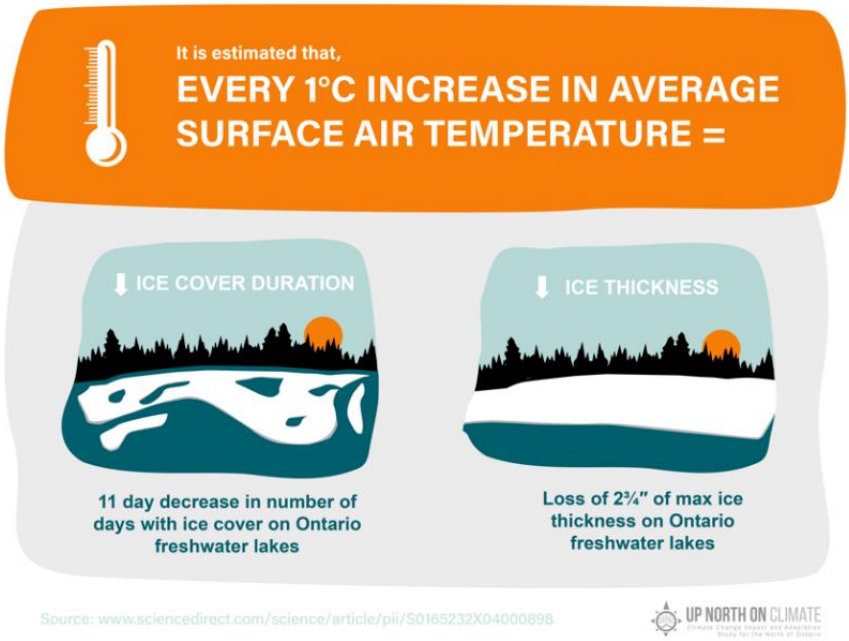
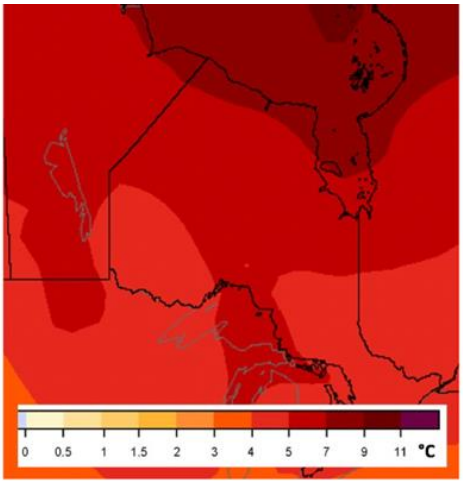
# Changing Ice

The winter season is projected to have the greatest temperature increase, and warmer winters are already being felt and seen in communities. In reality, changes in temperature are even more pronounced in some regions and can vary year to year.




## What are the projected changes for Winter?




*The projected change in winter temperature (°C) in Ontario is 4°C to 9°C by the 2050s, compared to the average for 1986-2005, assuming little reduction in carbon emissions (RCP8.5; 75th percentile). Source: http://climate-scenarios.canada.ca/index.php?page=download-cmip5*


## How will this impact the ice?

Ice growth and strength is directly linked to the weather in the area and this is especially important in the fall, when ice forms, and in the spring, when ice begins to lose its strength. In late fall, ice grows with cold days and colder nights (without snow to slow down freezing). Warming trends in fall and winter can delay ice freeze-up time making traditional routes unsafe when they would have been safe at that time in the past. This impacts people's ability to travel or hunt.

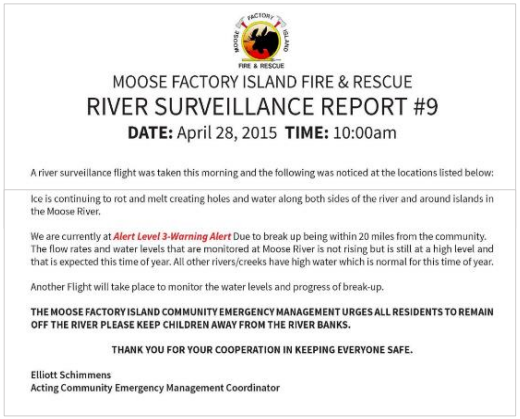
A faster spring melt of ice and snow can also create unsafe ice conditions earlier than when they have occurred in the past. Changes in ice thickness especially in the spring and fall can be a hazard to people's safety, and incidents of break-through could become more frequent.

## What can we do?

### *Monitoring and community alerting systems*

Ice thickness monitoring on traditional routes can increase the safety of community members. In some towns, a community person is hired to check ice thickness regularly on commonly used travel ways or waterbodies. Usually, an axe or an auger is used to measure ice depth, but some places have invested in ground-penetrating radar systems.


Sharing information about ice is vital and should include information about unsafe areas where the ice may not be as thick. Social media sharing, such as Facebook or community websites, may serve as information platforms to inform community members. Lake Simcoe has a Facebook page and the Moose Factory Island Fire & Rescue put out regular reports to inform community members.



### *Equipment modifications and changing routes*

In some regions, people have already needed to change the snowmobiles they drive to lighter weight machines for safer ice travel. Changing routes to avoid water crossings may be considered for safer access to traditional areas.

### *Emergency planning and preparedness*

Emergency planning for safe travel is always a good idea, but especially in the winter. Telling a reliable community member where you are going and when you expect to return can ensure that someone will come looking for you if you don't return. Safety equipment and supplies like a floater suit, throw rope and ice picks in case you fall through the ice should always be a part of a packing list. Emergency planning information and a complete packing list should be available to community members either as a poster or on a community website.

**Learn more:**

https://www.sciencedirect.com/science/article/pii/S0165232X04000898
http://lakeice.squarespace.com/bearing-strength/
https://www.ihsa.ca/PDFs/Products/Id/IHSA029.pdf

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