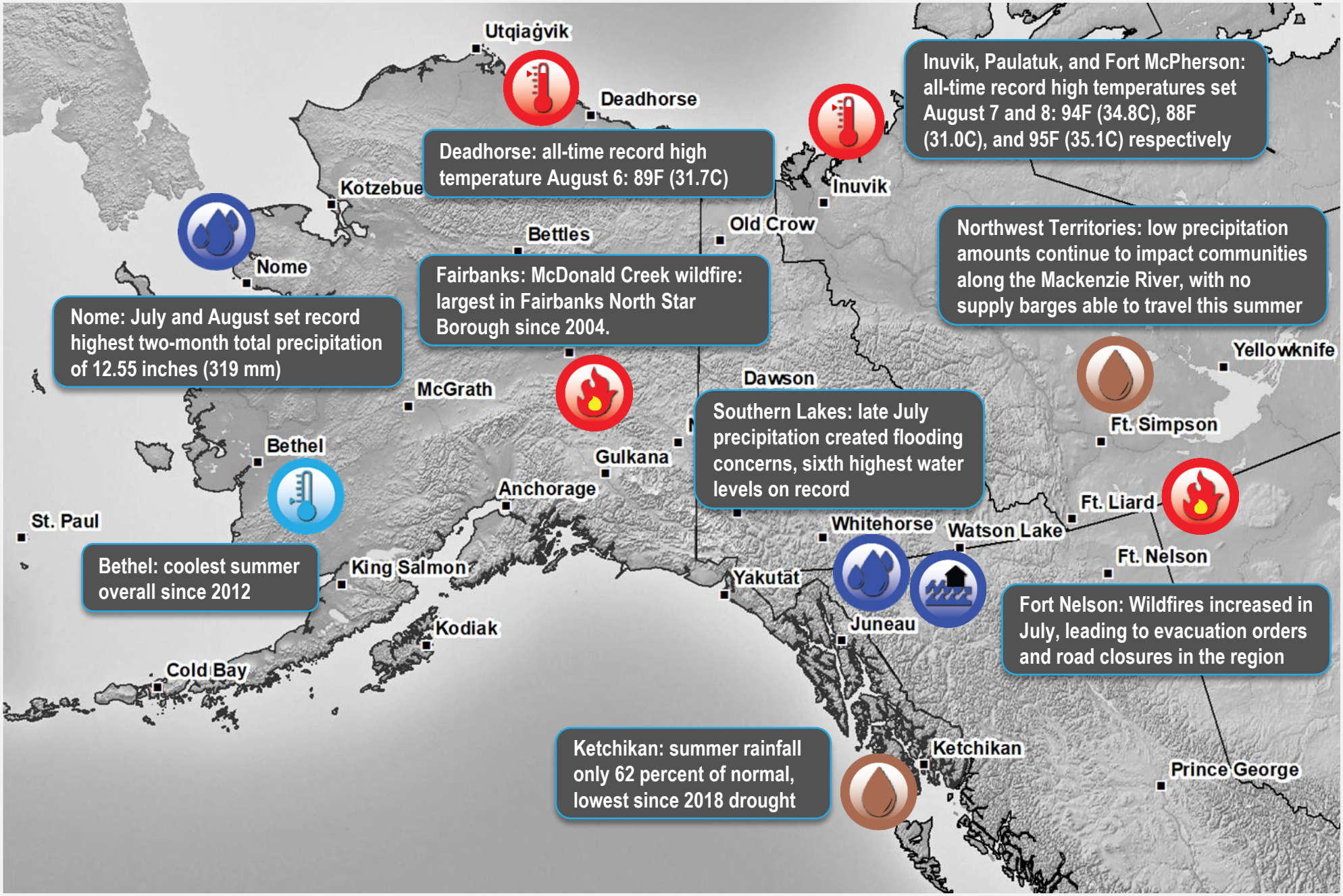
ALASKA and NORTHWESTERN CANADA

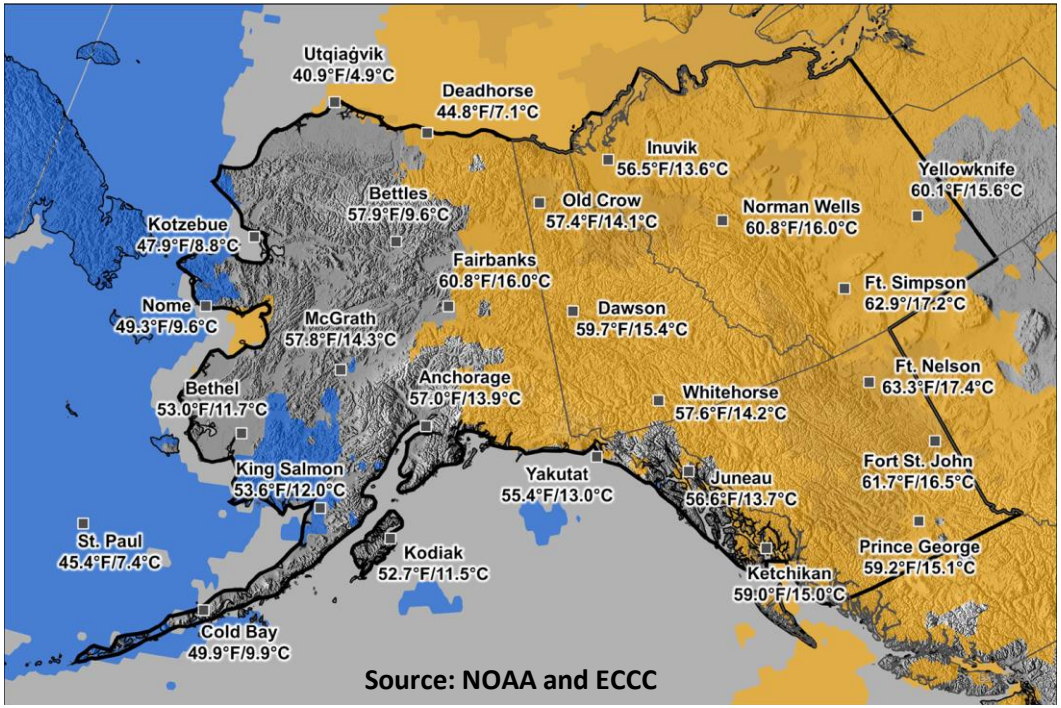
Weather and Climate Highlights and Impacts, June 2024 to August 2024
Climate Outlook, October 2024 to December 2024

ACCAP Alaska Center for Climate Assessment and Policy
A NOAA CAP team

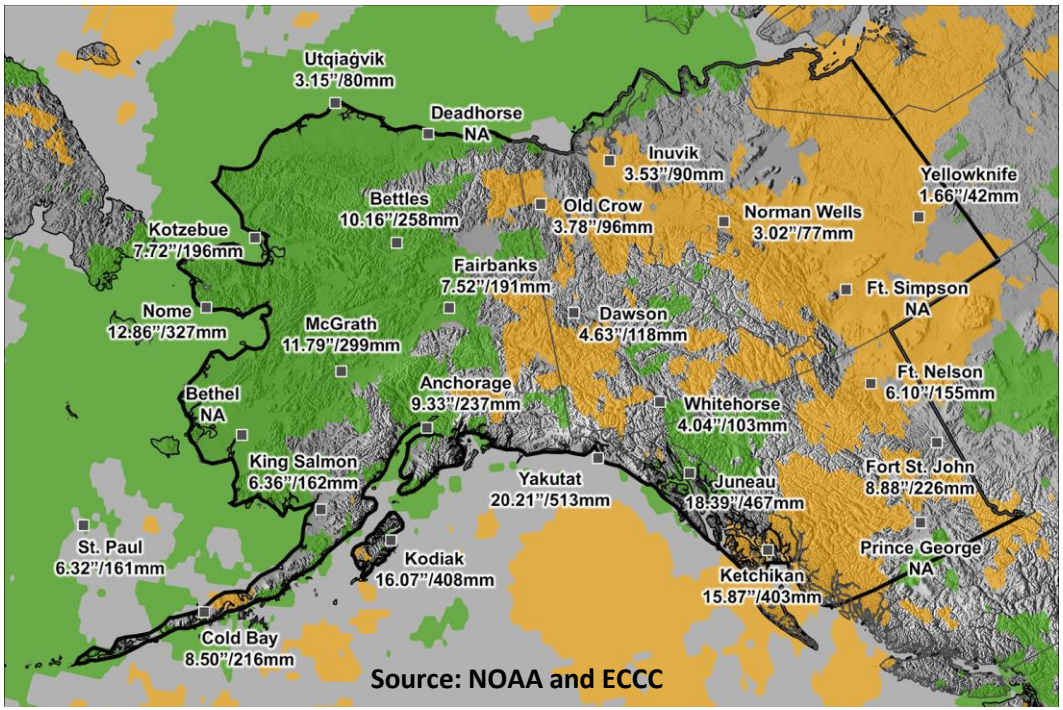
Environment and Climate Change Canada | Environnement et Changement climatique Canada



June to August 2024 Temp Averages (°F/°C) & Anomalies Below / Above / Normal



June to August Precipitation Totals (inches/mm) & Anomalies - Dry / Wet / Normal

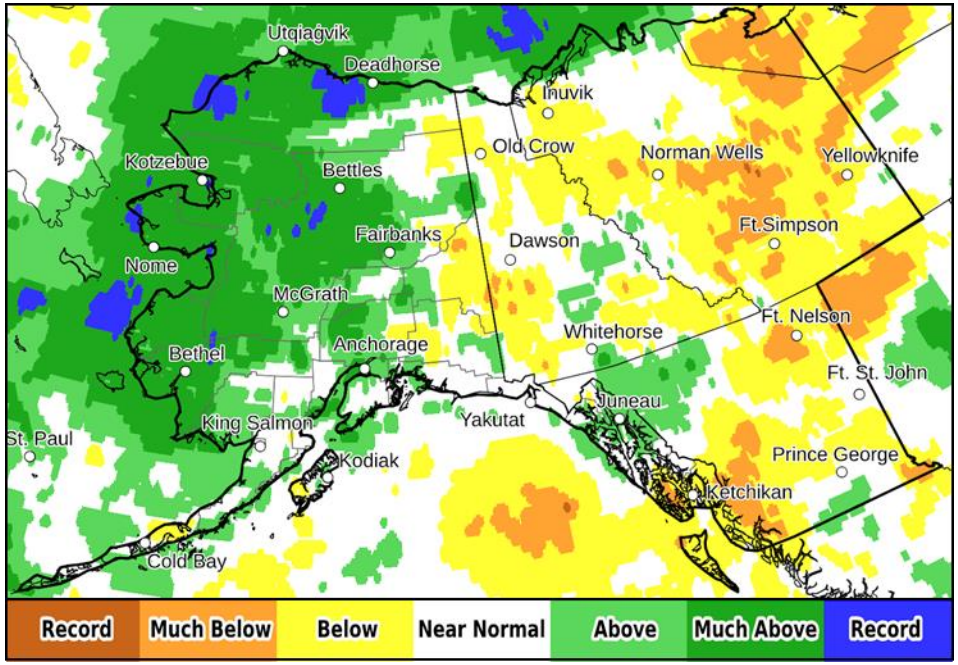


Ketchikan Landslide

Landslide at Ketchikan August 25, 2024
Photo credit: Ketchikan Gateway Borough

A landslide in Ketchikan on August 25 resulted in one fatality and damage to several homes. This was the second landslide in the past year and the fourth landslide in Southeast Alaska to cause fatalities since 2015. The weather preceding and immediately leading up to the landslide were somewhat different than the 2015 landslide at Sitka, the 2020 landslide at Haines, and the 2023 landslide at Wrangel. Rainfall during the summer at Ketchikan had been well below normal, and in fact the Ketchikan area was analyzed to be in moderate drought by the US Drought Monitor. In contrast, above normal rainfall had preceded the other three landslides. This landslide occurred during Ketchikan’s first significant rain in three weeks, and the rainfall totals of 2.5 to 5 inches (65 – 130 mm) just prior to the slide are not unusual for Ketchikan. However, like the Wrangell slide, winds of 25 to 40 mph were occurring at the time of the slide, and this may have been a contributing factor. State of Alaska geologists are in the process of conducting a detailed examination of the area in an effort to ascertain the factors responsible for the landslide.

Precipitation Dichotomy



Summer 2024 precipitation anomalies across Alaska and Northwest Canada.
Data source: ERA5 Reanalysis. Map by: Brian Brettschneider

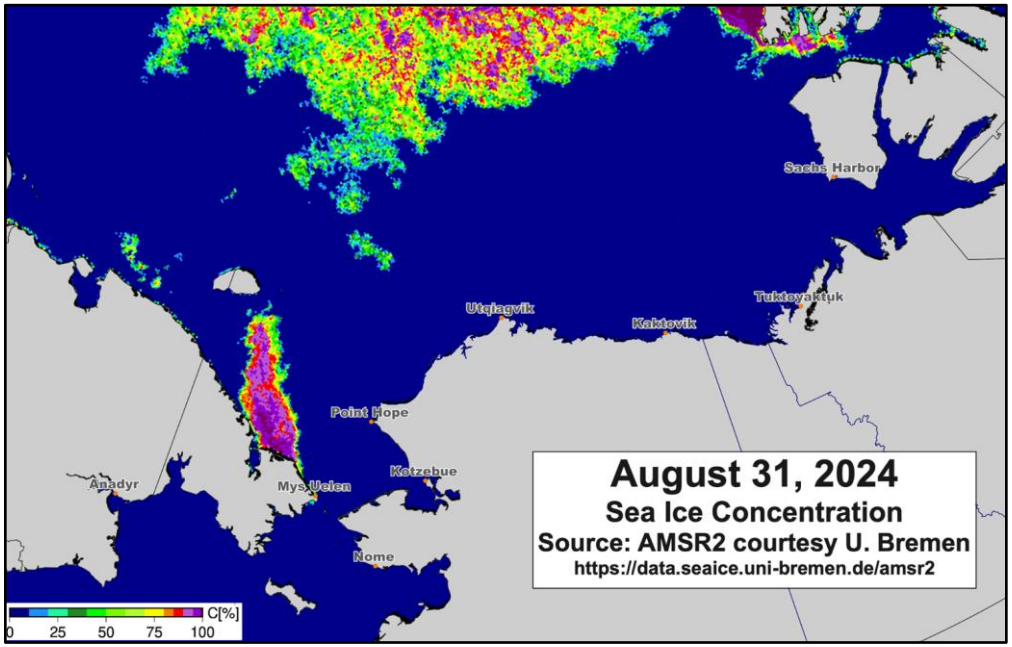
Precipitation across Alaska and northwestern Canada was split this season, with the east and west of the region experiencing opposing conditions. Alaska received consistent and plentiful precipitation through the majority of June through August, while across the Northwest Territories, Yukon, and northern BC, precipitation was below or well below normal for much of the season. Using ERA5 Reanalysis data, this year was Alaska's fourth wettest summer season since records began in 1940. Despite June being abnormally dry, July 2024 was the wettest July on record, and August 2024 was the second wettest August on record for Alaska. In contrast, northwest Canada was generally drier to much drier than normal this season. The region as a whole followed the same pattern as Alaska in June, experiencing it's second driest June of the last 30 years. In northwest Canada, July was the anomaly, with some precipitation in parts of the region. August, like June, was the second driest August of the last 30 years, with the greatest precipitation deficits occurring in northern BC and the Northwest Territories. These differences in precipitation amounts played out in the wildfires each region experienced: despite some notable fires in June, Alaska had a benign wildfire season, with the flip to wetter than normal conditions; the Northwest Territories, in comparison, started the season with some wildfires in June, but more than two-thirds of the total area burned this season occurred in August.

Juneau Glacial Dam Lake Outburst Damages 100 Homes

Flooding of the Mendenhall River in Juneau.
Photo credit: Alaska National Guard

For the second year in a row, record water volumes were released from the Suicide Basin, a glacially dammed lake in the headwaters of the Mendenhall River in Alaska's capital city of Juneau. This year's flood stage peaked on August 6th, nearly a foot above last year's, causing displacement of residents and damage to about one hundred homes. The outburst flooding began in 2011 as the melting Mendenhall Glacier opened up pathways for stored water to release into the watershed and ultimately into an urban neighborhood. In past years, smaller releases occurred several times per summer, creating fewer impacts. Last year, several homes were lost or impacted due to riverbank erosion during the record release. This year, the even larger amount of water created much larger-scale flood impacts. The challenge of this particular hydrological system is that so much is unknown with respect to the overall storage capacity and potential water volumes. Researchers and forecasters studying this system wonder if this year's record release represented a full draining of the basin all at once, as opposed to the partial releases in the past. While the effort to warn the community of the timing and severity of this year's event was successful from the point of view of the forecast accuracy and no lives being lost, there is still much unknown about this glacial system.

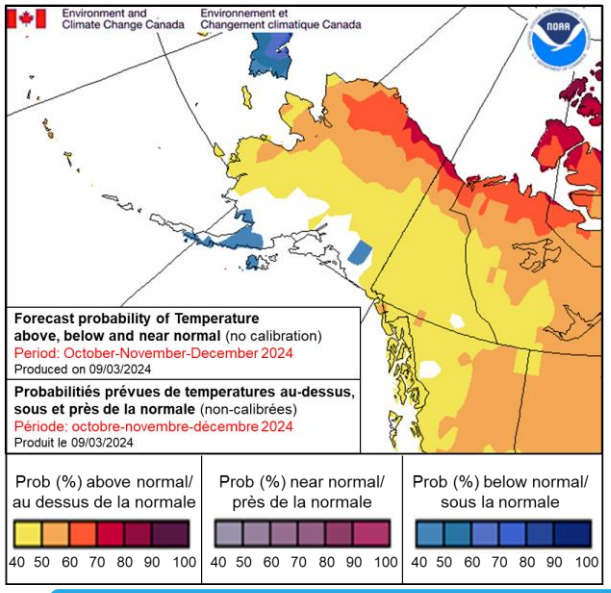
Sea Ice Concentration Conditions 31 August 2024 in the Bering, Chukchi and Beaufort Seas



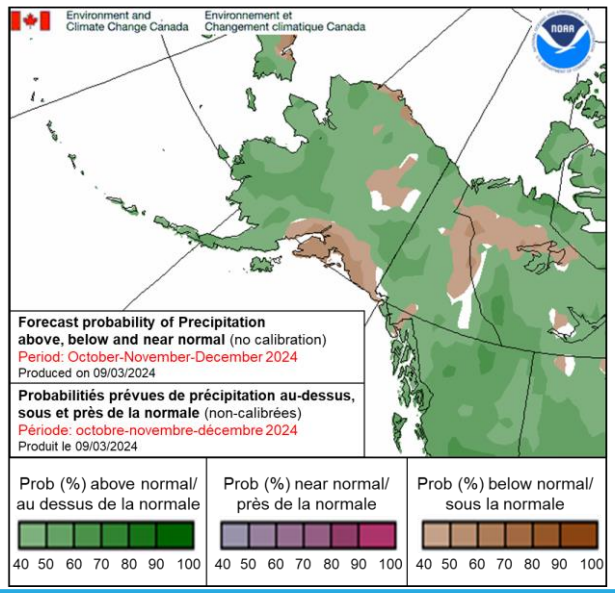
Sea ice on the Alaska side of the Chukchi had mostly cleared out by early July, with periodic winds bringing low concentrations to shore north of Point Lay. With high concentrations of sea ice along the northeastern Russian coast, ice occasionally drifted across the Bering Strait to Alaskan waters.

In the western Bering Sea along the Alaskan coast, nearshore ice was slow to clear out, relative to the earlier loss of offshore ice in the region. Central Beaufort Sea ice coverage was near normal at the beginning of June, despite the thinner than normal ice and lower than normal amounts of old ice. This soon changed, with persistent southeastern winds and warm temperatures leading to an earlier and more extensive breaking of sea ice, 4 – 5 weeks earlier than normal, across most of the western and central Beaufort Sea. July began with a shift in winds, bringing calmer waters, cooler temperatures and slowing ice melt, then switching back to higher than normal temperatures and windy conditions, once again rapidly eroding the weakening ice. By August, there was continuous open water along shores of the western Beaufort, and extensive open waters throughout the rest of the sea. By the last week of August, the Beaufort had only 8.8% ice coverage, which is tied with 2016 as the second lowest since records began in 1968.

Temperature Outlook: Oct to Dec 2024



Precipitation Outlook: Oct to Dec 2024



The temperature outlook for October through December of 2024 shows a moderate to strong signal for above normal temperature for much of the Alaska – Northwest Canada region, with the strongest signals along the Beaufort Sea coastline of Alaska and northwest Canada, including islands in the Arctic Archipelago. Southwestern Alaska and the Alaska Peninsula show either no signal or a slight signal for below normal temperatures.

The precipitation outlook shows a moderate signal for above normal precipitation amounts across much of the region, with increased probabilities in northern BC and southwestern Northwest Territories. The southcentral coast of Alaska, as well as an inland region off the Canadian Arctic coast down into eastern Yukon show a signal for below normal precipitation amounts, with a few other isolated pockets of below normal signal scattered throughout the rest of the region.

Content and graphics prepared by NOAA's National Weather Service and National Center for Environmental Information; the Alaska Center for Climate Assessment and Policy at the University of Alaska; and Environment and Climate Change Canada, as well as our regional partners: Alaska Climate Research Center, Alaska Climate Science Center, National Snow and Ice Data Center, and Scenarios Network for Alaska + Arctic Planning.

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