Mendota Ice Duration by C Kohn, Agricultural Sciences, Waterford WI

Name: Hour Date:

Date Assignment is due: Why late? Score: + ✓ -  
 Day of Week Date If your project was late, describe why

**Directions**: *In this lab you will graph the ice duration on Lake Mendota from* ***1855-2013****. Using large graph paper (like the kind you’d use for drawing landscape designs or blueprints, not the notebook-sized paper), create a graph base on this data. You can create any kind of graph that appropriately reflects this data. Your graph could be a line graph, a bar graph, or any kind that works to show how ice cover has changed, if it has at all. (Hint: Line graphs tend to be the easiest to create accurately).*

*All axes, lines, and data must be labeled – e.g. your y-axis should be labeled “Days of Ice Duration” and your x-axis should be labeled “Year”. Your graph should have a caption explaining its data; pretend you are explaining your graph to a blindfolded person – your caption should describe the trends in your data in detail.*

*You may work with a partner on this project; students in the past have done this by starting at opposite ends of their graph. For example, Partner A may start with 1855 and work forward, while Partner B will start at* ***2013*** *and work backwards. Each of you should have your name on your graph. Use your time wisely and start your work in pencil in case you make a mistake.*

Beginning in 1855, Lake Mendota was studied thoroughly to understand just why lakes are what they are. This helped to establish the science of limnology, the study of lakes. Ice cover is an especially important variable today because a single number – days of ice cover – can reflect the long term trends in temperature over the course of an entire year. This is precisely the problem with climate – it is long term and often beyond what daily temperatures can convey. Ice duration (the number of days that a lake is completely frozen over each winter) is a very valuable figure because it reflects ALL of the daily temperatures for that season.

A very cold or very warm day can throw off an average temperature and there is little consistency in temperature from Jan 1 to Dec 31. An excessively warm or cold day by itself will not change the ice duration significantly. This means that unlike average temperature, ice duration is a figure that is largely unaffected by short-term fluctuations in temperature. In short, ice duration is a reliable indicator of long-term weather trends.

It is not uncommon for someone to use one cold winter as proof that climate change is not real, or vice versa for someone to use a sweltering July day as proof the planet is being baked to death. One-time spikes or dips in temperature are not in themselves proof of climate change. Climate change is something that occurs over decades or centuries (if not millennia), not days, weeks, or years. In order to effectively address whether or not climate change is real, we have to examine long term, reliable data. The Ice Duration of Lake Mendota is among the most reliable long term data sets we have for this cause.

**HISTORY OF FREEZING AND THAWING OF LAKE MENDOTA, 1852-53 to 2012-13**

***Wisconsin State Climatology Office***

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Learn how this data affects ice fishing! Visit <http://climatewisconsin.org/story/ice-fishing>