

# How Environmental Extremism is Hurting California

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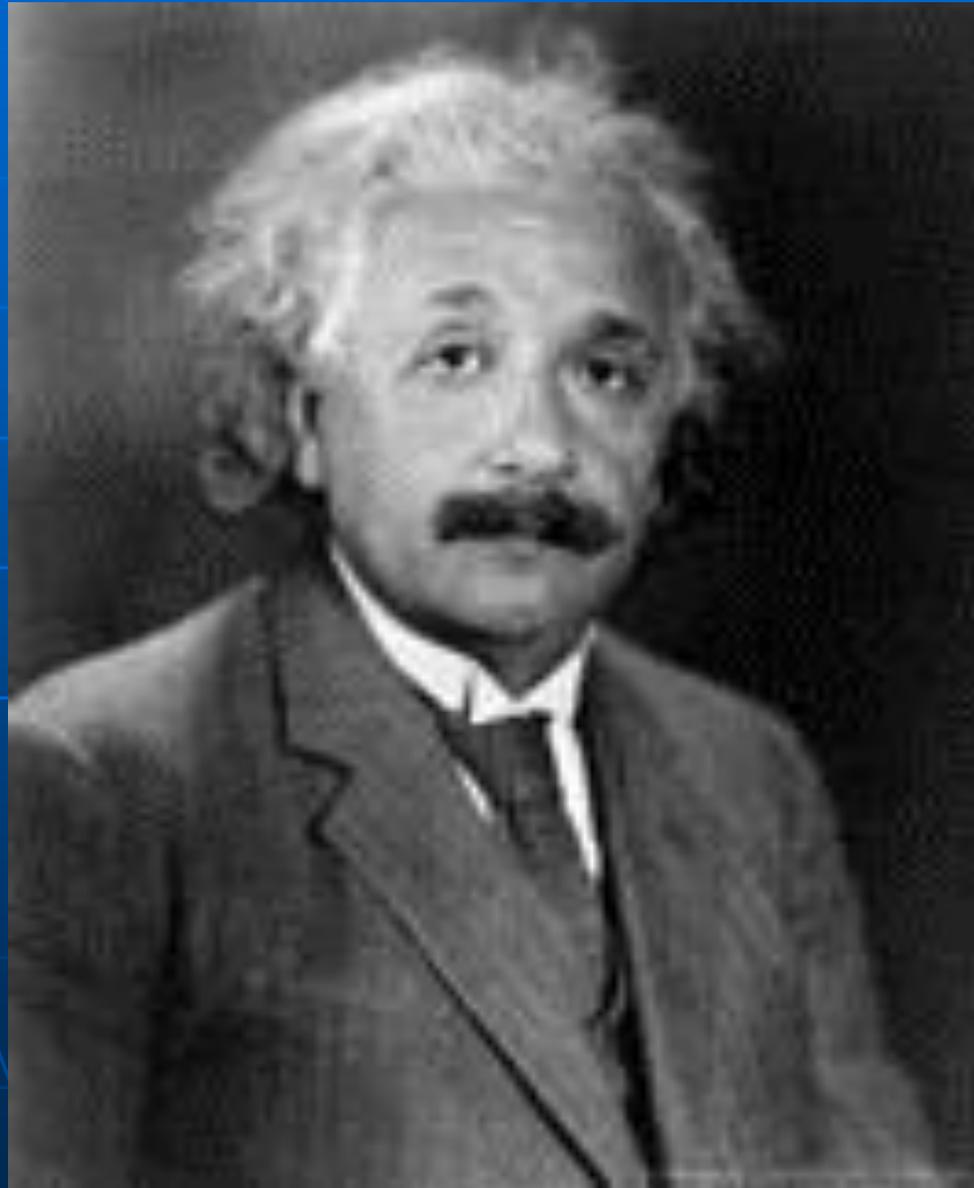
**University Club of Claremont  
Claremont, CA**

**January 28, 2014**

# Objectives of Talk

- 1. Honest Science v. Pseudoscience**
- 2. Enstrom: Physicist & Epidemiologist**
- 3. PM<sub>2.5</sub> & No Premature Deaths in CA**
- 4. PM<sub>10</sub> & Massive Water Waste in CA**
- 5. Combating CA Environmental Extremism**

# Albert Einstein 1979-1955

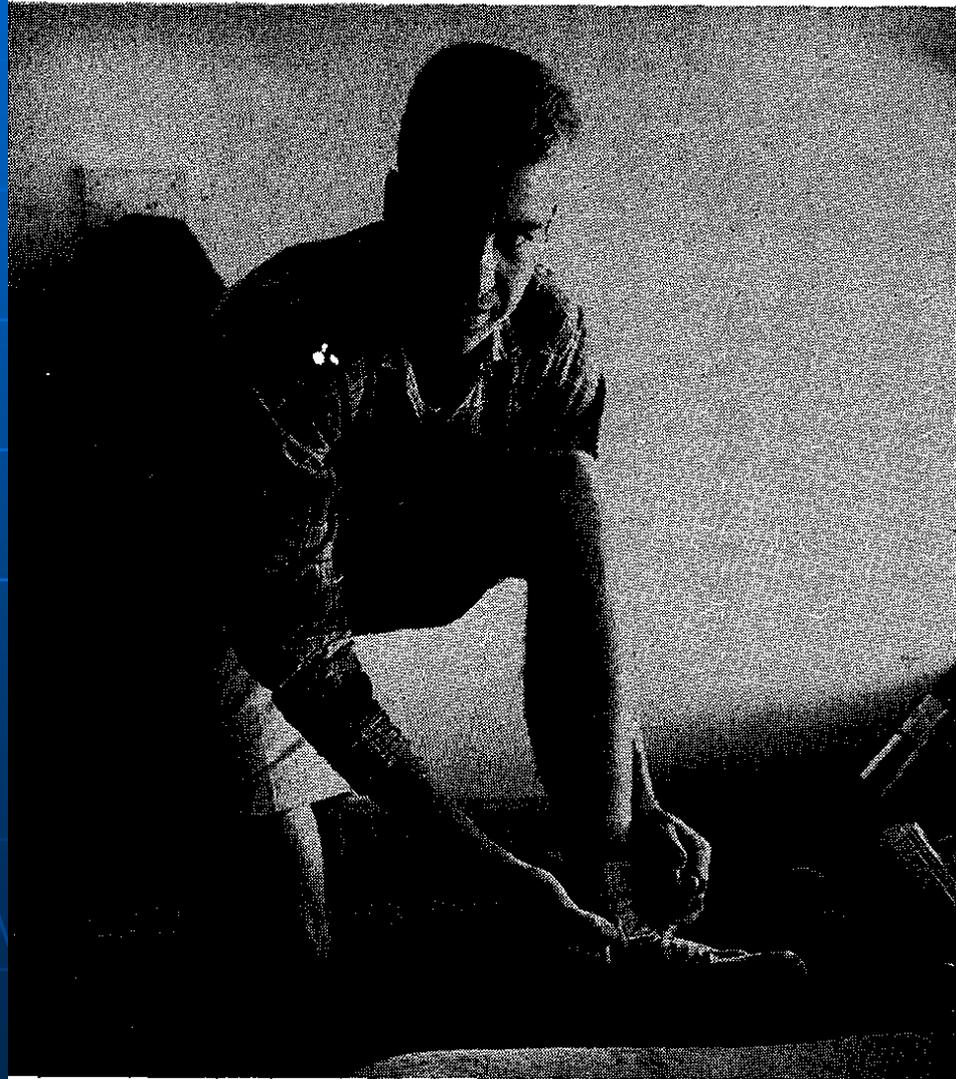


# Joseph B. Platt 1915-2012



# James E. Enstrom HMC 1965

Just time for a couple of hours of tennis before breakfast.



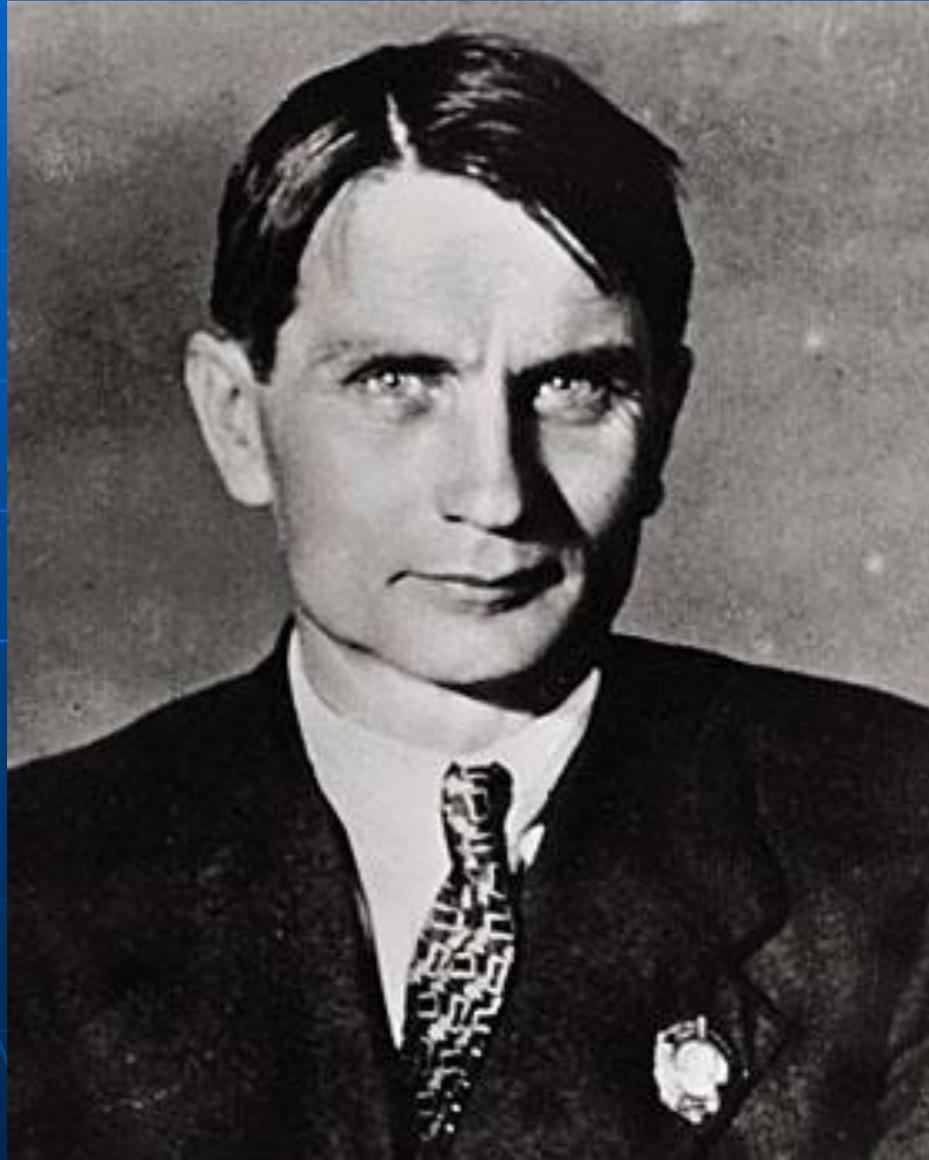
# Melvin Schwartz 1932-2006



# Nikolai I. Vavilov (1887-1943)



# Trofim D. Lysenko (1898-1976)



# Physics

**Rigorous experimental science that tests specific hypotheses regarding physical phenomena. Physics findings are based on independently verified results, many worthy of a Nobel Prize.**

## Chronic Disease Epidemiology

**Public health science that measures the characteristics of human subjects, like their lifestyle and air pollution exposures, and then relates these characteristics to the development of diseases and death over long follow-up periods. Often these observational relationships are weak and inconsistent and not independently verified.**

# **Air Pollution Control Agencies That Regulate in California**

**US Environmental Protection Agency 1970  
1970 Clean Air Act & Amendments  
1997 & 2012 Particulate Matter NAAQS**

**California Air Resources Board 1967  
Mobile Sources: Cars, Trucks, Buses**

**35 CA Air Pollution Control Districts ~1976  
(South Coast Air Quality Management District)  
Stationary Sources: Manufacturing & Ports**

# Fine Particulate Matter (PM<sub>2.5</sub>)

PM<sub>2.5</sub> is defined by particle size ( $\leq 2.5 \mu\text{m}$  in diameter) and not by chemical composition. PM<sub>2.5</sub> is generated mainly by combustion processes. The major sources of PM<sub>2.5</sub> in California are forest fires, agricultural dust, industrial combustion, residential burning, diesel engines (about 5%), and China (up to 30%).

PM<sub>2.5</sub> epidemiology has been used to establish the following scientifically contested regulations that have had and still have multi-billion dollar economic impacts in California and the US:

- 1) 1997 & 2012 US EPA Annual National Ambient Air Quality Standard (NAAQS) for PM<sub>2.5</sub> :  $15 \mu\text{g}/\text{m}^3$  and now  $12 \mu\text{g}/\text{m}^3$
- 2) 2008 CARB Truck and Bus Regulation for Diesel Vehicles
- 3) 2003-2007-2012 SCAQMD Air Quality Management Plans

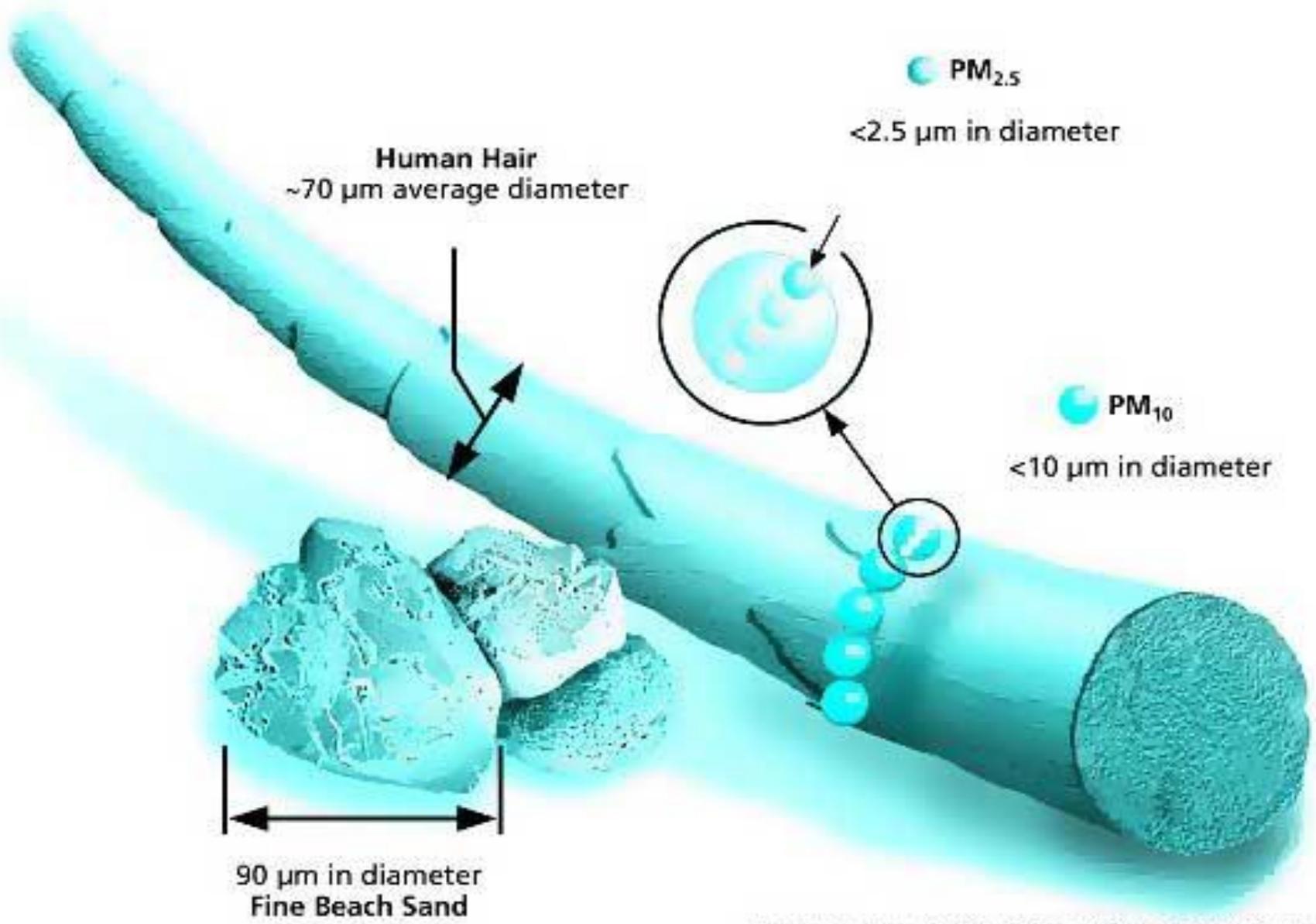


Image courtesy of EPA, Office of Research and Development

# Inhaled Particulate Matter ( $PM_{2.5}$ & $PM_{10}$ )

Amount of Air Inhaled by an Adult Breathing at Rest:  
~ 10,000 liters/day = 10 m<sup>3</sup>/day ~ 292 M m<sup>3</sup>/80 years

$PM_{2.5}$  Inhaled at NAAQS level of 15  $\mu\text{g}/\text{m}^3$ :  
292 M m<sup>3</sup>/80 years x 15  $\mu\text{g}/\text{m}^3$  ~ 4.38 grams/80 years  
4.38 grams/80 years = 0.88 teaspoons/80 years

Diesel PM Inhaled, Assuming 5% of total  $PM_{2.5}$   
0.22 grams/80 years = 0.044 teaspoons/80 years

$PM_{2.5}$  Inhaled from 1 Cigarette ~ 0.04 grams

$PM_{10}$  Inhaled at Owens Lake (Keeler) at Level of 20  $\mu\text{g}/\text{m}^3$ :  
292 M m<sup>3</sup>/80 years x 20  $\mu\text{g}/\text{m}^3$  ~ 5.84 grams/80 years

$PM_{2.5}$  and  $PM_{10}$  are the only regulated air pollutants  
without chemical specification--mass is regulated

# Weaknesses of PM<sub>2.5</sub> Epidemiology

- 1) **Ecological Fallacy:** ambient PM<sub>2.5</sub> measurements from selected monitoring stations are assumed to apply to all individual subjects within defined geographical areas
- 2) **Confounding Variables:** numerous confounding variables, including other pollutants, influence the PM<sub>2.5</sub> mortality relationship in observational cohort studies
- 3) **Secret Data:** investigators controlling major PM<sub>2.5</sub> databases (ACS and Harvard) refuse to allow independent analysis of these databases, in violation of House Subpoena
- 4) **Definition of PM<sub>2.5</sub>:** PM<sub>2.5</sub> is defined as particles less than 2.5 μm in diameter, but its composition varies greatly across US, from mineral dust to coal burning to diesel soot

# **PM<sub>2.5</sub> & Total Mortality Relationship**

## **Based on Prospective Epidemiologic Cohorts**

**Dockery, Pope, et al. NEJM 1993** “An association between air pollution and mortality in six U.S. cities” (H6CS)

**Pope, Thun, et al. AJRCCM 1995** “Particulate air pollution as predictor of mortality in prospective study of U.S. adults” (CPS II)

**Wall Street Journal April 7, 1997**

“Pollution study sparks debate over secret data”

**SCIENCE July 25, 1997** “Showdown Over Clean Air Science”  
& “Researchers and Lawmakers Clash Over Access to Data”

**Robert F. Phalen** “The Particulate Air Pollution Controversy”  
2002 Book and 2004 Paper

**Lamar Smith Wall Street Journal July 30, 2013**

“The EPA’s Game of Secret Science”

# “Premature Deaths” Attributed to PM<sub>2.5</sub>

A relative risk greater than 1.0 [RR > 1.00] for the relationship between PM<sub>2.5</sub> and total (all cause) mortality is interpreted by US EPA and CARB as evidence that PM<sub>2.5</sub> “causes” “premature deaths.”

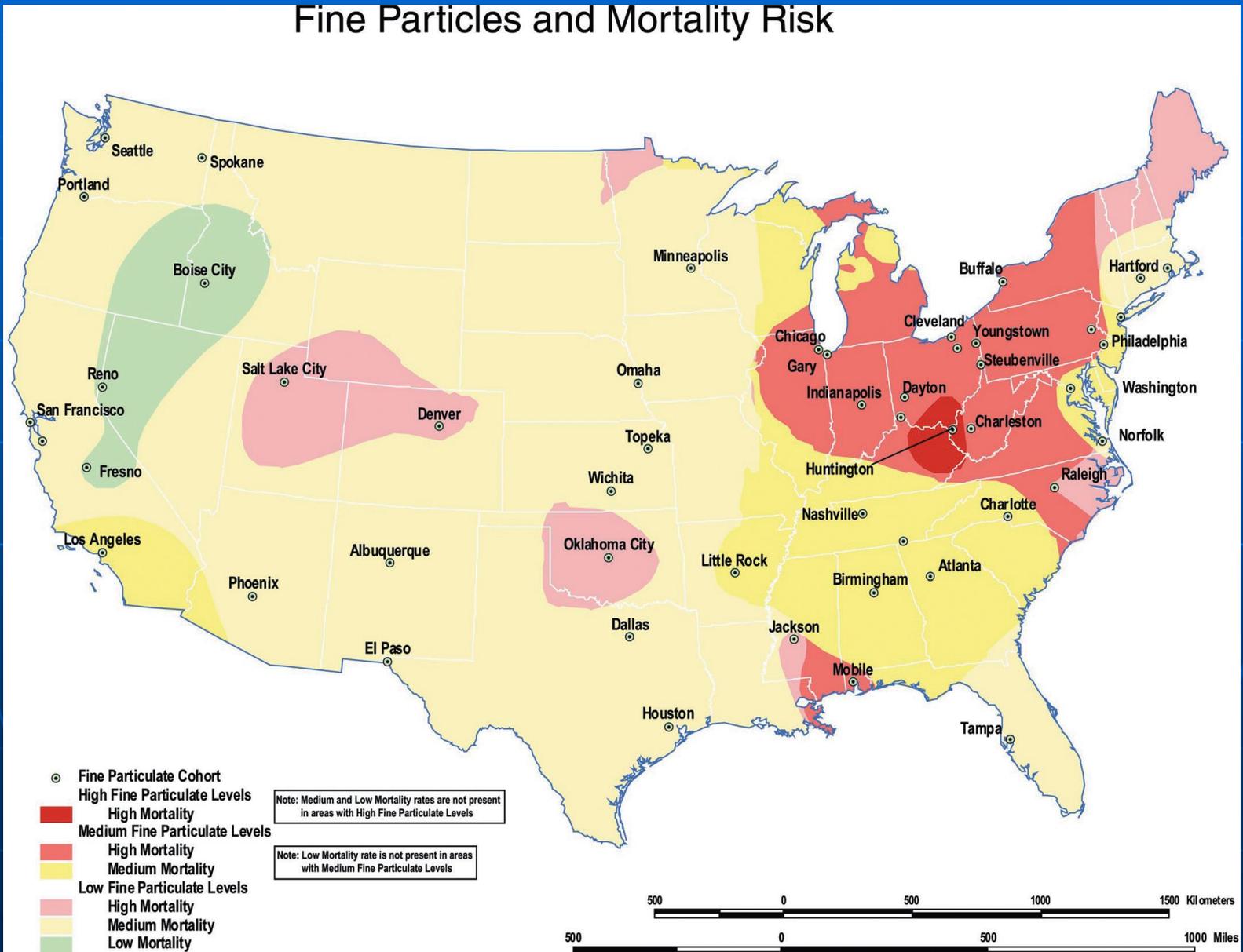
Because EPA assigns a lifetime monetary value of about \$9 million to each “death,” the health benefits of preventing these “deaths” are assumed to exceed the compliance costs of the EPA and CARB regulations that are designed to reduce PM<sub>2.5</sub> levels and PM<sub>2.5</sub>-related deaths.

Without PM<sub>2.5</sub>-related “premature deaths” the EPA and CARB regulations are not justified on a socioeconomic cost-benefit basis.

# 2000 Krewski Jerrett HEI Report Figure 21

## 1982-1989 CPS II PM<sub>2.5</sub> Mortality Risk <1.0 in CA

Fine Particles and Mortality Risk



# PM<sub>2.5</sub> & Total Mortality in California: RR (95% CI)

(<http://www.scientificintegrityinstitute.org/ASAS092812.pdf>)

McDonnell 2000 (9 air sheds)	AHSMOG	RR ~ 1.03 (0.95-1.12)	1976-1992
Krewski 2000 (4 MSAs, reported in 2010)	CA CPS II	RR = 0.87 (0.81-0.94)	1982-1989
Enstrom 2005 (11 cos & 25 cos)	CA CPS I	RR = 1.00 (0.98-1.02)	1983-2002
Zeger 2008 (CA + OR + WA)	MCAPS "West"	RR = 0.99 (0.97-1.01)	2000-2005
Krewski 2010 (4 MSAs)	CA CPS II	RR = 0.96 (0.92-1.00)	1982-2000
Jerrett 2010-11 (Nine Model Average)	CA CPS II	RR = 1.00 (0.99-1.01)	1982-2000
Lipsett 2011	CA Teachers	RR = 1.01 (0.95-1.09)	2000-2005
Jerrett 2013 (Conurbation LUR Model Only)	CA CPS II	RR = 1.06 (1.00-1.12)	1982-2000
Enstrom Unpub	NIH	RR ~ 1.00	1995-2010

# PM<sub>10</sub> & Total Mortality in California: RR (95% CI)

<http://www.scientificintegrityinstitute.org/ASAS092812.pdf>

Abbey 1999      AHSMOG    RR = 1.00 (0.97-1.04)    1977-1992  
(N=6,338; SC&SD&SF Air Basins; all natural causes)

Chen 2010      AHSMOG    RR = 1.01 (0.98-1.04)    1977-2006  
(N=4,830; SC&SD&SF Air Basins; all natural causes)

Jerrett 2011    CA CPS II    RR = 1.00 (0.99-1.02)    1982-2000  
(N=76,135;KRG Zip Model; 20 ind cov+7 eco var; Table 37)

Lipsett 2011    CA Teachers    RR = 1.01 (0.95-1.09)    2000-2005  
(N=73,489 F; California)

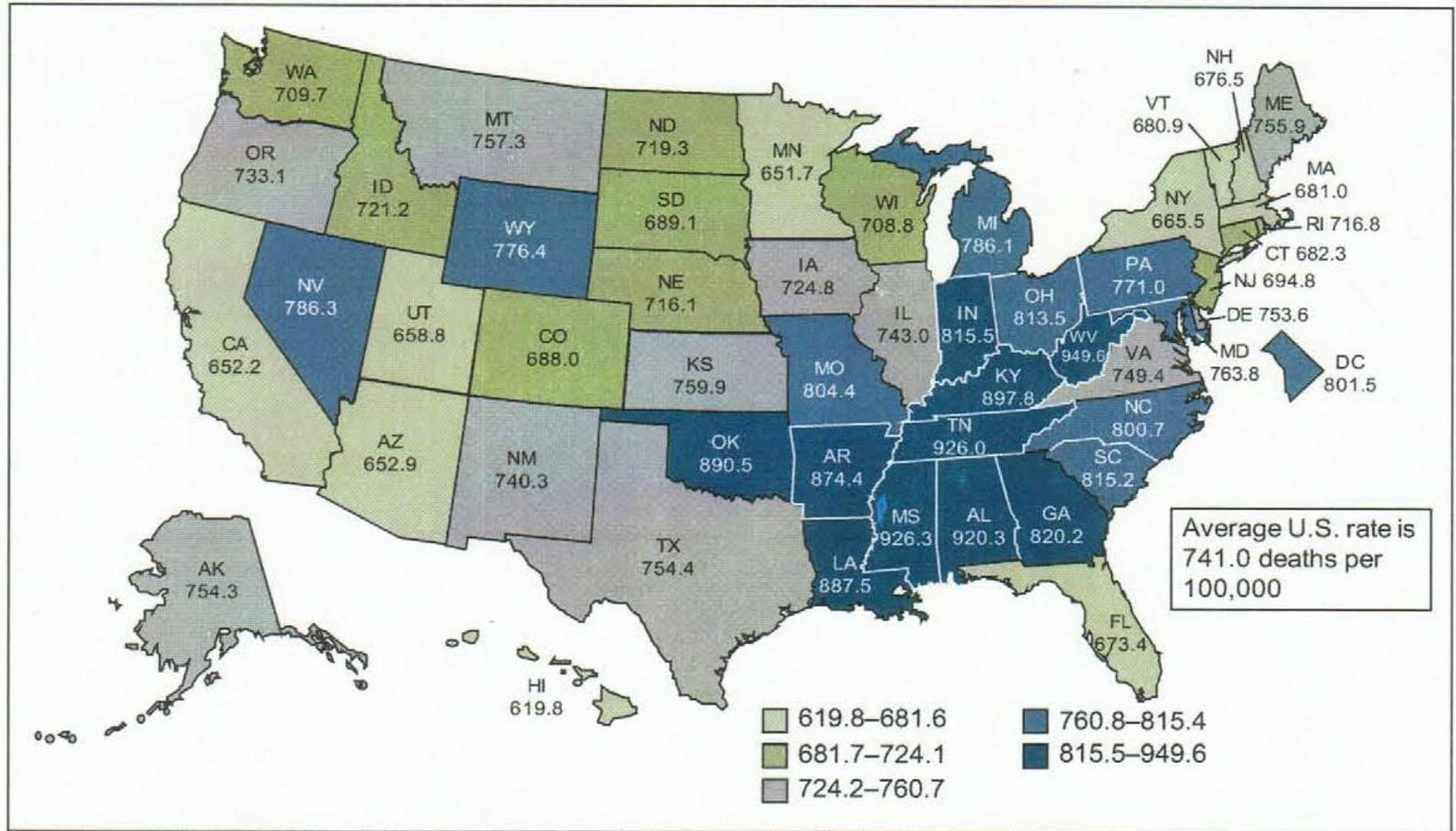
Enstrom Unpub    CA CPS I    RR ~ 1.00                    1983-2002  
(N~80,000; California)

Enstrom Unpub    NIH            RR ~ 1.00                    1995-2010  
(N~150,000; California)

# 2009 Age-Adjusted Total Death Rates by State

## NCHS (<http://www.cdc.gov/nchs/data/databriefs/db64.pdf>)

Figure 4. Age-adjusted death rates, by state and the District of Columbia: United States, preliminary 2009



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality.

# Owens Lake Dust Mitigation Project

## Massive LADWP Water Waste During Major CA Drought

**2013 had Lowest Recorded Rainfall in CA History**  
**Six Largest CA Lakes are Now at 40% Capacity**

Need for OLDMP is driven by daily  $PM_{10}$  NAAQS of  $150 \mu\text{g}/\text{m}^3$ .  
In 2006 EPA revoked the annual  $PM_{10}$  NAAQS of  $50 \mu\text{g}/\text{m}^3$  because of lack of adverse health effects. EPA was prepared to waive the daily  $PM_{10}$  NAAQS for rural areas, but 2006 CA law forced continued compliance.

Total Cost for OLDMP Since 2000: \$1.5 B, headed toward \$1.9 B  
OLDMP Accounts for About 15% of Total LADWP Water Bill  
Current Annual Owens Lake water waste ~ 95 K acre-feet = 30.97 B gallons  
LA Annual Residential Water Usage = 362 K acre-feet = 117.85 B gallons  
LA Commercial/Industrial Water Usage = 119 K acre-feet = 38.66 B gallons  
2010-2011 water use per person = 123 gallons/day (lowest among big cities)  
Ranked by "Average Monthly Bill for Family of Four,"  
LA is about #25 out of 30 cities in two Circle of Blue surveys

# Owens Lake: A Dust Control Update For the Imperial County APCD



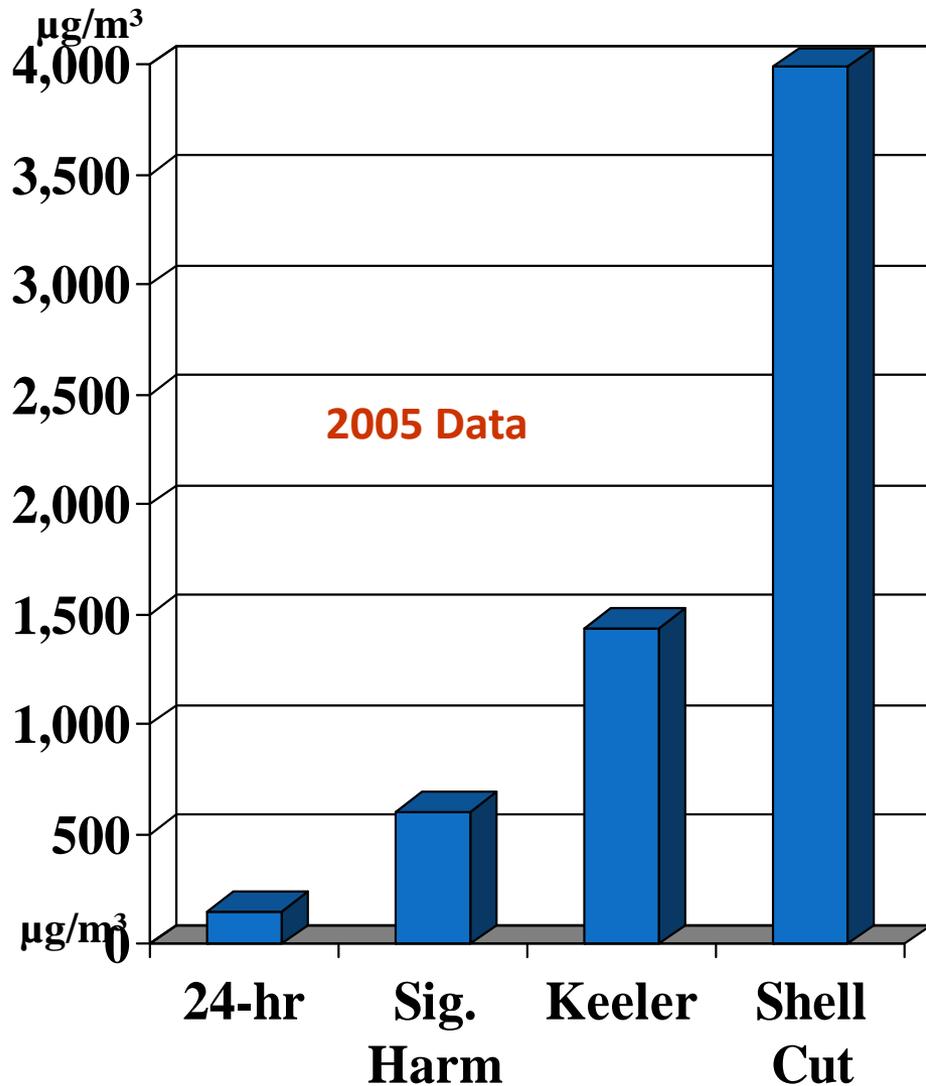
Owens Lake – March 2010

**By Ted Schade, Air Pollution Control Officer, Great Basin Air Pollution Control District  
September 10, 2013**

**In 1913, the City of Los Angeles' Department of Water and Power (LADWP) completed construction of the Los Angeles Aqueduct. The Aqueduct diverted Owens River water destined for Owens Lake 223 miles south to Los Angeles.**



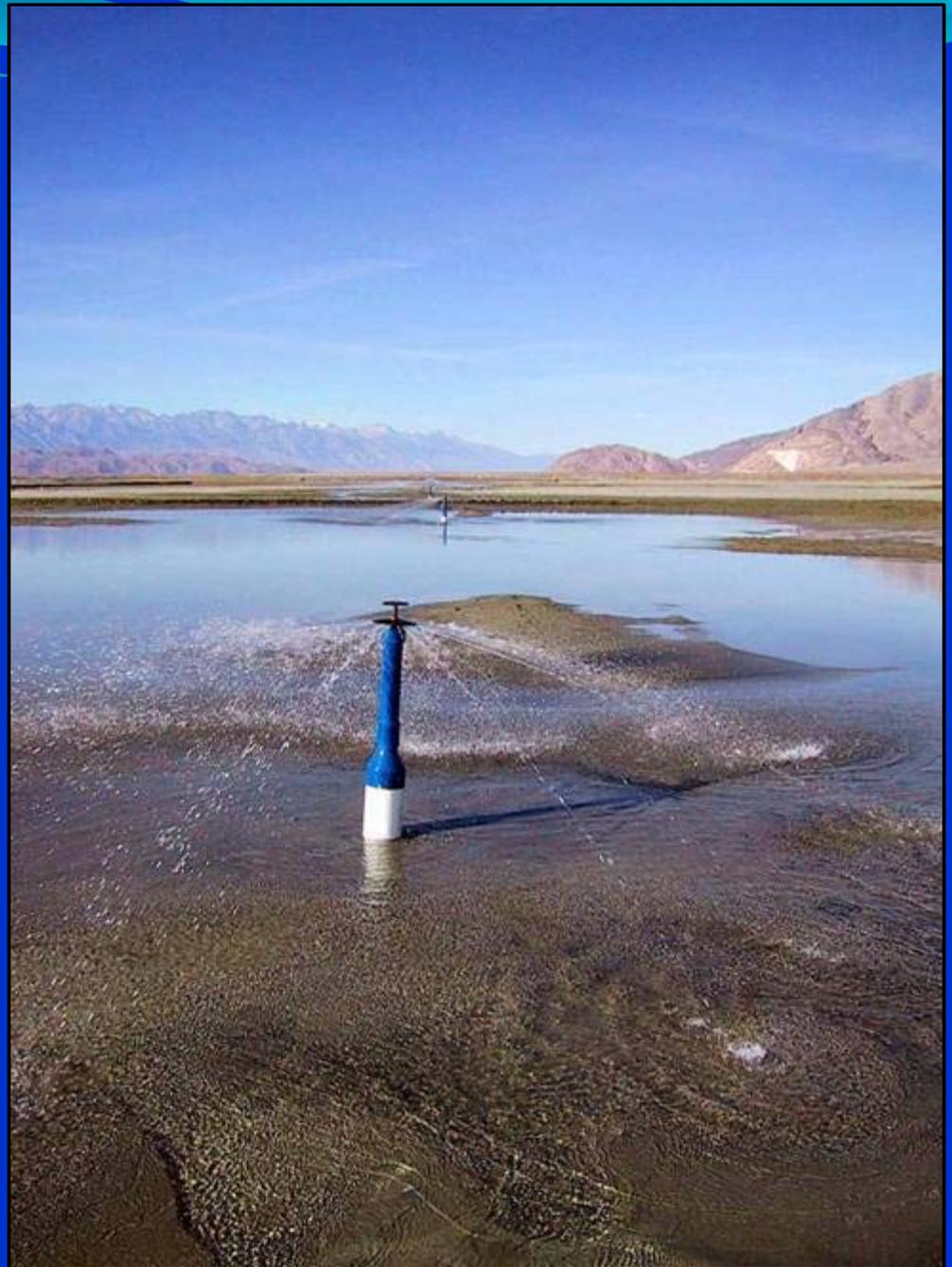
# 1. Because the PM-10 values are very high



- The Federal 24-hr standard for particulate matter is **150  $\mu\text{g}/\text{m}^3$** .
- The State standard is **50  $\mu\text{g}/\text{m}^3$** .
- The “significant harm to human health” level is **600  $\mu\text{g}/\text{m}^3$** .
- In 2005, 24-hr levels of **1,441  $\mu\text{g}/\text{m}^3$**  (10 times Std.) were measured in the town of Keeler and **3,989  $\mu\text{g}/\text{m}^3$**  (26 times Std.) at the Shell Cut monitor.

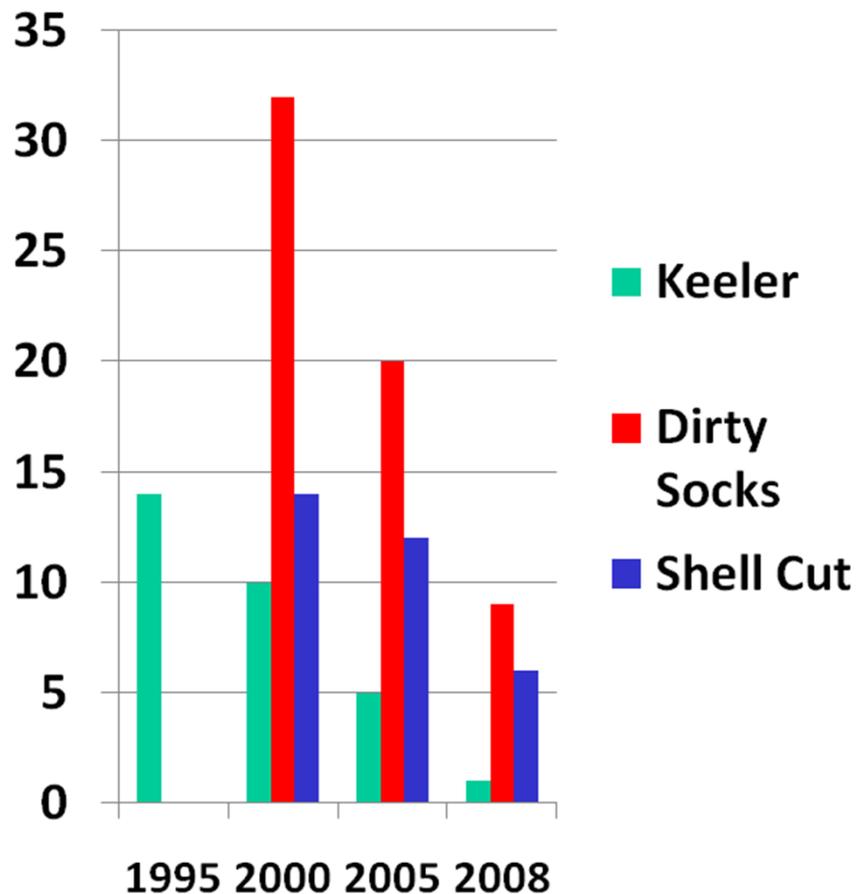
## Shallow Flooding

Shallow flooding controls dust emissions by wetting the lake bed with shallow sheets of water. When 75 percent of the emissive area consists of standing water and saturated soil, dust emissions are reduced by 99 percent.

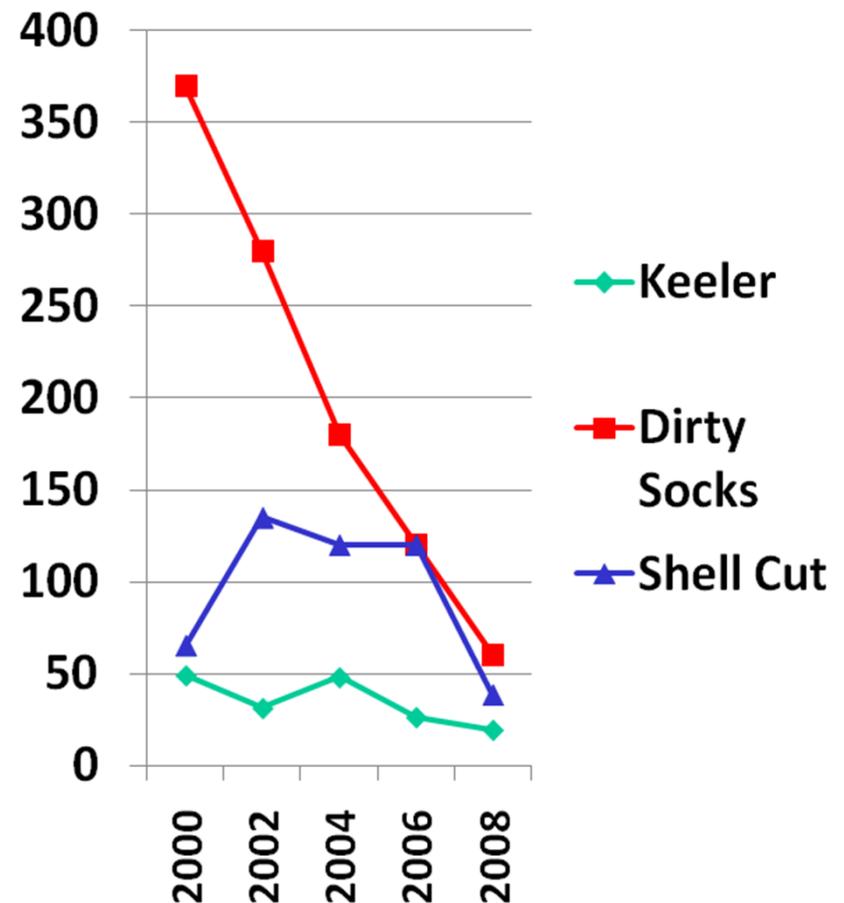


However, there have been significant decreases in both the number of federal PM<sub>10</sub> exceedances per year, as well as the average annual PM<sub>10</sub> values.

Number of federal 24-hr PM<sub>10</sub> exceedances per year (150 µg/m<sup>3</sup>)



Average annual PM<sub>10</sub> level (µg/m<sup>3</sup>)



# Current (2013) Owens Lake Dust Controls

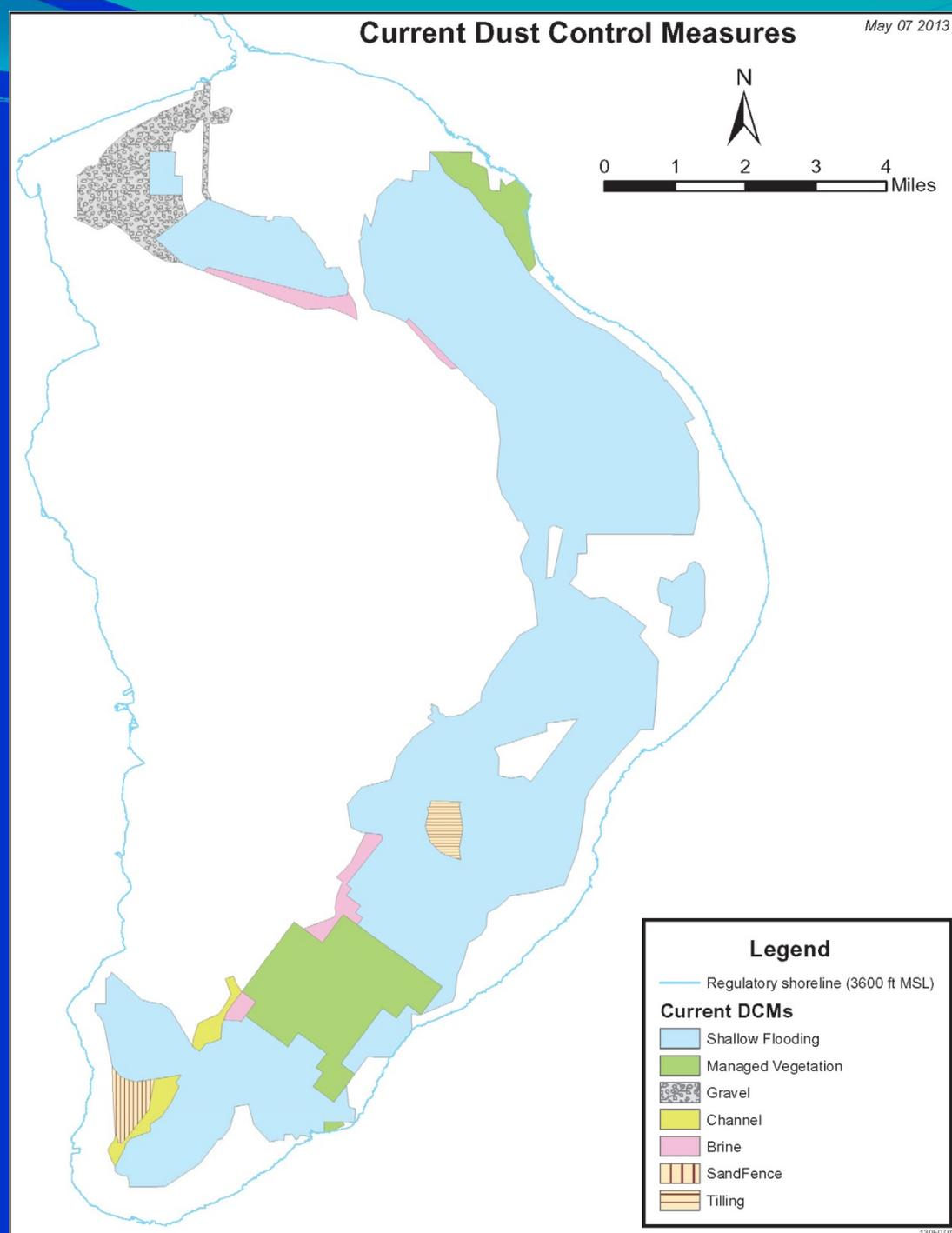
Shallow Flood 36.5 sq. mi.

Vegetation 3

Gravel 2

Sand Fence 0.5

**TOTAL 42 sq. mi.**



# Recent Litigation

- Two lawsuits in LA Superior Court
  - DWP appeals 2011 Order to ARB
  - DWP sues in Federal Court
  - Great Basin sues for fee payment
  - DWP cross-complaint in fee case
  - DWP sues CARB and GB re: 2011
  - DWP appeals 2012 Order to ARB
  - DWP appeals 2012 GB fees to ARB
  - Great Basin sues for penalties
  - DWP appeals 2013 GB fees to ARB
- Withdrawn by DWP  
ARB finds for Great Basin  
Dismissed by Court  
DWP ordered to pay  
Dismissed by Court
- Pending in Sacramento Court  
Hearing to be held Nov. 15  
Hearing held June 7  
Trial scheduled for Oct 2013  
????

# **August 1, 2013 US House Science Committee Subpoena of “Secret Science” Data Used by EPA for Deaths Related to PM<sub>2.5</sub> & Ozone**

**Seven Subpoened Papers Based on Original Two Papers**

1993 Dockery Pope NEJM Paper (H6CS Data—1%)

1995 Pope Thun AJRCCM Paper (ACS CPS II Data—99%)

**ACS has Refused to Comply with Subpoena: NO  
De-Identified Data That Can Be Independently Analyzed**

**ACS has Refused to Cooperate in Any Way with Highly  
Qualified Ph.D.-level PM<sub>2.5</sub> Critics, including Enstrom**

**ACS is Heavily Involved with EPA Regulatory Policy on  
an Issue Unrelated to Cancer and Will NOT Back Off**

**ACS Violated CPS II Subject Confidentiality by Allowing  
Home Addresses for Use in September 2013 AJRCCM Paper**

# **Conclusions About Air Pollution and Total Mortality in California Based on Prospective Epidemiologic Studies**

- 1) Overwhelming Evidence in CA that Premature Death is NOT Related to PM<sub>2.5</sub>, PM<sub>10</sub>, and Ozone**
- 2) ACS & Harvard Must Comply with August 2013 Subpoena of “Secret Science” Data Used by EPA**
- 3) EPA and CARB PM<sub>2.5</sub> & Ozone Regulations in CA Should be Frozen Pending Outcome of Subpoena**
- 4) Air Pollution in CA and South Coast Air Basin Must Be Put Into SES Context Given Low Total Death Rates & More PM<sub>2.5</sub> from China than Diesel**

## Lysenko Pseudoscience

Lysenko, non scientist, gained favor of Stalin  
Made false crop claims & used phony plant genetics  
Ignored genuine Mendelian plant genetics  
Purged opposing scientists, like Vavilov  
Famines resulted and Soviet citizens starved  
Soviet agriculture was set back decades

## Particulate Matter Pseudoscience

A few activist scientists publish most major papers  
Descenting scientists ignored & never funded  
ACS “secret science” findings cannot be checked  
Activists like ALA, UCS, NRDC file many lawsuits  
EPA, CARB, SCAQMD exaggerate health effects  
Draconian PM2.5 regulations adopted in healthy CA  
CA truckers, contractors & general public hurt

# **Combating Environmental Extremism in California**

**Learn about California environmental regulations and  
oppose those that are not scientifically justified**

**Challenge the scientists and CARB/SCAQMD officials  
responsible for regulations based on “secret science”**

**Ask elected officials to oppose questionable regulations,  
particularly those based on “secret science”**

**Ask local ACS officials to explain the use of CPS II  
data for “secret science” studies and EPA regulations**

**Stop supporting ACS until it complies with House  
subpoena & explains its involvement with EPA**