

2009 HOUSE NATURAL RESOURCES

HCR 3030

2009 HOUSE STANDING COMMITTEE MINUTES

Bill/Resolution No. 3030

House Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 2-12-09

Recorder Job Number: 9322

Committee Clerk Signature

Nancy L. Gerhardt

Minutes:

Chairman Porter – Opened the hearing on HCR 3030.

Rep. Wes Belter – Didn't sign in --I have a complete Hog House Amendment for HCR 3030.

Basically what this is saying is greenhouse gas reduction program should be should be developed and implemented by the US congress on a bipartisan basis, and not by federal agencies acting in unilateral implementing policies outside of congress. The aim should be to reduce ignitions of carbon dioxide while the economy continues to grow where new jobs are a standard of living that Americans can have. See **Attachment # 1**.

Dan Wosslund – ND Grain Growers Association – We support the HCR 3030. I've not reviewed the amendments, however, the spirit of the resolution to take a look at climate change legislation in terms of what it can or will do to the economy, what it will do to trade; to agriculture is great concern to Grain Growers Association and to agriculture in general.

Sandy Tabor – Didn't sign in – Energy Council – We too support the spirit behind HCR 3030 and hope you give it a Do Pass.

Julie Ellingson – ND Stockmen's Association – See **Attachment # 2**. I haven't had a chance to view the amendments either, but the concept is something we support.

Chairman Porter – Further testimony in support of HCR 3030? Any opposition to HCR 3030?

Verle Reinicke – See **Attachment # 3**.

Rep. Hunskor – You are very concerned over climate change, and as I read the resolution that addresses green house gasses and the effect that has on climate change. The amendment simply says it has to do with the congress looking into the green house have issue and the effect it has on the climate change. The amendment has a concern over the climate change you are talking about.

Mr. Reinicke – That's fine.

Brad Crabtree – Great Plains Institute – See **Attachment # 4**. I too have not seen the amendments. I urge a Do Not Pass on this resolution.

Renee Gopal – See **Attachment # 5**. I don't have time to review the amendments.

Dean Hulse – Landowner in Bottineau Co. – I wanted to make 1 point. One of the amendments was to allow capturing the investments in green house technologies. I'm all for that. If you pass this resolution I urge you to repeal ND century code section 490223. It reads the commission may not use, require the use of, or allow electric utilities to use environmental externality values in the planning, selection or acquisition of electric resources for the setting of rates for providing electric service. So, if this passes 40-02-23 should be stricken.

Jason Schaefer – See **Attachment # 6**.

Mary Mitchel – Dakota Resource Council – We oppose the original version of the bill. I haven't seen the amendment.

Chairman Porter – Any further testimony in opposition to HCR 3030? We will close the hearing on HCR 3030.

2009 HOUSE STANDING COMMITTEE MINUTES

Bill/Resolution No. 3030

House Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 2-12-09

Recorder Job Number: 9326

Committee Clerk Signature

Nancy L. Gerhardt

Minutes:

Chairman Porter – I have a motion from Rep. DeKrey for the amendment for HCR 3030 – 0101. 2nd from Rep. Clark. Discussion? Seeing none all in favor – unanimous voice vote – opposed none. Motion carries.

Rep. DeKrey – Move Do Pass As Amended.

Vice Chairman Damschen – 2nd

Chairman Porter – I have a motion from Rep. DeKrey for a Do Pass As Amended and a 2nd from Vice Chairman Damschen. Discussion

Rep. Hanson – Question

Chairman Porter – With no discussion all those in favor – unison voice vote – opposed – Rep. Myxter. Carried : Rep. Clark

Rep. Pinkerton – There is one question, about half way through the amendments it has this whereas, federal action should involve all sectors of the economy, all sources and sinks, and all types of greenhouse gasses. I didn't know what sinks meant.

Rep. Belter – Sinks are like where you might want to pump carbon dioxide into an existing well or some type of cavern or something like that.

Chairman Porter – So when we had that discussion about taking phosphorous out of the ground they can put something back in. That would be the definition.

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2/12/09
192

PROPOSED AMENDMENTS TO HOUSE CONCURRENT RESOLUTION NO. 3030

Page 1, line 1, after "A concurrent resolution" replace the remainder of the resolution with "urging Congress to use common sense principles for Congressional action on climate change legislation.

WHEREAS, federal action on greenhouse gas reduction programs should be developed and implemented by the United States Congress on a bipartisan basis and not by federal agencies acting unilaterally to implement policy outside of the Congress; and

WHEREAS, federal action should aim to reduce emissions of carbon dioxide while the economy continues to grow, new jobs are created, and the standard of living for all Americans increases; and

WHEREAS, federal action should incorporate a fully transparent cost-benefit assessment yielding a net positive outcome and achieving wide consensus as part of any carbon dioxide emission reduction program so that consumers can be made aware of the potential economic impacts of policies before their implementation; and

WHEREAS, federal action should encourage the rapid research, development, demonstration, and deployment, through public-private partnerships, of a broad spectrum of supply-side and demand-side technologies and practices, including energy efficiency, renewable technologies, fossil energy technologies with and without carbon capture and storage, carbon sequestration, and nuclear energy; and

WHEREAS, federal action should allow the utility sector to continue to supply consumers with adequate supplies of clean, affordable, and reliable energy and to recover all costs necessary to achieve any greenhouse gas reduction levels sought by public policies; and

WHEREAS, federal action should involve all sectors of the economy, all sources and sinks, and all types of greenhouse gases; and

WHEREAS, federal action should recognize that climate variability is a global phenomenon that requires comprehensive, long-term, and worldwide responses; and

WHEREAS, federal action should recognize that the timeframe for implementation of any greenhouse gas reduction requirements must be tied to technology availability, reliability, and economic feasibility in order to avoid unacceptable impacts on consumers; and

WHEREAS, federal action should target revenues generated by a climate change program to the rapid development and deployment of technologies to capture and store greenhouse gases; and

WHEREAS, federal action should allow greater access to onshore and offshore public lands for the development of domestic energy resources such as renewables, oil and gas, oil shale, and coal that can be used in power generation technologies that can help America reduce its greenhouse gas intensity; and

WHEREAS, federal action should recognize and protect existing and past investment decisions for generation resources such that the net costs of owning and operating existing resources are not increased as a result of any program and that any

2022

carbon emission reduction program must be limited in its impact to future investment decisions and tailored to the actual net future growth in demand for energy after application and full use of existing resources;

NOW, THEREFORE, BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES OF NORTH DAKOTA, THE SENATE CONCURRING THEREIN:

That the Sixty-first Legislative Assembly urges the Congress of the United States to use common sense principles for congressional action on climate change legislation; and

BE IT FURTHER RESOLVED, that the Secretary of State forward copies of this resolution to the President, the North Dakota Congressional Delegation, and the Majority and Minority Leaders of the United States House of Representatives and the United States Senate."

Renumber accordingly

Date: 2-12-09
Roll Call Vote #: _____

2009 HOUSE STANDING COMMITTEE ROLL CALL VOTES
BILL/RESOLUTION NO. 3030

House Natural Resources Committee

☐ Check here for Conference Committee

Legislative Council Amendment Number _____

Action Taken ☒ Do Pass ☐ Do Not Pass ☒ As Amended

Motion Made By DeKrey Seconded By Damschen

Representatives	Yes	No	Representatives	Yes	No
Chairman Porter	✓		Rep Hanson	✓	
Vice Chairman Damschen	✓		Rep Hunsakor	✓	
Rep Clark	✓		Rep Kelsh	✓	
Rep DeKrey	✓		Rep Myxter		✓
Rep Drovdal	✓		Rep Pinkerton	✓	
Rep Hofstad	✓				
Rep Keiser	✓				
Rep Nottestad	✓				

Total (Yes) 12 No 1

Absent 0

Floor Assignment Clark

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

HCR 3030: Natural Resources Committee (Rep. Porter, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (12 YEAS, 1 NAY, 0 ABSENT AND NOT VOTING). HCR 3030 was placed on the Sixth order on the calendar.

Page 1, line 1, after "A concurrent resolution" replace the remainder of the resolution with "urging Congress to use common sense principles for Congressional action on climate change legislation.

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WHEREAS, federal action should encourage the rapid research, development, demonstration, and deployment, through public-private partnerships, of a broad spectrum of supply-side and demand-side technologies and practices, including energy efficiency, renewable technologies, fossil energy technologies with and without carbon capture and storage, carbon sequestration, and nuclear energy; and

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WHEREAS, federal action should recognize and protect existing and past investment decisions for generation resources such that the net costs of owning and

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That the Sixty-first Legislative Assembly urges the Congress of the United States to use common sense principles for congressional action on climate change legislation; and

BE IT FURTHER RESOLVED, that the Secretary of State forward copies of this resolution to the President, the North Dakota Congressional Delegation, and the Majority and Minority Leaders of the United States House of Representatives and the United States Senate."

Renumber accordingly

2009 SENATE NATURAL RESOURCES

HCR 3030

2009 SENATE STANDING COMMITTEE MINUTES

Bill/Resolution No. 3030

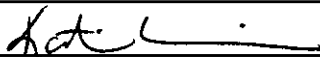
Senate Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: March 19, 2009

Recorder Job Number: 11262

Committee Clerk Signature



Minutes:

Senator Lyson opens the hearing on HCR 3030, urging Congress to use common sense principles for Congressional action on climate change legislation. All the committee members were present.

Representative Belter We as a nation have self inflicted an energy crisis that has resulted in our country not developing the energy resources that we do have. The energy resources that we do have developed I am concerned that we do not find ourselves in a situation where we do not over regulate and jeopardize the security of this country economically by imposing regulations that are counterproductive. I feel this should be implemented by the United States Congress and not by another agency. We have seen many times where rules are imposed by agencies or imposed by the Judicial Branch and those of us who are involved in the Legislative Branch lose control of what is happening. I think it is important as a sociality that we make sure Congress is responsible for any environmental regulations that take place and that we do not turn that over to other agencies. I think it is important that we do not impede economic growth or new job creations or lower our standards of living. It is important to make sure what we do is transparent as far as cost benefits to the consumers who will ultimately be the ones who will have to pick up the tab for whatever environmental standards that are imposed upon us. It is

important that we allow the security sector to continue to supply the consumers with adequate supplies of clean, affordable, and reliable energy.

Senator Triplett I think it would be a little hypocritical of us to tell Congress they have to be fully transparent and yet we tell our own regulators that they can't be fully transparent.

Representative Belter, We are talking about environmental issues here. I don't think in all the discussions about environmental issues that there is enough information going out to consumers about what this will actually cost.

Sandi Tabor, Lignite Energy Council, Our general policy is in support of a global solution to the regulation of greenhouse gases. We support a national solution that is driven by Congress and agree that the rapid deployment through way of private public partnership of funding for technology development is imperative. We agree with the resolution itself urging Congress to use common sense when developing greenhouse gas policies.

Michael Martin, Past President of North Dakota Grain Growers Association, spoke in favor of HCR 3030 (see attached testimony #2).

Senator Lyson asks Michael if he supports the amendments.

Michael Martin replies those amendments draw the resolution closer in line with our feelings on climate change.

Brian Kramer, North Dakota Farm Bureau, We also stand in support of HCR 3030. The basic concept is Congress should use common sense when putting this thing together.

Julie Ellingson, North Dakota Stockmen's Association, spoke in favor of the HCR 3030 (see attached testimony #3).

Bob White, All of the changes I was going to ask for were already presented in the amendment by Representative Belter. They were not in the exact wording I have, but close

enough and I am in support of the amendment. I would ask our Congress to be prudent, but also ask that they see it in the light of the rest of the world as well as the United States.

Senator Lyson closed the hearing on HCR 3030.

2009 SENATE STANDING COMMITTEE MINUTES

Bill/Resolution No. HB3030

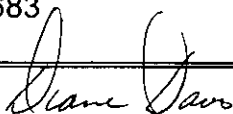
Senate Natural Resources Committee

☐ Check here for Conference Committee

Hearing Date: 4/2/09

Recorder Job Number: 11683

Committee Clerk Signature



Minutes: **Senator Lyson, Chairman**

Committee Work

Senator Triplett – Outlines how she would like to see an amendment read.

Senator Erbele Moves the .0204 amendment

Senator Schneider seconds

Verbal vote on the amendment, passes

Senator Erbele motions do pass as amended

Senator Hogue seconds

Discussion

Senator Triplett said she would vote against this because of the one line regarding Federal action should allow greater access to onshore and offshore public lands for development of domestic energy resources. She believes it should be done in an environmentally sensitive way.

Senator Schneider – Says he is a strong supporter of common sense principles and would be happy to see the ND Senate stand up for those common sense principles, he intends to vote for.

Verbal vote – passes – Senator Schneider will carry

98338.0204
Title.

Prepared by the Legislative Council staff for
Representative Belter
March 19, 2009

PROPOSED AMENDMENTS TO ENGROSSED HOUSE CONCURRENT
RESOLUTION NO. 3030

Page 1, line 1, after "resolution" replace the remainder of the resolution with "urging Congress to use common sense principles for congressional action on climate change legislation.

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WHEREAS, federal action aimed to reduce emissions of carbon dioxide should not impede economic growth, new job creation, or lower the standard of living for all Americans; and

WHEREAS, federal action should incorporate a fully transparent cost-benefit assessment yielding a net positive outcome and achieving wide consensus as part of any carbon dioxide emission reduction program so that consumers can be made aware of the potential economic impacts of policies before their implementation; and

WHEREAS, federal action should encourage the rapid research, development, demonstration, and deployment, through public-private partnerships, of a broad spectrum of supply-side and demand-side technologies and practices, including energy efficiency, renewable technologies, fossil energy technologies with and without carbon capture and storage, carbon sequestration, and nuclear energy; and

WHEREAS, federal action should allow the utility sector to continue to supply consumers with adequate supplies of clean, affordable, and reliable energy and to recover all costs necessary to achieve any greenhouse gas reduction levels sought by public policies; and

WHEREAS, federal action should involve all sectors of the economy, all sources and sinks, and all types of greenhouse gases; and

WHEREAS, federal action should recognize that climate variability is a global phenomenon that requires comprehensive, long-term, and worldwide responses; and

WHEREAS, federal action should recognize that the timeframe for implementation of any greenhouse gas reduction requirements must be scientifically based and tied to technology availability, reliability, and economic feasibility in order to avoid unacceptable impacts on consumers; and

WHEREAS, federal action should allow greater access to onshore and offshore public lands for the development of domestic energy resources such as renewables, oil and gas, oil shale, and coal that can be used in power generation technologies that can keep America a leader in economic development, and not be impeded by unfair environmental standards that are not imposed by world economic competitors; and

WHEREAS, federal action should recognize and protect existing and past investment decisions for generation resources such that the net costs of owning and operating existing resources are not increased as a result of any program and that any carbon emission reduction program must be limited in its impact to future investment decisions and tailored to the actual net future growth in demand for energy after application and full use of existing resources;

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REPRESENTATIVES OF NORTH DAKOTA, THE SENATE CONCURRING THEREIN:**

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Renumber accordingly

Date: 4/2/09

Roll Call Vote #: 1

2009 SENATE STANDING COMMITTEE ROLL CALL VOTES

Senate _____ Natural Resources _____ Committee

☐ Check here for Conference Committee

Bill #: 3030

Legislative Council Amendment Number _____

Action Taken ☐ Do Pass ☐ Do Not Pass ☐ Amended ☒ Amendment -02042

Motion Made By Sen. Erbele Seconded By Sen. Schneider *chang*

Senators	Yes	No	Senators	Yes	No
Senator Stanley W. Lyson, Chairman			Senator Jim Pomeroy		
Senator David Hogue, Vice Chairman			Senator Mac Schneider		
Senator Robert S. Erbele			Senator Constance Triplett		
Senator Layton W. Freborg					

Total (Yes) _____ No _____

Absent _____

Floor Assignment _____

If the vote is on an amendment, briefly indicate intent:

*2nd to last whereas
add " ; "
overstrike the rest
leave "and"*

Date: 4/2/09Roll Call Vote #: 2**2009 SENATE STANDING COMMITTEE ROLL CALL VOTES**

Senate _____ Natural Resources _____ Committee

☐ Check here for Conference CommitteeBill #: 3030

Legislative Council Amendment Number _____

Action Taken ☒ Do Pass ☐ Do Not Pass ☒ Amended ☐ AmendmentMotion Made By Sen. Erbele Seconded By Sen. Hogue

Senators	Yes	No	Senators	Yes	No
Senator Stanley W. Lyson, Chairman			Senator Jim Pomeroy		
Senator David Hogue, Vice Chairman			Senator Mac Schneider		
Senator Robert S. Erbele			Senator Constance Triplett		
Senator Layton W. Freborg					

Total (Yes) _____ No _____

Absent _____

Floor Assignment Sen. Schneider

If the vote is on an amendment, briefly indicate intent:

*Carried
voice vote*

REPORT OF STANDING COMMITTEE

HCR 3030, as engrossed: Natural Resources Committee (Sen. Lyson, Chairman) recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (7 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed HCR 3030 was placed on the Sixth order on the calendar.

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Renumber accordingly

2009 TESTIMONY

HCR 3030

North Dakota



STOCKMEN'S ASSOCIATION

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Ph: (701) 223-2522

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HCR 3030 Testimony

Good morning, Chairman Porter and members of the Natural Resources Committee. For the record, I am Julie Ellingson and I represent the North Dakota Stockmen's Association.

The North Dakota Stockmen's Association rises in support of HCR 3030, appreciating the take-it-slow approach to enacting significant climate change legislation.

Climate change has been a hot-button issue over the last decade, particularly as it relates to global warming. Interestingly, at our national meeting last month, one scientist who was a presenter there described a different kind of climate change phenomenon that he thinks is occurring – a mini ice age – due to low sunspot activity.

After the winter of 2009 in North Dakota, some may tend to agree with that scientist over Al Gore and his theory of the global temperature rising!

I tell you this to point out that there is conflicting science in relation to climate change and, so, the precautions outlined in this resolution seem appropriate. Therefore, I ask for your favorable consideration of 3030.

HCR 3030

Chairman Porter and members of the committee,

My name is Verle Reinicke, and I am here representing myself to urge a Do Not Pass on this concurrent resolution 3030. I'm wondering exactly what is not "well-thought-out" "climate change legislation".

I read (lines 3-4, page 1) that along with the United States "166 other countries, rejected the Kyoto Protocol's energy-rationing scheme." There are 195 countries in the world, of which as of February, 2009, 181 nations have signed it. Wikipedia has a map of the world indicating the signatory nations and those which have not. (See attachment 1.) I'm wondering if there is some sort of mathematical sleight of hand here.

No one denies that there are weather fluctuations. Everyone notices that this winter has had more snow and cold than more recent winters. As a matter of fact, last year at this time we were in the midst of the driest winter on record. The weather office in Bismarck measured only one and one-half inches for about a six-month period late fall into spring. That's indicative of a desert climate. However, the arid pattern changed for the rest of the year: welcome rains came, with the exception of the far west, which has been in drought for some years now. The central part of the state along with the west about three years ago experienced drastic drought. A prairie fire south of Mandan destroyed a small town.

Twelve years ago there was record snowfall across most of the state, and Grand Forks experienced a catastrophic record flood. Some places in Iowa experienced 100-year, and in some cases 500-year floods this past summer. That is on top of 100-year floods in some of the same places about 15 years earlier. Katrina was the most severe of a cluster of hurricanes which devastated the Gulf coast a few years ago. In part, scientists said that that was due in part to uncommonly high water temperatures in the Gulf of Mexico. California is experiencing more and more brush fires in recent years, and devastating fires can occur at any time of the year, having been limited more or less to late summer and fall in past years. Europe has had record heat. Australia right now has the worst fires in their history because of drought.

All of these events and more can be used to deny or affirm that global warming is taking place.

And prime facie both could be correct. However, singling out specific happenings over a short period of time or comparing this year to last year is not climate. Weather is short-term, and climate is the cumulative effect of weather over the long haul. Climate is "(t)he average of weather over at least a 30-year period. Note that the climate taken over different periods of time (30 years, 1000 years) may be different. The old saying is climate is what we expect and weather is what we get" (Climate Prediction Center, National Weather Service).

North Dakota, for instance, is in two climatological areas: the east more humid and the west drier. Fargo can expect that three out of four years on average there will be adequate moisture while Dickinson, by contrast, can never expect that kind of regularity.

Climate change is about the long-term changes in temperature, precipitation and the like. For most scientists there is no question about climate change: it's happening. An essay by Naomi Oreskes, Chair of the Department of History and Scientific Studies Program at the University of California San Diego, CA, published in Science Magazine, December 3, 2004, writes that there is consensus among scientists on the issue of climate change. 928 papers between the years 1993 and 2003 containing the words "climate change" were accessed. These are papers which circulate in the scientific community to be read, critiqued and commented on: it is proper and orderly scientific method. Not one of them denied the premise of climate change.

"Will Gosnold, professor and chair of geology and geological engineering (at the University of North Dakota), has found that the climate change we're experiencing isn't gradual. Global warming has sharply accelerated in the last decade, and, he says, the warming is more pronounced in northern areas such as North Dakota and Canada than it is in southern areas, such as Texas" (<http://www.dimensions.und.edu/February2007/HTML/bore.html>).

Professor Gosnold has been gathering data on earth's temperature from boreholes. He takes measurements from different kinds of mostly abandoned wells. The information gathered in those places is much more stable and reliable than those taken from ground, atmospheric or satellite instruments. Further, data can be gleaned from the test sites that gives historical data on temperature levels over hundreds, even thousands of years. The readings show a significant rise in temperature in the last 50 years or so. Gosnold's research is also cited by a number of experts in the field and hailed as significant new research.

The loss of the ice cap in the Arctic and the effect of that on Polar Bears is questioned in the resolution. It is posited that there is no appreciable harm done to these animals, that the population of the animals is increasing. Thomas Schueneman, who is involved in doing research on Polar Bears on the western side of Hudson Bay says of those who cite the figures like that "likely don't know a whit about what they're talking about." He says they're guessing in part because there were no attempts to keep records on Polar Bear populations until into the 1970s. The population of these animals in the western region of Hudson Bay has decreased 22% in the last 17 years to only 1000 bears. It is not wise to be cavalier about non-human species.

There is also ample information and data to countermand the resolution's attempt to downplay the data gathered from ice core samples taken both in Greenland and even deeper ones covering the last 600,000 years in Antarctica. There have been variations in levels of CO₂ over those years, but those levels now are the highest they've been in 600,000 years. That increase does not begin to show up until very recent times, even as recent as the length of some of our lifetimes.

My youngest son has just this spring graduated from Hawaii Pacific University with degrees in marine biology and biochemistry and a minor in Oceanography and now is in a master's program in marine biology at the same university. He directed me to Scientific American, March, 2006, and an article titled "The Dangers of Ocean Acidification." The article points out that because of increased CO₂ concentrations the oceans are becoming more acidic. The cause for alarm is that a very small increase in acidity can disrupt the ocean ecosystem dangerously.

What is human culpability in all of this, if there is any at all? That humans are the chief culprits in the issue of climate change is for many difficult to accept. From the point of view of the Bible, however, there is no question. According to the Bible, everything is related to everything else. That goes for the human and the non-human alike. The non-human impacts the human, and the human impacts the non-human. There is no way of escaping it; it's built into the created order.

Douglas John Hall, an emeritus systematic theologian, at McGill University in Toronto, Canada, in volume one of his systematic theology, *Thinking the Faith*, reminds us that nature has limits. Often, we modern humans have acted as though nature is boundless. There will always be iron, coal, oil, seas full of fish, sufficient undefiled land for food, air that will clean itself. Hall suggests that because of human overindulgence, nature can and does rebel and become dysfunctional. He says, "If human beings insist upon pressing nature beyond its capacities to produce; if human societies value standards of living more grandiose than the natural habitat can consistently sustain, if for the sake of its own (short-term) survival the human species is ready to 'sacrifice' other species and ecological systems on which its (long-range) survival is dependent, then, surely, one can expect nature to respond to these inordinate demands in a manner suggestive of a rebellion" (p. 220).

Terrence E. Fretheim, Old Testament professor at Luther Seminary, St. Paul, MN, in his *God and World in the Old Testament* looks at the Old Testament from the point of view of creation. Humans have "a deeply adverse impact on the creation" (p. 80), he says. One of the examples he uses is the Exodus story and particularly the 10 plagues that happen as the result of Pharaoh's stubbornness.

Fretheim makes the argument that the plagues are a direct result of Pharaoh's political, economic and social policies. The connection in the narrative story is fairly obvious because the Hebrew word for earth or land is used over 50 times. The story, then, is about what is happening to God's land because of what the humans are doing on and to it. Because of Pharaoh's policies, the creation acts in what he calls a hypernatural manner: it is nature in excess.

There is a lack of justice in Pharaoh's rule, and the land reacts, the creation reacts.

In our own day, there is a crisis with the climate because we humans have acted unjustly toward the rest of creation.

Again, I urge a Do Not Pass for this resolution.

Attachment 1



As of February 2009, 181 states have signed and ratified the Kyoto Protocol to the United Nations Framework Convention on Climate Change, aimed at combating global warming.

Participation in the Kyoto Protocol, where dark green indicates countries that have signed and ratified the treaty, yellow is signed, but not yet ratified, grey is not yet decided and red is no intention of ratifying.

http://en.wikipedia.org/wiki/List_of_Kyoto_Protocol_signatories

Attachment #4

Testimony in Opposition to HCR 3030: Urging Congress not to enact hasty or not well-thought-out climate change legislation
House Natural Resources Committee
February 11, 2009

Brad Crabtree, Program Director
Great Plains Institute
Ashley, North Dakota
(701) 647-2041
bcrabtree@gpisd.net

Chairman Porter and Committee members, thank you for the opportunity to testify in opposition to HCR 3030. I am program director of the Great Plains Institute, where I direct and staff cooperative regional initiatives on energy and climate policy and technology that involve representatives from private industry, agriculture, state governments, and environmental organizations.

The premise of this resolution, that the U.S. is about to embark on hasty and not well thought out climate policy, is unfounded. U.S. congressional debates on climate change and policy began when I was an undergraduate in college – 20 years ago. Our country has sat on the sidelines, while some of America's closest allies have shown leadership on trying to address the growing global problem of climate change. Indeed, our lack of leadership is one major source of America's diminished reputation in the world today.

Moreover, the scientific claims in this resolution are irresponsible and intentionally manipulative. I am not a scientist so I will spare all of you arguing the scientific claims point by point. However, passage of this resolution by the Legislative Assembly would undermine steps taken recently in North Dakota that have begun to restore our reputation as a place where policymakers take science seriously.

A decade ago, North Dakota was frequently caricatured nationally because of the efforts of some, but not all, in the coal and utility industry to fund and promote an active agenda of distorting climate science, the most notorious example being funding the Greening Earth Society, an organization which claimed that increased carbon dioxide (CO2) emissions are beneficial.

Since then, major North Dakota power companies have acknowledged the scientific reality of climate change and begun to take important steps in technology development and in their business practices to address the problem. Indeed, the Legislative Assembly has also stepped up to the plate. Legislation introduced this session by the Industrial Commission, with input from the coal and utility industries, has passed the Senate unanimously. This excellent and comprehensive legislation will put North Dakota on the map as a national leader in creating a framework for managing carbon dioxide. Why then would the Legislative Assembly choose to undermine this effort by passing a resolution that denies basic science and rejects any responsibility on our part for implementing solutions?

To make matters worse, the resolution states that anything we might do in terms of reducing emissions would be a small part of what is needed globally to solve the problem; therefore, we should not take action. This is a little like saying that because North Dakota and its 640,000 citizens contribute a very small part to the U.S. Federal Treasury, we therefore should not have to pay taxes. This is flawed ethics.

There will be federal climate policy whether some members of the Legislative Assembly like it or not. And for North Dakota's fossil and renewable energy industries to prosper in the energy economy of the future, we need the goodwill of members of congress and others from around the country to support major investments in low carbon coal and other key energy technologies and in incentives for their deployment. With that support, North Dakota is well-positioned to become a national energy leader.

Yet this resolution will not influence North Dakota's congressional delegation as intended, but will be disregarded nationally by all as lacking credibility and integrity, and will only serve, once again, to brand North Dakota as hostile to science and out of step with reality. North Dakota needs desperately to be building bridges with others to implement an effective national climate policy rather than actively marginalizing ourselves once again.

I respectfully urge a do not pass on this resolution. Thank you.

Testimony in Opposition to HCR 3030: A concurrent resolution urging Congress to not enact hasty or not well-thought-out climate change legislation

**House Natural Resources Committee
February 12, 2009**

**Renee Gopal
Prairie Climate Stewardship Network
701-647-2036 psn@prairiestewardship.org**

Chairman Porter and Committee members, I testify in opposition to HCR 3030. I am here as executive director of the Prairie Climate Stewardship Network, an organization that works with the religious community, civic and other organizations, communities and the private sector to foster climate change solutions.

While the resolution starts off with a seemingly logical position – who would want any sort of “hasty or not-well-thought-out legislation” – the “whereas” statements that follow are deeply troubling in tone, the purported “facts” listed, and their reasoning.

The responsibility of leadership requires us to respond appropriately to the challenges of our time, put aside biases and draw upon the knowledge and experience of experts. In the case of global climate change, that means acknowledging the credible body of science on global climate change and the findings and determination of experts and established bodies of science. This extends beyond the Intergovernmental Panel on Climate Change to include respected U.S. scientific authorities: NASA, the US National Academy of Sciences, National Oceanic and Atmospheric Administration, American Meteorological Society, American Geophysical Union, and Geological Society of America.

For centuries, churches have stood on the opposite side of science on various issues, adopting a similar hostile posture toward science that is evident in this and other resolutions before you today. However, today, every single mainline Christian denomination in the U.S., together with American Evangelicals have issued faith statements, respecting the science and calling on us to respond to the challenge of global climate change by reminding us of our responsibility to be good stewards to creation (see attachment). We are also urged to call on our leaders to act accordingly. Leadership ought not to pretend to be scientists themselves, but instead pay attention to the recognized bodies of experts and act accordingly.

It is ironic to read this resolution in 2009, when, already in 2007, in a report entitled “National Security and the Threat of Climate Change,” eleven retired military officers – six admirals and five generals – recognized global climate change as a national security threat and called for immediate action. With regard to scientific debate on climate change being an excuse not to act, I offer you what General Sullivan has to say: “We never have 100% certainty. If you wait until you have 100% certainty, something bad is going to happen on the battlefield. That’s something we know.” We should trust our military not to engage in fear mongering about climate change and take their concerns seriously. I call your attention to the attachment included with this testimony that offers further perspectives from our military leaders.

Just how real is global climate change to other leaders? Real enough that the world’s largest companies are actively taking steps to reduce their greenhouse gas emissions and support public policy action. In 2006, John Hofmeister, President of BP in the U.S., stated “It’s a waste of time to debate it [the science of global climate change].” “Policymakers have a responsibility to address it. The nation needs a public policy. We’ll adjust.” In

2005, John Coomber, CEO of Swiss Re, the world's second largest insurance company had this to say: "Risk of climate change is real. It's here. It's affecting our business today." In 2006, Lee Scott, CEO of Wal-Mart stated, "Global warming is real, now, and it must be addressed." Duke Energy, one the largest utilities in the U.S. favors U.S. policy on climate change as soon as possible.

So, given all this, why do we have resolutions debating consensus science and urging, for all intense and purposes, inaction?

A 2009 Gallop poll finds that 68 percent of North Dakotans find religion to be an important part of their daily lives. Given these religious beliefs, North Dakotans are quick to respond to humanitarian needs, not only at home but also overseas. At the same time, we fail to recognize the global implications of our global greenhouse gas emissions for the rest of the world, especially the poorest and most vulnerable, and for future generations. In 2006, we were 4.5 percent of the world's population, yet were responsible for 20 percent of global emissions. Should we take responsibility for the role we play in the problem, or should we, as this resolution advocates, prevent prompt action to reduce greenhouse gas emissions and cease being good stewards of this one planet that we live on?

I respectfully urge a do not-pass on this resolution. Thank you.

Attachment

Military

"Climate change can act as a threat multiplier for instability in some of the most volatile regions of the world, and it presents significant national security challenges for the United States. Accordingly, it is appropriate to start now to help mitigate the severity of some of these emergent challenges. The decision to act should be made soon in order to plan prudently for the nation's security. The increasing risks from climate change should be addressed now because they will almost certainly get worse if we delay." *National Security and the Threat of Climate Change*, 2007.

Military Advisory Board:

General Gordon R. Sullivan, USA (Ret.) Former Chief of Staff, U.S. Army Chairman, Military Advisory Board

Admiral Frank "Skip" Bowman, USN (Ret.) Former Director, Naval Nuclear Propulsion Program; Former Deputy Administrator-Naval Reactors, National Nuclear Security Administration

Lieutenant General Lawrence P. Farrell JR., USAF (Ret.) Former Deputy Chief of Staff for Plans and Programs, Headquarters U.S. Air Force

Vice Admiral Paul G. Gaffney II, USN (Ret.) Former President, National Defense University; Former Chief of Naval Research and Commander, Navy Meteorology and Oceanography Command

General Paul J. Kern, USA (Ret.) Former Commanding General, U.S. Army Materiel Command

Admiral T. Joseph Lopez, USN (Ret.) Former Commander-in-Chief, U.S. Naval Forces Europe and of Allied Forces, Southern Europe

Admiral Donald L. "Don" Pilling, USN (Ret.) Former Vice Chief of Naval Operations

Admiral Joseph W. Prueher, USN (Ret.) Former Commander-in-Chief of the U.S. Pacific Command (PACOM) and Former U.S. Ambassador to China

Vice Admiral Richard H. Truly, USN (Ret.) Former NASA Administrator, Shuttle Astronaut and the first Commander of the Naval Space Command

General Charles F. "Chuck" Wald, USAF (Ret.) Former Deputy Commander, Headquarters U.S. European Command (USEUCOM)

General Anthony C. "Tony" Zinni, USMC (Ret.) Former Commander-in-Chief of U.S. Central Command (CENTCOM)

Select Quotes:

Climate Change as serious threat to national security:

"You have very real changes in natural systems that are most likely to happen in regions of the world that are already fertile ground for extremism" ADM Lopez

Climate change acts as a threat multiplier for instability in some of the most volatile regions of the world:

"Unlike the challenges that we are used to dealing with, these will come upon us extremely slowly, but come they will, and they will be grinding and inexorable. But maybe more challenging is that they will affect every nation, and all simultaneously." VADM Richard Truly

Climate change, national security, and energy dependence are a related set of global challenges:

"The critical factors for economic and security stability in the 21st century are energy, water and the environment . . . When [these factors] are not in balance, people live in poverty, suffer high death rates, or move toward armed conflict." Gen Kern

Regional Impacts: Europe

"Europe will be focused on its own borders. There is potential for fracturing some very strong alliances based on migration and the lack of control over borders." ADM Pilling

Regional Impacts: Middle East

"Even small changes may have a greater impact here than they may have elsewhere. You already have great tension over water. It's not hard to make the connection between climate change and instability. . . ." Gen Zinni

Weather Affects Operations:

"A major weather event becomes a distraction from your ability to focus on and execute your military mission."
Gen Kern.

Conclusion:

"We will pay for this one way or another. We will pay to reduce greenhouse gas emissions today, and we'll have to take an economic hit of some kind. Or we will pay the price later in military terms. And that will involve human lives. There will be a human toll." Gen Zinni

Religion***Global Climate Change: A Plea for Dialogue, Prudence, and the Common Good*****A Statement of the United States Conference of Catholic Bishops (2001) (Excerpt)**

"The dialogue and our response to the challenge of climate change must be rooted in the virtue of prudence. While some uncertainty remains, most experts agree that something significant is happening to the atmosphere. Human behavior and activity are, according to the most recent findings of the international scientific bodies charged with assessing climate change, contributing to a warming of the earth's climate. Although debate continues about the extent and impact of this warming, it could be quite serious . . . Consequently, it seems prudent not only to continue to research and monitor this phenomenon, but to take steps now to mitigate possible negative effects in the future."

Environment: Caring for Creation: Vision, Hope, and Justice**Evangelical Lutheran Church in America (1993) (excerpts)**

"Even more widespread and serious, according to the preponderance of evidence from scientists worldwide, are: the depletion of the protective ozone layer, resulting from the use of volatile compounds containing chlorine and bromine; and dangerous global warming, caused by the buildup of greenhouse gases, especially carbon dioxide. The idea of the earth as a boundless warehouse has proven both false and dangerous. Damage to the environment eventually will affect most people through increased conflict over scarce resources, decline in food security, and greater vulnerability to disease."

Climate Change: An Evangelical Call to Action (2006) (excerpts)

"Over the last several years many of us have engaged in study, reflection, and prayer related to the issue of climate change (often called "global warming"). For most of us, until recently this has not been treated as a pressing issue or major priority. Indeed, many of us have required considerable convincing before becoming persuaded that climate change is a real problem and that it ought to matter to us as Christians. But now we have seen and heard enough to offer the following moral argument related to the matter of human-induced climate change. We commend the four simple but urgent claims offered in this document to all who will listen, beginning with our brothers and sisters in the Christian community, and urge all to take the appropriate actions that follow from them.

Claim 1: Human-Induced Climate Change is Real

Since 1995 there has been general agreement among those in the scientific community most seriously engaged with this issue that climate change is happening and is being caused mainly by human activities, especially the burning of fossil fuels. Evidence gathered since 1995 has only strengthened this conclusion.

Because all religious/moral claims about climate change are relevant only if climate change is real and is mainly human-induced, everything hinges on the scientific data. As evangelicals we have hesitated to speak on this issue until we could be more certain of the science of climate change, but the signatories now believe that the evidence demands action:

- The Intergovernmental Panel on Climate Change (IPCC), the world's most authoritative body of scientists and policy experts on the issue of global warming, has been studying this issue since the late 1980s. (From 1988—2002 the IPCC's assessment of the climate science was Chaired by Sir John Houghton, a devout evangelical Christian.) It has documented the steady rise in global temperatures over the last fifty years,

projects that the average global temperature will continue to rise in the coming decades, and attributes "most of the warming" to human activities.

- The U.S. National Academy of Sciences, as well as all other G8 country scientific Academies (Great Britain, France, Germany, Japan, Canada, Italy, and Russia), has concurred with these judgments.
- In a 2004 report, and at the 2005 G8 summit, the Bush Administration has also acknowledged the reality of climate change and the likelihood that human activity is the cause of at least some of it.

In the face of the breadth and depth of this scientific and governmental concern, only a small percentage of which is noted here, we are convinced that evangelicals must engage this issue without any further lingering over the basic reality of the problem or humanity's responsibility to address it.

Claim 2: The Consequences of Climate Change Will Be Significant, and Will Hit the Poor the Hardest

Claim 3: Christian Moral Convictions Demand Our Response to the Climate Change Problem

Claim 4: The need to act now is urgent. Governments, businesses, churches, and individuals all have a role to play in addressing climate change—starting now.

The basic task for all of the world's inhabitants is to find ways now to begin to reduce the carbon dioxide emissions from the burning of fossil fuels that are the primary cause of human-induced climate change."

Other Denominational Statements and Resolutions That Address Global Warming/Climate Change

- American Baptist Churches, USA: *American Baptist Resolution on Global Warming (1991)*
- Church of the Brethren General Board: Resolution on Global Warming/Climate Change (2001); Creation: Called to Care (1991)
- Episcopal Church: Resolution on Environment (July 1991 70th General Convention); The Episcopal Church Executive Council Resolution: Urging the President to address global warming (June 2001)
- Evangelical Lutheran Church in America: Caring for Creation (1993)
- Presbyterian Church USA: Restoring Creation for Ecology and Justice (1990); PCU 210 General Assembly 1998: Global Climate Change
- United Church of Christ: Resolution "Global Warming" United Church of Christ Statement of Global Climate Change (July 1999)
- The United Methodist Church: Social Principles: The Natural World; Energy Policy Statement Adopted 1980 and readopted 2000 (From The Book of Resolutions of the United Methodist Church)

Testimony in Opposition of HCR 3030: A Concurrent resolution urging Congress to not enact hasty or not well-thought-out climate change legislation

House Natural Resources Committee

February 12, 2009

Jason Schaefer

Private citizen - Fargo, ND

701-741-0709 <schaefer@gmail.com>

The language in HR 3030 contradicts the findings of the U.S. National Academy of Science, American Geophysical Union, the Geological Society of America, NASA, the Intergovernmental Panel on Climate Change, and the American Meteorological Society. Instead of heeding the research and advice of these mainstream experts and their peer-reviewed research, the resolution relies on findings from the far fringes of the scientific community.

We are blessed, here in North Dakota, to have world class climate and energy scientists at our disposal. In the past couple of days, I made an effort to reach out to some of those scientists so their perspective could be heard. I have attached a document endorsed by these North Dakota scientists that clarifies and corrects the claims made in HR 3030.

The scientists came to conclusions contrary to those identified in HR 3030 including:

- The current warming trend is caused by humans and not simply a natural occurrence;
- Higher carbon dioxide concentrations do cause temperatures to rise;
- Global sea ice levels are rising at a faster rate than most models predicted;
- Polar bear populations are threatened due to diminishing sea ice, their primary habitat;
- Glaciers are retreating at an accelerated rate according to the National Snow and Ice Data Center;
- Computer modeling of the climate is a reliable indicator of future climate scenarios;
- Increased concentrations of CO₂ in the atmosphere will have long-term negative impacts on most plant growth;
- Historical temperature and precipitation records show definitive warming trends in North Dakota;

These scientists are very accomplished and include:

Dr. Soizik Laguette, has been at UND since 1999, and was a founding member of the Earth System Science and Policy program where she currently serves as an assistant professor and Chair of the Department.

Dr. Andrei Kirlikov, a professor in the Earth System Science and Policy graduate program at UND as well as the Lead Author for the Intergovernmental Panel on Climate Change 4th Report, 2nd working group, Climate Change 2007: Impacts, Adaptation, and Vulnerability.

Dr. Dexter Perkins, a professor in the School of Geology and Geological Engineering at the University of North Dakota

Dr. Will Gosnold, chair of the School of Geology and Geological Engineering at the University of North Dakota and an expert on historical temperature data.

In the attached document, Dr. Gosnold shows how the North Dakota average annual temperature data from the Historical Climatology Network clearly show that present temperatures are higher than at any time since recordings were made. It is clear that the recent temperature highs are higher than any in the dust bowl years and the trends of highs, lows, and means all show warming.

Dr. Kirilenko brought to our attention a study, also attached, that demonstrates a clear scientific consensus on climate change. The study conducted by researchers from the University of Illinois at Chicago was recently published in Eos, a scientific journal of the American Geophysical Union and included responses from over 3,000 scientists. It found that over 90% of scientists agreed that the planet is warming and over 80% said humans were the primary cause of our current warming. More compelling, 97% of climatologists who are actively publishing their research agreed that humans are causing the climate to destabilize. To quote from the report: "It seems that the debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long-term climate processes."

Testimony to clarify scientific claims made in HCR 3030: A Concurrent resolution urging Congress to not enact hasty or not well-thought-out climate change legislation

House Natural Resources Committee

February 12, 2009

Perspective on HR 3030 from North Dakota Climate Scientists

Chairman Porter and Committee members, We submit this testimony in an effort to address the scientific claims made in HR 3030. We, the undersigned offer the following as a constructive and accurate portrayal of the mainstream science pertaining to anthropogenic climate change.

Dr. Soizik Laguette, 701.777.2355 <laguette@umac.org>

Dr. Andrei Kirilenko, 701.777.2355 <andrei.kirilenko@und.nodak.edu>

Dr. Dexter Perkins, 701-777-2811 <dexter.perkins@und.nodak.edu>

Dr. Will Gosnold 701-777-2811 <william.gosnold@und.nodak.edu>

Climate has always changed, why are we worried now and why does it have to be humans fault?

Yes, climate has varied in the past and it has varied for many different reasons, some better understood than others. Multiple scientific studies suggest that these past changes had triggered dramatic changes in the environment. However, simply noting that some process has occurred before, triggered by natural factors, does not in any logical way prove that humans are not able to trigger it today.

For example, we see in ice core records from Antarctica and Greenland that the world cycled in and out of glacial periods over 120K year cycles. The cause for that climate cycle's timing is fairly well understood to be the results of changes in the orbit of the Earth, though the mechanism behind the resulting response has not been conclusively established. These orbital cycles are regular and predictable and they are definitely not the cause of today's warming. The other important difference between the glacial-interglacial cycles and today's changes is the rapidity of the current change. The rate of warming is on the order of 10 times faster today than seen in the ice cores. Notice that the entire human civilization as we know it has grown during the period of very stable

climate, even though the life on Earth has definitely survived the periods of rapid warming or cooling in the distant past.

CO2 Lag

Ice core records indeed show that the rise in temperature during the onset of an interglacial epoch may have occurred approximately 800 years prior to the rise in CO2. It is likely to be true that elevated CO2 levels did not *trigger* these warming events, which are likely to be driven by the orbital cycles, (http://en.wikipedia.org/wiki/Milankovitch_cycles) However, it was suggested in the scientific publications that the CO2 released from the polar regions and from the deep ocean through the outgassing process due to that initial warming provided a strong positive feedback for the additional warming. Also, other scientific publications show that other warming events were in fact triggered by the CO2 release in the atmosphere, such as the end-Permian event 251 million years ago, when as much as 95% of all species on Earth were lost.

Arctic Sea Levels are falling:

Yes, a new study using Europe's Space Agency's ERS-2 satellite has determined that over the last ten years, sea level in the Arctic ocean has been falling at an average rate of around 2mm/year. This is very new and very interesting news, though it is preliminary and not published in any peer reviewed journals yet. However, local sea levels are subject to many influences including: wind and ocean currents that can "pile up" the ocean water locally, temperature anomalies like El Nino, local gravity wells of ice sheets and land masses and regional salinity levels that alter the water's density. Measurement of these levels is further complicated by changes in land height as the Earth's crust moves up or down from tectonic motion and rebounding after long and recently ended glaciation, although these complications are avoided by using satellite measurements.

So in short, this is undoubtedly of interest to specialists in several fields, but it does not in any way alter the Global Climate Change picture.

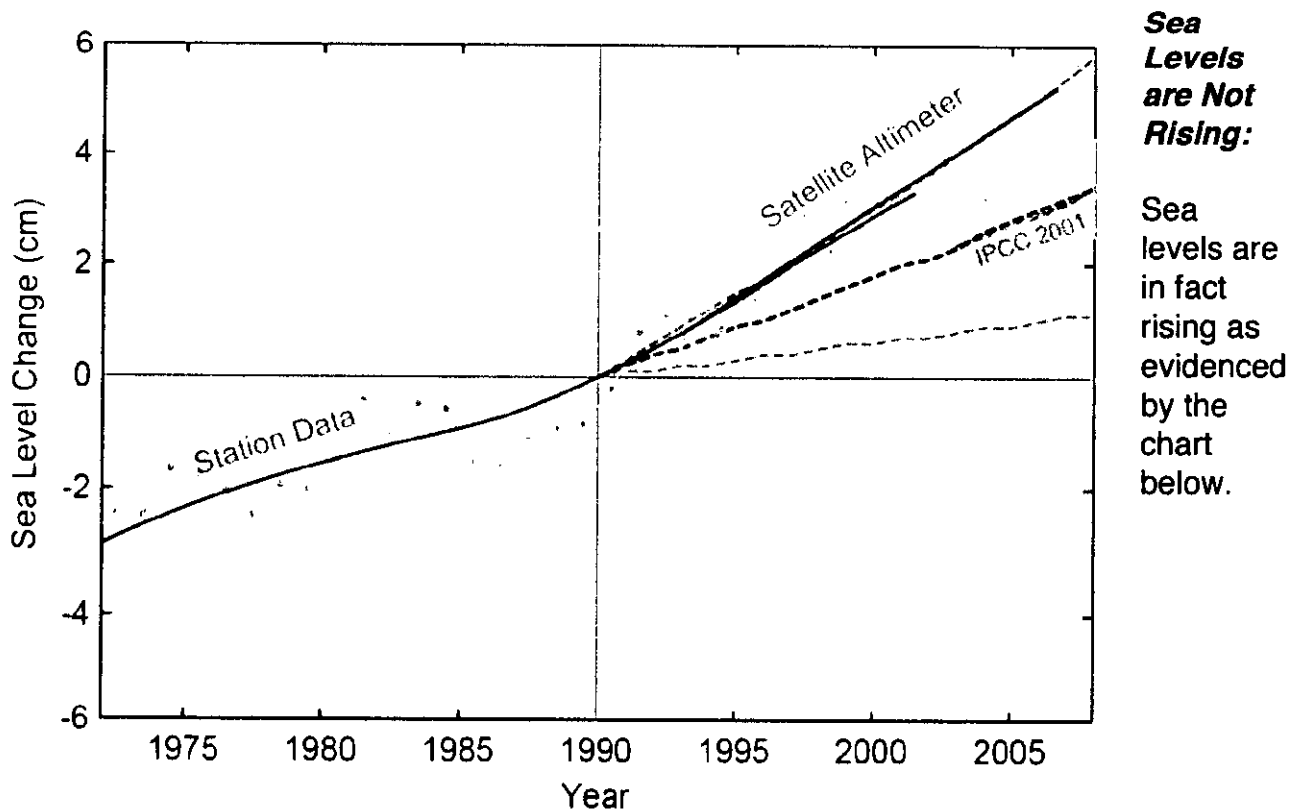
Polar Bear Population Not at Risk:

There are thought to be between 20,000 and 25,000 polar bears in 19 population groups around the Arctic. While polar bear numbers are increasing in two of these populations, two others are definitely in decline. We don't really know how the rest of the populations are faring, so the truth is that no one can say for sure how overall numbers are changing.

The two populations that are increasing, both in north-eastern Canada, were severely reduced by hunting in the past and are recovering thanks to the protection they and their prey now enjoy.

The best-studied population, in Canada's western Hudson Bay, fell by 22% from 1194 animals in 1987 to 935 in 2004, according to the US Fish and Wildlife Service. A second group in the Beaufort Sea, off Alaska's north coast, is now experiencing the same pattern of reduced adult weights and cub survival as the Hudson Bay group.

After a comprehensive review, polar bears were listed as threatened under the Endangered Species Act in 2008. The World Conservation Union projects the bears' numbers will drop by 30% by 2050 due to continued loss of Arctic sea ice.

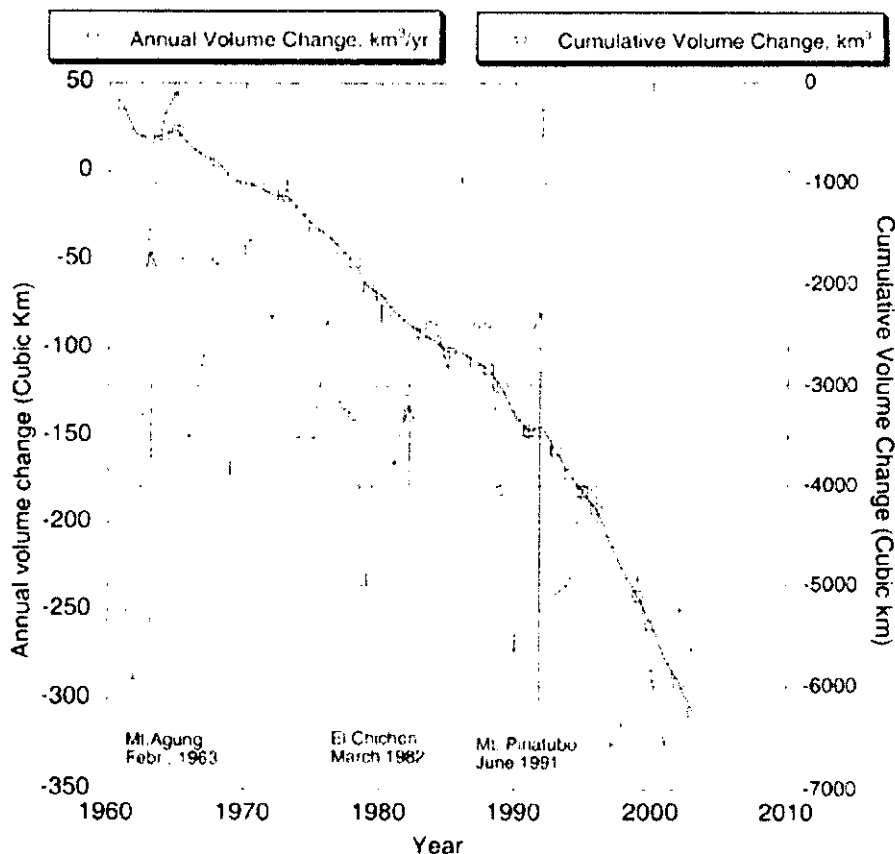


Comparison of the 2001 IPCC sea-level scenarios (starting in 1990) and observed data: the Church and White (2006) data based primarily on tide gauges (annual, red) and the satellite altimeter data (updated from Cazenave and Nerem 2004, 3-month data spacing, blue, up to mid-2006) are shown with their trend lines.

Glaciers are not retreating:

This is simply not true, rumours on the internet aside. According to the National Snow and Ice Data Centre and their State of the Cryosphere division, on their Glacial Balance page they report an overall accelerating rate of glacial mass loss. The World Glacier Monitoring Service has similar findings, the most recent data coming from 2004. While there surely are some growing glaciers, studies like these above are designed to determine a global trend by ensuring glaciers from all regions of the globe are assessed. There are 67,000 glaciers in the World Glacier Inventory. Not all, or even most, have quality data for decades and decades, but there are enough that do have adequate data located in enough regions of the globe to know the average trend.

Global Glacier Mass Balance (Volume Change)



Don't forget that there is similar evidence from other parts of the cryosphere. It is also worth noting that given the right circumstances, warming can actually cause glacier

growth due to accumulation of the resulting increased winter snowfall out weighing the increased summer melting.

Check this page for some good before and after images of glaciers over the last century, as well as other images of the different visible effects of Global Warming. There are also some very compelling animations of changes in Glacier Bay National Park here.

There is not scientific consensus:

A group of 3,146 earth scientists surveyed around the world overwhelmingly agree that in the past 200-plus years, mean global temperatures have been rising, and that human activity is a significant contributing factor in changing mean global temperatures.

Peter Doran, University of Illinois at Chicago associate professor of earth and environmental sciences, along with former graduate student Maggie Kendall Zimmerman, conducted the survey late last year. The findings appear in the January 19th 2009 issue of the publication Eos, Transactions, American Geophysical Union.

Two questions were key: "have mean global temperatures risen compared to pre-1800s levels", and "has human activity been a significant factor in changing mean global temperatures".

About 90 percent of the scientists agreed with the first question and 82 percent the second. In analyzing responses by sub-groups, Doran found that climatologists who are active in research showed the strongest consensus on the causes of global warming, with 97 percent agreeing that humans play a significant role. Doran and Kendall Zimmerman conclude that "the debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long-term climate processes." The challenge now, they write, is how to effectively communicate this to policy makers and to a public that continues to mistakenly perceive debate among scientists.

Computer models are highly speculative:

The validity of models can be tested against climate history. If they can predict the past (which the best models are pretty good at) they are probably on the right track for predicting the future - and indeed have successfully done so.

Most modelers accept that despite constant improvements over more than half a century, there are problems. They acknowledge, for instance, that one of the largest uncertainties at the moment originates from modeling the clouds. With time, better understanding of the natural processes will reduce this error. The model projections, usually come with generous error bars. In an effort to be more rigorous, the most recent report of the IPCC has quantified degrees of doubt, defining terms like "likely" and "very likely" in terms of percentage probability. Notice that there is another source of uncertainty, which is unlikely to be reduced. The models are driven by the "scenarios" of future human impact on the environment; by changing say our CO₂ emissions beyond these assumptions we can drive any existing model projection irrelevant.

Indeed, one recent study suggests that the feedbacks in climate systems means climate models will never be able to tell us *exactly how much warming* to expect. However, all models agree that there will be warming.

Given the complexity of our climate system, most scientists agree that models are the best way of making sense of that complexity. For all their failings, models are the best guide to the future that we have.

Increased CO₂ Is beneficial:

While experiments on natural ecosystems have also found initial elevations in the rate of plant growth, these have tended to level off within a few years. In most cases this has been found to be the result of some other limiting factor, such as the availability of nitrogen.

The regional climate changes that higher CO₂ will bring, and their effect on these limiting factors on plant growth, such as water, also have to be taken into account. These indirect effects are likely to have a much larger impact than CO₂ fertilization.

For instance, while higher temperatures will boost plant growth in cooler regions, in the tropics they may actually impede growth. A two-decade study of rainforest plots in Panama and Malaysia recently concluded that local temperature rises of more than 1°C have reduced tree growth by 50 per cent (see Don't count on the trees).

Another complicating factor is ground level ozone due to air pollution, which damages plants. This is expected to rise in many regions over the coming decades and could reduce or even negate the beneficial effects of higher CO₂ (see Climate change warning over food production).

In the oceans, increased CO₂ is causing acidification of water. Recent research has shown that the expected doubling of CO₂ concentrations could inhibit the development

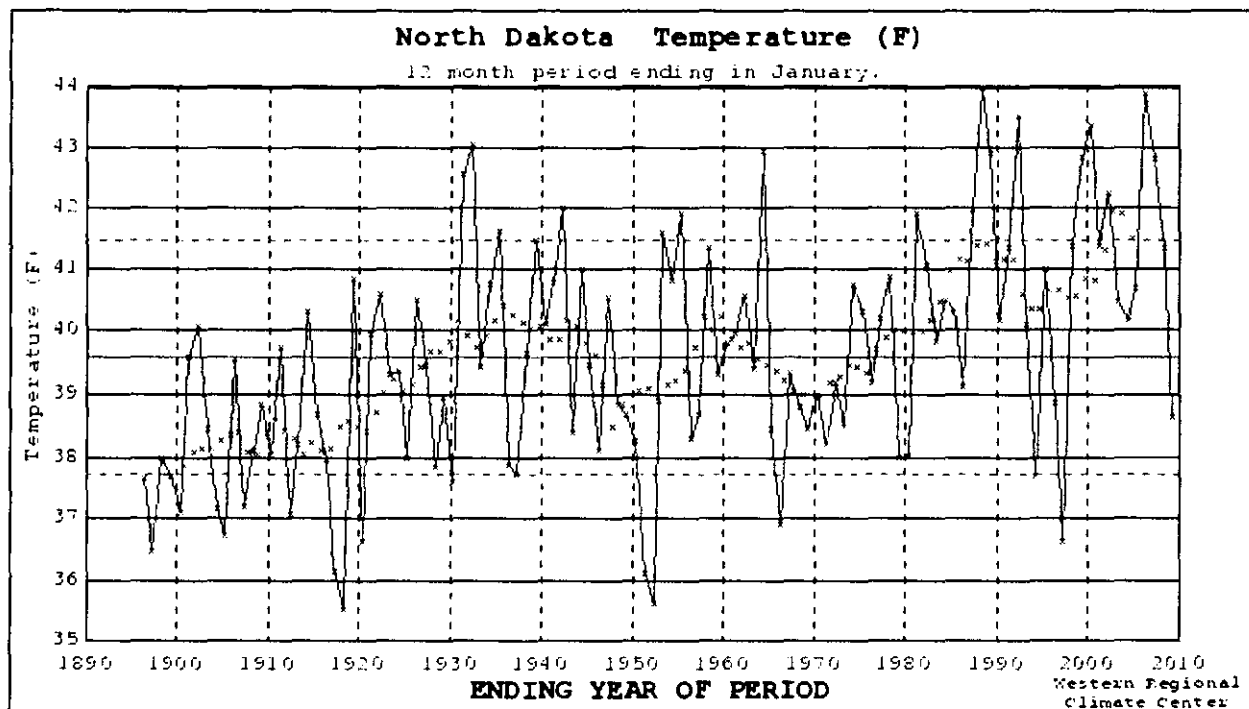
of some calcium-shelled organisms, including phytoplankton, which are at the base of a large and complex marine ecosystem (see Ocean acidification: the other CO2 problem). That may also result in significant loss of biodiversity, possibly including important food species.

It was warmer in North Dakota during the 1930's:

This is untrue. The North Dakota average annual temperature data from the Historical Climatology Network clearly show that present temperatures are higher than at any time since recordings were made. The data are available online from the Western Regional Climate Center in Reno as well as at NOAA. The comment on the HCN in the bill ignores the facts that the HCN data have been corrected for microclimate effects and that the ND stations do not suffer from the "urban heat island effect."

It is clear that the recent temperature highs are higher than any in the dust bowl years and the trends of highs, lows, and means all show warming.

Another point is that the standard. development. for 2 solar cycles, both moving and at 22 year intervals, is greater during the warmer 22 year periods. This shows the greater variability in annual temperature expected from warming.



Bios:

Solzik Laguette earned a Doctorate's degree in Agricultural engineering at ENGREF (French Institute of Forestry, Agricultural and Environmental Engineering), Paris, France. Dr. Laguette has been at UND since 1999, and was a founding member of the Earth System Science and Policy program where she currently serves as an assistant professor and Chair of the Department. Dr. Laguette's research interests involve the use of switchgrass as a bioenergy crop in the Northern Great Plains and the adoption of switchgrass into the traditional cropping system; the rapid integration of remote sensing data into in-field management decisions and the use of satellite data in crop modeling as well as on helping end-users integrate remote sensing data and technology as a tool in land management practices.

Dexter Perkins teaches geology, environmental issues, mineralogy, and ore deposits courses at the University of North Dakota. Perkins has over 50 publications (including Mineralogy, Second Edition) ranging from lengthy books about geology to short publications that help students. His main interests include thermodynamics of minerals and mineral systems. Perkins spent years in the faculties of Universities in Zurich, Switzerland, and the Universite Clermont Ferrand, France. He is a member of the American Geophysical Union, and the National Association of Geology Teachers, among other clubs.

Andrei Kirilenko is an associate professor in the Earth System Science and Policy (ESSP) graduate program at the University of North Dakota. He joined ESSP in 2006 after working as a Research Associate with the Department of Forestry and Natural Resources at Purdue University. His research interests are concentrated around the environmental modeling and sustainability issues, especially the global and regional impacts of changing climate, simulation the land use change, GIS-integrated and web-based models. In addition to research and teaching, Andrei is also a Lead Author for the Intergovernmental Panel on Climate Change 4th Report, 2nd working group, Climate Change 2007: Impacts, Adaptation, and Vulnerability.

Will Gosnold is a Chester Fritz Distinguished Professor and chairs the Department of Geology and Geological Engineering at the University of North Dakota. He is also the director of the Petroleum Research, Education, and Entrepreneurship Center (PREEC). This Center of Excellence will focus on petroleum related research. Dr. Gosnold and his colleagues will work on enhanced geothermal systems and to develop new businesses for distributed electric power systems. Additionally, Dr. Gosnold is reknown for his well-cited work to analyze temperature data from several hundred sites to document the Earth's average temperature changes over the past 500 years.

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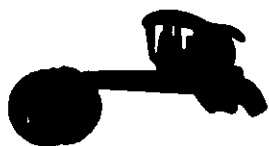
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NORTH DAKOTA



GRAIN GROWERS

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**Testimony of Michael Martin
Past President
North Dakota Grain Growers Association
HCR 3030
Senate Natural Resources Committee
March 19, 2009**

Mr. Chairman, members of the Senate Natural Resources Committee, for the record my name is Mike Martin, Past President of the North Dakota Grain Growers Association.

The North Dakota Grain Growers Association is in support of the basic goals of HCR 3030.

Mr. Chairman, members of the Committee clearly the climate debate is on the docket of the 111th Congress. Experts are divided on the climate issue, and it would be a disastrous mistake for the nation to hastily move forward with legislation that could forever cripple the U.S. economy and at the same time potentially not solve the perceived underlying problem.

To be sure, farmers are very concerned about the climate and the environment. Our living depends on it. Just as farmers cannot ignore threats to the environment, we cannot ignore the economic threat posed by climate legislation now under consideration.

The North Dakota Grain Growers Association is very concerned about three aspects of climate legislation:

1. National ramifications to climate legislation
2. Trade implications
3. Agricultural impacts

Climate legislation has been shown by some to decrease the U.S. Gross Domestic Product by \$1.7 to \$4.8 TRILLION dollars by 2030, using 2006 dollars. As the legislation evolves and becomes more stringent, the loss of jobs on a local and national scale will become enormous. It is estimated that stricter and more expensive building codes just in North Dakota could result in the loss of 3400 to 5000 jobs in North Dakota alone.

North Dakota is an export state, both in agriculture and energy. Some versions of the climate legislation would place trade restrictions on foreign countries whose climate

NDGGA provides a voice for wheat and barley producers on domestic policy issues – such as crop insurance, disaster assistance and the Farm Bill – while serving as a source for agronomic and crop marketing education for its members.

standards don't match our; the results of which would be increased worldwide trade barriers. This is the very concept that trade negotiations such as the DOHA round are trying to eliminate. For a state who depends on foreign buyers for 50 percent of its wheat, trade retaliation through climate legislation is the last thing that North Dakota needs or wants.

Finally, NDGGA would be remiss if we did not express our concerns about the agricultural impacts resulting from climate legislation. Studies show that by 2030 costs will increase by 29 percent for fuel, fertilizer costs will rise by 28 to 30 percent and electrical costs will increase by 53 percent as a result of climate legislation. Such a spike to input costs coupled with the collapse in commodity prices spells a train wreck for American agriculture; the results of which will reverberate across the globe.

Mr. Chairman, members of the Committee, the North Dakota Grain Growers Association considers climate legislation serious business.. In recent weeks, members of the NDGGA board spent time with all of the North Dakota Congressional Delegation expressing our deep concern over the ramifications of climate change legislation. We simply cannot afford climate legislation whose premises are not well thought out and whose ramifications are uncalculated.

HCR 3030 hopefully, sends a clear message regarding federal climate legislation from the North Dakota Legislative Assembly, the people's branch of government, to the powers in Washington D.C. The North Dakota Grain Growers Association supports this message and would ask for your favorable consideration of HCR 3030.

Thank you!

North Dakota



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HCR 3030

Good morning, Chairman Lyson and members of the Natural Resources Committee. For the record, I am Julie Ellingson and I represent the North Dakota Stockmen's Association.

The North Dakota Stockmen's Association rises in support of HCR 3030, appreciating its take-it-slow approach to enacting significant climate change legislation that could have long-lasting impacts to our society and world. In addition, there still is much conflicting science about climate change issues that needs to be sorted out before legislation would be appropriate.

It's hard to argue with a resolution simply asking Congress to use common-sense, so we'd ask for your favorable consideration of HCR 3030.