

NH Envirothon 2021 Current Issue

Climate Change and New Hampshire Water Resources

Introduction

Although New Hampshire has abundant water resources, these resources are threatened by demands from population growth, an aging water infrastructure, and climate change. It is very likely that the main effects of climate change will be the disruption of the water cycle. Probable disruptions include increases in water pollution related to higher temperatures, changes in precipitation patterns across the state, increases in the frequency of extreme water-related events, and increases in damage from coastal flooding related to global sea level rise. Governments, businesses, and communities must be aware of the main factors that contribute to climate vulnerability and the many proactive options available for climate change adaptation as related to water resources.

Water resource management strategies vary across the state and are dependent upon community resources and its water resource challenges. For example, densely populated regions are normally served by public water and sewer systems, while rural areas are typically served by private wells and septic systems, each having unique challenges. State, town, and community officials who manage water resources may not be prepared to deal with large scale impacts on water resources associated with climate change. It is thus very important for these officials to have the necessary resources to devise policies and implement changes to reduce the risks associated with climate change. Water resource management sectors that should be prepared for potential impacts from climate change include (but are not limited to) stormwater, drinking water, and wastewater infrastructure, risks from flooding, water availability, water quality, and water demand for irrigation.

The Challenge

The main objectives in this year's Envirothon are learning about the water resources in your community, determining what policies and procedures are in place for climate change adaptation, and providing decision makers with strategies for adapting to a changing climate. As part of your investigation you will need to contact state, county, and local governmental and non-governmental personnel directly. The main product of your work will be climate change adaptation measures that can be implemented to help preserve water resources in your community. These measures should then be transferred to local decision makers, along with implementation suggestions.

Questions to guide your work:

- 1) What are the sources for drinking water in your town or community?
- 2) How many people rely on these sources?
- 3) Does your community have an integrated water management plan?
- 4) Is your town or community actively engaging in source water protection for drinking water (often land conservation with a specific focus of protecting drinking water)?
- 5) Does your town or community have rules/zoning laws that are designed to protect water resources? Do they enforce them?
- 6) Are there plans for land preservation and development goals?
- 7) How might climate change impact the water resources in your community?
- 8) Does your community have a climate change adaptation plan? If not then, why not?
- 9) What types of resources can you provide to decision makers to help them devise climate change adaptation strategies?

Resources

New Hampshire Department of Environmental Services, Water Resources Primer

<https://www.des.nh.gov/organization/divisions/water/dwgb/wrpp/primer.htm>

Union of Concerned Scientists, Climate Change

<https://www.ucsusa.org/climate>

United State Environmental Protection Agency, Climate Impacts in the Northeast

https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-northeast_.html

New Hampshire Department of Environmental Services, Climate Change Program

<https://www.des.nh.gov/organization/divisions/air/tsb/tps/climate/index.htm>

U.S. Global Change Research Program, Climate Science Special Report

<https://science2017.globalchange.gov/>

Other Resources

1. Global Weirding with Katharine Hayhoe YouTube series, especially:
 - **I'm only a kid, I can't do anything about climate change...right?
<https://www.youtube.com/watch?v=PsIL9WC-2cQ>
 - **If I just explain the facts, they'll get it, right?
<https://www.youtube.com/watch?v=nkMIjbDtdo0>
 - Is carbon dioxide really a pollutant?
https://www.youtube.com/watch?v=wfq72W3RP_o
2. Yale Climate Connections, People don't need to 'believe' in climate change to act on it
<https://www.yaleclimateconnections.org/2019/08/people-dont-need-to-believe-in-climate-change-to-act-on-it-study-suggests/>
3. Katharine Hayhoe, Ted Talk: The most important thing you can do to fight climate change: talk about it
https://www.ted.com/talks/katharine_hayhoe_the_most_important_thing_you_can_do_to_fight_climate_change_talk_about_it?language=en
4. Project Drawdown, <https://www.drawdown.org/solutions>
5. Union of Concerned Scientists, Killer Heat Interactive Tool
https://www.ucsusa.org/resources/killer-heat-interactive-tool?utm_campaign=tw&utm_medium=social&utm_source=twitter
6. Grist, Climate change is coming for our toilets. Here's how we can stop it.
<https://grist.org/article/climate-change-is-coming-for-our-toilets-heres-how-we-can-stop-it/> (NH is mentioned in this article)

NH Envirothon 2021 Current Issue Team:

John F. Slater, Ph.D.
Adjunct Instructor, Earth Science Department
University of New Hampshire
jslater@unh.edu

Lara Hooper, M.S.
Drinking Water & Groundwater Education Coordinator & NH Project WET Coordinator
New Hampshire Department of Environmental Services
lara.hooper@des.nh.gov