

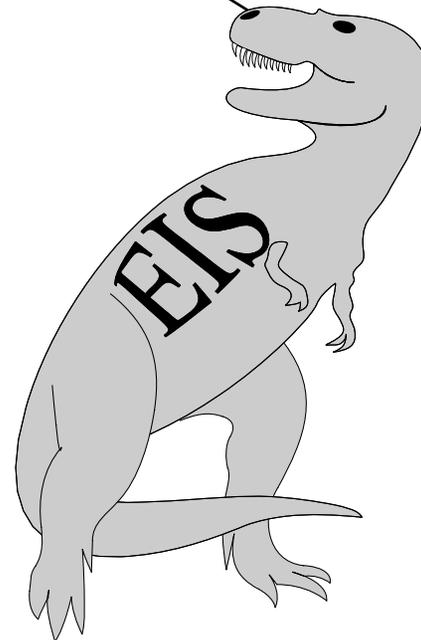
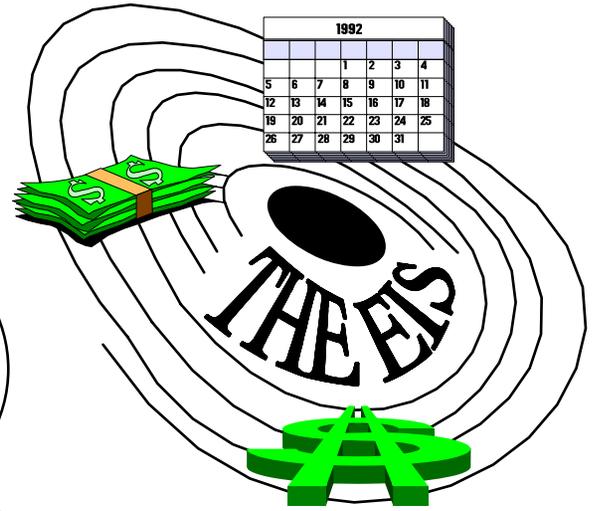
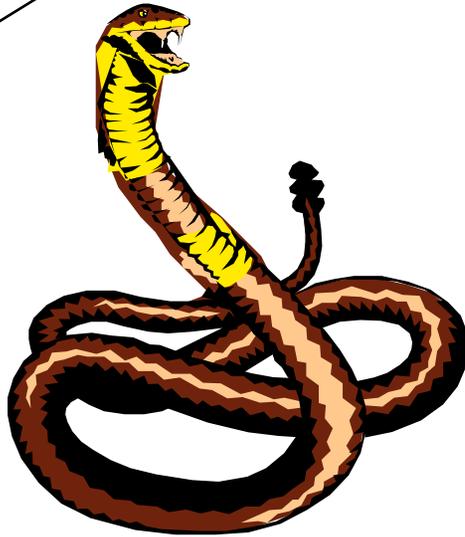
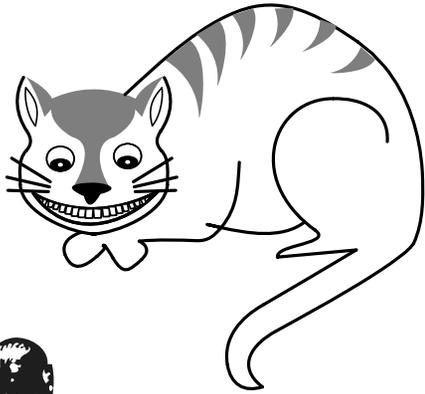
Greenhouse Gases/Climate Change and NEPA

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**VISIONS
OF
GHGs/GCC**



EO13423

- 2007 - Among other requirements
- **PART 2—GOALS**
- **Sec. 201. *Greenhouse Gases Reduction Goal.*** Through life-cycle cost-effective energy measures, **each agency shall reduce its greenhouse gas emissions attributed to *facility energy use by 30 percent by 2010 compared to such emissions levels in 1990.*** In order to encourage optimal investment in energy improvements, agencies can count greenhouse gas reductions from improvements in nonfacility energy use toward this goal to the extent that these reductions are approved by the Office of Management and Budget (OMB).

Congress Requires EPA to Create a GHG Emissions Reporting Regulation and Registry

- On December 26, 2007, President Bush signed into law an omnibus spending bill for 2008, H.R. 2764. This bill requires the Environmental Protection Agency (**“EPA”**) to create a **greenhouse gas (“GHG”) emissions registry and a GHG reporting regulation for emissions that exceed certain thresholds.** The reporting requirement applies economy-wide. EPA must determine how often industries must submit reports, and it must also consider reporting requirements for both upstream and downstream sources of production. EPA must submit proposed regulations within 9 months.
- Coming Soon! **“Thresholds” not defined in the law**

States Sue EPA Over Global Warming

2008-04-02

- BOSTON (AP) - A group of state attorneys general is taking the EPA back to court to try to force it to comply with a Supreme Court ruling that rebuked the Bush administration for inaction on global warming.
- The high court decided a year ago that carbon dioxide and other greenhouse gases are air pollutants under the Clean Air Act and ordered the Environmental Protection Agency to take action.
- **But 16 states and others said in a court filing Wednesday that the EPA has not issued a decision on regulation. Their court filing seeks to compel the EPA to act within 60 days.**
- Massachusetts Attorney General Martha Coakley said the EPA is failing to deal with the dangers of global warming.
- An EPA spokesman did not immediately respond to a call seeking comment.
- The plaintiffs in Wednesday's court action include attorneys general from Arizona, California, Connecticut, Delaware, Illinois, Iowa, Maine, Maryland, Minnesota, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, Washington and the District of Columbia, plus the city of New York, and the mayor and city council of Baltimore.

California Attorney General Settles Lawsuit On EIR Mitigation of GHG emissions – Not NEPA But

- San Bernardino Settled a lawsuit on the adequacy of the county's General Plan EIR to mitigate GHG emissions.
- “this lawsuit has generated significant concerns over development projects, including infrastructure projects planned by the state”
- **Settlement Requires California County to Inventory and Mitigate Greenhouse Gases**
- The settlement has potential implications beyond California as other states consider requirements for GHS mitigation.

States Continue to Adopt Economy-Wide Greenhouse Gas Reduction Targets

Seventeen states have now adopted economy-wide greenhouse gas (GHG) emission reduction targets, with seven of these having done so since January 1, 2007. In the last six months, Oregon, Florida, New Jersey and Hawaii have either legislatively or by executive order adopted GHG reduction targets.

This becomes a NEPA issue because of 40 CFR 1502.16(c) and 1506.2(d) where an EA or EIS would assess consistency or compliance with State or local requirements for protecting the environment

March 02, 2008

Petition Filed Seeking CEQ Guidance on Climate Change Analyses Under NEPA

- The International Center for Technology Assessment (ICTA), Natural Resources Defense Council (NRDC), and Sierra Club filed a formal legal petition with the Council on Environmental Quality (CEQ) seeking to assure that climate change analyses are included in all federal environmental review documents. [Petition](#) The petition builds on the success of environmental groups in recent cases where federal courts found that climate change issues need to be considered during environmental impact review. Rather than continue to address this on a piecemeal case by case basis, the petition seeks to create systematic review of climate change in NEPA documents.
- Specifically, the petition requests CEQ:
 - Amend the definitions of "significantly" and "effects" as well as the provision on environmental consequences to assure NEPA implementing regulations require climate change effects be addressed in environmental assessments and environmental impact statements; and
 - Issue guidance to assure that climate change effects be addressed at each stage of the NEPA from categorical exclusions to the ROD.
 - Issue a handbook to guide agencies in this process

CEQ 1997 draft Guidance

Guidance Regarding Consideration of Global Climatic Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act – 1997 draft

- CEQ noted first that, based upon scientific evidence and in particular the Intergovernmental Panel on Climate Change’s scientific conclusions, ***climate change was a “reasonably foreseeable” impact of GHG emissions,*** and should be considered in NEPA documents.
- “The NEPA process provides an excellent mechanism for consideration of ideas related to global climate change.”
- “Specifically, federal agencies must determine whether and to what extent their actions affect greenhouse gases. Further, federal agencies must consider whether the actions they take, e.g., the planning and design of federal projects, may be affected by any changes in the environment which might be caused by global climatic change.”

Federal District Court Decides That Fish And Wildlife Service Violated Endangered Species Act By Failing To Address Climate Change During Section 7 Consultation

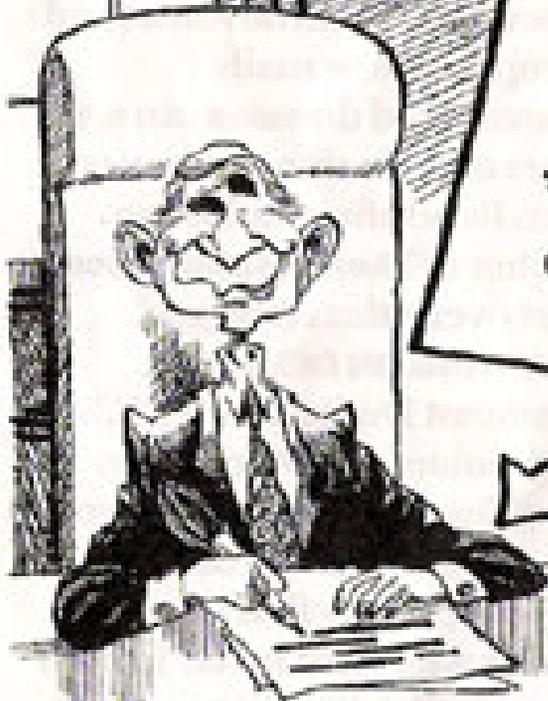
- On May 25, 2007, the United States District Court for the Eastern District of California upheld a challenge to the biological opinion issued by the U.S. Fish and Wildlife Service following consultation under section 7 of the Endangered Species Act (ESA) for the Central Valley and State Water Projects, which divert water from the Sacramento-San Joaquin Delta to central and southern California. *Natural Resources Defense Council v. Kempthorne*, No. 05-1207 (E.D. Cal. May 25, 2007). Two facets of the court's decision are likely to have dramatic implications for future consultations and other actions under the ESA: ***(1) the determination that the biological opinion is unlawful because the Service failed to address the issue of climate change and*** (2) the conclusion that an adaptive management program that does not specify enforceable mitigation actions that will occur under prescribed circumstances is unlawful.
- Environmental plaintiffs challenged the biological opinion for current operations of the Central Valley Project and State Water Project and certain planned future actions for the Projects on numerous grounds under section 7(a)(2) of the ESA. The court's decision includes analysis of many issues that arise during the consultation process ranging from use of best scientific and commercial data available to analysis of indirect and cumulative effects. The decision highlights the difficulty of developing a defensible biological opinion for a complex, large-scale project, particularly a comprehensive, cross-regional water project.

Center for Biological Diversity v. National Highway Traffic Safety Administration, 9th Cir., Nov 15, 2007

- In light of the Ninth Circuit's emphatic declaration that the ***“impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impact analysis that NEPA requires agencies to conduct,”***
- The court vacated the rulemaking for two reasons directly related to greenhouse gas emissions. First, it held that NHTSA had acted in an arbitrary and capricious fashion in failing to monetize the benefits of reducing greenhouse gas emissions in its cost-benefit analysis used to determine the “maximum feasible fuel economy level” achievable, as required under the governing statute. The court cited numerous studies that had arrived at a monetized value for such benefits, and held that “while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero.” This holding may have wide-ranging applicability, given the number of contexts in which the government uses cost-benefit analyses to set standards on regulated industries, and the number of industries which produce greenhouse gas emissions.
- Secondly, the ***Court's holding also suggests that simply quantifying emissions and comparing them to a baseline is insufficient.*** Instead, project proponents will likely be required to evaluate the interplay between a project's emissions, emissions attributable to other past and reasonably foreseeable future actions, and the actual environmental impacts attributable to climate change.
- **The Court's holdings on GHG impacts were unanimous!**

Advisory Report on Global Climate Change

Global warming is a ~~real and growing~~
~~phenomenon. There is no lack of data~~
~~indicating this is a big problem with~~
~~which the world must deal.~~
Some have ~~attacked the data and have~~
a ~~differing opinion. While it would be~~
nice to ~~dismiss the science, experts agree~~
~~this is a dilemma we must confront~~
day ~~soon.~~



CRS
CLIMATE RESEARCH SERVICE
1000 17th Street, NW
Washington, DC 20036

The Changing “Climate” for Climate Change.

- “It is the sense of the scientific community that carbon dioxide from unrestrained combustion of fossil fuels potentially is the most important environmental issue facing mankind.”
- DOE, 1979

Cumulative Impacts

- "Cumulative impact" is the impact on the environment which results from the ***incremental impact*** of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 CFR 1508.7
- **NEPA analyses have always addressed issues without specific regulations - Impacts are impacts**
- **Climate change considerations should be treated similar to any other issue.**
 - NEPA does not mandate specific “caps” to pollution or any other specific outcome, provided that whatever outcome is produced is one which generally well reasoned and provides for some degree of stewardship consistent with NEPA’s broad goals.

Incrementalism Is The Problem

- Current CEQ Regulations do not allow for an incremental increase (admittedly very small)
- Technically any project that has a net GHG emission increase would need to:
 1. Either prepare an EIS to cover the exceedingly small incremental emissions that contribute to Global Warming
 2. Avoid or offset the emissions (so it could be an EA)
 3. Not take the action
- “Negligible impacts” or “infinitesimal small impacts” = small incremental cumulative impacts under CEQ Regs

***A CEQ Significance “GAP”**

- The CEQ Regulations fail to define whether it is possible to find “not significant” an incremental increase to a “significant” problem, and if so, how?
- Currently No Court has specifically addressed this issue

* See Owen Schmidt, 2007 NAEP Conf Paper

Increased concentrations of GHGs are not the Impacts

- Temperature change varies by location
- Changing precipitation patterns affect water, agricultural output
- Higher sea levels affecting coastal zone development
- Warmer oceans impacting storms, fisheries, coral reefs and tourism
- More frequent occurrence of extreme weather events – dryer droughts and wetter monsoons

Incomplete or Unavailable Information

CEQ 40 CFR 1502.22

- If the agency is unable to obtain the information because overall costs are exorbitant OR because the means to obtain it are not known, the agency must **(1) affirmatively disclose the fact that such information is unavailable; (2) explain the relevance of the unavailable information; (3) summarize the existing credible scientific evidence which *is* relevant to the agency's evaluation of significant adverse impacts on the human environment; and (4) evaluate the impacts based upon theoretical approaches or research methods generally accepted in the scientific community**

Projects

- Projects that produce large quantities of CO₂ (GHGs)
- Analysis similar to excessive use of:
 - Water, Energy, Traffic, Waste water treatment
 - Bandwidth, Discharges
- Usually avoid “Significance” by shifting scale of the impacted environment (site-local-region-national) (individual-local populations-species as a whole)
 - not available for GHGs -- **already global!**
- Shift scale of the project!

“Carbon Neutral Program”

Take “Credit” – A Holistic look

- “Natural Sequestering”
- Can recycling
- Paper recycling
- Job sharing/flex schedules
- Car pooling incentives
- Mulch programs
- Fleet mgt
 - Electric vehicles
- Environmental Awareness Programs
- Conservation programs – native plants
 - Use less water/energy
- Cardboard
- Glass
- Plastic containers
- Tires/rubber

For Example:

Each ton (2000 pounds) of recycled paper can save 17-30 trees, 380 gallons of oil, three cubic yards of landfill space, 4000 kilowatts of energy, and 7000 gallons of water. This represents a 64% energy savings, a 58% water savings, and 60 pounds less of air pollution (not counting CO₂)!

The 17 - 30 trees saved (above) can absorb a total of 250 - 440 pounds of carbon dioxide from the air each year. Burning that same ton of paper would *create* 1500-2600 pounds of carbon dioxide.

A Model NEPA analysis should have a section on GCC/GHG that consists of the following:

- a. Identify and quantify the GHGs produced (some are worse than others and would have different credit values) and put in context and intensity terms
- b. Avoidance if possible (similar to HW/HM programs)
- c. Reduction to the maximum extent possible when avoidance is not possible (“all practicable means have been adopted to minimize the emissions”)
- d. Mitigate if possible (***Note: doing a-d would comply with most state laws***)
- e. Document that there are no reasonable alternatives (similar to Floodplains EO)
- f. Analyze projects in terms of predicted slight warming and less precipitation – based on best existing data (note data gaps per CEQ 40 CFR 1502.22)
- g. Typically, small projects are not significant because their GHGs emissions fit under the “No Net Carbon Increase” program (similar to Wetlands EO) and are offset by major conservation projects

Model NEPA Policy

h. Setting up a basewide GHG Bank/program that tracks activities:

1. As projects come in they should have a "no net increase" or carbon neutral policy for GHGs, and some projects may need to "buy" credits from the bank/program (similar to SIP conformity under the CAA)

2. Permanent activities would get credit for reducing GHGs or pay an "environmental cost" of doing business from the GHG bank/program.

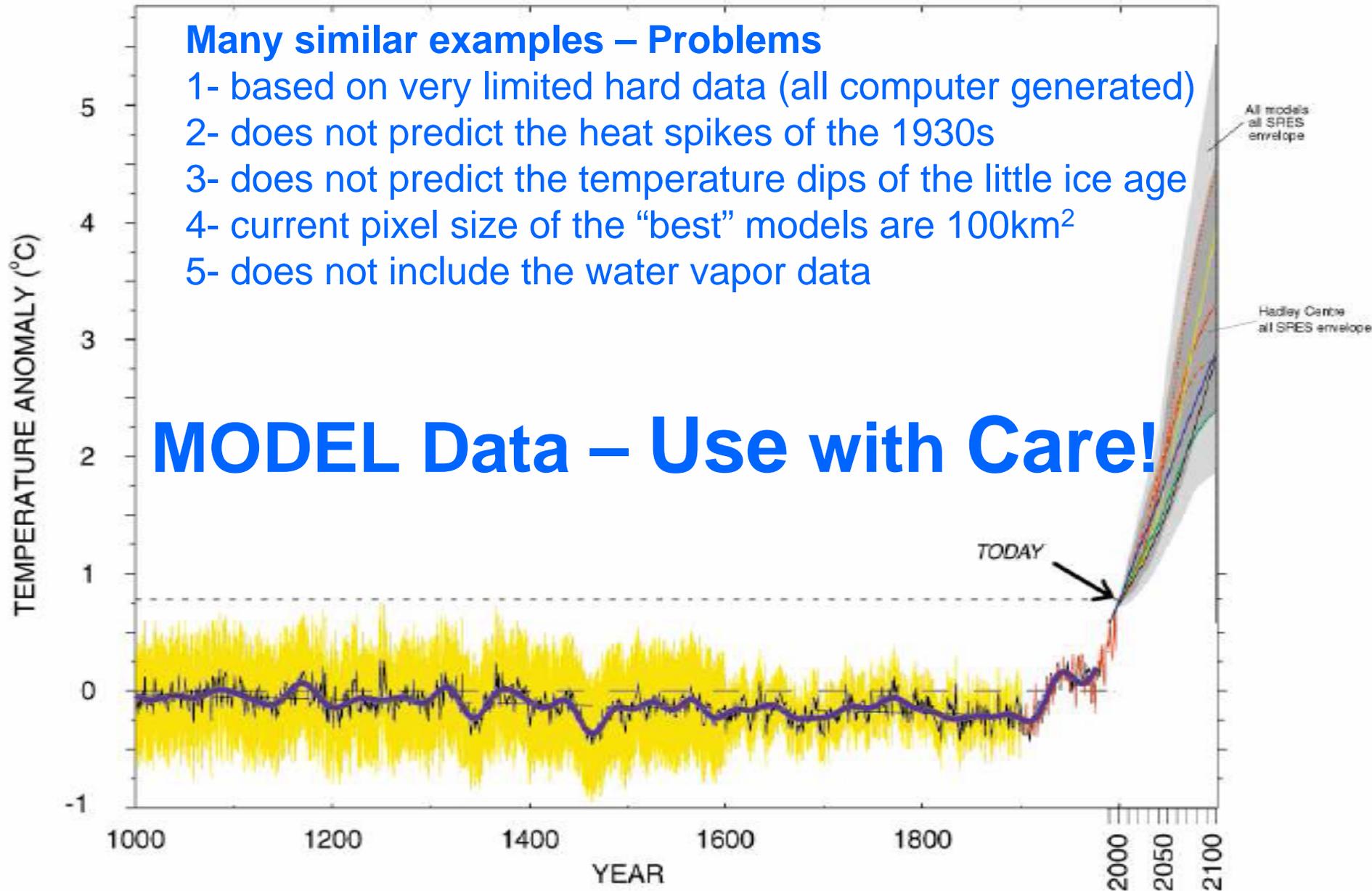
Key is to think Base - /Installation-wide not project specific

Temperature, past and future

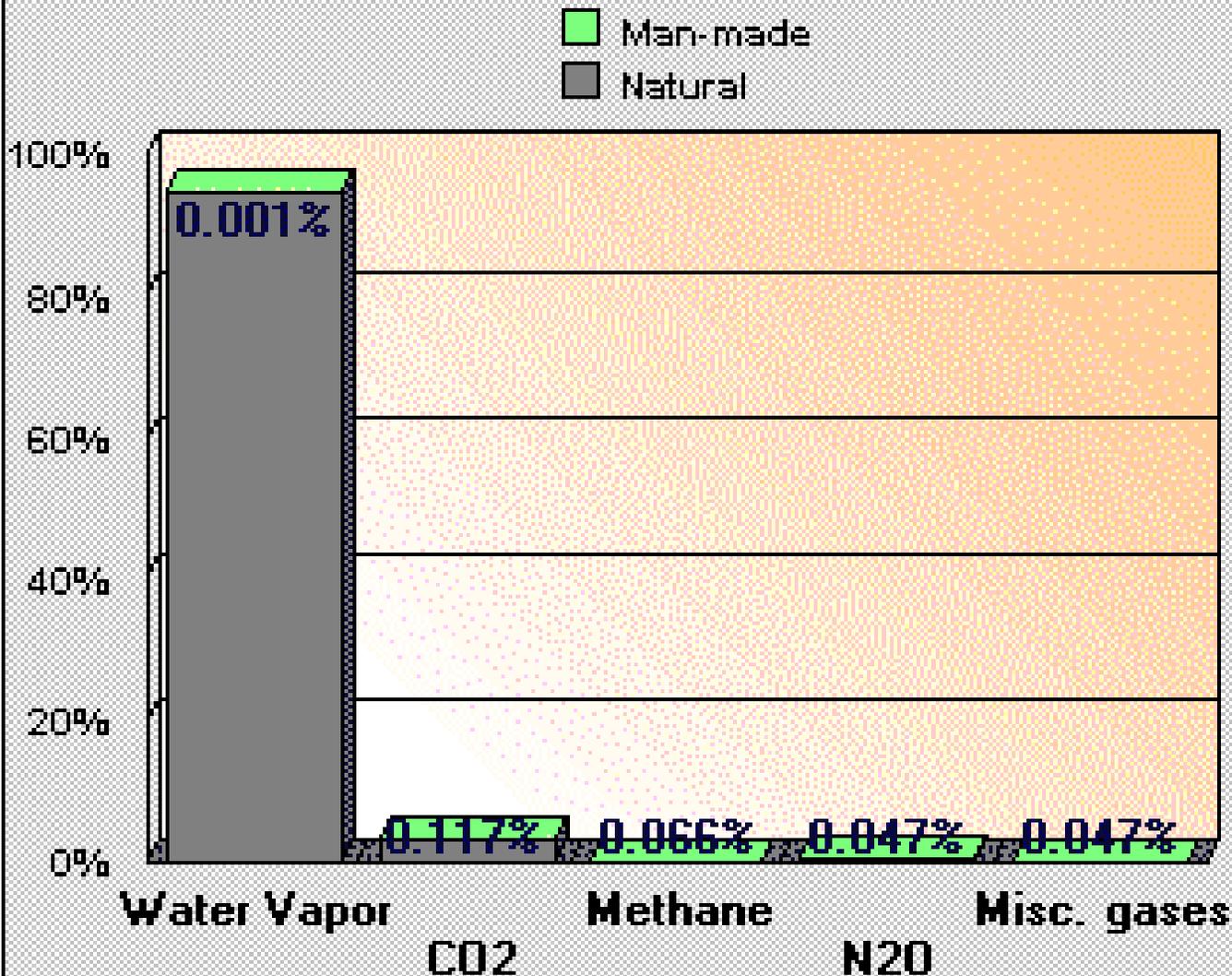
Many similar examples – Problems

- 1- based on very limited hard data (all computer generated)
- 2- does not predict the heat spikes of the 1930s
- 3- does not predict the temperature dips of the little ice age
- 4- current pixel size of the “best” models are 100km²
- 5- does not include the water vapor data

MODEL Data – Use with Care!



Contribution to the Greenhouse Effect (Including water vapor)



In spite of what you read in the newspapers or hear on TV

- Not technically possible to say “X tons per year of CO₂ would result in an increase in global average temperature of Y degrees”
- The contribution of the various gases are independent and not additive (Dalton’s Law of Mixed Gases)
- *“Petitioners presented evidence that continued increase in greenhouse gas emissions may change the climate in a **sudden and non-linear way.**”* (US Court of Appeals for the Ninth Circuit)
 - Sometimes referred to as “Tipping Points” or “last straws” and are very poorly understood

GHG/GCC Summary

- Neither New nor Novel in NEPA documents or NEPA Litigation
- All the basic NEPA rules apply
- Most experts consider GCC a “reasonable foreseeable” environmental consequence
- GHG emissions are the root causes – BUT Temperature and Precipitation changes are the impacts

NEPA

- Incomplete or unavailable information – CEQ guidance
- Gather Best Available Information
- State Assumption

“HeadStart” Programmatic EA

- Similar to Raven EA –USFWS Lead
- Edwards volunteers to provide technical support
- ISSUES/Guidance Needed (not in any particular order):
 - Use of captive females
 - Disease control
 - Genetic Issues
 - Where & How much to release
 - Incubation of eggs to produce more females
 - Isolation issues