Climate Change & Environmental Justice: Research Needs

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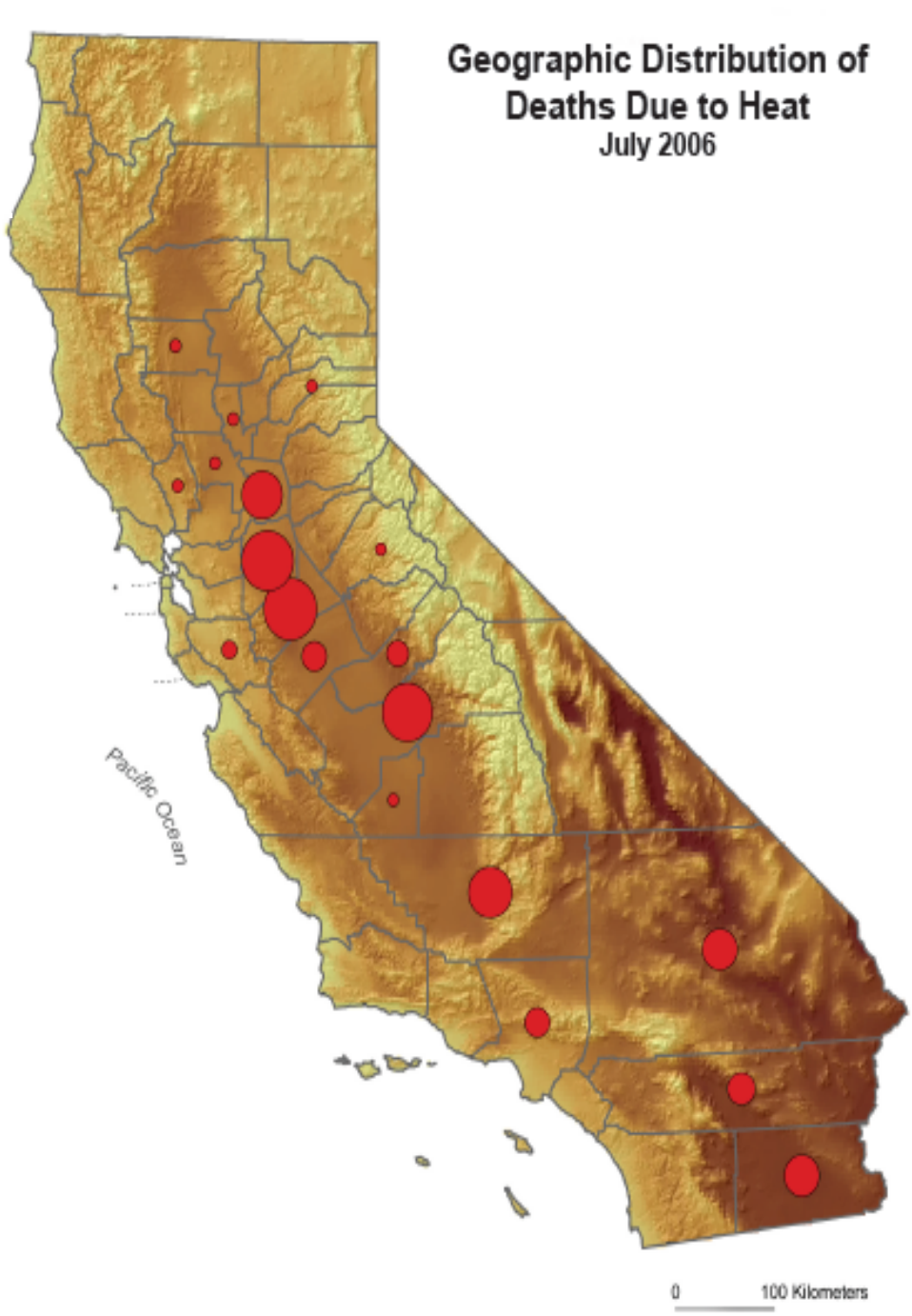
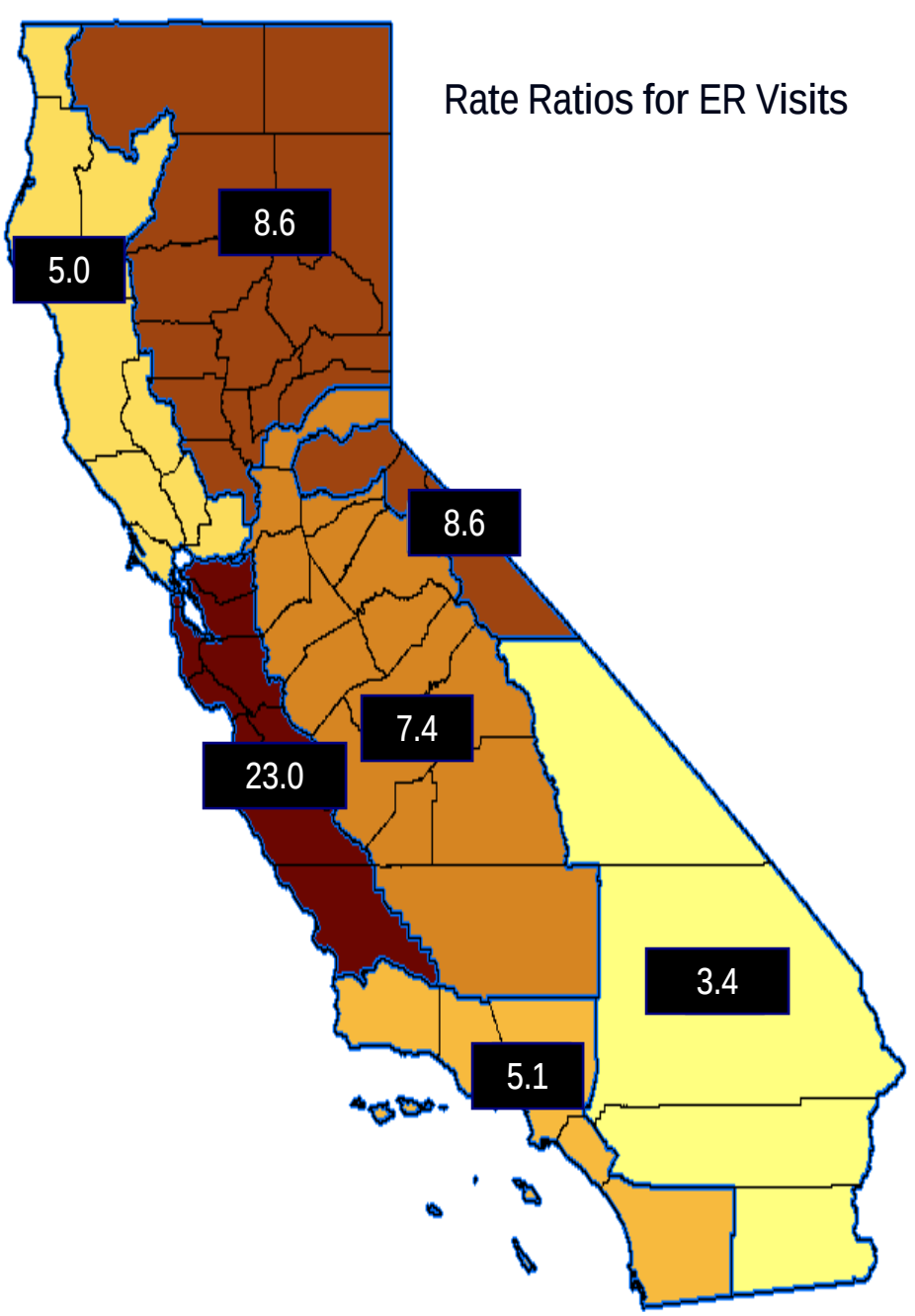
2006 Heat Episode in CA

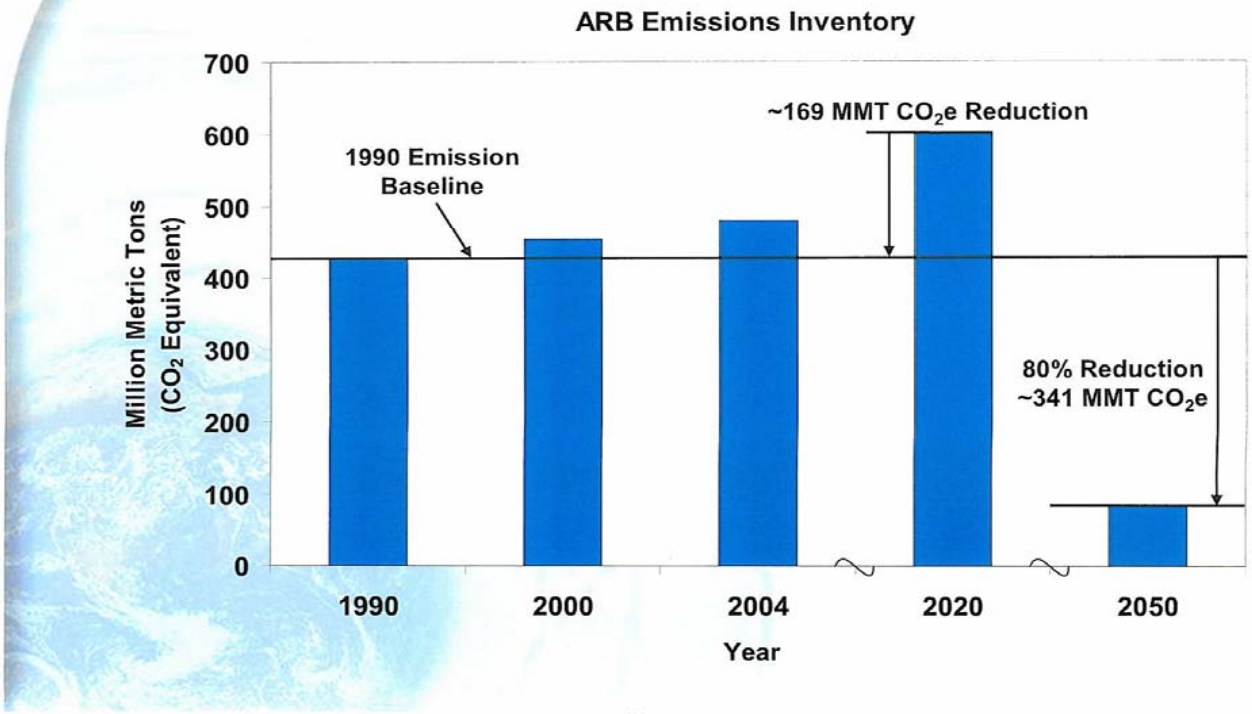
- July 15 – Aug 1 (18 days)
- 615 Excess deaths from all causes
- 145 Heat-related deaths (typical 10-12)
- 16,166 Excess ER visits
- 2537 Heat-related ER visits (typical 400)
- 1182 Excess hospital admissions

Source: Preliminary results - CDPH


Geographic Distribution of
Deaths Due to Heat
July 2006
Pacific Ocean
0
100 Kilometers


Rate Ratios for ER Visits
5.0
8.6
8.6
7.4
23.0
3.4
5.1

Magnitude of the Challenge



Air Pollution Benefits
(Reaching 1990 levels)

- 10 & 50 tons/day of PM 2.5 & NOx
- 340 premature deaths
- 9,400 asthma-related and LRS
- 780 acute bronchitis
- 57,000 work days
- 330,000 RADs

What is Known CC / AP

- Magnitude higher in Seniors, LIMs
- Heat-waves, forest fires, early snow-melt and flooding
- Vector borne diseases
- Extreme weather events
    - Hurricanes, tornadoes, monsoons

Information Needed

- Geographical distribution of impacts
  - Adaptation needs/resources
- Magnitude of impacts at a community level
- Potential impacts & magnitude on Native American Indian Tribes
- Combined benefits of improving CC / AP

AB-32 Requirements (1)

"when designing any market-based compliance mechanism and regulations consider the potential for direct, indirect, and **cumulative emission impacts** from these mechanisms, **including localized impacts** in **communities that are already adversely impacted by air pollution**, as well as prevent any increase in the emissions of toxic air contaminants or criteria air pollutants"

AB-32 Requirements (2)

"the greenhouse gas emission reduction rules, regulations, programs, mechanisms, and incentives ……**direct public and private investment toward the most disadvantaged communities** in California and provide an opportunity for small businesses, schools, affordable housing associations, and other community institutions to **participate in and benefit** from the statewide efforts"

Why Cumulative Impacts

- Current Regulatory Paradigm
  -- Single Pollutant / Single Facility
- Contradictory to Real Situation
  -- Multiple Pollutants / Facilities
- Cal / EPA's CI Definition – baseline
- Consistency & Uniformity to identify impacted communities
- Land-use and smart-Growth, Siting, Permitting
- Assessment method available

Environmental Justice Screening Method:

Integrating Indicators of Cumulative Impact and Community Vulnerability into Regulatory Decision-making

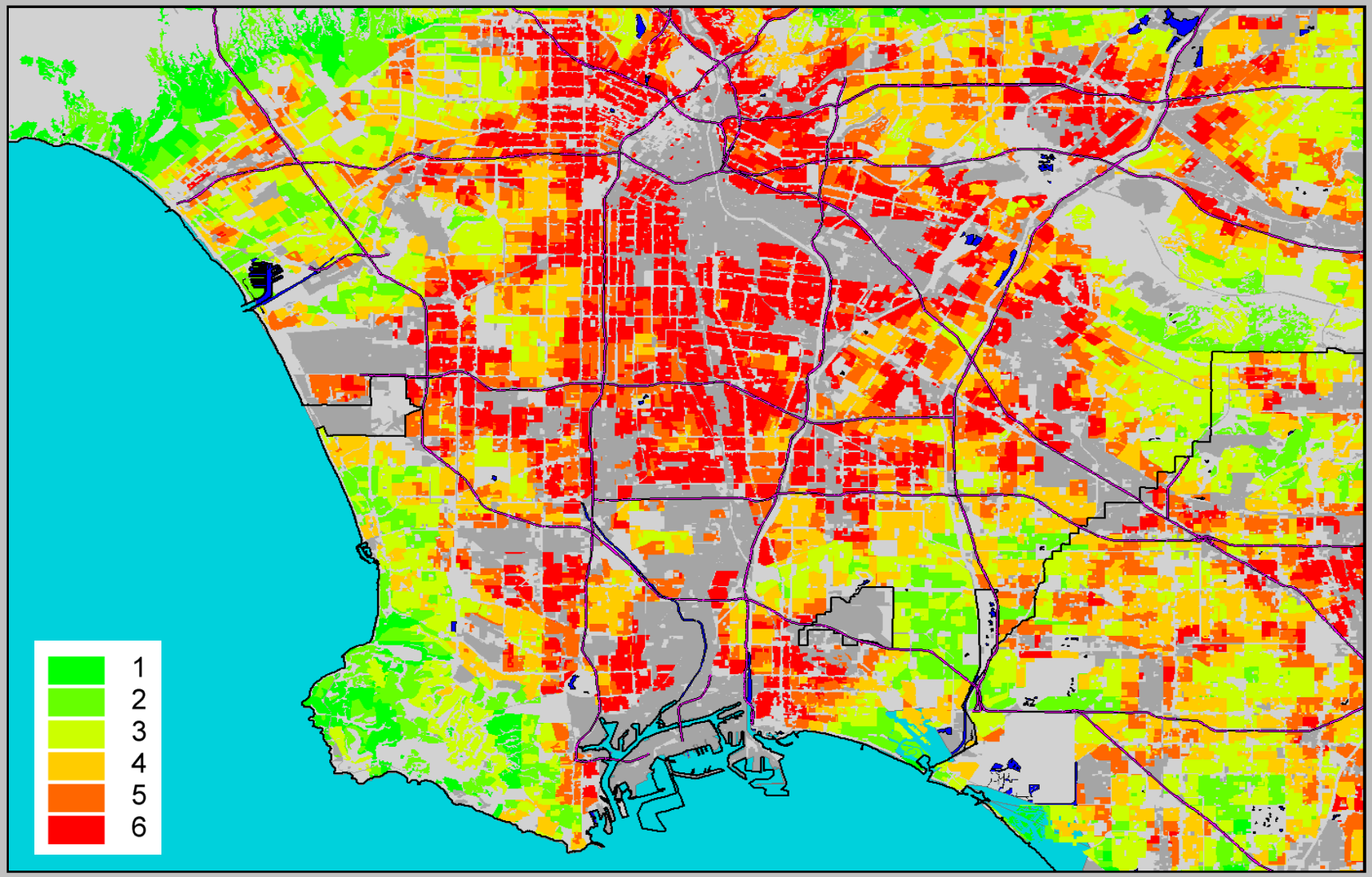
Source: CBE

Source: David Woo

Center for Justice, Tolerance & Community
University of California Santa Cruz

Manuel Pastor, USC
Rachel Morello-Frosch, UC Berkeley
Jim Sadd, Occidental College

Adjusted Cumulative Score



Equity Implications (1)

- Which source sectors hold the most promise both in terms of emission reductions and environmental justice/health benefits?

- Should greenlining be considered in impacted areas? How to integrate greenlining into various policies?

Equity Implications (2)

- Recognizing that climate change impacts will continue and may even increase into foreseeable future time frame, how to raise and allocate adequate resources to invest in adaptation measures?

- How can we uniformly ascertain social equity impacts of different GHG emission reduction strategies being considered at different levels? (i.e., local, regional, state, national and international)

Equity Implications (3)

- Which industrial / economic sectors are most likely to be impacted by proposed GHG mitigation strategies in terms of job loss, work retraining needs, productivity, or major production shifts? What is the demographic make-up of these potentially impacted sectors?