Impact of Climate Change on Public Health

September 23, 2004

Air Resources Board
California Environmental Protection Agency
Health Impacts of Fossil Fuels

Burning Fossil Fuels

- Greenhouse Gas Emissions
- Climate Change

Air Pollution

- Asthma Attacks
- Other Respiratory Illnesses
- Premature Death from Heart and Lung Diseases

Source: Harvard Medical School (2004)
SUMMER 2003 HEATWAVE
England, Wales, The Netherlands, France, Italy, and Portugal
23,000 excess deaths

20-40% of the deaths from air pollution

2003 Summer Temperatures
10 °C (18 °F) > 30-year average

Projected Deaths from Heatwaves

Asthma and Climate Change

Pollen

Ground-level Ozone and PM

Floods & Fungi

Droughts & Fires

Source: Harvard Medical School (2004)
Ragweed and Climate Change

- Drought favors colonization
- Pollen increases with CO$_2$
- Common allergen in Eastern U.S.

Source: Harvard Medical School (2004)
Owen K. Davis (photo)
A Case Study: West Nile Virus

West Nile virus activity
The virus is active in almost every state, but this year's outbreaks have been concentrated in Western states.

2004 activity
Human cases (number in bold)
Avian, animal or mosquito infections
No evidence of virus

Source: Centers for Disease Control (2004)
Environmental Justice and Climate Change

- At greater risk to heatwave mortality
- More asthma attacks

Harvard Medical School (2004)
Conclusions

- Climate change impacts
  - Heatwave-related deaths
  - Increased asthma effects
  - Increased allergen production
  - Increased infectious disease
  - Poor, minorities more affected