

INSTITUTE OF OUTDOOR RECREATION AND TOURISM

HOW WILL CLIMATE CHANGE AFFECT WINTER RECREATION?
RECENT RESEARCH FROM NORTHERN MINNESOTA

Lael Gilbert, Jordan W. Smith, Ph.D., Mae Davenport, Ph.D.



October 27, 2016



IORT-PR-2016-05

ABSTRACT

This fact sheet reviews recent research examining how winter-based outdoor recreation along the North Shore of Lake Superior will be affected by climate change. The research revealed the majority of outdoor recreationists who visit the region now won't change their travel plans as temperatures increase and the snow and ice thins out. However, a substantial number of outdoor recreationists indicated they will visit the region more often in the future. This is largely due to longer shoulder seasons, which support these individuals' preferred outdoor recreational activities. Knowing how outdoor recreationists' behavioral responses to climate change vary will help community planners and natural resource managers make decisions that will benefit both their communities and their guests.



Many communities that depend on winter tourism are at risk. What happens, for instance, when there is not enough snow to support skiing? With a changing climate, will winter recreation-based economies still be sustainable? Although climate change happens slowly, community planners and natural resource managers need to understand how to best respond to changing environmental conditions. The sustainability of winter recreation destinations depends on decisions made today.

More and more research has shown that climate change could have big impacts on activities like downhill and cross country skiing, snowshoeing, snowmobiling and sledding. Even a small tweak in a region's climate could mean altered snow conditions and air temperatures - factors that lead to big changes in the way tourists behave.

Scientists from across the country have recently come together in an effort to better understand how climate change will affect the winter outdoor recreation opportunities offered along Minnesota's North Shore region (Smith et al., 2016; Bitsura-Meszaros et al., 2015).

In their research, winter visitors were given a survey to determine how their outdoor recreation decisions might change in the next 20 years under future climatic conditions. Overall, the researchers found little change in the way visitors said they would travel after considering how climate change would affect outdoor recreation settings along the North Shore. However, they learned that not all visitors think alike. When researchers broke the respondents into groups, they found the people who visited just once or twice in a winter season preferred colder weather and sought it out as an important part of their trip.



The second group were those who were more frequent visitors to the North Shore. Although this group was in the minority overall, they were more sensitive to the impacts of climate change and preferred warmer temperatures. This group reported they would take more trips to the North Shore in the future as temperatures increased and the shoulder seasons become longer. This information suggests some visitors believe climate change might actually improve the quality of outdoor recreation opportunities offered along the North Shore (warmer weather = more desirable conditions = more trips).

The research highlights the importance of not lumping all visitors together in one group. People have differing tastes, preferences and expectations for outdoor experiences. Knowing how outdoor recreationists' behavioral responses to climate change vary will help community planners and natural resource managers make decisions that will benefit both their communities and their winter guests.

The researchers also found that economics drove outdoor recreationists' decision making. If a person spent \$461.14 and made two trips to the region during the winter, their costs would have to increase by \$32.14 for them to change plans and visit just once. People also said that if the changing climatic conditions negatively impacted the economies of the communities they were visiting, that they would visit less often in the future.

Minnesota's North Shore of Lake Superior is typical of many regions facing difficult decisions about how to best plan for a shifting climate. More research is needed to understand how outdoor recreation systems will respond to climate change so that decision makers will know how to best plan for long term development and growth.

REFERENCES

Bitsura-Meszáros, K., McCreary, A., Smith, J. W., Seekamp, E., Davenport, M. A., Nieber, J., ... Kanazawa, M. (2015). Examining tourism destination risk and community adaptive capacity along the north shore of Lake Superior. *Michigan Journal of Sustainability*, 3, 111–119.

Smith, J. W., Seekamp, E., McCreary, A., Davenport, M., Kanazawa, M., Holmberg, K., ... Nieber, J. (2016). Shifting demand for winter outdoor recreation and Tourism along the North Shore of Lake Superior under variable rates of climate change: A finite-mixture modeling approach. *Ecological Economics*, 1–13.



Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions. Utah State University employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities. This publication is issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Kenneth L. White, Vice President for Extension and Agriculture, Utah State University.