

Alaska is at the forefront of global warming, and thus it is important for Alaskans to prepare for and adapt to the changing climate and associated environmental changes to avoid severe impacts.

## A momentous occasion:

At the 53rd Alaska Federation of Natives convention in 2019, AFN delegates approved a measure declaring a state of emergency in Alaska over climate change. The resolution was authored by young participants in the Elders and Youth conference, and also called for the creation of a leadership task force focused on climate action. This has great impacts for Alaska and moving to adapt to climate change.



Photo: Zachariah Hughes – Alaska Public Media, Fairbanks

There is no “one-size-fits-all” strategy when adapting to climate change. Tribal governments, scientists, local residents, boroughs, and state and national governments will all have to work together to build adaptation solutions that meet local needs and priorities.



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### References:

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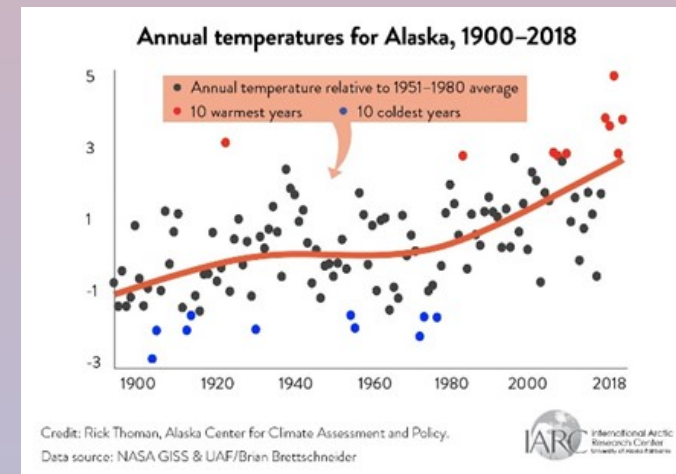
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## Alaska: Ground Zero for Climate Change

The Arctic is warming twice as fast as the rest of the planet, according to a 2004 Arctic Climate Impact Assessment report.

The effects of global warming in Alaska are significant. The dramatic temperature changes are already causing the landscape to change faster than anywhere else in the United States, threatening infrastructure, wildlife, and Native Alaskan culture.



# Native Alaskan Life Changes

Alaska Native people depend economically, nutritionally, and culturally on fishing and hunting animals, including polar bears, walrus, seals, moose, caribou, and fish. As the supply of fish and game decline, people are likely to travel onto thinning ice in search of food and are being forced to seek alternative food sources. Arctic plants and animals, including those harvested as subsistence food, are also at higher risk for diseases in a warming climate, further affecting food availability and human health.



Credit: <https://www.adfg.alaska.gov/index.cfm?adfg=subsistence.hunting>

## Winter travel

has long been a key feature of subsistence food harvest activities for rural Alaska communities. Higher winter temperatures and shorter durations of ice seasons may delay or disrupt usual patterns of ice formation on rivers, lakes, and the ocean. For subsistence hunters, this increases the risk of falling through the ice, having unplanned trip extensions, or attempting dangerous routes, leading to exposure injury, deaths, or drowning.

Global warming leads to more permafrost thaw and disruptions to freeze-thaw cycles that can increase frost heaves and subsidence. This can potentially cause damage to transportation infrastructure in Alaska, including highways, railroads, and airstrips. Structures such as roads, buildings, pipelines, and power lines built on top of permafrost may shift, warp, or collapse as the ground melts and softens. Uneven sinking of the ground in response to permafrost thaw is likely to add significant costs to the maintenance and repair of transportation infrastructure and buildings.



Credit [kml.gina.alaska.edu](http://kml.gina.alaska.edu)

# Wildland Fire



Credit: USGCRP (2014)

In many areas, rainfall has decreased, leading to drier conditions and more wildfires. Alaska's white spruce forests, for example, are already suffering from drought stress. Large wildfires have consumed more boreal forest in Alaska in the last ten years than in any other decade recorded, and the area burned annually is projected to double by 2050.

Warmer temperatures are also expected to worsen insect damage to forests across much of the state, which may increase the area of standing dead, highly flammable trees that are especially vulnerable to wildfire.