The Perfect Problem

MAUNA LOA OBSERVATORY, HAWAII
MONTHLY AVERAGE CARBON DIOXIDE CONCENTRATION   MLO-145

Global mean temperature change from ... ...

Warmest 12 years:
1998,2005,2003,2002,2004,2006,
2001,1997,1995,1999,1990,2000

Global mean temperature

- Annual mean
- Linear trends
- Smoothed series
- 5-95% decadal error bars

Difference (°C) from 1961–90

Period	Rate
50	0.128±0.026
100	0.074±0.018
Years	°/decade
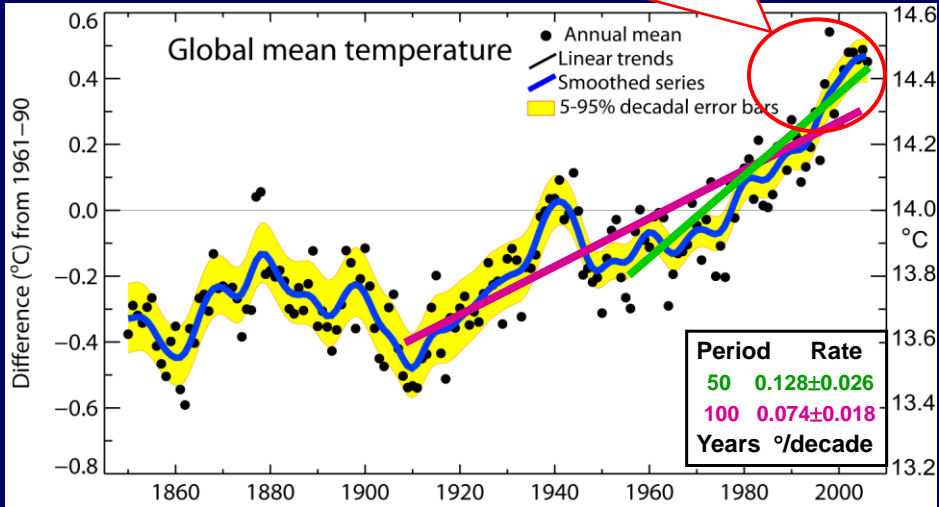
US Dept Energy, Hirsch et al 2005

THE GROWING GAP
Oil Discovery and Production

- Past Discovery
- Future Discovery
- Production

Past discovery based
on ExxonMobil (2002).
Revisions backdated

Gb/a
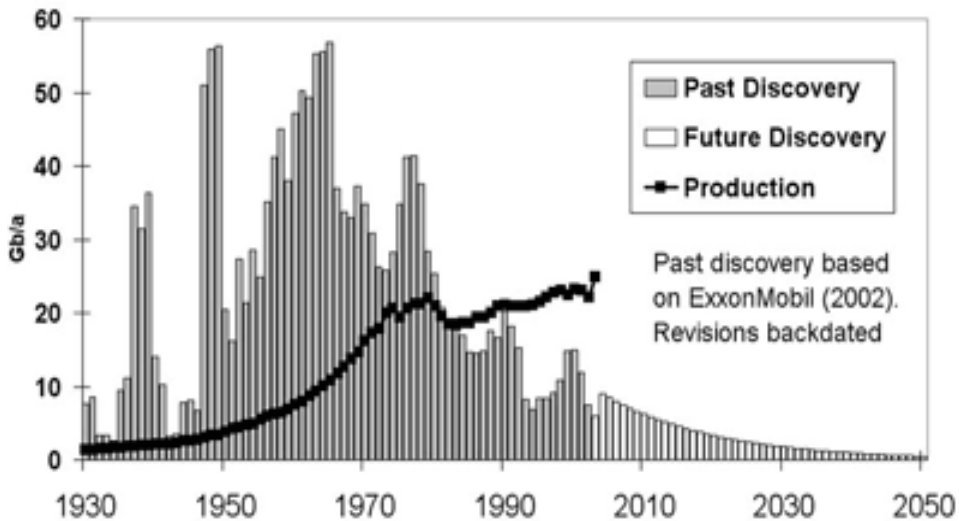
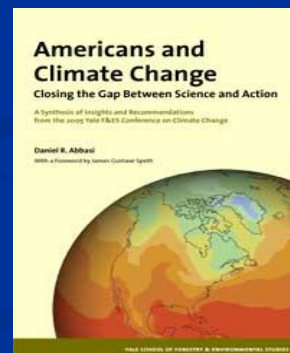## Variations of the Earth's surface temperature; 1000 to 2100

1000 to 1861, N.Hemisphere, proxy data; 1861 to 2000 Global, instrumental; 2000 to 2100, SRES projections
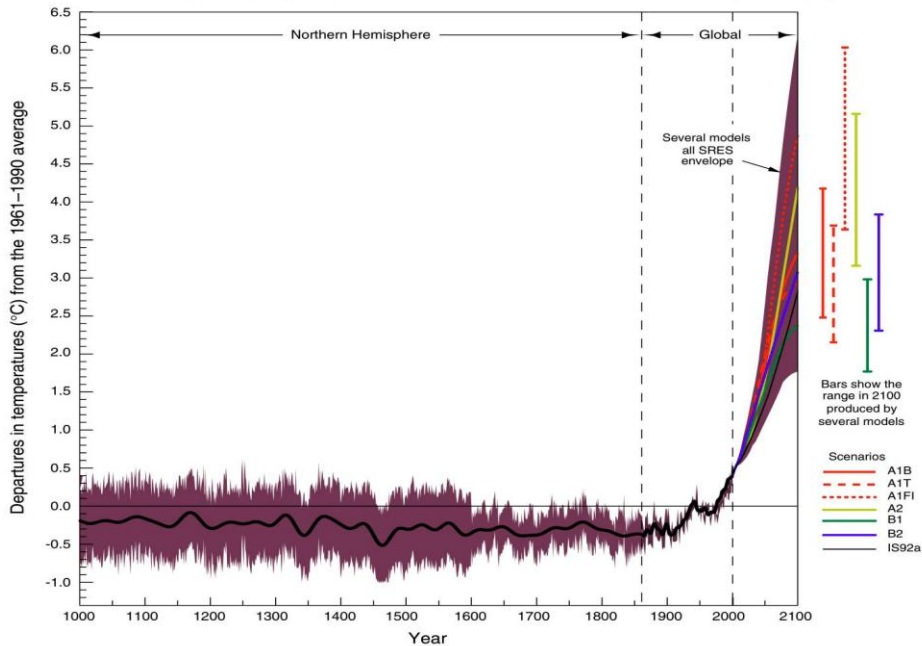
Americans and Climate Change

Why climate change is the "perfect problem"

■ "complex and inaccessible scientific content;

■ a substantial (and uncertain) time lag between cause and effect;

Abbasi, D. *Americans and Climate Change*, Yale School of Forestry & Environmental Studies 2006.

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Americans and Climate Change

- inertia in all the key drivers of the problem, from demographic growth to long-lived energy infrastructure to ingrained daily habits at the household level;
- psychological barriers that complicate apprehension and processing of the issue, due in part to its perceived remoteness in time and place;

Americans and Climate Change

- partisan, cultural, and other filters that cause social discounting or obfuscation of the threat;
- motivational obstacles, especially the futility associated with what is perhaps the quintessential "collective action problem" of our time;

Americans and Climate Change

- mismatches between the global, cross-sectoral scope of the climate change issue and the jurisdiction, focus, and capacity of exiting institutions;

- a set of hard-wired incentives, career and otherwise, that inhibit focused attention and action on the issue."

Goal

To achieve a *fair* and *effective* global response to climate change.

What constitutes an effective response?

Ethics and Risk

"The really vital issue does not concern the presence of scientific uncertainty, but rather how we decide what to do under such circumstances (Gardiner)."

What constitutes a fair response?

Questions of Justice

"The core ethical issue concerning global warming is that of how to allocate the costs and benefits of greenhouse gas emissions and abatement (Gardiner)."

Varieties of Justice and Climate Global Change

- Distributive Justice
  - Mitigation
  - Adaptation
- Procedural Justice
- Intergenerational Justice
- Environmental Justice

The Vision Problem:
Imagining Alternative Futures

"I have a dream!"
versus
"I have a nightmare!"

Online Deliberation Center

Deliberation

"Deliberation is a type of dialogue where a group of concerned citizens get together to discuss and attempt to solve a practical problem…The [goal] is to come to agreement on a line of action or policy they can implement together."

The ODC provides an online environment where students will discuss issues with their instructors, the occasional visiting expert, and other students from a variety of disciplines and interests. The ODC is tooled with features to assist participants in the deliberative process.