



April 12, 2013

U.S. Global Change Research Program  
1717 Pennsylvania Ave., NW, Suite 250  
Washington, D.C. 20006  
*Submitted at review.globalchange.gov*

*Re: The 2013 Draft National Climate Assessment*

Dear National Climate Assessment and Development Advisory Committee:

Thank you for this opportunity to comment on the critically important draft National Climate Assessment (NCA). Environmental Defense Fund (EDF) is a non-partisan environmental organization with more than 750,000 members nationwide. EDF is dedicated to working towards innovative, cost-effective solutions to environmental problems, building on a foundation of rigorous science, economics, and law. EDF respectfully urges the National Climate Assessment Development and Advisory Committee (NCADAC), and the participating federal agencies to include, in the final NCA, a more complete assessment of the profound economic burden of climate change using currently-available data and information. EDF also recognizes the impending June deadline for the final NCA to be submitted to Congress and the President, and respectfully urges the NCADAC to comply with that statutory deadline so American citizens, political leaders, and policymakers have this vital information as they address the clear and present danger of climate change.

A central purpose of the Global Change Research Act of 1990 (GCRA) is to “provide for development and coordination of a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change.”<sup>1</sup> In addition to other research activities, the GCRA requires the designated federal council, through the NCADAC, to prepare and submit to the President and Congress, at least once every four years, an assessment which “analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity.”<sup>2</sup>

We urge the NCADAC, consonant with its statutory obligations, to include an assessment of the extensive economic costs associated with a changing climate in the NCA. Any complete analysis of the effects of climate change on “human health and welfare” and “human social systems”

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<sup>1</sup> 15 U.S.C. § 2931(b).

<sup>2</sup> 15 U.S.C. § 2936(2).

must include a rigorous and quantitative analysis of the economic costs of climate impacts. The analysis should include, for example, the costs and fiscal impact on government resources from disaster relief, effects on insurance programs, and infrastructure repair and updating, as well as the costs borne by American communities due to the effects of extreme weather events such as drought, severe storms, and flooding.

The drafters of the previous version and current draft of the NCA found that it was important (indeed essential) to include adaptation costs in the assessment. The 2009 NCA stated, “[t]here is currently limited knowledge about the ability of communities, regions, and sectors to adapt to future climate change. It is important to improve understanding of how to enhance society’s capacity to adapt to a changing climate in the context of other environmental stresses . . . A major difficulty in the analysis of adaptation strategies in this report has been the lack of information about the potential costs of adaptation measures . . . .”<sup>3</sup>

Regrettably, the 2013 Draft NCA identifies the same information gap. It states that “emerging areas of needed research include: Costs and Benefits of Adaptation. Methodologies to evaluate the relevant costs of adaptation costs, as well as the costs of inaction, need to be developed.”<sup>4</sup>

The failure to document the economic costs of climate change, both impacts and adaptation, in the 2013 draft is untenable in light of the express finding in the 2009 report calling for such analysis, and especially so in light of the extensive and widely available information on the costs of climate change. We urge the NCADAC to correct this deficiency promptly, and to include an assessment of economic costs in the final 2013 NCA. This is necessary to carry out an assessment consistent with the law and to ensure that our nation’s policymakers and our citizens are provided with information to fully “understand, predict, and respond to” the clear and present danger of climate change.

In addition to including a more complete assessment of economic costs in the final 2013 NCA, it is imperative that the GCRA’s designated federal council, through the NCADAC, complete and timely submit the final 2013 NCA to the President and Congress in accordance with the GCRA’s four-year deadline.<sup>5</sup> The last NCA was released on June 16, 2009. Therefore, the next assessment is due on or before June 16, 2013. In the event that the final 2013 NCA is not timely completed and submitted to the President and Congress, then the designated federal council and the NCADAC will be in violation of their mandatory statutory duty and will be subject to legal action to enforce that duty.

## **I. Currently Available Information on the Costs of Climate Change**

As the extensive scientific studies and findings in the Draft NCA demonstrate, the effects of climate change are already being seen and felt throughout the United States. These effects include more intense storm events, increased frequency and intensity of wildfires and droughts, and stress on critical infrastructure. The Draft NCA, however, does not adequately present the very real and mounting economic costs that a changing climate imposes upon rural and urban

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<sup>3</sup> See 2009 NCA at 156.

<sup>4</sup> See 2013 Draft NCA at 1007.

<sup>5</sup> See 15 U.S.C. § 2936.

communities, government at all levels, and wide swaths of the American economy. The Draft NCA contains some references to these real and mounting costs, but these references should be highlighted, presented more systematically, and augmented with currently-available data from the public and private sectors.

For instance, a recent report by the independent, nonpartisan, U.S. Government Accountability Office (GAO)<sup>6</sup> warned that climate change “presents a significant financial risk to the federal government” in four key areas:

- 1) Damage to federal property and infrastructure, and associated adaptation costs.
- 2) Rising costs for federal insurance programs. For instance, the federal government’s crop insurance costs have increased from an average of \$3.1 billion per year from 2000 through 2006 to an average of \$7.6 billion per year from 2007 through 2012, and these costs are projected to increase further.
- 3) Costs related to providing assistance to state and local governments to respond to local climate impacts.
- 4) Rising costs of climate disaster relief. For example, federal disaster declarations have increased in recent decades, and the Federal Emergency Management Agency (FEMA) obligated over \$80 billion in assistance for disasters from 2004 through 2011. In addition, in December 2012, the U.S. Office of Management and Budget requested \$60.4 billion in federal resources for Hurricane Sandy recovery efforts. The growing number of disaster declarations—a record 98 in fiscal year 2011 compared with 65 in 2004—has contributed to increased federal disaster costs.

Of course, federal disaster relief and insurance programs do not cover all economic losses that occur because of climate change. The private insurance industry has also warned of the mounting insured and uninsured losses linked with climate change. In a recent report, the world’s largest reinsurance company, Munich Re, analyzed the costs of severe weather in North America.<sup>7</sup> As shown in the figures below, it found that the number of natural catastrophes escalated from 1980 through 2011, as did the losses (both insured and uninsured) for weather-related events during the same time period. The overall losses from weather catastrophes during that time period exceeded \$1.06 trillion, of which \$510 billion were insured losses.<sup>8</sup>

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<sup>6</sup> U.S. Government Accountability Office, *High-Risk Series: An Update* (Feb. 2013), GAO-13-283.

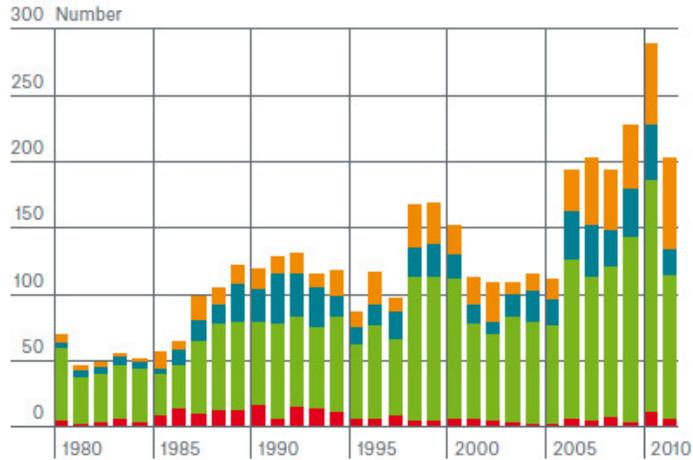
<sup>7</sup> Munich Re, *Severe Weather in North America* (2012). See also October 17, 2012 Press Release, available at [http://www.munichre.com/en/media\\_relations/press\\_releases/2012/2012\\_10\\_17\\_press\\_release.aspx](http://www.munichre.com/en/media_relations/press_releases/2012/2012_10_17_press_release.aspx).

<sup>8</sup> Munich Re, *Severe Weather* at 20.

**Natural catastrophes in North America 1980-2011: Number of events**

- Geophysical events
- Meteorological events
- Hydrological events
- Climatological events

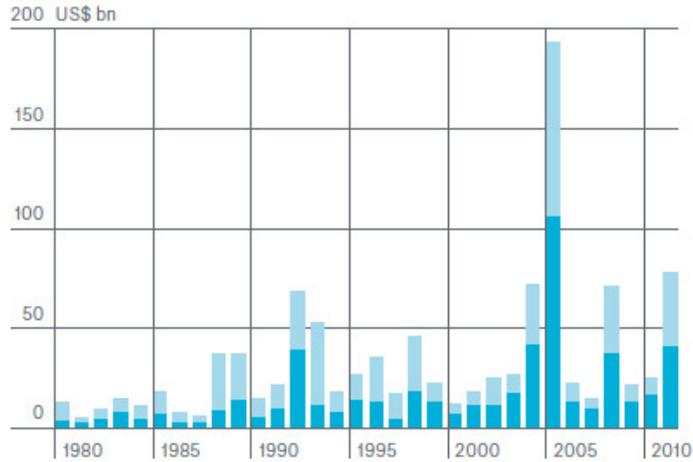
Source: Munich Re, NatCatSERVICE



**Weather catastrophes in North America 1980-2011: Overall and insured losses (US\$ bn, 2011 values)**

- Overall losses
- Insured losses

Source: Munich Re, NatCatSERVICE

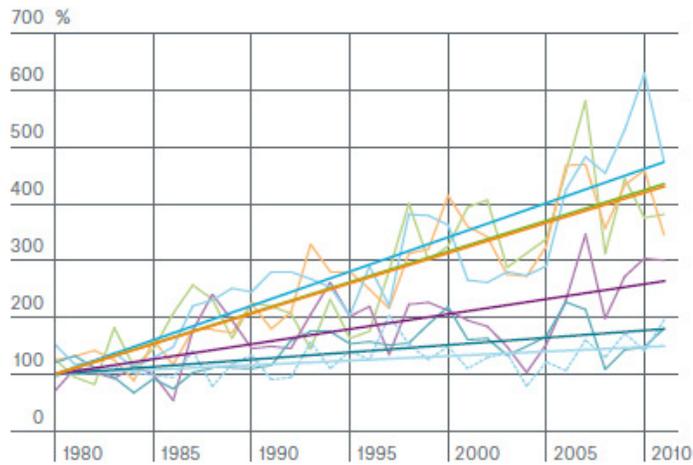


**Upward trends in weather-related loss events per continent, 1980-2011**

Remark: This analysis considers events in the United States, Canada, the Caribbean and Central America.

- North America
- Australia/Oceania
- Asia
- Africa
- Europe
- South America

Source: Munich Re, NatCatSERVICE



Source: Munich Re, Severe Weather in North America, Executive Summary at 3 (2012).

In addition to these very significant economic losses, there has been a profound loss of life from severe weather events in recent decades that cannot be adequately captured by economic or other statistics. Around 30,000 lives have been lost to weather catastrophes in North America since 1980.<sup>9</sup> Heat waves in 1980 and 1988 alone caused more than 15,000 deaths in the U.S.<sup>10</sup> The deadliest single storm event in that time period was Hurricane Katrina, from which 1,300 people died. More recently, Hurricane Sandy caused 131 deaths in October 2012.<sup>11</sup> The loss of life is the most profound and irreplaceable loss that we face from severe weather events, and should be foremost in the minds of political leaders, policymakers, and citizens as they address climate change.

The federal government has also compiled data on the frequency and high costs of extreme weather events. In its annual Billion-Dollar Extreme Weather/Climate Events report, the U.S. National Oceanic and Atmospheric Administration (NOAA) compiles a list of weather events that impose both insured and uninsured losses greater than \$1 billion.<sup>12</sup> According to NOAA, since 1980, the U.S. has sustained 144 weather/climate events where overall damages/costs exceeded \$1 billion (including a Consumer Price Index adjustment to 2012 dollars), and over 17% of these events occurred in the last two years.<sup>13</sup> There were eleven “billion-dollar events” in 2012 and fourteen such events in 2011. NOAA estimates that the aggregate cost for the fourteen extreme events in 2011 was over \$60 billion dollars, and that 2012’s eleven extreme events will surpass 2011’s in terms of total costs.<sup>14</sup> The data on 2011 events shows that losses were spread across the U.S. For instance, the 2011 drought and heat wave in the Southern Plains and Southwest resulted in over \$12 billion in damages, Hurricane Irene caused \$10 billion in damages in the Mid-Atlantic and Northeast, and a tornado outbreak in the Southeast and Midwest caused over \$9 billion in damages. In addition to the high costs from storms and drought, wildfires also imposed significant costs in 2011—fires in Texas, New Mexico, and Arizona resulted in \$1 billion in damages (note that this last figure greatly exceeds the \$1.9 million cost estimate shown on pages 296, 308, and 309 of the Draft NCA, which may be a typographical error).

## II. Conclusion

The National Climate Assessment presents a critical opportunity once every four years for some of the country’s top scientists and other experts to analyze the effects of climate change on the health and welfare of all Americans. This should include a robust presentation of the profound economic costs that we currently bear and will continue to bear so long as we forestall serious action to mitigate climate change. Therefore, EDF respectfully urges the NCADAC to timely complete its statutory obligations and include a more complete assessment of the costs of climate change in the final NCA.

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<sup>9</sup> *Id.* at 21.

<sup>10</sup> *Id.*

<sup>11</sup> National Atmospheric and Oceanic Administration, Billion-Dollar Weather/Climate Disasters, accessed at <http://www.ncdc.noaa.gov/billions/events>.

<sup>12</sup> Accessed at <http://www.ncdc.noaa.gov/billions/overview>.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*; see also Smith, A., and R. Katz, U.S. Billion-dollar Weather and Climate Disasters: Data Sources, Trends, Accuracy and Biases (2013). Natural Hazards, DOI 10.1007/s11069-013-0566-5.

Sincerely,

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