The Center for Local, State, and Urban Policy

Gerald R. Ford School of Public Policy >> University of Michigan

Climate Compared:

Public Opinion on Climate Change in the United States & Canada

February 2011

Project overview

This is the key findings report for the National Survey of American Public Opinion on Climate Change and the National Survey of Canadian Public Opinion on Climate Change.

The following report summarizes results drawn from national level surveys in the United States and Canada that examine public perceptions regarding various aspects of climate change. Since 2008, the National Survey of American Public Opinion on Climate Change (NSAPOCC) has examined the perceptions and preferences of residents of the United States regarding their views on the existence of climate change and potential policy approaches to address global warming. In order to gain comparative perspective on climate change matters in Canada, the National Survey of Canadian Public Opinion on Climate Change (NSCPOCC) accompanied the most recent version of the NSAPOCC. This report provides insight into the evolution of American public opinion regarding climate matters while producing direct comparisons between the views of the American and Canadian publics on matters pertaining to climate change and its mitigation.

Key findings

1. After experiencing significant declines in the level of belief that global warming is occurring between the fall of 2008 and spring of 2010, American belief rebounded slightly in late 2010, but remained well below the levels observed in 2008.
2. Belief in climate change among Canadians substantially outpaces belief in this phenomenon among residents of the United States.
3. For residents of Canada and the United States that believe that climate change is occurring there is general belief that this constitutes a very serious problem.
4. In the United States an individual's partisan affiliation is the most important determinant of their views on the existence of global warming, with Democrats significantly more likely than Republicans to believe that the Earth is warming
5. Partisan affiliation is also associated with individual views on global warming in Canada, with Conservative Party supporters significantly less likely than supporters of all other parties to believe the Earth is warming.
6. Among the cohort of Americans and Canadians who believe in climate change there is significant division on the root causes of global warming, with most believers pointing to both human activity and natural factors as contributing to increasing world temperatures.
7. Americans remain highly divided on claims that scientists are manipulating climate research for their own interests, with most Canadians rejecting such claims.
8. While placing the primary responsibility for addressing global warming on the federal government, a majority of both Canadians and Americans believe that state/provincial and local governments share responsibility for addressing this problem.
9. Canadians expressed a higher degree of willingness to pay for increased production of renewable energy resources than their American counterparts.
10. While most Americans do not support such policy options as cap and trade and carbon taxes, a majority of Canadians indicated that they would support such policy options even if they imposed increased costs of up to $50 per month in energy expenses.

Methodology

The findings included in this report are drawn from telephone surveys using random digit dialing samples in the United States and Canada. The United States sample includes both landlines and cell phones while the Canadian sample includes landlines only. The following table presents the sample size and margin of error for each of the respective samples:

	Fielding dates	Sample size	Margin of error
United States	November 15 – December 9, 2010	916	+/- 3%
Canada	January 13 – February 4, 2011	1214	+/- 2.8%

Percentages throughout this report are rounded upward at the .5 mark, thus many totals in the results will not equal 100 percent. All data summarized in this report are weighted to reflect population estimates in both the United States and Canada. The United States survey was conducted by the Muhlenberg College Institute of Public Opinion in Allentown, Pennsylvania and funded by both Muhlenberg College and the Center for Local, State, and Urban Policy at the Gerald R. Ford School of Public Policy at the University of Michigan. The Canadian survey was conducted by Leger Marketing in Montréal, Québec and was funded by the Public Policy Forum and Sustainable Prosperity, with additional financial support from Internat Energy Solutions Canada.

Note: Margin of errors are calculated at a 95% level of confidence.

Belief in climate change

For much of the last decade public opinion polls have shown that Americans have increasingly acknowledged the existence of climate change. This growth in belief was particularly pronounced between 2007 and 2008 when numerous polls converged in showing that Americans were more likely than ever before to express belief in global warming. But this trend shifted markedly in more recent years. Numerous surveys, including those of the NSAPOCC, have shown a declining percentage of Americans expressing belief that temperatures on Earth have been increasing (see *Table 1*). In this study we find a slight rebound in levels of belief among U.S. residents with belief levels increasing from 52% to 58% between March and December 2010.

Table 1
Views of Americans on the existence of global warming 2008 -2010

	There is solid evidence of global warming	There is not solid evidence of global warming	Not sure
Fall 2008	72%	17%	11%
Fall 2009	65%	20%	15%
Spring 2010	52%	36%	13%
Fall 2010	58%	26%	16%

Question wording: From what you've read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past four decades?

Canada, in contrast, presents a very different case, with 2010 survey findings indicating greater belief in the existence of global warming than has ever emerged in the NSAPOCC surveys in the United States. More specifically, 4 out of 5 Canadians currently believe that the Earth is warming compared with about 3 in 5 Americans (see *Table 2*). In addition, Americans were almost twice as likely as Canadians to indicate a belief that climate change was not occurring, with 26% of U.S. residents stating that they perceive no solid evidence of global warming, compared with only 14% of Canadians who responded the same way.

Table 2
Views of Americans and Canadians on the existence of global warming

	There is solid evidence of global warming	There is not solid evidence of global warming	Not sure
Americans	58%	26%	16%
Canadians	80%	14%	6%

Question wording: From what you've read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past four decades?

Among the majority of Americans and Canadians who believe the planet to be warming, however, there is general consensus that the matter is a serious problem. Overall, 9 in 10 Americans and Canadians perceive global warming to be at least somewhat of a serious problem (see *Table 3*). Of these, 6 out of 10 residents of both Canada and the United States believe the occurrence of global warming to be a very serious problem.

Table 3
Views on the seriousness of global warming among Canadians and Americans who believe the planet is warming

	Americans	Canadians
Very serious	61%	57%
Somewhat serious	30%	34%
Not too serious	5%	6%
Not a problem	3%	2%
Not sure	<1%	0%

Question wording: In your view is global warming a very serious problem, somewhat serious, not too serious, or not a problem?

The determinants of views on climate change

One of the key questions regarding public opinion on climate change involves the factors that determine one's views on this matter. Public opinion often reflects an individual's socio-economic attributes including gender, age, race and educational attainment. In the case of Americans, the single biggest predictor of one's views on climate change continues to be the individual's partisan affiliation. In particular those Americans who identify themselves as Democrats are significantly more likely than those calling themselves Republicans to state that they think climate change is occurring. Meanwhile, the climate views of independent voters in the United States fall almost directly between their Democratic and Republican counterparts

Table 4
Views of Americans on the existence of global warming by selected demographic categories

	Yes	No	Not sure
Democrat	69%	16%	15%
Republican	41%	43%	17%
Independent	56%	31%	13%
Tea Party member	54%	37%	10%
Non Tea Party member	59%	25%	16%
Male	53%	30%	18%
Female	63%	23%	14%
18-29	62%	28%	10%
30-44	55%	31%	14%
45-64	64%	22%	14%
65 or older	51%	29%	20%
College educated	64%	25%	11%
Non-college educated	50%	28%	23%
Total	**58%**	**26%**	**16%**

Question wording: From what you've read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past four decades?

Similarly, significant differences in perceptions of global warming emerge in Canada across partisan lines. In particular, respondents identifying themselves as supporters of the Federal Conservative party are significantly less likely to believe in the existence of climate change, compared to both supporters of all other parties and undecided voters. Conversely, Conservative party supporters are nearly three times more likely than all other voters to express disbelief that average global temperatures are warming (see *Table 5*).

Table 5
Canadian views on the existence of global warming by selected demographic categories

	Yes	No	Not sure
Conservative	64%	28%	8%
Liberal	91%	6%	3%
New Democrat	84%	10%	6%
Bloc Québecois	90%	9%	1%
Greens	87%	3%	10%
Undecided	80%	13%	7%
Male	79%	16%	5%
Female	80%	12%	7%
18-29	82%	13%	4%
30-44	79%	15%	6%
45-64	79%	15%	6%
65 or older	77%	14%	9%
College educated	80%	14%	6%
Non-college educated	78%	16%	6%
Total	**80%**	**14%**	**6%**

Factors undermining belief in climate change

In recent years there has been considerable attention paid to factors that have called into question the existence of global warming. In particular, the 2009 leaked emails from climate scientists that suggested possible manipulation of findings have been regularly cited by global warming skeptics as indicating efforts by scientists to overstate evidence of a changing climate in order to benefit their own interests. Americans are fairly evenly divided on this subject, with about half believing that such overstatements of global warming evidence are occurring and about half rejecting such claims (see *Table 6*). However, the percentage of Americans who reject the claim that scientists are manipulating climate change evidence for their own interest has noticeably dropped since the 2009 controversy.

Table 6
Levels of agreement with statement that scientists are overstating evidence about global warming among Americans 2008-2010

	Fall 2008	Fall 2009	Spring 2010	Fall 2010
Agree	38%	40%	47%	47%
Disagree	58%	53%	47%	49%
Not sure/refused	5%	7%	7%	4%

Statement: Scientists are overstating evidence about global warming for their own interests.

The division among Americans regarding the practices of climate scientists is substantially lower among Canadian citizens. In particular, 60% of Canadians do not agree with the claim that scientists are overstating evidence about global warming, with only 36% reporting such claims have merit (see *Table 7*).

Table 7
Levels of agreement with statement that scientists are overstating evidence about global warming among Americans and Canadians

	Americans	Canadians
Agree	47%	36%
Disagree	49%	60%
Not sure/refused	4%	4%

Statement: Scientists are overstating evidence about global warming for their own interests.

Role of government in addressing climate change

As the issue of climate change has emerged as a growing concern for governments throughout the world, increasing attention has focused on the role of governments at both national and sub-national levels. In particular, within such federal systems as the United States and Canada, sub-national governments have played an increasingly important role in adopting and implementing climate policies. Though placing a general responsibility on the federal level, both the Canadian and American publics indicate a belief that national, state and local governments all have a responsibility to address global warming. While both American and Canadian citizens generally see roles for all levels of government in combating global warming, Canadians are more likely to place a "great deal" of responsibility on their governments than are residents of the United States (see *Table 8*).

Table 8
Perceptions of government roles in addressing global warming in the United States and Canada

		A great deal of responsibility	Some responsibility	No responsibility	Not sure/refused
Federal	U.S.	43%	30%	22%	5%
	Canada	65%	24%	8%	3%
State/Province	U.S.	35%	37%	23%	5%
	Canada	52%	36%	9%	2%
Local	U.S.	29%	36%	30%	5%
	Canada	42%	42%	13%	2%

Question wording: For each level of government that I mention please tell me if it has a great deal of responsibility, some responsibility or no responsibility for taking actions to reduce global warming.

When it comes to particular policies to confront climate change Americans and Canadians generally support a role for both the national and sub-national governments. The only policy areas where public opinion in both federations appears to favor the national government over lower levels is in the area of automobile fuel efficiency standards, and to a lesser degree increased development of nuclear power (see *Table 9*).

Table 9
Support for climate change policies by level of government in the United States and Canada

		Federal	State/province	Both	Neither	Not sure
Cap and trade	U.S.	15%	9%	41%	29%	8%
	Canada	12%	9%	51%	19%	8%
Fossil fuel taxes	U.S.	12%	7%	34%	42%	5%
	Canada	15%	5%	43%	28%	5%
Nuclear power	U.S.	18%	5%	37%	35%	6%
	Canada	17%	5%	39%	28%	10%
Gas taxes	U.S.	8%	9%	26%	54%	3%
	Canada	10%	7%	36%	41%	5%
Renewable electricity portfolios	U.S.	8%	11%	57%	21%	3%
	Canada	8%	12%	69%	7%	5%
Automobile fuel efficiency	U.S.	25%	5%	48%	20%	3%
	Canada	26%	2%	60%	9%	3%

Question wording: I'm going to provide you with a list of policies that can be used to limit the emission of greenhouse gases. For each option that I mention please tell if the policy should be adopted ONLY by the federal government, ONLY by your state government, by BOTH the federal and state governments or should NOT be adopted by any government.

Canadians and Americans are in general agreement that sub-national governments should act to address climate change even if the national government or neighboring states and provinces fail to also act on this matter. However, Canadians are more likely than their American counterparts to attribute a role to the sub-national government in the absence of federal leadership (see *Table 10*). While 2 out of 3 Canadians believe that their province has already felt the effects of global warming under half of all Americans note that their state is experiencing climate change at this time.

Table 10
Agreement with statements regarding state and provincial roles in addressing global warming

	Americans	Canadians
My state/province should not adopt anti-global warming policies unless its neighboring states/provinces also adopt similar policies.	35%	34%
If the federal government fails to address the issue of global warming it is my state/province's responsibility to address the problem.	62%	70%
My state/province has already felt negative effects from global warming.	44%	65%

Willingness to pay for climate change policies

Considerable debate over policy options to reduce greenhouse gas emissions has focused on development of market-based tools that would deter consumption of fossil fuels and instead promote renewable energy sources. Such policies would generally impose greater costs on use of energy sources predominant in the United States and Canada. The surveys examined both a general willingness of the Canadian and American publics to pay for the development of renewable energy sources, as well as public support for two of the most discussed policy options aimed at decreasing use of fossil fuels.

Members of the American and Canadian public diverge somewhat on willingness to pay (see *Table 11*). In particular, Canadians are significantly less likely than Americans to indicate that they are not prepared to pay anything each year for the development of more renewable energy, and more likely to express a willingness to pay higher levels for increasing the availability of alternative energy sources.

Table 11
Willingness to pay for increased renewable energy production in the United States and Canada

	Canada	U.S.
$0 each year	21%	41%
$1-49 a year	28%	26%
$50-99 a year	19%	17%
$100-249 a year	13%	7%
$250-499 a year	6%	4%
$500 or more a year	7%	2%
Not sure	6%	4%

Question wording: If it required you to pay extra money each year in order for more renewable energy to be produced, how much would you be willing to pay?

Between 2008 and 2010, and corresponding with adverse economic conditions in the global economy, the NSAPOCC tracked a decline in willingness to pay for renewable energy development. While most Americans indicated that they would be willing to contribute at least something to promote the development of renewable energy, the overall financial commitment levels has fallen in each of the three NSAPOCC studies, with 4 out of 10 Americans in 2010 indicating that they would not be willing to pay anything for greater production of renewable energy.

Table 12
Willingness to pay for increased renewable energy production among Americans 2008-2010

	Fall 2008	Fall 2009	Fall 2010
$0 each year	22%	29%	41%
$1-49 a year	16%	31%	26%
$50-99 a year	17%	15%	17%
$100-249 a year	13%	13%	7%
$250-499 a year	10%	3%	4%
$500 or more a year	7%	2%	2%
Not sure	15%	7%	4%

Question wording: If it required you to pay extra money each year in order for more renewable energy to be produced, how much would you be willing to pay?

Two of the most prominent market-based policy options related to climate change have been carbon cap-and-trade and carbon taxes, having been debated extensively in both federal systems during the past decade. Neither federal government has adopted such policies, although some American states and Canadian provinces have done so. The Canadian and American surveys indicate fairly substantial differences in levels of support for policies designed to limit the use of fossil fuels. In particular, Canadians demonstrate a higher degree of support for both cap and trade policies and carbon taxes than the American public. A majority of Canadians support the adoption of a cap and trade system and a carbon tax without a set financial cost as well as with costs of $15 and $50 per month. Conversely, most Americans oppose cap and trade and carbon taxes in any of the forms presented (see *Table 13*).

Table 13
Support for cap and trade and carbon tax policies within the United States and Canada

	Cap and trade			Carbon tax		
	No cost specified	$15 per month	$50 per month	No cost specified	$15 per month	$50 per month
U.S.	39%	36%	18%	32%	32%	15%
Canada	58%	63%	58%	50%	60%	56%

Note: Support levels represent the percentage of respondents who indicated that they either "strongly supported" or "somewhat supported" the policy option.

Conclusions

This report constitutes the first effort to formally link and compare public opinion on climate change and related policy options between the United States and Canada through use of an identical survey instrument administered in the same time period. In many respects, these neighboring federations have considerable similarities in terms of climate change, with comparable rates of per capita greenhouse gas emissions, considerable emissions growth in recent decades, and substantial difficulty in reaching policy consensus at the federal level. However, our findings suggest that there are a number of areas where public opinion in these nations diverges, often quite significantly. We will expand upon these findings in subsequent reports and publications, including closer comparison of findings at the levels of some individual states and provinces.

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