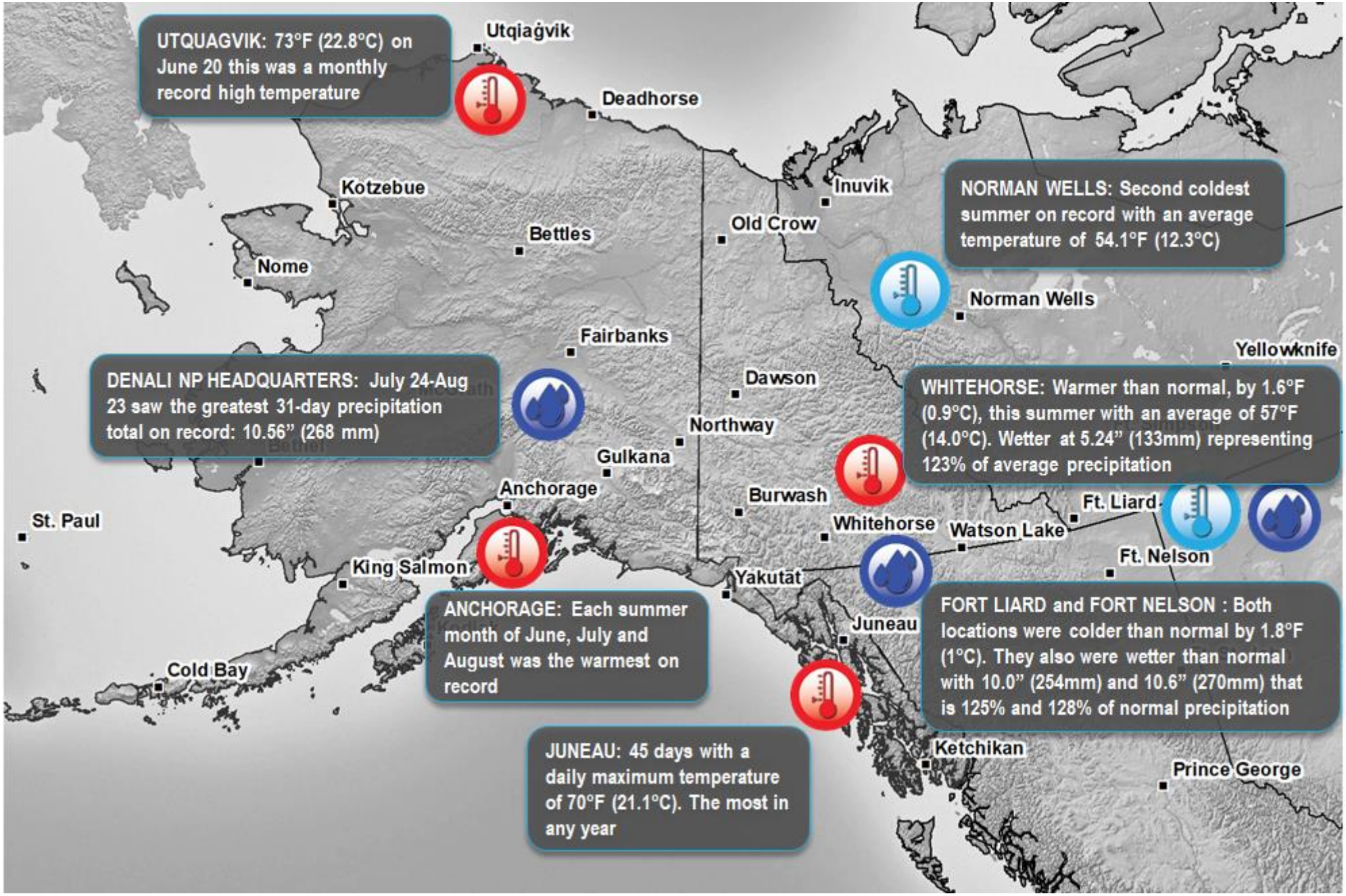
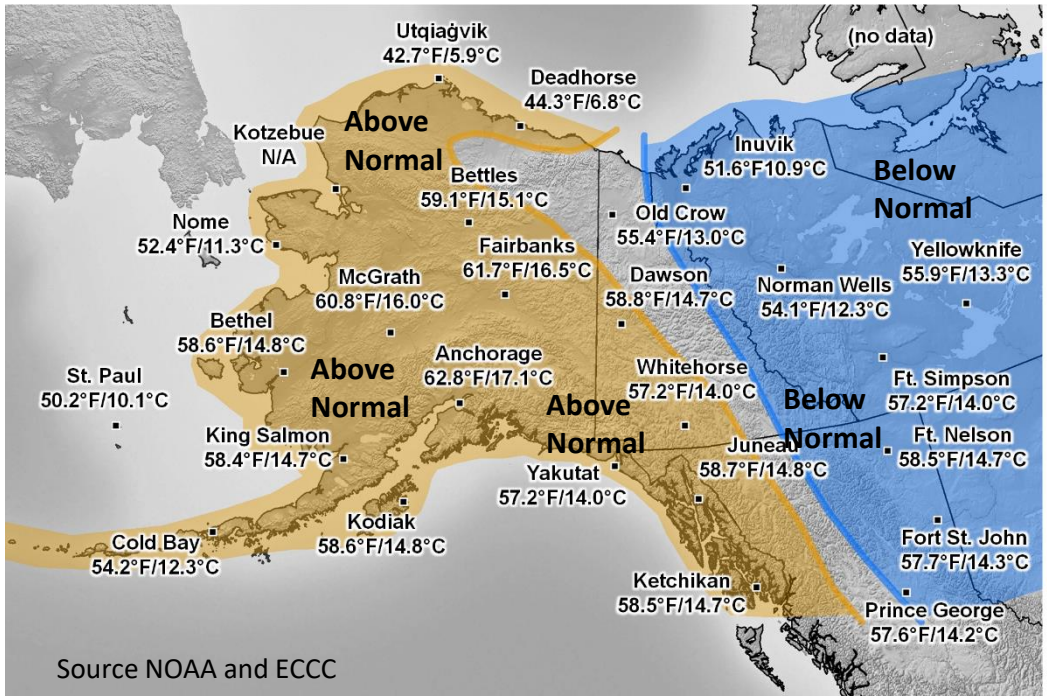
ALASKA and NORTHWESTERN CANADA

Weather and Climate Highlights and Impacts, Jun - Aug 2019; Climate Outlook Oct 2019 - Dec 2019

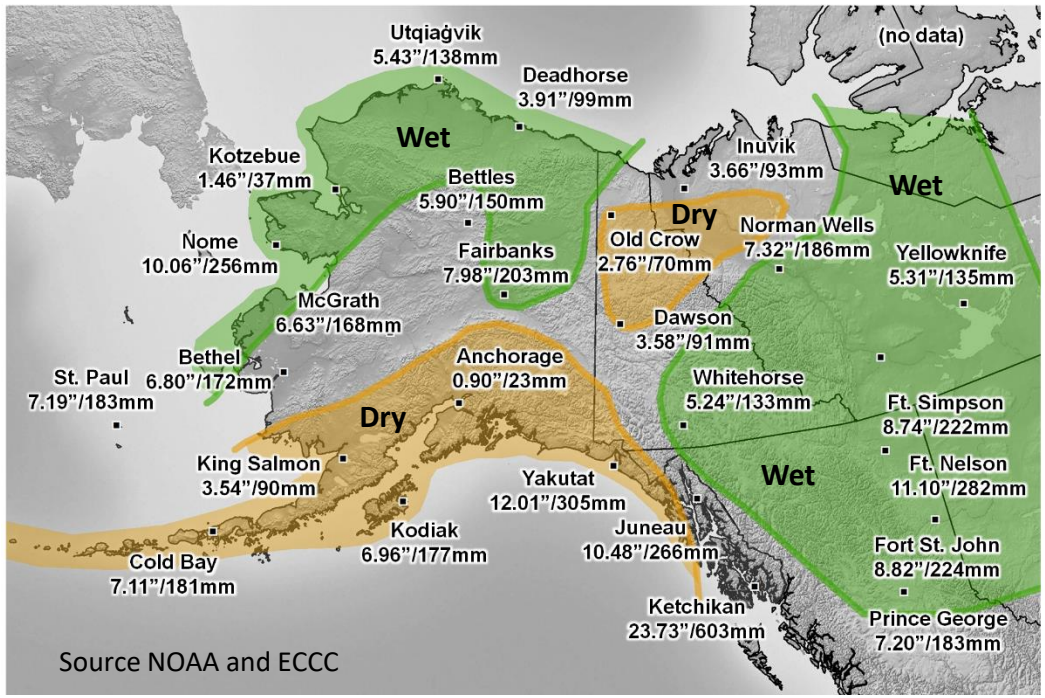
Environment and Climate Change Canada | Environnement et Changement climatique Canada



June to August 2019 Temperature Averages (°F/°C) and Anomalies (Above / Below)



June to August 2019 Precipitation Totals (inches/mm) and Anomalies (Dry / Wet)



Temperature & Precipitation, June – August 2019

Most of Alaska, Yukon and north-western BC were warmer than normal during this past summer, but Northwest Territories was cooler than normal. Norman Wells experienced the second coldest summer on record. Temperatures over north-eastern BC were below normal. Precipitation totals this past summer were above normal over northwest BC, a large part of the NT, south-east Yukon, northern Alaska. Drier than normal conditions were experienced in Aleutian Islands, southern Alaska and central Yukon. The Mayo area is seeing historic low reservoir levels due to the low snowfall last winter, combined with low summer precipitation.

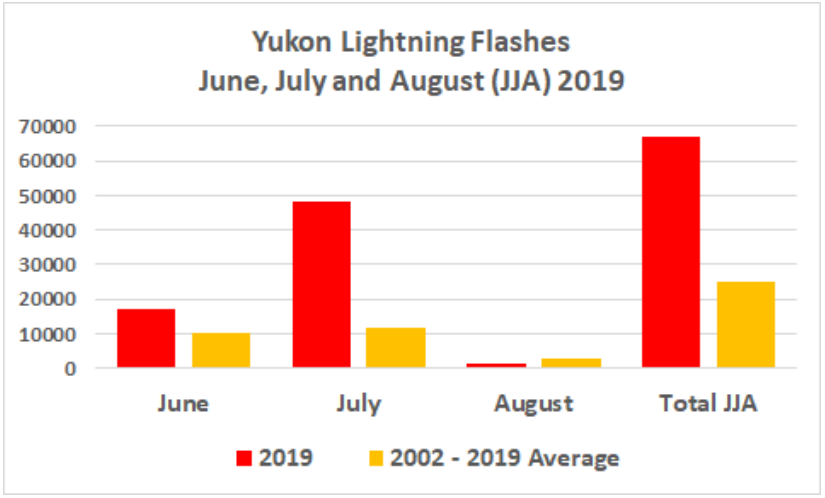
Summer 2019 included some surprises. On August 18 this photo from Upper Liard, BC, illustrates the not very summer-like highway conditions that existed briefly in mid-August. Photo credit: Georgi Pearson, Whitehorse, YT.

Strong NW winds over several days during the August long weekend caused significant wave erosion in Tuktoyaktuk harbour. There was enough erosion to cause the slumping of a smoke house structure. Photo credit Janet Elias.

Hot Dry conditions, Lightning and Wildfire Impacts

Photo of Dawson area wildfire
Photo credit: Yukon Wildland Fire Management

A dry, hotter than normal, spring in the northwest of the continent created the pre-conditions that led to a severe wildfire season during the 2019 summer. Meteorological conditions, especially in July, led to a record-breaking lightning season. Lightning was most intense when an all-time (2002-2019) record of 48,154 lightning flashes occurred in the Yukon in July. This record level of lightning strikes made the firefighting season intense and led to poor air quality for many areas of the North. In Yukon during the fire season up to September 1, there were 112 fires and a total area of 976 square miles or 252 912 hectares burned. Highly unusual lightning was recorded within 300 miles or 500 km of the North Pole on August 10.



The figure above shows the number of lightning flashes in Yukon in June, July (record) and August.

Alaska-Northwest Canada Wildfire

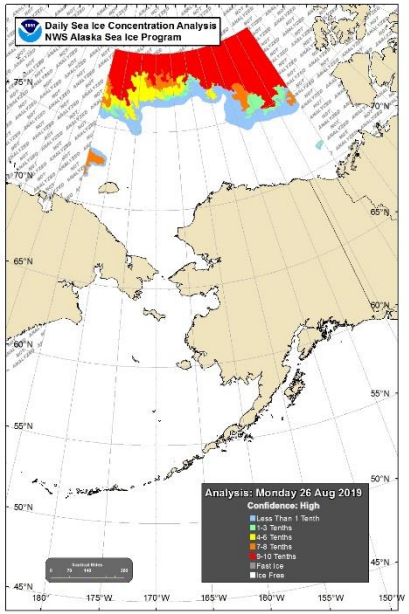
Wildfires burned nearly 3.5 million acres (1.4 million hectares) across Alaska, Yukon Territory and Northwest Territories during the summer of 2019. That is 3.25 times the 40 year average for the Alaska portion of the area burned. An inevitable consequence of burning such a large area of boreal forest is the production of large amounts of smoke that is carried far from the flames. This summer smoke from Alaska wildfires was seen (and smelled) in many areas around the state except for the North Slope and Aleutian Islands, and produced noticeably hazy conditions at times across the Yukon Territory, northern British Columbia and the Alaska Panhandle. In Alaska, areas in the Interior of the state usually experience the worst smoke conditions.

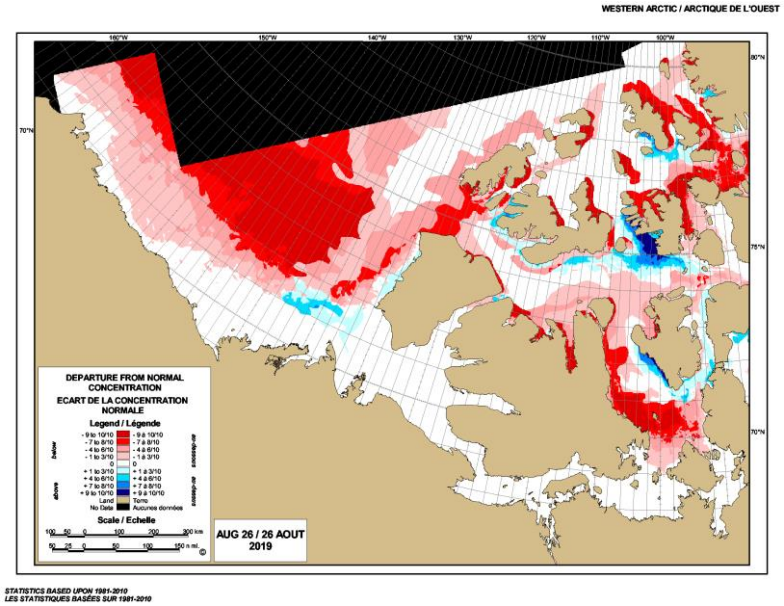
This summer at Fairbanks, wildfire smoke was thick enough to significantly reduce visibility for 23 days. This is similar to several other summers in the past 15 years, most recently in 2015, which had 27 smoky days with visibility less than 6 miles (10km). The situation was much more unusual at Anchorage, which, thanks to its coastal location, only rarely sees thick wildfire smoke. This year, the Swan Lake wildfire on the Kenai Peninsula about 35 miles (55km) south of Anchorage was responsible for repeated pulses of smoke that moved into the Anchorage urban wind blowing from the south and southeast. Overall, there were 296 hours with visibility-reducing smoke in Anchorage, almost three times the previous record of 119 hours in 2004.

The area of the Swan Lake wildfire in relationship to Anchorage and major Kenai Peninsula communities

The McKinley fire started on August 17 near Caswell during an episode of strong north winds. A record warm spring and very early snow melt followed by record warm and dry conditions during the summer, resulted in a dry, fire-susceptible forest that easily ignited once sparked and fanned by strong north winds which enabled the fire to spread quickly. The fire consumed more than 50 residences and businesses, closed the Parks Highway, the principal road link between Anchorage and Fairbanks for hours at a time and forced a stoppage on the Alaska Railroad. While this part of Alaska has seen serious wildfires before, these have occurred in late May or June: a devastating fire the second half of August in this region appears to be unprecedented.

Sea Ice Conditions at the end of August 2019 in the Chukchi and Beaufort Seas

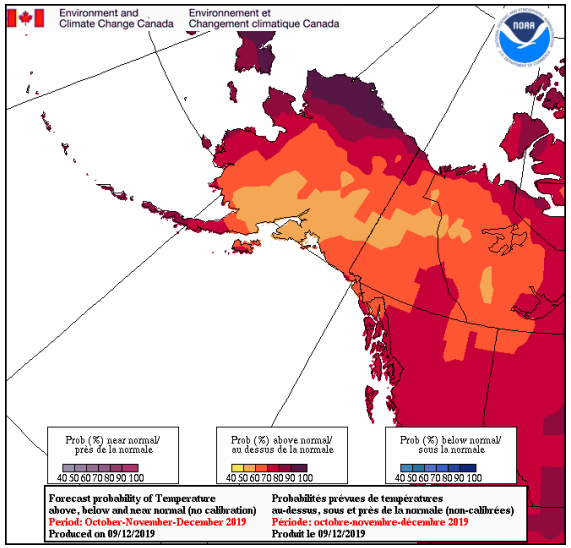




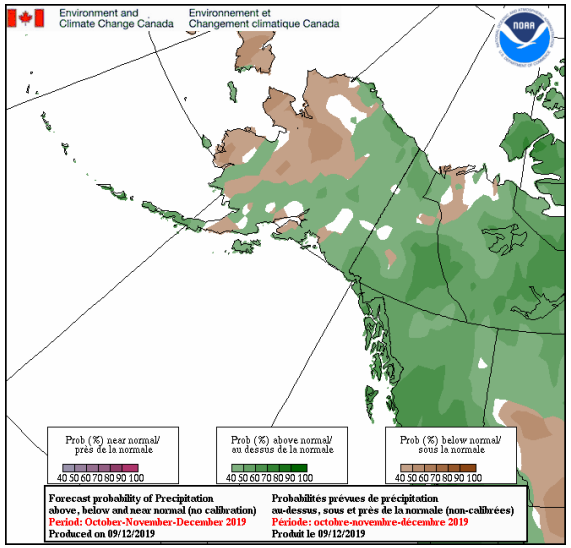
After a warm spring, sea ice near Alaska was at record low levels for most of the summer, as ice continued to retreat. Average sea ice extent in the Chukchi Sea was the lowest on record (since 1979) for each of the three summer months. In the Beaufort Sea, overall ice extent was the second lowest on record in June and 5th lowest in July -August. While some recent years have seen ice-free periods near Alaska toward the end of the melt season. This summer the last ice melted during the first days of August, leaving the remainder of the summer ice-free within 100 miles (160 km) of the Alaska coast.

Extensive ice melt in the Beaufort Sea occurred during the past summer season. In fact, significant melt reached north of 75°N by early August. The southeastern section of the Beaufort Sea, near Cape Bathurst, had more ice than normal, but this was the exception to the rule of very low sea ice this summer. Despite the extensive ice melt in the Beaufort Sea, this year did not set a new record low ice extent (3rd lowest) for the end of August.

Temperature Outlook: Oct.-Dec. 2019



Precipitation Outlook: Oct.-Dec. 2019



A combined Canada-USA forecast model is used to provide a temperature and a precipitation outlook for October to December 2019.

The temperature outlook map for October through December 2019 shows that Alaska and northwest Canada have a 50 to 95% chance of above average temperature (light orange to red colors), with highest probabilities found in northern Alaska, the Aleutian Islands, northern and southeastern Yukon, NT, and northern BC.

The precipitation outlook map for October through December 2019 shows that the majority of Alaska, northern BC and Yukon, along with most of NT, have a 40 to 70% chance of above normal precipitation (green areas). Northwest Alaska and part of northwestern NT have a 40 to 60% likelihood of below normal precipitation (brown areas).

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