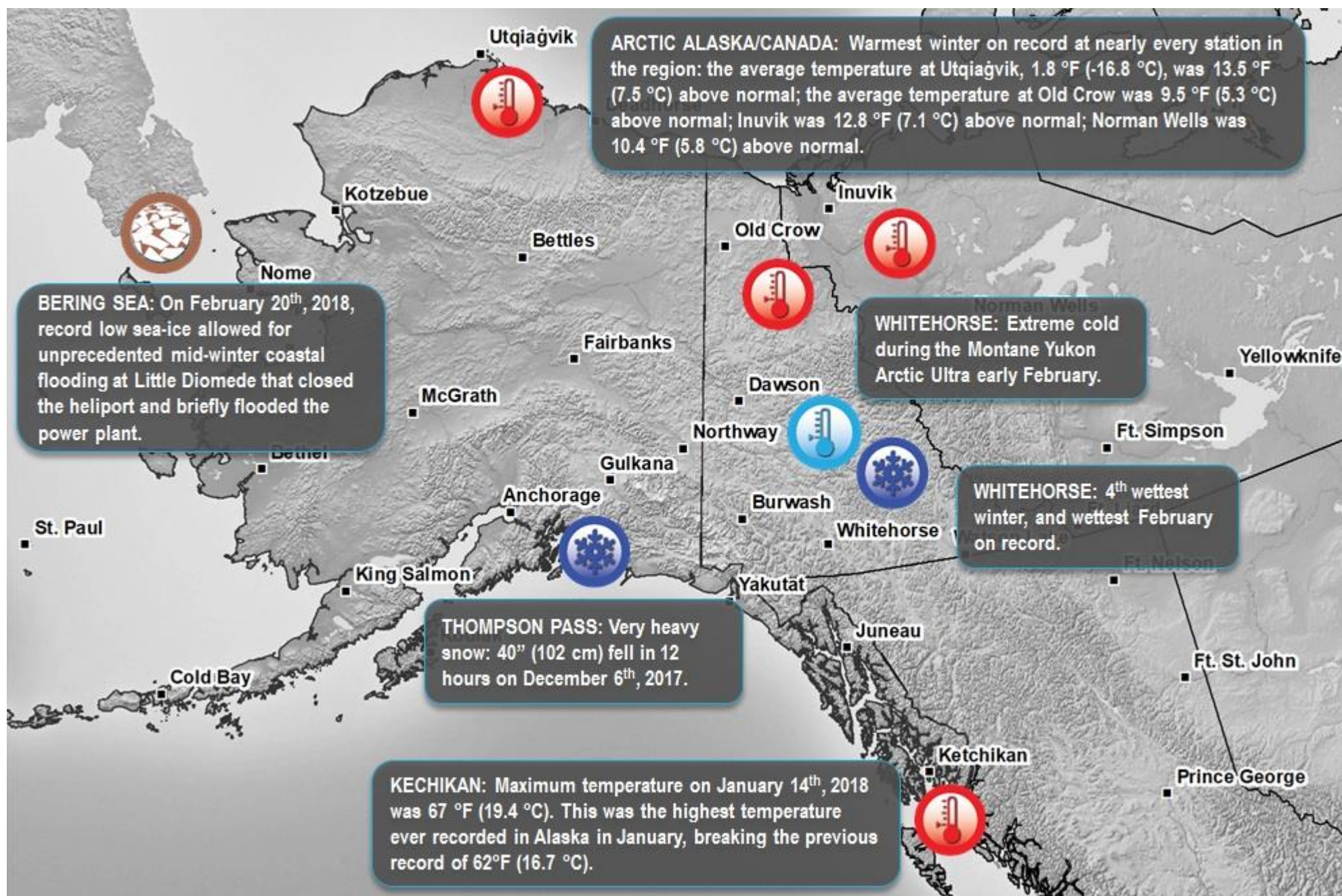
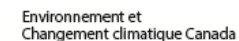


ALASKA and NORTHWESTERN CANADA

Weather and Climate Highlights and Impacts, Dec. 2017 – Feb. 2018; Climate Outlook Apr. 2018 – Jun. 2018



Temperature & Precipitation, Dec. 2017 – Feb. 2018

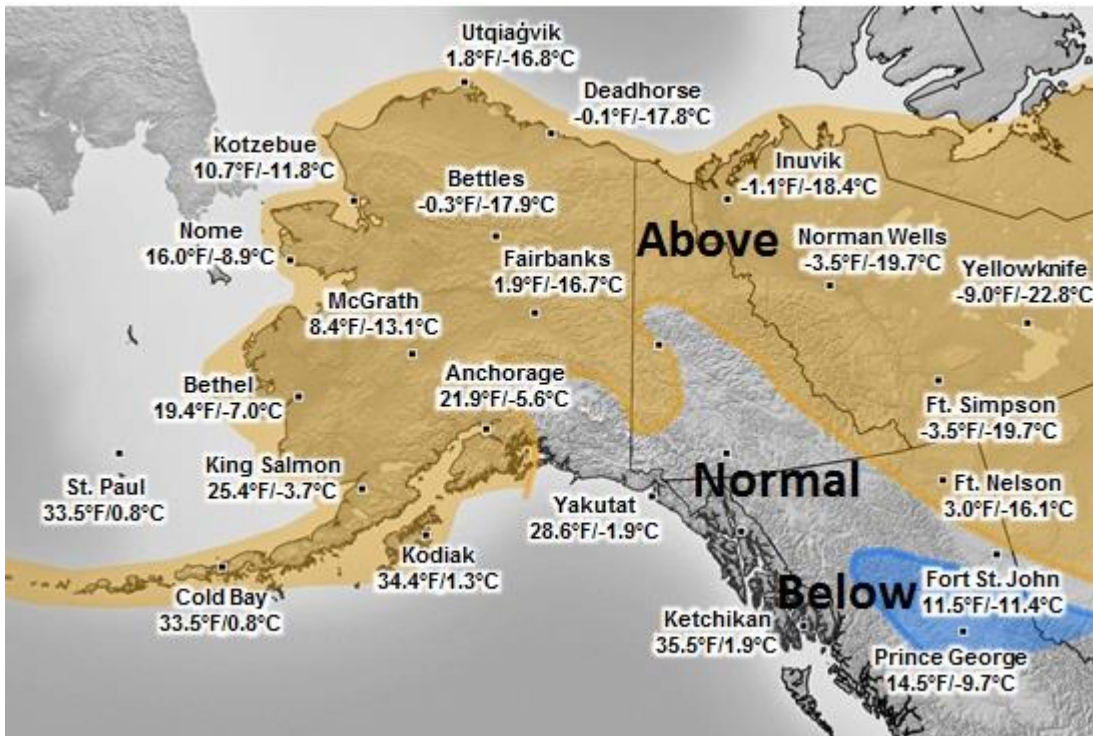


The majority of Alaska, northern Yukon, and the western part of the Northwest Territories were significantly warmer than average between December 2017 and February 2018. Most of the remainder of the region had, on average, near normal temperatures, except for a small area in central British Columbia where temperatures averaged below normal. Total precipitation was above average over the majority of Alaska, northern and southern Yukon, northwestern Northwest Territories, and over a small area in northeastern British-Columbia, while below normal precipitation was observed over the northwestern portion of British-Columbia and southeastern Northwest Territories.

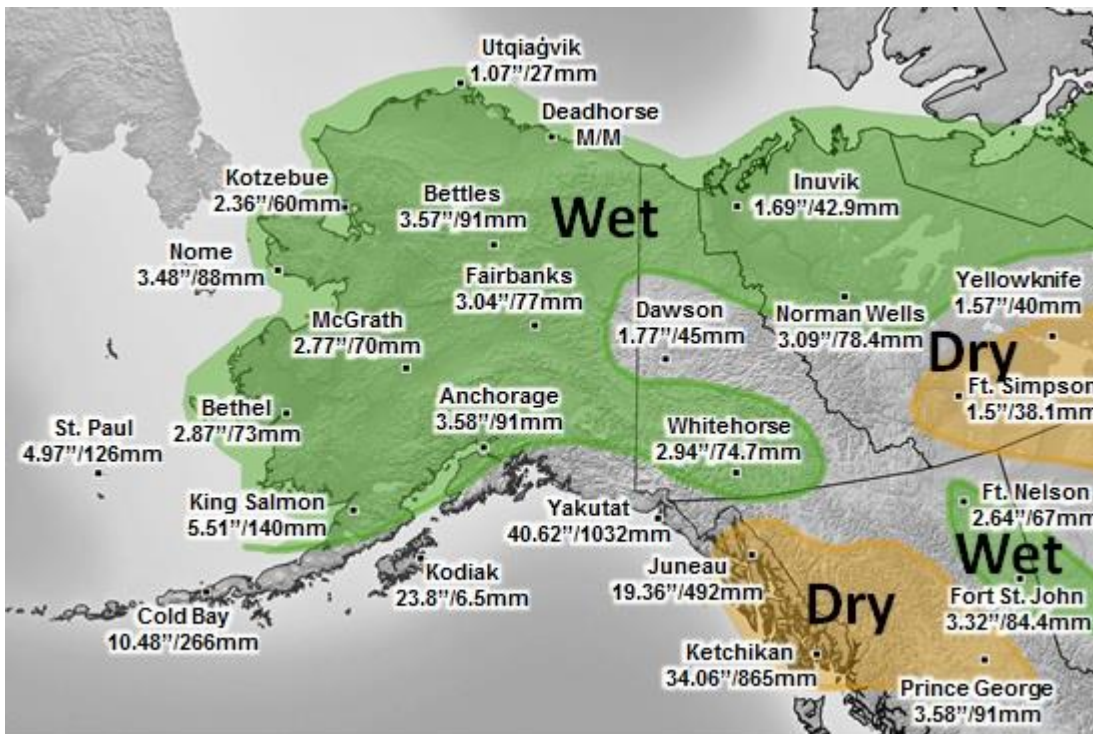
Storm surge flood waters on February 20th, 2018 covered low-lying areas of Little Diomed with boulder-sized ice pieces, closing the community heliport until the ice could be removed. Such an event is unprecedented in the memory of the community (photo credit: Henry Soolook).



On February 23rd, a low pressure system moving from Alaska into the southern Yukon/northern B.C. brought a total of 25 cm (9.8 ") of snow to the city of Whitehorse and 10-20 cm (3.9-7.9 ") in neighboring regions. Not only did this 24-hour snowfall event surpass the 18.3 cm (7.2 ") of snow Whitehorse typically sees in the entire month of February, but it contributed to 2018 being the wettest February on record with records dating back to 1943. Above, a man is digging out after 25 cm (9.8 ") of snow falls on the City of Whitehorse (image courtesy of Mike Rudyk/CBC).



Source: NOAA and ECCC



Source: NOAA and ECCC

Record Low Sea Ice in the Bering Sea

Sea ice in the Chukchi and Bering Seas during the winter was remarkable for forming so late in the season, and for the very low extent during the winter. Ice extent in the Chukchi Sea did not reach 95% of the basin until New Years, more than a month later than the average date prior to the late 1990s. In the Bering Sea, ice extent has been near below record low levels all season.

A series of storms in the middle of February caused the loss of more than half of what ice had formed. There was also very little shorefast ice along the Alaska coast, resulting in highly variable ice conditions, producing remarkable scenes of waves breaking on the beach at Utqiagvik on winter solstice and a virtual ice free ocean view of the Siberian coastline from Gambell.

The lack of sea ice has significantly impacted subsistence activities in many communities, especially walrus and seal hunting activities in the northern Bering Sea, requiring changes in strategies for southeastern Bering Sea communities. The photo on the right shows the Siberian coast seen across the nearly ice free Bering Sea from Gambell, Alaska on January 30th, 2018 (photo Credit: Clarence Irrigoo, Jr.).



Temperature Extremes in the Yukon



Extreme temperature swing occurred mid-January for much of the Yukon as temperatures leaped from daytimes highs of -37.1°C (-34.8°F) in Mayo, for instance, to 7.0°C (44.6°F) in just two days. Multiple days of positive temperatures and mild overnight lows caused the height of snow on the ground to drop by half.

Despite the welcomed reprieve from frigid temperatures, localized flooding and poor road conditions were reported by many. The photo on the left shows melting snow on the streets of Whitehorse amid unusual January warm up (image courtesy CBC).



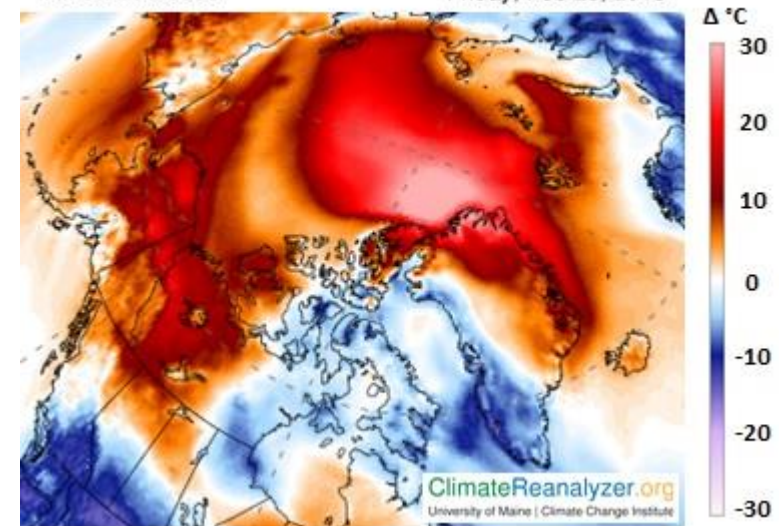
Temperature extremes in the Yukon impacted two races in February 2018. With temperatures ranging between -28 to -40°C (-20 to -40°F), only a fraction of the Yukon Arctic Ultra participants finished, the others abandoning due to frostbite and hypothermia.

Warmer than average temperatures, on the other hand, prevented the Dawson City ice crossing from freezing, forcing dog teams in the Yukon Quest to set up alternate camps; a cold snap following warm temperatures at the end of January then rendered the original trail too icy and rough for dog teams. The photo on the left shows a musher travelling on the Yukon River during the Yukon Quest (photo credit: Philippe Morin, CBC).

North Pole Warmth

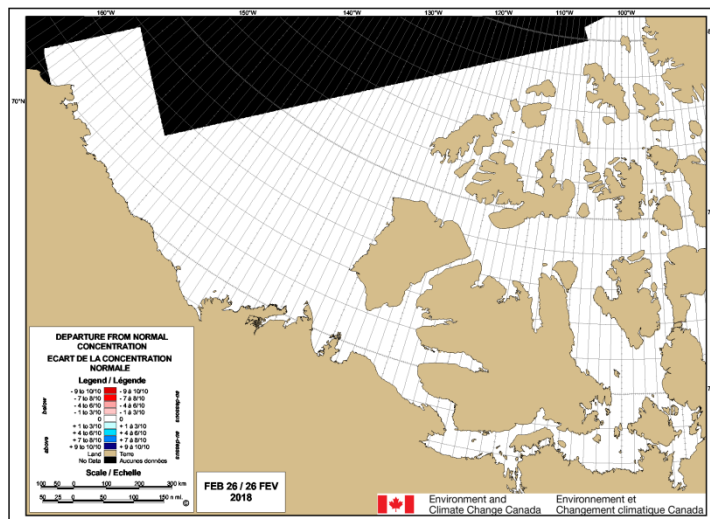
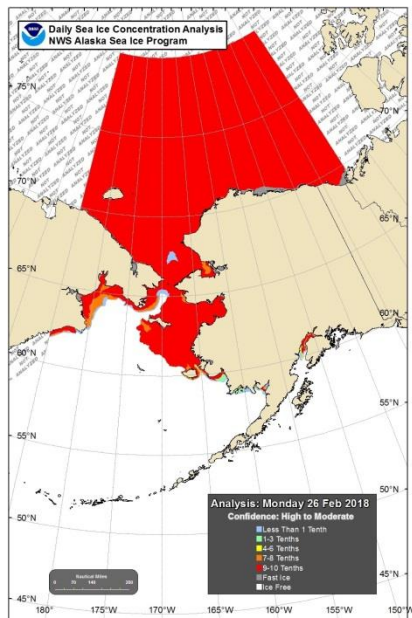
GFS/CFSR 1-day Avg
1979-2000 base

2m T Anomaly ($^{\circ}\text{C}$)
Friday, Feb 23, 2018



An intrusion of extremely mild air from a North Atlantic storm briefly brought temperatures to near freezing near the North Pole during late February. This was the culmination of nearly unbroken mild weather at the Earth's highest latitudes since September. According to the Danish Meteorological Institute's analysis of average daily temperatures north of 80°N , the last day the average temperature for this region was below the late 20th century normal was in mid-August 2017. Above is an example from February 23rd, 2018, where positive temperature anomalies in the Arctic can be seen above the North Pole, and over most of northern Alaska, the Yukon, and western NWT (adapted from Climate Reanalyzer).

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

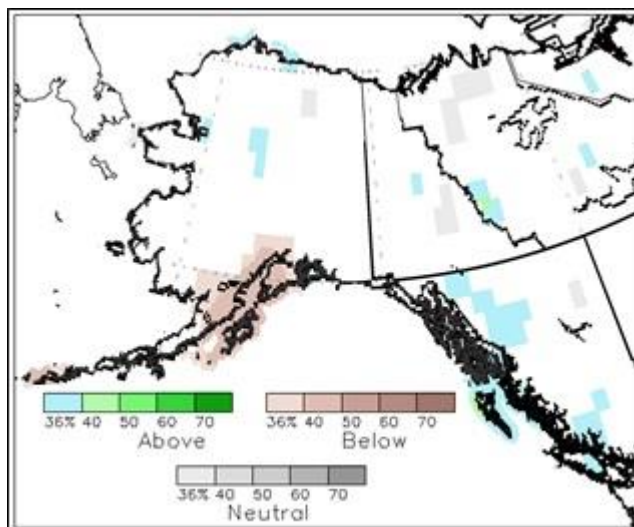
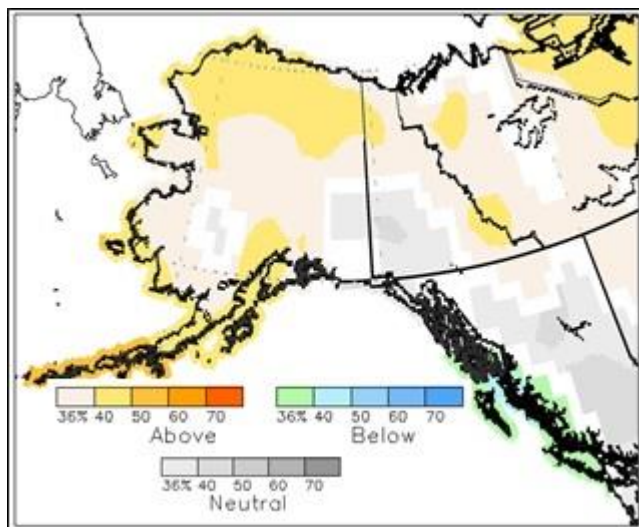


Sea ice extent was at record low during most of February (and indeed for much of the winter) in the Bering Sea. The Chukchi Sea did not become effectively ice covered until New Year's Eve, and at the end of February very little shorefast ice along the Alaskan coast was present. There was limited old ice in the Beaufort Sea north of Alaska, where satellite based estimates put the ice thickness at generally less than two meters.

There was no discernable departure from normal ice conditions (white areas as shown on map) at the end of February 2018. However, the old ice had slowly been drifting southwards on the eastern side of the Beaufort Sea west of the Queen Elizabeth Island since the freeze-up period last fall. By the end of February, the old ice edge in the southeastern Beaufort Seas by the Tuktoyaktuk Peninsula and the Makenzie Delta was further south than normal, while the old ice edge in the southwestern Beaufort Sea north of the Alaskan coast was further north than normal.

Temperature Outlook: Apr-Jun 2018

Precipitation Outlook: Apr-Jun 2018



The calibrated categorical forecasts from the 100 plus member North American Multi-Model Ensemble (NMME) for April-June 2018 shows that the majority of Alaska and northern Canada have a 36-60% chance of above average temperature, while the southern part of the west coast of British-Columbia has a 36-40% chance of below normal temperatures. Most of the interior British-Columbia and southwestern Yukon have slightly increased chances of near normal temperatures.

The precipitation outlook for April through June 2018 shows small areas of 36-40% chance of above normal precipitation along the west coast and the north-western parts of British Columbia, and a small area of 36-40% likelihood of below normal precipitation from Kodiak Island westward into the Aleutian Islands. The remainder of the region, depicted in white, shows no indication of above, below, or near normal precipitation (i.e. an equal chance of any of the three categories).

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

ALASKA REGION PARTNERS: Alaska Center for Climate Assessment and Policy, 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.

NOAA ALASKA REGION CONTACTS:
RICK THOMAN richard.thoman@noaa.gov
ncei.noaa.gov • #regionalclimateoutlooks
BRIAN BRETTSCHEIDER: ACCAP
brbrettschneider@alaska.edu

WESTERN CANADA CONTACTS:
Environment and Climate Change Canada (ECCC).
LISA WEST lisa.west@canada.ca
CINDY YU cindy.yu@canada.ca
GABRIELLE GASCON
gabrielle.gascon@canada.ca