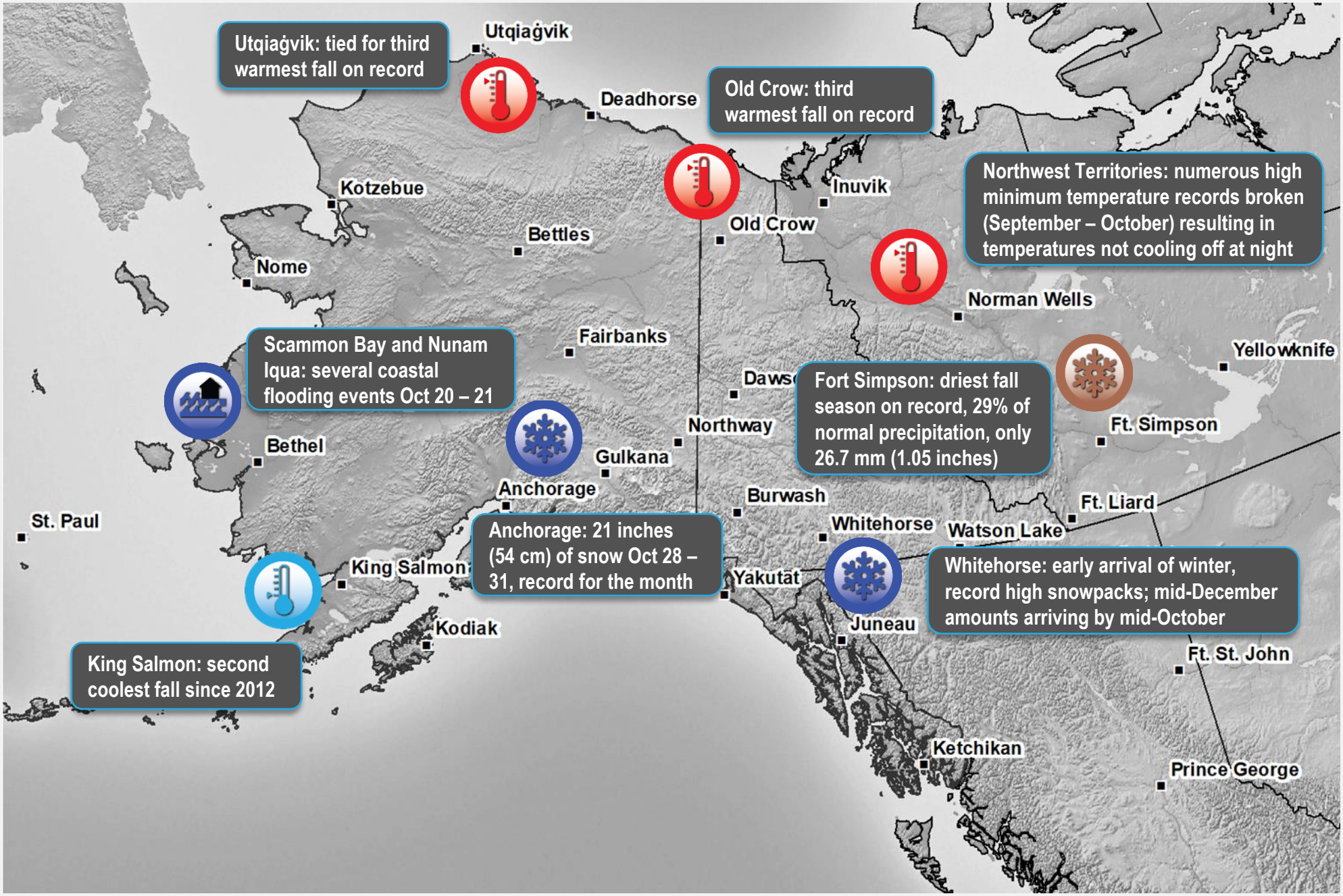
ALASKA and NORTHWESTERN CANADA

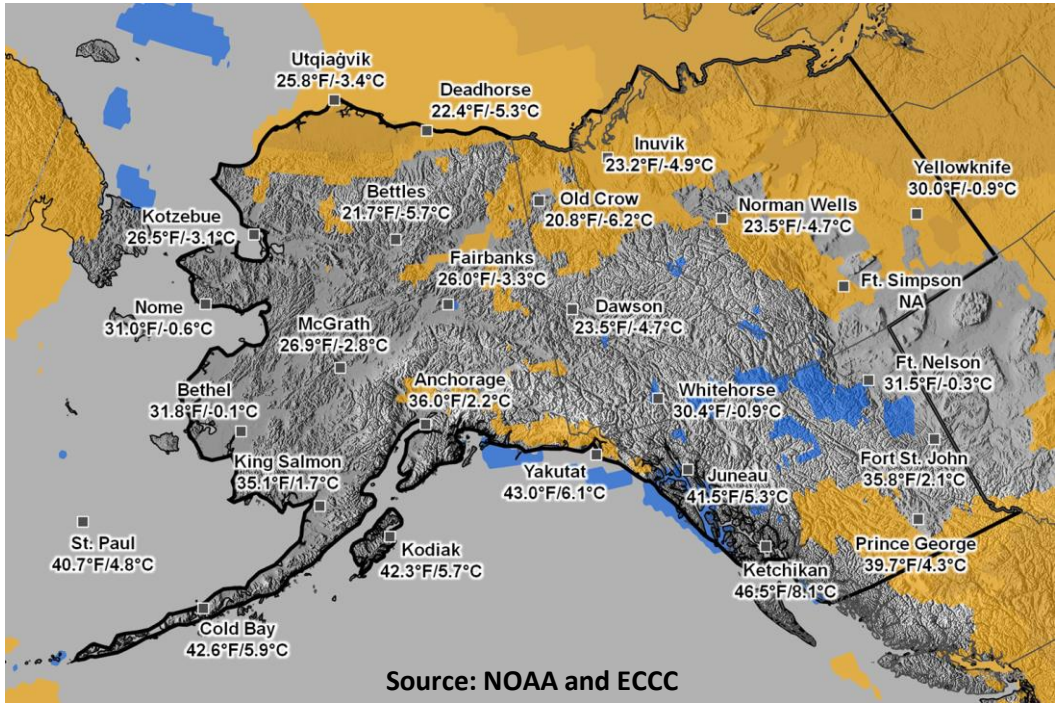
Weather and Climate Highlights and Impacts, September 2024 to November 2024
Climate Outlook, January 2025 to March 2025

ACCAP Alaska Center for Climate Assessment and Policy
A NOAA CAP/RISA Team

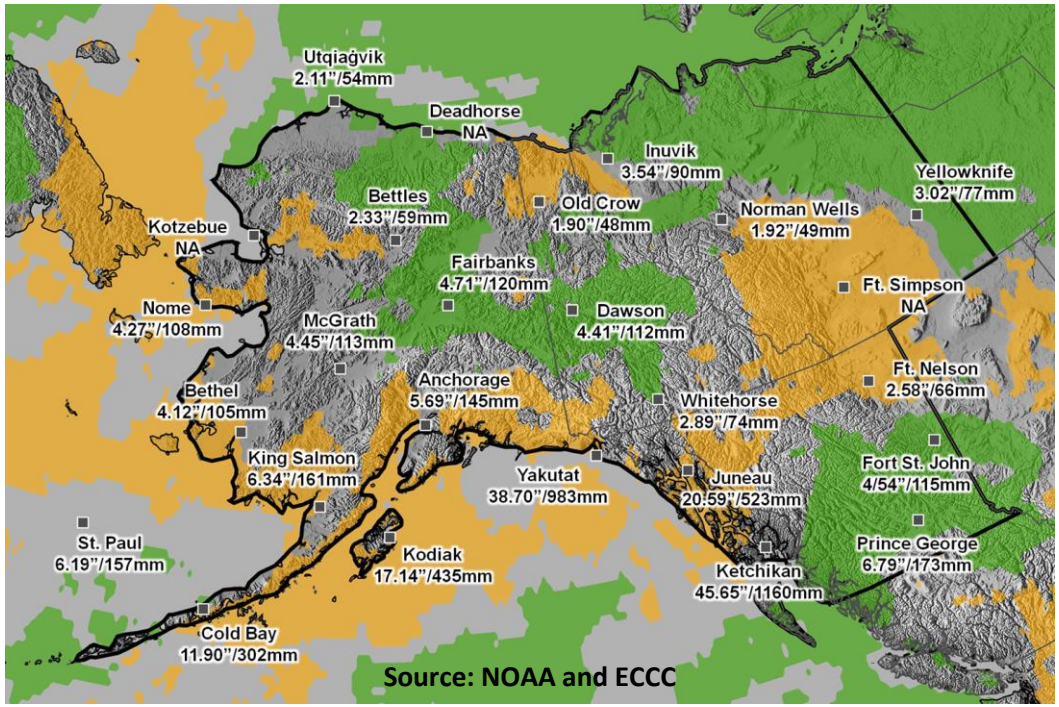
Environment and Climate Change Canada | Environnement et Changement climatique Canada



Sept to Nov 2024 Temp Averages (°F/°C) & Anomalies Below / Above / Normal



Sept to Nov Precipitation Totals (inches/mm) & Anomalies - Dry / Wet / Normal

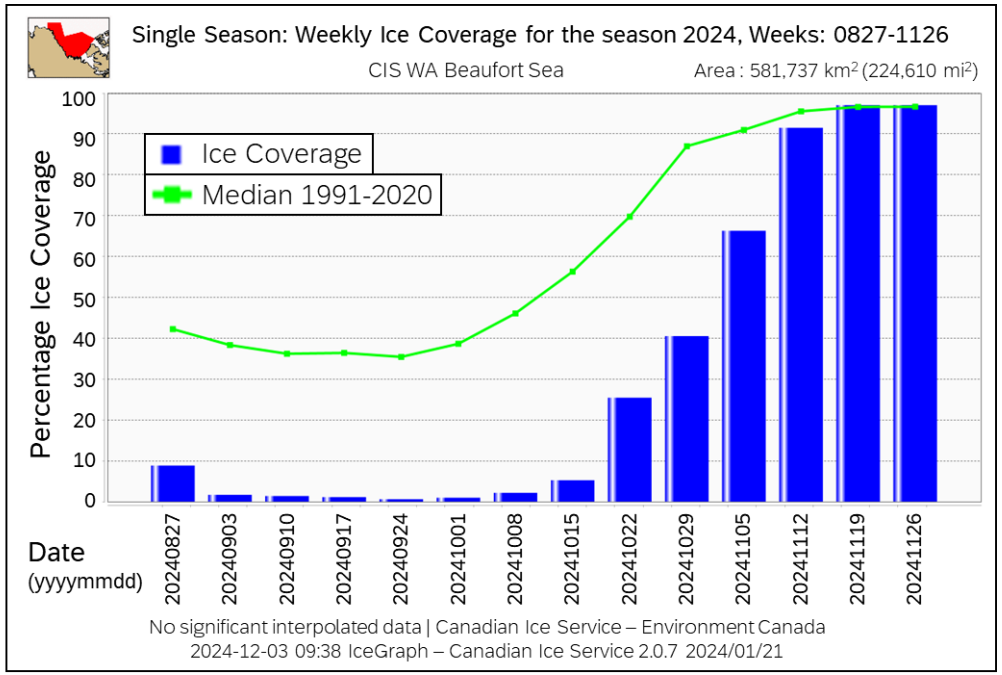


Flooding in Kotzebue

Photo: Kotzebue flooding on October 22, 2024. Credit: Northwest Arctic Borough Emergency Management

On October 22, a powerful fall storm caused major flooding in the city of Kotzebue, located in the northwest corner of Alaska on the Chukchi Sea. As much as 5 feet (1.5 m) of water inundated parts of this community of about 3,000 people, where 80 people were evacuated from their homes due to the storm's impacts. Multiple homes and other buildings were destroyed, the airport runways and terminal flooded, the boat harbor was destroyed, and much of the community was without power, water, or sewer services for an extended period. The storm was made more impactful by cold air temperatures down to 9°F (-13°C). Pronounced the new flood of record for the city, Alaska's Governor issued a disaster declaration on October 23. Other coastal communities in the region were impacted to a lesser degree, including water on roadways and other low-lying areas.

Record Low Sea Ice in the Beaufort in Fall 2024



Weekly ice coverage for fall 2024 over the Beaufort Sea. Credit: Canadian Ice Service

Sea ice in the Beaufort Sea hit a record low this fall, reaching a seasonal coverage of 31.4%. This broke the previous seasonal low, set in 2012, of 32.8%, since records began in 1968. The first week of September began with record low ice coverage and record lows continued for another six weeks. This resulted in an almost complete absence of ice in the Beaufort Sea for nearly all of September and much of the first two weeks of October, setting a new all-time record low for the Beaufort of 0.6% coverage during the week of September 24. This is particularly unusual for October, as ice normally starts to form in the first part of the month.

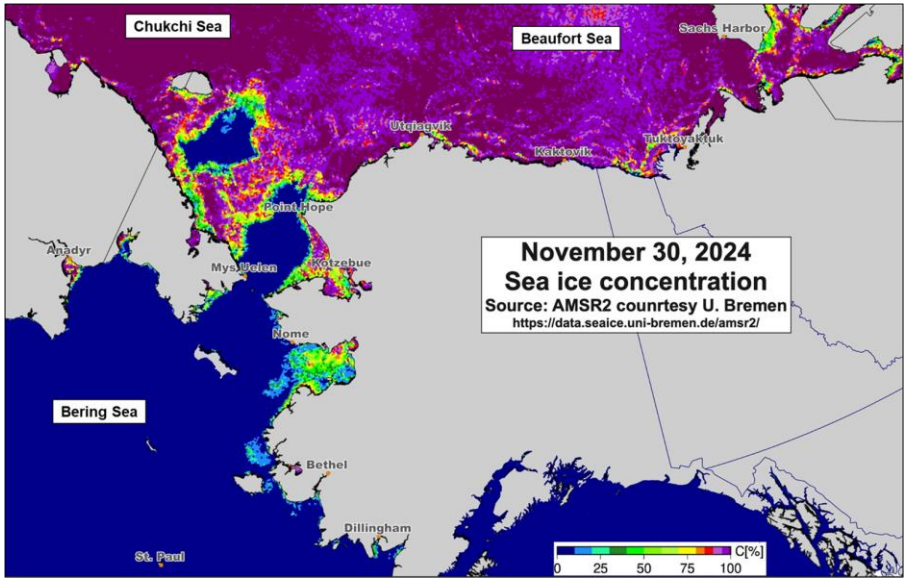
The low ice coverage from August and a strong low-pressure system brought very warm temperatures and strong westerly winds into the Beaufort region. These conditions lead to the complete collapse of the ice tongue off the western coast of Banks Island, which set off the string of record low weeks of ice coverage in the Beaufort in September. A combination of above normal air temperatures in September, ranging from 1 – 3°C (33.8 – 37.4°F), and in October, ranging from 3 – 6°C (37.4 – 42.8°F), as well as above normal sea surface temperatures, along with strong winds in the last week of September and early October, resulted in the ice not being able to recover. By late September, the northern route of the Northwest Passage saw its lowest ever ice coverage, becoming nearly ice free.

"Snow-mageddon" in Fairbanks

Photo: Downed trees and power pole near Fairbanks, Alaska October 2024. Photo credit: Golden Valley Electric Association

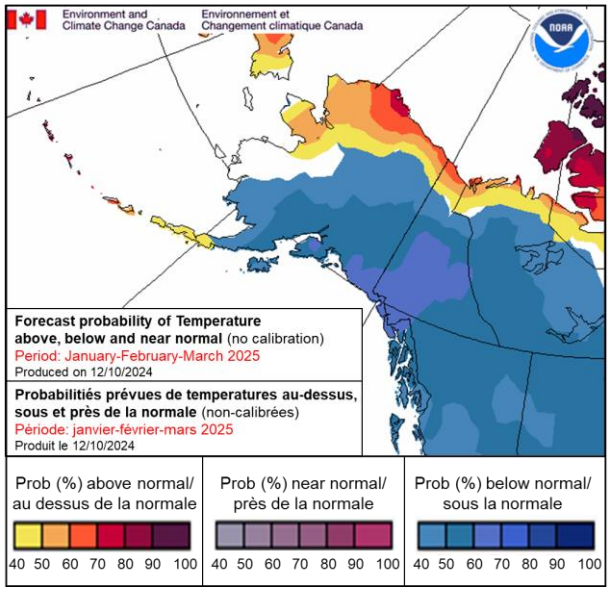
The same storm that produced several flooding events along the northwest Alaska coast in October also pushed abundant moisture into central interior Alaska. Fairbanks Airport reported 2.07 inches (52.6 mm) in 24 hours on October 20 – 21. This is the highest 24-hour precipitation on record in Fairbanks, not only in October but anytime between October and July. The precipitation fell as mixed rain and snow over much of the area. North and west of the city, severe icing on trees and power lines caused numerous power outages. Many homes were without power for two to four days (a few even longer), as crews had to mobilize by foot, cutting through many downed trees to access the power lines. Higher elevations to the east and northeast of the city were not as heavily impacted, as precipitation fell mostly as snow. In Fairbanks, the snow transitioned to rain with a prolonged period with above freezing temperatures, so there were fewer power problems, although roads were icy across the region.

Sea Ice Concentration Conditions 30 November 2024 in the Bering, Chukchi and Beaufort Seas

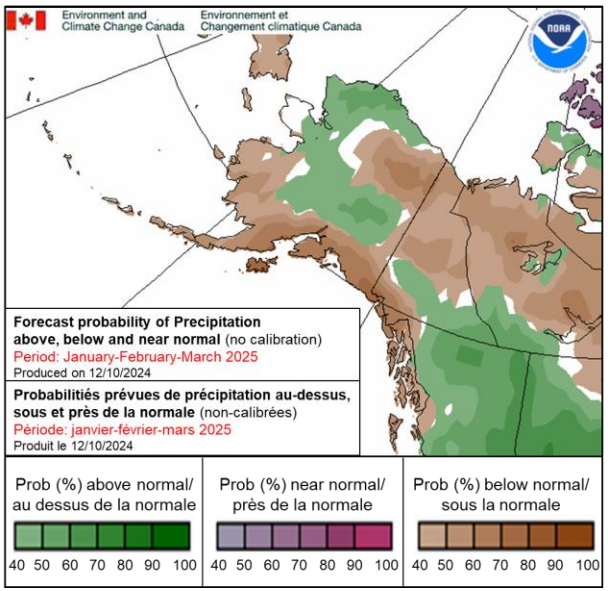


The season began with record low total sea ice coverage in the Beaufort Sea and ice far to the north of the Alaskan coast in the Chukchi Sea. There was an area of ice that persisted all summer in the western Chukchi Sea just to the northwest of the Bering Strait, although this area of ice continued to melt and disperse into October. It was not until the third week of October when new ice began forming along the northeastern section of the Beaufort and along the coasts, with ice forming in the Chukchi in earnest by mid-October. By the end of October, new and young ice had formed through most of the Beaufort Sea and continued to develop along the coasts, with freeze-up accelerating in November, as colder temperatures moved into the region. In the first half of November, multi-year ice drifted southward from the Arctic Ocean into northeastern Beaufort waters, however significant amounts of multi-year ice were lacking in the northwestern Beaufort. Additionally, the leading edge of thin first-year ice was further north than normal in western Beaufort waters. By the end of the season, ice conditions in the Beaufort were near normal, with freeze up only about a week slower than normal, however there is significantly less multi-year ice in the northwestern section as compared to normal. In the Chukchi, ice extent was slightly above normal, and in the Bering, ice was beginning to grow but was largely confined to shallow bays and in brackish waters near major river outlets.

Temperature Outlook: Jan to Mar 2025



Precipitation Outlook: Jan to Mar 2025



The temperature outlook for January through March of 2025 shows a signal for predominantly cooler than normal temperatures, in line with a La Niña winter. Moderate to strong signals for cooler than normal temperatures are dominant throughout the southern two thirds of Alaska, the Yukon, and Northwest Territories, and continue southward into northern BC and Alberta, with the highest probabilities over the southern mountainous coastline region and extending into central Yukon. Only along the Beaufort Sea coastline is there a signal for above normal temperatures.

The seasonal precipitation outlook is more varied, with a mixture of signals indicating above and below normal levels. Below normal precipitation regions include Pacific coast of northern BC, the Alaskan panhandle, the Aleutian Islands, western Alaska, northern Yukon, and a majority of the Northwest Territories. Regions with signal for above normal precipitation amounts include interior Alaska and the western North Slope, southern Yukon, and much of northern BC and northern Alberta.

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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