

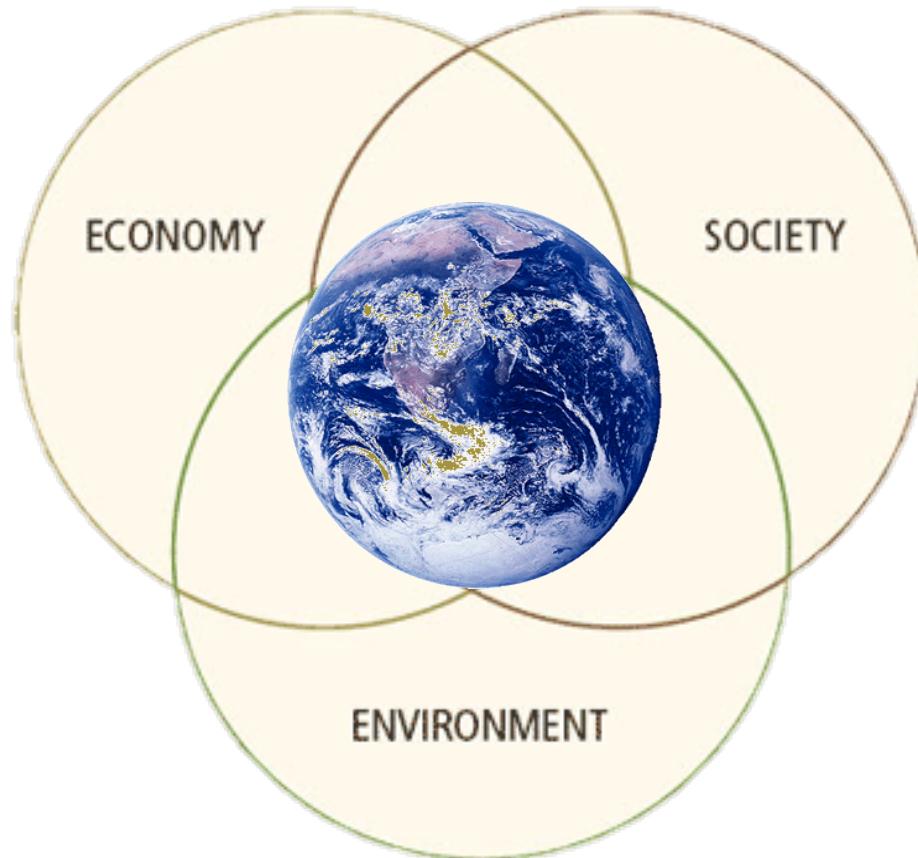
Sustainability Pioneers: #1 Climate Change and Health Connections

Patricia DeMarco

Lawrence Hall Room 203

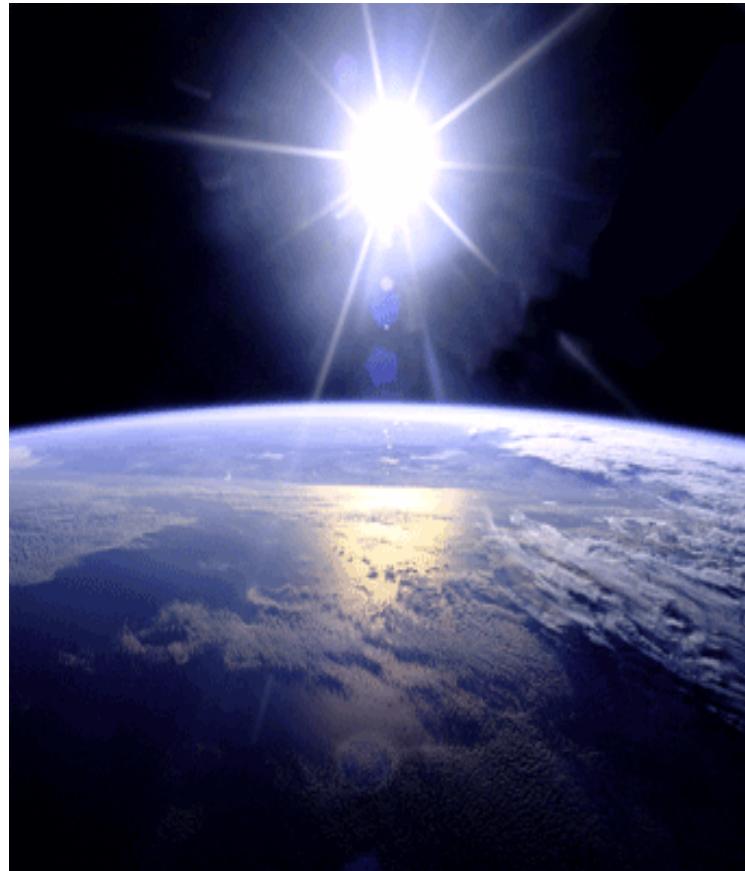
10:00 to 11:50 AM

Sustainability as a Goal



Earth- Our Life Support System

Clean Water



Fresh air

Fertile
Ground

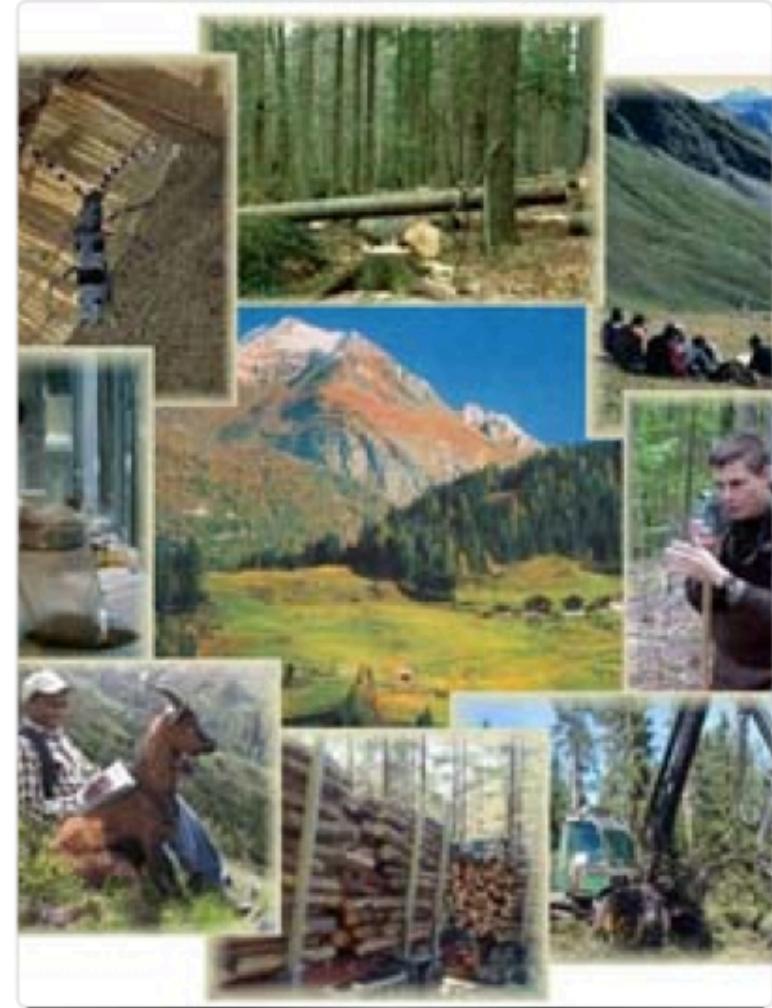
Biodiversity
of Species

Earth in orbit around the Sun www.nsf.gov

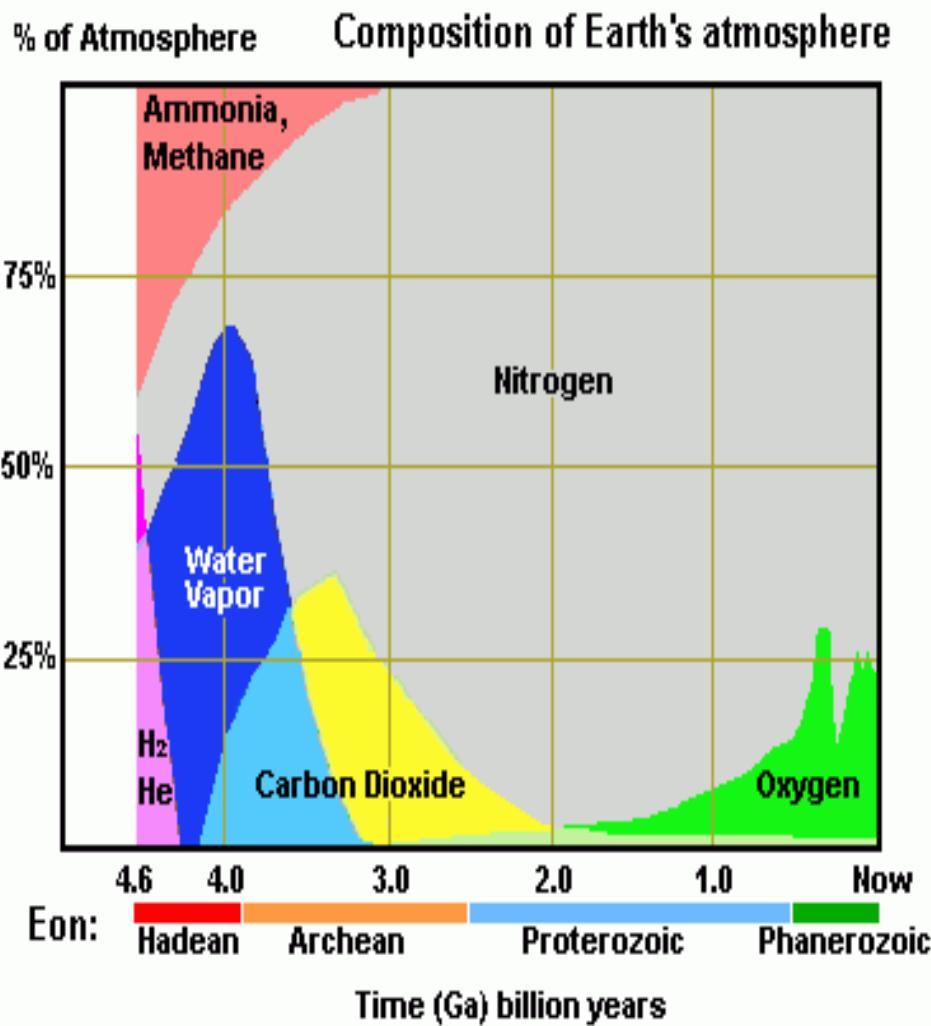
Interconnected Web of Life

- *“...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

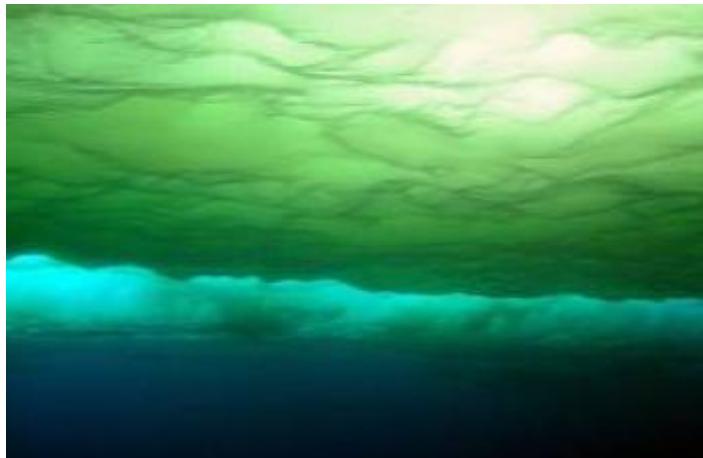
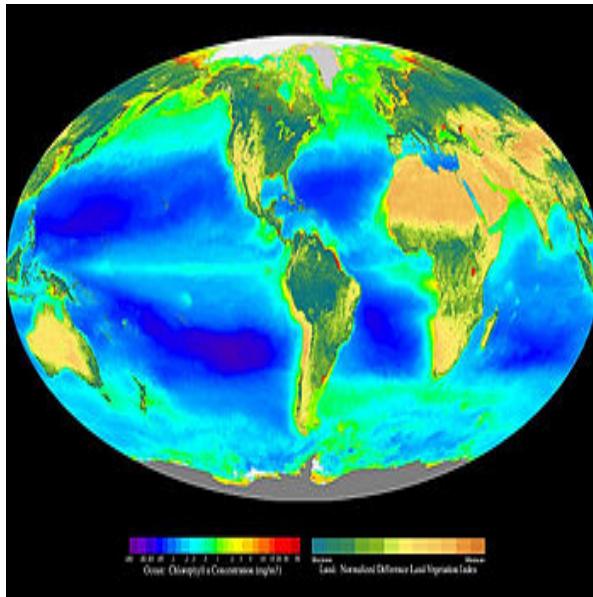


Evolution of the Earth's Atmosphere



Photosynthesis

- The miracle that sustains life



System Under Stress

Overpopulation

**Resource
Extraction**

Fossil Fuel Combustion

Hyper-consumption

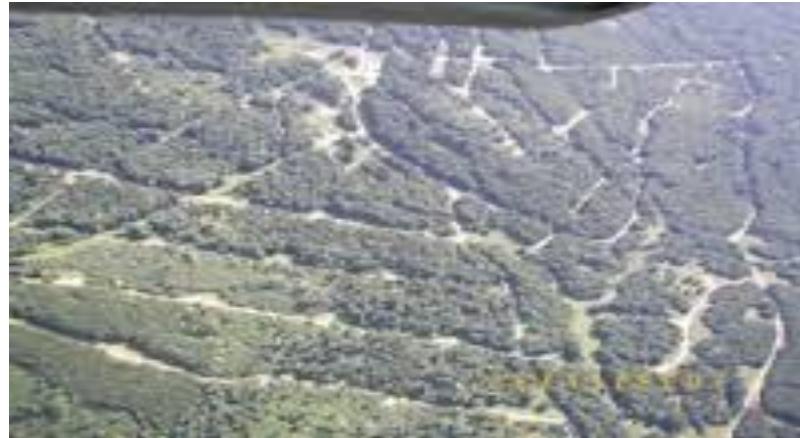


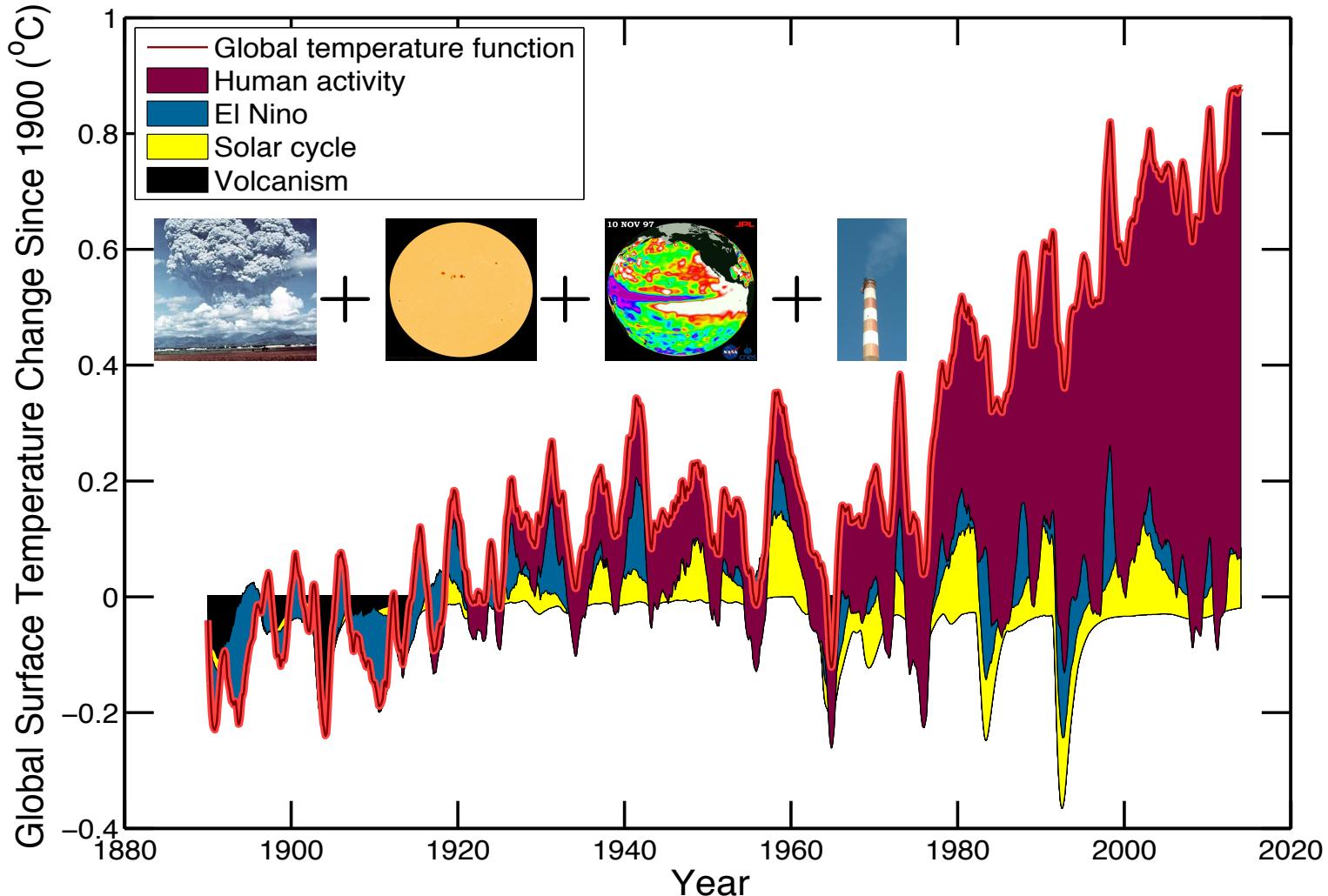
State of Global Ecosystem Today

1/3 Transformed or
Destroyed

1/3 Fragmented or
Disturbed

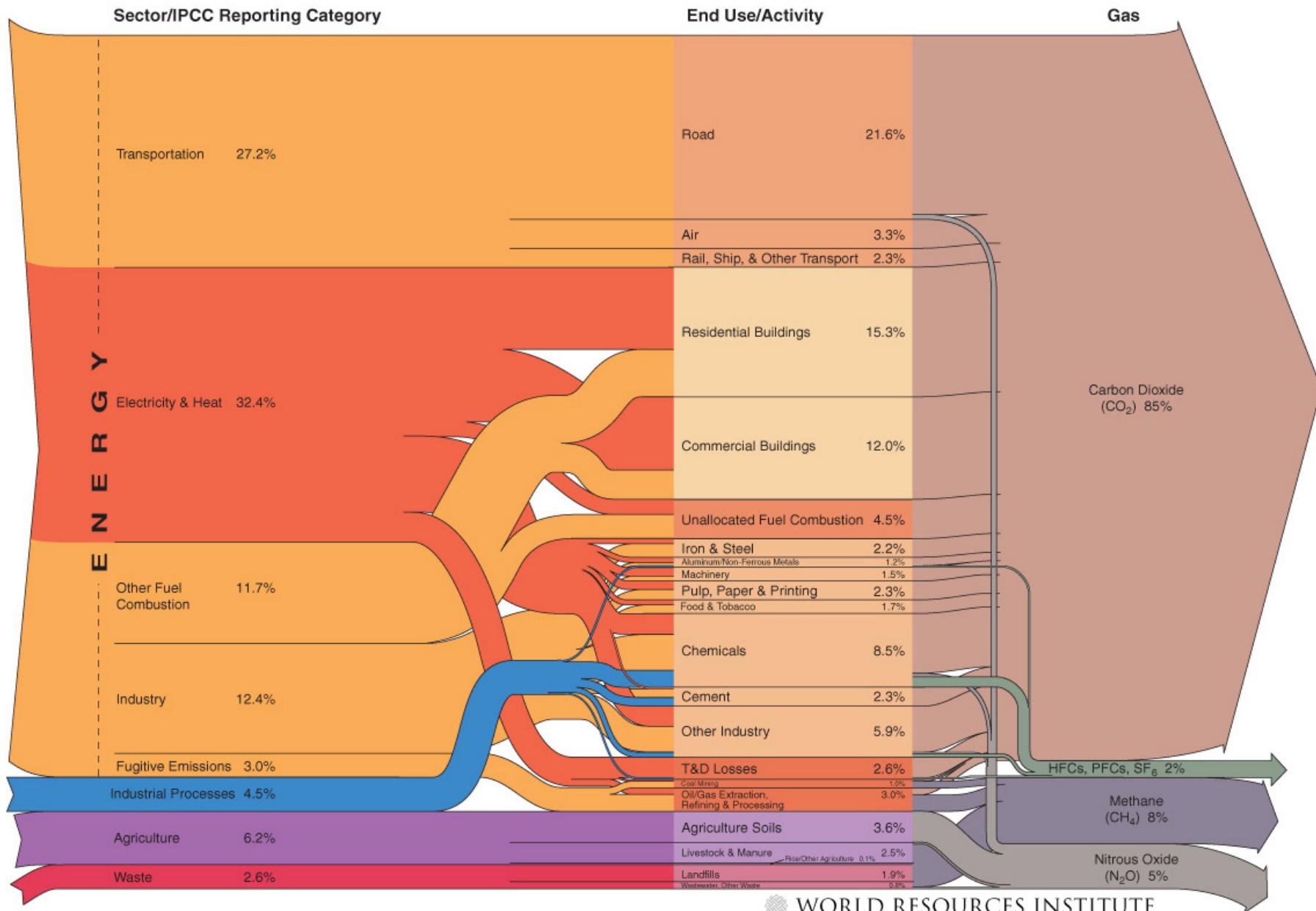
1/3 Pollution & invasive
species





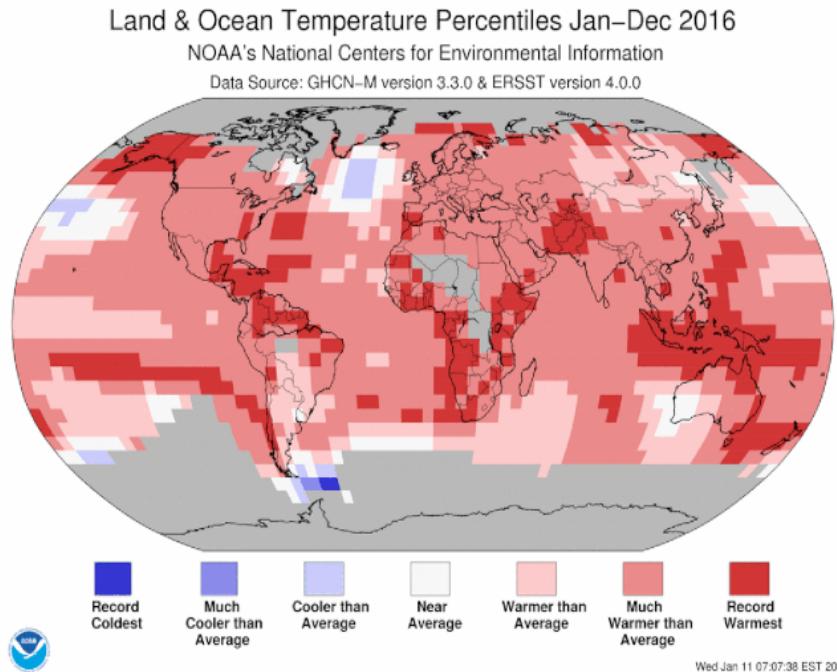
Judith L. Lean¹ and David H. Rind² How natural and anthropogenic
influences alter global and regional surface temperatures: 1889 to 2006
GEOPHYSICAL RESEARCH LETTERS, VOL. 35, L18701,
doi:10.1029/2008GL034864, 2008

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

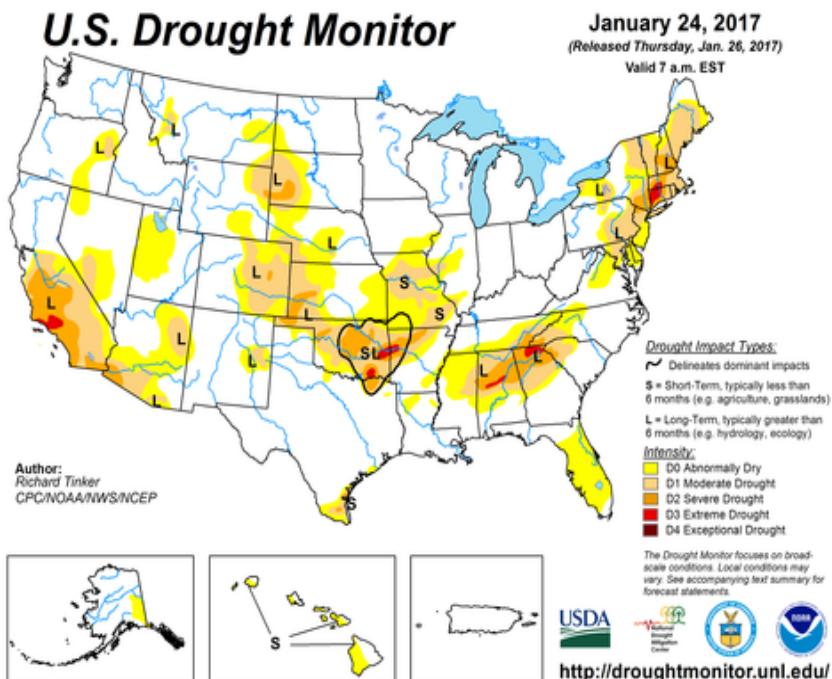
2. Air Pollution

3. Water Pollution

4. Land Contamination

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**



- Asthma
- Respiratory diseases
- Allergies

Shenango Coke Works- Pittsburgh, PA

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**



Oil contamination in New Orleans after Katrina

- 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