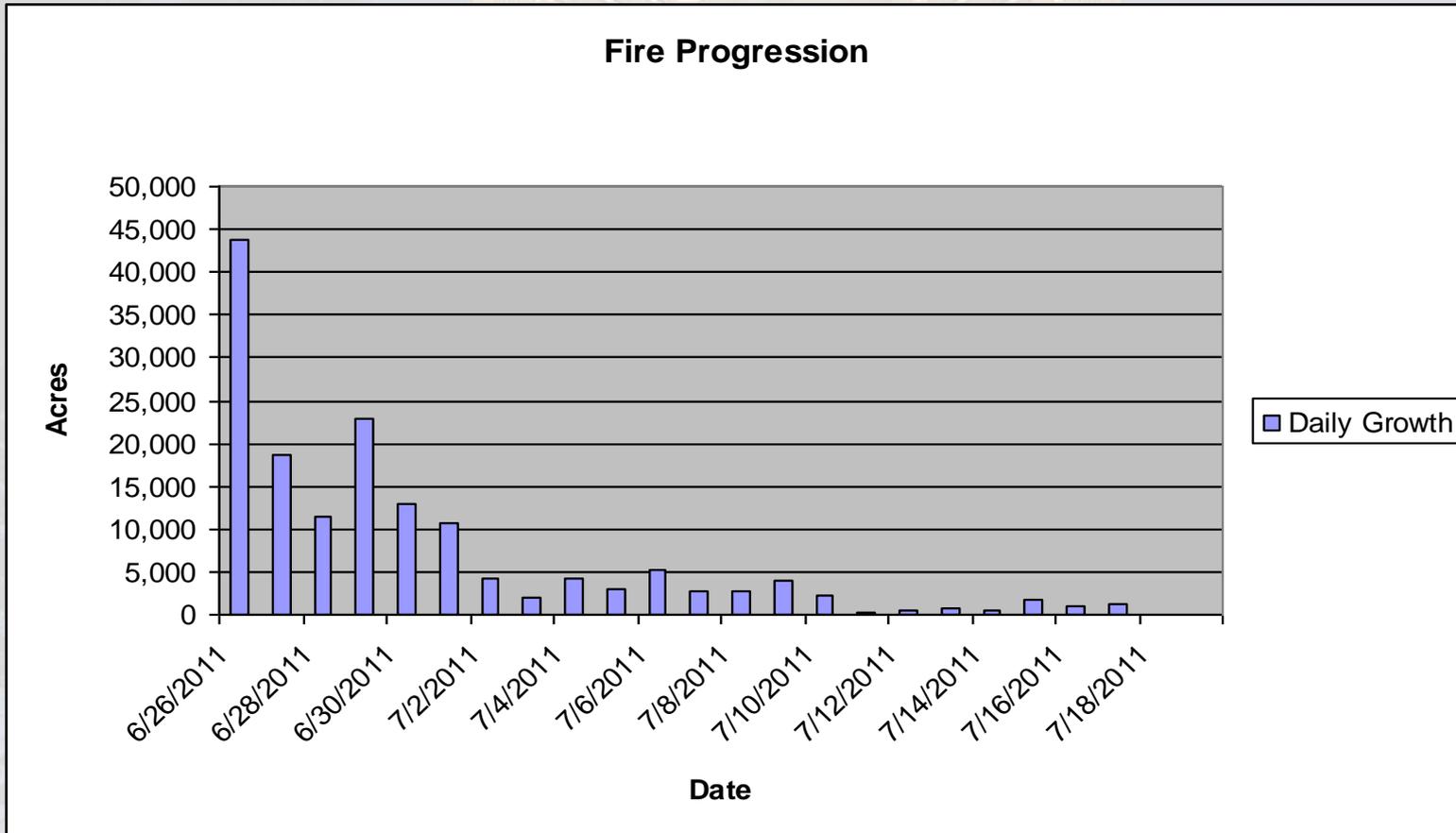
- **Started:** Sunday June 26th, 2011
approx. 1:00 PM
- **Where:** 12 miles southwest of Los Alamos
- **Cause:** Tree fell into power lines
- **Initial Spread:** 43000 acres in 12 hours (Approx 1 Acre/second)
- **Ultimate Size: 156,593** acres
(Largest in NM History)
- **Property Destroyed:** 63 residences, 49 outbuildings
- **Casualties:** No fatalities, 15 injuries



Fire Progression

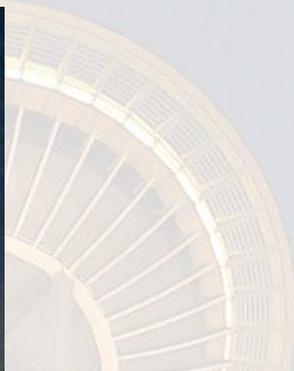


Fire Progression-Daily Growth



Air Resources





Ground Resources

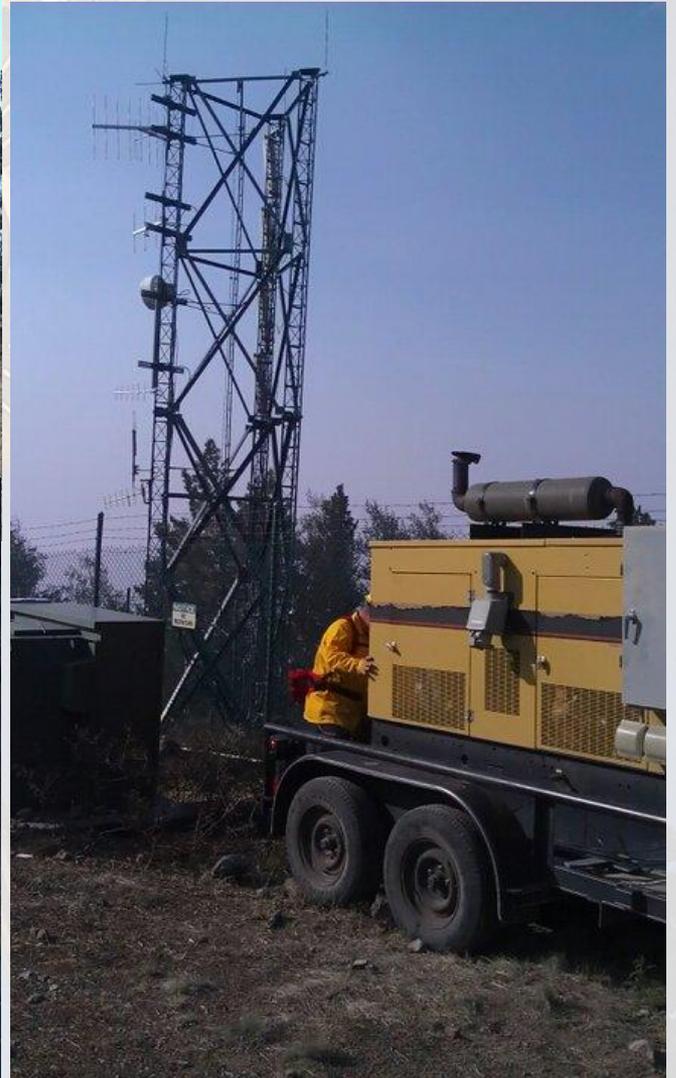
2557 Personnel





Los Alamos Fire Department





SPECIAL INTEREST GROUP



Back burn on West Jemez

Smoke as seen from Satellite...



Ready or Not – It's here....



Sunday, June 26th, 2011

- **[1300] Las Conchas fire started south of Cox Ranch**
- **[1541] EOC activated.**
Areas southwest of LANL affected.
- **[1815] Decision to close Lab on 6/27/11.**
Laboratory facilities/areas placed in safe configuration.
- **[2000] Voluntary evacuation for Los Alamos town site.**
- **Fire grew 43,782 acres.**

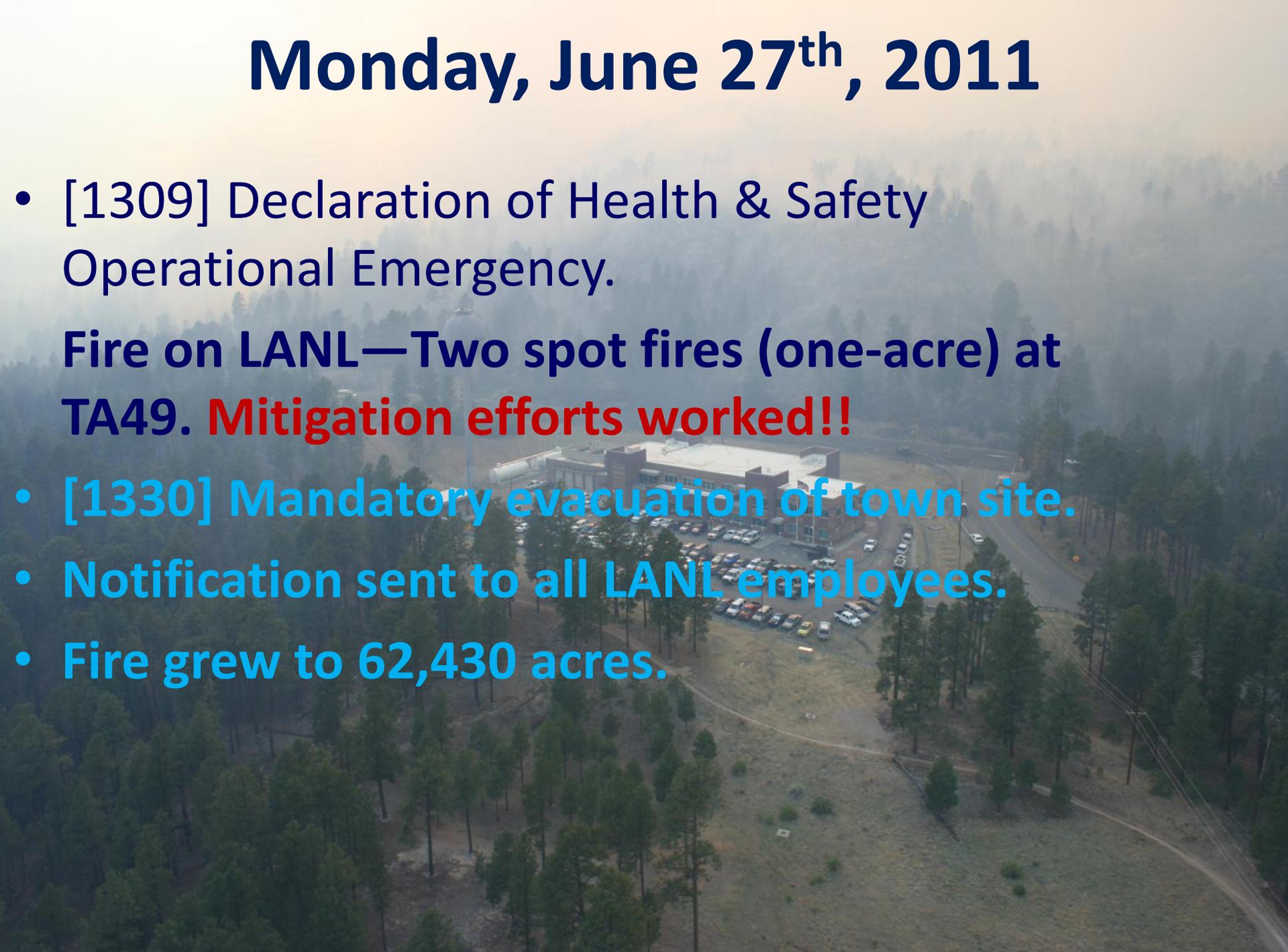


Monday, June 27th, 2011

- [1309] Declaration of Health & Safety Operational Emergency.

Fire on LANL—Two spot fires (one-acre) at TA49. Mitigation efforts worked!!

- [1330] Mandatory evacuation of town site.
- Notification sent to all LANL employees.
- Fire grew to 62,430 acres.





Another day. Sunrise Las Conchas Fire June 2011

LANL Response Activities

- Activated the EOC
- Back up communication systems
- Defended against cyber-security attacks
- Payroll processed
- Training extended
- Press releases, tweets, twitters, Facebook
- Mitigation projects completed
- DOE Offsite Teams deployed



Protective Force

A photograph showing a military Humvee parked on a paved road. Three personnel in camouflage uniforms and high-visibility vests are standing around the vehicle. One person is pointing towards the vehicle. The background is a dry, grassy hillside. Two orange traffic cones and two folding chairs are positioned in front of the vehicle.

Protective Force:

- Protected LANL
 - Resources & assets
- Access Control & Accountability

Protective Force augmented by Law Enforcement:

Communication Challenges

Radios

- Repeater on Pajarito Mtn.
- Backup system at EOC

Cell Phones

- Verizon reallocated resources
- COW (cells on wheels)
- GETS/WPS

Information Technology Challenges

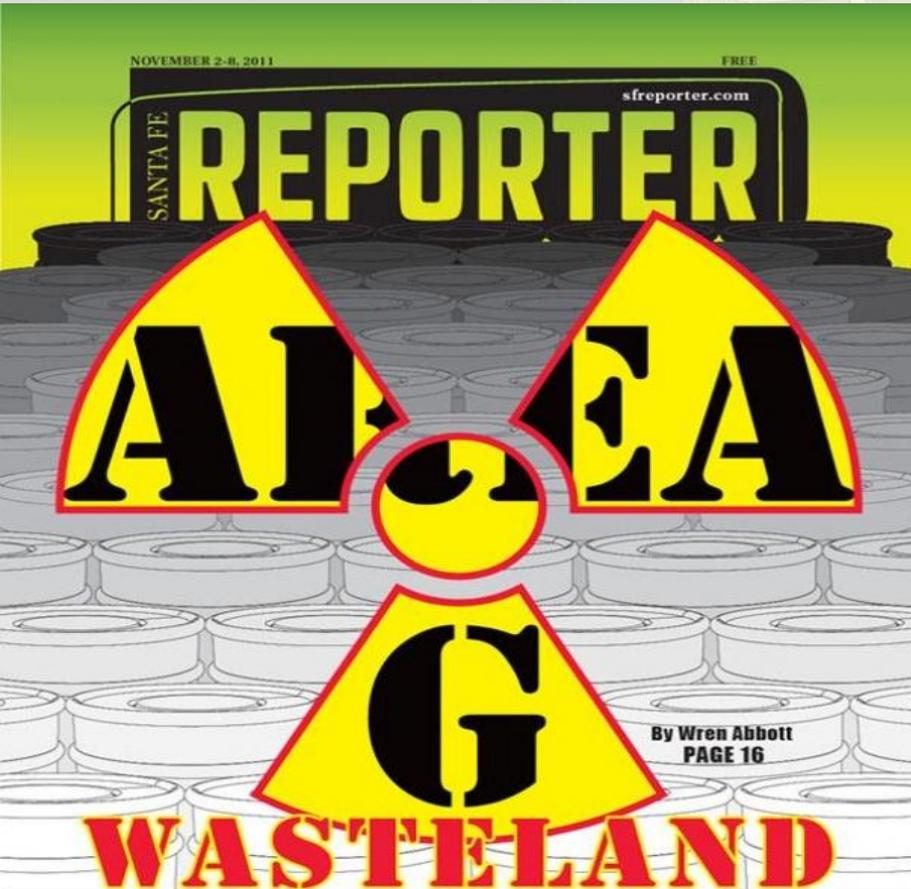
- **IT**
 - Servers interconnected
 - Anticipated loss of power
 - Extreme heat from HVAC shutdowns – over 90 degrees
 - Usage of LANL network from offsite
- **Cyber Security**
 - Increased volume of cyber threats
- **Payroll**
- **Training**
 - Extensions arranged and granted to preserve authorities & access



PIO Challenges – (Fear)

Staffed JIC & EOC

- News Releases
- News Conferences



**LOS ALAMOS NATIONAL LAB IS ON TRACK
TO BECOME A PERMANENT NUCLEAR WASTE DUMP**

Fire Threat Bypassed LANL

Terminated:

- OE
- EOC Activation



And Then...on Saturday The Squirrel Fire



Recovery

- July 3rd, 2011 Los Alamos County Roadblocks lifted, town repopulated
 - State Road 4 closed
 - All access points to Jemez Mountains closed.
- July 5th, 2011: “habitability” walk downs to assess safety conditions.
- July 6th, 2011: LANL reopens.
 - Employees briefed by line managers
 - Ensure safe & secure reopening
- LANL work crews installed flood and erosion control measures

Cascading Events

Flooding

- Canyons

- Roads

Animals

- Bear

- Skunks



Las Conchas Lessons Learned - Positive Aspects

- Clearing and thinning activities after Cerro Grande fire reduced fuel load.
- Planning performed by Interagency Wildfire Management Team worked.
- Teamwork was essential – LAC, LAPD, LAFD, FS, NPS, LAMC.
- High-volume air sampling stations allowed data to be obtained more rapidly. (Data compared with other NM fires)
- Formally chartered recovery team & plan:
 - approved requirements & checklists for facility pre-entry,
 - facility re-entry pre-job briefs,
 - facility walk downs aided the transition.

Las Conchas Lessons Learned - Areas of improvement

- On-call lists, emergency contact information, organizational phone trees for all Laboratory workers.
- Pre-established emergency communications website and media distribution lists.
- Back-up communication enhancement necessary.
- Include all disciplines in plans and briefings.
- Communication with employees who do not have access to LANL intranet.
- Situation-specific access control to the LANL site and the EOC.

Closing Remarks

Damage to the Laboratory was limited to a fraction of the potential loss due to the preparedness, training, equipment, and interagency coordination.