

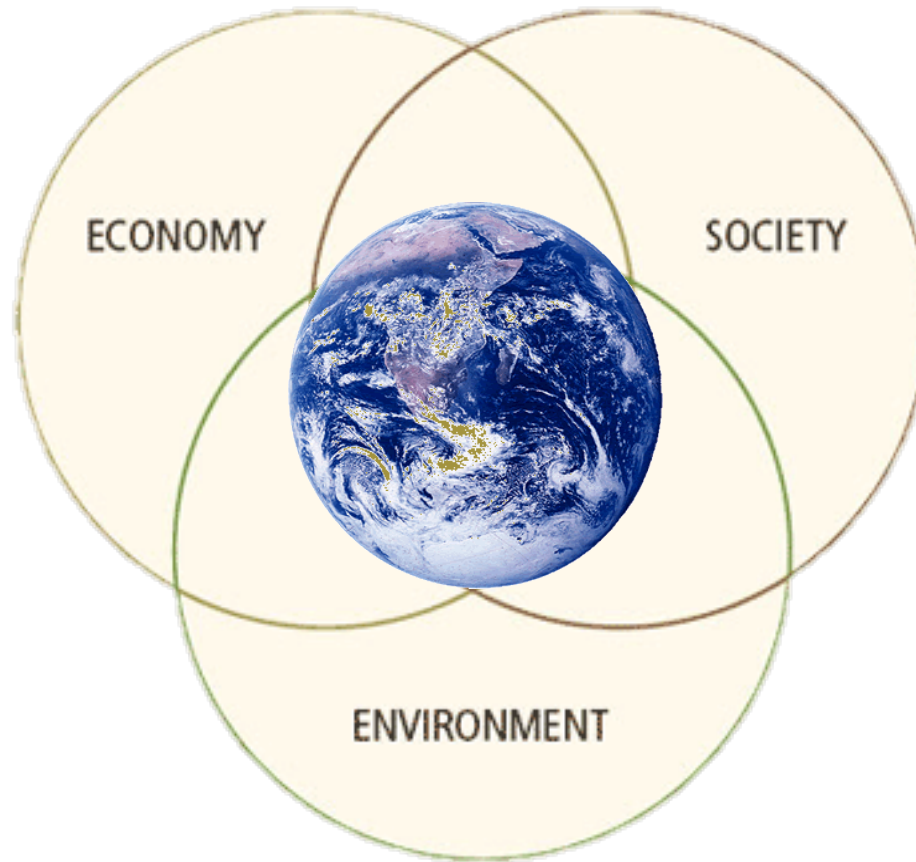
Sustainability Pioneers: #1 Climate Change and Health Connections

Patricia DeMarco

Lawrence Hall Room 203

10:00 to 11:50 AM

Sustainability as a Goal



Earth- Our Life Support System

Clean Water

Fresh air

Fertile
Ground

Biodiversity
of Species

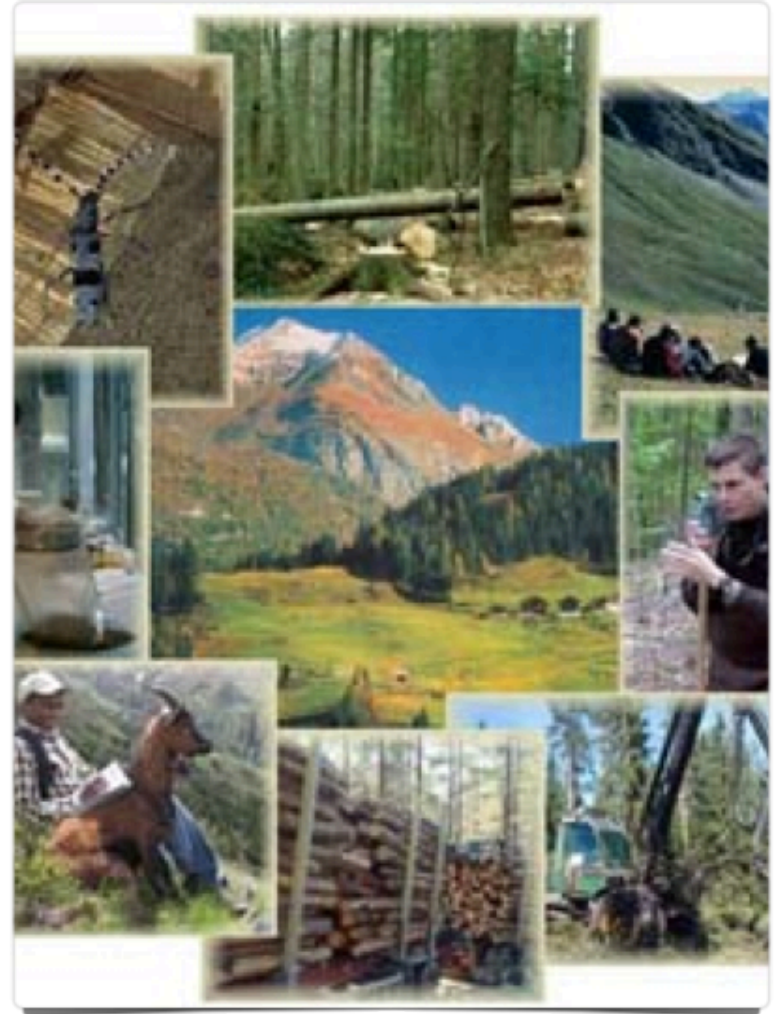


Earth in orbit around the Sun www.nsf.gov

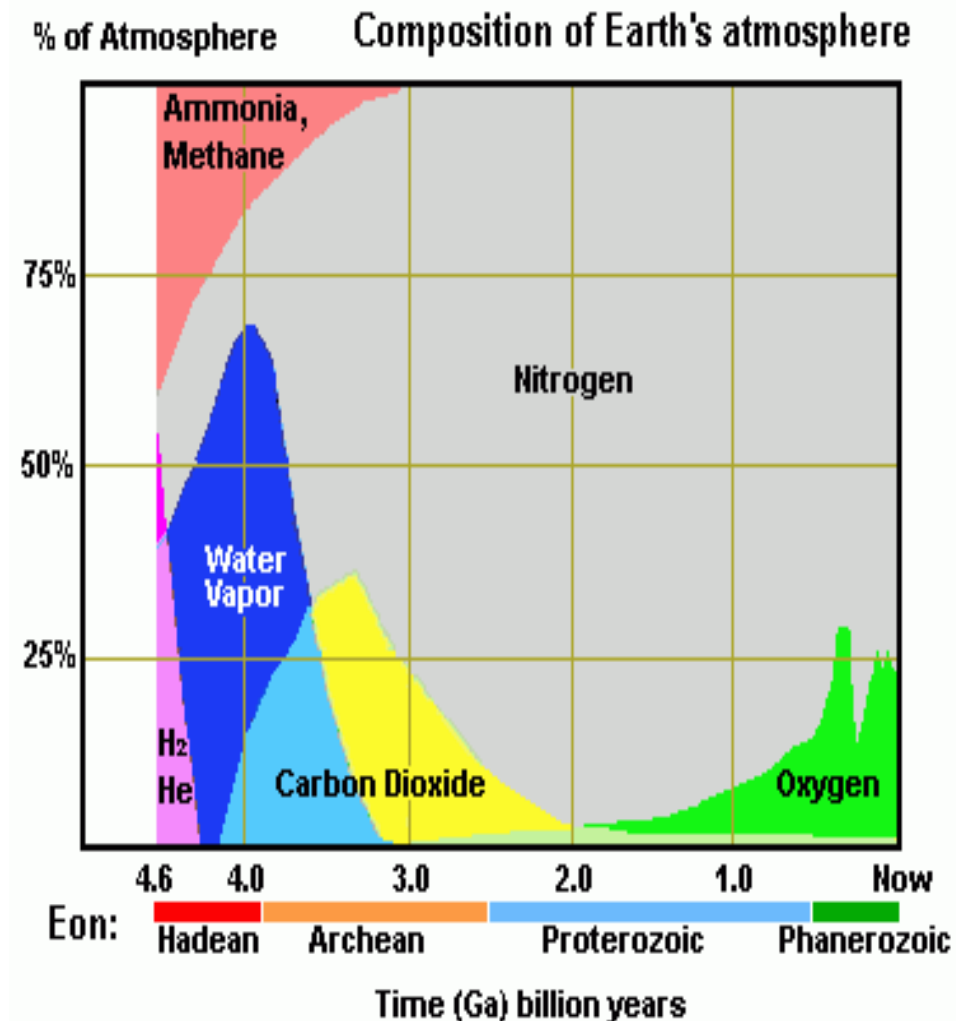
Interconnected Web of Life

- *"...man does not live apart from the world; he lives in the midst of a complex, dynamic interplay of physical, chemical, and biological forces, and between him and this environment are continuing, never ending interactions."*

Rachel Carson

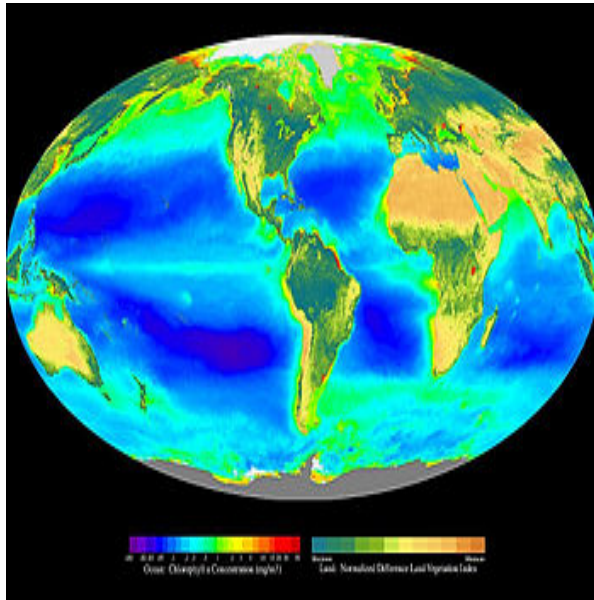


Evolution of the Earth's Atmosphere



Photosynthesis

- The miracle that sustains life



System Under Stress

Overpopulation

Fossil Fuel Combustion

**Resource
Extraction**

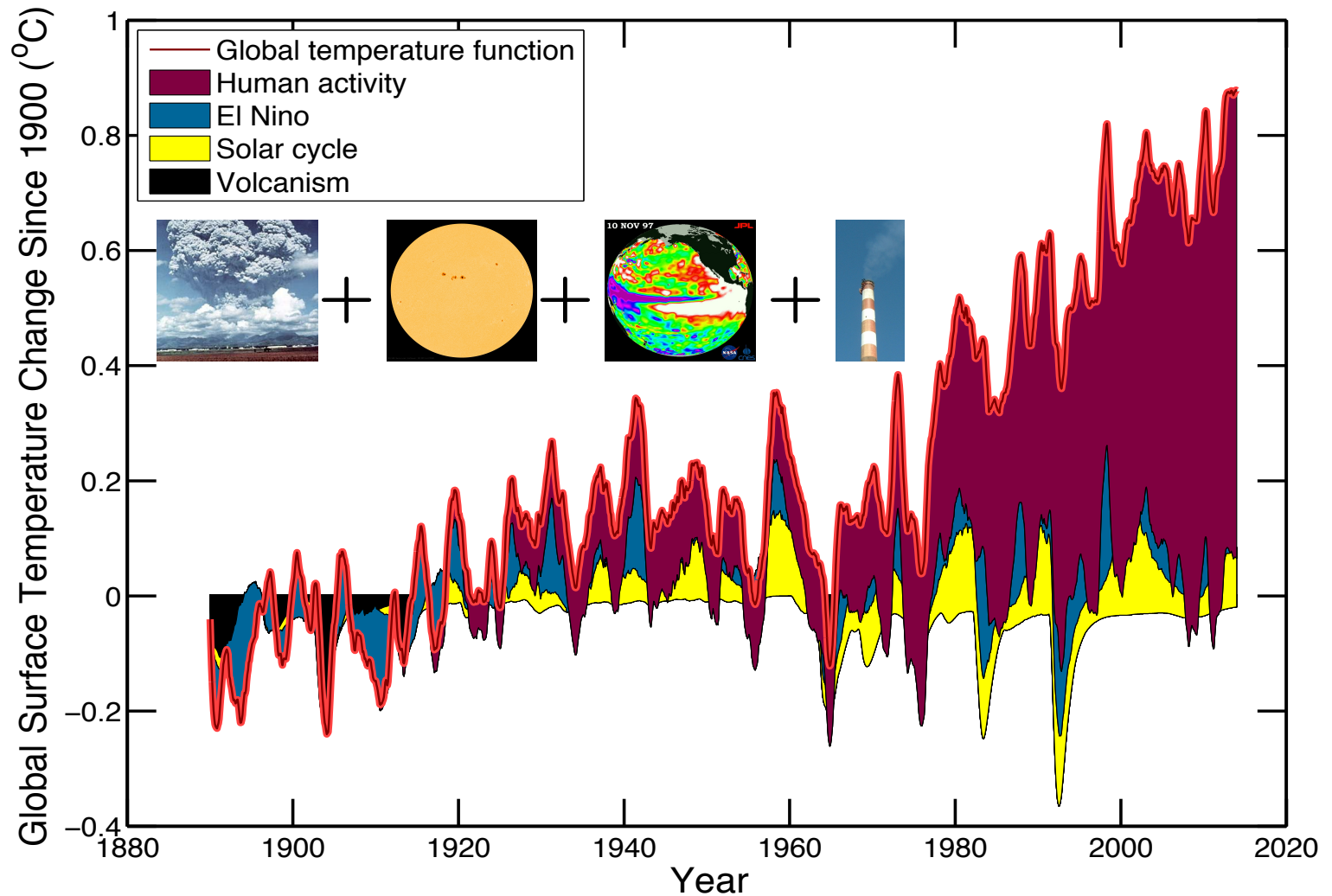


Hyper-consumption

State of Global Ecosystem Today

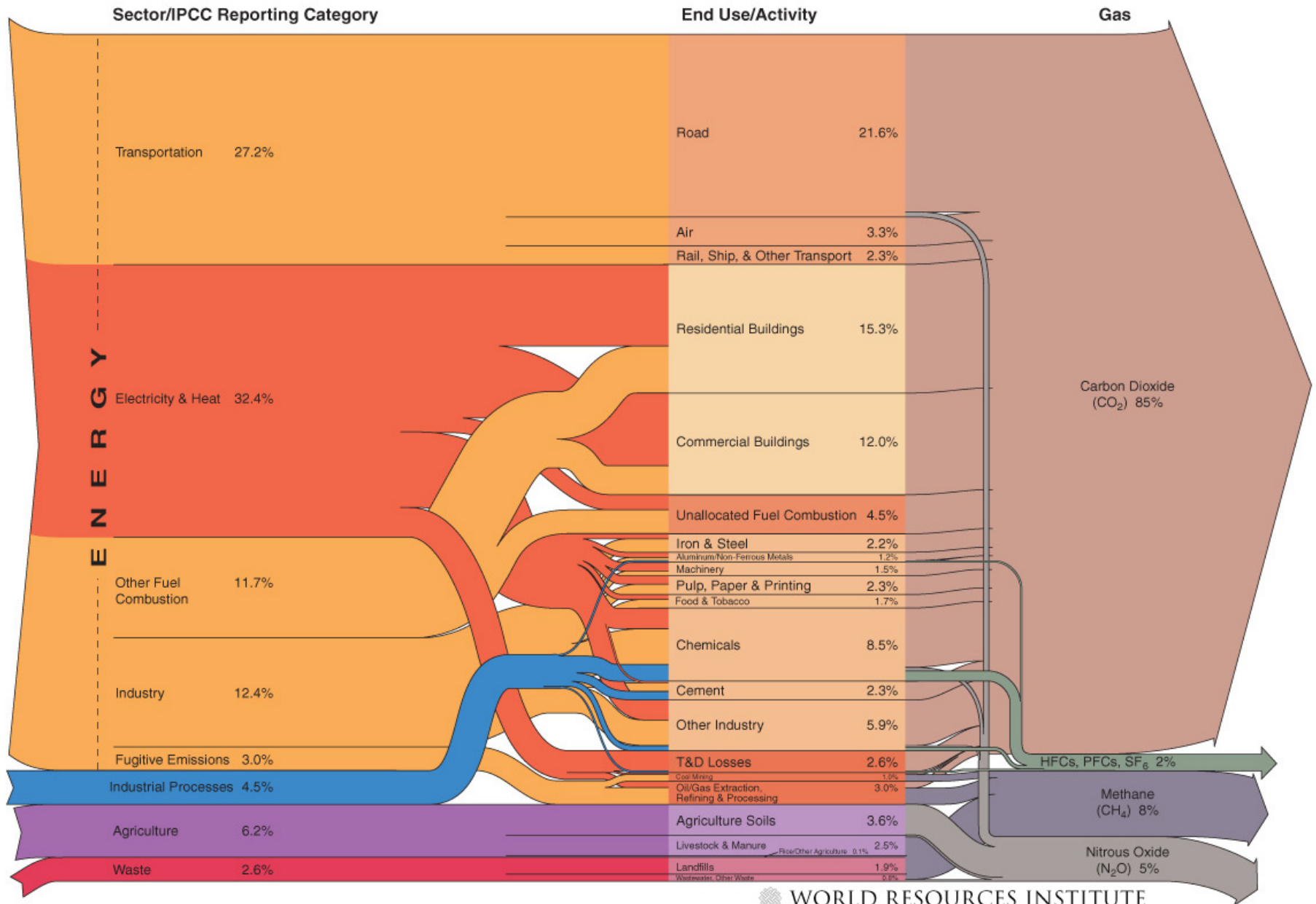
1/3 Transformed or
Destroyed
1/3 Fragmented or
Disturbed
1/3 Pollution & invasive
species





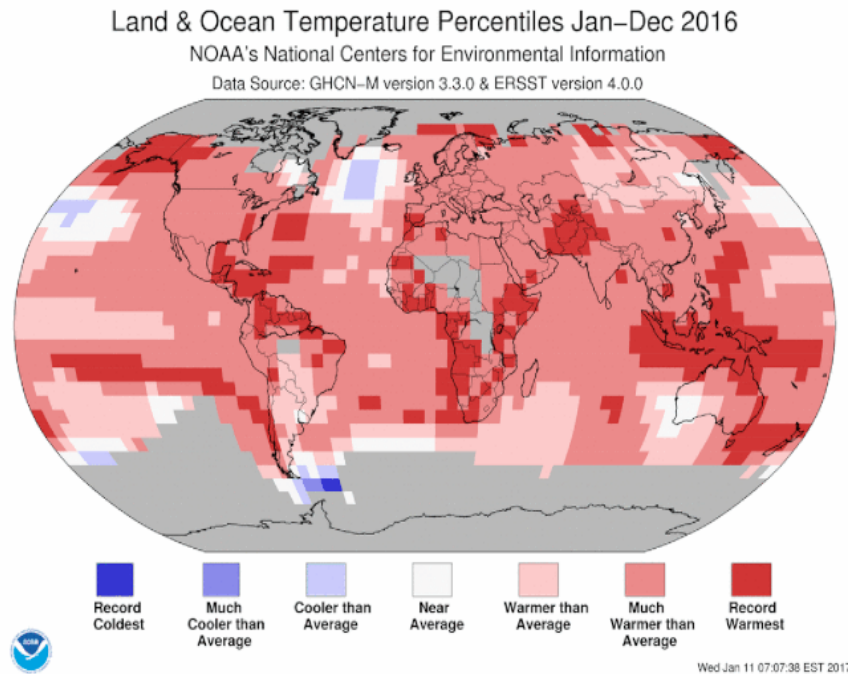
Judith L. Lean¹ and David H. Rind² How natural and anthropogenic influences alter global and regional surface temperatures: 1889 to 2006
 GEOPHYSICAL RESEARCH LETTERS, VOL. 35, L18701,
 doi:10.1029/2008GL034864, 2008

U.S. GHG Emissions Flow Chart



Existential Crises of the 21st Century

Climate Change



Global Pollution



Preserve the right for LIFE to Exist

- The laws of nature are NOT negotiable!
- Humans cannot legislate the laws of chemistry and physics nor the biologic system responses to changes in the environment



Ways Climate Change Affects Health

- Increase severity or frequency of health effects that already occur
- Creating health threats where they have not occurred before



heat stroke in areas of prolonged drought



Lyme disease vector habitat expansion

Four Health Impact Sources



1. Climate change

2. Air Pollution

3. Water Pollution

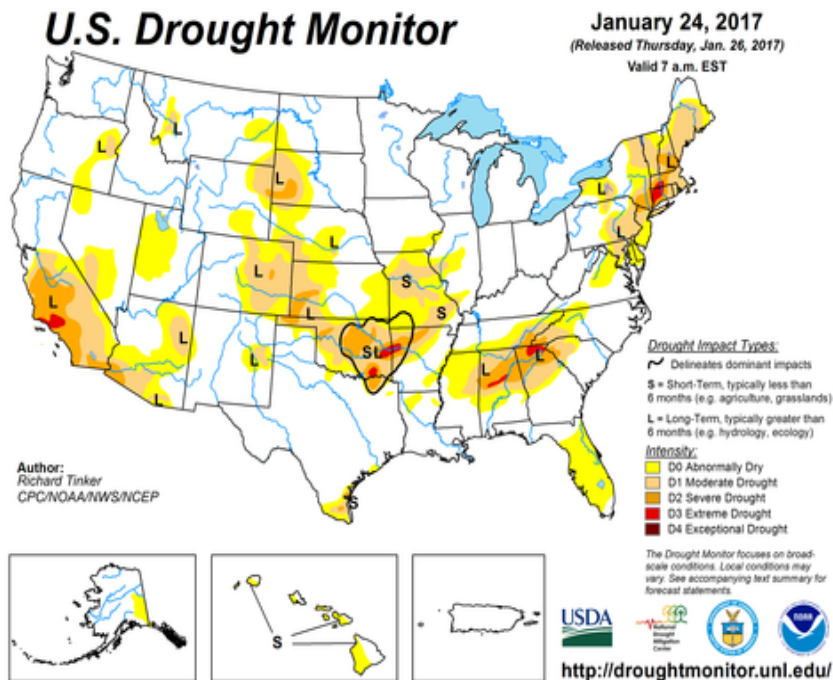
4. Land Contamination

Hopewell PA

Four Health Impact Sources

- 1. Climate change

- Weather-related Morbidity and Mortality
- Zoonotic Diseases (insect vectors)
- Mental Health and Stress related disorders
- Drought and Flood effects on nutrition/food scarcity



Four Health Impact Sources

- **2. Air Pollution**



Shenango Coke Works- Pittsburgh, PA

- Asthma
- Respiratory diseases
- Allergies

Four Health Impact Sources

- **3. Water Pollution**



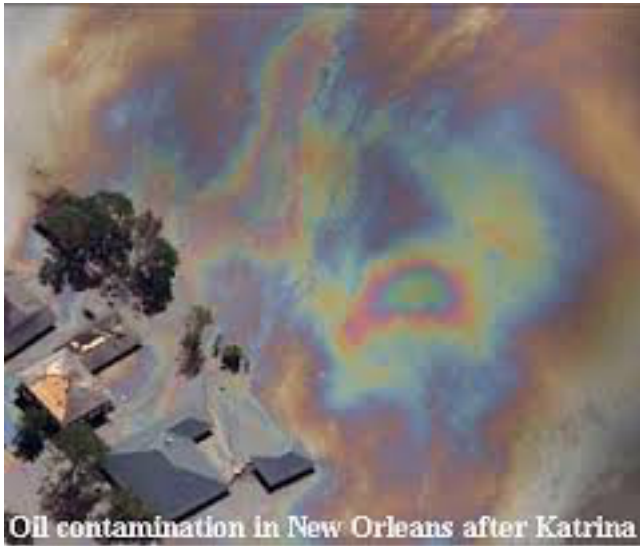
Hurricane Sandy in New York
black mold health hazard

- Zoonotic Diseases
(insect vectors)
- Waterborne Diseases



Four Health Impact Sources

- **4. Land Contamination**



- Cardiovascular diseases
- Food related Disease and Nutrition

Climate Change and Health

- Cancer
- Cardiovascular diseases
- Human development effects
- Mental Health and Stress related disorders
- Neurologic Diseases and Disorders



Transition to Sustainability Pioneers

- Take a break
- Show Sustainability Pioneers Video
- Kirsi leads discussion