



WALKING ON THIN ICE:

Impacts of Climate Change on Sea Ice in the Arctic

What is sea ice?

Frozen seawater that sits on top of the ocean surface.

Undergoes vast seasonal changes: forms in the winter and melts and retreats in the summer

There are many types of sea ice depending on its stage of development, including: young ice, first-year ice, multiyear ice, and more.

There are many forms of sea ice based on physical characteristics, including: pancake ice, floes, fast ice, and more.

What makes sea ice so important?



Viability of arctic communities

Northern communities use sea ice primarily for hunting, harvesting, and travelling.



Habitat for animals

Sea ice acts as an essential habitat for many animals such as polar bears, seals, and Arctic foxes which use it to forage, hunt, and breed.



Ocean circulation

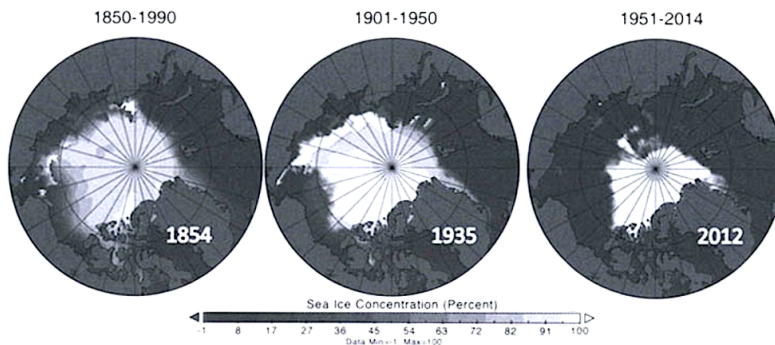
Sea ice is cold and releases salt as it forms. These two factors cause the water beneath it to sink and move towards the equator, driving oceanic circulation.



Reflection of incoming solar radiation

Due to its light colouration, sea ice has a high albedo (capacity to reflect incoming radiation), allowing the surrounding area to remain cool.

Comparison of minimum ice areas from 1850-2014

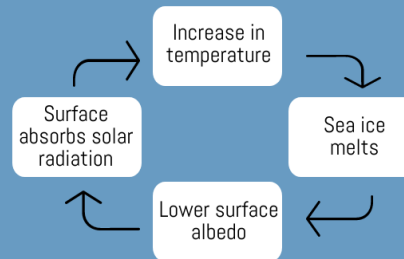


Sea ice extent in the Arctic is rapidly declining.

Summer sea ice in the Canadian Arctic decreased by 7% per decade on average from 1968-2015.

The extent of sea ice is expected to continue to decline with warming global temperatures due to climate change.

Canadian Arctic waters could be ice-free by the 2050s in the summer months.



Sea ice loss will result in a continuous feedback loop that will cause even more sea ice loss.

Impacts of sea ice loss on Canadian communities



Reduced hunting and harvesting opportunities



Travel becomes less predictable and more dangerous



Increase in coastal erosion and flooding



Increase in industrial activities which harm the natural ecosystem

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