

ALASKA

CLIMATE CHANGE IMPACTS



Rapid warming, flooding, and wildfires have already impacted Alaska, and pose growing challenges to many aspects of life. Health, infrastructure, and food will be increasingly compromised. Native communities will be especially at risk.

ALREADY OBSERVED CHANGES

ANTICIPATED FUTURE CHANGES*

RISKS TO SOCIETY



Alaska's temperatures are **warming twice as fast as the global average**, and Denali National Park is now 3.3°F warmer than it was 100 years ago.

Average temperatures during winter in Alaska are nearly **6°F higher** than in 1970.

By 2050, daily high temps in Alaska may increase up to **8°F** compared to 1981-2000; the coldest nights may increase by more than 12°F, and the number of nights below freezing may decrease by 20+ nights per year.

The number of **heat wave days** could **more than triple** by 2050.

The recent heat wave in the Gulf of Alaska **reduced fisheries catch** and led to an approximately 80% reduction in the allowable Pacific Cod quota in 2018.

Permafrost thawing is **damaging buildings, roads, and cultural heritage sites and structures** as the ground sinks.



The number of **coastal flood days** observed on the Pacific Coast in the period between 2005 and 2014 was **more than six times as high** as that observed in the 1950s. Of the 735 coastal flood days since 1950, 75% are attributed to human-caused climate change.

The **100-year coastal floodplain** in Alaska is projected to **expand** from nearly 13,000 square miles to more than 15,000 square miles by midcentury, which will affect around 3,000 more residents.

Flooding and erosion of coastal and river areas affect over **87%** of the **Alaska Native communities**.

As the sea ice edge moves northward, storms produce **larger waves** and cause more coastal flooding and erosion, threatening communities.



Alaska has more area burning in wildfires than any other state, and the **wildfire season** is now **40% longer** than in the 1950s, with nearly 350,000 more acres burned each year, and on average around **40 more large wildfires each year** – twice as many as 60 years ago.

The **area burned** by wildfires from 2006-2100 could be **120 million acres** if greenhouse gas emissions continue unabated.

Wildfires and temperature increases have caused **changes in forest and vegetation types**, which affects wildlife and rural communities.

Wildfire smoke exposure is a concern for children and people with chronic respiratory and cardiovascular conditions

For sources of information, please visit: www.edf.org/climateimpactsources

*Anticipated future changes are for scenarios without climate action



EXPECTED DAMAGES

IN ALASKA BY 2100
WITHOUT CLIMATE ACTION

- Costs to mitigate or remediate damage to public infrastructure could cost a cumulative \$4.7 billion (in 2018 dollars) by end of century.
- Many communities may choose to partially or completely relocate, which can cost hundreds of millions of dollars for each community.