

FIRST-STAGE ANALYSIS OF THE ARGUMENTS IN THE 100 DOCUMENTS

EXAMINED IN *DEBATING CLIMATE CHANGE*

<p>#1: Agarwal, Anil and Sunita Narain 1996. The atmospheric rights of all people on Earth: Why is it necessary to move towards the ‘ultimate objective’ of the Framework Convention on Climate Change? Centre for Science and the Environment, http://www.cseindia.org/html/cmp/cmp31.htm</p>
<p>Authority of speaker/writer</p>
<p>Primary: Agarwal and Narain are known for definitive statements of the developing country perspective on climate change (cf. <i>Global Warming in an Unequal World</i>)</p>
<p>Secondary: the authority of CSE as a voice in the climate change issue, beginning before FCCC and continuing by NGO participation in further COPs</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of argument</p>
<p>Primary: The world is unequal; rich countries have caused global warming (“historical emissions”) and should pay the true costs of their consumption (“polluter pays”) and should set up time-bound targets for greenhouse gas emissions reduction.</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of evidence</p>
<p>Primary: historical recounting of events in negotiations; first, ozone, which “remains a weak treaty, then WRI vs. “Global Warming in an unequal world” CSE’s role in climate issues</p>
<p>Secondary: facts about total emissions vs. per capita emissions</p>
<p>Tertiary:</p>
<p>Notes: what the developed countries say, but what we say</p>
<p>Worldview/view of nature</p>
<p>Primary: Economic orientation: atmosphere a global public good; rich countries who damage it should pay for the damage.</p>
<p>Secondary: World system is unequal; environmental agreements perpetuate inequality.</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Action(s) proposed</p>
<p>Primary: “rights-based approach in regulating climate change; treating the atmosphere as a limited common resource to be managed under an equity regime based on per capita entitlements (freezing the per capita entitlements on the basis of a population distribution index for a chosen year)”</p>
<p>Secondary: “Surplus entitlements with less polluting countries can give way to an international emission trading regime. An international tax can be levied on countries exceeding the limits imposed by their permissible entitlement allocation” (using the polluter pays principle).</p>
<p>Tertiary:</p>
<p>Notes:</p>

#2: Benedick, Richard E. 2001. Striking a new deal on climate change. <i>Issues in Science and Technology</i> Fall 2001, 71-76.
Authority of speaker/writer
Primary: Benedick was the principal US architect of the Montreal Protocol and the senior State Department official in population programs in the 1980s
Secondary: Member of the National Academy of Diplomacy (elected 2002)
Tertiary:
Notes:
Type of argument
Primary: Rational actors must negotiate doable policies
Secondary: Good diplomacy results in agreements that can trump “spoilers” (the US, in this case)
Tertiary: Montreal Protocol can be used as a comparative model → technology provides an irresistible incentive for developing countries to accept commitments
Notes:
Type of evidence
Primary: Evaluation of policy/agreement options and likely outcomes
Secondary: “Awards” for “diplomatic agility” (Japan, Australia, Canada), “flexibility” (EU), “suspense” (Russia), “outstanding consistency” (developing countries), and “politeness” (US)
Tertiary: informal conversations with “well-placed officials”
Notes: history of the Kyoto Protocol and Bonn COP
Worldview/view of nature
Primary: Humans can control the harms they do to the environment (e.g., Montreal Protocol) with the right technologies
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: US could renegotiate Kyoto Protocol commitments based on negotiations in Bonn; everything can be considered open for revision: base year, timetable, targets, sinks
Secondary: US should abandon its unaccustomed outside role, if for no other reason than to improve its position for constructively influencing future climate negotiations
Tertiary: (long-term) we develop a new generation of cost-effective technologies that dramatically reduce dependence on fossil fuels and/or that capture and sequester carbon (“start reducing emissions ... invest in a technological revolution ... adopt technology-based objectives ... accelerate technology transfer and joint implementation”) and key developing nations curtail their rapidly rising emissions
Notes:

#3: Ausubel, Jesse H. 2001. Some ways to lessen worries about climate. <i>The Electricity Journal</i> (January-February), 24-33.
Authority of speaker/writer
Primary: Ausubel is “director of the Program for the Human Environment at The Rockefeller University, New York. He was one of the main organizers of the first United Nations World Climate Conference, held in Geneva in 1979.”
Secondary:
Tertiary:
Notes: “This article is adapted from the keynote address to the Business Roundtable’s National Summit on Technology and Climate Change,” August 31, 2000.
Type of argument
Primary: It is likely that human emissions of GHGs will change the climate but we do not know how and probably cannot know. “But gambling with the climate does not strike me as a good bet.”
Secondary: “Societies are always trying to climate-proof themselves” (25) and many successful adaptations exist.
Tertiary: Technological change is a continuing process that demonstrates our adaptability, potential to design offsets, and engage in prevention strategies such as the Zero-Emission Power Plant (ZEPP).
Notes:
Type of evidence
Primary: Graphics showing technological cycles and improvements (recording media, RAM, transportation modes, and power plant size), with accompanying text
Secondary: long lists of ways we adapt to climate, e.g., “from antifreeze, air conditioning, and corn futures markets to windshield wipers, radar, and domed stadiums” (25).
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is essentially unpredictable; people can control their behavior.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “So, I say, let us prepare, just in case. Purchase some insurance. ... Publish and private entities should research and invest in all three” forms of climate insurance: adaptation, offsets, and prevention (25).
Secondary: “We should choose long-term solutions for emissions compatible with the evolution of the energy system. This means shift to methane, focus offsets on the carbon in methane, prepare the hydrogen economy, and anticipate the nuclear millennium that will follow our Methane Age” (33).
Tertiary:
Notes:

#4: Rayner, Steve and Elizabeth L. Malone 1998. Ten suggestions for policymakers. In <i>Human Choice & Climate Change, Vol. 4: What Have We Learned?</i> Battelle Press, Columbus, OH
Authority of speaker/writer
Primary: Steve Rayner, student of Mary Douglas, influential in institutional aspects of environmental, especially climatic, change
Secondary: Elizabeth Malone, relatively unknown at the time of publication
Tertiary: <i>Human Choice & Climate Change</i> has been widely cited in “soft science” journals and the IPCC 2001 assessment
Notes:
Type of argument
Primary: Narrative and pragmatic
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Historical events, intellectual history, metaphors (including Escher)
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Social solidarity determines the view of nature; at least four different worldviews (hierarchy, egalitarian, market, fatalist) exist, each with a different worldview (nature is robust within limits, fragile, robust, unknowable)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: See the problem in real-world context of (more important) development, other issues; act regionally and locally; design mitigation and adaptation strategies broadly; use a pluralistic approach (not just rational) to planning and decision-making; recognize institutional limits (just as important as environmental limits); direct resources toward the most vulnerable
Secondary:
Tertiary:
Notes:

#5: Goulder, Lawrence H. and Brian M. Nadreau 2002. International approaches to reducing greenhouse gas emissions. Pages 115-149 in <i>Climate Change Policy: a Survey</i>, Stephen H. Schneider, Armin Rosencranz and John O. Niles, eds. Island Press, Washington, DC.
Authority of speaker/writer
Primary: Lawrence H. Goulder: Well-known in economics and international environmental policy at Stanford
Secondary: Brian M. Nadreau: Master's student at Stanford
Tertiary: Stephen H. Schneider, the 1 st editor, has been an outspoken advocate of policy to combat climate change
Notes: Island Press is a publishing venue for environmentalists
Type of argument
Primary: Analytic assessment of options, with advantages and criticisms (emissions trading systems and carbon taxes; project-based emissions reductions [JI and CDM])
Secondary: Combining features to address criticisms (e.g., equity concerns)
Tertiary:
Notes:
Type of evidence
Primary: Modeling results and resultant cost and abatement curves
Secondary: Economic rational choice theory, benefits of trade
Tertiary:
Notes: Presumption that climate change should be addressed; begins with "the centerpiece for recent international policy discussions ... the Kyoto Protocol" (115)
Worldview/view of nature
Primary: Nature can be managed by coordinated human efforts.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "Climate change is a global problem, and dealing successfully with this problem will require the efforts of many nations. Although some climate policies can be implemented unilaterally, international coordination of national efforts is crucial to addressing climate change in the most effective & equitable manner." (115)
Secondary: Engaging "less developed countries," even without near-term abatement requirements, is important to having a global system for GHG reductions
Tertiary: Flexibility is important to reduce costs and to change policies as efforts continue.
Notes: Assumption that international agreements are the mechanism for dealing with climate change

#6: Jamieson, Dale 2001. Climate change and global environmental justice. Pages 287-307 in <i>Changing the Atmosphere: Expert Knowledge and Environmental Governance</i>, Clark A. Miller and Paul N. Edwards, eds. MIT Press, Cambridge, MA.
Authority of speaker/writer
Primary: Dale Jamieson is a professor at Carleton College, has published widely in environmental philosophy.
Secondary: The editors, Miller and Edwards, are sociologists.
Tertiary:
Notes:
Type of argument
Primary: Analyzes competing definitions of global environmental justice “that lie at the heart of the North-South debate about climate change.” (289)
Secondary: Philosophical (argument from cases)
Tertiary:
Notes:
Type of evidence
Primary: Narrative of policy debates with many names of organizations and individuals
Secondary: Philosophical cases of common property rights (analogy to emissions rights)
Tertiary:
Notes: Starts with Rio Summit and the FCCC, then Berlin Mandate (1995), then Kyoto
Worldview/view of nature
Primary: Everyone has an equal right to common property resources, including air
Secondary: Justice is primarily concerned with people
Tertiary:
Notes:
Action(s) proposed
Primary: distribute to every person “the same level of GHG emissions as every other person” in some index year (1990 or another)
Secondary: Industrialized countries should pay much of the cost of poorer countries’ adaptation.
Tertiary: “the post-Kyoto process must find ways of addressing contentious normative issues, including those bound in with scientific representations of nature, if we are going to be able to mobilize support among diverse and far-flung publics for the kinds of social and economic changes that will be needed” (289)
Notes:

#7: Meyerson, Frederick A.B. 2002. Population and climate change policy. Pages 251-274 in <i>Climate Change Policy: a Survey</i>, Stephen H. Schneider, Armin Rosencranz and John O. Niles, eds. Island Press, Washington, DC.
Authority of speaker/writer
Primary: Frederick A.B. Meyerson is described as “ PhD ecologist, demographer and former attorney.”
Secondary: Stephen H. Schneider, the 1 st editor, has been an outspoken advocate of policy to combat climate change
Tertiary:
Notes:
Type of argument
Primary: More people, more consumption, more “anthropogenic dominance of the biological assets of the planet” also “also decreased the ability of the global ecosystem to absorb and store carbon by ... ecosystem simplification” (253) of complex natural systems to agriculture
Secondary: “two demographic factors – the initial per capita inequity established by the Kyoto Protocol and the greatly different population growth trajectories of the Annex B countries – put additional strain on an already problematic and politically besieged international environmental agreement.” (261)
Tertiary: “Although there is an international consensus that improving reproductive health and family planning has positive economic, social, and environmental effects, a few fundamentalist countries, along with the Vatican, have been able to slow down progress toward many of the Cairo goals” (258) – a few in the US “have been able to block or weaken population-related legislation” (258)
Notes:
Type of evidence
Primary: Correlation between pop growth and emissions growth assumed to be causal
Secondary: Model projections of both population and emissions (CDIAC and UN demographic projections)
Tertiary:
Notes: begins with pop/consumption/emissions growth (1900-) , projected effects on pop, then backs up to 1800
Worldview/view of nature
Primary: Humans are harming climate and must reduce their use of natural resources such as fossil fuels.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Agree on a global emissions cap based on population
Secondary:
Tertiary:
Notes:

#8: Meadows, Donella H. 1997. "Mother Gaia reflects on the global climate conference." http://csf.colorado.edu/forums/ecofem/dec97/0009.html
Authority of speaker/writer
Primary: Meadows "is an adjunct professor of environmental studies at Dartmouth College."
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "I may have made a mistake when I evolved that two-legged, large-brained life-form. ... Deciding the composition of the atmosphere by counting up money 'costs' makes as much sense as deciding whether a plane will fly by the position of a football on a field. Wrong measure. Wrong field. Wrong game."
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: An imaginative monologue by Gaia
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is much larger and still in charge. Humans are arrogant if they think they can try to control climate and survive.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "If they don't figure that out, I'm going to have to take a few million years and try to evolve a higher form of intelligence."
Secondary: "Maybe that won't be necessary, though. ... The big-brains do have the capacity to see beyond power and money, see into the future, understand the fundamentals of my laws, distinguish between symbols and reality. Some of them know how many kinds of energy they can harness that don't put carbon back into the atmosphere. ...But they'd better hurry. ... I hope they do. I'm really quite fond of them."
Tertiary:
Notes:

#9: Martens, W.J.M., J. Rotmans and L.W. Niessen 1994. <i>Climate Change and Malaria Risk: An Integrated Modelling Approach</i>. GLOBO Report Series no. 3, Rijksinstituut voor Volksgezondheid en Milieuhygiene, Bilthoven, The Netherlands.
Authority of speaker/writer
Primary: RIVM is known for its ecologically based integrated assessment models.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Malaria is an important disease whose risk may rise because of increased temperature's effect on disease vectors.
Secondary: "The process leading to the impact of a human-induced climate change on malaria incidence can be represented by a sequence of indicators representing the cause-effect chain." (17) increased temp → increase in vectorial capacity → increase in disease burden of malaria (mitigated by public health programs, which divert resources from other goods) → effects on sustainable development
Tertiary:
Notes:
Type of evidence
Primary: Integrated Assessment Model design (with algorithms) and results
Secondary: Information about malaria and its vectors
Tertiary: Schematic diagram of the effect of "human-induced climate change" on "vector-borne disease incidence" (3)
Notes: begins "Human activities have reached a level at which their impact on the environment is global." (1)
Worldview/view of nature
Primary: Nature includes humans in the disease cycle; humans affect climate, climate affects vectors of disease, disease increases.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Modeling "is feasible and can provide valuable insights into the interdependencies among climate change, vector population dynamics and human disease dynamics" but additional research is needed on biological, ecological and socio-economic factors.
Secondary: "During all or part of the various simulation runs, there is a failure to meet targets for sustainability, defined in terms of temperature and human health. Given insufficient resources to deal with malaria adequately in the most affected regions, the anticipated risk of climate change tends to unacceptable levels." (29)
Tertiary:
Notes:

#10: USEA/USAID Handbook of Climate Change Mitigation Options for Developing Country Utilities and Regulatory Agencies 1999. Energy Resources International, Inc., Washington, DC.
Authority of speaker/writer
Primary: Both the US Energy Agency and US Agency for International Development are hands-on organizations concerned in development
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "Since the United Nations Framework Convention on Climate Change (UNFCCC) was signed in 1992, there has been a growing concern about the potential climate change implications of power sector activities, even those classified as 'best practices'. ... Information on more than 70 climate change action areas is provided in the Handbook for developing country utilities and regulatory agencies to avoid, offset or reduce the impact of GHG emissions." (ES-1)
Secondary:
Tertiary:
Notes: Assumption is that providing information leads unproblematically to desired actions.
Type of evidence
Primary: "For each action area, available information on the characteristics, climate change impact, issues related to implementation and information resources/contacts is provided." (1-5)
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Human-induced climate change is real; emissions can be managed/reduced.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Adoption of "best practices" that have climate change benefits will mitigate climate change.
Secondary: Information on beneficial regulation, along with contacts and funding sources, will encourage implementation of these regulations.
Tertiary:
Notes:

#11: Ahmed, Qazi Kholiquzzaman and Ahsan Uddin Ahmed 2000. Social Sustainability, indicators and climate change. In <i>Climate change and its Linkages with Development, Equity and Sustainability: Proceedings of the IPCC Expert Meeting held in Columbo, Sri Lanka, 27-29 April 1999. World Bank, Washington, DC.</i>
Authority of speaker/writer
Primary: The two authors are from the Bangladesh Unnayan Parishad.
Secondary: Sponsorship of the meeting came from several major climate change-involved organizations: IPCC, WMO, RIVM, World Bank, LIFE (in Sri Lanka)
Tertiary:
Notes:
Type of argument
Primary: Because climate impacts carry costs and developing countries will be most affected, climate change will exacerbate inequality, motivate migration, begin ‘a new vicious circle of socioeconomic vulnerability’ (99), and destabilize social relations.
Secondary: “Under conditions of climate change, social sustainability is a reflection of the society’s ability to reduce social vulnerability caused by the induced changes. ... If a society is well prepared in terms of human, physical (infrastructural), and financial capacities; well positioned in terms of general awareness and institutional capabilities; and possesses a high resilience (moral, kinship and otherwise), then it should be able to effectively lower its vulnerability.” (100)
Tertiary:
Notes:
Type of evidence
Primary: Enumeration of mostly negative impacts of climate change, referring to model-based studies
Secondary:
Tertiary:
Notes: begins with human dependence on natural systems and threats of “climatic disasters”
Worldview/view of nature
Primary: “Human lives and economic progress are both dependent on natural systems – as sinks for carbon dioxide and sources of oxygen, and as the ultimate natural base of the economic activity.” (95)
Secondary: “With the assault on the nature perpetrated largely by the now developed countries while increasing their wealth, and more recently by the developing countries seeking to improve their economic conditions, the climatic balance has been seriously destabilized.” (95)
Tertiary:
Notes:
Action(s) proposed
Primary: “Overriding focus” on “empowerment of the people for participating in economic, social and political processes in an effective manner, for which ethics and morality must underpin the behavior of the people, particularly those who are in decision-making, program implementation, and leadership positions.” (102) also social equity must be a “guiding principle.”
Secondary: Improve human capital, democratic governance, employment and opportunities, access to resources and social services; reduce poverty and population growth; improve health care; build environmental capacity
Tertiary: Protect flood-vulnerable areas; provide irrigation; produce better seeds; alter crop calendar; prepare to cope with emergencies & disasters; manage land use; create social infrastructures to minimize losses
Notes:

#12: Gore, Al 1992. <i>Earth in the Balance: Ecology and the Human Spirit</i>. Houghton Mifflin, New York.
Authority of speaker/writer
Primary: At the time of writing, Gore was a US Senator; he became Vice President and was the Democratic candidate for the presidency in 1999.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Humans are, by thinking of the earth as a storehouse of resources they have only to tap, are destroying the ecological balance; “the entire relationship between humankind and the earth has been transformed because our civilization is suddenly capable of affecting the entire global environment, not just a particular area.” (29-30)
Secondary: Most scientists believe that humans are increasing the greenhouse effect; although there are uncertainties, the conservative approach would be to limit emissions.
Tertiary:
Notes:
Type of evidence
Primary: Personal story – first, education by Roger Revell and Mauna Loa data; second, increasing involvement in hazardous waste and nuclear issues
Secondary: Metaphors, folk sayings, and anecdotes (frog in hot water v. gradually warmed water, perspective from space looking at Earth, Yogi Berra sayings, borrowing on credit)
Tertiary: Examples: burning in the Amazon, drying up of Aral Sea, ozone hole, thinning ice cap, historical examples of climate anomalies caused by, e.g., volcanic eruptions (1816) and consequent famine/political unrest/migration
Notes:
Worldview/view of nature
Primary: “The ecological perspective begins with a view of the whole, an understanding of how the various parts of nature interact in patterns that tend toward balance and persist over time. But this perspective cannot treat the earth as something separate from human civilization; we are part of the whole too, and looking at it ultimately means also looking at ourselves.” (2)
Secondary: Humans are a natural force, one that threatens to push Earth out of balance
Tertiary:
Notes:
Action(s) proposed
Primary: “For civilization as a whole, the faith that is so essential to restore the balance now missing in our relationship to the earth is the faith that we do have a future.” (368) – ethical choice “to pay attention, resist distraction, be honest with one another and accept responsibility for what we do” (368) – and begin without delay.
Secondary: Global Marshall Plan
Tertiary:
Notes:

#13: Edwards, Paul 1996. Models in the policy arena. In <i>Elements of Change, Session 2: Characterizing and Communicating Scientific Uncertainty</i>, Susan Joy Hassol and John Katzenberger (eds). Aspen Global Change Institute, Aspen, CO.
Authority of speaker/writer
Primary: The author is in the Science, Technology, and Society Program at Stanford U
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Climate change would not exist as a political issue without models” (159), but “Models don’t and probably won’t ever control policy choices because there are other policy constraints that are too powerful” (159)
Secondary: “One role of models for climate science has been to build an increasingly large community around the climate change issue in which many groups and elements have come to play a role.” (159)
Tertiary:
Notes:
Type of evidence
Primary: History of models-for-policy: Club of Rome, Systems Dynamics Group at MIT, IIASA, IMAGE at RIVM (a direct descendant of the world dynamics models)
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Because models have important limitations, they have large uncertainties that are unlikely to be eliminated, i.e., that cannot represent the climate although the new scientific paradigm accepts a mathematical representation of the climate
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Models should play a heuristic role in policymaking, e.g., “for retrospective policy evaluation, helping to determine if a policy worked by comparing what actually happened to model results of what would have happened in the absence of the policy” (162)
Secondary:
Tertiary:
Notes:

#14: Rosenzweig, Cynthia and Daniel Hillel 1995. Potential impacts of climate change on agriculture and food supply. <i>Consequences: The Nature & Implications of Environmental Change</i> 1(2), 22-32.
Authority of speaker/writer
Primary: Rosenzweig is one of the authoritative researchers on this topic.
Secondary: Funding is provided for this journal by NOAA, NASA, and NSF.
Tertiary:
Notes:
Type of argument
Primary: "Computer models and other studies confirm that agriculture may not be much perturbed by a temperature increase of 1.5 degrees C (the lower limit of the IPCC projections for the mid-21 st century), but may be severely affected by an increase of 4.5 degrees." (22)
Secondary: Possible benefits include enhanced CO ₂ assimilation, longer growing seasons, and increased precipitation. Possible drawbacks include more frequent and severe droughts, heat stress, faster growth/shorter growing periods and lifecycle, increased pests and erosion, decreased soil fertility, and flooding and salinization from sea level rise.
Tertiary: "the ability of any country to take advantage of the opportunities and to avoid the drawbacks as climate changes will depend on the availability of adequate resources as well as on the quality of the research base." (28)
Notes:
Type of evidence
Primary: model-based results showing projected impacts of climate change on crops
Secondary: analyses of uncertainty, thresholds, and surprises
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans are affecting the balance of nature, but can correct their actions through careful planning and actions.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Immediate action to prepare for global warming is needed.
Secondary: Instead of "setting arbitrary levels for atmospheric trace gas concentrations, emissions rates, or temperatures to serve as upper limits of acceptability for policy response" is misleading; better to assume the "global warming and its manifestations will be in some manner proportionate to the increase of trace gas concentrations and that the eventual consequences of <u>any</u> significant human alteration of the Earth's energy balance is potentially serious." (31)
Tertiary: A "blind faith in agriculture as a self-correcting process" is also misleading; "In all areas of the world the necessary adjustments (such as substituting crops, introducing or intensifying irrigation, and modifying field operations such as tillage or pest control) may be too costly for many farmers to implement." (31-32)
Notes: Not identified as a recommendation, but "The presently inadequate capacity of agricultural research systems in the tropics and semi-tropics will need to be rectified, and this task can best be achieved through international cooperation." (28)

#15: Edmonds, Jae and Michael J. Scott et al. 1999. <i>International Emissions Trading and Global Climate Change</i>. Pew Center on Global Climate Change, Washington, DC.
Authority of speaker/writer
Primary: Jae Edmonds was one of the first modelers of emissions and energy related to global climate change and an early integrated assessment modeler.
Secondary: The Pew Center is an advocacy group but strives for balance in its reports.
Tertiary:
Notes:
Type of argument
Primary: Because emissions mitigation addresses a century-scale problem, costs must be low if action is to be undertaken (i.e., there is no immediate benefit resulting from costs).
Secondary: Theory favors trading to lower costs, but actual costs depend on the design of the program.
Tertiary:
Notes:
Type of evidence
Primary: discussion of the principles of trade
Secondary: model results showing benefits of emissions trading relative to no trading
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans and human activities are the focus; nature is secondary
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Allow emissions trading in any scheme to reduce emissions.
Secondary: "Programs must be carefully designed to assure that the potential gains from trade are realized." (iv) Actual costs likely to be lower because "models do not include the various measurement, verification, trading, and enforcement costs that would characterize any real trading system." (iv)
Tertiary:
Notes:

#16: Greenwald, Judith, Brandon Roberts and Andrew D. Reomer 2001. <i>Community Adjustment to Climate Change Policy</i>. Pew Center on Global Climate Change, Washington, DC.
Authority of speaker/writer
Primary:
Secondary: The Pew Center is an advocacy group but strives for balance in its reports.
Tertiary:
Notes:
Type of argument
Primary: Just as “the federal government has taken an active role in assisting communities facing economic loss” from global competition, defense downsizing, and recession, so too it should assist “communities that may face substantial economic loss due to climate change policies ... those with high reliance of jobs in energy-producing industries (e.g., coal mining in West Virginia, oil and gas production in Louisiana); energy-intensive industries (e.g., steel manufacturing in Pennsylvania); and industries that make energy-consuming products (e.g., auto manufacturing in Michigan).” (1-2)
Secondary: Ability of communities to adjust to economic dislocation is a function of four factors: (1) strength and diversity of the economy, (2) nature of economic assets, (3) ability of community members to manage adjustment, and (4) effectiveness of economic development institutions in strategic planning and implementation.
Tertiary:
Notes:
Type of evidence
Primary: “review of 26 community-based adjustment programs from around the nation and the world” (3) – examples, cases
Secondary: “an examination of factors that influence the ability of communities to adjust to dislocation.” (3)
Tertiary:
Notes:
Worldview/view of nature
Primary: Ecomodernism
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Designate and fund the Economic Development Administration (E.D.A.) of the U.S. Department of Commerce to design and implement an economic adjustment program for communities.” (ii)
Secondary: “Identify and assist communities that are particularly dependent on energy-producing and energy-intensive sectors before dislocations occur.” (ii)
Tertiary: “Leverage and integrate additional resources by involving multiple federal agencies and state and local governments through federal and regional task forces.” (ii)
Notes: Additional action proposed – “Be flexible in addressing community needs by supporting locally determined, comprehensive strategies for five to seven years after the implementation of new climate policies.” (ii)

#17: “Response Strategies: Building Resilience in Systems” 2002. Chapter V in California Regional Assessment Report for the U.S. Global Change Research Program.
Authority of speaker/writer
Primary: This is one regional report, mandated by Congress to assess the potential impacts in the US of climate change and the potential to address climate change – it was widely criticized as alarmist and not good science
Secondary: The lead author is Robert Wilkinson, Lecturer, Environmental Studies Program at UCSB
Tertiary:
Notes:
Type of argument
Primary: “The goal of California decision-makers and stakeholders should therefore be to craft investment and policy strategies to maintain ecosystem health, productive capacity, and quality of life within the framework of the concerns and values of the region.”
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Quotations from business leaders and strategists, researchers, one journalist from <i>WSJ</i>
Secondary: Model programs, such as NOAA NWS Heat Index Program, Village Homes (Davis, CA), “Cool Roofs,” daylighting in a Lockheed building
Tertiary:
Notes:
Worldview/view of nature
Primary: Ecomodernism
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Stress “multiple benefits” and “no regrets” strategies: energy efficiency, waste reduction, providing better cost signals to consumers re resources, floodplain management, public education.
Secondary: For ecosystems, limit the footprint of development, restore degraded habitats, manage water and pollution for minimal impact, limit bio-invasions, “take the long view.” Build resilience in the urban infrastructure in “livable” neighborhoods. Manage stormwater runoff to let water percolate into the soil. Build “green.” Plan coastal land use and for fire protection/management. Use water markets and plan for adaptation in water infrastructure.
Tertiary:
Notes:

#18: Glantz, Michael H. 2001. Editorial: Global warming yea-sayers & naysayers: time to bridge the gap? <i>Network Newsletter, Climate-Related Impacts International Network (NCAR and NOAA).</i>
Authority of speaker/writer
Primary: Glantz is a well-known social scientist in the Environmental & Societal Impacts Group at the national Center for Atmospheric Research in Boulder, CO
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "There are, however, solid facts that all can (or should) agree on: seventeen of the eighteen warmest years in the twentieth century occurred since 1980. The atmosphere has warmed. The amount of carbon dioxide in the atmosphere has increased during the twentieth century. Glaciers worldwide are noticeably retreating. And the scariest of all, large chunks of the Antarctic's ice mass have broken away."
Secondary: "To stand by and do nothing just for the sake of undoing the policies of a former president would be folly."
Tertiary:
Notes:
Type of evidence
Primary: "Clearly, an increasing number of scientists have been joining the ranks of those concerned about the likelihood of human interference in the natural processes that produce the earth's climate (i.e., the yea-sayers)."
Secondary: "even though we do not think that our house will be struck by lightning, we all buy insurance against that likelihood. We just don't want to take the chance. We buy the insurance and hope it never happens. Thus, policies to deal with global warming, regardless of the human contribution to it, are a good insurance policy."
Tertiary:
Notes:
Worldview/view of nature
Primary: "I myself am not sure how a global warming, natural or human-induced, will play out in the real world (as opposed to how it plays out in highly sophisticated...models.)"
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "The Bush administration has the opportunity to take a fresh look at the global warming issue by holding its own 'global warming court' that brings together the yea-sayers, the naysayers, and those 'in between' in order to decide on appropriate tactical and strategic responses to this potential global threat."
Secondary: "There are enough pieces of the climate change puzzle on the table to prompt rational people (including incoming policy makers) to ponder the issue more carefully and with less hype, fanfare, and acrimony toward those with opposing views. This is not a call for more science, but a call for more common sense."
Tertiary:
Notes:

#19: Darwin, Roy, Marinow Tsigas, Janm Lewandrowski and Anton Raneses 1996. Land use and cover in ecological economics. <i>Ecological Economics</i> 17, 157-181.
Authority of speaker/writer
Primary: The authors were at the Economic Research Service, U.S. Dept of Agriculture
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Land use/cover is a “integrating concept”: (1) “the main resource governing primary productivity can be defined in terms of land” (157); (2) “land remains the primary source of the energy and mass that compose our food and fiber” (158); (3) “the most important interaction between humans and other biological communities is the competition for land.” (158)
Secondary:
Tertiary:
Notes: “A basic premise of ecological economics is that the world economy is embedded in and dependent upon Earth’s ecosystem. This dependency is captured by the concept of ‘throughput’ (Boulding, 1966) or ‘entropic flow’ (Georgescu-Roegen, 1971) – the one-way flow of energy and mass through an economy that begins with resources and ends with waste.” (157)
Type of evidence
Primary: “We present a model that integrates economic-ecological activities with land use and cover.” (157) – the Future Agricultural Resources Model (FARM), developed at USDA “to evaluate impacts of global climate change on the world’s agricultural system” (158), which includes a GIS and a CGE economic model (description 159-171)
Secondary:
Tertiary:
Notes: full-page flowchart of the model, 3 tables and a map re land class endowments
Worldview/view of nature
Primary: “interactions between economic and ecological phenomena are complex” (180) – “Whether the correlation with a particular economic variable [and forest depletion in Southeast Asia] is positive or negative depends on the global change scenario” (180)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Results from our scenarios [of global climate change, population growth, and deregulation of agricultural trade] indicate that such changes are likely to have adverse effects on the health and integrity of tropical forest ecosystems.” (180)
Secondary: “Improved throughput analyses require better tracking of resource stocks (soil, water, forests, fossil fuels, etc.) coupled with waste emission coefficients for various economic sectors. Methods for simulating inter- and intraregional labor migration, investment in human and physical capital, and technological change are needed to conduct dynamic analyses.” (180)
Tertiary:
Notes:

#20: Athanasiou, Tom 2003 (March). Two futures, and a choice. <i>Progressive Response</i>. http://www.fpif.org/commentary/2003/0303choice.html
Authority of speaker/writer
Primary: Foreign Policy in Focus (FPIF) is a “Think Tank Without Walls,” an international network of analysts and activists dedicated to “making the U.S. a more responsible global leader and partner by advancing citizen movements and agendas.” It is a joint project of the Interhemispheric Resource Center and the Institute for Policy Studies.
Secondary: The author (toma@ecoequity.org) is co-author of <i>Dead Heat: Global Justice and Global Warming</i> .
Tertiary:
Notes: Other articles in the same issue include “Women, HIV, and the global gag rule: the disintegration of U.S. global AIDs funding” and “The Mexican farmers’ movement: exposing the myths of free trade.”
Type of argument
Primary: Invading Iraq and refusing to act aggressively to prevent catastrophic climate change are the same decision: to pursue an oil-dependent future.
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: the Cheney Report of May 2001, which predicts oil imports to rise by more than 60% by 2020
Secondary: DOE’s Clean Futures study, which shows that U.S. oil consumption can remain near 2000 levels through 2020 “without harming the economy,” and the Tellus Institute report “The American Way to the Kyoto Protocol,” which projects “even greater reductions in both energy use of greenhouse pollution at a net savings of \$50 billion per year”
Tertiary:
Notes:
Worldview/view of nature
Primary: “The climatic future, for its part, is still open, but it’s closing in significant ways” – “Let one fact stand for them all: The Arctic ice is melting, fast”
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “policies and technologies available today can put us on a new path – a path to both a cleaner environment and real global cooperation. ... a future worth having”
Secondary:
Tertiary:
Notes:

#21: Ribot, Jesse C. 1996. Introduction: climate variability, climate change and vulnerability: moving forward by looking back. In <i>Climate Variability, Climate Change and Social Vulnerability in the Semi-arid Tropics</i>, Jesse C. Ribot, Antonio Rocha Magalhães and Stahis S. Panagides (eds). Cambridge University Press, Cambridge, UK.
Authority of speaker/writer
Primary: The authors are at Harvard U, Secretariat of Planning in Brazil, and the Esquel Group Foundation, respectively
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Social vulnerability is not a direct effect of climate impacts, which “attributes to nature causality that can be directly and more productively traced to social organization.” (2) – “the risk that the household’s entitlements will fail to buffer against hunger, famine, dislocation or other losses.” (2)
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: case studies (the chapters of the book)
Secondary: entitlements theory, as first articulated by Amartya Sen
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is not the primary determinant of human welfare.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Understanding vulnerability [through its historical antecedents] should thus be used to produce more durable and earlier, proactive responses.” (8)
Secondary: Focus on enfranchisement and empowerment to increase material resources with which to buffer against contingencies, including climate variability/change.
Tertiary: Understand the interdependence of households, rural communities, and the state in terms of security.
Notes:

#22: Calder, Nigel 1999. The carbon dioxide thermometer and the cause of global warming. <i>Energy & Environment</i> 10(1), 1-18.
Authority of speaker/writer
Primary: Author is an academic.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "Natural agents of climate change, and especially the cosmic rays, control the concentration of carbon dioxide in the Earth's atmosphere. Man-made emissions of carbon dioxide have no perceptible effect."
Secondary: "The increases in carbon dioxide in the air from year to year are a result, not a cause, of climate change."
Tertiary:
Notes:
Type of evidence
Primary: "By calibrating the natural carbon dioxide thermometer to global temperature deviations, a carbon dioxide history is inferred, which intersects ice-core data showing elevated carbon dioxide concentrations before the 20 th Century. The variable year-by-year increments of carbon dioxide can also be accounted for, without reference to temperature, by the combined effects of cosmic rays, El Nino and volcanoes. The most durable effect is due to cosmic rays."
Secondary: "The aa index of the solar wind, used as a long-term proxy for the cosmic rays, gives a carbon dioxide history similar to that inferred from the global temperature deviations."
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature operates independently of humankind.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: [none given, but clearly no actions to reduce greenhouse gases are needed]
Secondary:
Tertiary:
Notes:

#23: Idso, C.D. and K.E. Idso 2002. Carbon dioxide and global warming: where we stand on the issue. Available at http://www.co2science.org/about/position/globalwarming.htm
Authority of speaker/writer
Primary: This is a position paper for the Center for the Study of Carbon Dioxide and Global Change, which, according to its mission statement “attempts to separate reality from rhetoric in the emotionally-charged debate that swirls around the subject of carbon dioxide and global change.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: CO ₂ concentrations have risen, attributable to human use of fossil fuels; but there is only a weak correlation between this and the slight warming of the Earth over the past century, not causal link.
Secondary: Negative feedbacks, which are “not adequately represented in state-of-the-art climate models,” can counter any increased CO ₂ greenhouse effect.
Tertiary: “Growth-enhancing effects of CO ₂ create an impetus for cooling.” And they are “a boon to the biosphere.”
Notes: Another argument: “There is no evidence for warming-induced increases in extreme weather.” – although costs of damages have risen.
Type of evidence
Primary: Over the past half-million years, no causal relationship can be shown. During the “seven greatest temperature transitions...we note that increases and decreases in atmospheric CO ₂ concentration not only did not precede the changes in air temperature, they <i>followed</i> them, and by <i>hundreds to thousands of years!</i> There were also long periods of time when atmospheric CO ₂ remained unchanged, while air temperature dropped, as well as times when the air’s CO ₂ content dropped, while air temperature remained unchanged or actually rose.”
Secondary: “the warming predicted to result from a doubling of the air’s CO ₂ content may be <i>totally countered</i> by (1) a mere 1% increase in the reflectivity of the planet, <i>or</i> (2) a 10% increase in the amount of the world’s low-level clouds, <i>or</i> (3) a 15 to 20% reduction in the mean droplet radius of earth’s boundary layer clouds, <i>or</i> (4) a 20 to 25% increase in cloud liquid water content.”
Tertiary: Documented growth enhancements of CO ₂
Notes:
Worldview/view of nature
Primary: Nature is robust, will survive human actions
Secondary:
Tertiary:
Notes: “References to the voluminous scientific literature that supports the many factual statements of this position paper may be found on our website, which we update weekly.”
Action(s) proposed
Primary: “Our policy prescription relative to anthropogenic CO ₂ emissions is thus to leave well enough alone and let nature and humanity take their inextricably intertwined course.”
Secondary:
Tertiary:
Notes:

#24: Hoffert, Martin I., Ken Caldeira, Gregory Benford, David R. Criswell, Christopher Green, Howard Herzog, Atul K. Jain, Haroon S. Kheshgi, Klaus S. Lackner, John S. Lewis, H. Douglas Lightfoot, Wallace Manheimer, John C. Mankins, Michael E. Mauel, L. John Perkins, Michael E. Schlesinger, Tyler Volk and Tom M.L. Wigley 2002. Advanced technology paths to global climate stability: energy for a greenhouse planet. <i>Science</i> 298(1 November), 981-987.
Authority of speaker/writer
Primary: A fairly large, interdisciplinary group of scientists
Secondary: A prestigious scientific journal
Tertiary:
Notes:
Type of argument
Primary: "Arguably, the most effective way to reduce CO ₂ emissions with economic growth and equity is to develop revolutionary changes in the technology of energy production, distribution, storage, and conversion." (981)
Secondary: The gap between energy that will be needed and the capacity of current technologies is larger than realized (including by the IPCC).
Tertiary:
Notes:
Type of evidence
Primary: theoretical efficiency limits of current technologies, decarbonization, and sequestration; potential for renewables (including undemonstrated technologies), fission and fusion
Secondary: data on population growth, energy-related emissions, and stabilization levels
Tertiary:
Notes: warrants of Arrhenius and of FCCC included (quote re "dangerous" level of concentrations)
Worldview/view of nature
Primary: Humans can control nature
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "Stabilizing climate is not easy. At the very least, it requires political will, targeted research and development, and international cooperation." (986)
Secondary: "Most of all, [climate stabilization] requires the recognition that, although regulation can play a role, the fossil fuel greenhouse effect is an energy problem that cannot be simply regulated away." (986)
Tertiary:
Notes:

#25: Berger, John J. 2000. <i>Beating the Heat: Why and How We Must Combat Global Warming</i>. Berkeley Hills Books, Berkeley, California.
Authority of speaker/writer
Primary: Berger is “an independent energy and environmental consultant.” He holds a PhD in ecology from UC-Davis and has authored seven books on climate, nuclear and renewable energy, environmental restoration, and forestry.
Secondary: Jacket blurbs from John Adams at NRDC, Ernest Gallenbach, Lester Brown, and Stephen Schneider.
Tertiary:
Notes:
Type of argument
Primary: Take effective action before there is certainty about climate change, so that changes we can’t see now will not cascade, unstoppable, and ruin the planet and ourselves
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Ch. 1 (12-25) is an imaginative look at 2100; “you” travel in a personal transport device and survey the worldwide changes that have come from warming, SLR, wetlands loss, water siltation and pollution, and increased disease; Ch. 3 (41-57) depicts a U.S. Cabinet meeting in 2012, when no actions have been taken and now costs are much higher
Secondary: Ch. 2 explains the greenhouse effect and increases in CO ₂ concentrations in the past century; Ch. 5 describes renewable energy sources and their potential.
Tertiary: Ch. 4 names and tries to discredit climate skeptics, then argues against 9 “myths” of these skeptics.
Notes:
Worldview/view of nature
Primary: “If you are not sure why we should care if a few more species go extinct, remember that nature is an interconnected fabric. Poke enough holes in it, tear it, yank on it hard enough, and it will rip. Once in ruins, it is very difficult and costly to mend, and the services it was unobtrusively providing are suddenly in jeopardy or gone.” (10)
Secondary: “If we destroy nature, we eventually destroy ourselves.” (11)
Tertiary:
Notes:
Action(s) proposed
Primary: Individual actions to reduce energy use, from buying a fuel-efficient car to eating locally grown food and less meat to buying from green companies and becoming politically active on this issue (17 in all).
Secondary: Recommended government policies range from removing subsidies to fossil fuel and nuclear industries to providing incentives for renewables (firms and individuals) to reducing methane and nitrous oxide emissions from agriculture to participating in international emissions trading and non-emitting technology transfer.
Tertiary:
Notes:

#26: Kawashima, Yasuko 2000. Nuclear power and climate change: the current situation in Japan and a message to the United States. Resources for the Future, http://www.weathervane.rff.org/pop/pop9/kwashima.html
Authority of speaker/writer
Primary: The author is a researcher at the National Institute for Environmental Studies, Japan.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Japan is committed to reduce emissions, but lately support has shifted from expansion of nuclear power to renewable sources and “a shift towards less energy-consuming lifestyles.”
Secondary: The U.S. “has already achieved more progress than Japan in the use of soft energy such as wind power, but this advantageous position has not been expanded much recently. ... On the other hand, efforts toward a less energy-consuming community seem unpopular in the United States.”
Tertiary:
Notes:
Type of evidence
Primary: details of government policies at the national and community level
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Environmental issues/climate change are as important as economic issues/recession.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “I hope experts in the United States will come up with a recommendation for a win-win strategy, minimizing nuclear power while reducing CO ₂ emissions.”
Secondary:
Tertiary:
Notes:

#27: Toman, Michael A. n.d. <i>Climate Change Economics and Policies: An Overview</i>. Retrieved from Resources for the Future website (www.rff.org) 03/12/03. (Last date in reference list is 2000.)
Authority of speaker/writer
Primary: Toman has written widely about economics and climate policy for the think tank Resources for the Future.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Each issue in climate change should be analyzed in terms of its costs and benefits.
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Economic theory as embodied in climate policies.
Secondary:
Tertiary:
Notes: cites “dangerous” quote of UNFCCC, Kyoto Protocol
Worldview/view of nature
Primary: Economic – Nature is a storehouse whose products can be accounted for
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “basic points for evaluating climate change risks and response costs:” (1) “Think comprehensively about risks.” (2) “Address adaptation.” (3) “Consider the long term.” (4) “Make the focus international.” (5) “Keep in mind distributional issues.” (6) “Estimate costs comprehensively and realistically.”
Secondary: “what constitutes effective and efficient climate policies:” (1) “Incorporate economic incentives into emissions-reduction policy.” (2) “Provide opportunities for emissions reductions wherever possible.” (3) “Allow flexibility in the timing of cumulative emissions reductions to reduce overall costs.” (4) “Encourage the development of the climate change knowledge base and improved technology for emissions reduction.” (5) “Increase the emphasis on adaptation.”
Tertiary:
Notes:

#28: Inoest Strategic Value Advisors 2002. COE Briefing from <i>Climate Change and the Financial Services Industry</i>. United Nations Environment Programme Finance Initiatives, http://www.unepfi.net
Authority of speaker/writer
Primary: Inoest is a trade organization.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “even small changes (<10%) in even severity can generate multiple increases in damage”; however, threats and opportunities exist in every financial sector.
Secondary: “Market solutions will play a pivotal role in tackling climate change whatever the international policy framework. Financial institutions will therefore have a key role to play” in making an efficient market system and efficient emissions trading system; and providing products/services “that contribute towards adaptation and mitigation efforts,” “manage their own property risks,” “pursue environmental management leadership,” and “engage with stakeholders to work towards solutions.”
Tertiary: “Strong government leadership on adaptation and mitigation measures is a prerequisite for market-based solutions in order to provide the financial services industry with the necessary regulatory architecture.”
Notes:
Type of evidence
Primary: review of attitudes towards climate change in insurance/reinsurance, banking, asset management, project finance, emissions trading, and professional services (mostly unaware and/or unprepared, little experience)
Secondary: Graph on carbon finance at the project level (from the World Bank); graph on evolution of carbon as a driver of financial value (government role) (from Inoest)
Tertiary:
Notes: cites IPCC conclusions
Worldview/view of nature
Primary: Proactive strategies can help humans cope with climate change.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Long list of recommendations, from raising awareness and leading by example to adapting products; clarifying threats, opportunities and risk; developing tools and products; structure current markets in clean technologies, carbon credits, etc.; and develop harmonized GHG accounting methods.
Secondary: Policymakers should establish a long-term policy framework, involve financial institutions, and establish emissions trading systems. Governments should sponsor research, encourage renewables, and provide support for less developed countries.
Tertiary: The UNEP Finance Initiatives should sponsor three multidisciplinary task forces to raise awareness, developing a quantitative methodology that will capture the implications of climate change regulations, and developing a project finance method.
Notes:

#29: <i>Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change. Mid-Atlantic Overview. 2000. Mid-Atlantic Regional Assessment Team. Pennsylvania State University, University Park, Pennsylvania.</i>
Authority of speaker/writer
Primary: Sponsored by EPA and USGCRP, this report is one of 16 regional assessments of the U.S.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Results show that benefits are fewer and smaller than potential damages.” Large negative impacts of climate change for the coastal zones (most certain), biodiversity and ecological functioning (both uncertain); moderate negative impacts on temperature-related health stress (most certain) and fresh water quality (uncertain); other impacts are mixed or low.
Secondary: “Economic analysis suggests that the MAR <i>economy</i> will be resilient to projected climate change. The region’s diversified, technologically advanced economy is highly integrated with the rest of the United States and the world and has relatively little dependence on climate-sensitive economic sectors.” (iv)
Tertiary:
Notes:
Type of evidence
Primary: use of climate scenarios from two GCMs (Hadley and CCCM) and socioeconomic scenarios from USGCRP (population, income and employment growth)
Secondary: integrated regional assessment approach (START graphic)
Tertiary: extensive input from stakeholders
Notes:
Worldview/view of nature
Primary: climate as hazard and resource for people
Secondary: people stress the environment
Tertiary:
Notes:
Action(s) proposed
Primary: Win-win actions: (1) “use a watershed perspective to reduce flood and drought damages and protect water quality”; (2) remove incentives for practices ... that place people, investments, and (especially coastal) ecosystems at greater risk to climate variability”; and (3) set up communication and learning tools and programs...” (v)
Secondary: Information needs: improve projections of extreme weather and how it affects the environment/human health, how adaptation would help; improve models to evaluate benefits/costs; and improve methods for evaluating the effects of policies
Tertiary:
Notes:

#30: Singer, Dr. S. Fred 2000. Interview. http://www.pbs.org/wgbh/warming/debate/singer.html
Authority of speaker/writer
Primary: Singer “is an atmospheric physicist at George Mason University and... a leading skeptic of the scientific consensus on global warming.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “the scenarios are alarmist, computer models reflect real gaps in climate knowledge, and future warming will be inconsequential or modest at most.”
Secondary: Climate does change, but humans adapt. The only way to know if climate is changing is observations/measurements, but these are ambiguous. Satellite data are better than surface data.
Tertiary: Costs of buying climate change “insurance” are too high
Notes:
Type of evidence
Primary: critique of models: cannot reproduce clouds, do not agree with each other, are “tweaked” to produce current climate
Secondary: Historical data: satellite data show slight cooling in the past 20 years; CO ₂ and temperature in the long time record are not correlated such that causation is possible
Tertiary: climate scientists who are funded by USGCRP have a vested interest in producing claims about climate change
Notes:
Worldview/view of nature
Primary: People probably have little effect on climate but are very adaptable.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “If it warms, it will be good. So what is the concern, really?”
Secondary: “Certainly we know that the models do not agree amongst themselves. So I think the first step is to find out why this is so, and work very hard to at least resolve the differences between [models], and then try to resolve differences between models and observations.”
Tertiary:
Notes:

#31: Boehmer-Christiansen, Sonja 1994. Global climate protection policy: the limits of scientific advice, Parts 1 and 2. <i>Global Environmental Change</i> 4(2), 140-159 and 4(3), 185-200.
Authority of speaker/writer
Primary: The author is a sharp critic of the IPCC.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “energy politics rather than uncertain science have had the decisive impact on global warming policy and that this process has benefited the institutions of big science and the political North” (185) “The primary interest of research is the creation of concern in order to demonstrate policy relevance and attract funding. This policy relevance, and therefore the need for scientific advice, decline rapidly once a problem is actually dealt with by regulatory, technological or behavioural change.” (141)
Secondary: “It is argued here that energy industries, their R&D sectors, and regulators in government who felt threatened by this advice, became major opponents of the alarmist interpretation of scientific evidence. They were, however, countered by similarly strong alliances of environmentalists and competing energy interests – that is, those who stood to gain from the economic impacts of carbon dioxide emission reductions or carbon taxes. This latter green alliance, however, grew weaker during the late 1980s.” (185)
Tertiary:
Notes:
Type of evidence
Primary: history of international scientific programs re climate change and a map of their relationships (WMO, IGBP, ICSU, START, NASA EOS, etc.), history of IIASA’s system analysis and the IPCC (WGs and their findings)
Secondary: Interest linkage between FCCC, which requires little more than “plan and publish” and IPCC, which provides “advice”
Tertiary:
Notes:
Worldview/view of nature
Primary: The environment and society are the losers when political interests hold sway (i.e., environment at the mercy of humans).
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “It is therefore concluded that the capacity and responsibility of government (not NGOs!) – as elected and accountable representatives of society – in environmental policy making need significant conceptual and institutional strengthening. For global climate policy, this requires including areas of knowledge that have not so far been tapped and advice which some governments may not like to hear.” (200)
Secondary:
Tertiary:
Notes:

#32: Stakhiv, Eugene and Kyle Schilling 1998. What can water managers do about global warming? <i>Water Resources Update</i> 112, 33-40.
Authority of speaker/writer
Primary: Both authors are at the Institute for Water Resources, US Army Corps of Engineers
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Engineers can design and operate their systems more efficiently to increase robustness and resiliency and reduce vulnerability, but institutional arrangements must be reconfigured to ensure that future water resources services can be provided in a sustainable and equitable manner under a wider range of circumstances.” (33)
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: cites IPCC report, Ausabel, Lettenmeier, Gleick
Secondary: declining withdrawals, mostly because of the CWA, SDWA, Water Resources Development Act and other policy instruments
Tertiary:
Notes:
Worldview/view of nature
Primary: Currently, water managers “are continuously adapting to new information and demand-driven changes” and “managed water systems and river basins ... can be effectively managed for all but the most severe climate change scenarios” (34)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: explicitly include climate change concerns into planning for new investments for capacity expansion, operation of existing systems for optimal use, and maintenance and rehab of existing systems – especially using risk and uncertainty analysis
Secondary: Corps managers should “play a more active role in transferring technologies associated with climate forecasting” (39)
Tertiary:
Notes:

#33: Quick, Martin. “Friends and climate change – contraction and convergence?” http://www.quakergreenconcern.org.uk/displayarticle.asp?artcleid . Downloaded March 2003.
Authority of speaker/writer
Primary: This statement is on the “Quaker Green Action” site and is linked to Aubrey Meyer’s site on “contraction and convergence,” which he advocates to combat climate change.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “The principle of Contraction and Convergence appears to be a reasonably fair way of setting greenhouse gas emissions targets” and “appears to fit well with Friends testimonies and concerns.”
Secondary: “While technology can be expected to enable major reductions in greenhouse gas emission to be made, the very large cuts in greenhouse gas emissions needed are likely to require some changes in the rich countries to our profligate life style, particularly in use of cars and in flying. ... Here, Friend’s testimony to simplicity seems particularly relevant, showing that a simpler lifestyle can be a positive good for its own sake.”
Tertiary:
Notes: C&C sets up emissions trading based on per capita allowances and convergence, over time, to one “per head” standard for every country.
Type of evidence
Primary: Deals with equity arguments about emissions reductions – industrialized nations “negotiated for themselves at Kyoto” emissions levels based on current levels per country, not the fairer per capita levels; Russian “hot air” would allow the US to buy its way out of caps (if it agrees to join in mitigation)
Secondary:
Tertiary:
Notes: Discusses the UNFCCC, Kyoto, and the IPCC
Worldview/view of nature
Primary: Equity and simplicity among humans must guide the path to needed actions to mitigate climate change (assumption that this is doable).
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: No recommendations, as Friends are free to decide for themselves
Secondary:
Tertiary:
Notes:

#34: “API’s Position.” Downloaded March 2003 (but still refers to the Clinton Administration). http://www.api.org/globalclimate/apipos.htm
Authority of speaker/writer
Primary: No author given, since this is a trade group position. American Petroleum Institute has been a voice for skepticism, but has recently softened its hardline position because of views of some (former) members.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “The oil and natural gas industry believes that the targets and timetables reducing greenhouse gases contained in the Kyoto Protocol would exact [too] heavy an economic price given our current understanding of the evolving science of climate change.” – cites WEFA, Charles River Associates, federal government
Secondary: The science is uncertain; “We know enough to take the threat seriously, but not enough to inflict the economic harm which would result from implementation of the Protocol.”
Tertiary:
Notes:
Type of evidence
Primary: “To achieve the Protocol’s targets the U.S. would have to curb its energy production and use in ways that would cost millions of jobs and substantially raise the price of essential goods, including gasoline, electricity, heating oil and natural gas. Because developing nations are exempt from the Protocol, American businesses would lose out in the international marketplace.”
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is essentially unknown.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “focused research on the causes and impacts of climate change and developing technologies needed to make reductions of greenhouse gases affordable and efficient.”
Secondary: “cumbersome government rules, which have discouraged technological development, should be streamlined or eliminated.”
Tertiary:
Notes:

#35: Natural Resources Defense Council 2002. “Untangling the accounting gimmicks in White House Global Warming and Pollution Plans” wysiwyg://14/http://www.nrdc.org/globalwarming/agwcon.asp.
Authority of speaker/writer
Primary: NRDC is a prominent environmentalist organization.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Behind the rhetoric of progress, neither plan does anything to curb global warming or reduce dangers air pollution. This February 2002 NRDC analysis exposes the administration’s fuzzy math.” Furthermore, Bush cites uncertainty “to justify not reducing emissions” and reduces spending on research and technology.
Secondary: Since emissions will rise, the plan constitutes “walking away from the Rio global warming treaty” signed by Bush’s father.
Tertiary: The Voluntary Reporting Program (1605[b]) shows that voluntary programs don’t work. “Because the Bush global warming plan relies exclusively on voluntary programs, it won’t work either.”
Notes:
Type of evidence
Primary: Review of the “Enron-style accounting” to show that, even as emissions intensity improves, overall emissions rise – at a slightly higher rate than during 1990-2000 (14.1% v. 13.6% in the earlier decade).
Secondary: The National Academy of Sciences, the IPCC, and the WMO reported that climate is changing.
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans are working against the environment and have a responsibility to reduce emissions of GHGs drastically. Adaptation is not discussed.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: In a 2001 open letter to President Bush, John H. Adams, Pres. of NRDC, says, “we respectfully urge you to reevaluate your positions on global warming pollution, and the Kyoto agreement” and take immediate actions to “reduce greenhouse gas pollution.”
Secondary:
Tertiary:
Notes:

<p>#36: Sokona, Youba, Adil Najam and Saleemul Huq 2002. "Climate Change and Sustainable Development: Views from the South." And Huq, Saleemul, Youba Sokona and Adil Najam 2002. "Climate Change and sustainable Development Beyond Kyoto." International Institute for Environment and Development (IIED). http://www.iied.org</p>
<p>Authority of speaker/writer</p>
<p>Primary: IIED is a relatively new organization, "an independent, non-profit research institute working in the field of sustainable development. IIED aims to provide expertise and leadership in researching and achieving sustainable development at local, national, regional and global levels. In alliance with others we seek to help shape a future that ends global poverty and delivers and sustains efficient and equitable management of the world's natural resources."</p>
<p>Secondary: Saleemul Huq is a noted spokesperson/researcher from Bangladesh in the area of climate change.</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of argument</p>
<p>Primary: The short-term focus has been on getting "industrialized countries to agree to some targets, no matter how meager. It is time now to refocus on the longer-term objectives of the UNFCCC, particularly on its stated goals regarding sustainable development."</p>
<p>Secondary: Kyoto is flawed, focused on the interests of industrialized countries, "leaves much to be desired in terms of its implications for long-term policy" and "unlikely to produce many short-term benefits."</p>
<p>Tertiary: "Combating climate change is vital to the pursuit of sustainable development; equally, the pursuit of sustainable development is integral to lasting climate change mitigation."</p>
<p>Notes:</p>
<p>Type of evidence</p>
<p>Primary: Many citations to Southern voices, including the authors, and to the UNFCCC principles; also citations to Northern social scientists</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Worldview/view of nature</p>
<p>Primary: Political – problems can be best addressed politically</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Action(s) proposed</p>
<p>Primary: "The goal of the post-Kyoto phase should be clearly tied to atmospheric stabilization with a defined focus on emissions limitation and a clear sense of the rules for the future entry of developing countries into the regime. In all likelihood this will require moving to per capita emission targets and a 'contraction and convergence' policy scenario." – with WSSD, "build on the Kyoto promise by returning to UNFCCC basics."</p>
<p>Secondary: Refocus on equity, helping vulnerable countries "at greatest risk and disadvantage," and stabilizing atmospheric greenhouse gas concentrations rather than "managing the global carbon trade."</p>
<p>Tertiary: "In the past, the South has been routinely reactive in its environmental negotiations with the North. It is well past time that they change their strategy. The task of devising and putting forth proposals that match their interests lies squarely with negotiators from the South. They may not get a better opportunity than Johannesburg to do so."</p>
<p>Notes:</p>

#37: Gyawali, Dipak 1996. "An Extreme Climate Event in Nepal and its Implications for a Climate Change Regime." In <i>Elements of Change 1995</i>. Aspen Global Change Institute, Aspen, CO.
Authority of speaker/writer
Primary: Gyawali is a prominent Nepalese scientist, focusing on water resources and environmental change; he is also a cultural theorist (Douglas, Thompson, etc.)
Secondary:
Tertiary:
Notes: The write-up is by Susan Hassol, the rapporteur at the conference.
Type of argument
Primary: Shifts in the "monsoon trough can signal drought or flood for particular localities," meaning that people are extremely vulnerable, living "at the precarious margins of existence."
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Facts and figures about monsoon rainfall and the unusual cloudburst 8/93, which wiped out "much of the infrastructure in the central area of the country," killed 2000 people, destroyed 38 irrigation systems, etc.
Secondary: Social limits to growth are more important than physical issues. "The last man will have eaten the last woman long before the last tree falls."
Tertiary: People have loyalties "based on village, religion, ethnicity, region, language, etc." as well as national. "Especially if the state does not serve the interests of the people, their loyalty will be transferred ... and discourses based on the nation state unit may become totally irrelevant."
Notes:
Worldview/view of nature
Primary: Nature likely to change in ways that will be unmanageable by people.
Secondary: Analysis of social systems such as bonded labor, loyalties to groups
Tertiary:
Notes:
Action(s) proposed
Primary: "Important lessons for climate change include the fact that our scientific understanding of many natural processes, especially those that occur in non-temperate zones, is very poor and must be improved. ... it is very difficult to know whether events like this are being exacerbated by climate change or not."
Secondary: Learn from the unusual events to build in large tolerances in infrastructure and consider how to store such water (local ponds, high dams at river valley gorges?)
Tertiary:
Notes:

#38: Cohen, Stewart J. 1993. Climate change and climate impacts: please don't confuse the two! <i>Global Environmental Change</i> 3(1), 2-6
Authority of speaker/writer
Primary: Cohen: known for his work on the MacKenzie Basin study, an early "integrated assessment"
Secondary: <i>GEC</i> is a journal that focuses on social science contributions
Tertiary:
Notes:
Type of argument
Primary: UNCED has focused on mitigation, but less attention has been given to adaptation. "Without knowledge of potential impacts of climate change, however, other possible adaptation strategies will be difficult to identify because governments and the private sector will not know what they might be adapting to." (2) Because the required knowledge and methodologies are different, research on climate and research on impacts should be kept separate.
Secondary: Climate research is grounded in climate modeling, impacts research in studies of natural hazards.
Tertiary: The two are conflated is because the issue has become political; therefore, attacks that cite the uncertainty of climate models spills over to impacts research
Notes:
Type of evidence
Primary: mainstream scientific texts, including IPCC and WMO publications, and impact assessments
Secondary: disciplinary differences between atmospheric scientists and oceanographers, and "physical, biological, and social scientists who often work at smaller scales of time and space than the specialists who build GCMs" (4)
Tertiary:
Notes: begins with scenarios and models, then UNFCCC
Worldview/view of nature
Primary: humans have various strategies for dealing with or managing responses to natural hazards, including climate-related hazards (nature cannot be controlled but responses can be managed)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "Despite the uncertainties, it would be prudent to generate, review and publish information about potential impacts of climate change <i>scenarios</i> so that interested parties could have access to it, caveats and all. For anyone who believes in reducing uncertainties about global warming and its implications for our planet, a continued interdisciplinary effort is really the only alternative available." (6)
Secondary: Do not wait for reductions in uncertainties of climate science; "long-term resources management and planning options are being considered by governments and industries now, with information that is available today, but information that is often incomplete." (5) Consider "no-regrets" strategies.
Tertiary:
Notes:

#39: Ecimovic, Timi, Elmar A. Stuhler, Marjan Vezjak and Matjaz Mulej 2002. Introduction to climate change – present experience related to sustainability and impact on society. InfoAndina. http://www.mtnforum.org/emaildiscuss/discuss02/040102377.htm
Authority of speaker/writer
Primary: The authors are given honorifics (Drs. And Profs.) and university affiliations or Institutes (Climate Change, Sustainable Future)
Secondary: This paper is part of the Bishkek Global Mountain Summit E-Consultation
Tertiary:
Notes:
Type of argument
Primary: “Triggered by the development of our civilization, the consumption of natural resources, production of synthetic chemicals, life style, and run out from our nuclear technology laboratories represent the Number One threat to the existence of our civilization, the second threat being the climate change, reflecting a response by the very nature of our Earth, which is already evolving and seems to be capable of destroying our civilization.”
Secondary: “The mountain environments around the earth are an integral part of the earth nature, and should keep initiative for nature, space and environment protection as well as protection against impact if the climate change.”
Tertiary:
Notes: discusses “Our common Future,” the Rio Earth summit, Agenda 21 for Change, and “10 Years after Rio”
Type of evidence
Primary: assertions about impacts, both physical (e.g., “if the mean land mass temperature changes by one Celsius centigrade within 12 months, the change will force extinction of up to 90% of known plants”) and social (“at all levels of society the change are at an early stage”)
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: “Scientifically it is possible to correct global warming by fostering phytoplankton reproduction ... But if it is used without scientific control, it may produce another Ice Age...” “Without appropriate human intervention in the future, the climate change system ultimately would change living conditions within the biosphere and geography of the Earth so much that our civilization will collapse.”
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “It is necessary to work out an action plan for the better implementation of sustainability of our civilization worldwide. The platform offered by United Nations (UN) at ... Johannesburg ... could be an opportunity needed to workout plan and control system for sustainability.”
Secondary:
Tertiary:
Notes:

#40: Sathaye, Jayant A. and N.H. Ravindranath 1998. Climate change mitigation in the energy and forestry sectors of developing countries. <i>Annual Review of Energy and the Environment</i> 23, 287-437.
Authority of speaker/writer
Primary: Sathaye is a prominent scientist at DOE's LBNL, specializing in energy efficiency.
Secondary: Ravindranath, located in India, can be presumed to have in-country (i.e., more valid) information.
Tertiary:
Notes:
Type of argument
Primary: "Mitigation studies indicate that if energy efficiency and forestry options are implemented judiciously, emissions can be reduced at a negative cost without affecting economic growth."
Secondary: "The studies also suggest that this would increase significantly the worldwide demand for natural gas and renewable technologies."
Tertiary: "Country studies show that the aggregate mitigation potential in the forestry sector is higher, and the costs per tonne of carbon are lower, than reported earlier by global studies."
Notes: Many scientists feel that the bottom-up/engineering-type studies used by these scientists are overly optimistic.
Type of evidence
Primary: (showing overall knowledge): types the mitigation studies as inventories, mitigation, V&A; "Precursors to today's mitigation studies were led by research groups; the first effort was coordinated by the LBNL..." and brief history of other studies – many references to LBLN studies
Secondary: tables and data of emissions, baseline projections (from IPCC, top-down); then methodologies, technology options, data and models for bottom-up analysis – for both energy efficiency and forestry
Tertiary: brief discussion of barriers, mostly governmental
Notes: Invokes the FCCC, ratified by >160 nations, both OECD and developing, "much debate," Kyoto
Worldview/view of nature
Primary: "the earth's fragile atmosphere is changing with the continuing release of greenhouse gases (GHGs) around the world" – but we can control GHGs
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: No-regrets actions
Secondary:
Tertiary:
Notes:

#41: Van Asselt, Marjolein B.A. and Jan Rotmans 2002. Uncertainty in integrated assessment modeling: from positivism to pluralism. <i>Climatic Change</i> 54, 75-105.
Authority of speaker/writer
Primary: Rotmans is a well-known integrated assessment modeler.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "It is argued that a pluralistic approach to uncertainty is needed to comply with the social scientific evidence that different interpretations of uncertainty and different risk perceptions are legitimate," (76) i.e., different perspectives/worldviews/mgmt style
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Description of the model, parameters, and calibration
Secondary: IA model uncertainty: "Are all relevant processes considered? Are the system boundaries legitimate? Does the model reproduce actual behaviour of the mirrored system? Is the conceptualization used inline with established theories?" (82) – but these cannot be addressed by current methods
Tertiary: brief historical discussion of science as bringing certainty, not uncertainty + a taxonomy of sources of uncertainty and definitions
Notes
Worldview/view of nature
Primary: Constructivist/culturalist view of nature – different attributes depending upon the worldviews of different people
Secondary: The future is unknowable and will depend upon dominant worldview(s).
Tertiary:
Notes:
Action(s) proposed
Primary: Use the theoretical ideas "to think systematically about uncertainty treatment in relation to scenarios, qualitative assessment and participatory IA." (100)
Secondary: "Systematic uncertainty research is still needed to advance uncertainty management in Integrated Assessment, but major improvements are already within any modeller's/analyst's reach." (100)
Tertiary:
Notes:

#42: Scharper, Stephen Bede 2002. Green dreams: religious cosmologies and environmental commitments. <i>Bulletin of Science, Technology & Society</i> 22(1), 42-44.
Authority of speaker/writer
Primary: The author is “an assistant professor in the Department for the Study of Religion and an associate of the Institute for Environmental Studies at the University of Toronto, where he teaches courses on religious ethics and ecology.” (44)
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “We are, as a human community, facing what many see as a ‘global environmental crisis.’” (42) “What is happening in our times is not just another historical transition or simply another cultural change. The devastation of the planet that we are bringing about is negating some hundreds of million, even billions of years of past development on the earth” (quote from Thomas Berry)
Secondary: Religions “around the world” are becoming more ecology-minded, especially through their cosmologies; instead of a “communion of subjects,” a consumerist cosmology sees the universe as a “collection of objects.” (43)
Tertiary:
Notes:
Type of evidence
Primary: Imaginative reconstruction of early settlers’ experience of a forest now gone, then “think of the place in nature that was special to you growing up ... Does it still exist?”
Secondary: Invokes science, the evidence of pollution, “We are destroying these cornucopias of life and oxygen at the rate of one football field per second, an area the size of Austria each year” (42)
Tertiary:
Notes
Worldview/view of nature
Primary: Humans have lost the wonder of nature and are destroying it
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Recover “the awesome delight of a magnificent sunset or the sense of wonder we feel when gazing at an array of stars on a soft summer night” (44)
Secondary: “extricate ourselves from our pathological quest to consume and deface the natural world” (44)
Tertiary:
Notes:

<p>#43: Koteen, Laurie, Janine Bloomfield, Timothy Eichler, Cathryn Tonne, Rebecca Young, Helene Poulshock and Andree Sosler 2001. <i>Hot Prospects: The Potential Impacts of Global Warming on Los Angeles and the Southland</i>. Exec Sum, Intro, first two chapters. Environmental Defense, Washington, DC. Also at http://www.environmentaldefense.org</p>
<p>Authority of speaker/writer</p>
<p>Primary: Environmental Defense (formerly Environmental Defense Fund) is a major environmentalist group.</p>
<p>Secondary: ED supported research at Columbia U and NASA/Goddard; support was acknowledged from the Mary Livingston Griggs and Mary Griggs Burke Foundation, John D. and Catherine T. MacArthur Foundation, Public Welfare Foundation.</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of argument</p>
<p>Primary: Energy pollution causes climate change, but we can do much today to avert the worst – we should both mitigate and adapt.</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of evidence</p>
<p>Primary: Photo on front cover is smog over LA; inside, picture of child with asthma, a pier destroyed by storm, fire near homes – in recommendations, a wind farm; graph of increasing temp in LA 1910-2000, bar charts of projected change (temp, precip, 4 GCMs), scientific figures on El Nino.</p>
<p>Secondary: Data on climate change during 20th c., scientific evidence of anthropogenic causes (including quotes from IPCC), and projections: more storms, winter rainfall, hot summer days, smog, respiratory illness, hantavirus, erosion of beaches and hillsides, destruction of wetlands, decline of marine species, uncertainty re water, fires</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Worldview/view of nature</p>
<p>Primary: Humans have caused climate change and should mend their ways by using less and renewable energy.</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Action(s) proposed</p>
<p>Primary: Extend short-term strategies for CA's "energy woes" to long term: "conservation, increased energy efficiency and renewable energy" (vi) – energy-efficient appliances and vehicles, less cooling and driving,</p>
<p>Secondary: 10 adaptation strategies, including education, health care, urban environment, emissions controls, protection of marine species, shoreline/beach mgmt, flexible water resource planning, pre-fire mgmt (limiting development, etc.)</p>
<p>Tertiary:</p>
<p>Notes</p>

#44: La Vina, Antoinio G.M. 2002. From Kyoto to Marrakech: global climate politics and local communities. Working Paper. World Resources Institute, Washington, DC. (NYC?)
Authority of speaker/writer
Primary: The author is a Senior Fellow at WRI
Secondary: WRI is an environmentalist organization, but well respected for the quality of its data and analyses (many such organizations are seen as biased).
Tertiary:
Notes: “This briefing paper provides a background on the threat posed by climate change, particularly on the Global South & on poor and impoverished communities.” (i)
Type of argument
Primary: “Climate change, expected to result in global warming, is probably the most serious environmental problem that the world faces. ... the burden will fall disproportionately on local and impoverished communities,” which “depend greatly on climate conditions and natural resources for their daily survival and sustenance and they do not have the resources to adapt to the changes global warming will bring” (i)
Secondary: “The progress that has been made on fashioning a global response to climate change is actually remarkable given the complexity of the politics of climate.” (ii) – not just a North/South question
Tertiary: “Almost from its inception, there has been a high level of participation by civil society organizations as well as by industry”: Climate Action Network, environmental orgs, Global Climate Coalition, ICLEI/CCP, women, religious and youth orgs – but not local and impoverished communities
Notes; words such as “threat,” “peril” and “combat”; discussion of UNFCCC and stabilization, Kyoto, Bonn, Marrakech, and WSSD. “Consequently, there is high expectation that the Kyoto Protocol will come into force by late 2002.” (ii) – even with US “abandoning”
Type of evidence
Primary: catalogue of effects: desertification, coastal and low-lying areas, extreme weather events, public health/diseases (greatest on countries least responsible, ironically); intro invokes IPCC, list of GHGs, emitting activities
Secondary: analysis of interests: North EU and Europe “call for accelerated action by the North”; US and Aus “equivocation in the face of lingering scientific and economic uncertainties; Global South all think that tech/\$\$ transfers are necessary, but debate about level of participation; differences between OPEC and AOSIS; wariness re commitments (Brazil, China, India) v. eagerness to have projects supported (SE Asia, etc.)
Tertiary:
Notes:
Worldview/view of nature
Primary: nature fragile, susceptible to climate change
Secondary:
Tertiary:
Notes: words such as “threat,” “peril”
Action(s) proposed
Primary: Participation of local and impoverished communities must be enhanced: supporting info/ed campaigns, promoting their participation in UNFCCC and coalition building to national and global levels, supporting local adaptation and efforts to provide compensation mechanisms (CDM)
Secondary:
Tertiary:
Notes:

#45: Climate Change Programme 2003. World Wide Fund.
http://www.panda.org/about_wwf/what_we_do/climate_change/problems/index.cfm
Authority of speaker/writer
Primary: WWF is a major environmentalist organization
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "The impacts of global warming are evident from the equator to the poles."
Secondary: "There's no shortage of solutions – we must act NOW, and we can!"
Tertiary:
Notes:
Type of evidence
Primary: lists: of impacts (coral reefs bleached, alpine forest struggling, polar bears under pressure, glaciers melting, economic damage (insurance); and actions (wind and solar power, technologies to reduce CO ₂ emissions), simple things like better windows/insulation/lighting/appliances/cars, reducing energy use
Secondary: stats on CO ₂ emissions
Tertiary:
Notes:
Worldview/view of nature
Primary: nature at the mercy of humans; "It is humans who create the heat trap: every bit of coal, every litre of oil or gas that humans burn adds to the load of gases in the atmosphere that wraps around the planet like an ever thicker, brown blanket, trapping heat, smothering people and nature."
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "fighting CO ₂ pollution" – education, push to ratify Kyoto, partnerships with businesses, cooperation with scientists and technical experts (5 bullets on mitigation, one on adaptation)
Secondary:
Tertiary:
Notes:

#46: Lindzen, Richard S. n.d. (downloaded March 2003). <i>Global Warming: The Origin and Nature of the Alleged Scientific Consensus</i>. Cato Institute, Washington, DC.
Authority of speaker/writer
Primary: Lindzen is a prominent skeptic, well respected as a scientist (MIT) but also affiliated with Cato, which is seen as ideological
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “as a scientist, I can find no substantive basis for the warming scenarios being popularly described.”
Secondary: “Moreover, according to many studies I have read by economists, agronomists, and hydrologists, there would be little difficulty adapting to such warming if it were to occur.”
Tertiary: “present hysteria formally began in the summer of 1988” with a hot summer and James Hansen’s meaningless statement, and quickly became a “global warming circus” – scientific debate OK, politicization dreadful – warming does fit with other agendas, such as energy efficiency, reduced oil from the Mideast, dissatisfaction with industrialization, international competition, enhanced revenue from C taxes, and enhanced power
Notes:
Type of evidence
Primary: “Such was also the conclusion of the recent National Research Council’s report of adapting to global change. Many aspects of the catastrophic scenario have already been largely discounted by the scientific community.”
Secondary: examines the arguments: agrees that CO ₂ in the atmosphere has been increasing, but says an inaccurate model was used to predict a doubling of preindustrial levels by 2030 – “The simple picture of the greenhouse mechanism is seriously oversimplified.” – water vapor and clouds account for most of the effect, convection must be taken into account, models cannot duplicate the motions of the atmosphere, feedbacks are highly uncertain and not understood – predictions are exaggerated
Tertiary: history of the political process; Al Gore, environmental advocacy groups, Claudine Schneider (“scientists may disagree, but we can hear Mother Earth, and she is crying”), refusal of Science to print Lindzen’s critique, various actors, Michael Openheimer/EDF, Greenpeace, etc.
Notes: puts “greenhouse theory” in quotes, refers to “popular presentation” and “crude idea” of this theory
Worldview/view of nature
Primary: “improved technology and increased societal wealth are what allow society to deal with environmental threats most effectively.”
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Allow science to take its course, admitting the flaws of the models – get politics out of the picture.
Secondary: Focus on the control of societal instability, rather than insufficient claims to global warming catastrophe.
Tertiary:
Notes:

#47: Browne, John 1997. Climate change speech. Given at Stanford University. Available at http://icc370.igc.org/bp.htm
Authority of speaker/writer
Primary: Browne is the CEO of BP, perhaps the world's largest petroleum company
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "The passing of some of the old divisions reminds us we are all citizens of one world, and we must take shared responsibility for its future, and for its sustainable development." – people who work at BP have these convictions, so do consumers
Secondary: "The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven – but when the possibility cannot be discounted and is taken seriously by the society of which we are part. We in BP have reached that point."
Tertiary:
Notes:
Type of evidence
Primary: the science is uncertain, but scientists and others take the possibility seriously (i.e., we are all in this together) – metaphor of a journey, with partnerships and accommodations to the interests of all who are on the journey
Secondary: factual evidence – CO ₂ like a small weight that overbalances, and only a small fraction comes from transport, and only a fraction of that from BP (~95 Mt)
Tertiary: catalogue of actions that show BP is proactive: reduced oil discharges to the North Sea, investing \$100M to eliminate VOCs, reduced flaring in Norway; example of project in Bolivia to conserve 1.5 m ha of forests; example of investment in solar
Notes:
Worldview/view of nature
Primary: Economic – Nature is a storehouse whose products can be accounted for
Secondary: Ecomodernism
Tertiary:
Notes:
Action(s) proposed
Primary: First, do the low-hanging fruit: control own emissions, fund research, initiatives for JI, develop alternative fuels, contribute to public policy debate
Secondary: strive toward sustainability, "simultaneously being profitable and responding to the reality and the concerns of the world in which you operate."
Tertiary:
Notes:

#48: Summary for Policymakers 2001. Pp. 1-17 in <i>Climate Change 2001: Impacts, Adaptation, and Vulnerability. A report of Working Group II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.</i>
Authority of speaker/writer
Primary: The IPCC scientists are an inclusive and large group; the summary for policymakers is adopted word for word by member countries of the IPCC.
Secondary: “This report builds upon the past assessment reports of the IPCC, reexamining key conclusions of the earlier assessments and incorporating results from more recent research.” – “Further details can be found in the underlying report.” (3)
Tertiary:
Notes: Although the IPCC reports do not explicitly make policy recommendations, the selection and arrangement of topics and conclusions of course makes arguments.
Type of argument
Primary: Nine “emergent findings”: (1) Recent regional climate changes have already affected many physical and biological systems. (2) Some human systems have been affected by recent increases in floods & droughts (preliminary indications). (3) Natural systems are vulnerable to cc, and some will be irreversibly damaged, (4) Many human systems are sensitive to cc, and some are vulnerable. (5) Projected changes in climate extremes could have major consequences. (6) The potential for large-scale and possibly irreversible impacts poses risks that have yet to be reliably quantified. (7) Adaptation is a necessary strategy at all scales to complement cc mitigation efforts. (8) Those with the least resources have the least capacity to adapt and are the most vulnerable. (9) Adaptation, sustainable development, and enhancement of equity can be mutually reinforcing. (3-8).
Secondary: Effects on and vulnerability of natural and human systems: hydrology and water resources, agriculture and food security, terrestrial and freshwater ecosystems, coastal zones and marine ecosystems, human health, human settlements/energy/ industry, and insurance/financial services. (9-13) Specific adaptive capacity, vulnerability and key concerns for five world regions. (14-17)
Tertiary:
Notes:
Type of evidence
Primary: No references to research studies, but to chapters in the TAR where the summary items are covered.
Secondary: Declarative sentences, technical diction and syntax, details, and confidence levels are given.
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is essentially knowable and can be managed. For example, “the greatest vulnerabilities are likely to be in unmanaged water systems and systems that are currently stressed or poorly and unsustainably managed due to policies that discourage efficient water use and protection of water quality, inadequate watershed management, failure to manage variable water supply and demand, or lack of sound professional guidance.” (9)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: High priorities for assessment and research: quantitative assessment of sensitivity,

adaptive capacity, and vulnerability to climate change and variability; assessment of thresholds; study of dynamic responses of ecosystems to multiple stresses at multiple scales; development of approaches to adaptation responses; assessment of full range of cc impacts; improving tools for IA, including risk assessment; assessment of opportunities to include scientific info on impacts, etc. in decisionmaking processes, risk mgmt, and SD initiatives; improvement of systems and methods for long-term monitoring. (14-17)

Secondary: Water is obviously a, if not the, major focus (3 of 7 sectors, plus water implications for agriculture/food security and human health).

Tertiary:

Notes: The emphasis on vulnerability, adaptation and sustainable development marks a departure from the SAR, which emphasized only impacts.

<p>#49: Summary for Policymakers 2001. Pp. 1-13 in <i>Climate Change 2001: Mitigation. A report of Working Group III of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.</i></p>
<p>Authority of speaker/writer</p>
<p>Primary: The IPCC scientists are an inclusive and large group; the summary for policymakers is adopted word for word by member countries of the IPCC.</p>
<p>Secondary: “Research in cc mitigation has continued since the publication of the IPCC Second Assessment Report (SAR), taking into account political changes such as the agreement on the Kyoto Protocol to the UNFCCC in 1997, and is reported on here. The Report also draws on a number of IPCC Special Reports ...” (3)</p>
<p>Tertiary:</p>
<p>Notes: Although the IPCC reports do not explicitly make policy recommendations, the selection and arrangement of topics and conclusions of course makes arguments.</p>
<p>Type of argument</p>
<p>Primary: Mitigation challenges: Global/long-term problem. Different development paths → different emissions paths. Relation to broader SE policies and trends. Different resources among and within nations and regions, and between generations. “Lower emissions scenarios require different patterns of energy resource development” (4). “Significant technical progress relevant to greenhouse gas emissions reduction has been made since the SAR in 1995 and has been faster than anticipated” (5). Terrestrial ecosystems offer carbon mitigation potential. “No single path to a low emission future” (8). “Social learning and innovation, and changes in institutional structure could contribute to cc mitigation” (8). Estimates of costs and benefits differ because of how welfare is measured, the scope and methodology of the analysis, and the underlying assumptions. There are “no regrets” opportunities to reduce GHGs. Cost estimates for Annex B countries differ, in addition to the considerations above, also because they “depend strongly upon the assumptions regarding the use of the Kyoto mechanisms, and their interactions with domestic measures.” (10) “Cost-effectiveness studies with a century timescale estimate that the costs of stabilizing CO₂ concentrations in the atmosphere increase as the concentration stabilization level declines. Different baselines have a strong influence on absolute costs.” (10) Uneven distribution of costs & benefits. Spillover effects, e.g., oil, trade, carbon leakage. “Needs to overcome many technical, economic, political, cultural, social, behavioural and/or institutional barriers which prevent the full exploitation of the technological, economic and social opportunities of these mitigation options.” (11) Portfolio of policy instruments will be more effective. “The effectiveness of climate change mitigation can be enhanced when climate policies are integrated with the non-climate objectives of national and sectoral policy development ...” Coordinated actions can reduce costs. CC decision-making is a sequential process under general uncertainty. “The desired mix of options varies with time and place.” (12) “There is an inter-relationship between the environmental effectiveness of an international regime, the cost-effectiveness of climate policies and the equity of the agreement.” (13)</p>
<p>Secondary: Re “significant technical progress,” “Half of these potential emissions reductions may be achieved by 2020 with direct benefits “energy saved” exceeding direct costs (net capital, operating, and maintenance costs) and the other half at a net direct cost of up to US\$100tCequivalent (at 1998 prices).” (6) “At least up to 2020, energy supply and conversion will remain dominated by relatively cheap and abundant fossil fuels.” (5) Other reductions can be achieved through use of biomass, landfill methane, wind and hydro energy, extension of nuclear power plants (to 2010). Carbon removal and storage can reduce net emissions after 2010. Other gases can be reduced.</p>
<p>Tertiary:</p>

Notes:
Type of evidence
Primary: Data
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is malleable, robust, and should be managed effectively and efficiently.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “high priorities for further narrowing gaps between current knowledge and policy making needs:” further exploration of technical potentials; economic, social and institutional issues; “methodologies for analysis of the potential of mitigation options and their costs”; “evaluating climate mitigation options in the context of development, sustainability and equity.” (13)
Secondary: Continue to use CBA as a sufficient yardstick of options.
Tertiary:
Notes:

#50: Meyer-Abich, Klaus M. 1993. Winners and losers in climate change. Pp. 68-87 in <i>Global Ecology: A New Arena of Political Conflict</i>, Wolfgang Sachs (ed). Zed Books, London.
Authority of speaker/writer
Primary: Author is an academic.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: We should believe in climate change, in the same way that Pascal argues it is prudent to believe in God (to avoid being damned, should God really exist) – but, since it is not in the interest of industrialized countries, we should expect that “ <i>everything will be done to do nothing at present</i> ” (85)
Secondary: “With respect to climate change, it is often emphasized that we are all in the same boat, but this is exactly what one must expect to hear from those who are looking forward to being the winners.” “Instead, <i>risks</i> can be assessed; even if the economic data were available, <i>vulnerabilities</i> need also to be taken into account.” (71) – most vulnerable depend heavily on agriculture, cannot help themselves easily, already suffer from droughts, etc., and will suffer from flooding with SLR → Third World. Industrialized countries will be better off; “Climate policies of the industrialized countries then will have to balance uncertain but possible long-term advantages against fairly certain short-term disadvantages.” (78)
Tertiary: “The foregoing analysis shows that those who cause about three-quarters of the cc will be least affected by the implications or will even have absolute advantages. Those who will suffer from it most, share the responsibility only to the extent of about one-quarter.” (81)
Notes:
Type of evidence
Primary: “draws mainly on the IPCC report, particularly on the impact assessment” (69), also on studies by IIASA (Parry et al. 1988), EPA
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans are harming nature and should desist.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Increasing awareness of the issue, short-term interest in avoiding negative impacts, and going back to the man-nature relationship under which our present political institutions were founded may prompt actions.
Secondary:
Tertiary:
Notes:

#51: Linden, Eugene 2003. Who's going to pay for climate change? <i>Time</i> (February 7).
Authority of speaker/writer
Primary: [not given]
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "The Bush administration, so warlike in response to terrorism, has revealed a pacifist streak in its approach to the threat of climate change. ... By leaving moot the question of cause, and by implying that no one could have done anything about it, the administration also implies that no one is responsible. ... Nice try, but don't be surprised if there are few takers for this line of reasoning."
Secondary: Weather-related loss of revenues and insurance losses/policy cancellations will prompt businesses to act in spite of Bush's "no fault" approach.
Tertiary:
Notes:
Type of evidence
Primary: Penn State estimate of weather-related loss of revenue, example of insurer exits from NC Outer Banks and the Hamptons (no coastal storm coverage).
Secondary: Scenario from Swiss Re: insurer will refuse cc coverage to companies that say they don't think it's a problem. (Swiss Re has sent customers a questionnaire.)
Tertiary: States (NJ, MA, NY, CA) are imposing their own limits on GHGs.
Notes:
Worldview/view of nature
Primary: Human indifference will bring large impacts from climate change.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Business execs should rethink their position on climate change.
Secondary:
Tertiary:
Notes:

#52: National Wildlife Federation 2000. Climate change. In <i>The Toll from Coal: How Emissions from the Nation's Coal-Fired Power Plants Devastate Wildlife and Threaten Human Health</i>. National Wildlife Foundation. See http://www.nwf.org
Authority of speaker/writer
Primary: The acknowledgements include “a generous grant by the W. Alton Jones Foundation” and “the tireless effort of numerous individuals.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “The burning of carbon-based fuels such as coal has sent tremendous quantities of carbon dioxide and other greenhouse gases into the atmosphere and has caused the average global surface temperature to rise.” (16) – “Current efforts to curb global climate change are not sufficient.” (18) Coal must be reduced, there must be an international strategy, and the US must play a major role (e.g., controlling CO ₂ emissions in the electricity sector).
Secondary: “This warming is disrupting the planet’s climate system, threatening people and wildlife around the world. ... For wildlife and ecosystems already weakened by acid rain, mercury, ozone, and other forms of pollution, global warming – and resulting climate change – may deal the final blow.” (16)
Tertiary:
Notes:
Type of evidence
Primary: IPCC’s “exhaustive review of the subject. Using sophisticated computer models, direct observation, and data gathered from ice core samples – and drawing on the work of more than 2,000 of the world’s leading climate researchers...” (16) – correlation between temperature rise and GHG emissions
Secondary: “scientists expect” “scientists predict” impacts on forest, mammals, sea birds, waterfowl, songbirds, fish, amphibians, and corals and other marine life. (17-18)
Tertiary:
Notes:
Worldview/view of nature
Primary: Wildlife is victimized by pollution generally and by climate change specifically.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Stop favoring aged power plants....Toughen restrictions on sulfur dioxide and nitrogen oxides from power plants. ... Cap emissions of mercury and carbon dioxide. ... Promote energy efficiency and renewable energy resources.... Make environmental protection part of utility restructuring. ... Implement a meaningful international strategy to reduce greenhouse gas emissions. ... Provide an effective transition for coal-dependent economies.”
Secondary: Speak up! Think of “our children and grandchildren.” Pay now or later. Your actions make a big difference. Join the activist team at the National Wildlife Foundation.
Tertiary: Coal mining “has been a story of denuded landscapes, contaminated waters, destroyed wildlife habitat, eroded mountain sides, collapsed land surfaces, and homes that are crushed or damaged from blasting, mudslides, waste dam breeches, and other reckless mining practices.” Mountain top removal permanently changes the landscape. Coal washing pollutes water. Coal combustion produces massive wastes that “cause serious problems for mammals, birds, fish, and amphibians.”

#53: Parks, Noreen 2002. Measuring climate change. <i>BioScience</i> 52(8), 652.
Authority of speaker/writer
Primary: The author is “a science writer based in Hawaii.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Assessing and forecasting climate change is hampered by a lack of accurate and long-term observational data.
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Expert testimony: Kevin Trenberth (NCAR), and Thomas Karl (NOAA), Edward Sarachik (UW), Eric Barron (Penn State), well-known atmospheric scientists; NRC report <i>Climate Change Science</i> , Sherwood Boehlert (R-NY) at hearings
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Knowable in principle, with only enough scientific systems
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Given the potential social, environmental, and economic consequences of global cc, further delay in establishing a scientifically strong observation system could drive costs much higher. As Sarachik ruefully noted, ‘In a hundred years, people will look back and ask, why didn’t those guys who could have done it put in a climate observation system?’”
Secondary:
Tertiary:
Notes:

#54: Taubes, Gary 1997. Apocalypse not. <i>Science</i> 278 (7 November), 1004-1006.
Authority of speaker/writer
Primary: <i>Science</i> is one of the premier general science journals.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Henderson, Gubler, and otherS argue that breakdowns in public health rather than climate shifts are to blame for the recent disease outbreaks – and that public health measures will be far more important than climate in future disease patterns.” (1004)
Secondary: But the future may be different.
Tertiary:
Notes:
Type of evidence
Primary: Brief history of the controversy, including names and quotations of scientists who have said cc “may” bring increased death and disease, and those who downplay such scenarios. The former include Paul Epstein (Harvard), Rita Colwell (UMD), Anthony McMichael (London School of Hygiene), and Jonathan Patz (Johns Hopkins). The latter include Duane Gubler (CDC), D.A. Henderson (Johns Hopkins), Mark L. Wilson (UMich).
Secondary: Review of current changes in climate that have brought no epidemics and outbreaks (e.g., cholera) that can be explained by breakdowns in public health.
Tertiary:
Notes:
Worldview/view of nature
Primary: Many unknowns about how climate affects disease vectors.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: More investment in public health and in research on the disease vectors.
Secondary:
Tertiary:
Notes:

#55: Suzuki, David 2002. Waiting to fight climate change is not a viable option. http://production.enn.com/extras/printer-friendly.asp?storyid+47610
Authority of speaker/writer
Primary: This text is linked to the David Suzuki Foundation; “Since 1990, the David Suzuki Foundation has worked to find ways for society to live in balance with the nature world that sustains us. Focusing on four program areas – oceans and sustainable fishing, forests and wild lands, climate change and clean energy, and the web of life, the Foundation uses science and education to promote solutions that help conserve nature.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Some climate change is inevitable, according to scientists; the goal is to avoid “dangerous anthropogenic interference” with the climate.
Secondary: We need to start mitigation actions by any means to hand.
Tertiary:
Notes:
Type of evidence
Primary: Based on an unnamed article in <i>Science</i> and unnamed authors “from Brown and Princeton universities” – defining “dangerous, examining coral reefs as possibly close to their “upper thermal limits,” the merits of adopting a carbon dioxide concentration goal of 450 ppm to “prevent whole-scale disruption of the climate system, which could result from the disintegration of the West Antarctic Ice Sheet (this alone would raise sea levels by an astonishing four to six meters) or the shut-down of density-driven ocean currents such as the Gulf Stream.”
Secondary: “The point is that the immediate goal is not to completely stop or reverse climate change. That may prove impossible. Instead, the goal ...” cites the FCCC goal.
Tertiary:
Notes:
Worldview/view of nature
Primary: nature at the brink of disaster caused by people
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Kyoto, it seems, is more than just one choice in an array of possibilities to ‘prevent dangerous anthropogenic interference’ with our climate. Given the length of time it takes to create these complex international treaties and the speed with which emissions continue to increase, it is actually our only realistic option.”
Secondary:
Tertiary:
Notes:

#56: Friends of the Earth International 2000. <i>Gathering Storm: The Human Cost of Climate Change.</i>
Authority of speaker/writer
Primary: FoEI is based in Amsterdam and London, but is obviously trying to appeal to a much wider audience, with a cover picture of Asian people walking through flood waters with a few belongings and French and Spanish translations of its name (Les Amis de la Terre and Amigos de la Tierra)
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “People will be exposed to unacceptable risks for as long as governments ignore the immediacy of the dangers posed by human-induced climate change. Negligence at the national level is mirrored by complacency at the international level with the failure of the world’s historical polluters to reduce their carbon emissions.” (5)
Secondary: [Current climate events], “overlain on a more gradual change in environmental conditions, would have serious knock-on effects for ecosystems, fires, pest outbreaks, human health, our settlements and food security.” (15, Part 3)
Tertiary:
Notes: “the world’s historical polluters” is an obvious reference to the work of Agarwal and Narain in India
Type of evidence
Primary: Narrative of “a trail of climate disasters [that] have wreaked havoc with people’s lives and livelihoods around the world.” (5 and Parts 1 and 2) (although acknowledgement that no single event can be attributed to cc)
Secondary: personal testimonies from survivors of these “climate disasters” (Part 2) e.g., “The weather is getting crazier and crazier.... My guess: global warming. Maybe this was just a freak occurrence? I have no idea, I am not a scientist. But people are worried about it recurring.” (14)
Tertiary: Citations from IPCC and related research as a catalogue of impacts (Part 3) – 31 in 6 pages
Notes:
Worldview/view of nature
Primary: nature fragile; humans are tipping the balance on the way to catastrophe – all that can be done is to “keep cc within tolerable bounds” (22)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Ensure that the Kyoto Protocol results in real and permanent emissions reductions through the development of renewable energy sources and energy efficiency measures” (5)
Secondary: “Commit industrialized countries to achieving 80% of their Kyoto objective through emissions reductions at home” (5)
Tertiary: “Enshrine the principles of equity in the framework for emissions reductions in the next and future commitment periods based on an equal per capita approach and ecological limits” (5)
Notes: All actions proposed in the context of the Hague conference (COP6)

#57: Hayes, Denis 2000. <i>The Official Earth Day Guide to Planet Repair</i>. Island Press, Washington, DC.
Authority of speaker/writer
Primary: "Earth Day" evokes environmental activism, particularly at the local level; in 2000 the focus was on climate change – "a particularly clear example of a problem that involves thresholds and that requires international cooperation."
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "no other issue intersects with a wider variety of environmental problems than what kind of energy we employ to power society, where we get it, and how efficiently we use it. The wasteful use of outdated energy sources is producing climate change, oil spills, strip mines, nuclear waste, plutonium proliferation, smog, sulfate particulates, acid rain, childhood asthma, and myriad other environmental ills." ("Limited Warranty")
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: estimates of savings for various mitigation strategies
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: "Once we no longer live beneath our mother's heart, it is the earth with which we form the same dependent relationship, relying ... on its cycles and elements, helpless without its protective embrace" – quote from Louise Erdrich
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "Take control of your own life"
Secondary: "Pressure politicians to change how they run the world."
Tertiary: On Kyoto: "Make More Efficient Cars: 22 percent. ... "Create a National Utility Trust Fund: 20.5 percent.... Create Incentives to Reduce Industrial Energy Use: 14 percent.... Establish a Federal Renewable Portfolio Standard: 11 percent. ... Encourage Combined Heat and Power: 10 percent. ... Close the Power Plant Emissions Loophole: 9 percent. ... Build Better Buildings: 4.5 percent. ... Manufacture Efficient Appliances: 4.5 percent. ... Set Greenhouse Gas Standards for Vehicle Fuels: 4.5 percent. ... Overlapping All Categories: Establish Tax Incentives for Smart Energy."
Notes:

#58: Adhikary, Pushpa 2002. Climate change on the roof of the world. Taken from <i>Tough Terrain: Media Reports of Mountain Issues</i>. Asia Pacific Mountain Network and Panos Institute South Asia.
Authority of speaker/writer
Primary: No identifying information is given about the author.
Secondary: This paper is part of the Bishkek Global Mountain Summit E-Consultation.
Tertiary:
Notes:
Type of argument
Primary: “What happens to the water towers of the Tibetan plateau has a bearing on about three billion people in China, Southeast Asia, and South Asia” – and there are signs of thinning ozone and warming, resulting in low water flows
Secondary: The cause could be a warming cycle, but Professor Zhang “from the Chinese Academy of Social Sciences in Beijing believes that global buildups in the levels of carbon dioxide and other greenhouse gases are accelerating the current natural warming cycle in Tibet.”
Tertiary:
Notes:
Type of evidence
Primary: Naming the rivers and identifying their paths to the sea, then giving stats about less runoff in recent years.
Secondary: Quotations from Profs. Ying and Zhang
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans are affecting the environment negatively but could act to protect it.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “it is important to protect the Tibetan watershed since it has such a large impact on regions downstream.”
Secondary:
Tertiary:
Notes:

#59: Council for Agricultural Science and Technology (CAST) 1992. <i>Preparing U.S. Agriculture for Global Climate Change. Report 119.</i> CAST, Ames IO.
Authority of speaker/writer
Primary: CAST “is a nonprofit organization comprised of 29 member scientific societies and many individual, company, nonprofit, and associate society members.” It considers itself educational and “takes no advocacy positions on issues.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Autonomously, without outside encouragement, farmers will adapt to ease the impact of climate change” (2) – changing crops, animals, and management; water may be a limitation
Secondary: Farmers can emit less (use less fuels, reduce methane from livestock) and “stash away” carbon in soil and trees
Tertiary: “Leaders must, therefore, prepare the nation by encouraging adaptations that cut the costs of climate change to acceptable levels” (4) – diversity/flexibility, free trade
Notes:
Type of evidence
Primary: comparison of no-climate scenario, Dust Bowl climate, and projected climate change
Secondary: numerous scholarly publications on climate change, agricultural production, etc.
Tertiary:
Notes:
Worldview/view of nature
Primary: We (farmers) can manage nature – reduce climate change and adapt too
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “A prudent way to hedge the risk of those costs is to hold a diverse portfolio of agricultural climate change assets and assure the flexibility to use them” (86)
Secondary: continue to support trade and research to enable autonomous adaptation
Tertiary:
Notes:

#60: Sandalow, David B. and Ian A. Bowles 2001. Fundamental of treaty-making on climate change. <i>Science</i> 292 (8 June), 1839-1840.
Authority of speaker/writer
Primary: Sandalow is with WRI, Bowles with the Kennedy School of Government at Harvard and the Center for Applied Biodiversity Science, Conservation International
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Climate change is “an especially challenging public policy issue both for nations and for the international community as a whole” (1839)
Secondary: “A treaty response in the short to medium term should accomplish at least three basic objectives. It should (i) create strong incentives to start to reduce GHG emissions, (ii) provide a cost-effective framework for international cooperation, and (iii) maintain options and flexibility as an international regime is built over the coming years and decades” (1839)
Tertiary:
Notes: 1992 FCCC and provisions
Type of evidence
Primary: IPCC citations about “scientific and political time scales are mismatched,” “responses to climate change involve modifications in energy and transportation infrastructure” (=“enormous investments already sunk in the status quo”), “widely varying national circumstances complicate policy responses,” and “defining the relative responsibilities of industrialized and developing countries in a manner acceptable to each is particularly challenging.” (1839)
Secondary: theoretical discussion of Kyoto provisions, with reference to the Montreal Protocol
Tertiary:
Notes:
Worldview/view of nature
Primary: nature is secondary to the agreements humans make about it
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Adopt the Kyoto Protocol as possessing the “seven key elements we present for an effective treaty.” Policymakers “should be guided by a clear understanding of the urgency of the challenge and the basic elements that will contribute to a successful treaty response.” (1840)
Secondary:
Tertiary:
Notes:

#61: Chandler, William 1997. <i>The Economic Rewards of 'No Regrets' Climate Policies. Conference on Strengthening the Russian Economy through Climate Change Policies, Moscow, UNEP.</i>
Authority of speaker/writer
Primary: Chandler has led energy efficiency/climate mitigation efforts in Asia for 20+ years
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "Cooperation between Russia and the developed nations such as the United States to reduce greenhouse gas emissions would benefit both parties" (3) – Russia trading its cheap emissions reductions
Secondary: Current economic tools (both macro & micro models) are inadequate for economies in transition – micro doesn't account for economic restructuring costs; macro assumes equilibrium; both overestimate
Tertiary:
Notes: Discusses Joint Implementation under the FCCC
Type of evidence
Primary: Begins with a White House Conference on CC at which Clinton warned it would be a "grave mistake" to ignore global warming – ends with a quotation from Russian historian Nicholas Riasanovksy (ideas quickly give way to interests in a democracy)
Secondary: Reality of poor Russian economy, which is still 1/7 of GDP and 3 Russian advantages: one of the world's most energy-inefficient economies, possesses over half the world's natural gas reserves, high level of technical sophistication could enable it to utilize advanced energy tech (data on all points)
Tertiary: Model results and critique, along with Russian data & case study
Notes: Uses IPCC data and scenarios
Worldview/view of nature
Primary: Focused on human economies, nature as natural resources for use by people
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "A set of measures to share the burden of emissions reduction and to share resources for achieving those reductions may be the best one can expect in a less-than-perfect world. That means the [JI], offsets, and financing of projects would be desirable. A system of monitoring and verification would be necessary, but should be practicable" (10)
Secondary: Russia must "show leadership in the negotiations" (10) (at Kyoto).
Tertiary:
Notes:

#62: Shackleton, Robert G. 2003. <i>The Economics of Climate Change: A Primer</i>. Congress of the United States, Congressional Budget Office, Washington, DC. Also available at http://www.cbo.gov
Authority of speaker/writer
Primary: Shackleton has written on the economics of climate change at EPA
Secondary: The study was prepared at the request of the “Ranking Member of the House Committee on Science” and so may give a good summary of current thinking available to the federal government
Tertiary:
Notes:
Type of argument
Primary: “Over the next century, human activities will produce large quantities of greenhouse gases, and their accumulation in the atmosphere is expected to affect regional climates throughout the world. Those effects are very uncertain yet could prove serious and costly in at least some regions. However, restraints on emissions would also be costly and could be difficult to achieve in an efficient manner” (summary).
Secondary: “The atmosphere is freely available to all, and greenhouse gases spread around the world no matter where they are emitted. Those characteristics make it very difficult to create property rights and markets for use of the atmosphere – and they make the climate issue international in scope. It may therefore fall to governments to develop alternative policies for addressing the risks posed by climate change” (summary).
Tertiary:
Notes:
Type of evidence
Primary: many lit references to major journals, from known cc researchers, and from other government documents
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature = natural resources for human uses
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “The challenge will be to develop policies that take advantage of low-cost opportunities to reduce emissions throughout the world, and to find an acceptable way to distribute costs and benefit among countries and regions with dramatically different circumstances and interests” (summary).
Secondary:
Tertiary:
Notes: assumption that economic policies can accommodate the challenges of the atmosphere as a public good, equity among nations, etc.

#63: Chatterjee, Pratap and Matthias Finger 1994. “The Framework Convention on Climate Change” and “Conclusions.” In <i>The Earth Brokers: Power, Politics and World Development</i>. Routledge, London.
Authority of speaker/writer
Primary: Chatterjee is “Global Environmental Editor of the Inter Press Service, Washington, DC”; Finger is “Associate Professor at Teachers College, Columbia U”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Global ecology” brings into question the assumptions that industrial development will lead to “a rational society of free and responsible citizens” (3) – the means has become the end in the “development myth” – global ecology also undermines the nation-state and the military
Secondary: “The negotiations for the climate convention are a good example of what happens if a global environmental problem cannot be turned – unlike the case of biodiversity – into the promotion of further industrial development. Therefore, the climate negotiations are probably best characterized as an ‘effort to avoid conflicting positions through vagueness and ambiguity’” (44) and the Convention is careful to state that the process should “enable economic development to proceed...”
Tertiary: “Rather than facing up to the challenge of the limits to growth and the prospect of deindustrialization, UNCED has raised the promotion of economic growth to a planetary imperative” (172-3).
Notes:
Type of evidence
Primary: Mostly assertion/theory about power relations and the development myth – calls the FCCC “this toothless framework” (45) and says it reinforces the notion that development will stop the poor from degrading the environment
Secondary: Uses IPCC conclusions (“which stated in 1990 that unless emissions of greenhouse gases such as carbon dioxide were cut significantly, the world could face unprecedented global warming” and impacts (44)
Tertiary: Quote from a representative of youth, Wagaki Mwangi (Kenya), who spoke on the day before Bush’s speech “Multinational corporations, the United States, Japan, the World Bank, The International Monetary Fund have got away with what they always wanted, carving out a better and more comfortable future for themselves...” (167).
Notes: brief history of the Rio process leading to the FCCC
Worldview/view of nature
Primary: (Club of Rome) – Earth is a finite system: limits to growth, which people are violating
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Question The development process in its entirety ... we must think and collectively behave in terms of the sustainability of a closed and finite system of local and regional resources, as well as of socially and culturally rooted users ... we have no choice but to focus on the local, its people, and its communities ... and collectively un-learn the development paradigm of which modern society is both the product and the victim” (173).
Secondary:
Tertiary:
Notes

#64: Plumwood, Val 1993. <i>Feminism and the Mastery of Nature</i>. Routledge, London.
Authority of speaker/writer
Primary: Author is an academic.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “We need a common, integrated framework for the critique of both human domination and the domination of nature – integrating nature as a fourth category of analysis into the framework of an extended feminist theory which employs a race, class and gender analysis” (1-2).
Secondary: The man-nature dualism provides a basis to construct a “master story” that links the domination of humans and the domination of nature.
Tertiary: Most attempted revisions of the master story (e.g., deep ecology) succeed only in reversing the terms.
Notes:
Type of evidence
Primary: philosophical/theoretical discussion with literary quotations (poems, LeGuin...)
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: “The category of nature is a field of multiple exclusion and control, not only of non-humans, but of various groups of humans and aspects of human life which are cast as nature ... passive, as non-agent and non-subject, as the ‘environment’ of invisible background conditions against which the ‘foreground’ achievements of reason or culture (provided typically by the white, western, male expert or entrepreneur) take place” (4).
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “creating a democratic culture beyond dualism, ending colonizing relationships and finding a mutual, ethical basis for enriching coexistence with earth others” (196).
Secondary: “If we are to survive into a livable future, we must take into our own hands the power to create, restore and explore different stories, with new main characters, better plots, and at least the possibility of some happy endings” (196).
Tertiary:
Notes:

#65: Porritt, Jonathan 2003. "Take action or Climate Change Programme will fail to deliver." Press Notice (12 February). http://www.sd-commission.gov.uk/events/news/pressrel/030212.htm
Authority of speaker/writer
Primary: Porritt is a known advocate of green politics. He was chairman of the Sustainable Development Commission, which conducted an audit of the programme.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "The Government's Climate Change Programme is in danger of failing to deliver on its key goal ... for reducing emissions of carbon dioxide." "However, we believe the UK is likely to achieve its Kyoto target for reductions in greenhouse gases as a whole."
Secondary: "The emissions reductions from the 10 year transport plan are particularly at risk. And international air travel, not even included in the calculations or the goal, threatens to blow away all the good work in industry and other sectors."
Tertiary:
Notes:
Type of evidence
Primary: data, trends, projections
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: People can control the emissions that lead to climate change.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Do not "abandon the goal" but "redouble efforts to achieve it. There is still time to do so."
Secondary: The Government must now seize the opportunity of using the energy White Paper to bring us back on track for 2010, and set us on a low-carbon path into the longer term."
Tertiary:
Notes:

#66: McMichael, A.J. 1993. <i>Planetary Overload: Global Environmental change and the Health of the Human Species</i>. Cambridge University Press, Cambridge. Especially “Introduction,” “Greenhouse Warming and Climate Change,” and “The Way Ahead.”
Authority of speaker/writer
Primary: McMichael is a demographer who has written extensively on health and population issues related to environmental change.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Humans may be an “endangered species”; “the risk arises from the disruption of natural systems because we are exceeding the biosphere’s carrying capacity – i.e. we are overloading the planet’s ‘metabolic’ capacity to absorb, replenish and restore” (1).
Secondary: “If I had to reduce my argument...” (a) “:the <i>one</i> underlying problem is the entrenched inequality between rich and poor countries, which predominantly reflects recent imperial history, power relationships and the global dominance of Western industrial technology and economic values” (b) “the <i>two</i> central manifestations of this inequality are: (1) rapid, poverty-related, population growth and land degradation in poor countries, and (2) excessive consumption of energy and materials, with high production of wastes, in rich countries” (c) three possible outcomes: (1) exhausting various non-renewable materials, (2) toxic contamination of localized environments, and (3) impairment of the stability and productivity of the biosphere’s natural systems” (7).
Tertiary: “it is likely ... that the indirect effects [of climate change] will, in aggregate, outweigh the direct effects. Alterations in patterns of vector-borne infectious diseases, reductions in agricultural productivity and the social disruption caused by sea-level rise and associated disasters could all become major public health problems. Regional declines in agriculture will accelerate the flight to the cities by impoverished rural dwellers” (169-170).
Notes:
Type of evidence
Primary: Statistics about climate, the greenhouse effect (with diagram), carbon cycle (Earth’s “metabolism”) (with diagram), emissions of GHGs (with table and graph), and cc projections (with graph) – all bolstered by references; same treatment of direct and indirect effects of cc
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: The Earth has a finite “carrying capacity” that humans are exceeding; “planetary overload” will destroy the Earth’s ability to support life.
Secondary:
Tertiary:
Notes: Cc included in a list of global changes: cc, ozone layer depletion, land degradation and loss of biodiversity
Action(s) proposed
Primary: “The solution lies in controlling world population growth, weaning societies off cheap fossil-fuel energy and redistributing international wealth to obviate the need for inefficient industrialization and the destruction of rain forests” (169-170).
Secondary:
Tertiary:
Notes:

#67: UK Climate Impacts Programme, Department for Environment Food and Rural Affairs, and Environment Agency 2003. <i>Climate Adaptation: Risk, Uncertainty and Decision-Making</i>. UKCIP, Oxford, UK. Also at http://www.ukcip.org.uk
Authority of speaker/writer
Primary: The UK CIP has been actively engaging stakeholders in projecting climate impacts for various regions of the UK and in proposing adaptation strategies and actions.
Secondary: The booklet is targeted specifically at decision-makers, to help them if they “manage the consequences of present-day variability in weather or climate; make decisions with long-term consequences (decades or longer) for land-use, built assets or population groups; are responsible for infrastructure and business areas that are sensitive to changes in climate” (2).
Tertiary:
Notes:
Type of argument
Primary: “We now have convincing evidence that our climate is changing and that these changes are not part of a natural cycle. However,” both the nature of the change and its effects are uncertain (1).
Secondary: Climate change scenarios can provide “a basis for assessing some aspects of climate risk” (1).
Tertiary:
Notes:
Type of evidence
Primary: Political analysis
Secondary:
Tertiary:
Notes: assumption that readers agree with the arguments made
Worldview/view of nature
Primary: Climate is uncertain, but humans can adapt
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Use an eight-stage decision-making framework: identify problem and objectives, establish decision-making criteria, assess risk, identify options, appraise options, make decision, implement decision, monitor (then return to identify problem and objectives – start over) (4)
Secondary: “Try to keep your options open and flexible ... avoid making decisions that will make it more difficult to cope with future climate ... try to find ‘no regret’ options, which will deliver benefits whatever the extent of climate change” (6)
Tertiary:
Notes:

#68: <i>The World Energy Modernization Plan.</i> http://www.heatisonline.org/contentserve
Authority of speaker/writer
Primary: This is a report of an ad hoc group that met during the summer of 1998 at the Center for Health and Global Environment at Harvard Medical School. Conveners were Dr. Paul Epstein, Associate Director of the Center; and Ross Gelbspan, author of “The Heat Is On.”
Secondary: Twelve other participants are named, some academics, some from environmental NGOs, some independents.
Tertiary:
Notes:
Type of argument
Primary: [See five proposals in “Secondary” below.]
Secondary:
Tertiary:
Notes: Text begins with the Kyoto Protocol and the “dangerous” quote from the FCCC.
Type of evidence
Primary: more detail about how each proposal could work, bolstered by some statistics
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: implicit – focuses on human choices about which resources from nature to use (fossil fuels OR renewable and energy-efficient fuels)
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “We propose a worldwide project to modernize the global energy infrastructure over the next 15-25 years. ... We believe a set of interactive and mutually reinforcing strategies based on an international fund combined with fossil fuel efficiency and renewable energy standards can help accelerate a global energy transition, the benefits of which would reverberate through our social and economic systems.”
Secondary: Five specifics: (1) “The elimination of national subsidies in industrial countries for fossil fuels and the provision of equivalent subsidies to develop and deploy renewable and highly efficient energy techs and job retraining for displaced workers in the fossil fuel industries.” (2) “The adoption internationally of progressively more stringent Fossil Fuel and Renewable Content Standards as a complement to the emissions ‘cap and trade’ system embodied in the Kyoto Protocol.” (3) “The elimination of regulatory barriers which impede competition and support wasteful, inefficient high-carbon techs in order to create freer competition in energy according to the criteria of cost, efficiency and low-carbon content.” (4) “The creation of a World Energy Modernization Fund using the revenues from a tax on international currency transactions or other comparable revenue sources to finance the development and transfer of climate-friendly (renewable, high-efficiency and low-carbon) techs to developing nations.” (6) “The creation of a new agency or the authorization of an existing agency under the Kyoto Protocol to facilitate a rapid transition to climate-friendly ... energy facilities worldwide through transfer of techs and expertise according to principles of equity, sustainability and competitive energy markets.”
Tertiary:
Notes:

#69: Burnett, H. Sterling 2002. “Ask the Expert.” Global Warming Hotline. National Center for Policy Analysis. http://globalwarming.ncpa.org/askthex/
Authority of speaker/writer
Primary: The NCPA “is a 501 (c)(3) nonprofit public policy organization” that believes in private sector solutions to public policy problems.
Secondary: Dr. Burnett is identified as the “environmental expert” from NCPA.
Tertiary:
Notes: This is a series of questions from students and answers from Burnett about climate change.
Type of argument
Primary: Although there is correlation between current warming and rise in greenhouse gas emissions, there is no proof of causation.
Secondary: However, we should attempt to mitigate greenhouse gas emissions because global warming may be occurring and we can benefit from doing so.
Tertiary:
Notes:
Type of evidence
Primary: summaries of scientific findings, although not attributed
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: nature is largely unknown to us
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: The “key to preventing tragedy from human caused global warming” is a strong economic “which will grow the worlds [sic] wealth” so that we can “prepare for and mitigate the negative impacts of climate change.
Secondary: “Knowledge is the key, i.e., learn more about the issue.
Tertiary:
Notes:

#70: Harré, Rom, Jens Brockmeier and Peter Mühlhäusler 1999. <i>Greenspeak: A Study of Environmental Discourse</i>, especially 22-3, 61-8, 115-116, 173-188. Sage, Thousand Oaks, CA.
Authority of speaker/writer
Primary: Harré “has long been a preeminent and influential voice whose work is recognized in many disciplines. In the last 20 years he has been a pioneer in developing the theory and practice of discursive psychology. ... His interests range from the analyses of emotions to social theories and linguistics.”
Secondary: Brockmeier “teaches psychology and philosophy at the Free University of Berlin,” has a recent book <i>The Literate Mind: Literacy and the Relation Between Language and Culture</i> .
Tertiary: Mühlhäusler has a background in linguistics; “from 1979 to 1992 [he] was University Lecturer in General Linguistics and a Fellow of Linacre College at the University of Oxford, where jointly with Rom Harré he began to offer classes on language and environment.”
Notes:
Type of argument
Primary: Make room for all the voices in the debate; in particular, the public should “be charged to apply the standard: ‘How do we wish to live?’ to scientific plans, results and hazards” (Beck, quoted on 188).
Secondary: The metaphors of Gaia and the greenhouse are opposed because Gaia is self-regulating and humans have no effect, whereas in the greenhouse humans control nature. A third model, cycles and balances, pictures humans as affecting the environment much faster than earlier “photobionts.”
Tertiary: Other metaphors include “buying insurance,” the “carbon budget” and the “memory of the atmosphere.” No one agreed-on metaphor describes global warming.
Notes:
Type of evidence
Primary: material from the Linacre Lectures 1992-1994, reports of and contributions to the Rio Summit (where the FCCC was adopted), manifesto of the British Green Party, Statement on the use of nuclear energy by British Nuclear Fuels, C.C.W. Taylor’s 1992 collection of essays on environmental topics, examples collected by Mühlhäusler 1976-1996, and scientific papers from journals such as <i>Scientific American</i>
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Partially or wholly constructed through language, principally metaphor
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Keep the conversation going; build on the prevalent rights-based arguments and enlarge “the scope of morally protected beings” (182). “The ultimate value that we believe we can see running through the centuries of ever-changing Greenspeak is aesthetic, the conception of a certain rightness in the way human life must fit in as part of nature” (187) – also “the moral center, namely, that we do have moral responsibility and rights and duties with respect to the planetary ecology as much as to our own neighborhood” (187).
Secondary:
Tertiary:
Notes:

#71: Conway, Jill Ker, Kenneth Keniston and Leo Marx 1999. The New Environmentalisms. Pp. 1-29 in <i>Earth, Air, Fire, Water: Humanistic Studies of the Environment</i>, Jill Ker Conway, Kenneth Keniston and Leo Marx (eds). University of Massachusetts Press, Amherst.
Authority of speaker/writer
Primary: The authors are professors at MIT.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: Environmentalism is not one thing, but a “diffuse collection of ideas and groups” (7) including the National Rifle Association, deep ecologists, tree huggers, etc. They can be classified on different axes: ecocentrism versus anthropocentrism, apocalypticism versus gradualism, materialism versus idealism, primitivism versus presentism, worldview versus issue, global versus local perspective, ecofeminists versus material feminists, North versus South, wise use versus forever wild, government intervention versus market changes.
Secondary: Many positions are not incompatible but must be matched to the problem; for example, apocalyptic views were appropriate for the ozone problem.
Tertiary: “the well-being of the environment seems to involve importantly <i>both</i> changes in the values that issue in rampant consumerism ... and, at the same time, changes in technology that will permit them to do so and will permit other nations to realize their aspirations for a more adequate standard of life without overloading the planet’s fragile environmental balance.” (25)
Notes:
Type of evidence
Primary: discussion of positions, not many citations but many names and concepts
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: nature as fragile in some ways (e.g., ozone) but not in others
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Humanists have two tasks: “to study the ways that human beings actually interact with – not merely talk about – nonhuman nature ... contribute to an understanding of environmental discourse” and “to study the precise ways that culturally and psychologically patterned behavior contributes to the despoliation of the environment and the possibility or impossibility of alleviating it” – e.g., why people over-consume, pursue endless growth, are not mobilized against environmental problems (7)
Secondary: “In contrast, there are other issues where a prudent gradualism makes sense: for example, issues involving the causes and remedies of global warming. In this case, present knowledge is limited, and existing models do not enable us to predict catastrophe if we fail to take immediate, costly action, even though prudence would nonetheless seem to justify a serious international effort to reduce the emission of greenhouse gases” (24).
Tertiary:
Notes:

#72: Worster, Donald 1999. Climate and History: Lessons from the Great Plains. Pp. 51-77 in <i>Earth, Air, Fire, Water: Humanistic Studies of the Environment</i>, Jill Ker Conway, Kenneth Keniston and Leo Marx (eds). University of Massachusetts Press, Amherst.
Authority of speaker/writer
Primary: Worster “is Hall Distinguished Professor of American History at the University of Kansas. He has published nine books on environmental history, the history of ecology, and the history of the American West. His book on the Dust Bowl of the 1930s (Oxford U Press, 1979) won the Bancroft Prize in American History.”
Secondary:
Tertiary:
Notes
Type of argument
Primary: The rosy views of the climate of the American West and the ease of adjustment to its climatic shifts are both unrealistic (“naïve” and “wildly misinformed”). The climate is not so salubrious, and “the road from 1900 to the present has required massive demographic dislocations and great human and ecological costs and has produced a sharp-toothed anxiety gnawing at our national self-confidence” (55).
Secondary: “It is hard to adapt to a climate that you do not fully understand or do not fully want to accept” (56).
Tertiary: Three lessons: “Climate, we are now beginning to acknowledge, is so complicated a series of events that we may never be able to make predictions that a farmer can rely on” (59). “Trying to control nature through technology is never a fully adequate or long-term approach to successful adaptation. ... Adaptation to the environment, if it is to be lasting, must be cultural and social as well as technological” (61). “the best adaptation to a volatile climate can never be achieved merely by a system of private property and marketplace economics. Nor can it be achieved by supplementing that system with expensive, endless government relief or subsidies” (71-2).
Notes:
Type of evidence
Primary: historical evidence about the climate and its impacts
Secondary: cultural history – pioneers wanted the unlimited prosperity the West seemed to offer, so constructed the Great Plains as a “garden”; Frederick Clements, convinced of the regularity of all natural things, posited a “climax” plant community
Tertiary: history of adaptations, especially facts about deep-well irrigation
Notes:
Worldview/view of nature
Primary: Social construction
Secondary: Ecocentric
Tertiary:
Notes:
Action(s) proposed
Primary: “The best hope for avoiding another Dust Bowl lies in restoring more of the plains to their natural, preagricultural condition” (65) through “state or federal <i>purchase of land title</i> or the <i>purchase of conservation easements in perpetuity</i> ” (71) to revert to grassland.
Secondary: Reverse the policies that reward risky behavior vis a vis the environment – don’t bail farmers out. “What happens when we remove risk from the physical environment? Does it lead to an overextension of agriculture that cannot be sustained? I think it does” (68).
Tertiary:
Notes:

#73: U.S. Department of State 2003. United States Global Climate Change Policy. Fact Sheet, February 27. http://www.state.gov/g/oes/rls/fs/2003/18055.htm
Authority of speaker/writer
Primary: The State Department should presumably speak for the Administration.
Secondary: The Fact Sheet begins, “On February 14, 2002, President Bush ...”
Tertiary:
Notes:
Type of argument
Primary: The strategy of reducing greenhouse gas intensity “will set America on a path to slow the growth of greenhouse gas emissions, and – as the science justifies – to stop, and then reverse that growth.”
Secondary: “The President’s policy also continue the United States’ leadership role in supporting vital climate change research, laying the groundwork for future action by investing in science, technology, and institutions.”
Tertiary: The strategy “emphasizes international cooperation and promotes working with other nations to develop an efficient and coordinated response to global climate change.”
Notes:
Type of evidence
Primary: Details of how much \$\$ will be spent in developing nations, multilateral partnerships, and bilateral partnerships
Secondary: No real attempt to defend the policy
Tertiary:
Notes:
Worldview/view of nature
Primary: We can go slowly in mitigation until the science is more certain.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Support “significant funding for climate change-related science and technology research, development, and transfer in the developing world.”
Secondary: Support DOE multilateral climate change-related technology research and development
Tertiary: Commit to “working with other nations, especially developing countries, to build future prosperity along a cleaner and better path.”
Notes:

#74: Coon, Charli E. March 6, 2002. President Bush's Climate Change Proposal. WebMemo #83, The Heritage Foundation. http://www.heritage.org/Research/EnergyandEnvironment/WM83.cfm?renderforprint=1
Authority of speaker/writer
Primary: Coon is listed as a senior analyst who has a law degree and is working on a masters in environmental science.
Secondary: The Heritage Foundation is a notable conservative think tank.
Tertiary:
Notes:
Type of argument
Primary: After President Bush "courageously rejected the Kyoto Protocol ... it is disconcerting then, that [he] endorses an initiative to reduce these emissions." I.e., the policy to cut greenhouse gas intensity is inconsistent with his former, correct stance.
Secondary: Parts of the plan that are good are support for more basic scientific research, and advanced energy and sequestration technologies.
Tertiary: "Likewise the President's resolve to sustain economic growth while conducting further research on global warming is vital" but the structure for voluntary reductions "sends a mixed message to businesses and investors as to the President's commitment to economic growth and prosperity."
Notes:
Type of evidence
Primary: Assertions, e.g., "As the President noted in rejecting the Kyoto Protocol, such mandatory reductions would hurt American workers and the U.S. economy."
Secondary: Details of the policy, e.g., the 1605(b) voluntary reporting program for ghg emissions, \$1.7 billion for basic research, \$1.3 billion to advanced energy and sequestration technologies
Tertiary:
Notes:
Worldview/view of nature
Primary: The proper focus is human prosperity, not damage to nature until proven.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "Committing federal funds to sound research and innovative technologies is the sensible approach to unlocking the mysteries of climate change."
Secondary:
Tertiary:
Notes:

#75: Robinson, Dan. February 15, 2002. Environmentalists Criticize Bush Climate Change Policy. VOA News. http://greennature.com/article839.html
Authority of speaker/writer
Primary: No further info is given about Robinson other than that he writes for the VOA News
Secondary:
Tertiary:
Notes:
Type of argument
Primary: President Bush's "Clear Skies" initiative has been criticized as inadequate and likely to increase greenhouse gas emissions.
Secondary: Voluntary programs will lead to increased U.S. greenhouse gas emissions.
Tertiary:
Notes:
Type of evidence
Primary: Quotations from Jennifer Morgan (WWF), Gregg Easterbrook (Brookings Institution), Jane Morgan (WWF), Debbie Boger (Sierra Club), alternating with quotations from Bush.
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Politics, not nature, is the issue.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: The United States needs to join other nations (Japan, European nations, Russia) in ratifying the Kyoto Protocol.
Secondary:
Tertiary:
Notes:

#76: Dessai, Suraje 2002. The Special Climate Change Fund: Origins and Prioritisation. The Tyndall Centre for Climate Change Research and EURONATURA Centre for Environmental Law and Sustainable Development, Lisbon.
Authority of speaker/writer
Primary: Dessai is “currently supported by a grant from a Portuguese foundation. An article and a coauthored article by Dessai are listed in the references.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Prioritising measures to reduce adverse effects (adaptation) would be better since the possibility for regret is less.”
Secondary: “it seems clear that adaptation should be prioritized over mitigation because a market mechanism already exists for the latter.”
Tertiary:
Notes:
Type of evidence
Primary: Meticulous history of the fund, to explain why so many activities are included. “principles suggested in this paper, all based on the Convention”
Secondary: Model results. Adverse effects are more certain because “scientific knowledge” based on models (uncertain both for impacts of response measures and adverse effects) and non-modeling lit (“There is no supplementary non-model based evidence for impacts of response measures ... no reliable counterpart information”). Some models say mitigation is more expensive, some say adaptation.
Tertiary: 1.5 pages of references and notes out of a 6-page paper
Notes:
Worldview/view of nature
Primary: “the fact that the Marrakesh Accords have commodified the atmospheric commons” – i.e., nature to be manipulated by humans
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: The Special Climate Change Fund should give priority in its activities to adaptation first, followed by mitigation and finally economic diversification.
Secondary: “Projects that tackle mitigation and adaptation together could be given priority within this fund.”
Tertiary:
Notes: “The application of these principles could facilitate the negotiation of the process within the Group and the other Parties to reach a successful and equitable outcome by COP-9.”

#77: Braasch, Gary 2003. World View of Global Warming. http://www.worldviewofglobalwarming.org/
Authority of speaker/writer
Primary: "This project is featured in the Nieman Reports, Harvard University, Winter 2002, in a special section on Environmental Reporting."
Secondary: "is a project of the Blue Earth Alliance, Seattle, WA, a 501(c)(3) tax-exempt organization. The project is supported entirely by donations, grants, and license fees for the photographs."
Tertiary:
Notes: The main graphic is a globe with thermometers that one can click on for views of parts of the world where warming is occurring.
Type of argument
Primary: "Science photography" shows how climate is changing "from the Arctic to Antarctica."
Secondary: "It is real, it is accelerating across the globe, and as it combines with overpopulation and weather crises, it will affect more people than does war." "This is a story of frightening scale and great urgency that is just beginning to be told."
Tertiary:
Notes:
Type of evidence
Primary: Photographs.
Secondary: Graphs showing global average temperature from 1000 to 2000 and global air temperature from 1856 to 2001.
Tertiary: Discussions of the "peer-reviewed" science.
Notes:
Worldview/view of nature
Primary: Nature as victim of humans: "The plants and animals with whom we share the planet are adapting and moving because they have no choice."
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: "We six billion humans are being affected, too, but we have choices to make to help correct and ameliorate global warming."
Secondary: list of actions (a link), including many ways to reduce energy use, electing "responsible leaders," "Reduce sprawl and the paving of the landscape," "Build for efficiency and solar power," "Support sustainable farming and forestry," and "Start doing these things today."
Tertiary:
Notes:

#78: Huq, Saleemul 2001. Climate Change Conference in Bonn: What Does It Mean for Bangladesh? Retrieved May 29, 2003 from the internet.
Authority of speaker/writer
Primary: Huq is a well-known scientist from the Bangladesh Centre for Advanced Studies.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: The Bonn agreement (COP6 in Bonn, July 2001) to ratify the Kyoto Protocol “shows the will of the world to carry out the ratification of the Kyoto Protocol even without the US (which is the world’s greatest emitter to greenhouse gases) ... opens up a sizable new market for carbon trading across the world ... puts in place several new special funds ... from Bangladesh’s perspective it opens the door to possibly substantial levels of additional funding.”
Secondary: Bangladesh, as a country facing severe impacts from global warming, must work hard and make “early applications in the correct format” to gain new funding “DCM, adaptation capacity building, etc.)
Tertiary:
Notes:
Type of evidence
Primary: association between the consequences of climate change for Bangladesh and the opportunities from the agreements at Bonn in 2001
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: “if we move with foresight and skill we may be able to discover the silver lining hiding in the dark clouds of climate change looming on the horizon” – i.e., economic gain can come from environmental destruction
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “in order for Bangladesh to take advantage of the new development in the climate change arena it is necessary for it to make a timely and well thought out push for additional funding in the very short term and in the longer term to develop its own capacity to both cope with climate change impacts (i.e., to build adaptive capacity) and also engage in the ongoing negotiations on climate change to ensure that its interest are looked after adequately in future.”
Secondary:
Tertiary:
Notes:

#79: Blanchard, Odile, Patrick Criqui, Michel Trommetter and Laurent Viguié 2001. <i>Equity and Efficiency in Climate Change Negotiations: A Scenario for World Emission Entitlements by 2030</i>. Cahier de recherche No. 26, Institute d'économie et de politique de l'énergie, Grenoble. http://www.upmf-grenoble.fr/iepe
Authority of speaker/writer
Primary: [not given]
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "no differentiation rule and no single principle of justice have been found that might receive a consensus among all the countries"
Secondary: "we show that the reimplementation of an international emission trading system would re-establish <i>ex post</i> the efficiency which <i>a priori</i> does not exist in the initial allocation of rights. The utilitarian concept of justice would therefore also be respected."
Tertiary:
Notes:
Type of evidence
Primary: theoretical discussion of six equity principles: equality of rights, utilitarian equality, democratic equality, causal responsibility, merit, proportional equality.
Secondary: model results, both general from IPCC and the authors' own model, POLES
Tertiary:
Notes:
Worldview/view of nature
Primary: nature not considered; the important factor is what humans negotiate among themselves
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Institute differentiated responsibilities to reduce emissions, based on countries' historical emissions and ability to pay for reductions – the sooner both rise, the sooner they have to reduce emissions. Therefore, emissions per capita will converge over time.
Secondary: Allow emissions trading to keep overall costs down.
Tertiary:
Notes:

#80: Unfair Burden? “December 9, 1997. Newshour” transcript. http://www.pbs.org/newshour/bb/environment/july-dec97/india_12-9.html
Authority of speaker/writer
Primary: Naresh Chandra, the person interviewed, was at the time India’s ambassador to the United States.
Secondary: Margaret Warner is the interviewer on PBS.
Tertiary:
Notes: This is part of the run-up to the Kyoto Conference of the Parties (COP-3), that produced the Kyoto Protocol.
Type of argument
Primary: “Well, at the moment we have a much higher and urgent priority, and that is eradication of poverty, removal of backwardness, and improving the level of living of our people. That is a much great, urgent necessity than the long-term aim of controlling greenhouse gas emissions.”
Secondary: “developed countries have to take the fastest steps” because “the level of energy generation and consumption in very high in the developed industrialized nations,” “have the resources and the technical competence,” and “poverty is by itself a great polluter”
Tertiary: Developing countries are different – some, unlike India, have natural gas resources, which will produce little carbon.
Notes:
Type of evidence
Primary: argument from differences among countries, including natural resources, responsibility for the problem, and ability to pay for emissions reductions
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: Nature is the source for resources needed to develop economically, especially for energy production.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Developed, industrialized countries must take the first steps.
Secondary: India will develop “consistently with the requirements of environment.”
Tertiary:
Notes:

#81: Global Warming – A Corporate Perspective. December 5, 1997. “Newshour” transcript. http://www.pbs.org/newshour/bb/environment/july-dec97/air_12-5.html
Authority of speaker/writer
Primary: Fredrick Palmer “is CEO of Western Fuels Association, an energy cooperative that supplies coal to electrical power plants in the Western U.S.”
Secondary: Margaret Warner is the interviewer from PBS.
Tertiary:
Notes: This is part of the run-up to the Kyoto Conference of the Parties (COP-3), that produced the Kyoto Protocol.
Type of argument
Primary: “There is concern over global warming. There are computer models that project catastrophic global warming fifty or a hundred years from now, but observations from satellites and weather balloons over the last twenty to forty years suggest that there is not human-induced global warming.” The models are flawed. The 1-degree increase in temperature over the past century is the result of coming out of a little ice age.
Secondary: Cheap energy from fossil fuels is needed for our way of life.
Tertiary: “CO ₂ is a benign limiting nutrient that for plants, agriculture, and forests, a buildup of greenhouse gases of CO ₂ in the atmosphere is something that should be welcomed and not feared. The impact will be benign in that we will have more productivity in agriculture...warm is good; ice ages are bad.”
Notes:
Type of evidence
Primary: Satellite data show cooling and “satellites are the best measurement of temperature for the globe.”
Secondary: Ground-based data come from cities and reflect the urban heat island effect.
Tertiary: Estimates of the costs of mitigation.
Notes:
Worldview/view of nature
Primary: Economic
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “We want to use more of them [fossil fuels]. We want to use them cleanly and efficiently, but more of them.”
Secondary:
Tertiary:
Notes: Suggests that to prevent another ice age we should “put more CO ₂ in the air.”

#82: Global Environmental Facility and the United Nations Development Programme. 1997. Capacity Building for the Rapid Commercialization of Renewable Energy. Project description.
Authority of speaker/writer
Primary: The GEF “is a financial mechanism that provides grants and concessional funds to developing countries for projects and activities designed to protect the global environment.”
Secondary:
Tertiary:
Notes:
Type of argument
Primary: China should implement “an aggressive program to develop renewable energy, including solar and wind power, biogas, and bagasse cogeneration.”
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: The increasing need for energy in China, the potential of various sources, and a list of the barriers (“limited capacity to disseminate renewable energy through market mechanisms, institutional fragmentation, lack of business skills, incomplete assessment of renewable resources, lack of facilities for testing and certifying equipment, high cost of renewable energy systems, and lack of suitable funding mechanisms.”
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: China is the second-largest contributor to climate change, but can develop renewable energy to reduce emissions
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: First objective is “to develop national capacity for the rapid commercialization of renewable energy in China” through “operationalizing market-oriented renewable energy dissemination, strengthening China’s center for renewable energy development, training policymakers, renewable energy professionals, and businesspeople... and developing standards, codes of practice, and certification procedures for the ... industry.”
Secondary: Second objective is to “begin removing barriers to the widespread dissemination of promising alternative energy technologies” through “electrification through solar and hybrid systems, wind farm development, large-scale anaerobic biogas production, and bagasse cogeneration.”
Tertiary:
Notes: Benefits include reduced emissions and pollution.

#83: Johansen, Bruce E. 1999. Review of <i>Global Warming: The Essential Facts</i>. http://nativeamericas.aip.cornell.edu/fall99/fall99r.html
Authority of speaker/writer
Primary: Johansen, “Robert T. Reilly Professor of Communication and Native American Studies at the University of Nebraska at Omaha, is author of <i>Debating Democracy: The Iroquois Legacy of Freedom</i> .”
Secondary: John Houghton is the atmospheric scientist who has headed the IPCC’s Working Group I through all three global assessments.
Tertiary:
Notes:
Type of argument
Primary: “While a lively debate in political circles and the press questions whether human activity is significantly warming the Earth, scientific evidence has been accumulating in support of the idea.”
Secondary: Global warming will likely increase the number of violent storms and associated deaths and damage, deaths from extreme heat, and diseases.
Tertiary:
Notes:
Type of evidence
Primary: Data about the rise of carbon dioxide and other GHGs in the atmosphere and the acceleration since 1950, with large annual variations.
Secondary: Data about increases in temperature and increased energy use during the same periods (Houghton, NASA, articles in <i>Nature</i>).
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans are responsible for climate change.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Actively plan to reduce emissions, e.g., Denmark’s plans for wind farms and hydroelectricity.
Secondary:
Tertiary:
Notes:

#84: Shove, Elizabeth 1996. <i>Working Back from the Future</i>. Unpublished paper, Centre for the Study of Environmental Change, Lancaster University, UK.
Authority of speaker/writer
Primary: Shove is a social scientist who studies energy use and lifestyle.
Secondary:
Tertiary:
Notes: This was one output of a workshop on choice, culture, and technology – a working group on Sustainable Consumption and “Individual Travel Behavior”
Type of argument
Primary: The policy relevance of modeling techniques can be improved “by incorporating social factors or, more ambitiously, by drawing in ‘new’ theoretical approaches from the social sciences” (2)
Secondary: The mechanism of choice is how models account for differences in transportation modes, but producers and consumers alike often claim they have “no choice.”
Tertiary:
Notes:
Type of evidence
Primary: Typical model projections of the future “have been concerned with the modeling (both forecasting and developing scenarios) of demand for energy”; policy=national policy (2).
Secondary: Theoretical arguments about framing problems and thinking about future scenarios.
Tertiary:
Notes:
Worldview/view of nature
Primary: Social construction
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Think about a future desirable state, e.g., “what else would the social and organizational world be like if energy consumption were to be reduced?” or even “What would the world be like if 60% of journeys were made by bicycle..?” (7)
Secondary: For global warming, instead of specifying a future that can be avoided by policy and technology, it should be useful to specify a desirable future and explore how the varying time horizons of the natural world, technologies, social-cultural practices, economic conditions, and personal careers would intersect in such a future.
Tertiary:
Notes:

#85: Slade, H.E. Ambassador Tuiloma Neroni 2000. Linking Science and Climate Change Policy. Overview Address at the Pacific Islands Climate Change Conference, Rarotonga, Cook Islands, 3-7 April.
Authority of speaker/writer
Primary: Slade is the Permanent Representative of Samoa to the United Nations and Chairman of the Alliance of Small Island States (AOSIS)
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "We would see science as providing an essential component in the search for feasible pathways towards the management of the environment and towards sustainable development."
Secondary: "Equally, we have maintained that the precautionary approach provides a sensible and essential basis for policies relating to complex systems that are not yet fully understood and whose consequences of disturbances cannot yet be predicted."
Tertiary:
Notes:
Type of evidence
Primary: History of the processes and meetings: meeting in Apia in 1996 on Science and Impacts of Climate Change in the Pacific, Third Climate Change meeting in New Caledonia, 22 nd UN General Assembly special session in November 1999 & the priority areas closely related to climate change identified there, successive reports to the Commission on Sustainable Development pertaining to Small island States
Secondary: FCCC and its principles, the Kyoto Protocol, established AOSIS objectives deriving from these agreements, Clean Development, GEF
Tertiary:
Notes:
Worldview/view of nature
Primary: both nature and the small island States as victims of industrialized countries
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: For science: "enhance scientific understanding; improve long-term scientific assessments; strengthen scientific capacities in all countries, especially developing countries and, in the context of our conference, small island States in particular; and ensure that the sciences are responsive to changing needs."
Secondary: For "effective policy implementation that links global environmental issues and sustainable development": "scientific understanding of the nature of the links among environmental issues and their relationship to meeting human needs...", identification of innovative combinations of policies that are effective and cost efficient and that encourage the public and private sectors to work together; political and public commitment... and improved coordination among the national, regional and international institutions charged with developing and encouraging adoption of policies and measures to meet human needs, without undermining the environmental foundation for development."
Tertiary:
Notes:

#86: Ashford, Graham and Jennifer Castleden 2001. <i>Inuit Observations on Climate Change: Final Report</i>. Institute for Sustainable Development. http://www.iisd.org/casl/projects/inuitobs.htm
Authority of speaker/writer
Primary: Support for the project came from the Government of Canada's Climate Change Action Fund, the Walter & Duncan Gordon Foundation, Indian and Northern Affairs Canada, and the Government of the Northwest Territories, with much in-kind support from the community and government agencies
Secondary:
Tertiary:
Notes: The project team visited the community four times, to videotape scenes from the Inuit way of life and to audiotape interviews about the changes local people had observed.
Type of argument
Primary: "This community's [Inuvialuit of Sachs Harbour] way of life is at risk, an urgent warning of the negative impacts of climate change predicted to occur elsewhere in the world." (Exec Sum)
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: data on later autumn freeze-up, spring thaw earlier, smaller sea ice and thinner winter ice, melting permafrost, changes in animal populations, etc. – all based on observations of the local people
Secondary:
Tertiary:
Notes: assumption that observations of local people are scientific data
Worldview/view of nature
Primary: "Residents have a close relationship with the Arctic environment. They still harvest fish from the sea and animals from the tundra to support themselves."
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Continue and expand efforts to communicate the changes in climate being seen in Sachs Harbour, especially to policymakers
Secondary: scale up the research and extend to the opposite side of the world (Siberia) and the southern pole region; incorporate findings into education curricula; monitor the health of local wildlife, arrival of new species of animals, permafrost melting, and riverbank erosion
Tertiary:
Notes:

#87: What about the Effects of Coal Burning on Climate? The Greening Earth Society. http://www.bydesign.com/fossilfuels/crisis/html/climate_change.html
Authority of speaker/writer
Primary: The Greening Earth Society has a “green” name but is considered anti-environment.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “CO ₂ is the stuff of life, so how can CO ₂ be bad?”
Secondary: CO ₂ from U.S. coal burning is “just a tiny fraction of all the burning of stuff done by the 6 billion people on the planet, perhaps one quarter of one percent of the total” and “just a tiny fraction of the CO ₂ that comes from other, ‘natural’ sources.”
Tertiary:
Notes:
Type of evidence
Primary: use of down-to-earth language to make “simple” arguments, e.g., “CO ₂ is what plants eat” (so CO ₂ is good and maybe we should have more of it, not less) and “First of all, the whole issue of climate change being due to human activity is, literally, up in the air.”
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: CO ₂ is natural, what plants eat, and coal “is nothing but the remains of the billions and billions of plants that ...were buried before they could return their life giving carbon dioxide to the atmosphere.”
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “So right off the bat there are no clear or simple answers regarding climate change or global warming. So there is also no clear, simple reason to do anything about it at this time. At this point it is just a big argument.”
Secondary:
Tertiary:
Notes:

#88: Minnesotans for an Energy-Efficient Economy (ME3) 2002. Policies for a Clean Future: Greening Our Electricity Industry. http://www.me3.org/issues/climate/withfire2002.html
Authority of speaker/writer
Primary: No author is listed; the “royal we” is used.
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Electricity generation is the single largest source of pollution and greenhouse gas emissions in Minnesota.”
Secondary: “We cannot fight climate change without moving to cleaner sources of electricity.”
Tertiary:
Notes:
Type of evidence
Primary: stats about coal use, pie graph
Secondary: projections of savings, feasibility of increasing the percentage of renewable use to 10% or 20%
Tertiary: examples of states, cities and companies who have adopted “clean” policies
Notes:
Worldview/view of nature
Primary: Ecomodernism
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “consideration should be given to tax reforms that promote environmental improvements while expanding Minnesota’s economy.”
Secondary: “We need to make public transit more accessible and reliable by increasing the frequency, regularity, and coverage of our transit system,” and government should lead by example by “purchasing clean vehicles for their fleets.”
Tertiary: “Research by ME3 and its colleagues at the Center for Energy and Environment and 1000 Friends of Minnesota shows how metro Minnesota can grow smart, and protect its environment.”
Notes:

#89: Kirby, Alex 1999 (June 4). Nuking Climate Change. BBC News. http://news.bbc.co.uk/1/hi/sci/tech/368584.stm
Authority of speaker/writer
Primary: Kirby is identified as an “environment correspondent.”
Secondary: The report the article is drawn from was issued by the Royal Society and the Royal Academy of Engineering.
Tertiary:
Notes: This is a news article about a report, <i>Nuclear Energy – the Future Climate</i> .
Type of argument
Primary: “The report says: ‘There is a strong case for acting to mitigate the threat of drastic climate change associated with the unrestrained continuation of this trend [toward higher levels of atmospheric carbon dioxide].’”
Secondary: Use of renewables, energy conservation, and efficiency may not be enough; nuclear may be needed.
Tertiary: “‘Public confidence is central to the future of the nuclear enterprise.’”
Notes: The final section of the report says that Friends of the Earth responded, “More radioactive waste is not the answer to climate change” and Forum for the Future said, “We do not accept the report’s arguments.”
Type of evidence
Primary: stats and projections about the rise of carbon dioxide in the atmosphere
Secondary: photo of construction site for a nuclear energy plant and another plant identified in the caption as Chernobyl
Tertiary:
Notes:
Worldview/view of nature
Primary: climate is being affected by CO ₂ emissions; people should manage the climate by reducing their emissions
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “planners should now assume that new nuclear plants may be required in the course of the next 20 years.”
Secondary:
Tertiary:
Notes:

#90: Campaign for Nuclear Phaseout 1997 (November 28). Nuclear Power Is Not the Solution to Climate Change. http://www.ccnr.org/no_nukes_cnp.html
Authority of speaker/writer
Primary: No author is given.
Secondary: The article is on the website of the Canadian Coalition for Nuclear Responsibility (CCNR).
Tertiary:
Notes: The first paragraph states that Cretien, boosted by the Canadian Nuclear Association, “has suggested that nuclear energy may be part of his platform at the climate change negotiations in Kyoto.”
Type of argument
Primary: “Exporting nuclear reactors just adds more problems to those that already exist” (Dr. Gordon Edwards of CCNR), seconded by Krene Kock of the Nuclear awareness Project
Secondary: “Every dollar invested in energy efficiency displaces seven times as much CO ₂ emissions as the same dollar invested in nuclear power” – investing in nuclear just diverts money that would be better spent.
Tertiary: The nuclear industry is just trying to save itself, and Cretien should not be its salesman.
Notes:
Type of evidence
Primary: several studies cited in text, but not fully; statistics with no attribution
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: climate change is real, but nuclear is not a solution because it causes many other environmental problems
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Canada shouldn’t get greenhouse gas credits for selling or using nuclear power, environmental activists said today.”
Secondary:
Tertiary:
Notes:

#91: Clean Water Action. No date, but internal evidence that it was written post-January 29, 2003. Renewable Energy/Climate Change. http://www.cleanwateraction.org/ct/energy.html
Authority of speaker/writer
Primary: No author given.
Secondary: This is the site of a group, part of a “coalition of over 100 environmental, health, religious, and science-based groups throughout New England” that supports the Climate Change Action Plan adopted by the New England Governors and Eastern Canadian Premiers in August 2001 and wishes to go beyond it.
Tertiary:
Notes:
Type of argument
Primary: Climate is changing (temp, precip and SLR) and will have effects in health, ag, forests, water resources, coastal areas, species and natural areas.
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: Data from US National Climatic Data Center and EPA
Secondary: Details and side-by-side comparison of the Connecticut Climate Action Project and the New English Climate Action Project.
Tertiary:
Notes
Worldview/view of nature
Primary: “We can choose to pollute the air which aggravates asthma and other respiratory problems, contributes to climate change, and increases our dependence on foreign oil OR we can chose [sic] to be part of the vibrant living planet, making sustainable choices that apply human wisdom in ways that are life enhancing.”
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: (1) “By 2010, reduce state GHG emissions to levels 10% below 1990 levels.” (2) “Establish a schedule and process for developing timelines to meeting the long-term reduction goals of 75-85%.” (3) “...establish a system of mandatory reporting of CO ₂ and other GHG emissions by 2005.” (4) “The states should lead by example by reducing state government’s use by 25% overall by 2010.”
Secondary: “A clear step is to develop a strong consumer demand for clean, renewable energy.”
Tertiary:
Notes:

#92: McKibben, Bill 2001. Where Do We Go from Here? <i>Daedalus</i> special issue, <i>Religion and Ecology: Can the Climate Change?</i> http://www.daedalus.amacad.org/issues/fall2001/mckibben.htm
Authority of speaker/writer
Primary: McKibben is the author of <i>The End of History</i> .
Secondary: <i>Daedalus</i> is the journal of the American Academy of Arts and Sciences.
Tertiary:
Notes
Type of argument
Primary: “Now, responding to the urgent alarms of scientists, historians of religion and theologians have pored over old texts and traditions, seeking to find in them sources for a new environmental ethics – a repair guide for what suddenly seems our most broken relationship of all, namely our human relationship to the natural habitat.”
Secondary: However, “few religious leaders have stepped forward to make these new understandings central parts of their work.”
Tertiary: “We need to build on the work begun by this project to bring together ideas and action.”
Notes:
Type of evidence
Primary: results from “a series of Harvard conferences and books on world religions and ecology”
Secondary: civil rights movement in the U.S. and liberation theology in Latin America, Asia, and Africa “could bring important perspectives to the question of religious understanding of the human-Earth relationship”
Tertiary: visions of “what would happen” if religious leaders joined environmental activist causes – might change the political dynamic but would certainly make people think seriously “about what their traditions demand. They would have no choice but to begin viewing the facts about global warming, laid out with understated power by Michael McElroy, as the story of human beings grown too large in relation to their planet, a position that almost requires reference to the Book of Job or Psalm 148.”
Notes:
Worldview/view of nature
Primary: “Ecology may rescue religion at least as much as the other way around. By offering a persuasive practical reason to resist the endless obliterating spread of consumerism, it makes of Creation a flag round which to rally. And it is a flag planted not in the past, but in the present and the future. It is the keystone issue for our moment, the one that makes eco-theology urgent.”
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Political activists within the churches, synagogues, mosques, and temples doubtless fear marginalization if they get too far outside the mainstream, but in fact they are marginalized now, invisible within the smothering consensus of our society. It is only by getting far enough out to risk seeming extreme that they have any real change of challenging our consumerist complacency.”
Secondary: “Imagine gatherings where theologians and scholars and activists came together – and did not leave until they had worked out plans for closing down a polluting power plant, opening up new funding for alternative energy, or any of a hundred other tasks: specific actions, which they would help to carry out in the days and weeks ahead.” E.g., Episcopal Power and Light (markets green energy), Coalition for Environmentally Responsible Economics (CERES), new

declarations that “sport utility vehicles are morally problematic, that the Kyoto treaty needs moral support.”

Tertiary:

Notes:

#93: Society, Religion and Technology Project 1998. International Petition to Governments of Industrialised Countries. Church of Scotland. http://www.srtp.org.uk/climpet2.htm
Authority of speaker/writer
Primary: The petition was initiated by the World Council of Churches (which has a reputation for being “liberal”) and has the imprimatur of the Church of Scotland.
Secondary: When the petition was presented to the chair of the UN negotiating meeting held in Bonn in March 1998, “Former German President Richard von Weizsaecker made a strong address in support of the aims of the petition...”
Tertiary:
Notes:
Type of argument
Primary: Series of statements: “Climate change is a serious threat to the well-being of God’s creation.” International consensus, problem of burning fossil fuels, industrialized countries the cause, most impacts on developing countries.
Secondary: “Despite this situation, the UK government has shown reluctance to act for the long term...”
Tertiary:
Notes:
Type of evidence
Primary: Theory
Secondary: Scientific literature
Tertiary:
Notes
Worldview/view of nature
Primary: Religious/stewardship ethic
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “The signatories of this petition call on HM Government “(1) to set specific targets for reducing CO ₂ levels in the UK beyond 2000; (2) to implement appropriate measures to incorporate the environmental costs of burning fossil fuel in the price of coal, oil, gas and their products; (3) to increase energy efficiency by providing greater incentives and assistance to domestic and commercial users; (4) to pursue a rigorous policy of replacing fossil fuels by renewable energy, making full use of Scotland’s abundant renewable potential; (5) to provide assistance in environmentally-friendly technologies to developing countries as they industrialise and to countries of Eastern Europe.”
Secondary: “For our part: we declare our readiness to accept the consequences of such reductions on our society, economy and personal lives; we are prepared to take steps in our way of life to reduce our energy consumption and greenhouse gas emissions; we believe such changes would improve the long-term quality of life for all.”
Tertiary:
Notes:

#94: Müller, Benito 2002. <i>Equity in Climate Change: The Great Divide</i>. Oxford Institute for Energy Studies. http://www.ejcc.org/resources_tech.html
Authority of speaker/writer
Primary: This paper was also “scheduled to be published as a Viewpoint ‘A New Delhi Mandate?’ in <i>Climate Policy</i> 79(2002), 1-3.
Secondary: The support of the Shell Foundation is acknowledged.
Tertiary:
Notes:
Type of argument
Primary: North-South Divide: North concerned with setting emissions targets, South with “the discrepancy between the responsibility for, and the sharing of climate impact burdens.” (1) The North has set the agenda, ignoring the concerns of the South.
Secondary: Need to “put much greater effort into thinking of innovative ways in which these human impact burdens could be distributed.” (2) “The reduction – avoidance and limitation – of unacceptable climate impacts on individuals and societies can be achieved both by <i>reducing the hazards</i> associated with climatic change (‘climate hazards’) and by <i>lowering the vulnerability</i> of the individuals and societies in question.” (3)
Tertiary: “over the past three decades, the proportion of the global population affected by weather-related disasters has doubled...In absolute numbers, these trend figures have almost quadrupled over this period.”
Notes:
Type of evidence
Primary: References to the FCCC, IPCC, Marrakech Accords, Kyoto Protocol, Bonn Agreement, and their provisions for burden sharing. Also UNEP (Klaus Töpfer).
Secondary: statistics about rising number of disasters that are weather-related
Tertiary:
Notes
Worldview/view of nature
Primary: For the North, the problem is human degradation of Nature, which is the victim; for the South, the victims are people (unsustainable development, “in the non-technical sense of failing to survive”).
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “Given the existing threat, particular urgency is attached to a proposal for reform of the relevant disaster <i>relief</i> funding mechanism by creating an FCCC <i>Climate Impact Relief</i> (CIR) <i>Fund</i> to achieve an international relief system adequate to the challenge. Because this is to involve merely a more efficient funding mode, such a reform could be carried out with little or no additional costs (no ‘new money’), yet with significant benefits to the international community.” (1)
Secondary:
Tertiary:
Notes

#95: German Advisory Council on Global Change (WBGU) 2003. <i>World in Transition – Towards Sustainable Energy Systems</i>. Executive Summary. http://www.wbgu.de/wbgu_jg2003_kurz_engl.html
Authority of speaker/writer
Primary:
Secondary:
Tertiary:
Notes:
Type of argument
Primary: “Nothing less than a fundamental transformation of energy systems will be needed to return development trajectories to sustainable corridors.”
Secondary:
Tertiary:
Notes:
Type of evidence
Primary: IPCC findings , WHO
Secondary: WBGU scenario showing achievement of 450 ppmv concentrations with “major reduction in the use of fossil energy sources; phase-out of the use of nuclear energy; substantial development and expansion of new renewable energy sources, notably solar; improvement of energy productivity far beyond historical rates.” (graph) – with highly articulated roles for international organizations and mechanisms
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans are interfering with global life systems through greenhouse gas emissions; but, also, people are entitled to have some level of energy resources.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Milestones: Protect natural support systems (global reduction of 30% by 2050 – 80% from industrialized countries, no more than 30% rise in developing countries); eradicate energy poverty (ensure everyone has at least 500 kWh by 2020); mobilize financial resources for the global transformation of energy systems; use model projects for strategic leverage and engage in energy partnerships; advance research; and draw together and strengthen global energy policy institutions.
Secondary:
Tertiary:
Notes:

#96: Department of Energy, Office of Fossil Energy. No date, but after May 1999. Carbon Sequestration. http://www.fe.doe.gov/coal_power/sequestration/index.shtml
Authority of speaker/writer
Primary: No author is given.
Secondary: DOE-FE is focused on the continued use of fossil energy, so it may be expected to have an interest in ways to reduce emissions from coal, oil, etc.
Tertiary:
Notes:
Type of argument
Primary: "Availability of [fossil] fuels to provide clean, affordable energy is essential for the prosperity and security of the United States," but "To stabilize and ultimately reduce concentrations of this greenhouse gas [CO ₂], it will be necessary to employ carbon sequestration – carbon capture, separation and storage or reuse."
Secondary: Achieving a goal of reducing the cost of carbon sequestration to \$10 or less per net ton of carbon emissions avoided by 2015 would save the U.S. trillions of dollars.
Tertiary:
Notes:
Type of evidence
Primary: references and quotations from PCAST report "Federal Energy Research and Development for the Challenges of the Twenty First Century" and the SC-FE report (draft at the time) <i>Carbon Sequestration: State of the Science</i>
Secondary:
Tertiary:
Notes:
Worldview/view of nature
Primary: nature is not resilient to increasing concentrations of greenhouse gases, but will be resilient to sequestration technology schemes
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Develop carbon sequestration approaches, pilot test options for direct and indirect sequestration, and look for "more revolutionary" technologies that will "rely less on site-specific or application factors to ensure economic viability."
Secondary:
Tertiary:
Notes:

#97: Worldwatch Institute. 2002. Global War on Global Warming Heats Up. Press Release. http://www.worldwatch.org/press/news/2002/08/01
Authority of speaker/writer
Primary: Worldwatch Institute is a well-known environmentalist group that produces an annual <i>State of the World</i> report. In the press release, it describes itself as “a Washington, D.C.-based research organization.”
Secondary:
Tertiary:
Notes: This is a review of <i>Reading the Weathervane: Climate Policy from Rio to Johannesburg</i> by Seth Dunn.
Type of argument
Primary: “The scientific case for action continued to strengthen” 1990-2001 but most policies “have been too weak, only partially implemented, or discontinued”; governments have “failed to develop ‘diversified portfolios’ of policies”; and “the existence of ‘perverse practices’—including subsidies for fossil fuel production and consumption ... has been a major impediment to climate policymaking.” Emissions have generally risen since 1990 (e.g., EU, Japan, US, Australia, Canada), except in Germany (-17.1%), the UK (-4.1%), and Russia (-30.5%).
Secondary: India, China and Brazil are not “rogue emitters” but have been slowing emissions growth, China because of lower coal use and energy efficiency
Tertiary: Lowering emissions will not be costly, as conventional model results indicate.
Notes:
Type of evidence
Primary: stats about emissions, energy intensity, etc.
Secondary: history of the FCCC and international actions based on it
Tertiary:
Notes:
Worldview/view of nature
Primary: Humans have an obligation to reduce GHG emissions.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Bring the Kyoto Protocol into force
Secondary: Leave the era of voluntary commitments behind
Tertiary: Deal with the transportation sector
Notes:

<p>#98: Hansen, James, Makiko Sato, Reto Ruedy, Andrew Lacis and Valdar Oinas 2000. Global warming in the twenty-first century: an alternative scenario. <i>Proceedings of the National Academy of Sciences</i> 97, 9875-9880. Also available at http://www.giss.nasa.gov/gpol/abstracts/2000/HansenSatoR.html</p>
<p>Authority of speaker/writer</p>
<p>Primary: James Hansen is a prominent researcher at NASA's Goddard Institute of Space Sciences. Hansen testified to the US Congress in 1988 that global warming was upon us, using in his presentation data from only the first and last ten years of the century; a critic from the Cato Institute commented that "throwing out 80% of the data to make a striking pronouncement hardly seems to be normal scientific procedure."</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of argument</p>
<p>Primary: "We argue that rapid warming in recent decades has been driven mainly by non-CO₂ greenhouse gases such as chlorofluorocarbons, CH₄, and N₂O, not by the products of fossil fuel burning, CO₂ and aerosols."</p>
<p>Secondary: Focusing on CH₄ and O₃ precursors, reducing black carbon emissions, and slowing CO₂ emissions "could lead to a decline in the rate of global warming."</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Type of evidence</p>
<p>Primary: model results of separate greenhouse gas emissions and forcings</p>
<p>Secondary: 71 endnote references to the literature</p>
<p>Tertiary:</p>
<p>Notes: references to IPCC scenarios</p>
<p>Worldview/view of nature</p>
<p>Primary: Humans are causing climate change but can manage emissions so as to mitigate change.</p>
<p>Secondary:</p>
<p>Tertiary:</p>
<p>Notes:</p>
<p>Action(s) proposed</p>
<p>Primary: Reduce non-CO₂ GHGs and black carbon (soot) aerosols, which will have other benefits such as economic use of now-wasted CH₄ and reduction of air pollution.</p>
<p>Secondary: "require policies that encourage technological developments to accelerate energy efficiency and decarbonization trends" to slow CO₂ emissions.</p>
<p>Tertiary:</p>
<p>Notes:</p>

#99: Department of Natural Resources, Wisconsin. No date; retrieved June 8, 2003. Global warming is hot stuff! http://www.dnr.state.wi.us/org/caer/ce/eeek/earth/air/global.htm
Authority of speaker/writer
Primary:
Secondary:
Tertiary:
Notes: This is a Q&A format for “kids.”
Type of argument
Primary: “The increase in greenhouse gases is expected to raise the average global temperature of the planet by 2 to 9 degrees Fahrenheit over the next 50 to 100 years. Most of the increase is due to human activities...”
Secondary: Impacts would include sea level rise, “temperate places ... might become hotter and drier,” plants and animals may become extinct, severe storms “might occur more frequently and be more intense.”
Tertiary: “Just because we’re not absolutely certain of how more greenhouse gases will affect the Earth doesn’t mean we should sit back and do nothing.” And our actions will lower pollution and conserve energy.
Notes:
Type of evidence
Primary: Mostly assertion or “scientists say”
Secondary: “Who wants to breathe bad air, or always look up at a dirty sky?”
Tertiary:
Notes:
Worldview/view of nature
Primary: The natural greenhouse effect keeps the planet warm, but humans are probably causing increased global warming.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: “You can help slow global warming by Walking, riding a bike, or taking the bus instead of always going by car. Not wasting electricity (turn off the lights, the radio, the TV and the computer when you’re not using them). Reducing, reusing or recycling all kinds of items, from soda pop cans to clothes, to save energy and raw materials. Planting trees to help absorb excess CO ₂ , and to provide shade and windbreaks to keep buildings at more even temperatures so they will require less energy for heating or cooling.”
Secondary:
Tertiary:
Notes:

#100: Amory Lovins sees the future and it is hydrogen. May 4, 1999. Donella Meadows' <i>The Global Citizen</i>. http://iisd.ca/pcdf/meadows/hydrogen.html
Authority of speaker/writer
Primary: Lovins and his wife are noted for making large claims about energy efficiency; the article also discusses his advocacy of the Hypercar, which gets 100-200 mpg
Secondary:
Tertiary:
Notes:
Type of argument
Primary: "It would be better, many people have realized, to run our cars on hydrogen....The best part of this scheme is, when you use the hydrogen to run your car, out of your tailpipe comes nothing but water vapor."
Secondary: Fuel cells are best – quiet, essentially battery driven
Tertiary: A hydrogen energy system is expensive. "But factor in the avoided costs of air pollution, global warming, defense of the Middle East, central power plants, and long-distance electric wires and they don't look so bad."
Notes:
Type of evidence
Primary: description of how hydrogen fuel cells work
Secondary: "picture this" scenario of having your house, car, an workplace powered by hydrogen
Tertiary: "Says Lovins: 'This approach offers several strategic advantages. It uses idle off-peak capacity in the nature-gas and electricity distribution systems that have already been installed and paid for. It is build-as-you-need and pay-as-you-go, requiring investment only in step with incremental demand. It is one or two orders of magnitude cheaper than building a dedicated, centralized hydrogen production and delivery system from scratch....And vibrant competition between gas- and electricity-derived hydrogen, ... will exert downward pressure on the prices of hardware and hydrogen.'"
Notes:
Worldview/view of nature
Primary: Humans as engineers can address pollution and global warming.
Secondary:
Tertiary:
Notes:
Action(s) proposed
Primary: Start with stationary sources: workplaces, houses.
Secondary: The hydrogen Hypercar can be plugged in at work and sell electricity back to the grid.
Tertiary:
Notes: