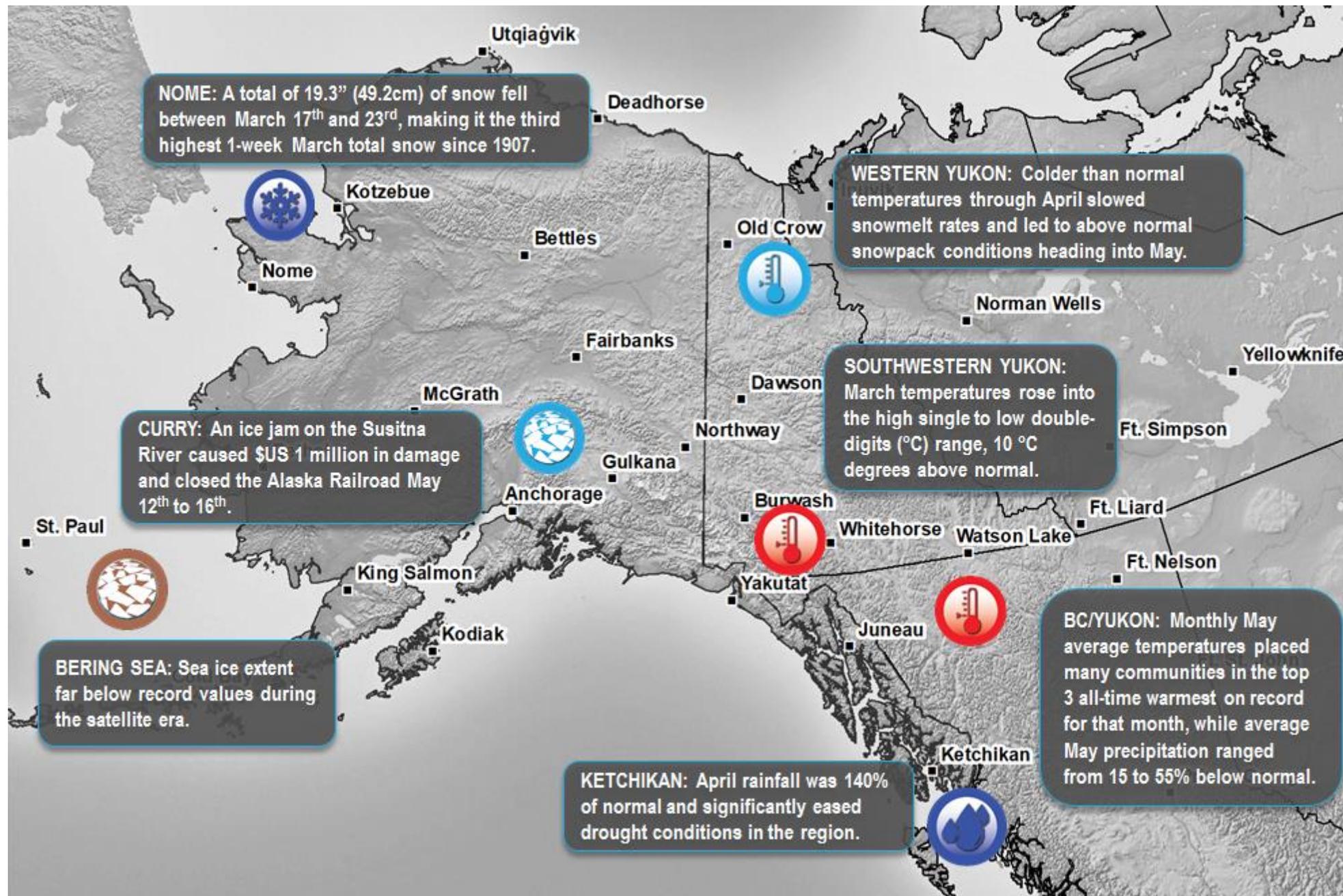
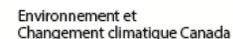


# ALASKA and NORTHWESTERN CANADA

Weather and Climate Highlights and Impacts, March-May 2018; Climate Outlook July– Sept. 2018



## Temperature & Precipitation, March-May 2018

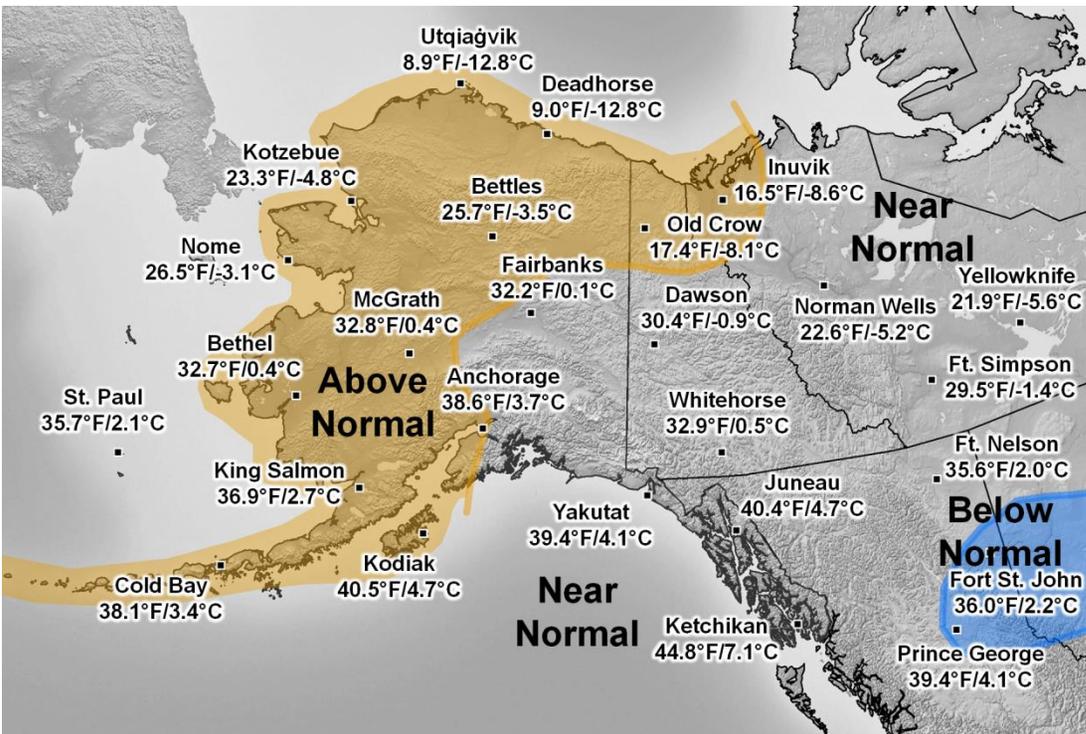
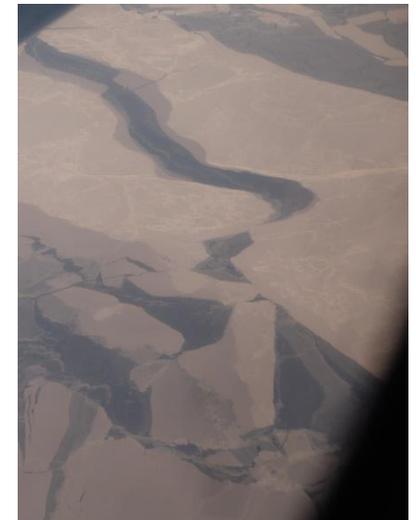
The majority of the Yukon and Northwest Territories (NWT), northern British Columbia, and the southeastern part of Alaska had, on average, near normal temperatures between March and May 2018. Most of Alaska experienced significantly warmer than average conditions during that period, while a small area in eastern central British Columbia saw below normal temperatures. Total precipitation was above average over the majority of Alaska, along the shore of the Beaufort Sea in the Yukon and Northwest Territories, and over a very small area in eastern central British Columbia. Below normal precipitation was observed over central Yukon and the southern half of the Northwest Territories.



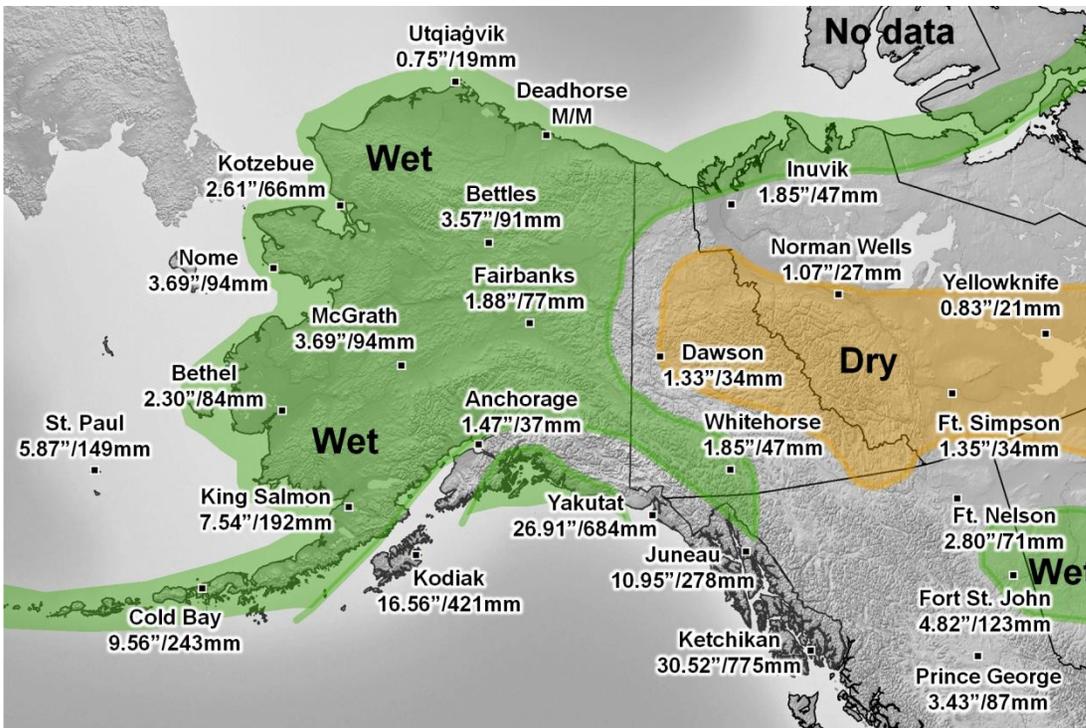
The photo above shows the 2018 ice break-up along the Yukon River on May 13<sup>th</sup>. The river ice break-up was uneventful this year. Photo taken by Rampart and Tanana, courtesy of the National Weather Service.

The region around Inuvik, NWT and the southern Beaufort Sea experienced warmer than average surface air temperature in the spring of 2018. Warmer than average temperatures, combined with thinner sea ice than average, a lack of multiyear ice, and an southeasterly wind generated conditions favourable to the formation of leads in the sea ice. These linear cracks in the sea ice influence regional and local climate (albedo, surface energy balance), and are important for wildlife and marine navigation.

The photo on the right shows open leads over the Beaufort Sea, and was taken on board an Aklak Air flight between Inuvik and Sacks Harbour on April 9th 2018 (Photo credit Arnel Castellan).



Source: NOAA and ECCC



Source: NOAA and ECCC

## Science, Outreach, and Community Engagement in the North

### The 11<sup>th</sup> annual Western Alaska Interdisciplinary Science Conference : “Sharing Science and Knowledge”

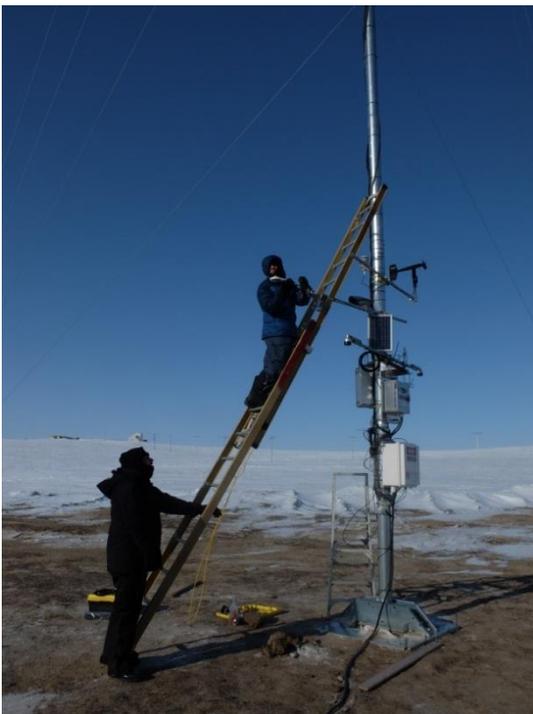
The 11<sup>th</sup> annual Western Alaska Interdisciplinary Science Conference (WAISC) was held in Nome March 28<sup>th</sup>-30<sup>th</sup> and more than 100 people from across Alaska and elsewhere came to share and learn about a wide variety of topics of importance to western Alaska. This conference is held every spring in a different community, and aims to explore the intersection of local and indigenous knowledge of subsistence-based communities with scientific research relevant to the region.

This year's focus was on effectively communicating science and traditional knowledge in rural communities. The record low sea ice and impacts to subsistence activities in the Bering Sea this season was an important topic of conversation. Presentations covered a wide range of topics including the low sea ice extent in an historical context, accessing weather information in a low bandwidth environment, home energy efficiency, and Indigenous empowerment in science of and for western Alaska.

On the right, James Nicori from Bethel speaks to the opening session of the Western Alaska Interdisciplinary Science Conference on the importance of western science connecting with the Yup'ik and Inupiaq knowledge in western Alaska.



Photo credit: Gay Sheffield/University of Alaska Fairbanks NW Campus.



Matthew Asplin and David Atkinson connect instruments in strong winds and -25°C on a boundary-layer scientific tower. Photo credit: Arnel Castellan.

### User-driven monitoring of adverse marine and weather states in the Eastern Beaufort Sea

As part of the Marine Environmental Observation, Prediction and Response (MEOPAR) project, scientists from the University of Victoria, joined by a representative of Environment and Climate Change Canada, visited the hamlets of Sachs Harbour, Ulukhaktok, Tuktoyaktuk and Inuvik in the Northwest Territories in April 2018.

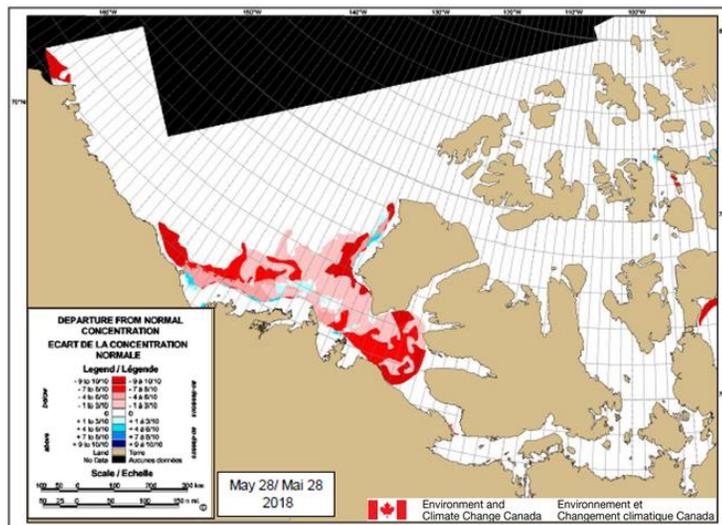
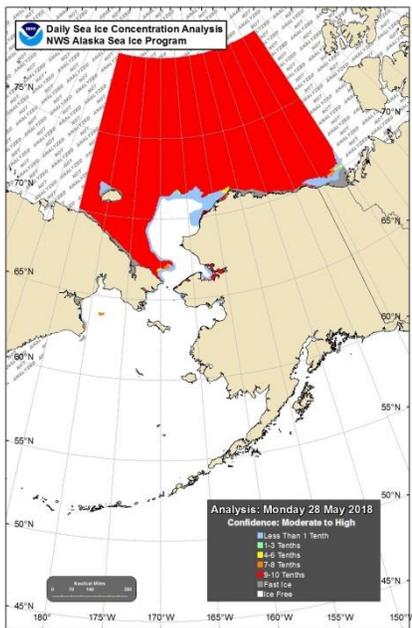
The focus of the trip was to establish and strengthen relationships within these communities, and to participate in engagement and outreach activities with local residents. Activities included the sharing of local weather knowledge, the introduction of weather products currently available over the Canadian Arctic, and discussions on how to best tailor weather products to the needs of the communities. Public meetings were hosted in Ulukhaktok to share information on the MEOPAR project, and to learn from hunters, mayors and Elders about their way of life, traditions, and concerns. The sharing of knowledge highlighted the potential impact of hazardous weather to Indigenous Peoples and communities and Northerners.

The trip also allowed the MEOPAR project to partner with local residents to build capacity in understanding and interpreting weather products and services. Local research assistants will visit the University of Victoria and the Prairie and Arctic Storm Prediction Centre as part of a training and knowledge exchange opportunity in December 2018. This partnership will provide two-way sharing of knowledge between researchers and Indigenous Peoples and communities and Northerners.



Sachs Harbour is named after the ship 'Mary Sachs' of the Canadian Arctic Expedition of 1913. Photo credit: Arnel Castellan.

# Sea Ice Conditions at the end of May 2018 in the Beaufort and Chukchi Seas

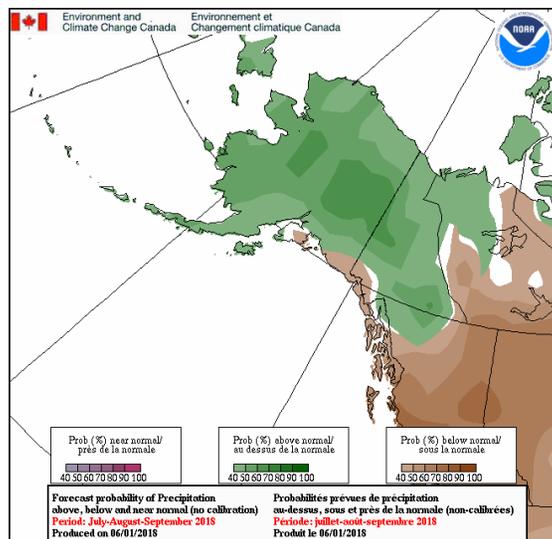
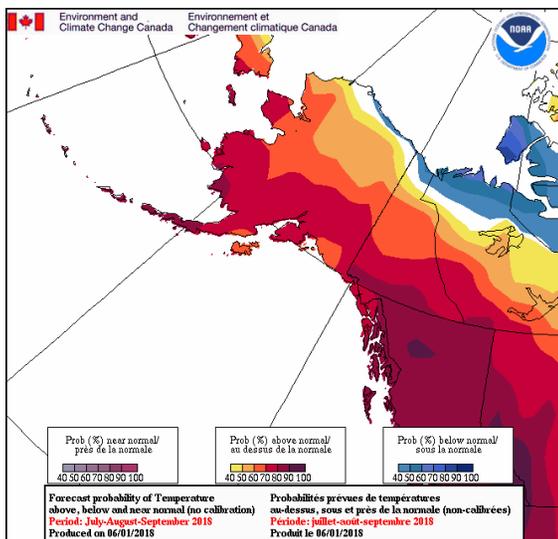


Ice extent in the Bering Sea was the by far lowest on record during the entire spring. The average ice extent for March through May was only 6% of the 1981-2010 average. Additionally, there was a lack of shorefast ice in many areas, resulting in significant impacts to subsistence activities. At the end of May, there was virtually no ice left in the Bering Sea except in some protected bays. Ice in the southern Chukchi Sea started to open up very early, and average ice extent for both April and May were the lowest in the past 40 years. By the end of May, open water extended to 71°N and Kotzebue Sound was nearly ice free.

The onset of ice breakup began earlier than normal in the southeastern Beaufort Sea area as well as the region southwest of Point Barrow. Late winter and spring temperatures have been much warmer than normal. Favorable southeasterly winds during the last month has also contributed to the early ice breakup. Ice conditions in the southeastern Beaufort Sea and Amundsen Gulf area are about 3-4 weeks earlier than normal. The area of open water west and southwest of Point Barrow usually doesn't appear until the middle of July, representing sea ice conditions about 6 weeks earlier than normal.

## Temperature Outlook: July-Sept. 2018

## Precipitation Outlook: July-Sept. 2018



A combined Canada-USA climate forecast model is used to provide temperature and precipitation outlook for July-September 2018.

The temperature outlook for July through September 2018 shows that the majority of Alaska and northwest Canada have a 40-95% chance of above average temperature, with chances of above average temperature decreasing with increasing latitude. A small area along the coast of the Beaufort Sea and extending to Banks Island in the Northwest Territories (NWT), on the other hand, show 40-80% chance of below normal temperatures.

The precipitation outlook for July through September 2018 shows that most of Alaska, the Yukon, and the northwest part of the NWT have a 40-60% chance of above normal precipitation, while a small region of southern Alaska along the coast, most of northwest BC, and most of inland NWT have a 40-70% likelihood of below normal precipitation.

Content and graphics prepared in partnership with the Alaska Center for Climate Assessment and Policy, NOAA National Weather Service Alaska Region, and Environment and Climate Change Canada.

ALASKA REGION PARTNERS: Alaska Climate Research Center, Alaska Climate Science Center, National Snow and Ice Data Center (NSIDC), NOAA / NWS Weather Forecast Offices, NOAA / NESDIS / NCEI, Scenarios Network for Alaska + Arctic Planning.

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