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FACT SHEET: What Climate Change Means for Vermont and the Northeast



Today, the Obama Administration released the third U.S. National Climate Assessment – the most comprehensive scientific assessment ever generated of climate change and its impacts across every region of America and major sectors of the U.S. economy. The findings in this National Climate Assessment underscore the need for urgent action to combat the threats from climate change, protect American citizens and communities today, and build a sustainable future for our kids and grandkids.

The National Climate Assessment is a key deliverable of President Obama’s Climate Action Plan to cut carbon pollution, prepare America’s communities for climate-change impacts, and lead international efforts to address this global challenge. Importantly, the plan acknowledges that even as we act to reduce the greenhouse-gas pollution that is driving climate change, we must also empower the Nation’s states, communities, businesses, and decision makers with the information they need prepare for climate impacts already underway.

The Obama Administration has already taken a number of steps to deliver on that commitment to states, regions, and communities across America. In the past year alone, these efforts have included: establishing a Task Force of State, Local, and Tribal Leaders on Climate Preparedness and Resilience to advise the Administration on how the Federal Government can respond to the needs of communities nationwide that are dealing with the impacts of climate change; launching a Climate Data Initiative to bring together extensive open government data with strong commitments from the private and philanthropic sectors to develop planning and resilience tools for communities; and establishing seven new “climate hubs” across the country to help farmers and ranchers adapt their operations to a changing climate.

VERMONT is part of the U.S. National Climate Assessment U.S. Northeast Region. The regional phenomena identified by the Assessment may not occur in every state that is part of a particular region. According to the third U.S. National Climate Assessment Highlights report:

“Sixty-four million people are concentrated in the Northeast. The high-density urban coastal corridor from Washington, D.C., north to Boston is one of the most developed environments in the world. It contains a massive, complex, and long-standing network of supporting infrastructure. The Northeast also has a vital rural component, including large expanses of sparsely populated but ecologically and agriculturally important areas.

Although urban and rural regions in the Northeast are profoundly different, they both include populations that are highly vulnerable to climate hazards and other stresses. The region depends on aging infrastructure that has already been stressed by climate hazards including heat waves and heavy downpours. The Northeast has experienced a greater recent increase in

extreme precipitation than any other region in the U.S.; between 1958 and 2010, the Northeast saw more than a 70% percent increase in the amount of precipitation falling in very heavy events (defined as the heaviest 1% of all daily events). This increase, combined with coastal and riverine flooding due to sea level rise and storm surge, creates increased risks. For all of these reasons, public health, agriculture, transportation, communications, and energy systems in the Northeast all face climate-related challenges.” (NCA Highlights, p. 70)

Regional Findings of the Third U.S. National Climate Assessment: NORTHEAST

- “Heat waves, coastal flooding, and river flooding will pose a growing challenge to the region’s environmental, social, and economic systems. This will increase the vulnerability of the region’s residents, especially its most disadvantaged populations.
- Infrastructure will be increasingly compromised by climate-related hazards, including sea level rise, coastal flooding, and intense precipitation events.
- Agriculture, fisheries, and ecosystems will be increasingly compromised over the next century by climate change impacts. Farmers can explore new crop options, but these adaptations are not cost- or risk-free. Moreover, inequities exist in adaptive capacity, which could be overwhelmed by changing climate.
- While a majority of states and a rapidly growing number of municipalities have begun to incorporate the risk of climate change into their planning activities, implementation of adaptation measures is still at early stages.” (NCA, Ch. 16: Northeast)

Selected Findings and Information from the Third U.S. National Climate Assessment Relevant to VERMONT

- **Water:** “Throughout the Northeast, populations are also concentrated along rivers and their flood plains. In mountainous regions, including much of West Virginia and large parts of Pennsylvania, New York, Vermont, and New Hampshire, more intense precipitation events will mean greater flood risk, particularly in valleys, where people, infrastructure, and agriculture tend to be concentrated.” (Ch. 16: Northeast)
- **Health:** “Since the hottest days in the Northeast are often associated with high concentrations of ground-level ozone and other pollutants, the combination of heat stress and poor air quality can pose a major health risk to vulnerable groups: young children, the elderly, and those with pre-existing health conditions including asthma.” (NCA, Ch. 16: Northeast)
- **Lakes:** “A long-term record of the ice-in date (the first date in winter when ice coverage closes the lake to navigation) on Lake Champlain in Vermont shows that the lake now freezes approximately two weeks later than in the early 1800s and over a week later than 100 years ago.” (NCA, Appendix 3)
- **Transportation:** “Many inland states – for example, Vermont, Tennessee, Iowa, and Missouri – have experienced severe precipitation events, hail, and flooding during the past

three years, damaging roads, bridges, and rail systems and the vehicles that use them.” (NCA, Ch. 5: Transportation)

- **Ecosystems:** “Effects of rising temperatures on the Northeast’s ecosystems have already been clearly observed. Further, changes in species distribution by elevation are occurring; a Vermont study found an upslope shift of 299 to 390 feet in the boundary between northern hardwoods and boreal forest on the western slopes of the Green Mountains between 1964 and 2004. Wildflowers and woody perennials are blooming earlier and migratory birds are arriving sooner. Because species differ in their ability to adjust, asynchronies (like a mismatch between key food source availability and migration patterns) can develop, increasing species and ecosystem vulnerability.” (NCA, Ch. 16: Northeast)

Examples of Efforts Underway in VERMONT to Address Climate Change

In VERMONT, many efforts are already underway to mitigate and respond to the impacts of climate change, including:

Preparing Communities for the Consequences of Climate Change:

Many important preparedness, resilience, and adaptation efforts are already being led by local, state, and regional entities across the country. Mechanisms being used by local governments to prepare for climate change include: land-use planning; provisions to protect infrastructure and ecosystems; regulations related to the design and construction of buildings, road, and bridges; and preparation for emergency response and recovery. These local adaptation planning and actions are unfolding in municipalities of different sizes, and regional agencies and regional aggregations of governments are also taking actions. And States have also become important actors in efforts related to climate change.

- Governor Peter Shumlin serves on the President’s State, Local and Tribal Leaders Task Force for Climate Preparedness. Under the leadership of Governor Shumlin, Vermont has reduced greenhouse gas emissions in Vermont through a combination of investments in energy efficiency and the deployment of renewable energy. He has joined 7 other states in adopting an aggressive action plan to promote the deployment of Zero Emission Vehicles in Vermont. Governor Shumlin has made investing in climate resilience a priority of his administration, and by a 2011 executive order he established a Climate Cabinet to coordinate mitigation and adaptation efforts across state government. Vermont is also a member of the Regional Greenhouse Gas Initiative, a regional cap-and-trade effort to reduce carbon pollution in the Northeast and Mid-Atlantic.

Cutting Carbon Pollution in VERMONT:

In 2012, power plants and major industrial facilities in Vermont emitted almost 0.5 million metric tons of carbon pollution – that’s equal to the yearly pollution from more than 90,000 cars. Through the Climate Action Plan and state initiatives, there are many efforts already underway to mitigate and respond to the impacts of climate change in Vermont, including:

- ***Investing in Clean Energy:*** Since President Obama took office, the U.S. increased solar-electricity generation by more than ten-fold and tripled electricity production from wind power. In Vermont, renewable energy generation from wind, solar, and geothermal sources increased about 60 percent. Since 2009, the Administration has supported tens of thousands of renewable energy projects throughout the country, including 332 in Vermont, generating enough energy to power nearly 14,000 homes and helping Vermont meet its own goal of generating 20 percent of its electricity from renewable energy sources by 2017.
- ***Improving Efficiency:*** Using less energy to power our homes, businesses and vehicles is critical to building a clean and secure energy future. President Obama has made essential investments in research and development for energy efficiency advances, and set new standards to make the things we use every day – from cars to microwaves – more efficient.
 - President Obama established the toughest fuel economy standards for passenger vehicles in U.S. history. These standards will double the fuel efficiency of our cars and trucks by 2025, saving the average driver more than \$8,000 over the lifetime of a 2025 vehicle and cutting carbon pollution.
 - Since October 2009, the Department of Energy and the Department of Housing and Urban Development have jointly completed energy upgrades nearly two million homes across the country, saving many families more than \$400 on their heating and cooling bills in the first year alone.
 - Nationally, the President’s Better Buildings Challenge partners and Better Buildings, Better Plants partners have committed to reduce energy intensity at least 20 percent in over 3 billion square feet of building space.

For more information about the third U.S. National Climate Assessment, please visit www.globalchange.gov or contact engagement@usgcrp.gov.

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