

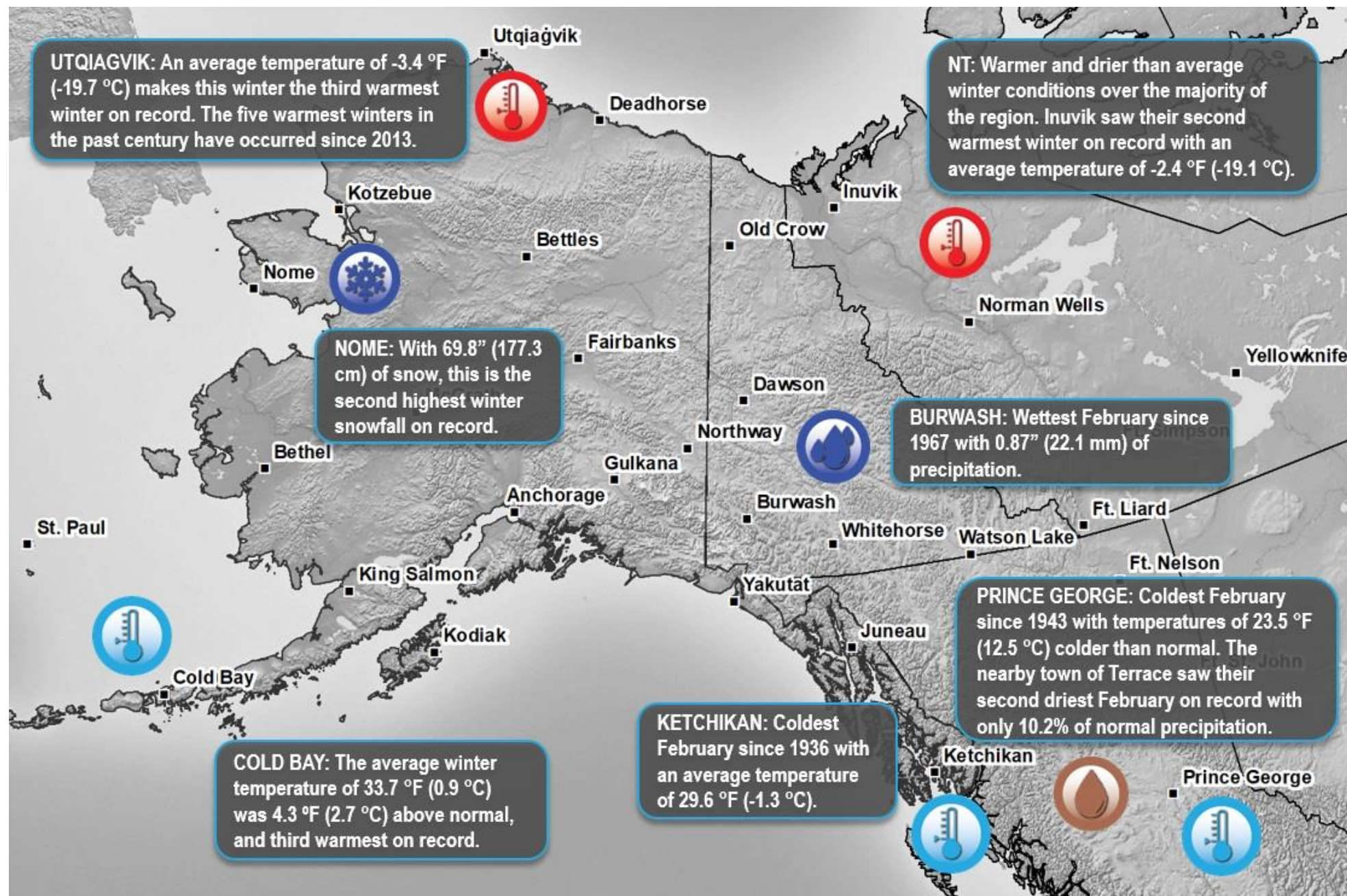
ALASKA and NORTHWESTERN CANADA

Weather and Climate Highlights and Impacts, Dec. 2018 – Feb. 2019; Climate Outlook April – June 2019

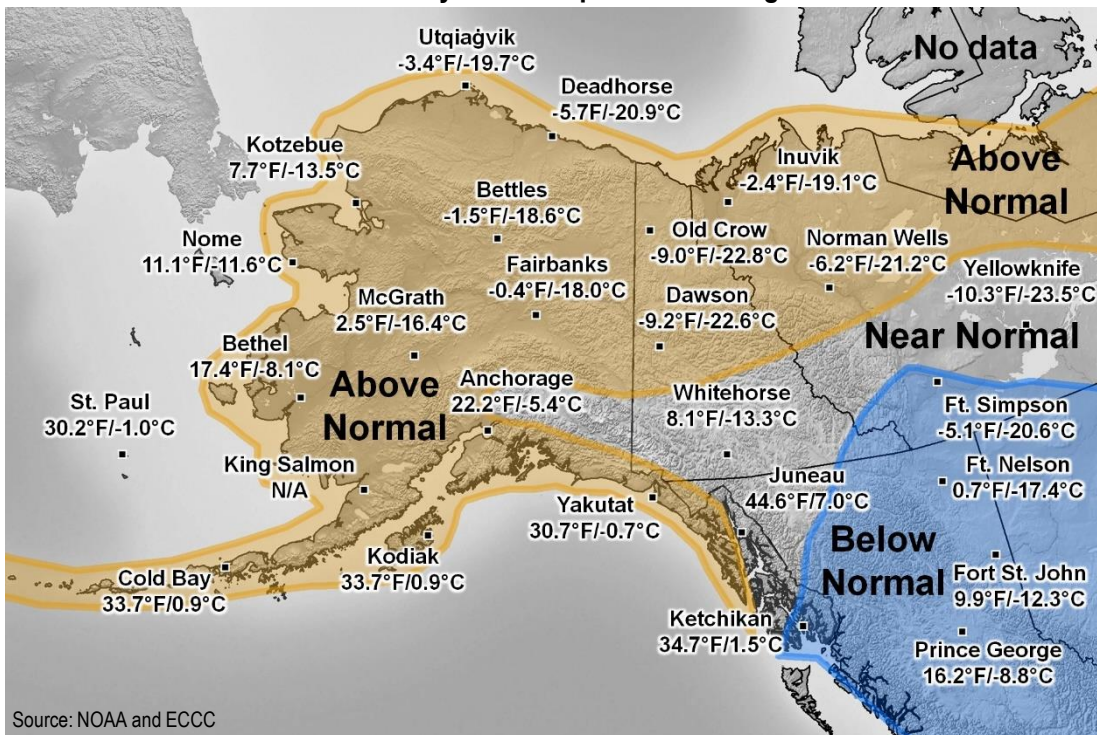


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December 2018 to February 2019 Temperature Averages and Anomalies



Temperature & Precipitation, December 2018 – February 2019

Most of Alaska, northern Yukon and the northwestern portion of the Northwest Territories (NT) were significantly warmer than normal during this past winter, with some areas in western Alaska near record warmth. In contrast, much of British Columbia and southwest NT where significantly colder than normal. In between, there was a narrow area where temperatures averaged near normal. Precipitation totals this past winter were well below normal over a large part of the NT, southern Yukon and Southeast Alaska, while much of mainland Alaska, northern Yukon and northeast BC were considerably wetter than average. Like temperatures, there were only small areas with near normal precipitation.

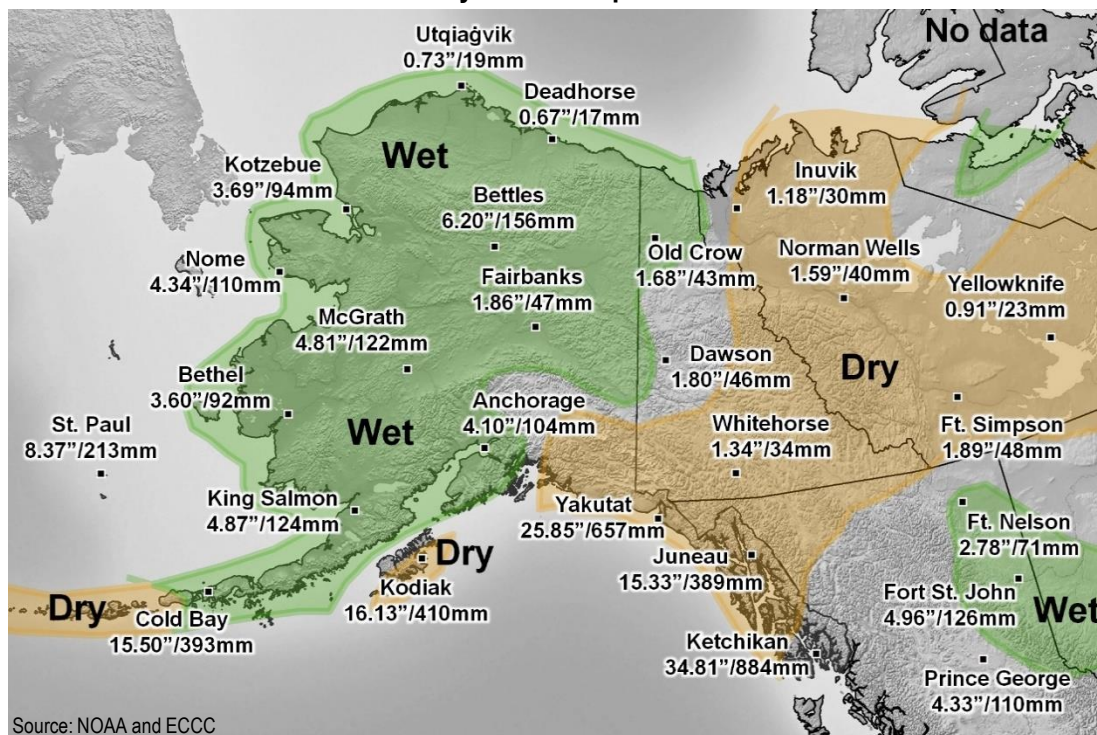


Kotlik, Alaska is located on a channel of the Yukon River only a short distance from Norton Sound. Nearly ice-free seas combined with a strong storm on February 11-12, 2019 elevated ocean levels enough to cause water to flow back up the Yukon River, overtopping river ice and spilling into town. Elders reported that there had never before been flooding at this time of year. Photo credit: Philomena Keyes.



Although ice conditions in the Beaufort Sea at the end of February 2019 were near normal, small isolated pockets of open water were observed near the shore. The photo above shows open water near Ulukhaktok, NT on February 12, 2019. Photo credit: Jack Akhiatak.

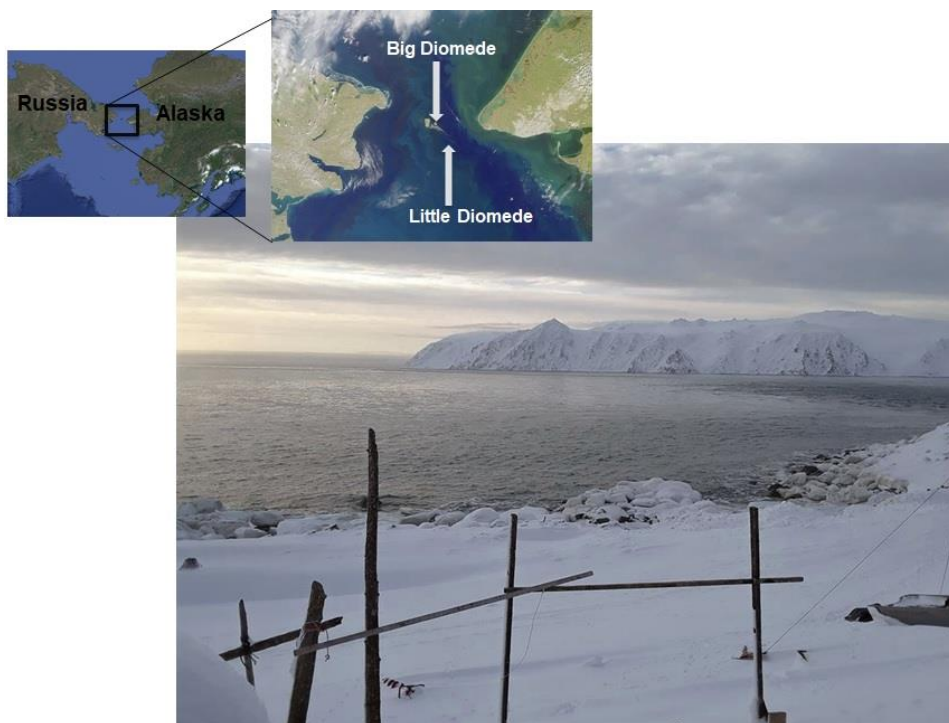
December 2018 to February 2019 Precipitation Totals and Anomalies



Low Bering Sea Ice

Autumn 2018 started with very warm ocean temperatures in the southern Chukchi and Bering Seas, resulting in slow sea ice formation. Despite a slow start, seasonably cold temperatures and frequent northerly winds during December 2018 and early January 2019 allowed for rapid ice growth and optimism for more normal spring sea ice conditions.

Normal spring sea ice conditions were unfortunately not to be: starting in late January 2019, the weather changed to persistent southerly storm conditions, with 15 separate storm systems affecting the northern Bering Sea region through February 2019. This “parade of storms” decimated the existing sea ice by melting or pushing the ice north through the Bering Strait and into the southern Chukchi Sea.

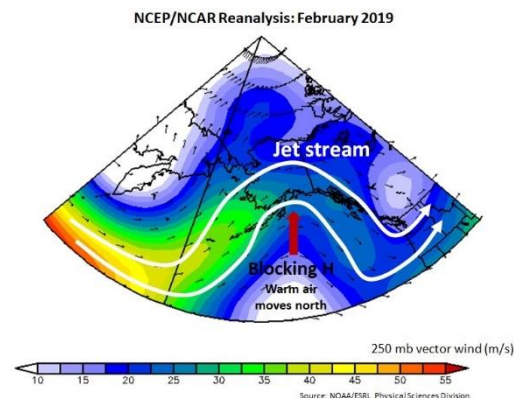


The photo above, taken on Little Diomed Island, shows the absence of sea ice between Little and Big Diomed Islands on March 1, 2019, and illustrates the absence of sea ice in the middle of the Bering Strait. Photos courtesy of: Google Earth, NASA, and E. Soolook.

The impacts to coastal communities were immediate, and people were left to change their food-gathering strategies to adapt to a novel open water winter situation in order to provide for the nutritional, cultural, and economic needs of their communities.

Sea ice extent during February 2019 was the second lowest documented, at 56% of normal. Despite low sea ice conditions in February 2019, the February 2018 sea ice extent in the Bering Sea remains the lowest record in the satellite era (since 1979) with just 42% of the 1981-2010 average. Sea ice extent in Alaska during March 2019 is not off to a good start, as there is already less sea ice compared to March 2018.

High pressure system and warm temperatures over the region



The figure on the left shows the key February 2019 weather pattern with high elevation winds (jet stream) pushed north by a blocking high-pressure system. This blockage is steering unusually warm air to the far north of Alaska and northwestern Canada.

The winter in Alaska and northwest Canada started near normal, but a persistent patch of high pressure over the Gulf of Alaska from mid-January to mid-march (see figure above) has led to above average temperatures across much of Alaska, northern Yukon and the western part of the Northwest Territories. The weak El Niño conditions likely contributed to the warm winter in the region. This pressure pattern also led to colder than normal conditions in central British Columbia and elsewhere in central Canada. Warmer than normal conditions will likely continue into the spring with enhanced precipitation in central Alaska.

The weather of the 2019 Yukon Quest



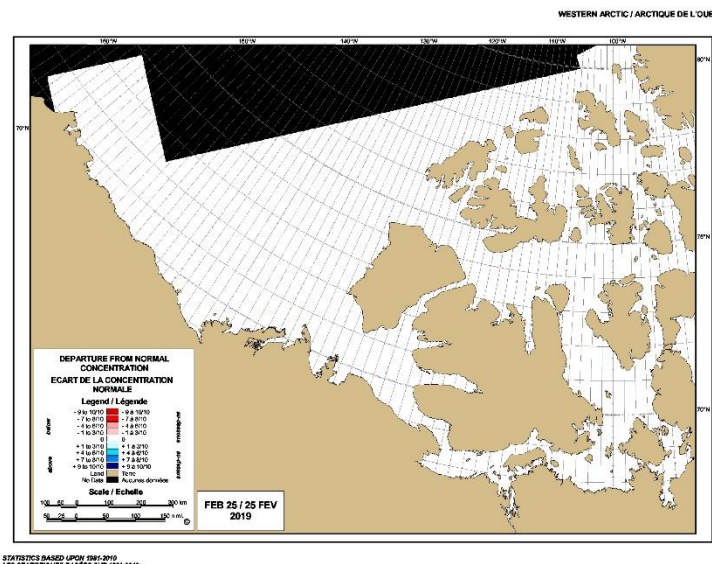
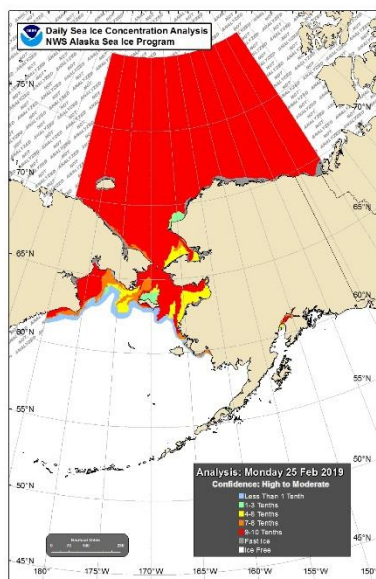
Deke Naaktgeboren (Alaska) and Andy Pace (Alaska) mush over the top of Eagle Summit in a storm with a group of two other mushers on February 12, 2019. Photo credit: Seth Adams, Instagram @seth.d.adams

Participants of the 2019 Yukon Quest saw a wide range of weather conditions. Teams experienced cold conditions at the beginning of the race, with temperatures reaching sub -40 °C/°F at the Braeburn checkpoint in the Yukon. Temperatures slowly warmed up to -5 °C by the time the first few teams crossed the finish line in Fairbanks, Alaska.

Lower than average snow conditions in the Yukon affected this year's route, preventing trailbreakers to fill in holes and cover up exposed roots with snow. For the safety of dogs and mushers, teams were trucked between the closed portion of the trail between Braeburn and Carmarks.

The Alaskan portion of the race did not see a shortage of snow this year. In fact, a few storms brought heavy snowfall and high winds to the region. As commonly happens, Eagle Summit experienced clear-sky conditions combined with a few episodes of inclement weather. This year, a few teams climbed Eagle Summit in strong winds and whiteout conditions while some of the first teams covered this section under blue sky conditions.

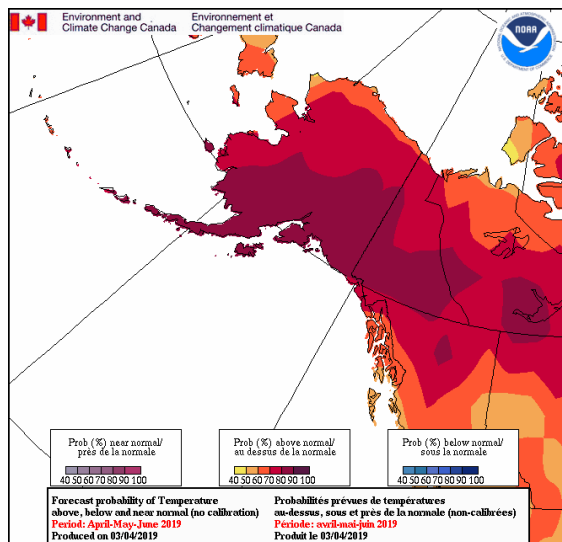
Sea Ice Conditions at the end of February 2019 in the Beaufort and Chukchi Seas



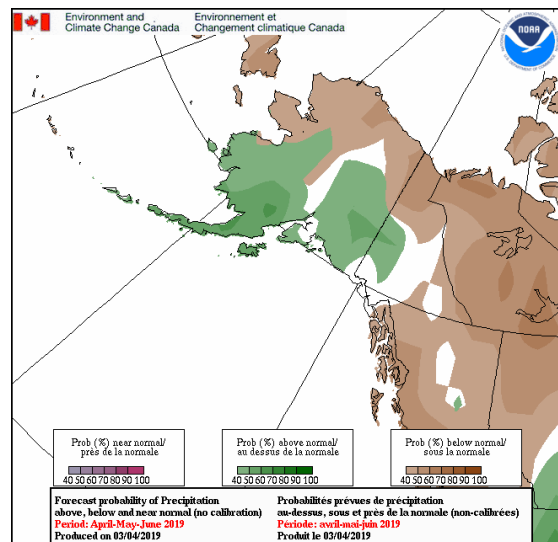
A turn to seasonably cold weather in December 2018 allowed for freeze-up in the Chukchi Sea to proceed more quickly than the previous winter, although freeze-up was still more than two weeks later than the pre-2000 average. Similarly, seasonably cold temperatures and persistent northerly winds allowed ice growth in the northern Bering Sea during December 2018 and most of January 2019. While still below normal, December 2018 and January 2019 sea ice extent was not exceptionally low. A dramatic change in the weather pattern in late January and early February 2019 produced almost continuous south to southeast winds. This resulted in the loss of more than 50% of the ice area in the Bering Sea in February 2019; by the last day of the month, there was less ice in the Bering Sea than during the previously unprecedented low extent of 2018. By Late February 2019, only a small area of sea ice remained in the Alaskan portion of the Bering Sea, while the Russian Bering had slightly more ice than in late February 2018.

Sea ice in the Beaufort Sea has reached maximum extent for the season, with no discernable departure from normal ice conditions at the end of February 2019 (white areas on the entire departure from normal concentration figure). The location of the old ice edge in the Beaufort Sea, on the other hand, migrated northwards between December 2018 and February 2019. The old sea ice edge was about 50 to 90 nautical miles off the Northwest Territories, Yukon and Alaskan coasts in December 2019. By February 2019, the southern edge of the old ice migrated about 120 to 180 nautical miles from the coast. As a result, the old sea ice situation during the past three months went from greater than normal old ice concentration to less than normal old ice concentration over the southern Beaufort Sea area.

Temperature Outlook: Apr.-Jun. 2019



Precipitation Outlook: Apr.-Jun. 2019



A combined Canada-USA climate forecast model is used to provide temperature and precipitation outlook for April-June 2019.

The temperature outlook for April through June 2019 shows that Alaska and northwest Canada have a 40-90% chance of above average temperature (orange-red colors), with highest probabilities found in the southern parts of Alaska and the Yukon. The combined Canada-USA climate forecast model does not predict chances of below average temperatures for that period.

The precipitation outlook for April through June 2019 shows that most of southwestern and central Alaska, along with a small portion of central Yukon along the Alaska border have a 40-60% chance of above normal precipitation (green areas). The majority of remainder of the region have a 40-60% likelihood of below normal precipitation (brown areas).

Content and graphics prepared in partnership with the Alaska Center for Climate Assessment and Policy and Environment and Climate Change Canada.

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ALASKA CENTER FOR CLIMATE
ASSESSMENT AND POLICY CONTACTS:

RICK THOMAN
rthoman@alaska.edu

BRIAN BRETTSCHEIDER:
brbrettschneider@alaska.edu

ENVIRONMENT AND CLIMATE CHANGE
CANADA WESTERN CONTACTS:

GABRIELLE GASCON
gabrielle.gascon@canada.ca

MARK BARTON
mark.barton@canada.ca