

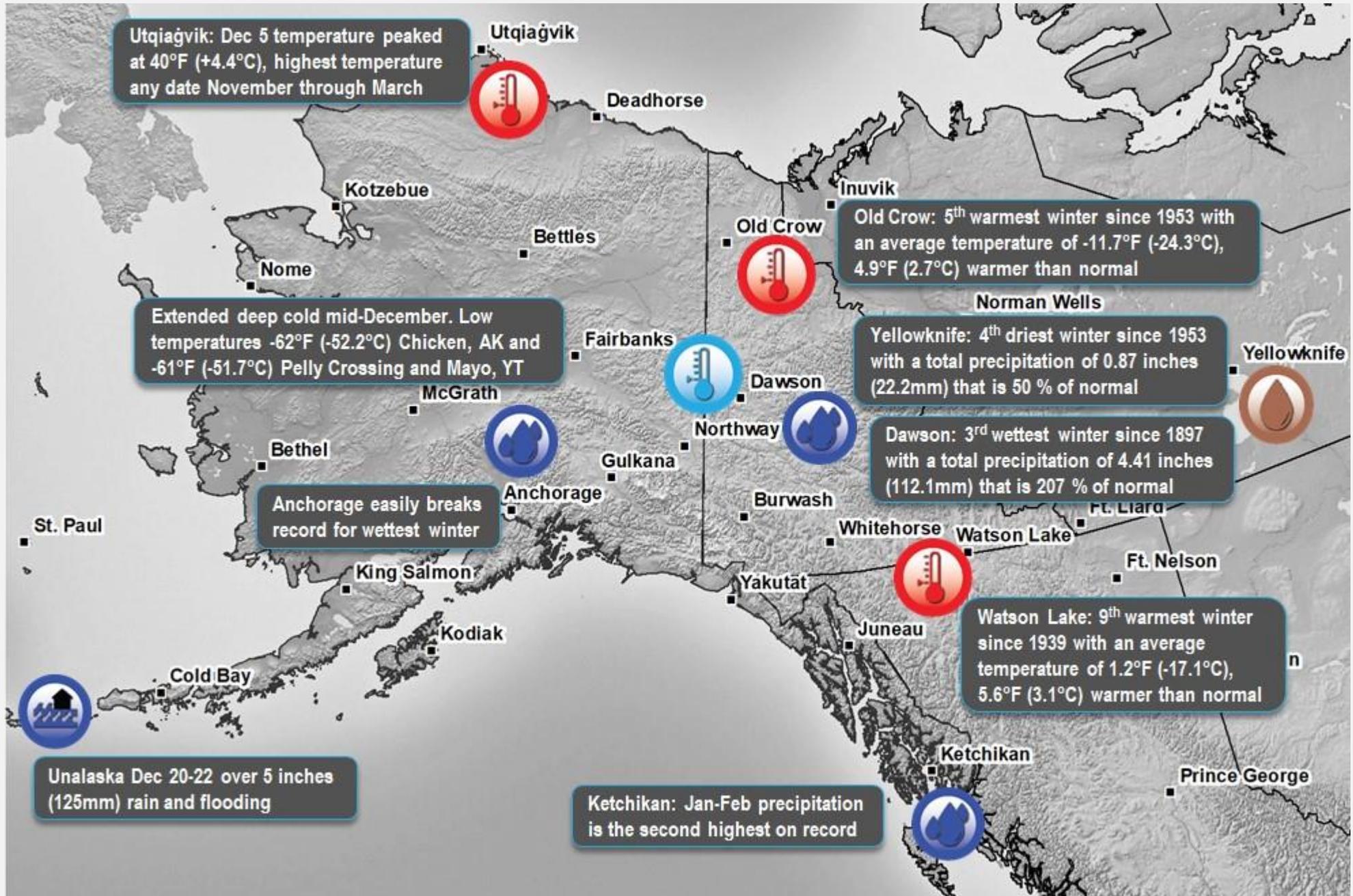
ALASKA and NORTHWESTERN CANADA

Weather and Climate Highlights and Impacts, December 2022 to February 2023
Climate Outlook, April to June 2023

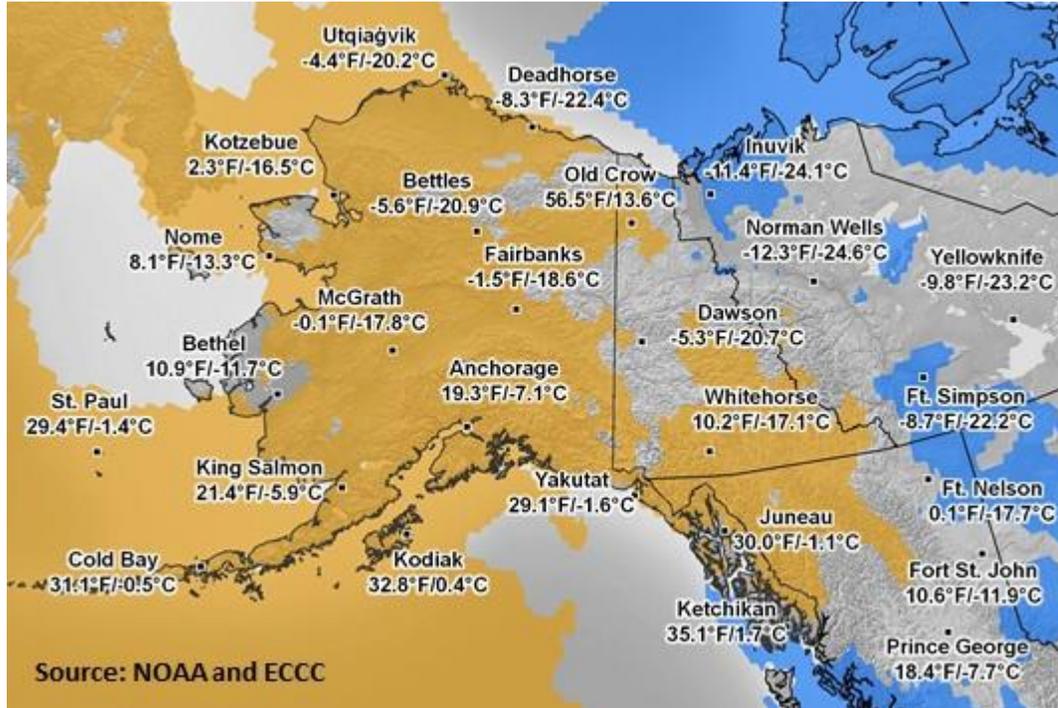


Environment and
Climate Change Canada

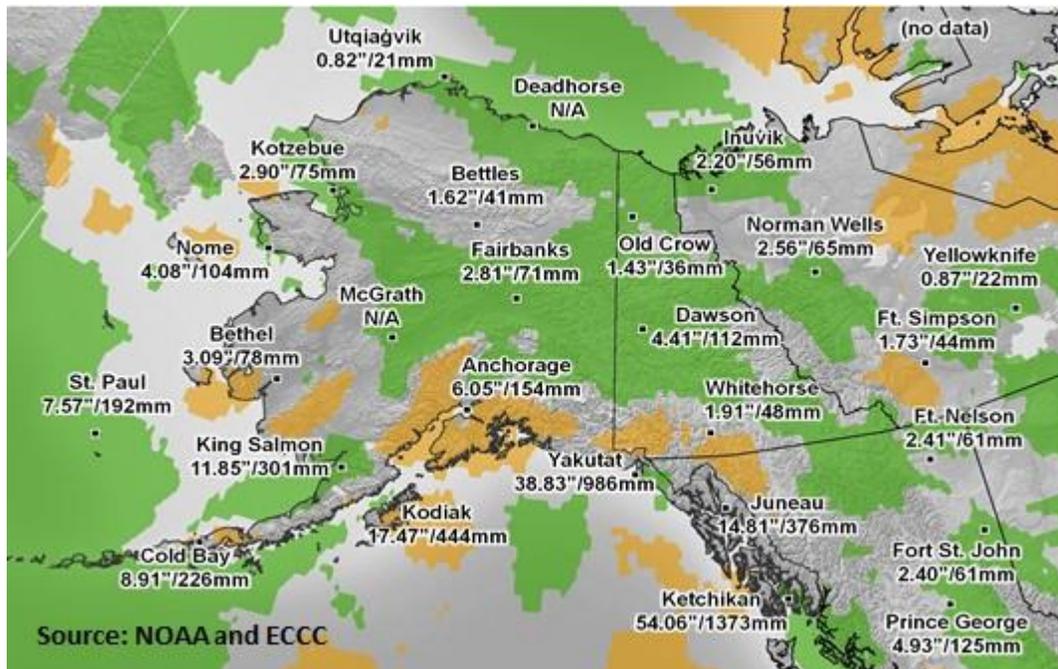
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Dec 2022 to Feb 2023 Temp Averages (°F/°C) & Anomalies- **Below** / **Above** / Normal.



Dec 2022 to Feb 2023 Precip Totals (inches/mm) & Anomalies- **Dry** / **Wet** / Normal.



Yukon, Dempster Highway Icing

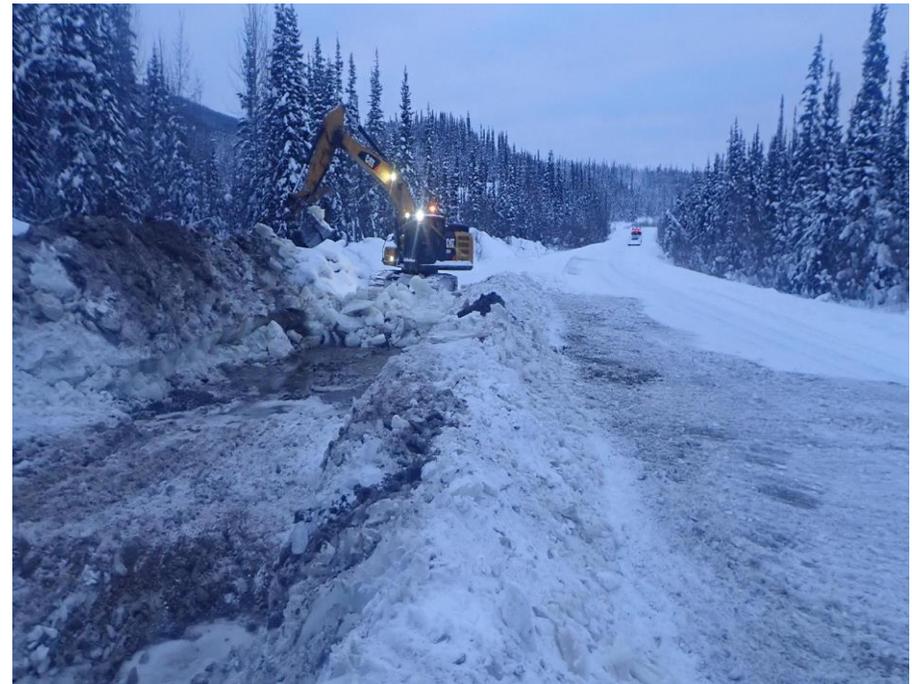


Photo credit: Benoit Turcotte, Dempster Highway Icing at km 60

The unusually wet conditions during August, September and October 2022 in central Yukon caused a recharge of the groundwater table and record high flows in several river systems and lakes. A direct consequence of this anomaly is the very high to record water levels during the subsequent ice formation period in November and December.

The greatest impact, which is still being felt in February, is the formation of aufeis along roads of the territory, including on the surface of the Dempster Highway and the Silver Trail. This ice results from the freezing of groundwater seepage exposed to cold winter air temperatures. This phenomenon is common in the North, but it is far more intense this winter, and as a consequence, significant maintenance is needed in order to reduce the risk to the transportation of people and supplies between communities.

Credit: Benoit Turcotte, Yukon University

Heavy Snowfall in Dawson Yukon



Photo credit: Andy Muir, Dawson Airport weather station 14 February 2023

There was an unusually large amount of precipitation in the Dawson area in January and February. Dawson Airport recorded 55.8 mm of precipitation in January, which is 287 % of what would normally be expected in January. A weather station near Dawson at King Solomon Dome registered 36mm of precipitation for the period January 4 to 31, 2023. To put this into perspective, precipitation was recorded for about 46 % of the winter hours, where the precipitation fell as snow. A total winter precipitation of 112 mm snow water equivalent was measured, where the snow is melted and given as millimeters of water.

In mid-February, Dawson Airport weather station instruments were overloaded with snow as shown in the photograph above. Over February, residents and visitors of Dawson had to deal with much more accumulated snow than normal. The depth of snow on the ground, accumulated over the winter season at Dawson Airport reached 66cm by late February.

The flood risk on the Klondike River is dominated by ice jamming, so the snowfall will not have much of an impact beyond the need for extra snow clearing.

Credit: Yukon Government, Water Resources Branch

Heavy snow in Anchorage Alaska

A series of three storm systems brought near record amounts of snowfall to Anchorage, Alaska, during the first half of December. On December 5-6, 2022, 12.2" (31 cm) of snow was observed at the Anchorage International Airport. Four days later, 16.2" (41 cm) of snow was recorded. Then only three days later, a third storm brought an additional 11.5" (29 cm) of snow to the area. The eleven-day total was 41.1" (104 cm). This was the second greatest 11-day snow total on record for Anchorage.

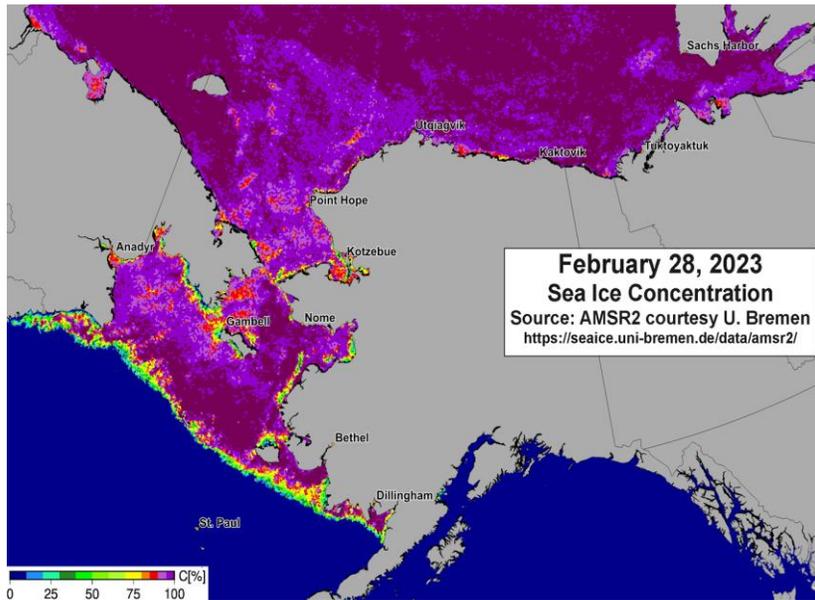
Even more remarkable than the snow was the liquid equivalent of the precipitation. During the same eleven days, the snow water equivalent was 3.75" (95 mm). That amount of precipitation is unprecedented during the winter months and by itself shattered the December precipitation record. The 11-day precipitation alone would make it would be the eleventh wettest Dec-Feb on record.

The prodigious snowfall created numerous snow plow / snow removal issues around the city. Many streets remained unplowed for weeks and the local snow storage areas ("snow dumps") were at capacity. By the end of February, some buildings in Anchorage had collapsed under the weight of the snowfall, and one fatality was reported.



Photo credit: Brian Brettschneider, Sidewalk in front of a house in Anchorage, Alaska, after 48" (122 cm) snow fell in eleven days.

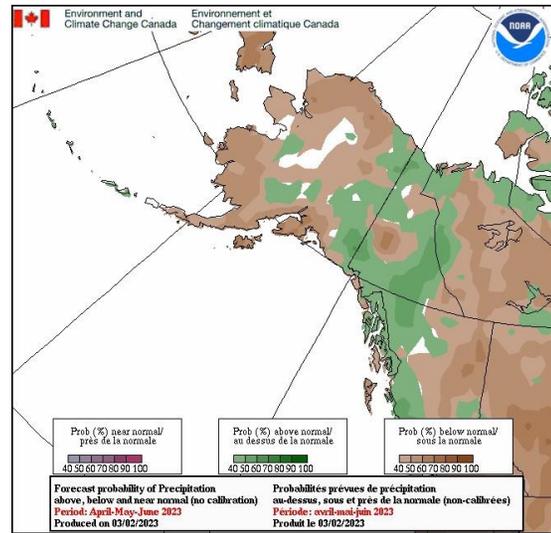
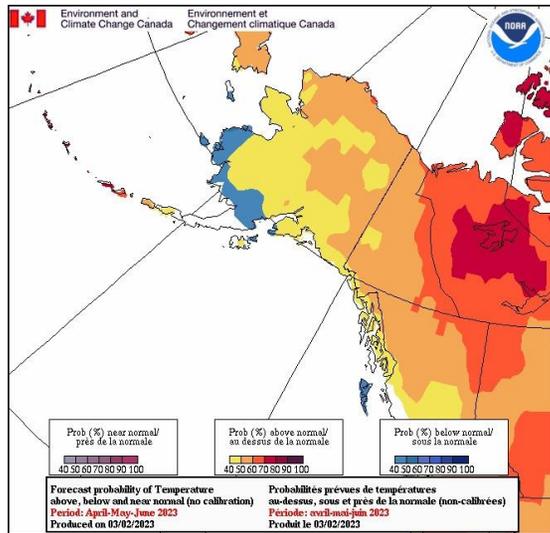
Sea Ice Concentration Conditions 28 February 2023 in the Bering, Chukchi and Beaufort Seas



With the freeze-up over the entire western Arctic, including the Chukchi Sea and the Beaufort Sea, from December until the end of February, there remained significantly less old ice than normal in M'Clure Strait, Parry Channel, M'Clintock Channel and in the southwestern Beaufort Sea. The leading edge of old ice was also further north than normal in the southern Beaufort Sea. Notably, M'Clintock Channel normally contains predominantly old ice, whereas thin-medium first-year ice was observed throughout December and January and thick first-year ice in early February. Ice was slow to develop along the Alaska coast, and sea ice growth in the Bering Sea was very slow in December. Nome had the possibly unprecedented experience of a winter solstice with an ice free sea in front of the town. Thereafter, sea ice expanded south and west but remained north of the Pribilof Islands and was found only in upper Bristol Bay, both in contrast to winter 2021-2022 when ice was more extensive.

In general, ice growth was delayed and/or did not reach the normal climatological ice thickness in many areas. Areas of young ice were also observed along the western coast of Banks island, in the eastern Amundsen Gulf and off the coast of the Yukon and Northwest Territories throughout most of December and January. Above normal temperature anomalies were present over the western Arctic throughout the winter months, including significantly above normal temperatures over the Arctic Ocean. Also of note was the presence of consolidated mobile ice over the southeastern Beaufort Sea for most of the month of February, due to persistent northwesterly winds under a ridge of high pressure.

Temperature Outlook: April to June 2023 Precipitation Outlook: April to June 2023



A combined Canada - USA weather forecast model is used to provide a temperature and a precipitation outlook for April to June 2023.

The temperature outlook map shows that all of Alaska except the southwest, including the Aleutian Islands, has a 40% to 80% chance of above average temperature (yellow, orange and red colors), with the highest probabilities found in the central Northwest Territories and the Arctic islands. Coastal southwestern Alaska has a 40-50% chance of below normal temperatures.

The precipitation outlook map shows a complex pattern of below and above normal precipitation with the highest probability (50-60%) of above normal precipitation in northwest British Columbia, southeast Yukon and southeast Alaska.

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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