



Climate Change in Baxter State Park

The only thing constant in life is change. *—Francois de La Rocheoucauld*

Climate change has emerged as one of the most urgent and important issues of this century.

There has been a considerable amount of scientific time, effort focused on the issue of climate change, combined with an equally considerable amount of political and social debate. Significant research has been directed towards evaluating the potential and likely effects of climate change on natural and social systems. A clear early result of this research is an understanding of the deep complexity of climate and the natural systems that depend upon it. While a clearer understanding of some of the hemispheric changes associated with climate change is emerging, local or regional changes cannot be predicted with certainty.

Research has suggested that the Maine climate will have warmer, shorter winters with less snow. Other research suggests that disruptions to the Gulf Stream may lead to deeper, colder winters in Maine. Climate research has also suggested a general increase in the occurrence of the intensity of storms¹. Research also suggests that increased storm intensities may be accompanied by extended duration of weather patterns leading to drought, flooding or continuing heat or cold temperatures².

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[http://www.theclimatechangeclearinghouse.org/CLIMATECHANGEIMPACTS/CHANGESSTORMINTENSITYFREQUEN
CY/Pages/default.aspx](http://www.theclimatechangeclearinghouse.org/CLIMATECHANGEIMPACTS/CHANGESSTORMINTENSITYFREQUEN
CY/Pages/default.aspx)

² <http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-10-05035.1>

The physical and biological relationships of our landscape are so overwhelming complex that future conditions can be predicted only in the most general sense at this time. The uncertainty of climate change effects and outcomes may continue for some time.

Regardless of the uncertainty, climate change has the clear potential to significantly, perhaps drastically, change the arrangement and interconnections of plant and animal communities, the arrangement and presence of species and the recreational and economic opportunities available to Park visitors in particular and society in general.

For Baxter State Park, a significant change in climate would present some obvious risks. Warmer average temperatures accompanied by less abrasive winter weather would put unique, rare and endangered plants and plant communities at risk (examples: diapensia, sedge meadow and windswept alpine ridge communities). Shorter winters, including lower average snow depth and shorter duration of snow cover would result in changes in species competition regimes (example: decreasing moose populations, increasing white-tail deer populations). Longer growing seasons would have consequences on recreational use of the Park as well. Summer camping seasons could be extended. A decrease in rime ice coupled with a longer growing season on Katahdin's Tableland could lead to an expansion of krumholtz communities into small forest communities. Viewsheds would diminish. Higher storm intensities could increase impacts from trail erosion or road washouts. Conversely, longer periods of unchanged weather patterns could lead to extended periods of very dry or very wet weather, changing natural wildfire regimes or affecting building maintenance strategies.

These are some of the possible effects of climate change on our landscape and outdoor recreation regimes, but the fact is that at this time we cannot predict the actual outcomes with any certainty. The complex and infinite connections that exist in the biological systems and communities that cover our landscape are intimately related to climate. We recognize that thresholds of major change and specific and succinct triggers that can lead to cascading effects likely exist, but we cannot identify them or evaluate how close we are to them.

Consequently, attempts to list possible risks and according adaptations would seem to be an ineffective approach.

The most valuable adaptation is the adaptation of existing management systems to an environment that will be changing at a more rapid rate than previously experienced.

Examples:

- Develop effective monitoring systems to accurately and objectively measure or determine actual changes occurring on the Park landscape
- Adapt policies to administer the use of the Park based on current landscape conditions and not dates.
- Develop plans for alternative means of transport of materials and personnel in the Park
- Inject variability into seasonal position lengths to reflect landscape conditions and recreation demands
- System flexibility to respond to extreme weather events
 - Stockpiling of materials and supplies (gravel, culverts, bridge sections)

- Refine information and education techniques to address continuing change in resource and social protection issues.

These actions are things the Park can, and should, begin to do now, as they will help protect the Park regardless of what actual outcomes of climate change emerge in the coming years.

Instituting these changes will be challenging and will require careful thought and appropriate pacing as they will change structures that have not changed in decades and that people are comfortable with, but addressing climate change will require all of us to leave our comfort zones and get comfortable with adaptation.

It's not the strongest of species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change. ----- Charles Darwin