

# Hubbard Brook Environmental Literacy Program

## Data Analysis and Interpretation Activity

### Tracking Climate Change-Lake Ice Cover

Summary	Students explore climate change by graphing, analyzing and interpreting 52 years of ice cover data from Hubbard Brook Experimental Forest in NH
Subject areas	Ecology, Earth Science, Environmental Science
Grade level	Advanced middle and high school
Objectives	<ul style="list-style-type: none"><li>• Differentiate between weather and climate</li><li>• Identify types of data that can be collected to track climate change</li><li>• Represent data in graphical form</li><li>• Analyze and interpret data</li><li>• Explain how duration of ice cover might affect lake ecology and climate on a planetary scale</li></ul>
Next Generation Science Standards	<ul style="list-style-type: none"><li>✓ Science and Engineering Practice: Analyzing and Interpreting Data</li><li>✓ Disciplinary Core Idea: ESS2.D: Weather and Climate</li><li>✓ <b>HS-ESS2-2 Earth's Systems</b> : Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.</li></ul>
Timeframe	2 hours, including teacher introduction and post activity discussion
Materials	<ul style="list-style-type: none"><li>• Student Reading <a href="https://www.caryinstitute.org/news-insights/feature/listening-science-conversation-gene-e-likens">https://www.caryinstitute.org/news-insights/feature/listening-science-conversation-gene-e-likens</a></li><li>• Student handout</li><li>• Computer for each student or small group</li><li>• Excel data file</li><li>• Teacher answer key</li></ul>
Assessment	Student handout responses and graph.

Note to Teachers: This lesson is based on research conducted at Hubbard Brook Experimental Forest in Woodstock, New Hampshire from 1968-2020. Thanks go to Dr. Gene Likens, lead researcher, and Don Buso and Tammy Wooster, field data collectors. The lesson was created by Sarah Thorne while she taught high school and held a summer Research Experience for Teachers position at Hubbard Brook Research Foundation.

For more information about research that tracks climate change at Hubbard Brook, see *Facts about Climate Change* at <https://hubbardbrook.org/sites/default/files/pictures/HBRF/ScienceLinks/Climate%20PRINT.pdf>