

California's 2007 Fires a Coordinated Response

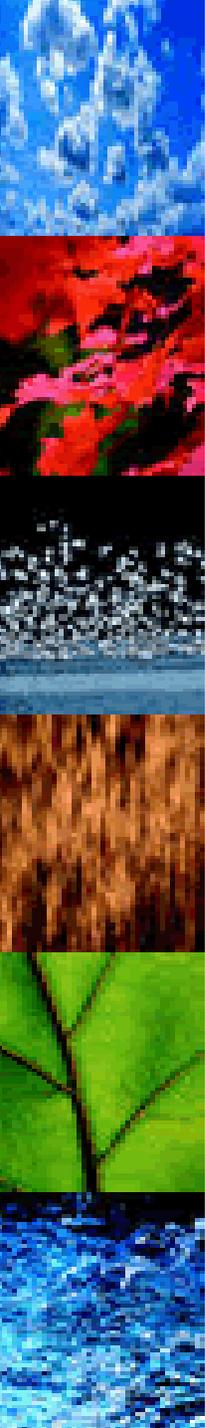
Don Johnson

California Environmental Protection Agency,
Assistant Secretary for Emergency Response

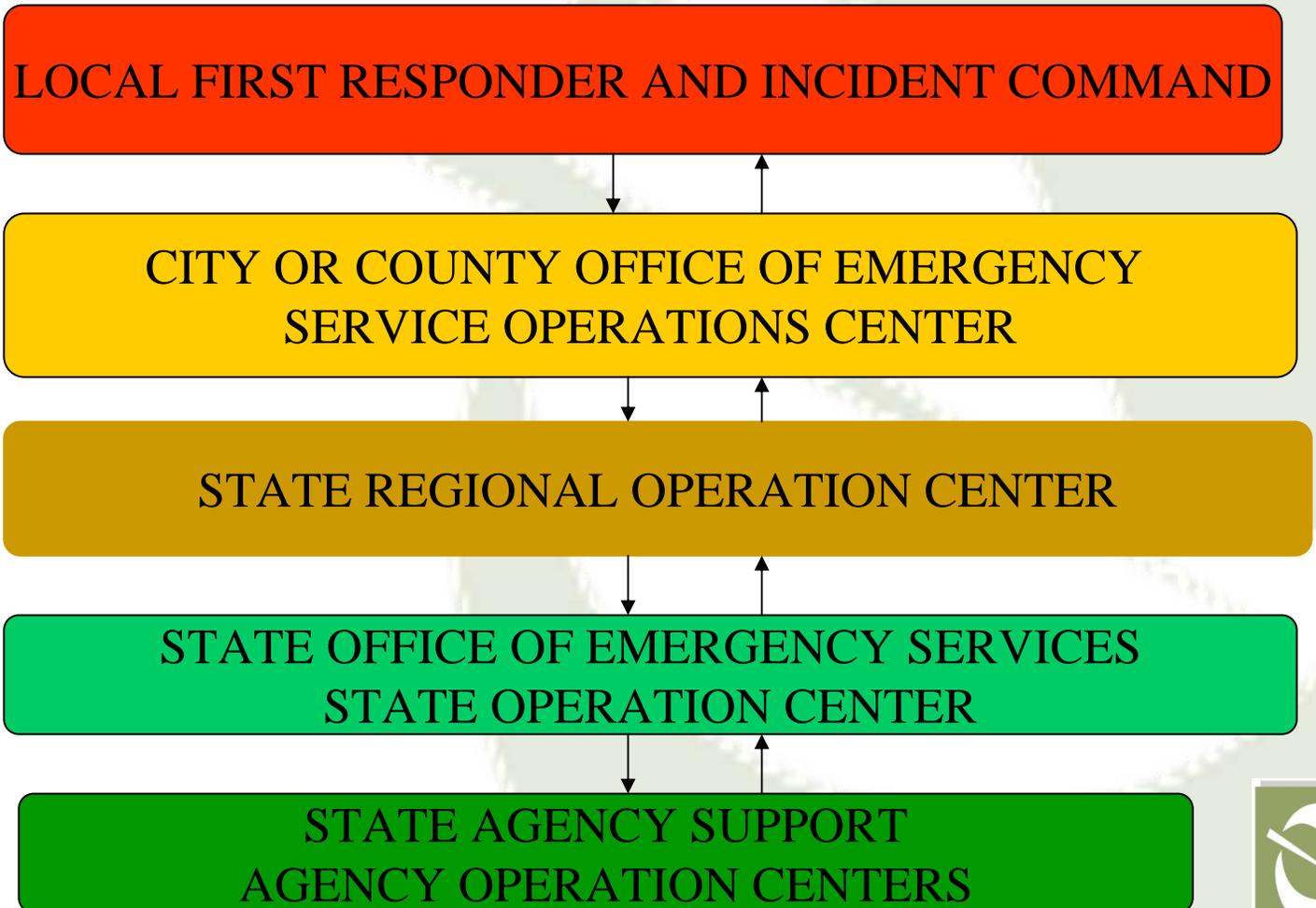


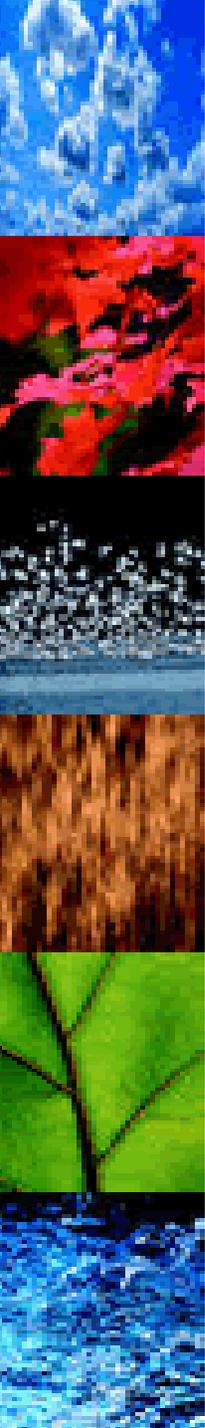
RULE TO REMEMBER

- All disasters are local



EMERGENCY RESPONSE ORGANIZATION





Lake Tahoe (Angora) Fire, July 2007

- 0 Deaths
- 1000 residents evacuated
- 256 homes destroyed
- 74 other structures destroyed
- 3,100 acres burned
- 60,000 tons of debris removed from water shed
- \$28,500 average cost/dwelling to remove debris

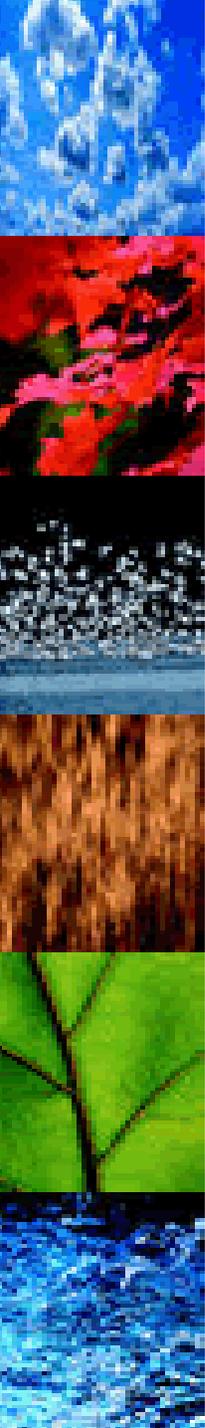


Southern California Fires of 2007

- 10 fatalities
- 517,00 acres burned
- 3,204 structures of which 2,233 were homes destroyed
- 321,500 persons evacuated
- 22,195 persons housed in shelters



The Angora Fire Video





A firefighter from the California Department of Forestry and Fire Protection is dwarfed by flames along East Grade Road on Palomar Mountain early Wednesday. The fire was still raging Saturday and had burned 43,000 acres and destroyed nearly 80 homes.

(Wally Skaliy / Los Angeles Times)

October 24, 2007



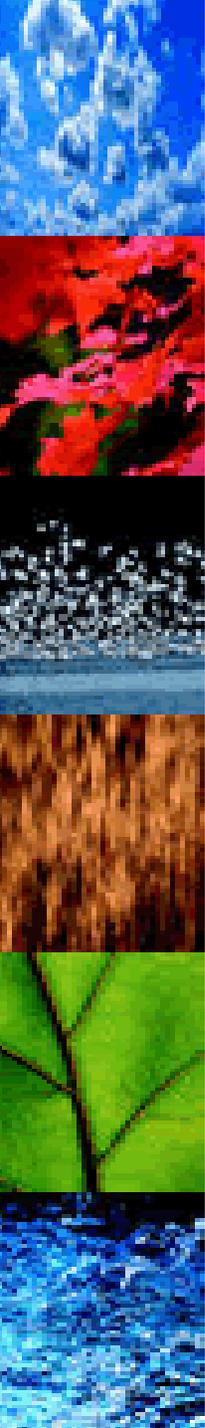


Firefighter Jason Falarski battles to save a house in Poway on Monday. For many in San Diego County, the scene was reminiscent of the deadly 2003 Cedar fire. Several hundred thousand people evacuated their homes as wildfires flared across the county, but the size of the exodus made escape impossible for some.

(Matty Skaliy / Los Angeles Times)

October 22, 2007





Devore residents race to their car to evacuate from a brush fire burning toward Glen Helen Parkway last Sunday, the day the wind-whipped firestorms began. Gusts of 75 mph were reported in the area.

(Gina Ferazzi / Los Angeles Times)

October 21, 2007





David Ottesen, 16, tries to douse embers before firefighters reach his and his parents' property on Bent Tree Court in Poway on Monday. "They just went to town on every single flame that was in our backyard," said David, a high school junior. "We probably wouldn't have a house if they hadn't come."

(Wally Skaliy / Los Angeles Times)

October 22, 2007





Sunday morning on the beach in Malibu.
(Submitted to Your Scene By Matt Doolin)



Even Asbestos Does not like the Fire





San Diego County Air Quality 9077
CLEAN UP PROGRAM
HAZARDOUS MATERIALS
ASSESSMENT and REMOVAL
COMPLETE
Questions: 619-538-2271
Address: 3780 #106



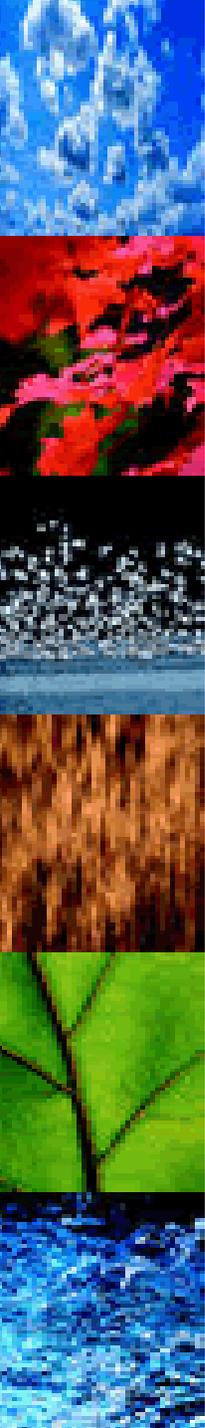
Leo Calac passes an undamaged piece of Southwest Indian pottery to a helper as he sifts through the remains of his burned-down home Wednesday on the Rincon Reservation in San Diego County. Calac had lived in the house for 30 years.

(Brian Vander Brug / Los Angeles Times)

October 24, 2007



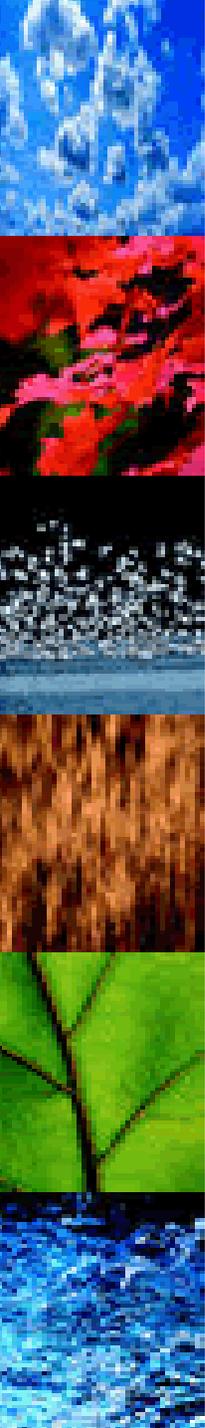




Public Health Concerns

- Air quality
 - Particulate matter during fire
 - Re-entrainment of ash after fire
- Direct exposure to contaminants in ash/debris
- Potential surface & groundwater contamination
- Public health advisories for re-entering burned areas
 - Gloves, Masks
 - Decontaminating pet areas, gardens, lawn furniture
 - Collection of household hazardous waste

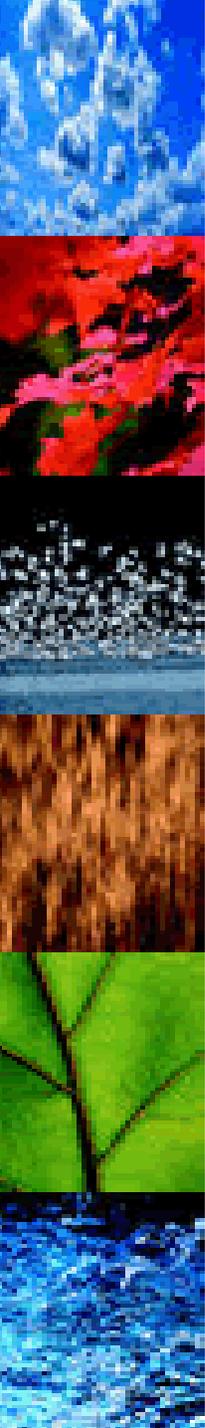




Angora and So Cal Fires, Local/State Coordination

- A Multi-Agency Coordination Group with local, state and federal government participation was formed to address public health concerns and debris management

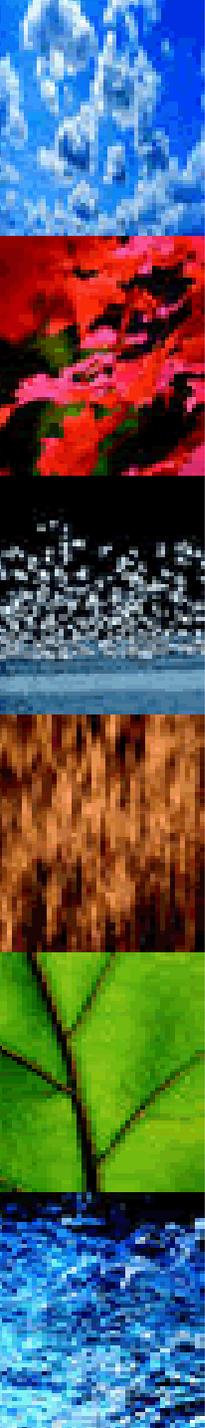




Angora and So Cal Fire Local/State Coordination

- ARB worked with local air district to assist in air sampling and modeling
- Air sampling data was interpreted by ARB and OEHHA and information provided to local health officer





Angora and So Cal Fire Local/State Coordination

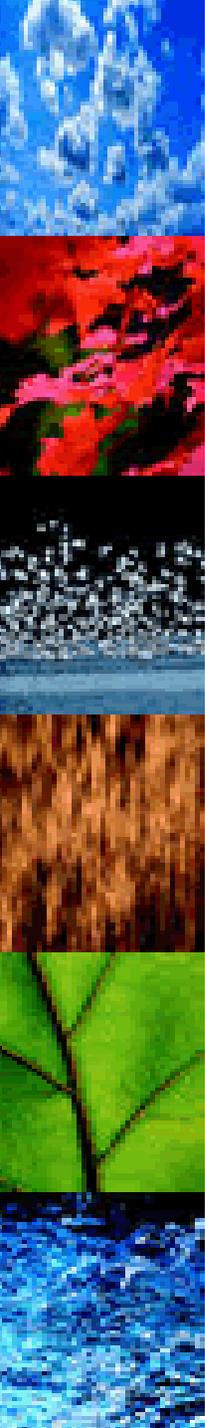
- DTSC worked with El Dorado County Health Department to remove hazardous materials
- DTSC use funding to pay contractor to conduct ash sampling
- USEPA, DTSC, OEHHA and Local Haz Mat coordinated ash sampling program



Angora and So Cal Fire Local/State Coordination

- CIWMB worked with El Dorado County to remove debris in a coordinated project
- State contractor and funding used
- State employees worked with county employees to manage the removal project

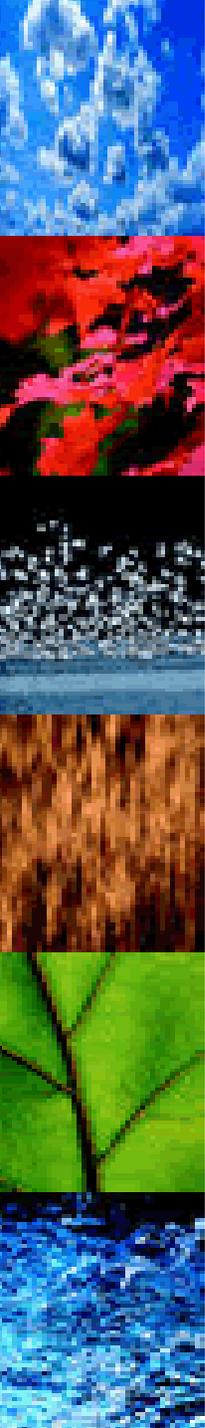




Angora and So Cal Fire Local/State Coordination

- State provided funding to support debris removal.
 - Angora Fire \$7.5 Million with \$3.2 million paid back by insurance
 - So Cal Fire \$60 Million provided with cost recovery still under way





Angora and So Cal Fire Coordination

- OEHHA, DTSC and SWRCB issued endangerment orders for ash and debris to support local health department actions to abate public health nuisance and to assist in the recovery of funds



Sampling & Analysis of Fire Ash

- Required by FEMA for federal assistance to counties
- Statistically-based sampling plan in San Diego and San Bernardino Counties
- 70 total samples analyzed for heavy metals and polycyclic aromatic hydrocarbons (PAHs)



Water Contamination

- Rains and clean-up efforts lead to potential surface water and groundwater contamination from the off-site migration
- San Diego area is served by several open drinking water reservoirs (Sutherland Lake, and Barrett, Hodges, and El Capitan Reservoirs)
- Angora fire area was immediate to Lake Tahoe



Water Contamination, *cont*

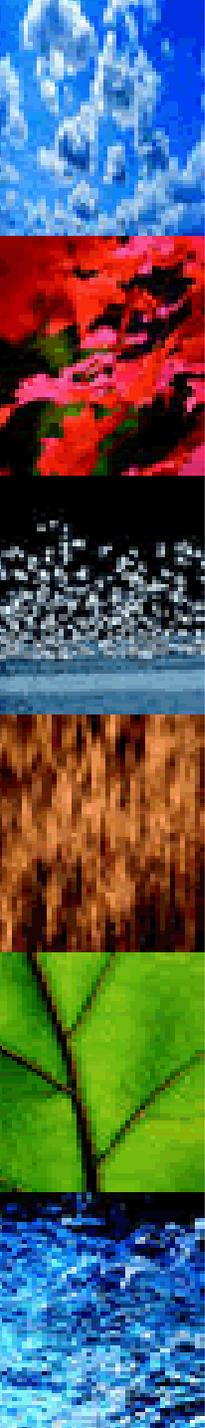
Sampling at Sutherland Lake one week after 2003 fires:

Contaminant	Concentration (ppb)	MCL* (ppb)
Arsenic	29.9	10
Manganese	>1000	50

* US EPA maximum contaminant level

- High concentrations of lead, arsenic, aluminum, barium, manganese, vanadium at El Capital Reservoir tributaries 2 ½ weeks after fires
- Reservoir concentrations after first rain event:
 - aluminum > 10,000 ppb
 - manganese > 7000 ppb
 - barium > 3000 ppb





Water Contamination, *cont*

- Sampling at Sutherland Lake one week after 2003 fires:
 - arsenic 29.9 ppb (vs. MCL of 10 ppb)
 - manganese > 1000 ppb (vs. MCL of 50 ppb)
- Sampling at tributaries to El Capitan Reservoir 2 ½ weeks after fires:
 - High concentrations of lead (Pb), arsenic, aluminum, barium, manganese, vanadium
- First rain after 2003 fires resulted in:
 - aluminum > 10,000 ppb
 - manganese > 7000 ppb
 - barium > 3000 ppb
- All exceeding their respective MCLs by several-fold.



2003 Ash Results

- Similar ash analysis following the 2003 Southern California fires
- Significant levels of:
 - arsenic (mean 34.5 mg/kg)
 - cadmium (mean 16.2 mg/kg)
 - copper (mean 3580 mg/kg)
 - lead (mean 5595 mg/kg)
- Benzo(a)pyrene, naphthalene, and other PAHs found in ash

[EPA Method 8310]



2007 Ash Results

- Ash contained significant levels of heavy metals
- Significantly above CA soil background levels
- Exceeded Federal and California health-based standards

Contaminant*	Mean conc (mg/kg)	CHHSL** (mg/kg)	PRG† (mg/kg)
arsenic	11.4	0.07	0.062
cadmium	14.7	1.7	37
copper	4458	3000	3100
lead	1075	150	150

* CA Title 22 metals analyzed by EPA Method 6010B/7471A; Ash collected after removal of household hazardous waste

** California Human Health Screening Levels for Residential Areas, CalEPA, Jan 2005 †US EPA Region IX Public Remediation Goals for Residential Areas



2003/2007 Ash Results

Similar ash analysis following the 2003 Southern California fires:

Contaminant	2003 levels (mg/kg)	2007 levels (mg/kg)
arsenic	34.5	11.4
cadmium	16.2	14.7
copper	3580	4458
lead	5595	1075

Benzo(a)pyrene, naphthalene, and other PAHs also found in ash [*EPA Method 8310*]



Conclusions

- Many constituents detected in ash samples could pose threats to drinking water in high enough concentrations
- Contaminants in ash pose a risk of adverse health effects from direct dermal and inhalation exposure
- Substantial evidence to support the claim that the debris from the fires poses potential harm by multiple routes of exposure
- If conditions are similar following future fires, then similar threats to public health and safety are likely





San Diego County Wildfires 2007
**CLEAN-UP PROGRAM,
HAZARDOUS MATERIALS
ASSESSMENT and REMOVAL
COMPLETE**

Questions: 619-338-2231

Address: 23680 Old Manzanita Road

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