


# 21<sup>st</sup> Century Challenges For Humans

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A silhouette of a runner in a starting crouch on a track, positioned to the left of the text.

For information about presenting this to your own group please contact Tony Noerpel – use of this material for profit or on a commercial website is prohibited

# Why this meeting?

- ◆ See the film “End of Suburbia”
- ◆ To raise money for Coal River Mountain Watch [www.crmw.org](http://www.crmw.org)
- ◆ Create Loudoun County Committee for a Sustainable Society to study, discuss and raise awareness and apply sustainable solutions and initiatives.

# The Big Challenges

- ◆ Global warming and environmental degradation
- ◆ Resource depletion and overpopulation
- ◆ International economic imbalances



# Example: Africa

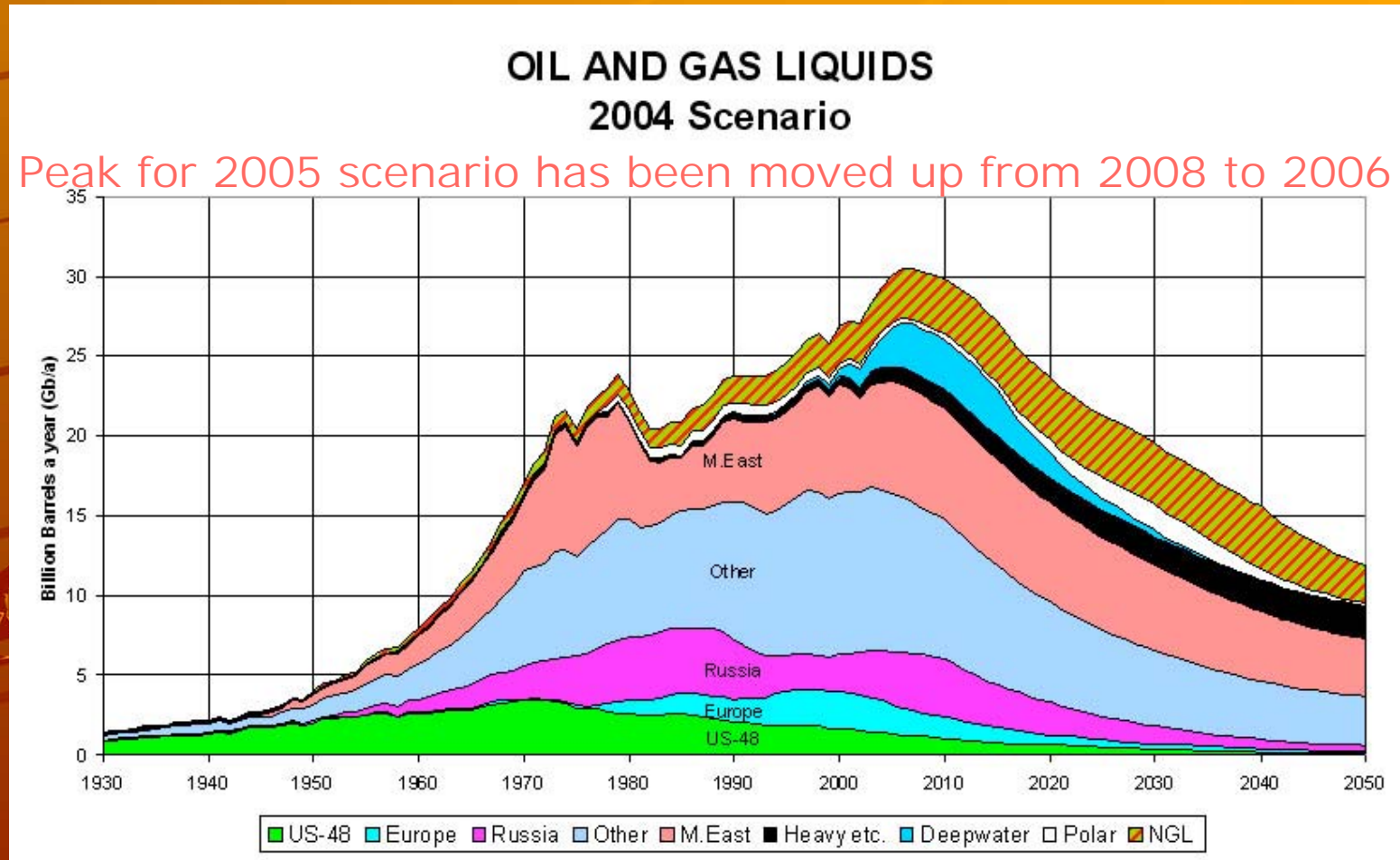
- ✦ Debt relief for sub-Saharan Africa will save those countries \$1 Billion per year, however...
- ✦ Oil prices of \$55 pbl will cost an additional \$10.5 Billion per year over 2002 average price of \$26.<sup>1,2</sup>
- ✦ Desertification and draught caused by global warming threaten all agriculture in region.<sup>3</sup>

1 Financial Times, July 2, 2005, p. 2

2 War of the Future- Oil Drives the Genocide in Darfur by David Morse; TomDispatch; August 18, 2005

3 Thomas, Knight, Wiggs, "Remobilization of southern African desert dune systems by twenty-first century global warming," Nature, June, 2005

# Association for the Study of Peak Oil – 2004 Scenario

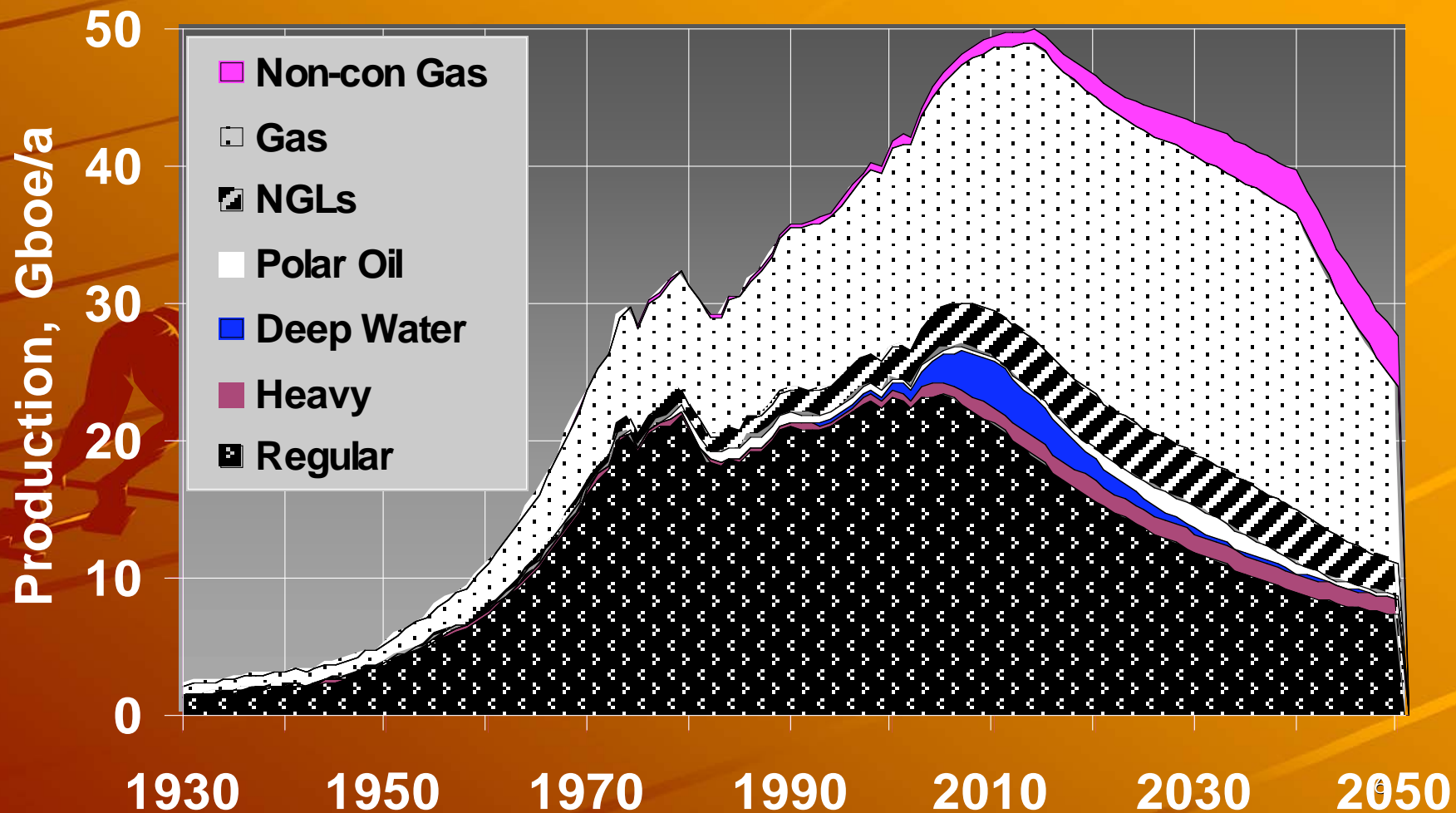


Source: ASPO, 2005



# All Oil & Gas

All boundaries fuzzy



# Scientific Support for the Theory of Anthropogenic Global Warming

- ◆ 1995 IPCC Report
- ◆ 2001 IPCC Report
- ◆ 2005 World Bank Millennium Ecosystem Assessment
- ◆ Arctic Climate Impact Assessment
- ◆ The American Meteorological Society, the American Geophysical Union, the American Association for the Advancement of Science and the National Academy of Science
- ◆ Pentagon report on global warming "An Abrupt Climate Change Scenario and Its Implications for United States National Security"
- ◆ Joint Science Academy Statement, 2005

# Scientific Support for Anthropogenic Global Warming Theory

- ◆ Naomi Oreskes<sup>1</sup>, University of California at San Diego studied more than nine hundred articles on climate change published in refereed journals between 1993 and 2003. Seventy-five per cent endorsed the view that anthropogenic emissions were responsible for at least some of the observed warming of the past fifty years. The remaining twenty-five per cent, which dealt with questions of methodology or climate history, took no position on current conditions. **Not a single article disputed the premise that anthropogenic warming is under way.** Washington Post Sunday, December 26, 2004;

1 "The scientific consensus on climate change", Science 306, 5702 #686, 2004



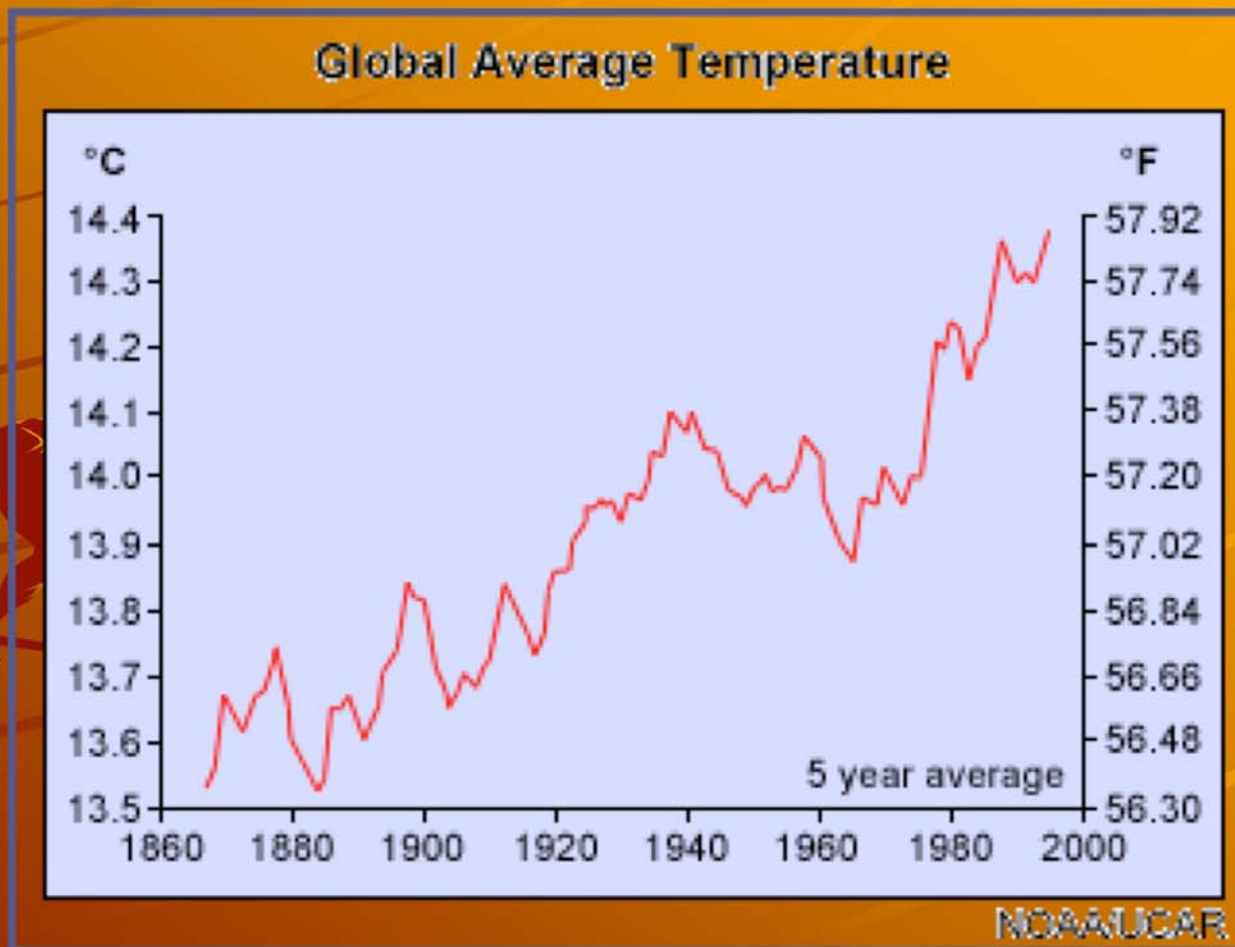
# Scientific Support for Global Warming Skeptics

No peer reviewed scientific articles  
No established science organizations

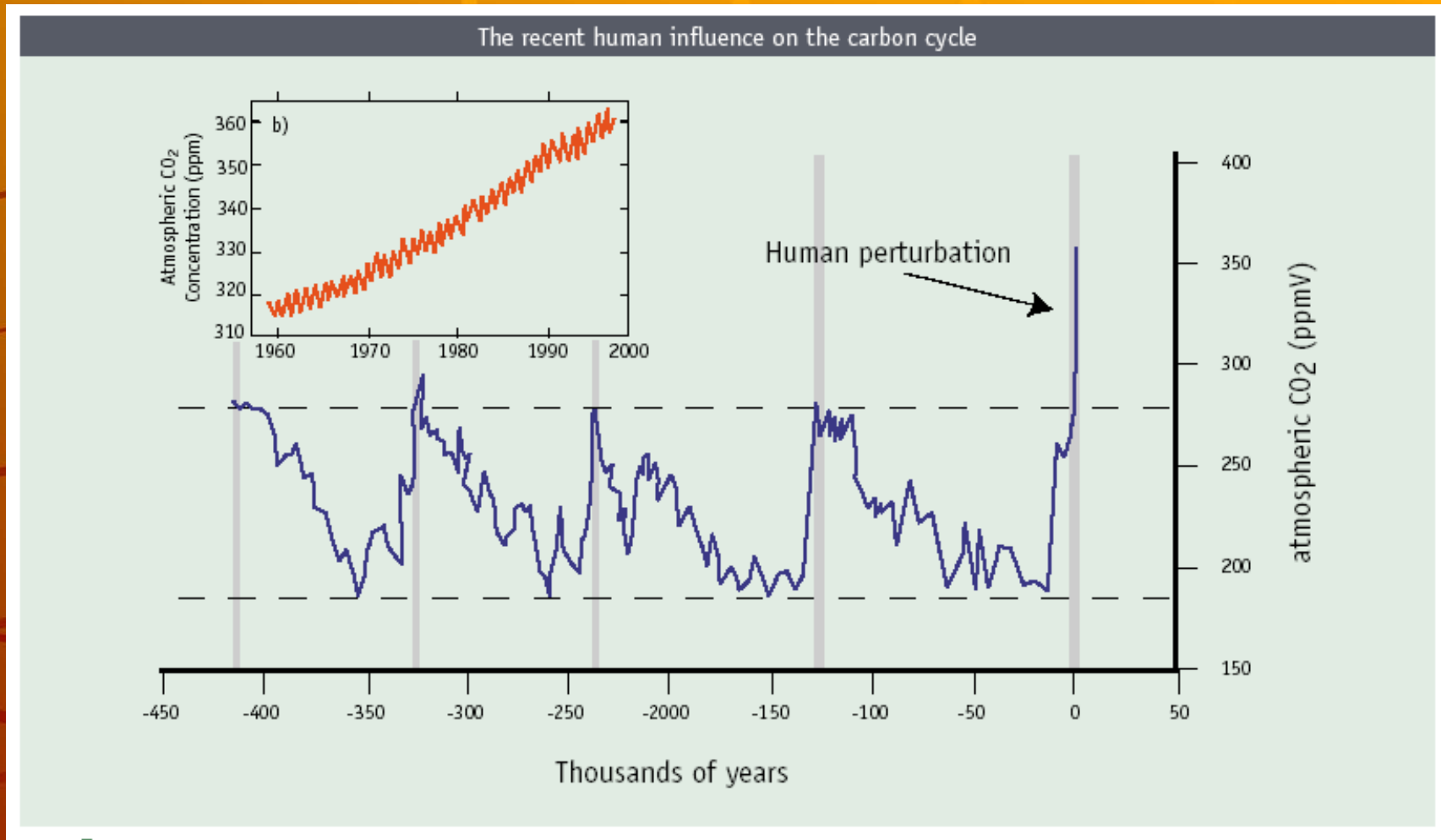
Refute the effects humans are having on the  
global environment



# Global Average Temperature



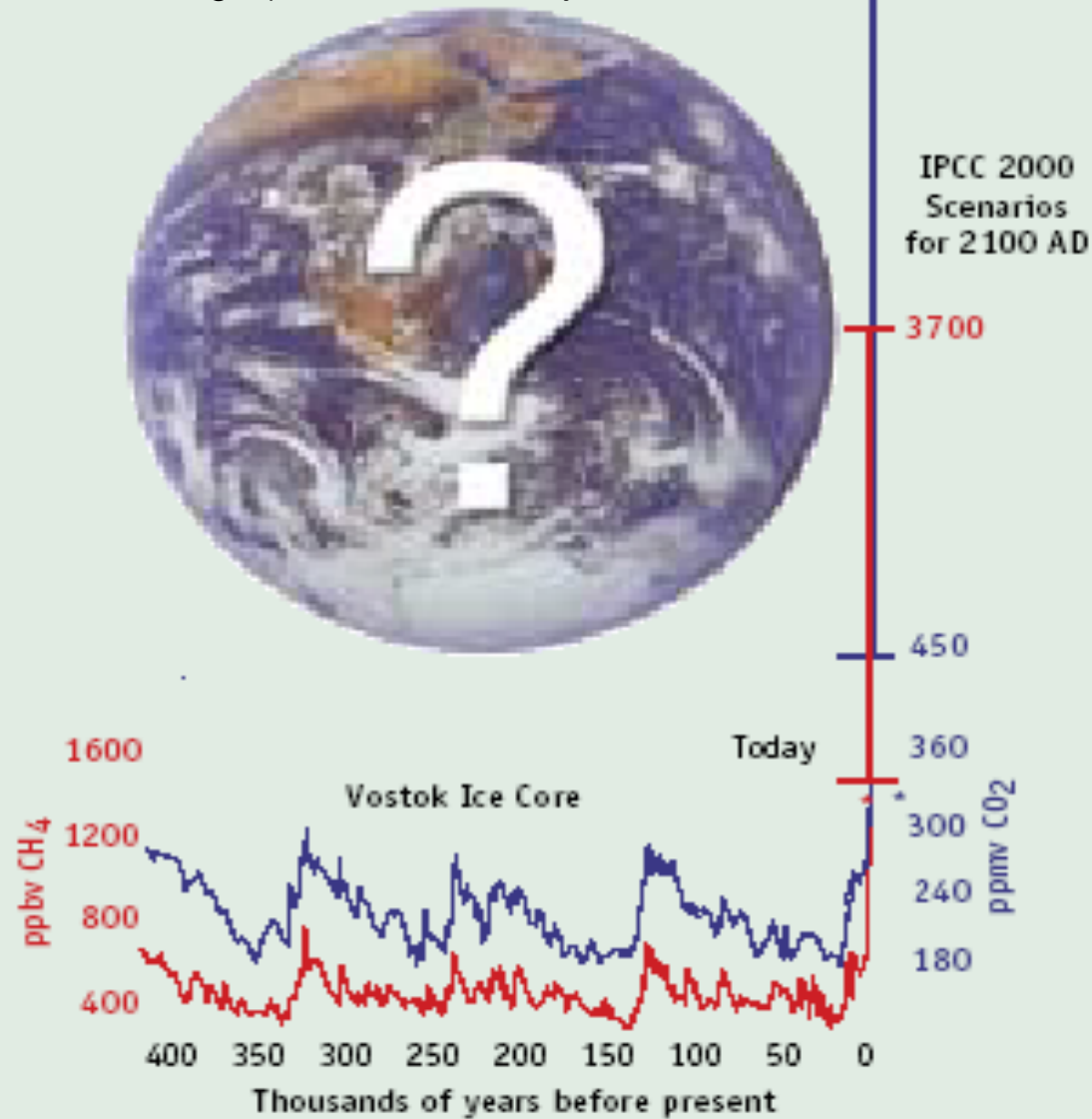
# Atmospheric Carbon



Sources: Petit et al. (1999) Nature 399, 429-436 and National Oceanic and Atmospheric Administration (NOAA), USA

## Sailing into terra incognita?

Adapted from Petit et al. (1999) Nature 399, 429-436 and the IPCC (Intergovernmental Panel on Climate Change) Third Assessment Report by the PAGES (Past Global Changes) International Project Office.



# World Extinction Events

Event	when	severity
Holocene	now	50% of all species – it is also the fastest extinction event <sup>1</sup>
Cretaceous-Tertiary	65	47 percent of marine genera and 18 percent of land vertebrate families
End Triassic	200	22 percent of marine families, 52 percent of marine genera
Permian	251	95 percent of all species
Late Devonian	364	22 percent of marine families and 57 percent of marine genera
Ordovician-Silurian	439	25 percent of marine families and 60 percent of marine genera

1 E. O. Wilson, The Future of Life, 2002



# Portage Glacier Alaska



<-1914



2004 copyright Gary  
Braasch ->

[http://www.worldviewofglobalwarming.org/  
pages/glaciers.html](http://www.worldviewofglobalwarming.org/pages/glaciers.html)

# Greenpeace





# Rhone Glacier – Braasch copyright





# Mount Hood – Braasch copyright





# Bark Beetle destruction Alaska – Braasch copyright





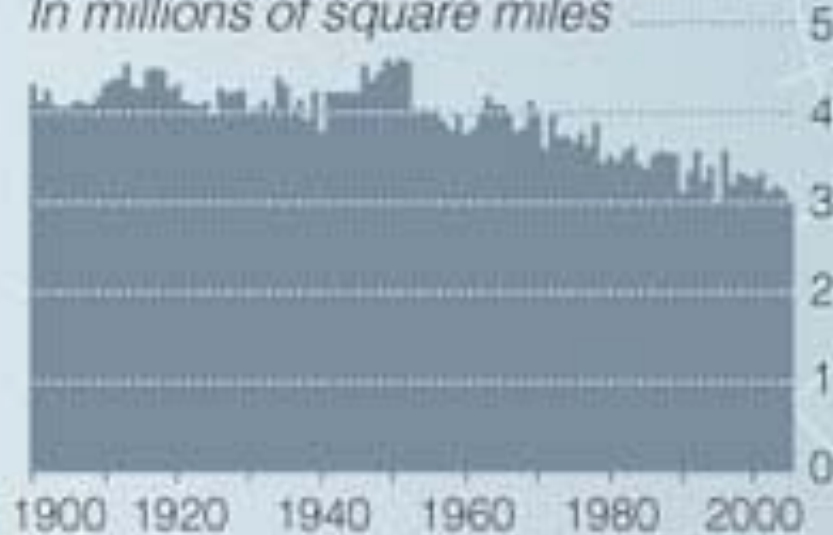
# A Smaller Ice Cap - NY Times

## A Smaller Ice Cap

The ice covering the Arctic Ocean shrank to its smallest size in a century this summer, continuing a trend of decades.

### EXTENT OF SUMMER SEA ICE

*In millions of square miles*



# Positive Feedback or why global warming is worse than the estimates

- ✦ Albedo effect
- ✦ Melting of the permafrost in Alaska and Russia results in release of methane (effect unaccounted in 2001 IPCC report)
- ✦ Spread of bark beetles and draught causing forest fires releasing huge quantities of carbon into the atmosphere
- ✦ Hotter atmosphere is capable of absorbing more water vapor – also a green house gas which acts as an amplifier<sup>1</sup>
- ✦ Anthropogenic deforestation not just in Amazon but in West Virginia coal belt

<sup>1</sup> Soden et. Al. Science, The Radiative Signature of Upper Tropo-20  
spheric Moistening, October 6 2005; 10.1126/ science.1115602

# View from West Virginia





# View from West Virginia



# The View from West Virginia

- ◆ *There is a manmade ecological disaster of geologic proportions occurring in the rolling mountains of the southern Appalachians;*  
Mountain Top Removal (MTR) mining. It is the ultimate in theft of a people's heritage -- the destruction of watersheds -- and the annihilation of one of the most diverse places on earth.



# Conclusion

- ✦ Everybody who understands agrees on the Challenges
- ✦ Even those of us who understand the challenges disagree on the solutions
  - This is not unhealthy
  - Suggests that there is not one solution

# *Turn to Renewables*

A solar collector on every roof

Capture massive tidal and wave energy

Wind-power and hydro-power

Fuel crops (supplies 30% in Brazil)

Geothermal

Re-assess nuclear energy

Rebuild our railroads

Local organic farming

*Conservation, increased energy  
efficiency,*

*Simpler and sustainable lifestyles*

# Loudoun County Committee for a Sustainable Society

- ◆ Research - Sustainability
  - Energy, Peak oil, alternatives
  - Low energy, local farming
  - Urban planning
- ◆ Educate - Sustainability
  - Web site
  - Presentations at schools, board meetings, local planning commissions, etc.
- ◆ Implement
- ◆ Network with national and international groups
- ◆ Organize locally



# What we need

- ◆ Researchers
- ◆ Public speakers
- ◆ Organizers
- ◆ Implementers



# Contact

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