

Alaska

Regional Climate Impacts

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ENVIRONMENTAL
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Fast Facts Series

Rising temperatures threaten communities, glaciers, and coasts



Alaska is **warming** two to three times faster than the global average.

Scientists link human-caused greenhouse gas emissions to 75% of Alaska's warming from 1950 to 2017.



Rising temperatures caused glaciers to melt by an average of three feet per year between 2000 and 2019, exposing communities to more floods.



Permafrost underlies 80% of Alaska. Climate change accelerates **permafrost thaw**, leading to soil erosion and releasing carbon dioxide and methane into the atmosphere.

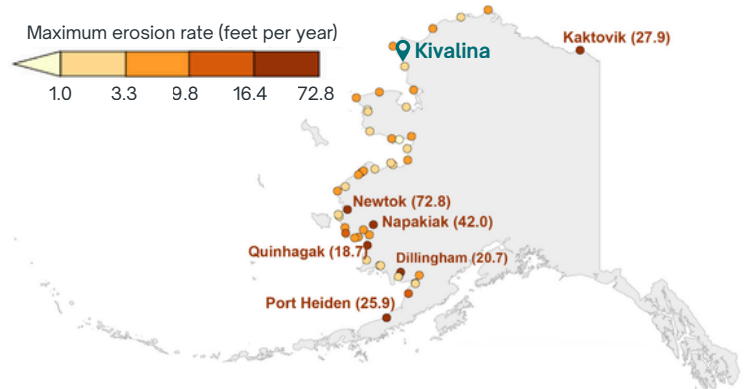


From 2020 to 2024, the State of Alaska declared about twice as many **weather or climate disasters** as it did between 2014 and 2019.

Climate-forced displacement can lead to litigation

According to the Fifth U.S. National Climate Assessment, "Climate-forced population displacement, including community relocation, is expected to be one of the greatest climate adaptation challenges for Alaska Native communities." In one example, a federal court dismissed a case seeking monetary relief for adaptation projects.

Coastal Erosion Rates in Alaska



The figure shows maximum observed rates of coastal erosion in selected communities. Data are unavailable for many parts of Alaska's extensive coastline, but erosion risk is high in much of the state. Figure from the Fifth U.S. National Climate Assessment.

CASE SPOTLIGHT: SEA-ICE MELT FROM WARMING

Native Village of Kivalina v. ExxonMobil Corp. (9th Cir. 2012)

Summary: Facing dire rates of coastal erosion and the need to relocate, a Native Alaskan tribe and coastal village filed a public nuisance claim under federal common law, seeking monetary relief. The communities alleged that ExxonMobil and other energy companies' greenhouse gas (GHG) emissions contributed to climate change that melted sea ice, reducing a buffer that offered protection from winter storms and increased erosion. The Ninth Circuit held that the Clean Air Act displaced plaintiff's claim.

Science: The Ninth Circuit acknowledged the **village's reliance on sea ice as a natural shield protecting it from storms and erosion**, citing a U.S. Government Accountability Office report: "[I]t is believed that the right combination of storm events could flood the entire village at any time... Remaining on the island...is no longer a viable option for the community."



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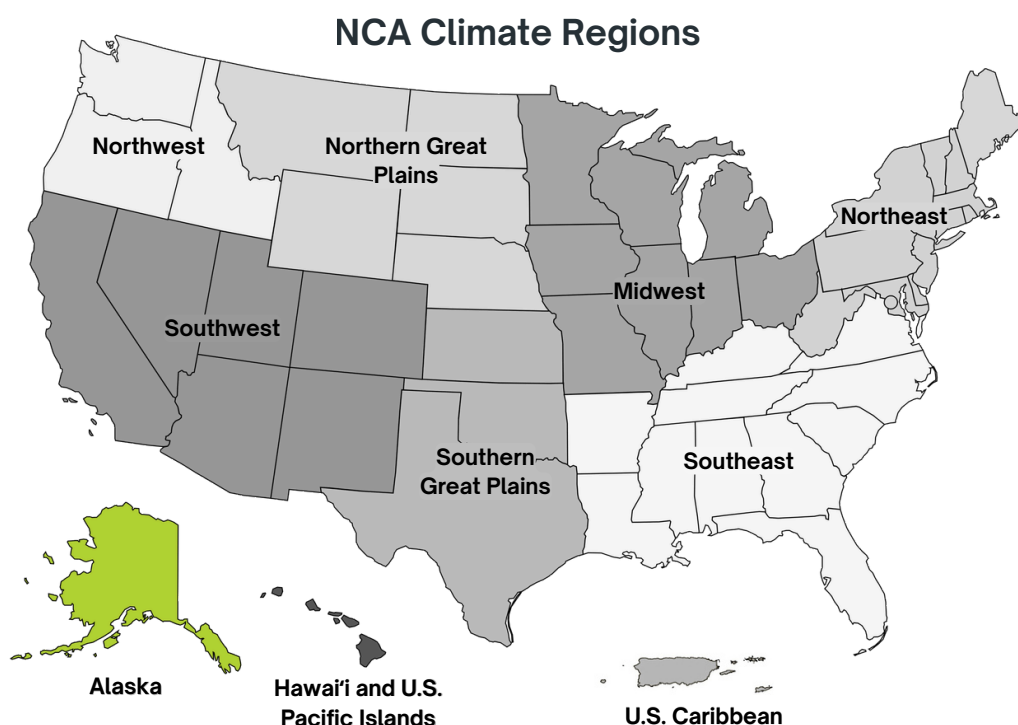
Providing judges with authoritative, objective, and trusted education on climate science and the law.

Climate change impacts all regions of the United States

The Fifth National Climate Assessment (NCA5) of 2023 divides the United States into ten regions to assess the current and future risks posed by climate change in each region. View fact sheets for other regions at cjp.eli.org and learn more about climate impacts at nca5.climate.us/regions.

Primary impacts from climate change vary regionally, typically affecting:

- Heat
- Sea-level rise and flooding
- Precipitation patterns
- Hurricanes and tropical storms
- Wildfires
- Air quality
- Sea ice and glacier melt



SO Why should judges care?

The effects of climate change are reshaping society and, with it, many aspects of the law. There are thousands of cases in courts throughout the country raising issues related to climate change that cover an extremely wide variety of topics, including, for example, insurance, permitting, and land use. As the impacts of climate change accelerate, judges can expect more cases that will draw upon scientific and technical evidence about these impacts.

SOURCES

Henry P. Huntington, et al., *Chapter 29: Alaska* in Fifth National Climate Assessment (2023), <https://nca5.climate.us/>.
 Alaska's Changing Environment 2.0 (R. Thoman & H.R. McFarland eds., 2024).
 Arctic Monitoring & Assessment Programme, AMAP Arctic Climate Change Update 2024: Key Trends and Impacts (2024).
 Native Vill. of Kivalina v. ExxonMobil Corp., 696 F.3d 849 (9th Cir. 2012).

