

Preregistration

Historical trends in ice cover for Wisconsin Lakes Mendota and Monona

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Data collection	Yes, we already collected the data.
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Hypothesis

What are the long-term trends in ice cover on Lakes Mendota and Monona? Do trends differ between the two lakes?

Dependent variable

The dependent variables are ice in date, ice out date, and number of ice covered days.
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Conditions

Lakes will be assigned a condition on each day of measurement - ice covered or uncovered.

Analyses

As we expect the trends in ice cover over time to be nonlinear, we will use generalized additive models (GAM) to characterize trends.

**Outliers and
exclusions**

We will not exclude outliers but will ensure that GAM fits are not overly influenced by them so as to over fit and falsely conclude that a trend exists in ice cover over time.

Sample size

Sample size is pre-determined by the start date of monitoring (1853 CE for Lake Mendota, 1851 CE for Lake Monona)

Other

Nothing else to declare.

Study type *Class project or assignment

References
