The Climate Science Blackout of US Environmentalists
D R A F T
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Summary. A survey of public material from 18 US environmental organizations and 25 private foundations conducted in July, 2012 demonstrates a substantial gap between current climate science and programs of major environmental organizations and funders.

US environmentalists are in a climate science blackout. None of 18 organizations accept the substantial risk of geometric climate change and only 4 out of 18 organizations reference recent climate science (Environment America, NWF, WRI). 11 out of 18 organizations ignore mounting evidence of catastrophic sea level rise and 4 rely on vintage climate science of the IPCC Fourth Assessment Report (AR4).

US environmentalists do not focus on climate. A single organization (Sierra Club) defines climate change as its central priority and endorses the global target of 350 ppm (but does not highlight either position), while 11 out of 18 organizations showcase issues other than climate change.

Funding for climate programs slashed. A review of 25 major funders of climate program found a sharp drop in foundation funding from $982 million in 2008 to an estimated $69 million/annual in 2010-11.

The most plausible explanation for the climate science blackout by US environmentalists is a cognitive response to dissonant information. Analysis shows that the surveyed organizations and foundations have the resources to fund a $2 billion coordinated climate effort, which would substantially improve odds of reshaping the public debate on climate but entails significant organizational and professional risk. Environmental organizations are caught in a bind between short-term interests and global imperatives and are responding, like virtually all other institutions, by erecting barriers to information which challenges business-as-usual.

Failure to overcome these barriers is the single greatest impediment to effective climate action. The blackout on current climate science by US environmentalists is an abdication of our first responsibility (to define the problem), isolates climate scientists who are working to meet that responsibility, and effectively undercuts the efforts of independent climate campaigns. If major environmental organizations do not act as if a catastrophe is unfolding, why should anyone else take it seriously?

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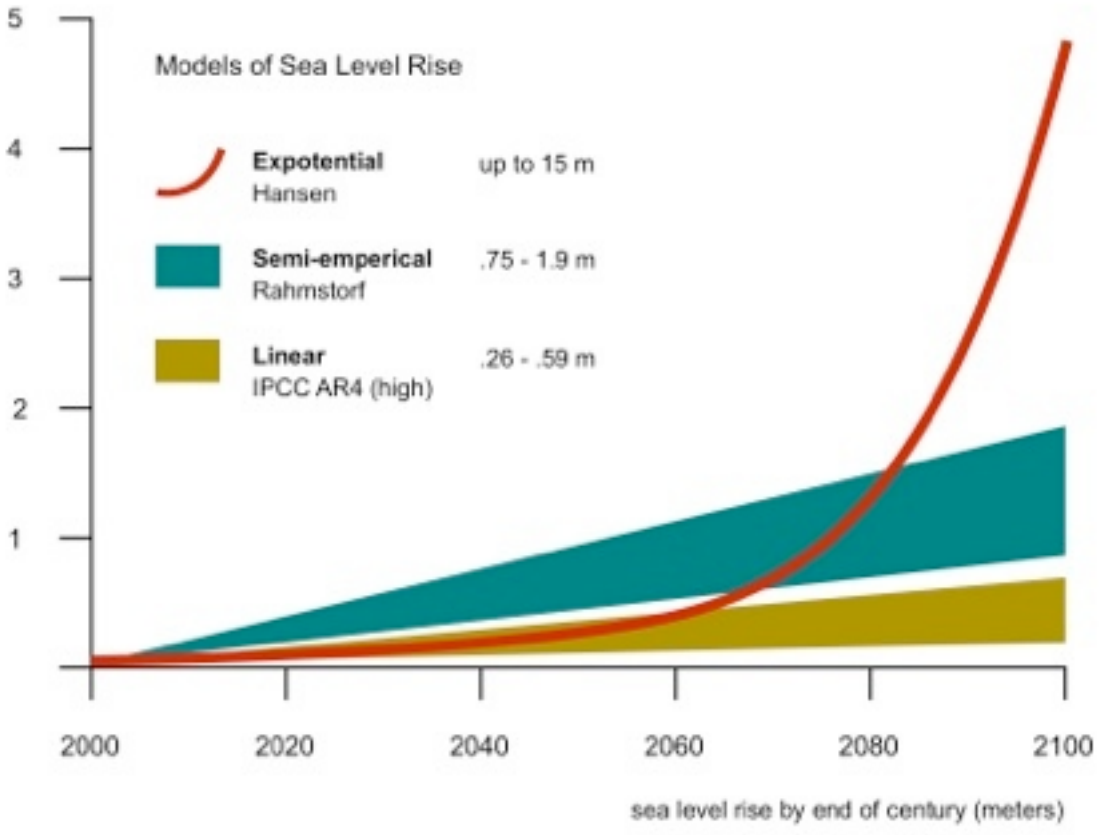
1. The climate paradigm debate.

James Hansen and a handful of other scientists argue that climate change is self-reinforcing and geometric, that tipping points for major climate systems have been reached and the world is near, if not past, the point of no return. This is a revolutionary new scientific paradigm, in Kuhnian terms,[1] which challenges established climate science and political world views.

The crucial question is whether climate change-induced sea level rise (slr) is linear and may confidently be extrapolated from current trends, as the UN Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) assumes, or rapid buildup of greenhouse gases beyond beyond any in geological history is driving climate change leading to rapid (in geological terms) collapse of Greenland and Antarctic ice shelves, with a geometric increase in sea levels, as Hansen argues.[2] The difference is enormous, with linear projections of slr (Rahmstorf 2010, Pfeffer et al. 2008) grouped between .75 - 1.9 meters by end of the century, with 1 meter as consensus high probability outcome[3], versus Hansen's guesstimate of up to 15 meters.[4]



[1] The Structure of Scientific Revolutions, Thomas S. Kuhn, 1962

[2] "Ice sheet disintegration is nonlinear, spurred by amplifying feedbacks. We suggest that ice sheet mass loss, if warming continues unabated, will be characterized better by a doubling time for mass loss rate than by a linear trend." Hansen, J.E., and Mki. Sato, 2012: Paleoclimate implications for human-made climate change. In Climate Change: , http://pubs.giss.nasa.gov/abs/ha05510d.html

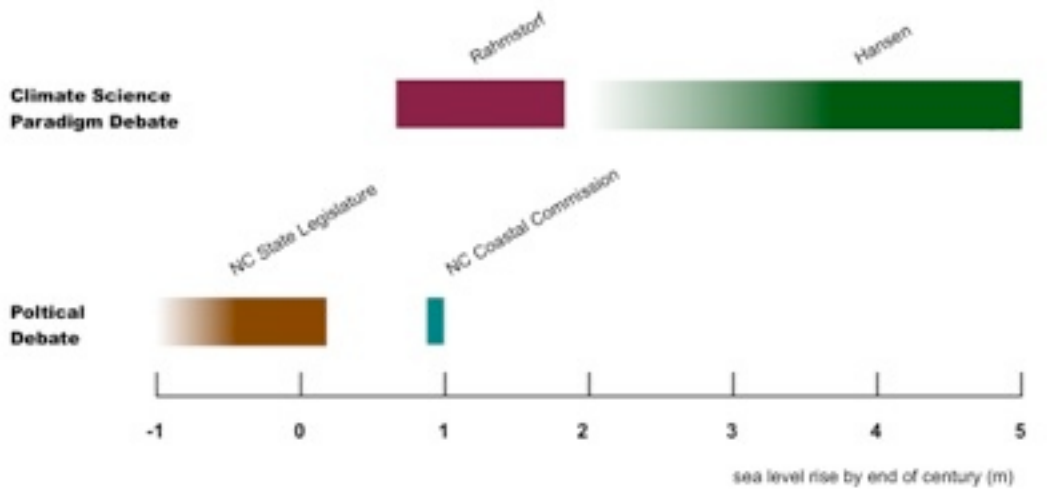
[3] The "semi-empirical" model devised by Rahmstorf builds on the consensus view of the 2007 IPCC Fourth Assessment Report, which projected 0.18 and 0.59 m slr, taking into account the contribution of Greenland and Antarctic ice shelves, not accounted for in the 2007 IPCC AR4.

[4] Hansen link

While the scientific debate is measured in the difference between Rahmstorf's slr range of .75 – 1.9 m meter and Hansen's guesstimated 15 meters, the *political* struggle continues to be dominated by climate denier attacks on the reality of climate change, illustrated by the recent political debate over sea level rise in North Carolina.

A 2010 report by the North Carolina Costal Resources Commission (NC CRC) recommended the state adopt a planning standard of 1 meter sea level rise by end of the century, based on Rahmstorf 2009 and other studies. NC real estate interests formed a coalition (N-20) that won passage in the NC State Senate of a bill limiting sea level rise projections to linear extension of historical trends (roughly .2 meters[5]). Compromise language signed into law in August, imposes a 4-year moratorium on sea level rise projections and requires the NC CRC to conduct a new study "including sea-level fall, no movement in sea level [and] deceleration of sea-level rise." The NC law and CRC recommendation define the current *political* debate on sea level rise as a range between .2 – 1 meter

The difference between the climate science paradigm debate and climate politics, as measures of change in sea level, is displayed in the following chart.



As Hansen points out, echoing Keynes, it doesn't much matter in the long run how high the seas rise this century, as the relationship between ocean temperature and sea level rise is fixed (each 1°C = 2 meters sea level). As a political matter, however, the distinction makes all the difference in the world.

If climate change is *linear* and the world may expect sea level rise of 1 meter be end of the century, then climate adaptation is conceivable in the US, incremental climate policy remains relevant, the IPCC (or Copenhagen) target is appropriate, and there is time to pursue complex, multi-stage strategies. If climate change is *geometric* then Hansen's target of 300-350 ppm is, if anything, not strict enough, we are playing and losing the end game now, and environmentalists have no option other than a last-ditch effort to change the terms of the public debate.

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[5] NOAA mean sea level trend for Wilmington, NC is 2.07 mm/year for period 1935-2006. http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8658120

2. Survey of US environmental organizations.

It is not possible to determine a climate strategy or organizational plan without accepting one or the other paradigm. Where do our major organizations stand?

All material, reports and web page available to the public[6] by eighteen major environmental organizations[7] were surveyed in July, 2012 to determine: 1. how each presents climate science, with particular focus on sea level rise, and the climate paradigm debate; how each organization's understanding of climate science is reflected in policy and program, and; 3. how important climate change is considered relative to other issues. A spreadsheet of survey results is attached as a separate document and summary chart appears below. Major results are:

Science-based by self-advertisement. Twelve of the surveyed organizations state explicitly in mission statements, organizational summaries or program overviews that their work is based on science.

Sea level rise projections & climate change risk. Just seven out of eighteen organizations reference sea level rise climate science projections: two relay on AR4 (EDF, NRDC), four reference post-AR4 climate science (Environment America, National Wildlife Federation, Union of Concerned Scientists and World Resources Institute), and one (Greenpeace) unaccountably references the Second IPCC Assessment Report (AR2) released in 2001. All organizations mention climate change and three rank it as the greatest global threat ("the definitive challenge of our time" - FOE, "the greatest environmental challenge facing our civilization" - LCV, "the single biggest threat to wildlife" - NWF), but no organization considers geometric climate change as a serious risk and none reference Jim Hansen's work (though Hansen himself is featured by several organizations).

Climate presentation. Only three organizations featured climate change on website home pages (EDF, NRDC, UCS) and two of those do so alongside other issues in slide shows (EDF, NRDC). Five other organizations focus issues or campaigns related to climate – fossil fuels, Rio conference, EPA regulation of carbon and air pollution – but not presented as such. One organization (WRI) was conducting a survey directly on the question of how best to present climate science, discussed further below.

Climate policy. The Sierra Club alone endorses the target of 350 ppm. Environment America, LCV and World Resources Institute support the Copenhagen Accord, limiting temperature increase to <2 C), and the remaining 15 organizations articulate no global target or timeframe for action.

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[6] Websites were reviewed to determine: 1. where and how climate change is presented (placement, language, importance relative to other program) and how it ranks in importance compared to other program, 2. how the climate change problem is defined, 3. how sea level rise risk is presented, and whether "semi-empirical" models (Rahmstorf, etc.) and Hansen estimate are referenced, 4. whether the distinction between linear and geometric paradigms is drawn and/or Hansen referenced, 5. what global target, if any, is endorsed and whether 350 ppm is referenced, 6. whether there is any discussion of climate strategy, coalitions, analysis of US and international defeats, and 2012 elections., and 7. how each organization represents the role of science in its mission, approach, staffing, history and decision-making.

[7] Defenders of Wildlife, Environment America, Environmental Defense Fund (EDF), Friends of the Earth (US), Greenpeace USA, League of Conservation Voters (LCV), National Audubon Society, National Wildlife Federation (NWF), Natural Resources Defense Council (NRDC), Nature Conservancy Oceana, Pew Environment Group, Rainforest Action Network (RAN), Sierra Club, Union of Concerned Scientists (UCS), Wilderness Society, World Resources Institute, World Wildlife Fund (WWF,)

Summary Chart of Statements on Science and Climate Science

Organization	Statements on science & research	Climate science references regarding sea level rise
Defenders of Wildlife	"We strive to always use the best available science to inform and guide our decisions and priorities, but recognize that it may not always be the sole driver of our actions."	none
Environment America	"We research the challenges confronting our environment and educate the public about what's at stake."	"[The] U.S. Climate Change Research Program concluded in 2008 that, based on observed changes in the behavior of the Greenland and Antarctic ice sheets, 'including these processes in models will very likely show that IPCC Fourth Assessment Re- port projected sea level rises for the end of the 21st century are too low.' One recent study projects that sea level rise by the end of the century could be more than double that predicted by the IPCC—or between 2.5 and 6.25 feet." *Global Warming and Extreme Weather The Science, the Forecast, and the Impacts on America*, 2010
Environmental Defense Fund	"Science sets our agenda. EDF was founded by a small group of scientists. Ever since, we've relied on rigorous science to identify serious environmental problems and the most effective remedies."	"During the 20th century, sea level rose an average of 7 inches after 2,000 years of relatively little change. The 2007 IPCC report conservatively predicts that sea levels could rise 10 to 23 inches by 2100 if current warming patterns continue."
Friends of the Earth (US)	"Friends of the Earth as a leader in the environmental and progressive communities, seeks to change the perception of the public, media and policy makers -- and effect policy change -- with hard-hitting, well-reasoned policy analysis..."	none
Greenpeace USA		"The anticipated range of global sea level rise over the next century is now between and 88 cm, compared to 13-94 centimeters in the IPCC's Second Assessment Report." Greenpeace Briefing Paper, 2001
League of Conservation Voters		none
National Audubon Society	A powerful combination of science, education and policy expertise combine in efforts ranging from protection and restoration of local habitats to the implementation of policies that safeguard birds, other wildlife and the resources that sustain us all—in the U.S. and Across the Americas.	none
NRDC	"[NRDC] uses law, science and the support of 1.3 million members and online activists to protect the planet's wildlife and wild places and to ensure a safe and healthy environment for all living things."	"The Intergovernmental Panel on Climate Change predicts that sea levels could rise 10 to 23 inches by 2100, but in recent years sea levels have been rising faster than the upper end of the range predicted."

Organization	Statements on science & research	Climate science references regarding sea level rise
National Wildlife Federation		“Sea-level rise as a consequence of global warming is a foregone conclusion. It only remains to be seen how much and how quickly. The 2007 IPCC report projected global average sea-level rise of 7 to 23 inches by the 2090s. This calculation did not take into account compelling new evidence of recent rapid melting in Greenland and Antarctica, that if continued could lead to sea-level rise of 5 or 6 feet this century.”
Nature Conservancy	“The Conservancy is a world leader in cutting-edge conservation science — and you play a key role in our adventures! Keep up with our 550 staff scientists around the globe and learn how you can support their work to benefit nature and people.”	none
Oceana	“Oceana is fact based. We believe in the importance of science in identifying problems and solutions.”	none
Pew Environment Group	“...we work to advance scientific understanding of the causes and consequences of environmental problems along with their solutions.”	none
Rainforest Action Network		none
Sierra Club		none
The WIlderness Society		none
Union Concerned Scientists	The Union of Concerned Scientists is the leading science-based nonprofit working for a healthy environment and a safer world. UCS combines independent scientific research and citizen action to develop innovative, practical solutions and to secure responsible changes in government policy, corporate practices, and consumer choices.	“...global sea level is projected to increase between 0.18 and 0.59 meters (0.6 to 1.9 feet), depending on the emissions scenario, by the end of the century (IPCC 2007). Subsequent studies (Rahmstorf 2010; Pfeffer et al. 2008) have generally projected ranges with even greater sea-level rise—some of the high values of the ranges are around 2 meters (6.6 feet) by 2100. The high ends of the projections should be treated as plausible, though less likely to occur.”
World Resources Institute	“[WRI was founded to conduct] policy research and analysis on global environmental and resource issues... That research and analysis had to be both scientifically sound and politically practical. It had to command the respect of the scientific community and the attention of the key decision-makers.”	“Regardless of the precise method used, it appears that the IPCC 2007 sea level rise estimates may in fact be too low. While the rise by the year 2100 is almost certain to be below 2 meters, uncertainty is large and the debate on the magnitude of sea level rise is continuing.” Climate Science 2009–2010 Major New Discoveries, WRI Issues Brief, Dec. 2011
World Wildlife Fund	“WWF's unique way of working combines global reach with a foundation in science, involves action at every level from local to global, and ensures the delivery of innovative solutions that meet the needs of both people and nature.”	none

Case Studies. Four organizations illustrate a range of differing approaches to handling climate science.

World Resources Institute. WRI provides the most extensive summary of recent climate science publications[8] and manages to lose the forest for the trees. Despite the introductory observation that *"... the latest science summarized below suggests that the impacts of climate change in many areas of the world are not advancing linearly,"* WRI does not consider the potential cumulative impact of the reports it summarizes on linear sea level projections. The following excerpts describe the implications of a host of studies relating to sea level:

> "... This study provides troubling new estimates that the rate of mass loss may be greater than previously thought, especially in the East Antarctic Ice Sheet, which had until now had been thought to be declining more slowly or even growing." (reference)
>
> "... the most recent data show that we are losing the edges of glaciers at an alarming rate, accelerating sea level rise." (reference)
>
> " ... ocean-terminating glaciers in Greenland have been rapidly disappearing, and this has led the flow of these glaciers to accelerate, leading to a feedback of ice-mass loss that has the potential for warming the global climate and increasing sea levels." (reference)
>
> " Recently observed losses of multi-year sea ice are happening very quickly, with implications including positive climate feedback effects..." (reference)
>
> " ...warmer sea surface temperatures in the North Atlantic, linked to global temperature increases caused by anthropogenic warming, might have a positive feedback and accelerate melting of the Greenland Ice Sheet." (reference)
>
> " .... hydrologic-thermal feedback may be a potential mechanism that explains the relatively rapid response of [Greenland] ice sheet loss due to a warmer climate." (reference)
>
> " [This study] present new evidence of impacts to North Atlantic coastlines, with significant implications for major U. S. metropolitan centers... increasing coastal sea levels from Newfoundland to Cape Hatteras." (reference)
>
> "While [this] reassessment of the contribution of the West Antarctic Ice Sheet collapse to sea level rise is lower than previous estimates, it still represents a catastrophic scenario." (reference)

In the final analysis, however, WRI does not consider the cumulative impact of this information, restricting its consideration of sea level rise to a single publication (Grinstead, et. al. 2010), concluding:

> "Regardless of the precise method used, it appears that the IPCC 2007 sea level rise estimates may in fact be too low. While the rise by the year 2100 is almost certain to be below 2 meters, uncertainty is large and the debate on the magnitude of sea level rise is continuing

[8] http://pdf.wri.org/climate_science_2009-2010.pdf

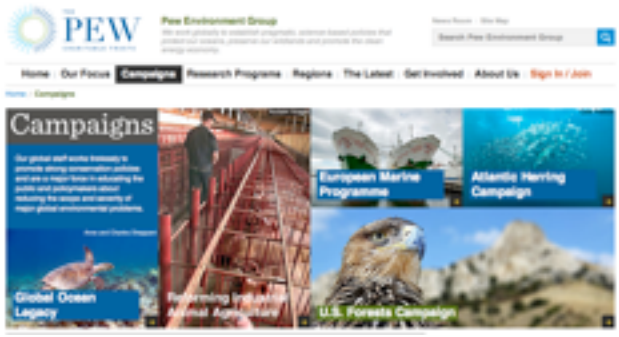
Sierra Club. Climate change is highest priority of the Sierra Club, with substantial resources invested in its Climate Recovery Partnership (Beyond Coal, Oil and Gas campaigns); a pointed challenge to fossil fuels. Sierra Club alone among the organizations surveyed articulates a clear climate strategy (Climate Recovery Partnership Prospectus[9]) and endorses Hansen's global target of 350 ppm.

This strong organizational commitment is muted in presentation, however. The Sierra Club showcases several issues and topical concerns on its website, including targets of its Climate Partnership campaigns (Mountaintop Removal, Arctic Ice, Tar Sands), but without direct mention of climate, and alongside other issues and programs without differentiation, a deft by nonetheless awkward effort to seriously tackle climate without alienated other Club concerns. The bridging effort is further complicated by a decision to undertake serious climate program, but not *as* climate. The Sierra Club's climate campaigns downplay climate risk as the basis for action, leaning instead on a mix of visceral reactions and immediate public health concerns, as the Prospectus makes clear...

> "Beyond Coal will] demonize and take action against coal everywhere it operates. Within two years we want the public to associate coal with death, disease and environmental destruction, and we want public officials to shun any support from the coal industry because of clear public concerns about coal."

As organizational strategy, the Club's approach is eminently sensible – a sophisticated effort to maintain the breadth and strength of the organization while acting responsibly and honestly on climate. The problem, considered further below, is that the two stories are fundamentally incompatible. Either the point of no return is near and we must act urgently or fail, as the Sierra Club correctly accepts or, climate is one of a number of environmental problems of relatively equivalent concern, as the Sierra Clubs public presentation implies, but not both.

Pew Environment Group. Pew Environment Group, despite claims to the contrary,[10] does not work on climate. "Clean Energy" is presented as one of three major program areas, but out of 41 active campaigns, just one is focused directly on climate (and one on clean energy). The two campaigns are managed by 7 staff out of a total 148 issues positions. Pew presents no information about climate impacts and the organization's web site returns the advisory "no longer active in this line of work," in response to search inquires on climate. Questioners are directed to the Center for Climate and Energy Solutions (C2ES), formerly Pew Center on Global Climate Change, recently spun off as an independent organization.[11]



[9] http://www.sierraclub.org/crp/downloads/SierraClub-CRP-Prospectus.pdf

[10] Pew Charitable Trusts put its environmental mission in these terms: "The global environment is at a crossroads. The rapid pace of technology and population growth is placing unrelenting pressure on the world's natural resources. Many of our natural systems have been pushed to the breaking point. The build-up of carbon dioxide and other greenhouse gases from the burning of fossil fuel is changing the planet's natural systems, upon which all life depends."

[11] C2ES, it should be noted, presents an accurate description of sea level rise climate science in Climate Science 101. http://www.c2es.org/docUploads/climate101-science.pdf

Pew's primary focus is oceans, accounting for 27 of 41 campaigns and 88 out of 148 staff[12] and land conservation, viscerally demonstrated by the organizations web site visuals.

To all outward appearances, the entity which most directly shaped US climate policy – driving state utility deregulation as a vehicle for renewable portfolio standards, advancing cap & trade as the preferred climate policy, forming alliances with fossil fuel corporations and founding the U.S. Climate Partnership, co-founding the Energy Foundation and crafting a national funder strategy which shifted the locus of power away from environmental organizations to funder-controlled entities – has washed it's hands of the problem. Pew provides no rational for this extraordinary shift and, indeed, does not acknowledge that any change has occurred.

The former Pew Center on Global Climate Change is now a "strategic partnership" of major corporations (including Shell Oil and Entergy) and foundations (Energy Foundation and Rockefeller Brothers Fund), which may best be understood as the follow-on to the U.S. Climate Action Partnership, without even the pretense of environmentalist participation.

As there has been no change in Pew leadership and its strategic planning is legendary, the dual action of reshaping climate policy under corporate and fossil fuel sector sponsorship and refocusing environmentalism on conservation and oceans, must be presumed deliberate. But toward what end? Is climate best addressed in two steps by base building on oceans and conservation first? Is the problem considered so immense and corporate partnerships so effective that climate programs should be privatized? Whatever the thinking, as a practical matter, Pew has withdrawn from climate.

Union of Concerned Scientists. UCS is one of just four organizations to reference post-IPCC AR4 sea level rise projections (along with WRI, Environment America and National Wildlife Federation), noting in a recent report that...

> "... global sea level is projected to increase between 0.18 and 0.59 meters (0.6 to 1.9 feet), depending on the emissions scenario, by the end of the century (IPCC 2007). Subsequent studies (Rahmstorf 2010; Pfeffer et al. 2008) have generally projected ranges with even greater sea-level rise—some of the high values of the ranges are around 2 meters (6.6 feet) by 2100. The high ends of the projections should be treated as plausible, though less likely to occur."

Unlike WRI, however, UCS reverts to IPCC AR4 in summary statements and policy and makes no reference to Hansen's paradigm or non-linear climate impacts/sea level rise. The organization's problem statement, presented below, is representative of the unspoken "consensus" position of US environmentalists – a vague list of fairly benign risks, without mention of the worst case, accompanied by a relatively upbeat political summary, presented outside of any timeframe and without reference to the magnitude of the task before humankind. By comparison, Jim Hansen and Makiko Sato's summary, which appeared in a professional journal, is specific, urgent and clear.

UCS presents itself as "the leading science-based nonprofit" an "alliance of 400,000 citizens and scientists." At the time of survey, the UCS website featured launch of the Center for Science and Democracy, to "strengthen the American democracy by restoring the essential role of science,

[12] Pew's ocean program does encompass climate change, primarily in the context of impacts on fisheries (http://www.pewenvironment.org/news-room/media-coverage/warming-oceans-signal-fishery-changes-study-says-85899366730).

evidence-based decision making, and constructive debate." In practice, however, the organization relies on vintage climate science and ignores the vital and energetic climate paradigm debate.

UCS	Hansen & Sato
"The Earth is warming and human activity is the primary cause. Climate disruptions put our food and water supply at risk, endanger our health, jeopardize our national security, and threaten other basic human needs. Some impacts—such as record high temperatures, melting glaciers, and severe flooding and droughts—are already becoming increasingly common across the country and around the world. So far, our national leaders are failing to act quickly to reduce heat-trapping emissions. "However, there is much we can do to protect the health and economic well-being of current and future generations from the consequences of the heat-trapping emissions caused when we burn coal, oil, and gas to generate electricity, drive our cars, and fuel our businesses. "Our country is at a crossroads: the United States can act responsibly and seize the opportunity to lead by developing new, innovative solutions, as well as immediately putting to use the many practical solutions we have at our disposal today; or we can choose to do nothing and deal with severe consequences later. At UCS we believe the choice is clear. It is time to push forward toward a brighter, cleaner future. *Union of Concerned Scientists web page*	"We conclude that Earth in the warmest interglacial periods of the past million years was less than 1°C warmer than in the Holocene. Polar warmth in these interglacials and in the Pliocene does not imply that a substantial cushion remains between today's climate and dangerous warming, but rather that Earth is poised to experience strong amplifying polar feedbacks in response to moderate global warming. "Thus goals to limit human-made warming to 2°C are not sufficient — they are prescriptions for disaster. Ice sheet disintegration is nonlinear, spurred by amplifying feedbacks. We suggest that ice sheet mass loss, if warming continues unabated, will be characterized better by a doubling time for mass loss rate than by a linear trend. Satellite gravity data, though too brief to be conclusive, are consistent with a doubling time of 10 years or less, implying the possibility of multi-meter sea level rise this century. Observed accelerating ice sheet mass loss supports our conclusion that Earth's temperature now exceeds the mean Holocene value. "Rapid reduction of fossil fuel emissions is required for humanity to succeed in preserving a planet resembling the one on which civilization developed. *Paleoclimate Implications for Human-Made Climate Change, James E. Hansen and Makiko Sato*

Summary. Most major US environmental organizations are estranged from climate science and do not focus on climate program. Even the handful that do pay attention to climate science, manage to avoid coming to grips with its implications. Most major organizations express no opinion on sea level rise and those that do, stick to out of date science which is not relevant even within the current political debate.

If we consider the gestalt of US environmentalism – the overall sense conveyed by the most visible face we present to the world, our home pages – then we are about whales, whale sharks, shark fins, ospreys, pine trees, polar bears, brown bears, panthers, rivers, surfers and canoes on the water. The things we find threatening are specific, visible and ugly – smokestacks, pipelines and mines. We haven't any

images, nor any language for climate – nothing similar to the variety, wit and poignancy of 350.org images from around the world. On the whole we'd rather work on what is close to our hearts and the hearts of our contributors. Climate change doesn't come off as a gnarly matter we don't quite know what to do with, but more, just... uninteresting.

3. Barriers to accepting climate science.

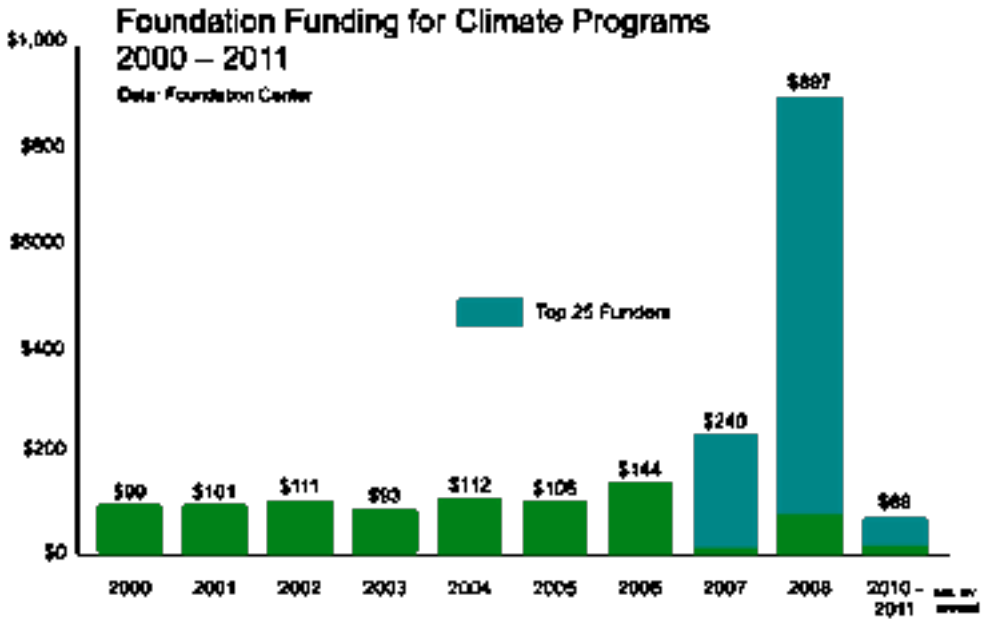
The climate science blackout by US environmental organizations must either be conscious, unconscious or a product of incompetence or incapacity.

Capacity. Climate programs of the surveyed organizations are funded by private foundations, major donors and general revenue from membership and contributions. A survey of private foundations shows a drastic decline in recent funding for climate programs.

The Foundation Center reported in 2010 that between 2002 and 2008 foundations "doubled the number of grants they awarded related to climate change," though cautioning that "a small number of very large funders still account for most of that support."[13] The top 25 climate funders in 2008, which collectively made grants of $812.3 million, accounting for 90% to the total, were surveyed to determine current levels of climate funding (2010 or 2011, depending on data available[14]).

Two closed their doors (Goldman, Lincy), one closed its environmental grants program (Mellon), ten made no climate grants in 2010-12 (California Endowment, Duke, Ford, Johnson, McArthur, Moore, NY Community Trust, Packard, Rockefeller, Skoll), one is currently making no grants (Sea Change), and three direct climate support to the Climate Works Foundation which funds US climate programs through the Energy Foundation (Hewlett, McKnight, Packard).

The remaining eleven foundations[15] gave roughly $55 million to climate programs on average in 2010 and 2011, based on a grants analysis conducted for this report. The top 25 funders contributed 91% of total estimated climate funding 2008 (75%), excluding Packard's huge one time gift. At this ratio, foundation funding for climate was roughly $69 million in 2010-11, lower than at any time in the decade.



[13] Climate Change: The Foundation Response, Foundation Center 2010 https://docs.google.com/viewer?a=v&q=cache:m3CZ-SexkAMJ:foundationcenter.org/gainknowledge/research/pdf/researchadvisory_climate.pdf+top+climate+funders+2008&hl=en&gl=us&pid=bl&srcid=ADGEESi01yfZ8pOTDTai8N5vNBnW9OmN2lU9KBbQAIF1AM4ivW5qM3yi2v2PP1qDeFfNivo2FSy_7P3VCtH8irpqLUSnXXtMUevDPb0xuLI1FUGLhSbqGC8UmBvOAhsKajhnkGdzGWlN&sig=AHIEtbQKt53LluiZ2JXgWfXFUf4SvFiIg

[14] 2009 data used for Joyce Foundation

[15] Unable to determine Tides Foundation grants for climate program, 2008 total used.

In retrospect, the high level of climate program funding in 2007-08 was a funding fad, not a long-term trend, and did not substantially alter climate program funding opportunities for major US environmental organizations. There is no evidence, however, that lack of funding is a significant barrier to adopting climate science findings. The surveyed organizations have a conservatively estimated combined an annual income of $2.5 billion (average 2010-11, based on review of federal 990 filings) and hold $6.8 billion in assets. [Best available estimates show membership of 8 million (2005) for the largest 25 organizations[16] and 10,200 staff for the largest 33 organizations (1995)[17], neither of which has likely seen significant drops.]

Staying abreast of current climate science is steadily more challenging, but is doable by a single staff person or, for that matter, active volunteers. Each surveyed organization certainly has the wherewithal *independently* to stay current on climate science, despite the decline in foundation funding, and nothing prevents the organizations from pooling resources to establish a climate science center for the purpose of monitoring latest findings.

Conscious action. Joe Romm offers a summary and critique of US environmentalists' decision to downplay climate risks.

> "The two greatest myths about global warming communications are 1) constant repetition of doomsday messages has been a major, ongoing strategy and 2) that strategy doesn't work and indeed is actually counterproductive! These myths are so deeply ingrained in the environmental and progressive political community that when we finally had a serious shot at a climate bill, the powers that be decided not to focus on the threat posed by climate change in any serious fashion in their $200 million communications effort...

Romm highlights a recent publication by Robert Bruelle of Drexel University that shows a correlation between public perception of climate threat, elite cues and climate advocacy. Bruelle shows that public concern about climate peaked in 2007, following publication of Al Gore's "An Inconvenient Truth" and the IPCC 4th Assessment Report, and in 2009, when climate was a major issue in the Presidential primaries.

There is further correspondence between the Bruelle "Climate Change Threat Index," and results of open-ended national polling on "major threats," a good indicator of strongly appreciated climate threat. Climate change/environmental issues offered in response to open-ended national polls broke above the 2% margin of error three times in the last decade, in perfect correspondence with the Bruell threat index peaks (shown in the following chart - reference).

If US environmental organizations are pursuing a conscious and coordinated strategy of downplaying climate risks, then they do so in spite of overwhelming evidence that the strategy has failed, but there is no evidence of such a strategy. The climate science lacune is pervasive, but it does not appear to be planned or coordinated and no reasonable strategic argument can be made for passing over information readily available by major mass media (cite).

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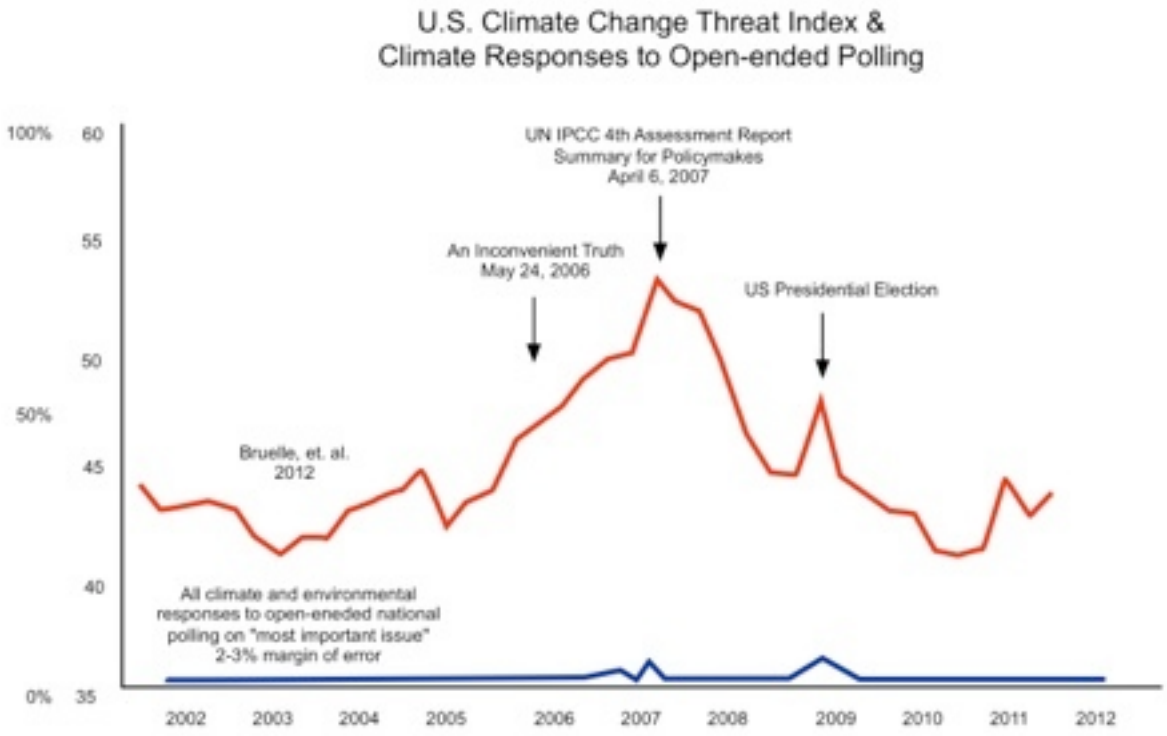
[16] The Broader Movement: Nonprofit Environmental and Conservation organizations 1989-2005, B. Straughan, T. Pollak, National Center for Charitable Statistics, Urban Institute, 2008 http://www.urban.org/UploadedPDF/411797_environmental_conservation_organizations.pdf

17 Agency, Democracy, and Nature: The U.S. Environmental Movement, R. Brulle, http://books.google.com/books?id=uTIMqZANGF4C&pg=PA105&lpg=PA105&dq=total+staff+us+environmental+organizations&source=bl&ots=z4t2LWlFYu&sig=NxZ0nFDh6ifCRaPDldvMD7tEDaE&hl=en&sa=X&ei=B44OUMEDyOzSAfqQgZgD&ved=0CFIQ6AEwAA#v=onepage&q=total%20staff%20us%20environmental%20organizations&f=false



Unconscious buffers. The most plausible explanation for the significant gap in US environmentalists' apprehension of climate change findings, is that climate science is threatening to US environmental organizations, just as it is to society at large, and rather than accept a view of climate change that is incompatible with business-as-usual, it is easer to erect cognitive buffers to that information.

Practical environmentalists have *always* functioned with a high degree of cognitive dissonance, because our values contradict the dominant worldview. Until recently, however, we believed our work was meaningful and might be successful in the long run. The climate change timetable, coupled with political failure in the last four years, effectively eliminates room for such optimism. Environmentalists working on anything *other* than climate are certainly aware that their efforts will be meaningless unless climate cataclysm is averted. People working *on* climate must handle the vast gulf between what we know is necessary, and daily routine where the reality of climate change is up for debate, even the best of our allies consider it of no greater importance than other progressive issues and virtually no one is interested in talking about the worst case.

If accumulating climate science support Hansen's paradigm, then it is necessary to grapple with the practical question of how to achieve the target of 300-350 ppm. Hansen proposes a global solution that requires cessation of burning coal by 2030 and reworking of agriculture and forestry practices, among other tasks. Environmentalists may quibble with some of Hansen's plan, but *any* functional solution of such scale is wholly outside the bounds of our present thinking and impossible to even discuss without substantial institutional change, as we have no fora, no experience and no mechanism for institution-wide debate.

Furthermore, it is against organizational and, arguably, professional interests to broach the question. In their insightful study of why public views of climate change have little to do with scientific literary, Kahan et. al. 2012 show that most people decide what to think about climate, as they do for most everything, based on what is in their own self-interest and in reference to what people around them think, rather than by logical assimilation of facts.

Individual climate action, according to Kahan et. al. is "just not consequential enough to matter. Given how much the ordinary individual depends on peers for support—material and emotional—and how little impact his beliefs have on the physical environment, he [or she] would probably be best off [forming] risk perceptions that minimized any danger of estrangement from the community."

Environmentalists make the same calculation. It is in our interest to believe that climate change can be handled without significant disruption to organizational operations and professional standing, and it is not in our interest, as individuals or organizations, to buck that thinking. Any effort to bring the work of US environmentalists into line with the scale and timeframe of global action required by 350 ppm would be disruptive and any effort to do so, by individuals or organizations acting unilaterally, imposes significant penalties.

It *is* possible, however. If the 18 surveyed organizations committed 10% of assets and 20% of income (in-kind and cash) toward a cooperative effort focused on the 2012 election and 2013 AR5 release, it would create a pool of $1.2 billion. If the 11 foundations making the largest climate grants agreed to focus 30% of funds toward the effort, the additional $.75 billion would create a fund of nearly $2 billion.[18] Regional, state and local environmental organizations, additional foundation support, large donors headed up by the likes of George Soros and Ted Turner, green businesses, and a general (global) public appeal might reasonablly double that total. If those organizations issued a statement endorsing Hansen's paradigm – the commitment of substantial funds and resources underlining it's importance – it would substantially influence public opinion and alter the terms of the election debate.

Cognitive dissonance theory holds that discrepancies between belief (in this case, the belief that environmentalists are effective political actors) and action (our current organizational work), gives rise to negative emotions (anxiety, guilt, anger, shame, embarrassment, etc.), for which a resolution is sought. Caught in a bind between organizational interest and climate imperatives, there are three broad mechanisms to reduce dissonance. Environmentalists may:

> *Give up environmentalism* by withdrawing from civic life or accepting a secondary role under the broader progressive umbrella.
>
> *Change what we are doing* to make it relevant within necessary terms of climate action scale and timeframe, which without any logical avenue for pursuing, is an illogical, symbolic and unsustainable response, or;
>
> *Reduce sources of dissonance* through several devices familiar to cognitive science – including buffering contradictory information, redefinition of terms (of what "science-based" means, for example), strengthened social cohesion and increasing investment in beliefs which shore up a worldview by ruling out conscious consideration of alternatives and undermine legitimacy of critics – which evidence indicates is our principle response. So long as the overwhelming majority of US environmentalists tip toe around Hansen, agree on a short list of climate "givens" (it is counter-productive to speak the truth, there is time, climate can be handled as one of several issues by a number of US organizations working independently of each other, and so on), focus on the short-term, and function within corporate-liberal and Democratic/progressive worlds, it will not be difficult to maintain that worldview.

The survey shows that US environmentalists are primarily choosing the third option. Our worldview is vulnerable because what we are doing day to day is fundamentally out of whack with what we believe about how the world works. Rather than give up environmentalism or adapt our institution to present necessities, we are slapping patches on a cognitive framework which serves organizational purposes, but obscures reality.

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[18] No distinction is made here between 501(c)3 and c(4) resatricted funds, PAC and campaign monies, which would obviously be be required.

4. Conclusion.

The collective failure of US environmental organizations to accept Hansen's climate paradigm and make appropriate institutional and organizational changes given the timeframe may be rational, but as Kahan et. al. point out, while "it is effectively costless for any individual to form a perception of climate-change risk that is wrong but culturally congenial, it is very harmful to collective welfare for individuals in aggregate to form beliefs this way."

This review has focused on major environmental organizations and funders, because as Willie Sutton said, "that's where the money is." The major environmental organizations control the vast percentage of income, staff, real estate and other assets and intangible bases of our power. No emergency effort is possible without those resources and leadership. In fact, were significant funds unexpectedly made available outside the major organizations, it would still be impossible to fundamentally change climate politics if the surveyed organizations took no part. Passive resistance by major environmental organizations to Hansen's paradigm is sufficient to prevent a real debate, for obvious reasons, and there is no time for the sort of laborious internal reform that has consumed the US labor movement for over a decade. if there is to be change, it must be achieved be a collective effort of will by current leadership that, at the very least, splits US environmentalism into two camps over climate paradigms.

Changing course for large organizations is a slow business, but rapid *institutional* change is feasible. Decision-making and funding[19] is relatively centralized. Steps that would be difficult for any individual organization could be undertaken collectively with much less risk. Barriers to climate science may still be holding, as the survey shows, but staff, membership and contributors are not immune to the flow of information via mass media and the web – there is no need, in other words, for major internal education. There *is* a need for leadership.

19 Foundation giving on climate has always been highly centralized in the hands of a small number of foundations, according to the Foundation Center 2010 report, and has even further constricted since 2008 with five most activist foundations distributing 80% of the total (Energy, Joyce, Kresege, Rockefeller Bros., Surdna), leaving climate strategy in the hands of a small group of less than 20 program officers.