

# THE GREENING OF PLANET EARTH CONTINUES...



**"TWO BIG THUMBS DOWN" Sassy and Eggbert**

**"THERE ARE SOME MOVIES THAT DEFY NOT JUST REALITY, BUT BELIEVABILITY. THIS IS ONE OF THEM." JEAN SHALLOT**

**"WESTERN FUELS ASSOCIATION TURNS IN A PREDICTABLE PERFORMANCE..." A CLEAR VIEW**

**VOTED "BEST ASTROTURF PROPAGANDA EFFORT" AT THE 1998 FLAT EARTH SOCIETY FILM FESTIVAL**

WASHINGTON, NOVEMBER 13, 1998 — In what looks to be another big-budget flop, the Greening Earth Society has released a sequel to "The Greening of Planet Earth" called "The Greening of Planet Earth Continues".

Both productions of "Greening..." were funded by the Western Fuels Association, a conglomerate of multi-million dollar, coal-dependent electric utilities. "The Western Fuels Association is recycling a tired plot," said Emily Headen of the Clearinghouse on Environmental Advocacy and Research, a project of the Environmental Working Group. "It's a re-run of the corporate denial we've seen from the tobacco companies' paid scientists."

The commitment to the production of this sequel is impressive especially since the producers have been operating in the red to support their global warming denial habit. "We lost \$583,000 in 1997...[even though] Western Fuels is operating substantially in the black... Our half-million dollar shortfall is due entirely to our advocacy in the area of climate change," crowed their 1998 annual report.

Patrick Michaels, Robert Balling, Sallie Baliunas, and Sylvan Wittwer — all of the Greening Earth Society — performed predictably as the veteran global warming skeptics. The four endorsers followed the global premiere of this new endeavor with a panel discussion uplinked to the National Press Club in Washington.

**RATED P.G. — (for Polluted Globe)**

Contact: Emily Headen, CLEAR Analyst  
Clearinghouse on Environmental Advocacy and Research • CLEAR  
1718 Connecticut Avenue, N.W., Suite 600  
Washington, D.C. 20009  
tel 202/667-6982 • fax 202/232-2592  
info@ewg.org • www.ewg.org



# CLEAR

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CLEARINGHOUSE ON  
ENVIRONMENTAL  
ADVOCACY AND  
RESEARCH

CONTACT: EMILY HEADEN, ANALYST  
1718 CONNECTICUT AVENUE NW  
SUITE 600  
WASHINGTON, DC 20009  
PHONE 202-667-6982  
FAX 202-232-2592

## Affiliations of Selected Global Warming Skeptics

### **Sallie Baliunas**

World Climate Report-- Contributor  
Greening Earth Society-- Scientific Advisor  
George C. Marshall Institute-- Chair, Scientific Advisory Board, Senior Scientist  
Committee for a Constructive Tomorrow-- Advisory Council\*\*  
Global Climate Coalition-- consultant\*\*  
Suspected fossil fuel funding-- Compensation for services rendered to Global Climate Coalition,  
Western Fuels Association affiliated organizations.

### **Robert Balling**

World Climate Report-- Contributor  
Greening Earth Society-- Scientific Advisor  
Arizona State University  
Fossil fuel funding-- Western Fuels Association, Kuwait Foundation for the Advancement of Science  
(Kuwaiti Government), British Coal Corp., German Coal Mining Association.

### **John Christy**

World Climate Report-- Occasional contributor  
Marshall Institute-- Global Warming Round Table Participant.  
Science and Environmental Policy Project-- Frequently used as source in press releases.

### **Robert Davis**

World Climate Report-- Assistant Editor  
University of Virginia  
Suspected fossil fuel funding-- Compensation from Western Fuels Association affiliated organization.

### **Craig Idso**

Center for the Study of Carbon Dioxide & Global Climate-- President  
Arizona State University-- Graduate Research Associate, Climatology  
Brother to Keith, son of Sherwood.  
Author of Western Fuels Association commissioned study..  
Suspected fossil fuel funding-- Western Fuels Association, compensation for Western Fuels Study.

### **Keith Idso**

Center for the Study of Carbon Dioxide & Global Climate-- President  
Brother to Craig, son of Sherwood.  
Fossil fuel funding-- Western Fuels Association, paid expert testimony at MN public utility hearing.

### **Sherwood Idso**

Center for the Study of Carbon Dioxide & Global Climate-- Scientific Advisor  
Committee for a Constructive Tomorrow-- Scientific Advisory Board\*\*  
Institute for Biospheric Research-- President (The institute made first Western Fuels' "The Greening of  
Planet Earth" video, based on S. Idso's work)  
Fossil fuel funding-- Western Fuels Association, British Coal Corporation, Cyprus Minerals.

\* TASSC may no longer exist, reports unconfirmed.

\*\* Unable to confirm current status.

**Richard Lindzen**

Marshall Institute-- Science Advisory Board\*\*

Fossil fuel funding-- Western Fuels Association, various consulting fees at \$2,500 per day.

**Patrick Michaels**

World Climate Report-- Chief Editor

Greening Earth Society-- Scientific Advisor

George C. Marshall Institute-- Global Warming Roundtable participant.

The Advancement of Sound Science Coalition\*-- Scientist Advisor

Consumer Alert-- Advisory Council

Cato Institute--Senior Fellow

Amer. Council on Science and Health-- Board of Scientific & Policy Advisors

Competitive Enterprise Institute-- Published book with CEI.

Fossil fuel funding-- Western Fuels Assoc., German Coal Mining Assoc., Edison Electric, Cyprus Minerals.

**Thomas Gale Moore**

World Climate Report-- Contributor

Marshall Institute-- Member of Independent Commission on Environmental Education.

Cato Institute-- Adjunct Scholar and Editorial Advisory Board

Hoover Institute-- Senior Fellow

Competitive Enterprise Institute-- Board

**Fred Seitz**

Science and Environmental Policy Project-- Board of Directors\*\*

George C. Marshall Institute-- Board of Directors, member of (Independent Commission on Environmental Education).

Accuracy in Media-- National Advisory Board\*\*

**S. Fred Singer**

Science and Environmental Policy Project-- Director

The Advancement of Sound Science Coalition\*-- Scientist Advisor

Cato Institute-- Editorial Advisory Board

American Council on Science & Health-- Board of Science & Policy Advisors

Fossil fuel funding-- Exxon, Shell, Arco, Unocal, Sun Oil.

**Willie Soon**

Marshall Institute-- Visiting Scientist, Summer 1998.

World Climate Report-- Contributor

Suspected fossil fuel funding-- Compensation for services to Western Fuels Assoc. funded project.

**Sylvan Wittwer**

Greening Earth Society-- Scientific Advisor

Center for the Study of Carbon Dioxide & Global Climate-- Scientific Advisor

Spoke at Western Fuels' 1998 annual energy conference.

Suspected fossil fuel funding-- Compensation for services rendered to Western Fuels Association affiliated organization.

**Sources:**

Organizational affiliations are from CLEAR's database, compiled from primary sources and media reports. Additional research assistance provided by Ozone Action.

**Funding information primarily compiled from:**

Ross Gelbspan, *The Heat is On*. Perseus Books: Reading, Massachusetts. 1997, 1998.

Ross Gelbspan, "The Heat is On," *Harpers*. December 1995.

Ozone Action, *Ties That Blind: Industry Influence on Public Policy and our Environment*. March-December, 1996.

Ken Silverstein, "Hello. I'm calling this evening to mislead you." *Mother Jones*, December 2, 1997.

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November 10, 1998  
A CLEAR Special Report

## **Western Fuels Association's Astroturf Empire** Coal industry campaign multiplies efforts to re-spin global warming

- **Western Fuels Association**  
www.westernfuels.org  
phone/ (703) 907-6160, fax/ (703) 907-6161  
Arlington, Virginia  
A non-profit cooperative which provides coal to member electric utilities.
- **Greening Earth Society**  
www.greeningearthsociety.org  
phone/ (703) 907-6168  
Arlington, Virginia  
Western Fuels-created lobbying effort, promotes CO2 as "good for Earth".
- **World Climate Report**  
www.nhes.org  
Greening Earth Society is the primary supporter of the Report. Criticizes predominant global warming science and evidence.
- **www.fossilfuels.org** Host site, leads to Greening Earth Society and World Climate Report information. Sponsored by Greening Earth Society.
- **www.globalwarmingcost.org** "grassroots mobilization project" by public relations firm Bonner and Associates and Western Fuels Association. Focuses on industry projected costs of Kyoto Protocol compliance. Visitors can send instant email opposing treaty.
- **Center for the Study of Carbon Dioxide and Global Change**  
www.co2science.org  
phone/ (602) 491-3637, fax/ (602) 491-3869  
Tempe, Arizona  
Newest climate change skeptic site launched in September, 1998. Enjoys moral (if not financial) support of the Greening Earth Society.

### **Western Fuels Association. (WFA)**

While many of the major direct corporate efforts to wish away global warming have waned, and indeed a growing number of major corporations have acknowledged that global warming is real and deserving of action, The Western Fuels Association, a non-profit cooperative which provides coal to

member electric utilities, seems absurdly opposed to the scientific consensus and even the slightest progress on the Kyoto Treaty. The Advancement of Sound Science Coalition, formerly in the forefront of professional, corporate-backed global warming skeptics, apparently no longer exists. The Global Climate Coalition, once a popular source for the "opposing" minority view to anthropogenic climate change, evidently became too widely known as an industry front group to serve as a credible foil to independent science. Western Fuels has stepped in to close the gap<sup>1</sup>.

As a dollars and cents indication of Western Fuels Association's commitment to the anti-Kyoto cause, the association is actually operating "in the red" to support their anti-global warming habit. The 1998 WFA annual report stated,

We lost \$583,000 in 1997, even though coal deliveries were substantially over 20 million tons. 1997's "red ink" was not due to adverse operational performance either in coal deliveries or by management... On an ongoing basis, Western Fuels is operating substantially "in the black." Our half-million dollar short fall is due entirely to our advocacy in the area of climate change. The Board of Directors continues to provide financial support to programs designed to turn back efforts by the Clinton Administration to dial-out coal-fired generation in the US energy supply mix... (emphasis added).

The report added, "Western Fuels does not stand alone, but we occupy a unique and important position with respect to principled defense against the environmental onslaught that continues to come at American society under the rubric of apocalyptic global warming."

The Western Fuels Association has spun off a number of new projects in the past year to amplify their new message. A web venture, [www.globalwarmingcost.org](http://www.globalwarmingcost.org), was launched a little over a year ago to emphasize industry projected costs of decreased carbon dioxide emissions. It is a "grassroots mobilization" effort created for WFA by Bonner and Associates, a public relations firm that prides itself on faking grassroots campaigns for corporate clients. The Greening Earth Society was unveiled on Earth Day 1998 to spread the good news about excess atmospheric carbon dioxide. The Society's most recent additions, the [fossilfuels.org](http://fossilfuels.org) web site and the Center for the Study of Carbon Dioxide and Global Change, have sprung up in the last several months to serve as additional mouthpieces for the Western Fuels-approved "science."

In addition to front groups it is connected with, WFA is in partnership with the National Mining Association to fight the EPA designation of carbon dioxide as a pollutant. (Western Fuels CEO Fred Palmer also serves as the Chair of the Legal Affairs Committee of the National Mining Association).

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<sup>1</sup> For a rundown of the major pre-Kyoto players, see CLEAR's December 3, 1997 analysis "The Backlash Industry in Kyoto." Other policy organizations and think tanks mentioned in last year's paper, such as the National Center for Public Policy Research and the Competitive Enterprise Institute, are still working hard to oppose ratification of the Kyoto global warming treaty.

## Greening Earth Society. (GES)

In what could be its largest event to date, Greening Earth Society is releasing a new 30-minute video at Basin Electric's annual meeting on November 13 1998. The sequel to Western Fuels' "The Greening of Planet Earth" is creatively titled, "The Greening of the Planet Earth Continues." The video release will be followed by a panel discussion with four veteran global warming skeptic scientists, Patrick Michaels, Robert Balling, Sallie Baliunas and Sylvan Wittwer, all of the Greening Earth Society. The GES will provide a satellite uplink of the event which will be beamed to reporters in the National Press Club in Washington, DC. A spokesman for Basin Electric told the *Bismarck Tribune* that they considered having scientists on the panel who would represent the opposing view, but "decided having the media question their panelists was [sic] sufficient."

Basin Electric is "a dues paying member" of the Greening Earth Society, and a "Class A" member of the Western Fuels Association. Corporate membership to Greening Earth starts at \$1,000, and Basin Electric has declined to disclose the amount of their support to Greening Earth. (*Bismarck Tribune*, September 27, 1998). Basin Electric general manager Bob McPhail also serves as the president of Western Fuels Association.

Greening Earth Society, Western Fuels Association's premiere campaign, was established on April 22, 1998 to "promote the optimistic scientific viewpoint that mankind is a part of nature, rather than apart from nature," and spread the news that "using fossil fuels to enable our economic activity is as natural as breathing." Fred Palmer claims he created the GES because the coal industry was "waging an uphill battle against a well-funded environmental lobby that has coalesced around the scientifically unproven notion the earth may warm to cataclysmic proportions in the next century." (*Coal Age*, September 1998). In addition to spreading the gospel of the benefits of carbon dioxide, promotion of coal-fired electricity is a primary concern. A Greening Earth report released October 14 alarmingly announced "We are running out of electricity. This is a crisis. We must use fossil fuel, especially coal, to meet our needs."

This agenda is hardly surprising when one realizes Greening Earth Society and Western Fuels are essentially the same organization. Both are located at the same office suite in Arlington, VA. They share the same leader, Fred Palmer, several WFA board members serve as the board for GES, and they have the same "manager of communications and governmental affairs," Ned Leonard. Leonard and Palmer are both registered lobbyists for Western Fuels Association. (*1998 Washington Representatives*).

The only element absent from WFA's line-up is GES' triumvirate of current leading global warming skeptics: Patrick J. Michaels, Robert Balling, and Sallie Baliunas. Lesser known critics on the GES scientific panel include Sylvan Wittwer, an emeritus agricultural specialist from the University of Michigan, and David Wojick.

Nor is this the first time this particular group of people have worked together to cloud the public's understanding of global warming science. Back in the early 1990s, Fred Palmer was Vice President of a now defunct corporate front group, **Information Council on the Environment (ICE)**, which was run by Edison Electric, The Southern Company, and Western Fuels Association. (Climate Action Network newsletter). Robert Balling, Patrick Michaels, and Sherwood Idso all served on the ICE Scientific Advisory Panel. According to documents obtained by environmental group Ozone Action and journalist Ross Gelbspan, ICE messaging strategies included targeting "older, less educated males from larger households who are not typically active information seekers" and "younger, lower income women." ICE's stated goal was to "reposition global warming as theory (not fact)." (*Ties that Blind*).

Balling and Michaels are still the prize horses in the Western Fuels stable, while Idso has earned the status of global warming skeptic emeritus. The first "Greening Earth" video produced by Western Fuels was based on Sherwood Idso's work, and was made by Idso's Arizona-based enterprise, Institute for Biospheric Research. The three scientists have received hundreds of thousands of dollars in research money from fossil fuel interests. (*Ties that Blind*).

#### **World Climate Report.** (Formerly World Climate Review)

WFA and member companies fund the World Climate Report through the Greening Earth Society. It is published 24 times per year, and is available on-line or through paid subscription. World Climate Report primarily functions to promote the idea that global warming is not happening, and knocks down whatever new evidence emerges which supports the global warming thesis.

Patrick Michaels is the Chief editor, while Sallie Baliunas and Robert Balling are contributors. World Climate Report also employs the expertise of Robert Davis (colleague of Michaels' at the University of Virginia), Thomas Gale Moore, resident climate change skeptic of the ultra-conservative George C. Marshall and Cato Institutes, Mark Mills from Mills McCarthy and Associates Inc., (which produced two books for WFA in 1997 according to 1997 annual report, including "Coal: Cornerstone of America's Competitive Advantage in World Markets") and Willie Soon, also a visiting scientist at the Marshall Institute. The Marshall Institute's cadre of "experts" overlaps with Western Fuels experts Sallie Baliunas, Patrick Michaels, Willie Soon, and Thomas Gale Moore. Other Marshall institute experts include Fred Seitz, who also on



the board of the Science and Environmental Policy Project, another organization highly critical of the predominant body of global warming science. Baliunas was also the primary scientific spokesperson for the Global Climate Coalition. (See attached chart and list for further interlocking directorates). Baliunas was also the primary scientific spokesperson for the Global Climate Coalition.

**[www.globalwarmingcost.org](http://www.globalwarmingcost.org)**

**[www.fossilfuels.org](http://www.fossilfuels.org)**

Western Fuels Association also sponsors a couple of "web only" projects. The site at [www.globalwarmingcost.org](http://www.globalwarmingcost.org) is produced by P.R. firm Bonner and Associates. Links from the home page are aimed toward different constituencies. With a click of the mouse, "businesses", "seniors", "farmers", "families" or "workers" can read about industry projected costs of the Kyoto Protocol specifically tailored to their financial interests. The site then offers presumably outraged readers the option to send an email to legislators. WFA claims the site generated an estimated 20,000 email form letters opposing the Kyoto Treaty between September of 1997 and July of 1998 (*Gannett News Service*, July 16, 1998) Western Fuels regards the site as "continu[ing] to defend Americans' reliance on fossil fuels." (1998 WFA annual report).

Bonner and Associates is well known for leading a populist-sounding patch-through campaign against the Kyoto Protocol for Western Fuels. (*Mother Jones*, December 2, 1997). Time magazine noted that such "grassroots" techniques earn Bonner and Associates \$350 to \$500 per call generated. (*Time Magazine*, January 23, 1995)

The [fossilfuels.org](http://fossilfuels.org) site simply hosts a link to the Greening Earth Society, provides information on the World Climate Report, and gives some other fossil fuel related links. The site is relatively new and will conceivably be expanded. The site is officially sponsored by the Greening Earth Society, though it is unclear why two separate web sites are necessary.

### **Center for the Study of Carbon Dioxide and Global Change.**

The Center "was created to disseminate factual reports and sound commentary on new developments in the world-wide scientific quest to determine the climactic and biological consequences of the ongoing rise in the air's CO<sub>2</sub> content" (From mission statement. [www.co2science.org](http://www.co2science.org))

The Center is run by Sherwood Idso's sons, Craig (President) and Keith (Vice President). Sherwood sits on the Scientific Advisory Board along with Sylvan Wittwer of the Greening Earth Society. Other scientific advisors are Donald Baker, Edwin Olson, William Reifsnnyder, Paul Reiter, and Kenneth E.F. Watt.

According to the Arizona State University Web Directory, Craig Idso is currently a Graduate Research Associate at the Office of Climatology at ASU, a project run by Robert Balling, who is associated with two Western Fuels projects, the Greening Earth Society and the World Climate Review.

It must be stressed that there is currently no evidence to indicate financial support of the Center by Western Fuels or Greening Earth, but there is plenty of circumstantial evidence that at the very least a working relationship exists.

Both Idso brothers have been on the Western Fuels payroll at one time or another. Keith Idso, then a doctoral candidate at the University of Arizona, was a paid expert witness for Western Fuels Association at a 1995 Minnesota Public Utilities commission hearing in St. Paul, along with MIT's Richard Lindzen, Patrick Michaels, and Robert Balling. (*The Heat is On*). According to news from Basin Electric, a Western Fuels Association member, Craig Idso produced a report, "The Greening of Planet Earth — Its Progression from Hypothesis to Theory," in January 1998 for the Western Fuels Association. (The Center also came into being in January 1998, according to information provided by the Center). Fred Palmer of Western Fuels had nothing but praise for the Idso brothers at the release of the report, "They (Craig and Keith Idso) each are providing valuable service to the army of scientists at work in this important, though often overlooked, field of inquiry." (Basin Electric "Latest News" no date given)

Additionally, Greening Earth Society issued a press release announcing The Center's web site on September 23, 1998. In the release, Fred Palmer, under the auspices of GES said, "The Center's viewpoint is a needed antidote to the misleading and usually erroneous scientific claims emanating from the Federal scientific establishment and adopted by leading politicians, such as Vice President Al Gore." The only contact information for The Center was the web address, and GES's Ned Leonard was listed as the sole phone contact on the press release.

There is no information about sponsorship or funding on The Center's web site.

**Full Citations in order of first appearance:**

Western Fuels Association Inc., *The CO2 Issue*. Annual Report 1998.

Joe Gardyasz, "Right On the Money; More carbon dioxide is good for the earth, plants." *Bismarck Tribune*, September 27, 1998.

*Coal Age*, "Scientist defends CO2." September, 1998.

*Washington Representatives 1998: Who Does What for Whom in the Nation's Capital*. Columbia Books, Inc. Washington, DC.

Climate Action Network, "Patrick Michaels: A Correction." *Eco Newsletter*, Issue Five, Volume XCIII, July 16, 1996.

*Ties That Bind: Industry Influence on Public Policy and our Environment*. Ozone Action, March-December, 1996.

Greg Barrett, "Should you write, e-mail, fax or form-letter your Congress Member?" *Gannett News Service*, July 16, 1998.

Ken Silverstein, "Hello. I'm calling this evening to mislead you." *Mother Jones*, December 2, 1997.

Robin Wright, "Hyperdemocracy: Washington isn't dangerously disconnected from the people; the trouble may be it's too plugged in." *Time Magazine*, January 23, 1995.

Basin Electric, "Greening of the Planet Earth: Researcher says theory's time has come." Latest News (no date [www.basinelectric.com/news/greening.htm](http://www.basinelectric.com/news/greening.htm))

Ross Gelbspan, *The Heat is On*. Perseus Books: Reading, Massachusetts. 1997, 1998.

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CONTACT: EMILY HEADEN, ANALYST  
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Western Fuels-created lobbying effort, promotes CO2 as "good for Earth".
- **World Climate Report**  
[www.nhes.org](http://www.nhes.org)  
Greening Earth Society is the primary supporter of the Report. Criticizes predominant global warming science and evidence.
- **[www.fossilfuels.org](http://www.fossilfuels.org)** Host site, leads to Greening Earth Society and World Climate Report information. Sponsored by Greening Earth Society.
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#### **World Climate Report.** (Formerly World Climate Review)

WFA and member companies fund the World Climate Report through the Greening Earth Society. It is published 24 times per year, and is available online or through paid subscription. World Climate Report primarily functions to promote the idea that global warming is not happening, and knocks down whatever new evidence emerges which supports the global warming thesis.

Patrick Michaels is the Chief editor, while Sallie Baliunas and Robert Balling are contributors. World Climate Report also employs the expertise of Robert Davis (colleague of Michaels' at the University of Virginia), Thomas Gale Moore, resident climate change skeptic of the ultra-conservative George C. Marshall and Cato Institutes, Mark Mills from Mills McCarthy and Associates Inc., (which produced two books for WFA in 1997 according to 1997 annual report, including "Coal: Cornerstone of America's Competitive Advantage in World Markets") and Willie Soon, also a visiting scientist at the Marshall Institute. The Marshall Institute's cadre of "experts" overlaps with Western Fuels experts Sallie Baliunas, Patrick Michaels, Willie Soon, and Thomas Gale Moore. Other Marshall institute experts include Fred Seitz, who also on

the board of the Science and Environmental Policy Project, another organization highly critical of the predominant body of global warming science. Baliunas was also the primary scientific spokesperson for the Global Climate Coalition. (See attached chart and list for further interlocking directorates). Baliunas was also the primary scientific spokesperson for the Global Climate Coalition.

**[www.globalwarmingcost.org](http://www.globalwarmingcost.org)**  
**[www.fossilfuels.org](http://www.fossilfuels.org)**

Western Fuels Association also sponsors a couple of "web only" projects. The site at [www.globalwarmingcost.org](http://www.globalwarmingcost.org) is produced by P.R. firm Bonner and Associates. Links from the home page are aimed toward different constituencies. With a click of the mouse, "businesses", "seniors", "farmers", "families" or "workers" can read about industry projected costs of the Kyoto Protocol specifically tailored to their financial interests. The site then offers presumably outraged readers the option to send an email to legislators. WFA claims the site generated an estimated 20,000 email form letters opposing the Kyoto Treaty between September of 1997 and July of 1998 (*Gannett News Service*, July 16, 1998) Western Fuels regards the site as "continu[ing] to defend Americans' reliance on fossil fuels." (1998 WFA annual report).

Bonner and Associates is well known for leading a populist-sounding patch-through campaign against the Kyoto Protocol for Western Fuels. (*Mother Jones*, December 2, 1997). Time magazine noted that such "grassroots" techniques earn Bonner and Associates \$350 to \$500 per call generated. (*Time Magazine*, January 23, 1995)

The [fossilfuels.org](http://fossilfuels.org) site simply hosts a link to the Greening Earth Society, provides information on the World Climate Report, and gives some other fossil fuel related links. The site is relatively new and will conceivably be expanded. The site is officially sponsored by the Greening Earth Society, though it is unclear why two separate web sites are necessary.

### **Center for the Study of Carbon Dioxide and Global Change.**

The Center "was created to disseminate factual reports and sound commentary on new developments in the world-wide scientific quest to determine the climactic and biological consequences of the ongoing rise in the air's CO<sub>2</sub> content" (From mission statement. [www.co2science.org](http://www.co2science.org))

The Center is run by Sherwood Idso's sons, Craig (President) and Keith (Vice President). Sherwood sits on the Scientific Advisory Board along with Sylvan Wittwer of the Greening Earth Society. Other scientific advisors are Donald Baker, Edwin Olson, William Reifsnyder, Paul Reiter, and Kenneth E.F. Watt.



According to the Arizona State University Web Directory, Craig Idso is currently a Graduate Research Associate at the Office of Climatology at ASU, a project run by Robert Balling, who is associated with two Western Fuels projects, the Greening Earth Society and the World Climate Review.

It must be stressed that there is currently no evidence to indicate financial support of the Center by Western Fuels or Greening Earth, but there is plenty of circumstantial evidence that at the very least a working relationship exists.

Both Idso brothers have been on the Western Fuels payroll at one time or another. Keith Idso, then a doctoral candidate at the University of Arizona, was a paid expert witness for Western Fuels Association at a 1995 Minnesota Public Utilities commission hearing in St. Paul, along with MIT's Richard Lindzen, Patrick Michaels, and Robert Balling. (*The Heat is On*). According to news from Basin Electric, a Western Fuels Association member, Craig Idso produced a report, "The Greening of Planet Earth — Its Progression from Hypothesis to Theory," in January 1998 for the Western Fuels Association. (The Center also came into being in January 1998, according to information provided by the Center). Fred Palmer of Western Fuels had nothing but praise for the Idso brothers at the release of the report, "They (Craig and Keith Idso) each are providing valuable service to the army of scientists at work in this important, though often overlooked, field of inquiry." (Basin Electric "Latest News" no date given)

Additionally, Greening Earth Society issued a press release announcing The Center's web site on September 23, 1998. In the release, Fred Palmer, under the auspices of GES said, "The Center's viewpoint is a needed antidote to the misleading and usually erroneous scientific claims emanating from the Federal scientific establishment and adopted by leading politicians, such as Vice President Al Gore." The only contact information for The Center was the web address, and GES's Ned Leonard was listed as the sole phone contact on the press release.

There is no information about sponsorship or funding on The Center's web site.

**Full Citations in order of first appearance:**

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CONTACT: Ned Leonard  
(703) 907-6159 or  
info@greeningearthsociety.org



GREENING  
EARTH  
SOCIETY

## GES SCIENCE ADVISOR BALLING ANALYZES U.S. TEMPERATURE TRENDS: NONE ARE SIGNIFICANT

(Arlington, VA — November 4, 1998) In a special report released today, Greening Earth Society science advisor Robert C. Balling, Jr., analyzes trends in United States "degree days" between 1950 and 1995 to see if they contain evidence of "global warming." Balling, who is Director of the Arizona State University Office of Climatology, explains that trends in "heating degree days" in northern latitudes and "cooling degree days" in southern ones should serve as a surrogate in detecting changes in climate because they represent the energy required to control climate in buildings throughout the year. Balling's study reveals **no statistically significant trends** over the period of study (1950-1995).

According to Balling, heating degree days in the United States have decreased by 0.2%, cooling degree days have decreased by 5.7%, and the total degree days have decreased by 1.0% over the 1950 to 1995 period. He notes that although such a trend is far from being statistically significant, the largest change is in the decrease in cooling degree days which should be increasing *if climate is warming*, as predicted by computer-based General Circulation Models of climate.

"Despite all the publicity about increasing mean temperatures, increasing extreme high temperatures, and an increase in the frequency, duration, and magnitude of summer heat waves," Balling writes, "cooling degree days in the United States have declined slightly – indicating a small reduction in the energy needed to cool buildings."

Balling's methodology involves use of Daily Historical Climatology Network temperature data, a database prepared by the National Oceanic and Atmospheric Administration that contains daily maximum and minimum temperature values for over 1000 stations in the conterminous United

(more)

*Humanity and Nature Growing Together*

4301 Wilson Boulevard, Suite 805 Arlington, Virginia 22203-4193 Ph: 703-907-6168 Fax: 703-907-6161  
www.greeningearthsociety.org info@greeningearthsociety.org e-mail

Center for the Study of  
Carbon Dioxide and Global Change

## Editorial Commentary

Volume 2, Number 22  
15 November 1999

Views expressed in the Editorial Commentary are those of the editorial contributor and are not necessarily those of the *Center for the Study of Carbon Dioxide and Global Change*.

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### "Noticed the Weather Lately?"

This innocuous question introduces a one-page "HOTEARTH" advertisement in the 25 October 1999 *New Republic*. What is it selling? The idea that "IT'S TIME TO START FIXING GLOBAL WARMING."

The ad states that "nearly every scientist who is an expert on climate says that global warming is real and having an effect." Of course it is. It wasn't much more than a century ago that the planet was shivering through what has come to be known as the "Little Ice Age," and the ongoing recovery from that less-than-desirable climatic excursion is indeed "real and having an effect." In fact, it is returning the globe to a condition akin to what it was like during the preceding warm period that has come to be known as the "Little Climatic *Optimum*," so named because everyone who has studied the two climatic regimes has come to the conclusion that the warm interlude was much to be preferred over the protracted cold spell that followed it.

This *fact*, however, is not the "real effect" that the ad is attempting to sell. Quite to the contrary, the ad (which was paid for by the National Environmental Trust) claims that the warming of the last century is "making our weather more extreme." In what ways? Well, the ad's creators throw out words like *heat waves, droughts, hurricanes and floods*, which they say are costing us "three times more than a decade ago."

The rhetoric sounds impressive; but is it true? Is the global warming that has gradually ameliorated the environmental stresses and strains of the Little Ice Age really making our weather more extreme in these several unfriendly ways? Let's do what any rational person would do if he or she knew how to do it, but what the copywriters of the National Environmental Trust apparently did not do. Let's check out the peer-reviewed scientific literature and see what the *real* "experts on climate" have to say.

Let us consider, first of all, the general two-part claim that the weather is getting more extreme and that it is getting that way as a consequence of global warming. Kunkel *et al.* (1999) recently analyzed historical trends of several different types of extreme weather events, together with their societal impacts. They found that most measures of the economic impacts of weather and climate extremes over the past several decades do indeed reveal increasing losses, which is what the HOTEARTH ad proclaims. However, they also found that "trends in most related weather and climate extremes do not show comparable increases with time," which flies in the face of what the ad suggests.

How is this dichotomy explained? In the words of the scientists who conducted the study, the increasing economic losses "are primarily due to increasing vulnerability arising from a variety of societal changes, including a growing population in higher risk coastal areas and large cities, more property subject to damage, and lifestyle and demographic changes subjecting lives and property to greater exposure."

Much the same conclusion has been reached by van der Vink *et al.* (1998), who conclude that "we are becoming more vulnerable to natural disasters because of the trends of our society rather than those of nature." Specifically, they note that (1) more people are moving into coastal areas that are vulnerable to natural hazards, (2) the effect of this population shift is amplified because the people

who are moving into these areas come from the wealthier segment of society, and (3) the wealth of these wealthy people has been rising at a dramatic rate. Today, for example, millionaires are a dime a dozen; and one almost has to be a multi-billionaire to attract attention.

With respect to some of the specific weather phenomena they studied, Kunkel *et al.* note that "increasing property losses due to thunderstorm-related phenomena (winds, hail, tornadoes) are explained entirely by changes in societal factors." They also report there is "no apparent trend in climatic drought frequency" and "no evidence of changes in the frequency of intense heat or cold waves." With respect to hurricanes, in fact, they find that when changes in population, inflation, and wealth are considered, there is an actual *downward* trend in damages.

In another study of planetary storminess, Key and Chan (1999) also found no evidence of any global trend. They did, however, find there were fewer low-pressure cyclones during warmer El Niño years than during cooler La Niña years, refuting the oft-made claim that warmer weather leads to more storms. Should we thus wish for more warmer El Niño years? Perhaps we should, for in a study of the plusses and minuses of weather events attributable to the El Niño episode of 1997-98, relative to human lives and the economy of the United States, Changnon (1999) counted 4.5 billion dollars and 189 lives lost, but 19.5 billion dollars and 850 lives saved! And in a comprehensive study of United States hurricane damage, Pielke and Landsea (1999) examined all 22 El Niño years and all 22 La Niña years that occurred between 1925 and 1997, finding twice the dollar amount of damages in cooler La Niña years compared to warmer El Niño years. In addition, they found average hurricane wind speeds in warmer El Niño years to be significantly *lower* than in cooler La Niña years.

In another extensive survey of hurricanes of the North Atlantic, Gulf of Mexico and Caribbean, Landsea *et al.* (1999) found decreasing trends over the period 1944-1996 for (1) the total number of hurricanes, (2) the number of intense hurricanes, (3) the annual number of hurricane days, (4) the maximum attained wind speed of all hurricane storms averaged over the course of a year, and (5) the highest wind speed associated with the strongest hurricane recorded in each year.

In view of these several real-world scientific observations, we are prompted to ask ourselves a couple of simple questions. Has it warmed over the past fifty to one hundred years? Yes. Have extreme weather events gotten worse? No. Does global warming do what the National Environmental Trust ad says it does? Not on our planet. And not even in many of the climate models that have created all the fuss about the subject.

Consider, for example, the findings of Walsh and Pittock (1998), who studied the ability of climate models to predict effects of global warming on tropical cyclones. They found that (1) "there is little relationship between SST (sea surface temperature) and tropical cyclone numbers in several regions of the globe," (2) "there is little evidence that changes in SST, by themselves, could cause change in tropical cyclone numbers," (3) "regional changes in tropical cyclone numbers caused by possible changes in the characteristics of ENSO (El Niño-Southern Oscillation) in a warmer world are likewise unknown," (4) "evaporative feedbacks may lower SSTs in the central region of a tropical storm, thus tending to minimize any increase in intensity," (5) "the models suggest that the tropical atmosphere will become more stable," (6) "this may tend to limit intensities," (7) "under enhanced greenhouse conditions, the number of (model-predicted) storms is substantially reduced," and (8) "because of the insufficient resolution of climate models and their generally crude representation of sub-grid scale and convective processes, little confidence can be placed in any definite predictions of such effects."

Ah, but what about floods and droughts? Lins and Slack (1999) point out that floods and droughts cause more damage annually in the United States than any other natural disaster *and* that damages due to both of these phenomena have been increasing with time. As you could probably guess by now, however, the story behind these headlines is pretty much the same as that behind the hurricane

hype. In the words of the two investigators, "most of the flood damage increase stems from continuing urban and suburban development on floodplains" and "drought vulnerability increase is from development in regions of lower renewable water supplies."

Lins and Slack's findings relative to trends in the actual physical phenomena of floods and droughts are even more eye-opening. Their analysis of more than 1500 streamflow gauges in the United States reveals that "the conterminous U.S. is getting wetter, but less extreme." It is difficult to conceive of a better consequence of increasing temperatures. As the climate has warmed over the past century, the United States has gotten wetter in the mean (which is great for thirsty crops, livestock and people) and less variable at the extremes (which is also great for thirsty crops, livestock and people). Indeed, in a study of the frequency and severity of drought in the central United States over the last two thousand years, Woodhouse and Overpeck (1998) found that the most recent century - wherein a certain degree of global warming has undeniably occurred - has been characterized by droughts of "moderate severity and comparatively short duration, relative to the full range of past drought variability."

Clearly, both the claims and the implications of the HOTEARTH advertisement of the National Environmental Trust are fallacious. Pielke (1999), for example, lists as one of nine prominent *fallacies of floods* the claim that "damaging flooding in recent years is unprecedented because of 'global warming'." And the study of Gan (1998) in Canada confirms that "the evidence is insufficient to conclude that warmer climate will lead to more severe droughts."

So, the next time someone like the National Environmental Trust asks you if you've noticed the weather lately, tell them you have, and that it's getting better, not worse. And tell them that they have global warming to thank for it.

Dr. Craig D. Idso  
President

Dr. Keith E. Idso  
Vice President

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CONTACT: Ned Leonard  
(703) 907-6159 or  
info@greeningearthsociety.org



**REPORT 'BLOWS AWAY'  
CLAIM CLIMATE CHANGE TRIGGERS  
MORE, STRONGER HURRICANES**

**(Arlington, VA — August 23, 1999)** Greening Earth Society today releases a special report by University of Missouri-Columbia's Dr. Anthony R. Lupo concerning predictions of "more and stronger hurricanes as part of our globally-warmed future." Lupo, who with the Department of Soil and Atmospheric Sciences, cites nine peer-reviewed studies and an online data base in support of his contention that such long-range predictions are difficult, at best, and fly in the face of a half-century trend toward fewer and less intense hurricanes making landfall in the US.

In his report (attached), Dr. Lupo cites research evaluating the linkages between global and local environments as predictors of hurricane activity. Such research points toward better understanding and evaluation of the role of El Niño and La Niña events in suppressing or increasing the potential for hurricanes. He also cites research of longer-term cycles and their role in hurricane frequency. Lupo's report also incorporates research attributing increased damage and property losses from hurricanes to more people living along vulnerable coastline and owning more expensive property rather than increased hurricane frequency or intensity.

"Despite these facts," he writes, "one cannot help but notice that media coverage of weather events and weather-related disasters has increased dramatically." He attributes the trend to the proliferation of 'round-the-clock news sources and coverage of major storms threatening population centers. Such news coverage is a mixed blessing, he says, because when it is combined with

(more)

*Humanity and Nature Growing Together*



# **Does global warming threaten US coastal regions with stronger hurricanes? The facts will blow you away!**

by

**Dr. Anthony R. Lupo**

Department of Soil and Atmospheric Sciences  
**University of Missouri-Columbia**

Each year, Dr. William Gray and the hurricane forecast team in the Atmospheric Science Department at Colorado State University and the Tropical Prediction Center issue predictions regarding the expected hurricane frequency within the Atlantic Ocean basin for the upcoming hurricane season. These predictions are based on many different global or local climatic variables and parameters. The forecasts usually are issued near the beginning of the season (early June) and are revised early in August. This year (1999), the Atlantic Hurricane season is expected to be busy because there is a strong connection between the absence of an El Niño event and increased Atlantic hurricane activity.

In an attempt to remain on the cutting edge of climate science, Vice President Al Gore has made even longer-range predictions regarding global hurricane activity. In many speeches on the subject of the environment, the Vice President predicts more and stronger hurricanes as part of our globally-warmed future. This was especially true in the wake of Hurricane Mitch. That record-breaking storm devastated Central America in October 1998 and the Vice President linked it to global warming in his speeches. His predictions were featured in *Newsweek* and resulted in his front-cover appearance.

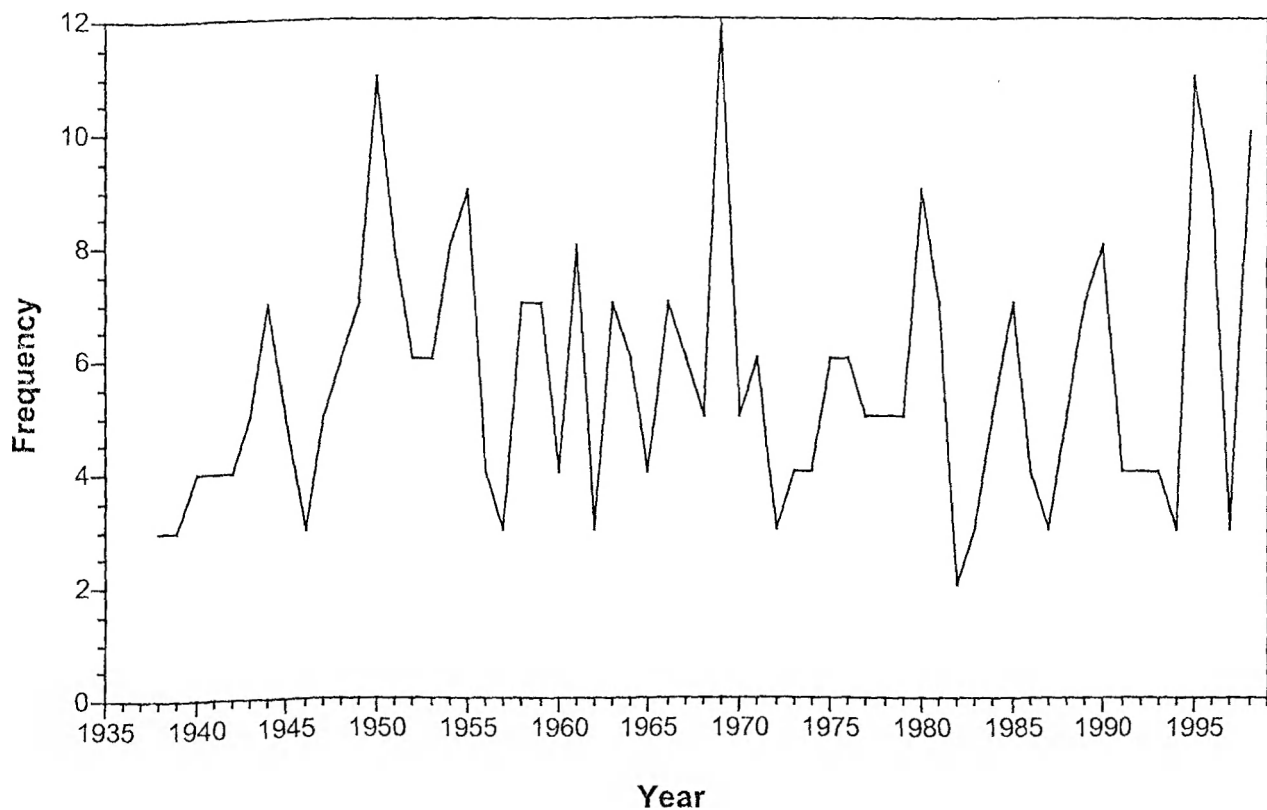
Intense media coverage of that devastating hurricane brought home horrifying images of disaster. On many occasions, the package came complete with apocalyptic pronouncements from the Vice President and others about the likelihood of more "Mitches."

It is likely that this greater news coverage combined with substantial improvements in forecasting technique and skill by the National Weather Service (including The National Hurricane Center) has increased public awareness of the dangers that hurricanes pose and the lead time available for evacuation of population centers. The result is a substantial decrease in loss of life from recent storms. Unfortunately, the increase in media coverage has also brought with it the spread of misinformation regarding the possibility of future hurricane disasters – as evidenced by coverage of the Vice President’s linkage of global warming to more and stronger hurricanes along the US coast in the future.

While *bona fide* hurricane forecasts by scientific groups such as Colorado State University’s Department of Atmospheric Science and the Tropical Prediction Center have a measurable record of success, it is difficult to project with any certainty far into the future as to whether or not there will be more or stronger hurricanes. This is especially true for hurricanes striking the US coastline. Only by studying past trends of hurricane activity and their linkages to global and local environments are we provided with vague clues about future hurricane activity.

A number of studies – e.g. Landsea (1993), O’Brien *et al.* (1996), Bove *et al.* (1998), and Landsea *et al.* (1999) – have examined the issue of past Atlantic Ocean Basin hurricane activity, especially those that strike the coast. Landsea *et al.* (1999) found that there to have been a decrease in the number of US landfalling hurricanes between 1944 and 1996, with no significant trend in hurricane intensity. Landsea (1993) found that there has been a tendency toward fewer intense hurricanes over a similar time period (1944 – 1991). This was reflected by a tendency toward fewer landfalling, intense hurricanes during the 1970’s and 1980’s when compared to the 1940s and 1950s.

It is now well known that there is a connection between the El Niño/La Niña oscillation and hurricane activity in the Atlantic Ocean Basin. For example, there is a tendency toward fewer hurricanes during El Niño years and more hurricanes during La Niña years. O’Brien *et al.* (1996) and Bove *et al.* (1998) studied this variation with respect to landfalling US hurricanes. They



*Fig. 1: (Taken from Johnston and Lupo, 1999) The 61-year Atlantic Ocean Basin hurricane frequency distribution and trend. Data cover the period from 1938–98.*

All of these studies demonstrate the complex relationship between long-term variations in hurricane frequency and intensity, and the global environment. Only by understanding these and many other factors can we properly assess the future risk faced by US coastal areas. Only by being prepared for the possibility of a landfalling hurricane every summer and fall will the loss of life and property be minimized.

In assessing the Vice President and his followers' hurricane forecasts, it is best to read the words of the scientists who study hurricanes at Colorado State University and the Tropical Prediction Center (<http://typhoon.atmos.colostate.edu/forecasts>):

Some individuals will interpret ... hurricane activity since 1995 as being related in some way to increased man-made greenhouse gases. ... There is no reasonable way such an interpretation can be made. Anthropogenic greenhouse gas warming, even if a physically valid hypothesis, is a very slow and gradual process. ... And even if man induced greenhouse increases were to be interpreted as causing global



## FINNISH SUMMER SAW NO WARMING OR COOLING OVER 595 YEARS

(Arlington, VA — October 5, 1999) In their ninth report pursuant to a Greening Earth Society research grant to Arizona State University, the ASU Climate Data Task Force reports no evidence of long-term summer warming or cooling over 595 years of records extrapolated from tree-ring data in Finland. Although there clearly has been significant variability in summer temperatures during the period reconstructed from the tree-ring data, the researchers say, the record shows no long-term cooling or warming trend.

A plot of temperatures (Figure 1 in the attached report) indicates they were near or above the modern mean from 1398 to 1500. They were below the modern mean temperature during the period of the Little Ice Age between 1500 and 1850. In the fifty-two years between 1398 and 1450, temperatures at the tree-ring site near Kharnupe, in Finland, were 0.23°C warmer than they were in the nearly fifty years between 1950 and 1993. In contrast, according to the ASU researchers, in the fifty years between 1600 and 1650, temperatures were 0.92°C cooler than in the 1950-1993 period. Such “summer cooling” corresponds with the coolest 50 years of the Little Ice Age at the site.

The ASU researchers note in their introductory paragraph that a 0.5°C warming that occurred at the tail-end of the Little Ice Age and reflected in a nearly 250-year reconstruction of European temperature spanning 1751-1995 (Balling *et al.*, 1998) may reflect urban development, a return to near-normal temperatures, or some response to the increased concentration of greenhouse gases. That study identified the most substantial warming between 1890 and 1950, with no significant warming during the most recent 45 years. “Clearly, forces other than

(more)

due to the buildup of greenhouse gases. And studies of European temperature records and, now, Finnish tree-rings have failed to locate such warming.

In a previous report (“Baltic Sea Balks On Warming”), the ASU Climate Data Task Force found no evidence in 500 years of Baltic Sea sea-ice data that the high latitude, winter warming predicted by computer-based general circulation models of global climate change is occurring. In still earlier work, the researchers detected no warming in 37 years of temperature data gathered at Soviet manned, drifting Arctic ice stations and noted a slight, though statistically insignificant, *cooling* of annual mean temperature (“View of Arctic Temperatures from Drifting Ice”). Although detecting more than 2°C warming in 116 years of data from Siberia’s Lake Baikal, the task force notes that summer maximum temperatures contributed least to the warming while minimum winter temperatures warmed most – contrary to apocalyptic climate change scenarios (“Lake Baikal Temperature Record May Show a Warmer Winter World”).

In “A Climate Gift from Rothamsted” the task force examined one of the longest-running, continuous temperature records in the world. The 121-year record at England’s Rothamsted Experimental Station reveals benign, winter warming with 92.5% of the warming taking place before 1950. Although detecting warming in 37 years of record at Kitt Peak Observatory near Tucson, Arizona, the ASU researchers note *slight cooling* using a century-long regional record from the National Oceanic and Atmospheric Administration (“Kitt Peak Warming: The Rest of the Story”). Meanwhile, 81 years of hand-written temperature data at Mt. Wilson Observatory near Los Angeles, California reveals *significant cooling* (“20<sup>th</sup> Century Cooling at Mt. Wilson, California”).

In an earlier study (“Listening to the Pines”) the task force evaluated temperature data extrapolated from tree-ring chronologies of Bristlecone pines growing in the San Francisco Peaks area of northern Arizona. They found a warming of 0.10°C per decade that, over the entire 1,437-year record, they characterize as “an inconsequential twist in the long road of temperature changes in the region.” In still another report, they found no change in the 60-year annualized mean, maximum or minimum temperatures recorded at Mount Washington in New Hampshire (“20<sup>th</sup> Century Temperatures Atop Mt. Washington”). All the ASU Climate Data Task Force reports are available on the Internet at <http://www.greeningearthsociety.org/human.htm#Climate>.

## Summer Temperatures in Finland, 1398-1993

Over the past decade, many researchers have investigated historic sea surface and terrestrial temperature records from throughout the world to identify warming signals potentially related to the buildup of greenhouse gases. For example, Balling *et al.* (1998) recently examined temperature records for Europe spanning 1751–1995, and identified warming on the order of 0.5°C for the period of study. It is important to note, however, that the period from 1751–1850 represents the latter half of the Little Ice Age in Europe, a period of unusually cool temperatures that resulted in alpine glacial advances in northern regions (Williams *et al.*, 1993). Warming that occurred at the tail-end of the Little Ice Age may reflect urban development, a return to near normal temperatures, or some response to the increased concentrations of greenhouse gases.

Interestingly, the most substantial warming identified by Balling *et al.* (1998) occurred between 1890 and 1950, with no significant warming identified over the most recent 45 years. These scientists noted that warming during the late 1800s to mid-1900s was likely due to, in some part, increased urbanization of Europe. However, this cannot explain the apparent reduction in warming from 1950 to 1995. Clearly, forces other than urbanization are driving long-term temperature cycles in Europe.

In order to obtain a better understanding of the natural climate variability that underlies the historical temperature trends of Europe, researchers at Arizona State University decided to reconstruct temperature beyond the period of urbanization and the Little Ice Age. This study reconstructs temperature for Finland, extending beyond the Little Ice Age, by calibrating historic temperature records to the annual growth rings of a species of white pine (*Pinus sylvestris*). This species was selected because it has been found to be sensitive to temperature change (Briffa *et al.*, 1988), and therefore can provide a good proxy for temperature beyond the historic records. For this study, the tree-ring chronology was examined for climate sensitivity using the program ARSTAN, which was developed by the Laboratory for Tree-Ring Research at the University of Arizona. The results indicated the chronology is moderately sensitive to climate change, and therefore would provide a good proxy for temperature.

The tree-ring data were obtained from the International Tree-Ring Data Bank (ITRDB), a publicly-accessible component of the National Geophysical Data Center in Boulder, Colorado. The white pine chronology used in the study was collected near Khamupe, Finland, and spans the years 1398 to 1993. The site chronology was established by Schweingruber (1993). The Khamupe white pine tree-ring site is located at 68.5° N and 28.0° E. The tree-ring data were prepared for temperature reconstruction by using statistical techniques that remove the non-climatic variance associated with the growth of individual trees and generate a site chronology.

trend. The plot indicates temperatures were near or above the modern mean from 1398 to 1500, followed by temperatures below the modern mean during the period that corresponds with the Little Ice Age (1500 to 1850). From 1398 to 1450, temperatures were 0.23°C warmer than they were between 1950-1993. In contrast, between 1600 and 1650, temperatures were 0.92°C cooler than 1950–1993, corresponding with the coolest 50 years of the Little Ice Age for this site.

A 25-year moving average applied to the temperature estimate more clearly illustrates low frequency temperature cycles at the Kharnupe site (*Figure 1*). Clearly, at different times in the past, low frequency cycles of warming have approximated modern summer temperatures in Finland. These low-frequency cycles of warmer temperatures were punctuated by lower temperatures, predominantly associated with the Little Ice Age. The most significant summer temperature cycles identified by our study were 0.4°C *cooling* from 1398 to 1500, a 0.39°C *warming* from 1850 to 1950, and a 0.39°C *cooling* from 1973 to 1993.

The findings identified by this study closely approximate those of Balling *et al.* (1998). However, our 595-year reconstruction provides a record that extends beyond 1751, facilitating an examination of natural low-frequency temperature cycles that occurred prior to the anomalous cool conditions of the Little Ice Age. Our study indicates that the warming observed earlier in this century may have been influenced by a natural climate cycle similar to the warm cycle that occurred between 1398 to 1500. A natural climate cycle underlying the effects of urban development may explain the 0.39°C cooling observed from 1973 to 1993.

Our study demonstrates that warming observed during this century cannot be so readily explained away as a product of urban development. Although urban development clearly affects temperature, it is important to recognize that natural global and/or regional cycles underlie the smaller scale effects of anthropogenic activities.

Nonetheless, most climate models suggest that high latitude land areas, like Finland, should be warming due to the ongoing buildup of greenhouse gases. Studies of historical temperature records from Europe have failed to locate this warming, and now we find the trees of Finland telling us the same story. Studies on the most recent half century in Europe bring us to the big question: where's the warming?



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## VIRTUAL CLIMATE ALERT

**January 4, 2000**

**Vol. 1, No. 1**

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In the December 19, 1999, edition of *The New York Times*, science writer Bill Stevens reported that 1999 was the "second warmest year on record" for the United States and other global land masses and that the rate of increase has been especially dramatic since the 1970s. While these facts in themselves are correct, Mr. Stevens ignores the larger set of observations that are necessary in order to put these facts into proper perspective.

For instance, the warming rate during the most recent three decades is the same as the warming rate observed during the 30 years from 1916 to 1945 – a period before there was any large buildup of atmospheric carbon dioxide concentration. The fact that the rate of current warming has been observed in recent history indicates that it is not at all unusual and that it is, therefore, likely to have occurred many times in the past.

The statement that 1999 was the second warmest year on record in the United States – behind only 1998 – also lacks significance when put into a long-term perspective. In fact, of the 13 years in the Twentieth Century that the average temperature in the United States was greater than 1°F above normal, over half occurred more than 40 years ago (before 1960).

Mr. Stevens reports that with the rising temperatures, the weather will become more variable and extreme, leading to more droughts, floods and wild temperature swings. These statements cannot be supported by any but shortsighted facts. The bigger picture shows that during the Twentieth Century in the United States there has been no change in the frequency of droughts, rainfall has increased slightly with no concomitant increase in flooding (leading to more available water for agriculture and domestic consumption), and with no change in temperature variability.

When atmospheric temperatures are measured from earth-orbiting satellites instead of from the ground, the observations show that there has been no significant trend during the entire history of these data (since 1979). Climate

(more)

*Humanity and Nature Growing Together*



CONTACT: Ned Leonard  
(703) 907-6159 or  
info@greeningearthsociety.org



## MERGER PRODUCES NEW PUBLICATION DEVOTED TO SOUND SCIENCE

*A monthly newspaper devoted to debunking environmental myths  
gets a major boost by merging with the leading newsletter  
on global warming*

**(Arlington, VA — January 4, 2000)** Those who believe the modern environmental movement often neglects sound science and market-based solution to pollution have gained a strong voice as the result of a merger announced today.

*Environment News* will become *Environment & Climate News* with the February edition, thanks to its merger with *World Climate Report*, a biweekly newsletter previously published by New Hope Environmental Services, Inc., with funding from Greening Earth Society.

The merger was announced today by Greening Earth Society, based in Arlington, Virginia, and The Heartland Institute, a Chicago-based nonprofit research organization that has published *Environment News* since launching the monthly newspaper in June 1997.

“This agreement enables us to deliver the latest science and commentary on the global climate change issue to thousands of additional people,” said Fred Palmer, president of Greening Earth Society. “Most Americans don’t realize that the scientific community has grave doubts about whether human activities cause ‘global warming’ and what the proper course of action should be. We’re making up for the poor job that television stations and newspapers have done conveying the truth about the global temperature record and the benefits of rising atmospheric concentrations of carbon dioxide (CO<sub>2</sub>).”

(more)

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CONTACT: Ned Leonard  
(703) 907-6159 or  
info@greeningearthsociety.org

## GREENING EARTH SOCIETY LAUNCHES VIRTUAL CLIMATE ALERT



(Arlington, VA — December 27, 1999) Greening Earth Society announces creation of a “virtual climate alert” news release and website capability in response to ongoing efforts by politicians and those at work in the media who engage in climate-change advocacy in portraying weather events and models-modeling-models as climate reality. One occurrence that will be the subject of the first Virtual Climate Alert is a front-page article by William K. Stevens in the December 19 edition of *The New York Times* headlined “1999 Continues Warming Trend Around Globe.” Other examples abound.

“Bill Stevens has cast aside any semblance of journalistic objectivity in his writing for *The New York Times* when it comes to climate change,” says Greening Earth Society President Fred Palmer, who is also general manager and chief executive officer of Western Fuels Association, Inc. “Stevens’s refusal to report satellite temperature records that show little warming and contradict the vision of apocalyptic global warming, together with his selective use of isolated weather phenomena to paint a picture of worldwide, inexorable, and severe human-induced warming borders on the fraudulent. Another example is the just-published book *The Coming Global Superstorm* co-authored by radio talk-show host Art Bell and author Wesley Strieber. In what amounts to a work of science fiction, the authors seek to portray a weather system run amok due to human industrial activity. This is part-and-parcel of efforts by global-warming apocalysts to frighten Americans into lowering their living standards.”

The first *Virtual Climate Alert* will be released after the first of the year. It will focus on Stevens’s December 19<sup>th</sup> feature story, be promoted by press release and direct mail to GES membership, and posted at [www.greeningearthsociety.org](http://www.greeningearthsociety.org).

(more)

*Humanity and Nature Growing Together*



## No Warming in Panama

By

Robert C. Balling, Jr.

Greening Earth Society Science Advisor

After a century of involvement in Panama, the United States has at long last turned over the famous Panama Canal to the Panamanian government.

Back in 1534, Charles I of Spain ordered the first survey of the Isthmus of Panama. He hoped to build a canal connecting the Atlantic and Pacific Oceans. Then the French took up the task in 1880, only to be defeated by disease and financial hurdles in their 20-year effort. In 1903, after some intrigue involving Colombia, a newly christened Panama and the United States signed a treaty to build the canal. Ten years later – on August 15, 1914 – one of the world's greatest feats of engineering was open-for-business.

In 1977, the United States and Panama signed treaties intended to turn over the canal and operational responsibility to the government of Panama, effective January 1, 2000.

With such centuries-long interest in the Isthmus of Panama, it comes as no surprise that long-term temperature records are available for the region. Monthly temperature anomalies from January 1861 to the near present are available from the U.N. Intergovernmental Panel on Climate Change (IPCC).

As seen in *Figure 1*, there is some data missing during the first half-century and a nearly complete time series spanning the most recent century. The record shows cooling from 1861 to 1915, statistically significant warming from 1915 to 1960, and no warming since. The highest positive anomaly (or warmest month relative to normal) occurred in December 1868.

The 20<sup>th</sup> century has been a time of unparalleled worldwide economic growth. The Panama Canal certainly has played a significant role in this growth, even while the same prosperity has increased fossil fuel consumption, thereby increasing the emission of greenhouse gases emitted into earth's atmosphere. It is comforting to know that during the past 40 years – when atmospheric greenhouse gas concentrations have increased the most – the temperature in the Panama Canal area has not warm a bit.



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## VIRTUAL CLIMATE ALERT

January 12, 2000

Vol. 1, No. 3

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New findings from the National Academy of Sciences (NAS) provide evidence that global climate model forecasts are unreliable indicators of future climate.

On January 12, 2000, the NAS's National Research Council (NRC) released a report entitled *Reconciling the Observations of Global Temperature Change*. The report panel finds that global temperatures have not been changing in the manner that the state-of-the-art climate models predicted they would, a fact that lends support for the premise that the models should not be used in formulating policy that could potentially lead to great economic harm.

Although the average temperature at the earth's surface has risen somewhere between 0.45°F and 0.72°F during the past 20 years, temperatures in the lower atmosphere as measured by National Aeronautic and Space Administration (NASA) satellites virtually have not changed at all, the report states. "There really is a difference between temperatures at the two levels that we don't fully understand," panel chairman and University of Washington Atmospheric Sciences professor John Wallace told *The Washington Post*. Wallace goes on to say that the disparity between the temperature trends at the surface and those in the lower atmosphere points to a weakness in scientists' ability to predict future warming.

Global climate models built to forecast the earth's future climate indicate temperatures in the lower atmosphere should be rising faster than those at the surface. But the NRC report demonstrates that the observations do not support these claims.

Nor does the NRC report conclude that the observed surface warming is due to human-induced changes in the earth's greenhouse effect. While Wallace states "There is a high level of confidence among the panel members that the surface temperature is indeed rising," he adds that this change is not necessarily due to manmade alterations to the atmosphere. "The rapid increase in the earth's surface

*VIRTUAL CLIMATE ALERT*

January 12, 2000

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The NRC panel also included University of Alabama in Huntsville's John Christy who, along with NASA's Roy Spencer, is responsible for the satellite measurements. Christy agrees that forecasts of future climate change are uncertain. He sums up the panel's findings by saying, "It is still not clear whether [the current temperature measurements] are a representative sample that will tell us how the greenhouse effect is going to be played out. You can't use [the surface temperature] trend for prediction."

# # # # #

Greening Earth Society *Virtual Climate Alerts* are published periodically in response to news coverage of climate-change advocacy that seeks to portray weather events and hypothetical climate scenarios generated by computer-based climate models as "climate reality." *Virtual Climate Alert* draws upon the expertise of Greening Earth Society science advisors and is coordinated by New Hope Environmental Services of Charlottesville, Virginia.



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## VIRTUAL CLIMATE ALERT

**January 7, 2000**

**Vol. 1, No. 2**

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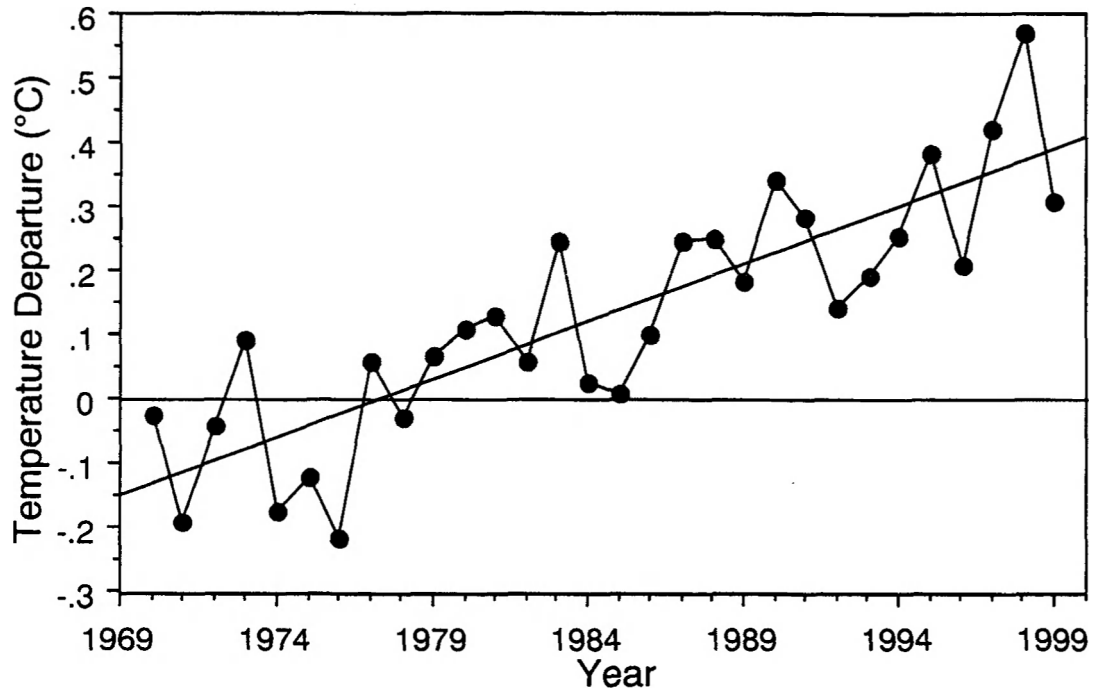
On the January 4, 2000, *NBC Nightly News* correspondent Robert Hager reported that the odd weather across the United States during the past week was part of a rapid change toward a warmer climate. But his report contained errors, half-truths and exaggerations.

Hager quoted National Center for Atmospheric Research scientist Kevin Trenberth as saying that we are beginning now to see a "climate change more rapid than anything we've seen in the last 10,000 years." That just is not true. In fact, we have to look back less than 100 years to find a temperature trend that matches the one we are currently experiencing. From 1916 to 1945 the earth warmed up (*Figure 1*) just as much as it did from 1970 to 1999 (*Figure 2*). And in between these two periods, the earth actually experienced a cooling trend. The earth's climate is not characteristically constant. Instead, as events of the past 84 years illustrate, the climate continually fluctuates on time scales that range from days to millennia. It would be much more unusual if there were no trend in the climate.

NBC's Hager also claimed that as a result of the recent warming, arctic sea ice is melting, leading to an increase of sea level that is threatening the very existence of low-lying Pacific islands. This is also wrong. In fact (on January 3, 2000) CNN's Environment Unit reporter Jack Hamann reported on the trend in Arctic sea ice. Hamann stated, "When Arctic ice melts, it does not raise the level of the ocean, threatening coastal communities with flooding." He explained that "like an ice cube in a drinking glass, sea ice only displaces ocean water, merely changing form [from ice to water] when it melts." The water level does not change. Sea level is affected by melting of ice on land, in Antarctica for example, and there is no evidence this is occurring.

Hager pointed to the recent tornado outbreak stretching from the Midwest through the Southeast as support for the occurrence of odd weather. Yet National Weather Service Meteorologist Scott Truett told *CBS News*, "While January is certainly not the peak time for tornadoes in Missouri, they're not that unusual at this time of year." As he explained, "When you get the clashes of the winter-type air to the north and the warm, humid air to the south, that's what happens."

## Global Temperature Trend, 1970-1999



**Figure 2.** The trend in annual global temperatures during the 30 year period from 1970 to 1999 was 0.17°C/decade. This warming rate is virtually the same as that which occurred from 1916-1945, so how "unusual" can it be?

# # # # #

Greening Earth Society *Virtual Climate Alerts* are published periodically in response to news coverage of climate-change advocacy that seeks to portray weather events and hypothetical climate scenarios generated by computer-based climate models as "climate reality." *Virtual Climate Alert* draws upon the expertise of Greening Earth Society science advisors and is coordinated by New Hope Environmental Services of Charlottesville, Virginia.



## Warming Up In Vietnam?

By

Robert C. Balling Jr.

Greening Earth Society Science Advisor

In April 2000, Arizona Senator John McCain led a group to Vietnam to celebrate the 25<sup>th</sup> anniversary of the end of the Vietnam War. The anniversary filled newspapers such as *The Washington Post* with feature stories and reflections on the impact that conflict had upon the U.S. and Vietnam, both North and South.

While there, McCain toured the "Hanoi Hilton" and recounted the horrors of the three years he spent within its confines. It was there that men Americans came to regard as heroes were tortured and killed, forced to live in claustrophobic cells, were fed inadequately and exposed to days of sweltering heat, among other indignities, discomforts, and psychological stresses. McCain admitted softly concerning his Vietnamese guards, "I still bear them ill will, not because of what they did to me, but because of what they did to some of my friends." Millions are thankful that the ending of such a terrible chapter in the histories of both the U.S. and Vietnam is all but finished being written. McCain's visit is yet another step in amending the relationship between the U.S. and Vietnam.

If the relationship between the U.S. and Vietnam is warming, have Vietnamese temperatures been warming in the time atmospheric greenhouse gas concentrations have been rising? Monthly temperature anomalies (deviations from normal) for Vietnam are available from the United Nations' Intergovernmental Panel on Climate Change. The temperature data begin in August 1857 and end in January 2000.

As seen below, the monthly temperature anomalies from Vietnam show a cooling in the early record, little change in its middle, and warming in the most recent decades. A second-order polynomial curve fits this pattern. Based on that type of fit, Vietnam has warmed 0.19°C over the past century and a half.

Most climate models predict that Vietnam should warm by several degrees over the next 50 years due to the continued buildup of greenhouse gases. Based on the actual temperature record, it is obvious that the warm-up that is underway is happening about 10 times slower than anticipated.





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## VIRTUAL CLIMATE ALERT

May 1, 2000

Vol. 1, No. 17

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*New York Times* science writer Bill Stevens implies in the April 25, 2000 edition that global warming could increase the frequency of droughts across the United States, despite observations that show there is no tendency in that direction. Relying on dramatic predictions rather than on actual (often less dramatic) observations apparently is the key ingredient in creating a good news story.

In his story headlined "Drought, Persistent and Severe, Strikes Again," Stevens describes how devastating major drought can be. Since a single drought can occur over large portions of the country – and since all living things depend on water to survive – a significant lack of water can have large economic and ecologic consequences. For example, 1988's drought cost the nation about \$40 billion, whereas Hurricane Andrew (considered to be the most costly weather disaster in U.S. history) cost about \$30 billion.

Stevens points to a host of recent articles appearing in the scientific literature that examine past records of drought as recorded by tree rings. It has been concluded that the United States is overdue for a drought of Dust Bowl-like proportions. In fact, there is evidence that three mega-droughts struck the nation in the 1800s. There is other evidence that indicates that the Dust Bowl was actually a "Dust Eyedropper" when compared alongside other droughts that occurred in regions of North America in the past 3,000 to 5,000 years. Major droughts, lasting a century or two, are thought to have led to the downfall of several indigenous civilizations including the Mayans and the Anasazi.

Where Stevens starts to get himself into journalistic trouble is when he begins to bring global warming into the picture. In 1996, the Intergovernmental Panel on Climate Change issued the following catchall statement:



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## VIRTUAL CLIMATE ALERT

March 9, 2000

Vol. 1, No. 13

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Physicians for Social Responsibility (PSR) recently released another in their series of statewide reports on the human health impacts of global warming. All are released with the title *Death by Degrees: The Emerging Health Crisis of Climate Change In* [insert name of state here]. This particular one concerns Georgia.

Just like its predecessors for New Hampshire, Maine, and Minnesota, the report for Georgia was based upon an extremely distorted view of climate observations and was filled with so many factual misrepresentations that it is rendered internally inconsistent and inconsistent with reality.

Observed climate change is not responsible for any health crisis in Georgia, nor will it be at any time in the foreseeable future. In reality, Georgia's climate is much the same now as it was a century ago. In that time, technological change has made Georgia's growing population (transplants from all over the nation) much less susceptible to heat stress. Technology has virtually eliminated infectious diseases such as malaria and dengue fever. Food production on Georgia's farmland is at an all-time high. All in all, Georgia is a better and healthier place to live. Residents of Georgia, today, have greater health and greater wealth, thanks in part to coal-fired electricity and technology.

Part of the contract of *social responsibility* is an implied agreement not to yell "Fire!" in a crowded theater. But that's precisely what these self-styled socially responsible physicians do with each report on this issue, allowing media hype and partisan fear-mongering to overtake pure science while professing to tell the truth about climate change for Georgia, or wherever.

The PSR's Georgia report puts forth numerous claims as to the negative health consequences that will result from global warming. These include more incidents of heat-related disease like heat stroke; more respiratory and cardiovascular



GREENING  
EARTH  
SOCIETY

April 26, 2000

MEMORANDUM

To: Membership and Friends  
Greening Earth Society

From: President

Re: Our Advocacy Work

The enclosed E-mail was sent to me by Dr. Chauncey Starr, President Emeritus of the Electric Power Research Institute. The E-mail speaks for itself and I wanted to share it with you.

Dr. Starr's analysis of the situation is absolutely correct. In our advocacy work, we maintain a pro-environment posture because we believe it and we believe it is good for the human community. We simply have never seen anything inconsistent with vigorous industrial activity and a healthy environment for humans and other living things. I have expressed these views to Dr. Starr and thanked him for his kind words.

Frederick D. Palmer

FDP/pc  
Enclosure

Subj: FW: COAL CAMPAIGN  
Date: 4/20/00 5:30:04 PM Eastern Daylight Time  
From: wfa@westernfuels.org (Ned Leonard)  
To: vapalmers@aol.com (Fred Palmer)

—Original Message—

From: Starr, Chauncey [mailto:CSTARR@epri.com]  
Sent: Thursday, April 20, 2000 5:15 PM  
To: 'WFA@WESTERNFUELS.ORG'  
Subject: COAL CAMPAIGN

FRED PALMER:

My commendation on your role in the Frontline program on "what's up with the weather". That video deserves wide public viewing as a preamble to serious national discussion of energy policy. Although it is weak in some areas, it is as good a summary of the basic issues as I have seen.

More to the point, the announcement of your legal action against the green group is a very much needed opportunity to hold that sector of the environmental movement publicly accountable for their extremism. The understandable reluctance of the energy industry to confront such green attacks has been very irritating to those of us committed to the development of energy technologies to meet the growing needs of modern societies. I believe your action is both timely and appropriate and a significant public service.

As you know, the environmental movement is not monolithic, and can roughly be divided into four group objectives – pollution reduction; waste reduction; efficient use of resources; and the deindustrialization of modern society. The last should be the target of your campaign. While all these groups voice the common umbrella of reducing the environmental footprint of man, the last group uniquely believes that the needs of nature have a higher priority than man's. Thus their objective of deindustrialization as the cure for global warming. While all this may sound philosophic, it is the key to public opinion. The first three objectives listed above have solid public acceptance and are overtly supported by industry. However, the last objective, deindustrialization, is usually obscured by its proponents by mixing with the first three, as they know the public won't support it. I am mentioning all this as my experience with these groups has shown they will try to paint you as an enemy of the first three. My suggestion is that you preempt them by forthrightly espousing the first three.

Although I no longer take an active role in such matters (I'm 88), I would be willing to review and comment on any drafts relating to energy options and their future roles, both nationally and internationally – all areas of my past publications and expertise. If I can be of any help, let me know.

Chauncey Starr  
President Emeritus  
EPRI  
Ph: 650 855 2909  
Fx: 650 855 2090  
email. cstarr@epri.com

GREENING  
EARTH  
SOCIETY

## MEMORANDUM

December 14, 1999

To: Membership  
Greening Earth Society

From: Fredrick D. Palmer  
President

Re: energy.com Debate

Recently, I participated in an online debate with Brandon MacGillis of Ozone Action. I am enclosing a transcript of the debate for your possible interest.

In case you haven't noticed, the environmental community has stepped up its PR campaign against fossil fuels. I wonder where the source of all of this money is coming from? I continue to believe that we will prevail in this great debate because their agenda is such a negative and unattractive one.

In yesterday's *New York Times*, for example, in a full page ad on the back section a group of environmentalists have wrapped a new campaign against world trade in the global warming mantra. It seems they want to return the human community to some kinder, gentler past that never existed.

  
Fredrick D. Palmer

FDP/pc  
Enclosure  
cc: U.S. Congress

April 7, 2000



**MEMORANDUM**

TO: Greening Earth Society Members & Friends

FROM: Ned Leonard, Communications Advisor

SUBJECT: Fred Palmer On Frontline/NOVA.

Greening Earth Society President Fred Palmer, who is also General Manager & Chief Executive Officer of Western Fuels Association, will appear in a *NOVA/Frontline* program about climate change entitled "What's Up With the Weather?" on **Tuesday, April 18<sup>th</sup>** at 9:00 p.m. EDT (check your local PBS listing for broadcast time where you are).

Jon Palfreman of Palfreman Film Group produced the program and tells us that Fred has about 15 minutes on-air time during the two-hour program. We have reason to be optimistic about the treatment Greening Earth Society will receive but, as always, we'll have to wait and see.

Others participating in the program include Pieter Tans of the National Oceanic and Atmospheric Administration (NOAA), Tom Wigley of the National Center for Atmospheric Research (NCAR), Fred Singer from George Mason University, and Dick Lawson of the National Mining Association, among others.



CONTACT: Ned Leonard  
(703) 907-6159 or  
info@greeningearthsociety.org



## **GREENING EARTH SOCIETY DELIVERS ANNUAL *STATE OF THE CLIMATE REPORT* TO U.S. CONGRESS**

**(Arlington, VA — April 21, 2000)** Today, the day before the 30<sup>th</sup> anniversary of Earth Day, Greening Earth Society delivers the fifth annual *State of the Climate Report* to each member of the U.S. Senate and House of Representatives, accompanied by a letter from Greening Earth Society President Fred Palmer.

In his letter, Palmer explains how the *State of the Climate Report 2000* is published as an educational tool on the status of the climate-change controversy. "It is a part of our effort to see to it that policy makers like yourself," he writes by way of explanation to Members of Congress, "are exposed to science of climate change that doesn't first have to pass muster with those convinced we must 'do something' about climate change and, in so doing, do something about fossil fuels. A federal policy that is designed to eliminate the use of fossil fuels is the antithesis of policies that seek to let more people live better lives both here in the US and abroad."

This year's report includes an interview with Dr. William Gray, one of the world's foremost experts on tropical cyclones, tropical meteorology, and seasonal weather prediction. It also includes essays by Dr. Bruce P. Hayden on variations in the frequency and intensity of storms in the last century, Dr. Sallie Baliunas and Dr. Willie Soon on the relationship between solar variability and climate change, Dr. Robert C. Balling's about a recent National Research Council report on presumably conflicting temperature datasets, and Dr. Robert C. Davis on trends in U.S. mortality as related to high temperature.

(more)

*Humanity and Nature Growing Together*

Finally, Davis, after poring over available data, concludes that projections of deaths increasing in the United States from higher temperatures are unfounded. "In fact," he writes, "the U.S. population's adaptation to heat has been so profound that we are hard-pressed to find any increases in mortality in the 1990s for even the hottest and most humid conditions."

In his essay kicking off the 36-page report, Michaels – who is chief editor of Greening Earth Society's online *World Climate Report* and author of two books including the forthcoming *The Satanic Gases: Clearing the Air About Global Warming* – compares climate truth to "Washington fiction." In doing so, he begins by examining fixation on last summer's drought referred to by President Clinton, last August, as the worst agricultural drought in this century. "Apparently, his National Climatic Data Center had not advised him that, even as he spoke, less of the country than normal was experiencing drought of major magnitude," Michaels writes. "On the average, 4 percent of the nation qualified for this status over the course of the 20<sup>th</sup> century. On that early August day, the total was 2.2 percent." He then provides a graphic illustration comparing 1934 (a date earlier in the century) when 25 times more of the nation was experiencing major drought than experienced it during summer 1999.

To order *State of the Climate Report 2000*, contact Greening Earth Society at (703) 907-6168, send a fax to (703) 907-6161, or email [info@greeningearthsociety.org](mailto:info@greeningearthsociety.org).





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## VIRTUAL CLIMATE ALERT

January 21, 2000

Vol. 1, No. 5

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In a stunning reversal of the conventional wisdom on global warming, climatologists now predict a return to the climate patterns of the 1950s and 1960s – a relatively cool period with fewer El Niños, rainfall in drought-prone portions of Africa, and changed hurricane patterns.

A blizzard of news reports over the last few years have repeatedly claimed that El Niño was being experienced more frequently and has become increasingly destructive as a result of global warming. Kevin Trenberth of the U.S. National Center for Atmospheric Research recently was quoted as saying that "there's got to be a connection" between the recent El Niño events and climate change. Even Vice President Al Gore, during the last El Niño, used every weather anomaly that merited a minicam to conflate El Niño, global warming, and our miserable future.

In 1996, Trenberth wrote an often-cited scientific paper in *Geophysical Research Letters* that concluded there has been a relatively high prevalence of El Niños in the 1980s and 1990s. He claimed that such a frequency and strength could only occur randomly once every 2000 years. So (connect the dots), it must be related to global warming. In the same journal, two other scientists (D.E. Harrison and N.K. Larkin) wrote, "It is plausible ... that the unusual behavior in the early 1990s is a result of natural variability."

The data now argue for Harrison and Larkin's interpretation. According to a front-page article by staff writer Curt Suplee in the January 20<sup>th</sup> edition of *The Washington Post*, satellite readings indicate a change in Pacific Ocean circulation that began in 1995. Suplee writes:

America could be about to experience a meteorological replay of the 1950s and '60s. On the average, winters are likely to be colder and wetter, but drought is more probable in the parched Southwest, and the Southeast could have



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## VIRTUAL CLIMATE ALERT

January 19, 2000

Vol. 1, No. 4

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The Saturday, January 15, 2000, edition of *The New York Times* reminds us how easy it is to “snow” the media when it comes to the climate-change issue. The Metropolitan Desk’s Barbara Stewart wrote nearly a 1400-word article on the lack of snow in recent winters blaming, of course, the normal Pacific temperature oscillations of El Niño/La Niña and dreaded global warming. *The New York Times* even included a chart of snowfall for the last 10 years.

Ms Stewart reports that Michael Oppenheimer (Barbra Striesand Chair of Environmental Studies at the Environmental Defense Fund), “points to global warming as the most significant long term factor” related to lack of snow.

“I used to go sledding all the time,” Oppenheimer was quoted as saying. In 1960, Oppenheimer probably was around 10 years old – the optimum age for snow sledding, in our opinion. Together, the winters of 1959-1960 and 1960-1961 are the second snowiest consecutive winters of the last 60 years in New York.

Occasional winters with extensive snowfall are the norm in the Mid-Atlantic region. It takes only a few coastal cyclones, drawing upon the abundant moisture of the Gulf Stream, to pile up several feet of the white stuff. But during winters in which coastal storms are uncommon (and there are many such years) very little overall snowfall is produced.

During the last 60 years, the period that makes up the modern snowfall record for Central Park in New York City, well over half of the winters have produced less than two feet of snow. But six have produced more than four feet, and they are the ones in which coastal storms have either been unusually strong or common.



## Warming Slows In Chechnya

by

Robert C. Balling, Jr.

Greening Earth Society Science Advisor

Choose any current newspaper and the chances are very good that there will be a story filed from Chechnya somewhere within the first few pages. Yet few Americans have any idea where Chechnya is located or why it has been such a prominent international news story.

Chechnya is located in the North Caucasus region between the Black Sea and the Caspian Sea. It encompasses roughly 6,000 square miles. Grozny is the capital and Chechnya is home to over a million Chechen people. Despite a long series of wars with its neighbors, Chechnya officially became a part of Russia in 1859.

In May 1918, shortly after the Bolshevik Revolution, Chechnya declared its independence from Russia and became a part of the North Caucasian Emirate. Not long afterward, the Red Army came calling. Thus began a long period of civil unrest. Rebellion followed and actually escalated to the dawn of World War II. Many of the Chechen rebels viewed the German Nazis as potential liberators. As a result, following the war, Chechens were seen as Soviet traitors. As a result, massive deportations were ordered from their homeland to other parts of the Soviet Union. In 1957, Nikita Khrushchev reversed that policy and allowed Chechens to return home.

In 1990, the Soviets in essence declared Chechnya to be a sovereign state equal to the other Soviet states at the time. Several years later, the Chechens seceded from Russia and declared total independence. They passed a constitution, and established a parliament and president. Russian troops suffered heavy casualties fighting in Grozny in the mid-1990s and, unfortunately, although the conflict has often seemed near to ending, it flares up from time to time and returns Chechnya to the international spotlight.

Fascinating as it is, however, it is not Chechnya's history but its climate history that is of primary interest to Greening Earth Society.

April 26, 2000



MEMORANDUM

GREENING  
EARTH  
SOCIETY

To: Membership and Friends  
Greening Earth Society

From: President

Re: IPCC's 'Third Assessment Report' (TAR-2000)

John Daly is a scientist who lives in Tasmania and provides ongoing and useful information with respect to the science of climate change and the abuse of the scientific process by the United Nations. John's latest work product is the enclosed, which looks at the upcoming report by the Intergovernmental Panel on Climate Change concerning what has been learned in several years since the last UN report.

This is a disturbing document and I am asking that you read it closely and consider what you are reading. It would appear that the UN has embarked on a revisionist history of our past climate, using UN selected climate data in an effort to portray a misleading picture of our current climate, and will soon adopt a stance that any climate change at all, whether human induced or not, is bad and needs to be avoided. These findings by the UN will be trumpeted in major media in the United States and abroad as settled scientific fact and will be used by politicians, who have an anti-fossil fuel agenda, to argue for government control over our future economic activity.

We coined the term "virtual climate reality" partly in jest. It proves to be all too real a description of the scientific process now underway. The temperature graph the UN will adopt will eliminate the Holocene Maximum and the Little Ice Age and portray 20<sup>th</sup> century warming as highly unusual and obviously human induced, without explicitly making the statement. The struggle continues.

Fredrick D. Palmer

FDP/pc  
Enclosure

# IPCC's 'TAR-2000'

## A Discernible Political Influence...

by  
**John L. Daly**  
(23 April 2000)

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### ● Introduction

The latest draft of the IPCC's '**Third Assessment Report**' (TAR-2000), circulated on 16th April 2000, is a massive technical document, the final version not expected to be published until January 2001.

Most of the findings in this draft are underpinned by one critical assumption - namely that the 'surface record' of global temperature as published by CRU (UK) and GISS (USA) is an accurate representation of the actual temperature history of the earth since 1860. This assumption has been challenged on numerous occasions by various scientists on a variety of grounds, the most compelling of which is the failure of the surface record to match the mutually consistent records from satellites and sonde balloons. In addition, even an examination of individual station records on this website shows that the global and hemispheric statistical aggregates produced by CRU and GISS bear little relation to individual records from those weather stations which are known to be free of local measurement errors such as urban heating, other environmental distortions, and equipment/procedural faults.

This article is not a critique of the main body of the report. In the world of environmental politics, few will even get to read that document. Rather, the 'policymakers' (politicians, ministers, public servants etc.) will be guided by the '**Summary for Policymakers**' (SPM), which is the only part of the report they will take any serious note of. It is this summary which forms the basis of this critique as it here where the politically biased aspects of the report are at their most evident.

### ● Cherchez la 'Small Print' !

To begin, here is a strange footnote on page 1 of the SPM, in small print -

<sup>1</sup> Climate change in IPCC Working Group I usage refers to any change in climate over time whether due to natural variability or as a result of human activity. This differs from the usage in the Framework Convention on Climate Change where climate change refers to a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

The IPCC have taken 10 years to get the public and policymakers used to the idea that the phrase 'climate change' refers only to possible human-induced changes. Indeed this very definition is incorporated into the 'Framework Convention on Climate Change', the international treaty which governs inter-governmental activity on climate research and negotiations.

Here, the IPCC are unilaterally changing that definition to include **all** changes, including purely natural ones, but doing so only with a small-print footnote, so that the report is then free to use the term 'climate change'

indiscriminately in such a way that the public and policymakers may unwittingly attribute **all** climate changes reported in the document to human influence. Redefinition of terms to cloud an issue is a common political practice, but not so common in science.

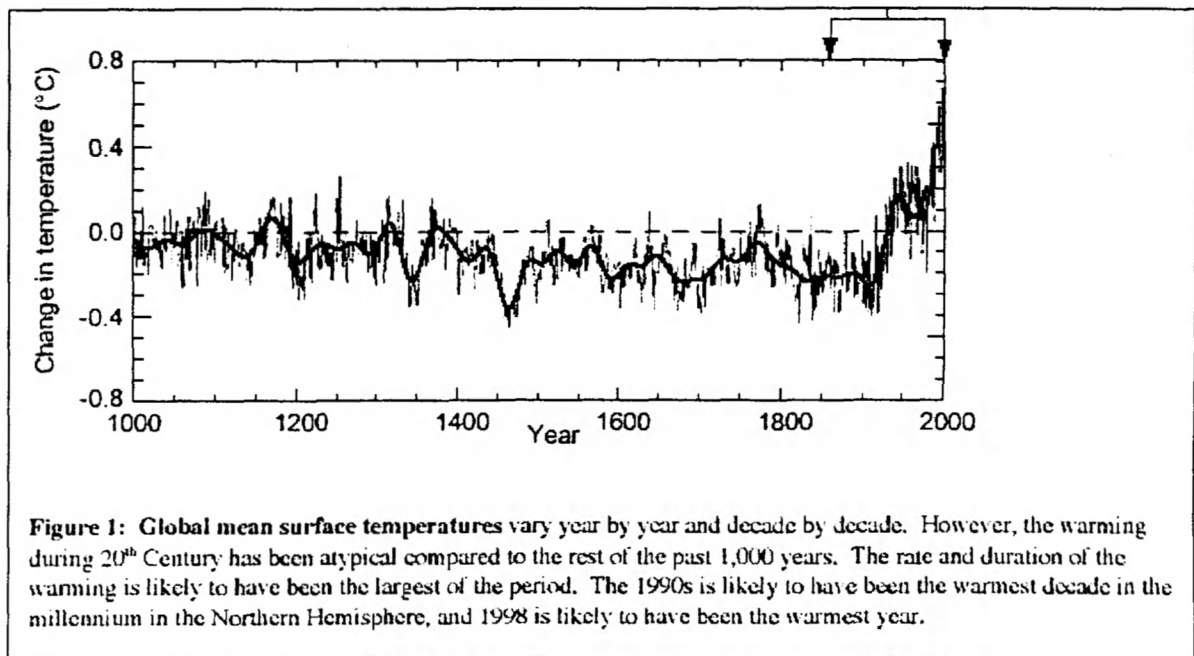
## ● Re-Inventing the Past

The IPCC have made a major revision to history, in that they have abolished the 'Medieval Warm Epoch' (MWE) a very warm period around 1100-1200 AD (during the Viking era), certainly warmer than today, by as much as +2°C. In addition, they have rendered the 'Little Ice Age' of the 17th century hardly distinguishable from other centuries, a period when global temperatures were about -1°C cooler than today. There is only tenuous evidence at best for this revision of history, mostly from tree rings, but it is consistent with an effort to characterise the late 20th century as being somehow unique and unprecedented.

*The global average surface temperature has increased since the late 19<sup>th</sup> Century.*

- The current estimate is that the global average surface air temperatures over both land and oceans have increased by between 0.4 and 0.8°C since 1860, when sufficient data for global estimates began. This estimate is about 0.1°C larger than estimated for the period up to 1995 in IPCC (1996).
- The rate and duration of the warming of the 20<sup>th</sup> Century appears to have been the largest during the past 1000 years. During that period and in the Northern Hemisphere, the 1990s was likely the warmest decade and 1998 the warmest year.
- Globally, minimum temperatures have been increasing at about twice the rate of maximum temperatures since 1950, which is lengthening the freeze-free season in many middle- and high-latitude regions in the Northern Hemisphere.

To demonstrate these claims visually, they present the following graph of temperatures over the last 1,000 years. The significance is plain - according to the SPM, the Medieval Warm Epoch never happened and the Little Ice Age is hardly detectable. The scale of the revisionism is so breathtaking as to be positively Orwellian.



The evidence to support these revisions are almost entirely from tree rings, not the most reliable form of proxy evidence upon which to overturn well-established facts of climate history. Tree rings only record the climate of the growing season, not the whole year. Tree rings are also influenced by rainfall, access to light, and other environmental variables, and are thus not an exclusive indicator of annual temperature as the tree ring researchers would have us believe.

The imprint of the MWE is clearly suggested in this tree ring record (below) from Tasmanian Huon Pines, at the opposite end of the world to the North Atlantic region (the only region the IPCC concedes to have been warm during the medieval period). Of course, being tree rings, it could just be warm summers, or even wet summers. The Little Ice Age is not evident here, but then again, these are just seasonal tree rings, not indicators of annual temperature. The 'jump' in tree ring width at the end of the graph is consistent with the impact of CO<sub>2</sub> fertilisation, a positive outcome from CO<sub>2</sub> enhancement..

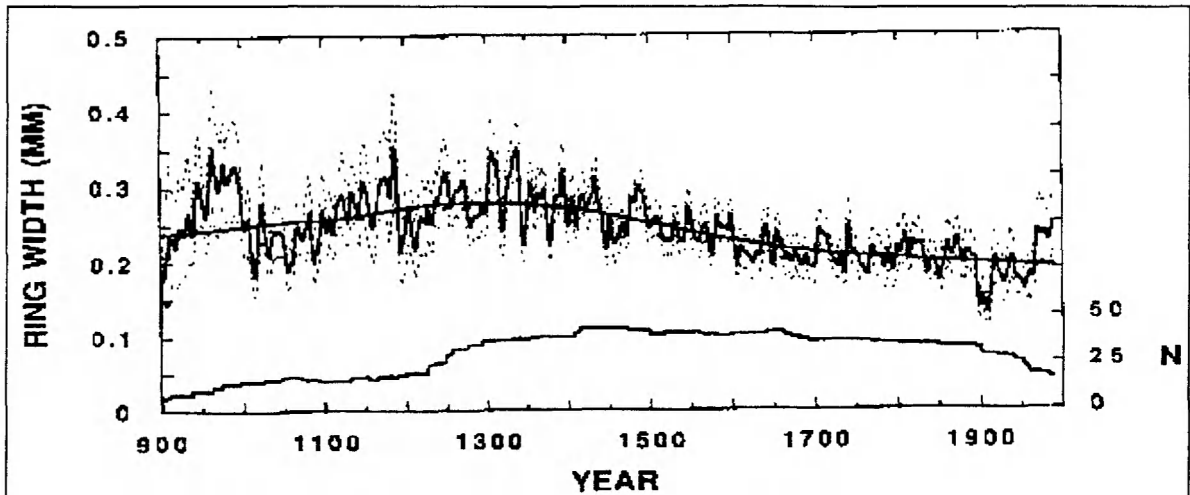


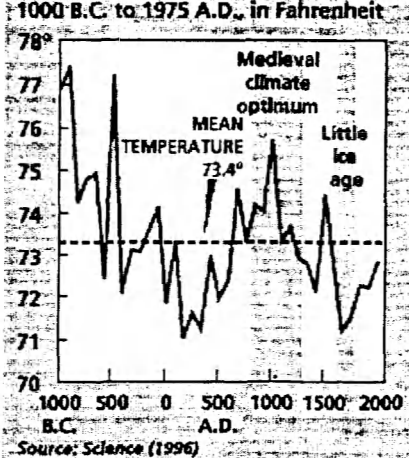
Figure 2 Lake Johnston Huon pine mean ring-width series in millimetres and sample size

From: Cook E R, Bird T, Peterson M, Barbetti M, Buckley B, D'Arrigo R and Francey R. 1992. Climatic change over the last millennium in Tasmania reconstructed from tree-rings. *The Holocene* 2,3:205-217.

It has even been shown that tree species in Siberia often fail to show known past warmings if the snow volume is greater, as would be expected from increased precipitation following from a warmer climate [Hughes, *Nature*, July 8 1999]. It seems the settled unmelted snow prevents the roots from warming up, thus restricting the growth of trees during the early spring and giving a false impression to tree-ring observers of no warming. Just such absurd outcomes are all it takes to mask the Medieval Warm Epoch in some tree ring studies. In using tenuous and disputed evidence to suggest the MWE did not exist, we have the first 'discernible political influence' on this report.

### CLIMATE IN PERSPECTIVE

Temperature of the Sargasso Sea from 1000 B.C. to 1975 A.D., in Fahrenheit



Evidence of the global nature of the Medieval Warm Epoch and the Little Ice Age is contained in lake bed deposits in Kenya and in the Sargasso Sea (chart). In overturning a mountain of past evidence of these two events by a few recent tree ring studies - and treating it as undisputed fact - demonstrates the IPCC tendency to select those fragments of evidence which accords with their warming agenda. Since this requires that the late 20th century be seen as unprecedentedly warm, with 1998 being the 'warmest year of the Millennium', denial of the existence of the Medieval Warm Epoch is essential to that agenda.

Even the cliché 'Warmest Year of the Millennium' for 1998, amounts to little more than a publicity exercise to engage public attention during a period of 'millennium fever'. There is no means by which anyone can know the climate of any single year (prior to about 1800) in the last 1,000 years, so the claims in that regard were entirely frivolous and designed only for grabbing headlines. That such nonsense should appear in a purportedly scientific inter-governmental report is all the more reason to attribute it to yet more 'discernible political influence'.

## ● How Consistent is 'consistent with...'?

The satellite record has been subject to intensive reviews, mostly hostile, in an attempt to find errors, any errors which would force it to exhibit an upward trend more consistent with that shown by the surface record. By 2000, the accumulated 21-year trends since 1979 were nearly  $+0.4^{\circ}\text{C}$  for the surface record and  $+0.1^{\circ}\text{C}$  for the satellite record, a widening gap of around around  $0.3^{\circ}\text{C}$  between them.

*The data for the trends of the temperature of the lowest few kilometers of the atmosphere from the satellite record are now more consistent with those from the surface record.*

- Since IPCC (1996), there have been corrections to several data sets, especially satellite-derived data, used to calculate changes of temperature above the surface.
- Satellite and balloon measurements both show that temperatures above the surface have been increasing. The corrected trends are now more consistent with the those of the surface record. However, there remains an unexplained difference of about  $0.05$  to  $0.1^{\circ}\text{C}$  per decade that may indeed be within the combined observational uncertainties, but that may also arise from real differences between surface and upper-air trends.

The obvious 'Ockam's Razor' response when confronted with such a discrepancy is to check to see if one of the data sets might be wrong. That may be the obvious common-sense reponse, but that is not the response of the IPCC, or of the NRC which investigated this problem in January. Instead, both have fudged the issue, downplaying the importance of the problem. There have been rigorous and independent reviews of the satellite data, resulting in very minor upward corrections of only a few hundredths of a degree, hardly sufficient to justify the claim that the two "are now more consistent". That was an absurd and misleading conclusion given the miniscule corrections involved.

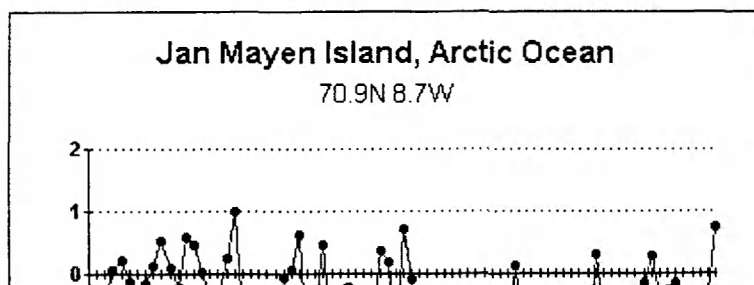
The second paragraph even refers to '**corrections**' to several data sets '**especially**' satellite-derived data, implying that the satellites were the ones in dire need of correction (which given the tiny corrections involved, they clearly were not). And yet this statement conceals the only sensible inference to be drawn, which is that **the surface record is the one urgently needing independent review and correction**. The satellites are validated not only by the rigorous reviews they successfully passed, but also by the network of sonde balloons which has returned data wholly consistent with the satellite record.

The third paragraph in the IPCC quote above contains false data. They claim a difference of 'about  $0.05^{\circ}\text{C}$  to  $0.1^{\circ}\text{C}$  per decade' between the surface and satellites. Yet the January 2000 NRC report into this very problem states it quite clearly as being between  $+0.25^{\circ}\text{C}$  and  $+0.35^{\circ}\text{C}$  over two decades, a quite serious difference needing urgent examination.

## ● Ice

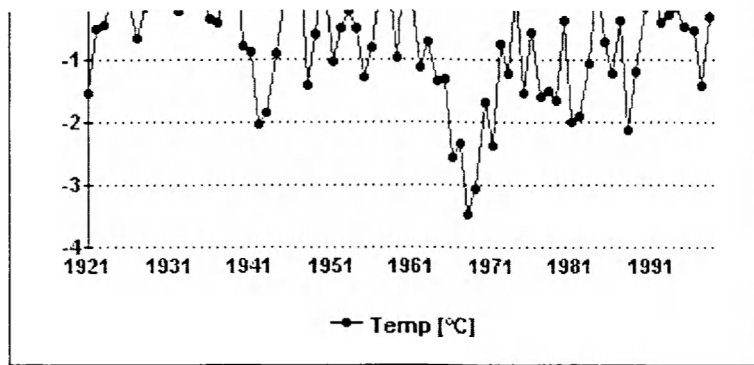
- New data from submarines indicate that there has been about a 40% decline in Arctic ice in summer or early autumn between the period 1958 - 1976 and the mid-1990s. Limited sampling, however, leaves open the possibility that these changes may not reflect broad areas of the Arctic.

The last sentence in this quote leaves open the suggestion that the decline in Arctic sea ice may even be worse in other parts of the Arctic. It's effect is that of innuendo, leaving the the reader to speculate' about the details.



See my [article on this Arctic sea ice issue](#) where the time scale is shown to be the crucial factor. The period cited, 1958-1976 is right in the depths of the post-war cooling (as per this Jan Mayen Island record), where Arctic ice expanded from the record Arctic warmth of the late 1930s. The Arctic today is not as warm as in the 1930s as [station records](#) from there readily attest. Since the cited





IPCC start years were anomalously cold, of course there has been a decline in Arctic sea ice since that time. But it was natural variability, not man-made. Many IPCC claims depend on similar 'end-date distortions' as a means to suggest trends which may not really exist once those distortions are evened out by longer-term data series.

Interestingly, the SPM makes no mention of Antarctic sea ice. Recent papers suggest that even though Arctic sea ice has decreased over the period

specified above, Antarctic sea ice has actually **increased** in extent. The SPM chooses to highlight Arctic sea ice, but omits to mention Antarctic sea ice.

## ● Sea Levels

*Sea level continues to increase globally.*

- Tide gauge data show a rise of global mean sea-level during the 20<sup>th</sup> Century by between 10 to 20 centimeters, much of which can be attributed to expansion as a result of the rise in ocean temperatures.
- Based on a few very long tide-gauge records, it appears that, on the average, the rate of sea level rise had been larger during the 20<sup>th</sup> Century than the 19<sup>th</sup> Century. It appears that sea level rise during the 20<sup>th</sup> Century has been faster than at any time since the melting of the large ice sheets of the last Ice Age some 6,000 years ago.

My researches on [the 1841 benchmark on the 'Isle of the Dead'](#) in Port Arthur, Tasmania (which is tectonically stable), shows just how misleading such claims of 'sea level rise' are. At the 'Isle of the Dead', there has been **no** rise in sea level at all since the benchmark struck there by Antarctic explorer Captain Sir James Clark Ross in 1841, was examined in 1890, 1985, and 2000. When the full evidence is considered, there are strong indications that there was a sea level **fall** during the 19th century. The IPCC have no reliable data to pre-date that benchmark and so it stands in stark testament to the fact that sea levels have not changed significantly in the 20th century.

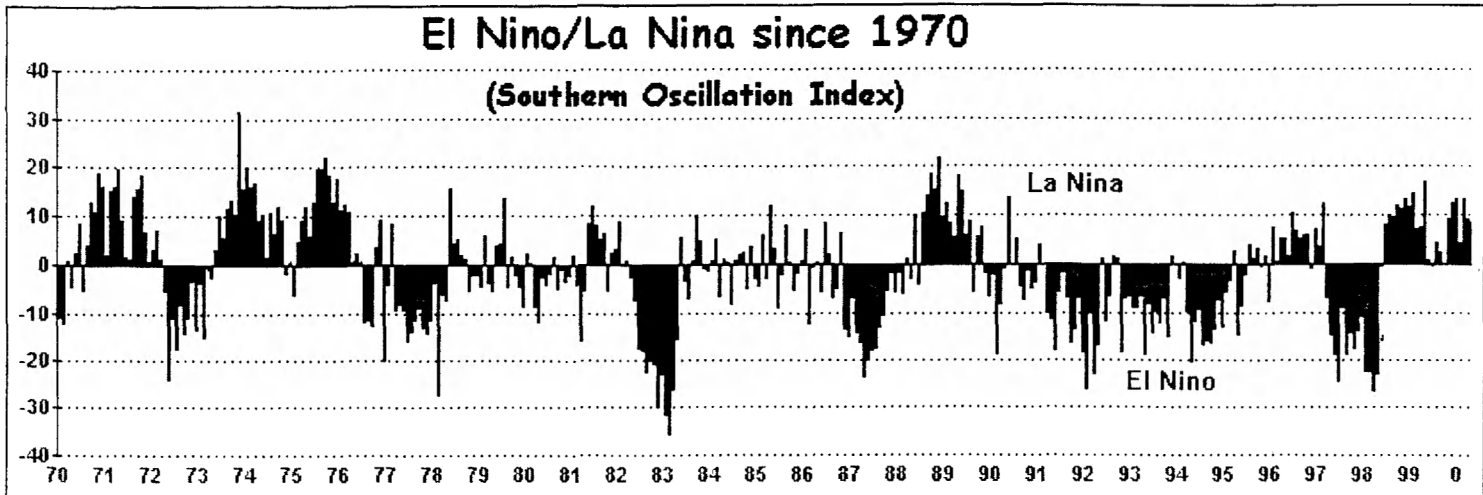
Most tide gauges, especially ones with long records, are located in regions which suffer tectonic activity and/or land uplift/subsidence from post-glacial rebound (mostly in the northern hemisphere), or changes in sea bed topography (eg. movements of sand shoals) affecting tidal patterns in places like the British Isles and northern Europe. Such records cannot be reliable and are largely uncorrectable, particularly when we are looking for such small changes on the scale of millimetres and centimetres.

## ● More El Nino?

- Warm (El Niño) episodes of the cyclic El-Niño/Southern-Oscillation (ENSO) phenomenon have been relatively more frequent or persistent since the mid-1970s. El Niño is associated with a shift of rainfall patterns over the western tropical Pacific, and its effects extend around the world, producing large variations in weather and climate.

Why cite the mid 1970s? The dates appear to have more to do with perceptions than with their scientific significance. Here is the El Nino/La Nina cycle since 1970. If we ignore that extra 5 years at the start of the series we would get the impression of dominance by El Nino. But adding that 5 years puts it into better perspective. If we simply start our series at 1996, that would show La Nina as dominant, a very different interpretation to the one being promoted.

The idea that El Niño is linked to 'global warming' was first postulated by Kevin Trenberth, partly because El Niño events always create a brief period of warming, while La Nina creates similar periods of cooling. Thus the idea that warm El Niños would begin to prevail over cool La Ninas has an obvious appeal within the warming scenario. The recent resurgence of La Nina has made Trenberth's claim somewhat redundant and it is therefore misleading for the IPCC to still promote this linkage.



● **Increases in Greenhouse Gases**

Carbon dioxide has increased in the atmosphere, but not at the exponential rate predicted earlier by the IPCC. Instead, the increase has been generally linear averaging about 1.6 ppm per year over the last two decades. (The rate of increase is higher during El Nino events and lower during La Nina events). This is an important difference because an exponential increase would have resulted in CO<sub>2</sub> doubling in a much shorter time than would be the case with a linear increase. At the present rate, CO<sub>2</sub> doubling from its assumed pre-industrial level of 280 ppm would be expected to occur in about 120 years from now.

This doubling scenario is the benchmark around which the model predictions are based and assume, without justification, that fossil fuels will be used at increasing rates during all that period, irrespective of technology changes, and pays no regard to the expected exhaustion of the world's oil and gas reserves.

- Observations indicate that uptake of CO<sub>2</sub> by terrestrial ecosystems since 1980 has equalled or slightly exceeded release of CO<sub>2</sub> caused by land-use change. The balance of uptake and release could be altered in the future, depending on many factors.
- Climate variability influences CO<sub>2</sub> uptake by land and oceans, often causing large differences in the rate of increase of atmospheric CO<sub>2</sub> concentration from one year to another.
- Atmospheric methane (CH<sub>4</sub>) concentrations have increased by 150% during the Industrial Era. The rate of CH<sub>4</sub> varies considerably and has become slower in the past two decades, for reasons that are not clear.

As for methane (CH<sub>4</sub>), the IPCC here is being quite disingenuous. They characterise the rate of increase as having 'become slower' in the past two decades, but the reality is that the increase has actually stopped since about 1992. Their use of the term 'past two decades' incorporates the pre-1992 methane increases and thus conveys the false impression that methane is still increasing in the atmosphere. We can therefore infer a 'discernible political influence' behind this misleading characterisation of methane.

● **'A Discernible Human Influence'**

*From the body of evidence since IPCC (1996), we conclude that there has been a discernible human influence on global climate.*

Does the IPCC seriously think that the 'discernible human influence' phrase will work a second time round? It caught media attention in 1995, but the statement itself is quite fatuous since it does not define exactly which human influences they believe are 'discernible'. It is patently self-evident that there has been human influence on the climate since Man first walked on the planet. Land clearing, deliberate burning of forests, bush and grassland (including by aboriginal peoples), de-forestation etc., all have an impact, however small, on climate.

There is plenty of evidence to show that deforestation on a large scale raises surface temperature in the region affected by up to 2°C, an effect which has nothing at all to do with greenhouse gases. Then there are the urban areas with their own warming micro-climates, again unrelated to greenhouse gases. There are the human impacts on vast areas of agricultural land which again may change temperatures into something different than they would have been in their wilderness state, but without greenhouse gases. Every large-scale land use change involves a change in albedo (surface reflectivity) and thus a change, however slight, in the radiative balance.

In this document, the 'human influence' is clearly intended to be applied only to carbon dioxide in the atmosphere, but the statement is phrased in such a way that it can also be defended on the grounds of including all human influences, not just greenhouse gases.

## ● Palaeoclimate

The claim (below) that the surface record is "more closely scrutinised" is a nonsense given the obvious **avoidance** of independent scrutiny of that record. The surface record shows a warming, so there is no motive to subject it to the same kind of rigorous review that the maverick satellite record was exposed to. Such a reluctance to engage in this very necessary review is not the kind of response which science would or should demand, but is certainly the kind of inaction one would normally associate with politics.

- *There is a longer and more closely scrutinised temperature record.* Paleoclimatic reconstructions of the past 1,000 years and model estimates of natural climate variations suggest that the observed warming over the past 100 years is exceptional and unlikely to be solely natural in origin. Three of the last five years have been the warmest in the instrumental record.

Note also from this quote the repeat of the earlier claim that the warming of the last 100 years was exceptional compared with any other time in the last 1,000 years, again denying the existence of the Medieval Warm Epoch.

The 'instrumental record' is the one which is at variance with the satellite record. Until such time as the surface record is subject to the same independent and stringent review process (with corrections if needed), then such claims cannot be credible. The satellite record is the only one to have passed independent review, leaving the surface record unreviewed, uncorrected, and simply not credible.

## ● Token 'Uncertainties'

No report claiming the status of 'science' would be complete without a few token 'uncertainties', a few harmless expressions of scientific caution to maintain an image of conservative scientific rectitude. The 'uncertainties' here are in stark contrast to the hard statements of undisputed 'fact' earlier in the summary. They are essentially token expressions and do nothing to modify or moderate the more alarming statements elsewhere in the policymakers summary.

- *There are new estimates of the climate response to natural and anthropogenic forcing.* Natural forcings alone, including volcanic eruptions and changes in solar output, are unlikely to explain the recent observed global warming (natural forcing effects produce a cooling over the last two decades) and the observed changes in vertical temperature structure of the atmosphere (notably the cooling of the stratosphere). There is still considerable uncertainty in estimates of sulphate aerosol forcing and the climate response. This uncertainty does not have a large effect on the detection of the combined signal from anthropogenic greenhouse gases and sulphate aerosols.
- *New detection techniques have been applied.* All studies show that the recent changes in global mean surface temperatures cannot readily be explained by natural causes. In the majority of cases, model estimates of anthropogenic temperature changes are consistent with observed changes. The overall evidence indicates that increases in greenhouse gases dominate the forcing response.
- *From the body of evidence since IPCC (1996), we conclude that there has been a discernible human influence on global climate.* Studies are beginning to separate the contributions to observed climate change attributable to individual external influences, both anthropogenic and natural. This work suggests that anthropogenic greenhouse gases are a substantial contributor to the observed warming, especially over the past 30 years. However, the accuracy of these estimates continues to be limited by uncertainties in estimates of internal variability, natural and

Inherent in all these above statements is the assumption that the surface record is established and scientifically undisputed. They do not even hint at the conflict between surface and satellites/sondes as a key 'uncertainty' in their above list. Nor do they acknowledge the lack of warming in the polar regions (which, according to the models, should show the largest warmings of all), another major 'uncertainty'. To admit to these latter uncertainties might endanger the warming agenda in a serious way, and are thus not mentioned.

## ● Back to the Future

### *Temperature*

- Coupled ocean-atmosphere climate models estimate that the equilibrium global mean temperature increase for a doubling of the atmospheric CO<sub>2</sub> concentration to be 2.5°C (with a probable range of 1.5 to 4.5°C). This estimate is unchanged from IPCC (1990) and IPCC (1996).
- Models continue to project that land areas will respond to a forcing faster than oceans. Response to a reduction in emissions will be slow, because of the long atmospheric residence time of many greenhouse gases and because of the thermal inertia of the oceans.

The IPCC have returned to their original numbers first popularised at the Toronto Conference of 1988, namely a predicted warming upon doubling of CO<sub>2</sub> of +1.5°C to +4.5°C, probably to counter the observation by some critics that the IPCC predictions were being progressively wound back. Here, they have hosed down any expectations that the predictions might be moderated even further in this report.

They have even gone back to their old 'thermal inertia' theory to explain away the lack of sufficient warming to date. It had been less used of late, being replaced by the 'sulfates cooling' theory to explain the lack of warming. Since the sulfates theory is failing to demonstrate its existence in the very places it should be most evident (eg. the northern hemisphere), it is interesting that the IPCC are now restoring the ocean thermal inertia theory.

## ● A Recently Cracked Record

The fatal flaws in the surface record have already been comprehensively discussed on this website both [here](#) and also [here](#). But in spite of this, the IPCC adheres to the surface record as its primary means to justify to policymakers that warming really is ongoing. Without it, the IPCC would be left with obscure proxy indicators and computer models, the latter having proved to be poor predictors of anything.

- *Arresting the decline of observational networks in many parts of the world. Unless networks are significantly improved upon, it may be difficult or impossible to detect climate change over large parts of the globe.*

There has been a significant decline during the 1990s in the number of weather stations worldwide, especially the crucial non-urban ones. The result has been an increasing bias toward urban records in the surface record and a degraded geographical spread. But this has not deterred the IPCC from presenting the 'global mean temperature' estimates as undisputed fact, with no reservations about the effect this station decline must be having and has had on the accuracy of the 1990s temperature estimates.

Note also the claim that "it may be difficult or impossible to detect climate change" if the observational networks continue to decline. Really? Are the climate changes they predict so slight as to be undetectable except by fine instruments and statistical processing? If so, why should the public even be concerned about it? Without the surface network to provide the raw material there could be no 'surface record' as it is presently promoted. We would have to rely instead on the satellites and that would remove a vital pillar from the warming theory.

## ● What Might Have Been ...

Presented here in the SPM are two graphs, one to compare 'observations' (ie. the surface record) with model simulations using natural climate forcings only, and the other to compare the same surface record with model