

November 10, 2014

The Honorable Barbara Mikulski
The Honorable Richard Shelby
Senate Committee on Appropriations
The Capitol, S-128
Washington, D.C. 20510

Dear Chairwoman Mikulski and Ranking Member Shelby:

As U.S. associations, universities and companies, we stand with scientists who conduct research on the Earth systems that drive climate and who create knowledge and provide information on how the climate impacts the U.S. economy, national security, health, and the environment. This information is used routinely by the military, federal agencies, local and state governments, businesses, and other public and private sector decision makers in a wide range of fields, including national security, public health, agriculture, insurance, business, community planning, and transportation.

We are concerned regarding a number of House-passed appropriations measures and amendments that would defund or reduce federally funded climate research in FY 2015 and restrict the availability and use of climate information. **We urge you to continue your support of the climate sciences for the benefit of the American people by restoring funding for climate research and dropping all climate research riders and prohibitions in the final FY 2015 appropriations legislation.**

Among the House-passed appropriations measures that would interfere with climate research and undermine the progress toward better climate information and prediction are:

- H.R. 4660 - Commerce, Justice, Science, and Related Agencies Appropriations Act of 2015
 - Funding cuts to NASA's Earth Science Division, which supports space-based climate research missions as well as many other Earth observing missions.
 - Funding cuts to NOAA's Office of Oceanic and Atmospheric Research.
 - H. Amdt. 766. Prohibition on funds spent on implementation of the US Global Change Research Program (GCRP) or IPCC Fifth Assessment Report.
- H.R. 4923 - Energy and Water Appropriations Act of 2015
 - Severe cuts to the Biological and Environmental Research program, which funds climate and environmental sciences and large-scale climate modeling at the Department of Energy (DOE) Office of Science.

- H. Amdt. 1040. Prohibition on funds spent on implementation of the USGCRP or IPCC Fifth Assessment Report.
- H. Amdt. 1045. A prohibition on expenditures on the DOE's Climate Modeling and Validation Program.
- H.R. 4870 – Defense Appropriations Bill. H. Amdt. 915. Prohibition on funds spent on implementation of the USGCRP or IPCC Fifth Assessment Report.

Such measures would interfere with ongoing scientific projects and collaborations across agencies and sectors. Science today is often done on a multi-year scale with individual projects and studies involving tens to hundreds of collaborators over many years. When funding cuts and statutory constraints disrupt the continuity of science, it threatens to derail ongoing work and prevent new science innovation. Such constraints also jeopardize important benefits that climate information provides for society and national security, from the protection of American lives and property to the nation's ability to prudently plan for the future.

No matter where in the nation we live or what we do for a living, as a nation we all benefit from climate research. Farmers and business owners depend on climate science to make decisions on matters of profit and loss, including what to make, grow and sell, how to manage supply chains, and other resource allocation decisions. State leaders and managers depend on the best available climate science for energy infrastructure planning, transportation infrastructure and maintenance planning, and water resources management.

Climate research also provides the tools that enable us to understand patterns in the weather beyond two weeks, including predictions for upcoming seasons, which can affect the U.S. economy. A recent study by the National Center for Atmospheric Research found that shifts in routine weather patterns, such as winter snowstorms, can change the U.S. gross domestic product (GDP) as much as 3.6 percent (over \$500 billion each year).

Moreover, climate change is a clear and present risk, and it threatens our most basic national security. According to the 2014 Quadrennial Defense Review, "The impacts of climate change may increase the frequency, scale, and complexity of future missions...while at the same time undermining the capacity of our domestic installations." U.S. military sites could be impacted by sea level rise of three feet or more, according to a 2011 NRC report, and of those 56 are Navy facilities valued at \$100 billion. Constraining scientific research or the government's ability to study and plan for climate change is imprudent.

Thank you for your leadership on behalf of the U.S. science enterprise this year and in past years. We urge you to reject language limiting the actions of departments and federal agencies with regard to climate change. We equally urge you to fully restore funding for agency climate programs to ensure that American community and business leaders are better able to understand and plan for climate change.

Sincerely,

Alliance for Earth Observations
American Association for the Advancement of Science
American Chemical Society
American Council of STEM Educators
American Geophysical Union
American Society of Agronomy
American Society of Plant Biologists
Association of American Universities
Ceres
Consortium for Ocean Leadership
Crop Science Society of America
Ecological Society of America
Geological Society of America
National Association of Marine Laboratories
National Council for Science and the Environment
Soil Science Society of America
University Corporation for Atmospheric Research
University of Colorado Boulder
The Weather Company / The Weather Channel
Woods Hole Oceanographic Institution

cc: Sen. Patrick Leahy
Sen. Tom Harkin
Sen. Patty Murray
Sen. Dianne Feinstein
Sen. Dick Durbin
Sen. Tim Johnson
Sen. Mary Landrieu
Sen. Jack Reed
Sen. Mark Pryor
Sen. Jon Tester
Sen. Tom Udall
Sen. Jeanne Shaheen
Sen. Jeff Merkley
Sen. Mark Begich
Sen. Chris Coons
Sen. Thad Cochran

Sen. Mitch McConnell
Sen. Lamar Alexander
Sen. Susan Collins
Sen. Lisa Murkowski
Sen. Lindsey Graham
Sen. Mark Kirk
Sen. Dan Coats
Sen. Roy Blunt
Sen. Jerry Moran
Sen. John Hoeven
Sen. Mike Johanns
Sen. John Boozman

Climate Research is Essential:

For National Security:

- The Department of Defense (DoD) says that climate information is increasingly critical to our national defense, and has incorporated climate change into its risk management planning.
- According to the 2014 Quadrennial Defense Review (QDR), “The impacts of climate change may increase the frequency, scale, and complexity of future missions, including defense support to civil authorities, while at the same time undermining the capacity of our domestic installations to support training activities.”
- The Department of Defense (DoD) 2014 Climate Adaptation Roadmap states that climate change is a threat multiplier that “will intensify the challenges of global instability, hunger, poverty, and conflict.” The Department of Defense recognizes the critical importance of timely, accurate information on climate trends to our national defense, and is integrating climate change considerations into its plans, operations, and training. The Roadmap notes that the Department is also considering the impacts of climate change in war games and defense planning scenarios, and working with its Combatant Commands to address impacts in their areas of responsibility.
- 128 U.S. military sites could be impacted by sea level rise of three feet or more, according to a 2011 National Research Council report, and of those, 56 are Navy facilities valued at \$100 billion.
- Replacing just four piers at Norfolk Naval Base cost \$60 million, and restoring a barrier island protecting Eglin Air Force Base cost \$112 million after it was hit by three hurricanes in ten years.

For the Economy:

- The non-partisan General Accountability Office put climate change on its High Risk List in 2013, saying that it “presents a significant financial risk to the federal government. Among other impacts, climate change could threaten coastal areas with rising sea levels, alter agricultural productivity, and increase the intensity and frequency of severe weather events.”
- A recent study by the National Center for Atmospheric Research found that shifts in routine weather patterns can change the US GDP as much as 3.4 percent, or over \$500 billion each year.
- Extreme weather events, which the National Oceanic and Atmospheric Administration (NOAA) has documented, are rising in frequency and costs inflicted, can cost many times more in lives and property lost. As weather can affect both demand and supply of various sectors, with complex and sometimes countervailing influences on the overall economy, there is tremendous value in

being able to predict how a shifting climate will alter patterns of routine and extreme weather in the future.

- According to a recent study co-sponsored by a regional utility, coastal counties and parishes in Alabama, Mississippi, Louisiana, and Texas, with a population of approximately 12 million, assets of about \$2 trillion, and producers of \$634 billion in annual gross domestic product, already face significant losses that annually average \$14 billion from hurricane winds, land subsidence, and sea level rise.¹
- Port facilities, such as in Maryland (primarily Baltimore), also have flooding impact estimates: 298 acres, or 32% of the overall port facilities in the state. These impacts have potentially significant economic ramifications. For example, in 2006 alone the Port of Baltimore generated more than 50,200 jobs, \$3.6 billion in personal income, \$1.9 billion in business revenues, and \$388 million in state, county, and municipal tax.

For Businesses and Farmers:

- NOAA's seasonal and drought forecasts provide critical information to the nation's 22 million farmers that helps them decide when to plant, what to plant, how much, and when to harvest.
- Eddie Bauer, and hundreds of retailers like it, depends on seasonal forecasts every winter to decide how many parkas and other heavy coats it should produce for its stores and outlets as well as other supply chain decisions.

For Communities and First Responders:

- Advanced warning on the harshness of winters can help state departments of transportation plan for the proper snow removal equipment and amount of salt and other road treatments to keep the roads as safe as possible.
- Thanks to NOAA's seasonal flood forecasts for watersheds and communities that are prone to flooding, those communities have more lead time to issue warnings, improve infrastructure, and build flood walls and take other mitigation measures, thereby saving American lives and property.
- The American Red Cross can better allocate resources, staff, and volunteers, because it has a better sense of where natural disasters such as floods (or wildfires or droughts) might hit over the course of the next months and years.
- NOAA's seasonal hurricane predictions also hold promise to help coastal communities and cities like New Orleans and New York that are prone to tropical storms to begin to prepare for intense storm seasons much further in advance.

¹ <http://nca2014.globalchange.gov/report/regions/southeast>