



Wondering Where the Snow Went?



Fitzgerald's Guide to Using Conservation Law to Control Climate Change

The SCB, its partners and members can be a catalyst for improved controls over the causes of climate change.

That is, we can save snow, money, and other good things.

Objectives Today

1. Describe briefly some practical ways to limit climate change;
2. Outline solutions that we can help create this year and next based on existing law for the problem of climate change,
3. Review how scientists and other experts can help create and use the law,
4. Discuss options with our panelists and the audience, and
5. Ask that you help us by joining a policy task force of SCB or working with your section, chapter or another organization.

The Problem:

Despite the predictions of many that we would be safe from the worst effects of climate change if we were to keep atmospheric levels of carbon dioxide under 450 ppm, and the average temperature increase to less than 2 degrees centigrade, real world observations have made it clear that that was neither safe nor acceptable.

A Better Target

- Luckily, 450 ppm and an increase in 2 degrees Celsius are probably avoidable. Our best climate scientists have recently estimated that we may be able to do this if we decrease carbon dioxide levels from 389 ppm to 350 soon while reducing other climate – forcing elements such as black soot.
- Jim Hansen sent us Friday his most recent ppt from which we have taken the next few slides:

United Nations Framework Convention on Climate Change

Aim is to stabilize greenhouse gas emissions...

*“...at a level that would prevent
dangerous anthropogenic interference
with the climate system.”*

Metrics for “Dangerous” Change

Extermination of Animal & Plant Species

1. Extinction of Polar and Alpine Species
2. Unsustainable Migration Rates

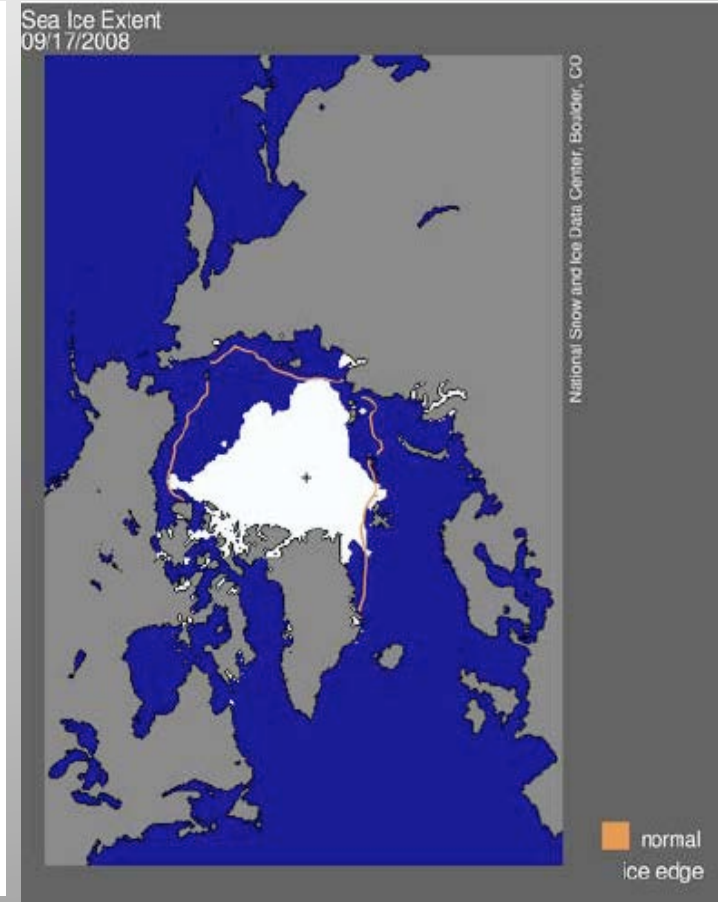
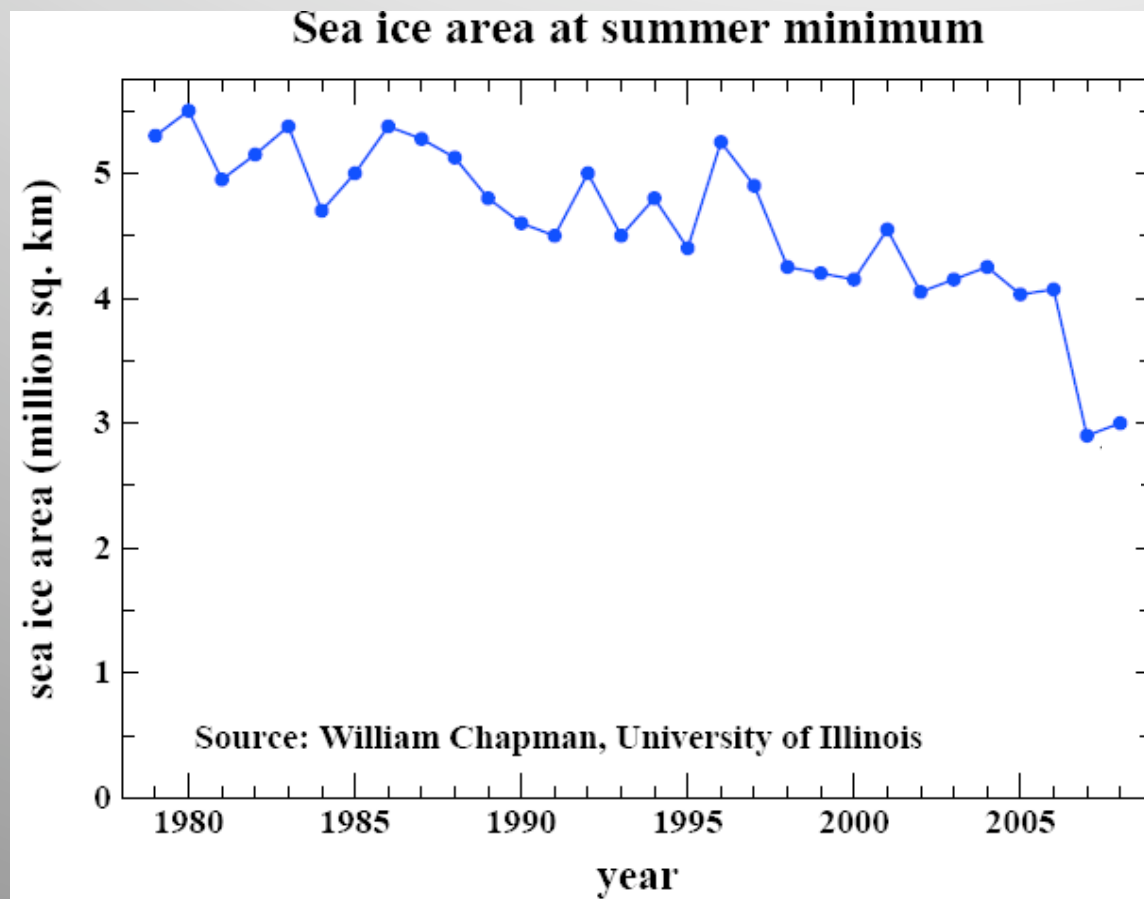
Ice Sheet Disintegration: Global Sea Level

1. Long-Term Change from Paleoclimate Data
2. Ice Sheet Response Time

Regional Climate Disruptions

1. Increase of Extreme Events
2. Shifting Zones/Freshwater Shortages

Arctic sea ice area at summer minimum.



Arctic Sea Ice Criterion*

1. Restore Planetary Energy Balance

→ CO₂: 385 ppm → 325-355 ppm

2. Restore Sea Ice: Aim for -0.5 W/m²

CO₂: 385 ppm → 300-325 ppm

Range based on uncertainty in present planetary energy imbalance (between 0.5 and 1 W/m²)

* Assuming near-balance among non-CO₂ forcings

Surface Melt on Greenland

Melt descending into a moulin, a vertical shaft carrying water to ice sheet base.



*Source: Roger Braithwaite,
University of Manchester (UK)*

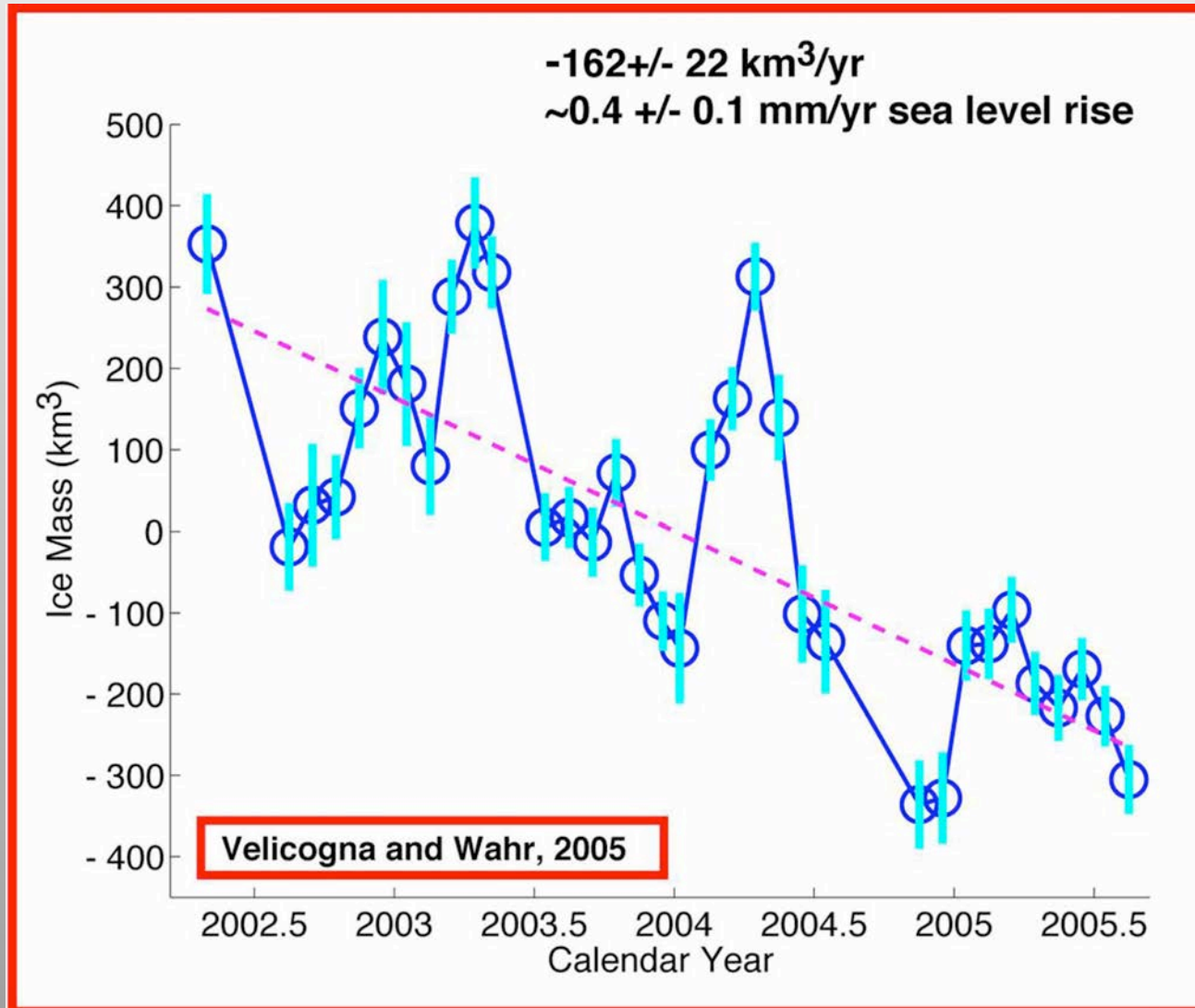
Jakobshavn Ice Stream in Greenland

Discharge from major Greenland ice streams is accelerating markedly.

*Source: Prof. Konrad Steffen,
Univ. of Colorado*



Greenland Mass Loss – From Gravity Satellite



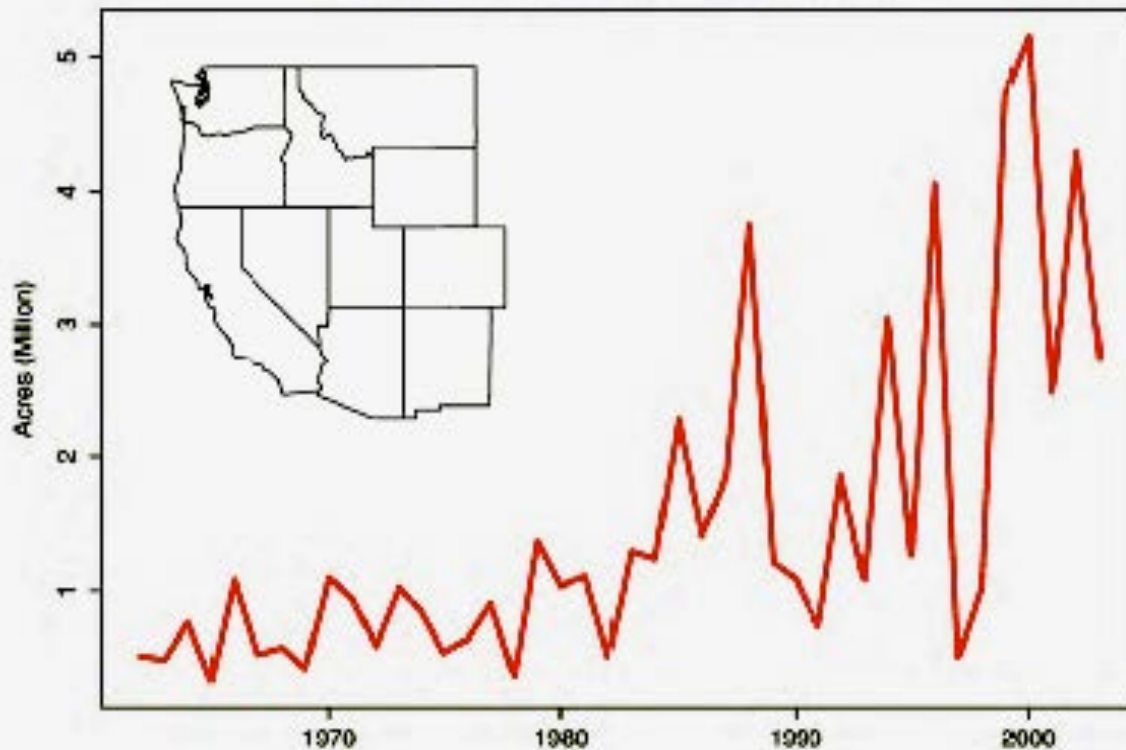


Latin American cities at risk from 1-meter sea level rise.

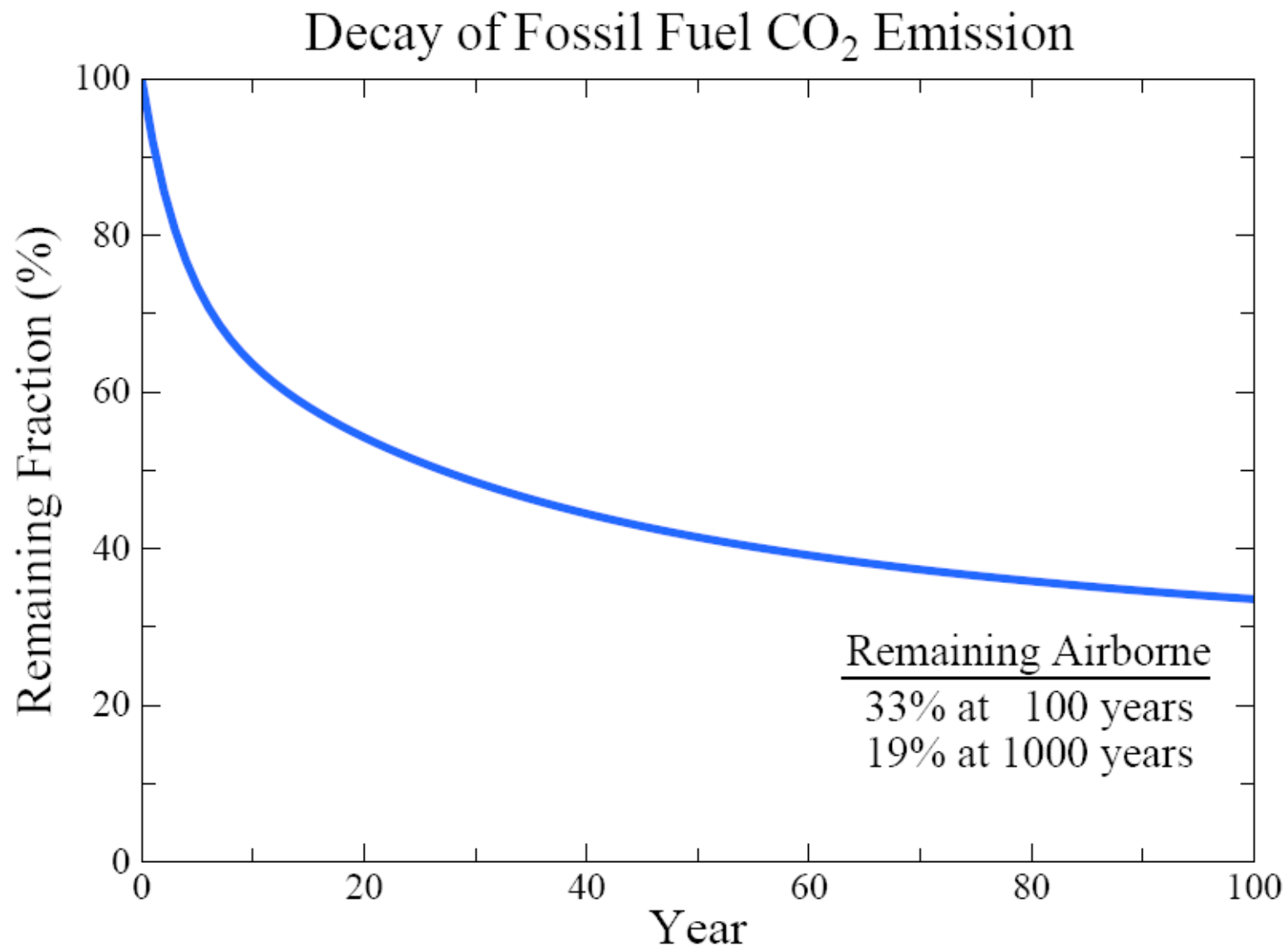
Fires Are Increasing World-Wide

Wildfires in Western US have increased 4-fold in 30 years.

Western US area burned

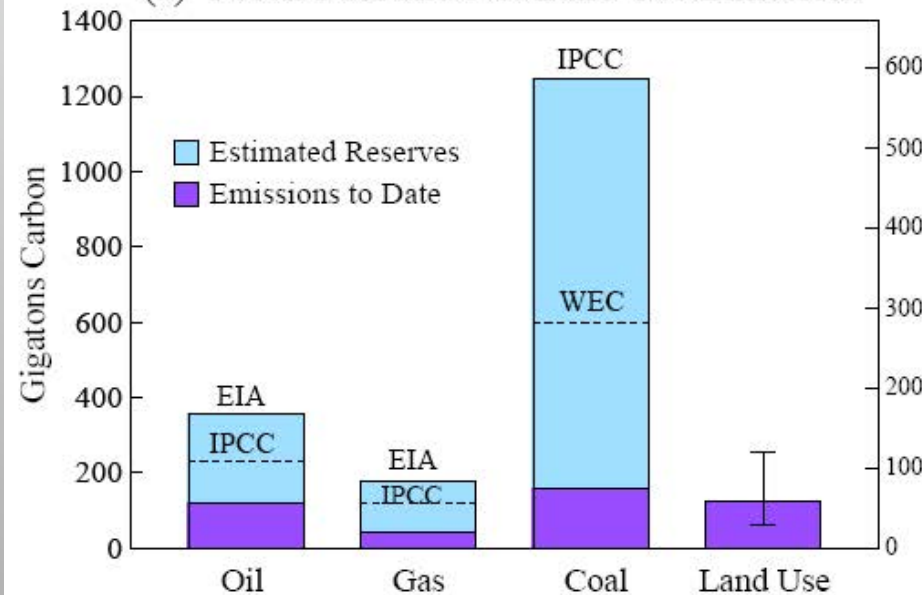


Source: Westerling et al. 2006

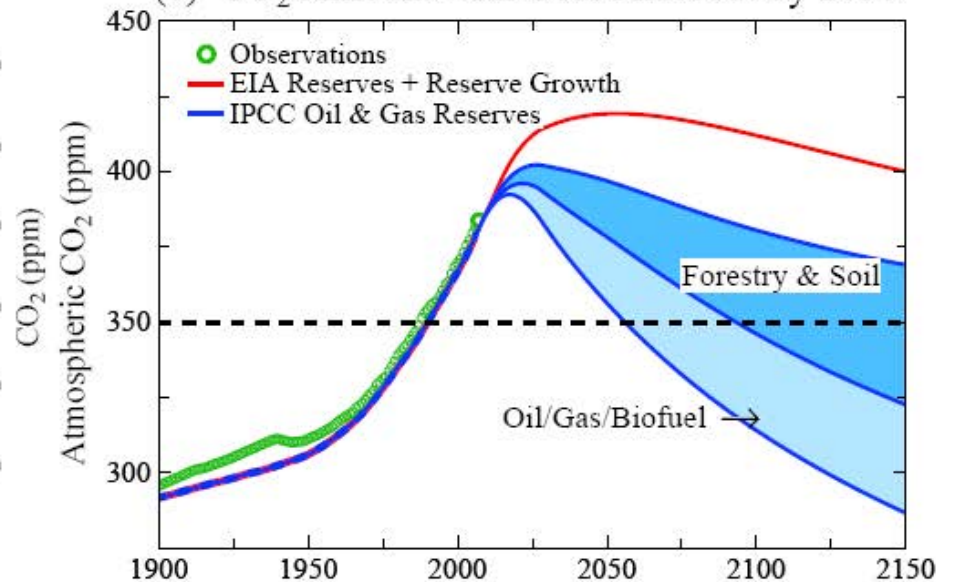


The fraction of CO₂ remaining in the air, after emission by fossil fuel burning, declines rapidly at first, but 1/3 remains in the air after a century and 1/5 after a millennium (*Atmos. Chem. Phys.* **7**, 2287-2312, 2007).

(a) Fossil Fuel and Net Land Use Emissions



(b) CO₂ Amount with Coal Phaseout by 2030



Coal phase-out by 2030 → peak CO₂ ~400-425 ppm, depending on oil/gas
Faster return below 350 ppm requires additional actions

Web Site

www.columbia.edu/~jeh1

includes

Target Atmospheric CO₂: Where Should
Humanity Aim?

Global Warming Twenty Years Later: Tipping
Points Near

In Defence of Kingsnorth Six

Solutions At Hand –JF's Summary

To get to 350 ppm, we must switch to appropriate renewable energy production and use it efficiently, reform agricultural practices and restore degraded ecosystems until we restore a balance in the planet's ecosystems. A good barometer for this is the trend, extent and pace of glacial and polar ice coverage.

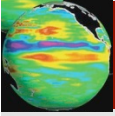
“We Don’t Need Any More Coal or Nuclear Plants” – FERC Chair, 2009

In the Spring of 2009 the Chairman of the U.S. Federal Energy Regulatory Commission said that in light of the available wind and natural gas electric generating capacity the U.S. does not need any more base-load power plants, which means we need no more coal or nuclear plants.

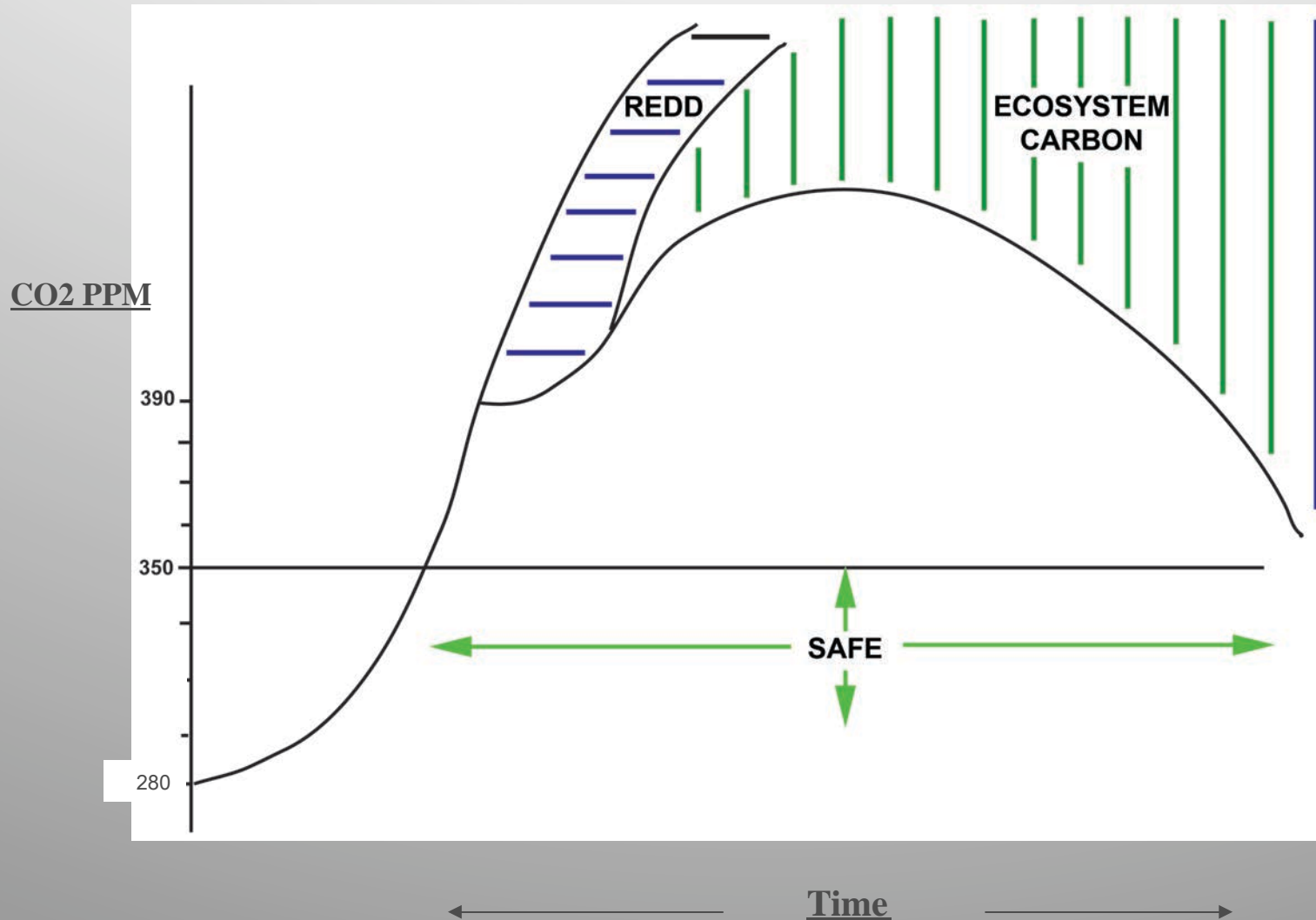
Now the only question is how fast we can back out the old coal with efficiency & renewables.

New Laws Can Speed the Transition

- With the rapidly expanding availability of electric or hybrid vehicles that can use those cleaner sources of power we can require cuts in pollution from vehicles very quickly.
- Investments in building and industrial efficiency pay for themselves very rapidly and with continued support from the tax code and other policies they will be the fastest source of GHG reductions.



Planetary Engineering Using Ecosystems



Defending The Forest That Defend Us

- I. The nation needs a comprehensive national goal with early and aggressive measures to reduce GHG to reach a 350 ppm target.
 - Require all federal agencies to contribute to this goal:
 - First, direct the Secretaries of Interior and Agriculture to report on authorities they already have under existing laws to reduce net GHGs and how they plan to use them.

Helping Forests to Help Us

Second, Congress and/or the Administration should convene a Committee of Scientists tasked with advising Congress and the Administration on how to best retrofit existing regulations and statutes to address cumulative causes and impacts of climate change arising from land-use.

Helping Forests Help Us

II. Make the primary goal of public lands the protection of ecosystem services, biodiversity, and optimization of carbon storage.

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Helping Forests

To help public lands adapt to and mitigate against climate change, Congress should direct federal agencies to:

- (1) retain existing stores of carbon in mature and old forests as the nation's "carbon trust," earning annual interest on deposited carbon and acting as a climate change insurance policy
- (2) reduce existing ecosystem stressors from land management, and
- (3) maintain viable wildlife populations.

Helping Forests

III. Correct Excessive Fossil Fuel Development --

- A. Require a full accounting of emissions and ecosystem degradation from developed fossil fuel extraction leases on public lands to better understand and mitigate impacts, and
- B. impose a moratorium on further lease development, and
- C. revoke any leases that are incompatible with climate and biological security.

International Forest Protection

- I. Apply and Enforce Existing Forest Protection Provisions - From CBD to the Lacey Act
- II. Add New Tools such as ways to pay to:
 - A. Further Reduce Emissions through Avoided Deforestation and Degradation (REDD) – AFTER scientists help determine what works and how well;
 - B. Restore Degraded Ecosystems – Faster.

So, how can we use existing law?

1. In litigation, to stop harm from happening or to be paid for harm done.
2. In planning, to avoid future liability.
3. As a precedent or building block toward more even effective measures built on similar and accepted principles. And here is where we are often most powerful, improving rules or laws based on the best discoveries and experience.

Key Terms in Existing Law

Convention on Biological Diversity

- Restore Degraded Ecosystems
- Assess the Impact of Proposed Projects and Alternatives
- List and Protect Endangered Species
- Limit uses to sustainable levels

Key Terms in Law, CBD, Cont'.

- The duty in international customary or common law and in Article 3 of the CBD, of one country not to harm the natural resources of another country, and
- The duty in US law and in article 14 of the CBD to assess the likely impact(s) of any major government action or project or program, and alternatives, including when issuing permits for private parties to carry out projects or programs.

Key Terms, CBD, Cont.

- The duty to warn and help others avoid harm and ...
- Remedies -- In most legal systems it is first to stop the harm if possible and then to pay to help make up for the losses suffered by the innocent party if stopping the harm is not possible. Article 14.2 of the CBD asks the Conference of the Parties who should pay and how for cross boundary harm to biodiversity.

Key Terms in Law

CITES

- Ensure that Appendix II species are harvested legally and playing their role in their ecosystem throughout their ranges. (Article IV).

Key Terms in the Law

WTO/General Agreement on Tariffs and Trade

- Parties can ban the importation of goods produced with methods that are not allowed domestically in order to protect natural resources or human health (Article XX (B) and (g), and the Shrimp and Sea Turtle Appellate Decision of 1993.)
- The U.S. Pelly Amendment uses this principle.

Key U.S. Laws Implementing These Treaties and Principles

- Endangered Species Act
- Migratory Bird Treaty Act
- National Environmental Policy Act
- Clean Water and Air Acts
- The Pelly Amendment to the Fishermen's Protective Act
- The Lacey Act
- The Alien Tort Claims Act

How are scientists and other experts especially essential for using such existing laws as the CAA? That is, **how** can **we**, in particular, use the law more effectively than most people?

1. As plaintiffs whose presence in the field and concrete plans to return provide the essential element of standing to sue – one who is likely to realize harm due to the complained of action.
2. As expert witnesses supplying or confirming the factual claims of plaintiffs or petitioners that the living resources and ecosystems they enjoy will be harmed unless the law is obeyed or enforced.

Scientists use the Law, continued:

3. As creative consultants who can connect the dots of data and process to show a pattern of behavior or effect that a layperson or judge might not see as clearly or as soon.
4. As guides and advisors, communicating all of these things to legislators and Presidents instead of letting coal company lobbyists, for example, rewrite our laws to solve their problems.

Scientists Use the Law, Continued:

5. As a precedent or building block toward more even effective measures built on similar and accepted principles. Here is where we are often most powerful, improving rules or laws based on the best science and management experience.

The Opportunities & Dangers of 2009:

At best, we will negotiate on schedule this year the global and national laws, or social contracts, that will ensure that we achieve these goals.

Worst Case

At worst, we will rely on new laws but lose existing laws that could help protect biological diversity and human health. We may be asked to accept a new system with no safeguards or biological limits to ensure that it will work in time and save life as we know it. For example, thirty percent of all species are likely to be lost if we experience a 1.5 degree increase according to IPCC predictions. Newer observations show that things are worse.

Will Congress Retain Existing Authority to Regulate Greenhouse Gas Emissions from Coal-Fired Power Plants under the Clean Air Act? U.S. Senate Committees Will Act by Sept. 28 – You Decide.

The American Clean Energy and Security Act (ACESA, H.R. 2454), as passed by the House, relies heavily on a cap-and-trade system and the use of offsets to attempt to achieve a set of emission reduction objectives that do not meet the best scientific standards, while waiving many successful existing Clean Air Act mechanisms which could be used in addition to the cap and trade system.

Losing the Right to Enlighten and Enforce the Law

Preempting the Clean Air Act would remove two of most important parts of modern environmental law, as they appear in the Clean Air Act. These are:

- 1)The power of citizens to petition agencies to adopt new rules based on new science or technology; and
- 2)The power of citizens to enforce the rules by suing on behalf of themselves and the public.

Trade and Climate

- Rep. Sander Levin, (D-Michigan), a former official at USAID strengthened slightly a form of tariff on goods produced by heavily polluting facilities overseas.
- In early 2007 SCB recommended that Levin's Committee consider a more progressive version that would fund development assistance for cleaner methods.

Additional Concerns

In a recent newsletter, we flagged a few other major concerns that might outweigh the many very good features of the 1400+ page House bill.

One concern is that the renewable energy requirement is not strong enough.

Another that many have is that funding for wildlife adaptation work is set at a very low level.

See: www.conbio.org/resources/policy

More Climate Tools

Internationally and domestically there are many tools that do justice to the environment and use common sense in the economics of energy. The legislation could do more for--

- Utility Rate Reform/Feed In Tariffs
- Smart grids – adjust uses, flows precisely
- Tax/subsidy reform for energy, pollution, forests and farms
- Moving quickly, wisely to net **negative CO2**.

A Moderate Goal for 2009

- A mid-point between success and failure would be not to lose any existing legal tools but to begin to apply them vigorously, while we negotiate from a position of greater knowledge about our current tools, true risks and creative options.

Where are we now on Climate Law?

- It is being written now in capitols and negotiations around the world, and more of us must join the conversation.
- But, it is being written over green marble floors like these of the Longworth House Office Building -- not outdoors.

Coal In our Stalkings?

Years ago naughty children expected only coal in their Christmas stockings. This year the green marble floors of the Lobby of the Longworth Building were worn down by 63 lobbyists representing one major coal burning utility this spring stalking Members of Congress; not giving them the best science. Hundreds more are working to water down the climate bill and treaty.

Secretary Salazar's Choice – Duck the Issue?

The Interior Secretary of the United States has stated that we have enough wind energy potential to supply three times our power needs but that he declined to use the Endangered Species Act to protect the threatened polar bear from the most significant sources of pollution that the White House predicts will extirpate polar bears from the U.S.

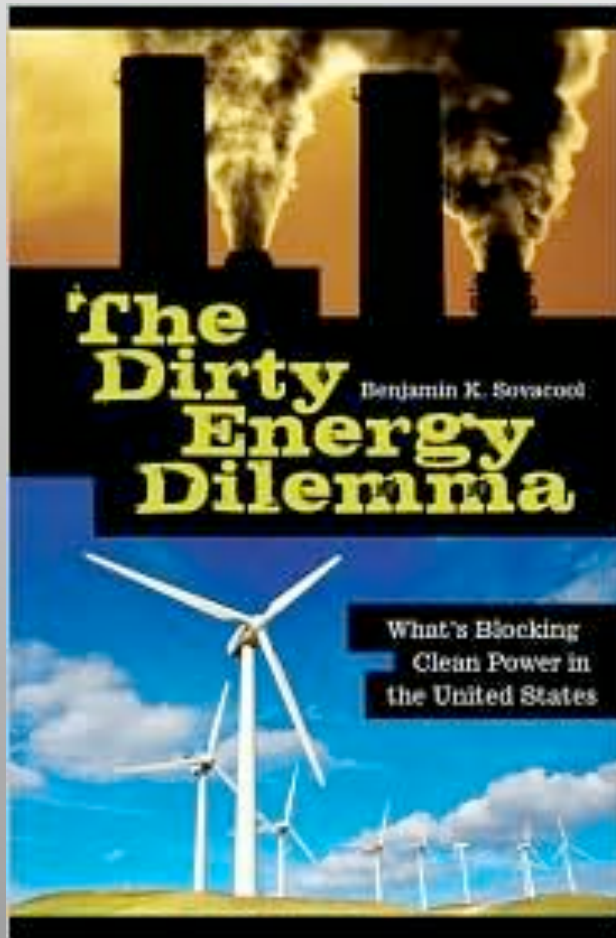
He said Congress should provide different laws. Was he asking them to waive the ESA? He could consider how to use his own authorities more for major decisions affecting the climate.

G8 July GHG Statement & China Turns to Renewables

The G8 have agreed to cut emissions by 80% by 2050 in hopes of not exceeding a 2 degree rise. Developing countries called for a goal for 2020 as well and more assistance.

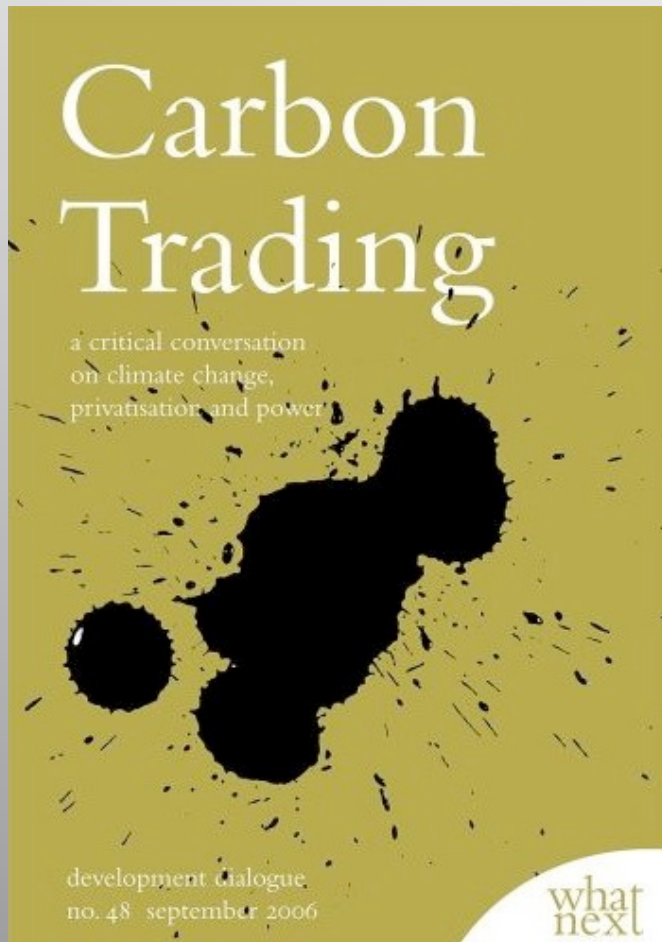
China has slowed construction of new coal plants and plans many new wind farms, including the largest in the world. China is also a leading manufacturer of solar equipment and wind turbines.

An Analysis of Why We Lack A Better Energy Policy



- Sovacool, Benjamin K. The Dirty Energy Dilemma: What's Blocking Clean Power in the United States. Westport, Conn: Praeger Publishers, 2008.

Can We Improve Carbon Trading?



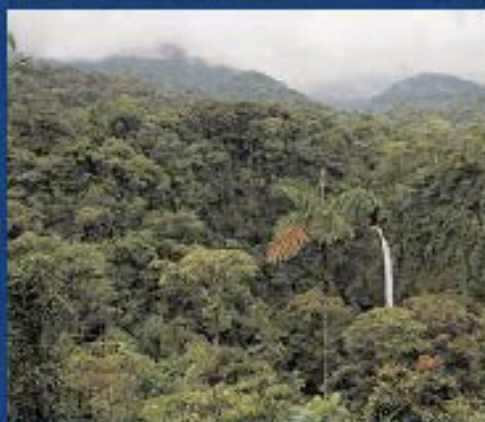
- Carbon Trading: A Critical Conversation on Climate and Change, Privatization and Power. Development dialogue, 48. Uppsala: Dag Hammarskjöld Foundation, 2006.

Which Energy Sources To Use?

- Jacobson, M. Z. 2009. Review of solutions to global warming, air pollution, and energy security. *Energy & Environmental Science* 2: 148-173.
- Clean Energy and Jobs, Barrett, et al., Economic Policy Institute, 2002
- Carbon Free and Nuclear Free: A Roadmap for U.S. Energy Policy, Arjun Makhijani, 2007, Institute for Energy and Environmental Research.

Healthy Solutions for the Low Carbon Economy

Guidelines for Investors, Insurers and Policy Makers



A Project of:
The Center for Health and the Global Environment
Harvard Medical School

Sponsored by:



The Center for Health
and the Global Environment
Harvard Medical School



In *Conservation Biology*, China's
Environmental Performance
And the opportunities for progress
are described in one short
powerful article.

See, Grumbine, R. E., and J. C. Xu. 2009. China
shakes the world-and then what ?
Conservation Biology 23: 513-515.

Onward and Upward, or Over a Cliff?



It Is Up to You

1. Read About Climate Change Options
2. Join the SCB Climate Task Force and work through other SCB Task Forces, Sections, and Chapters -- write jfitzgerald@conbio.org (and be persistent).
3. Make an Appointment to meet with your legislators (U.S.: 202-224-3121) at home, and other policy makers this summer. U.S. Senate Committees will act by September 28th.

For Further Information

www.conbio.org/resources/policy

For links to other policy tools & organizations:

www.conbio.org/activities/policy/advocacy.cfm