

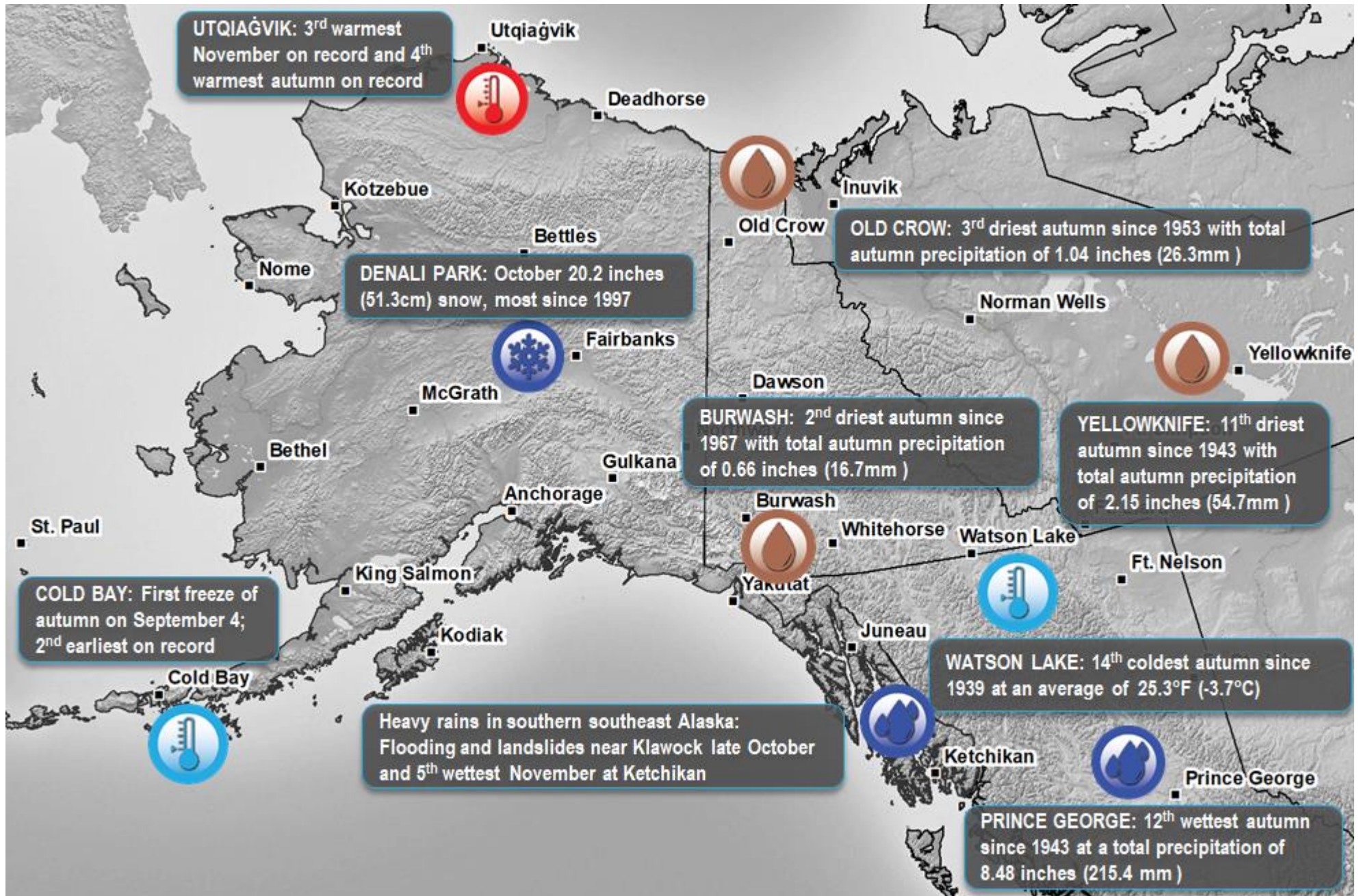
ALASKA and NORTHWESTERN CANADA

Weather & Climate Highlights and Impacts, September-November 2020; Climate Outlook January-March 2021

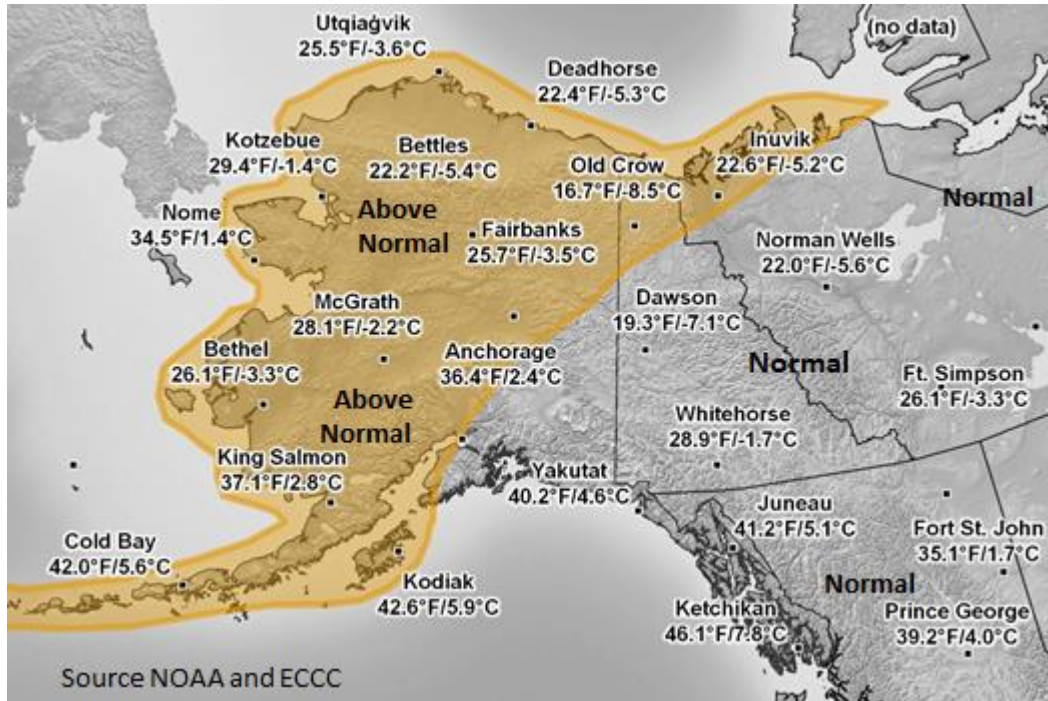


Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



Sept-Nov 2020 Temperature Averages (°F/°C) & Anomalies- **Below** / **Above** / Normal.



Early November heavy snowfall

Heavy snow fell over parts of Interior Alaska on November 5-7 from the same storm system that brought high winds, and severe erosion to portions of the Alaska Bering Sea coast. In the Fairbanks area, reported snowfall over the three days generally ranged from 13 to 18 inches (33 to 46 cm). The National Weather Service Fairbanks Forecast Office reported an official total of 14.7 inches (37.3 cm) of snow in 24 hours on November 5-6, the greatest 24 hour snow total on record for the month of November, just eclipsing the previous record of 14.6 inches (37.1 cm) set in November 1970. The storm resulted in some business closures and ended with a bit of freezing rain and drizzle, which added to the travel difficulties.



Sept-Nov 2020 Precipitation Totals (inches/mm) & Anomalies- **Dry** / **Wet** / Normal.

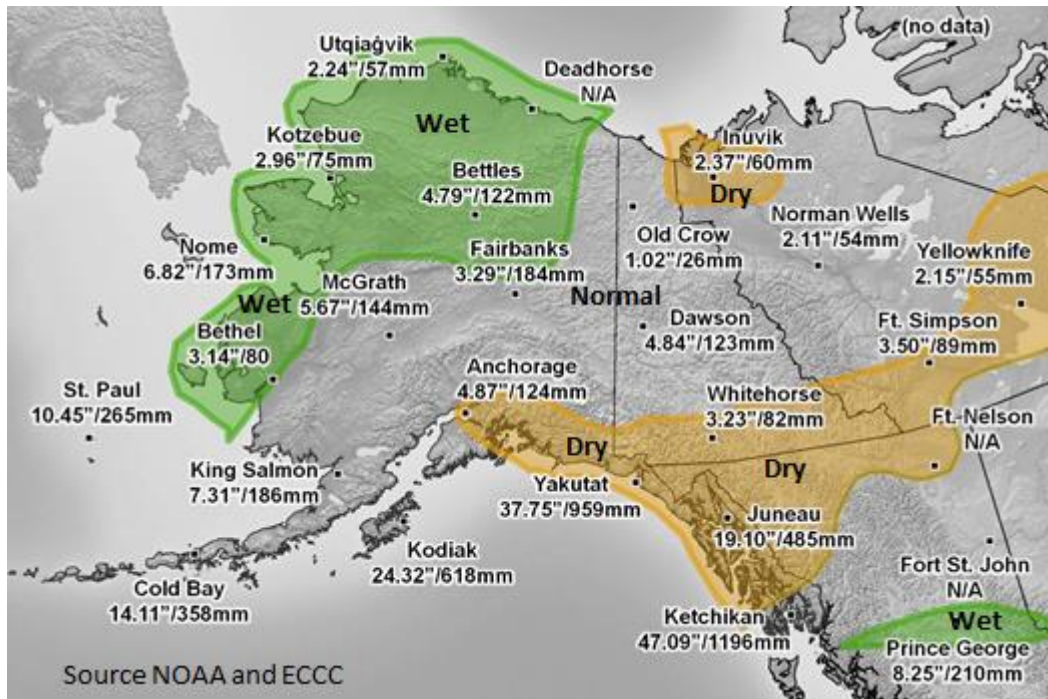


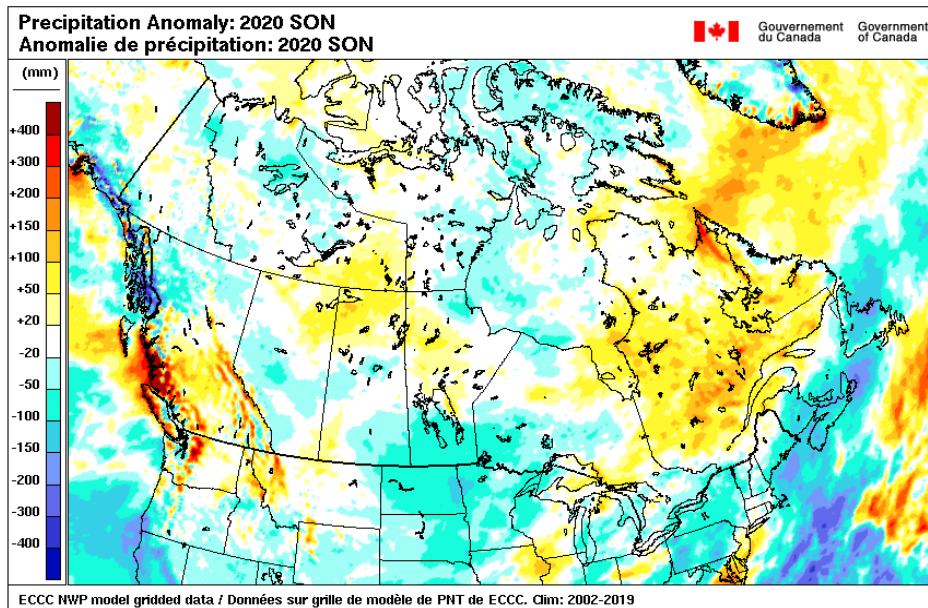
Photo: Heavy snow falling the mid-morning of November 6th at a Fairbanks area residence. Credit: T. Sammis

Early November snowfall near Whitehorse, Yukon



Photo: C. Cibart, Yukon Emergency Services. 2 Nov 2020

A record-breaking snowstorm on November 1-2, produced 134% of normal monthly snowfall in the Whitehorse area in a 28-h period. Roads, schools and the Whitehorse International Airport were closed as a result of this event. The precipitation map shows seasonal precipitation was near normal in the Northwest.



Alaska storm early November 2020

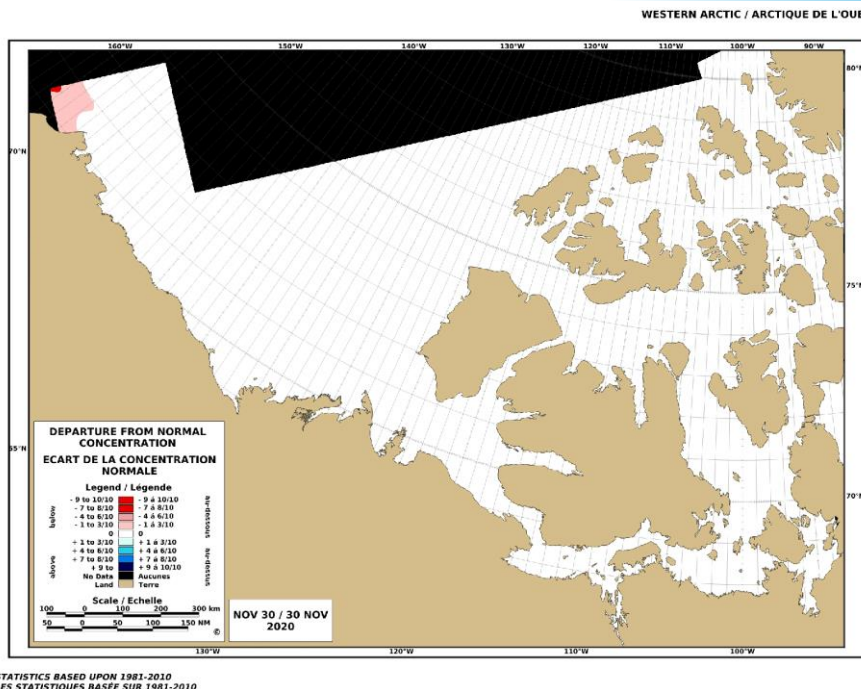
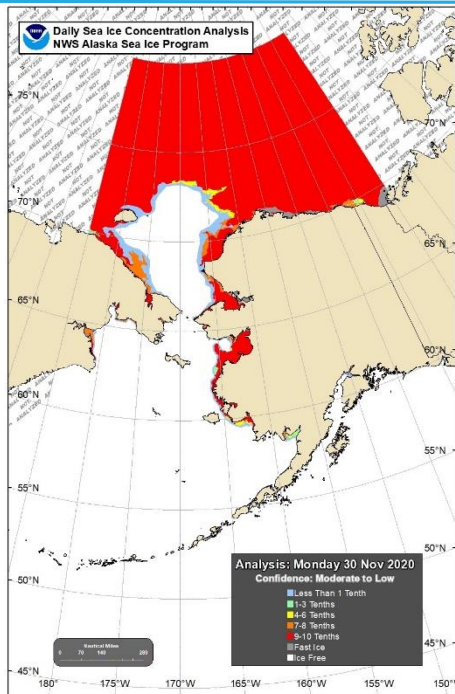
A strong storm moved from the northwest Bering Sea, across Chukotka and into the southwest Chukchi Sea November 5 to 7, 2020. The storm brought snow and rain to St. Lawrence Island, the Bering Strait and most of the Seward Peninsula. However, the major impact was storm surge and extensive erosion. This was due not only to favorable wind direction and duration, but largely because there was no significant ice had formed, which would have been unusual 40 years ago, but is now typical for the first week in November.

While there was only minor flooding, multiple communities reported substantial erosion due to long duration onshore winds. Nome reported an average wind speed of 31 mph (51 km/h) on November 5th and this produced extensive erosion of the beach east of town and temporarily closed the Nome-Council Road near Safety. Erosion was also reported at Elim. On the northern Seward Peninsula coast, the road to the landfill at Shismaref was washed out by the persistent wave action at an estimated US \$6 million to repair.



Photo: Newly formed beach erosion bluff east of Nome, Alaska. Credit. G. Sheffield, 7 November 2020

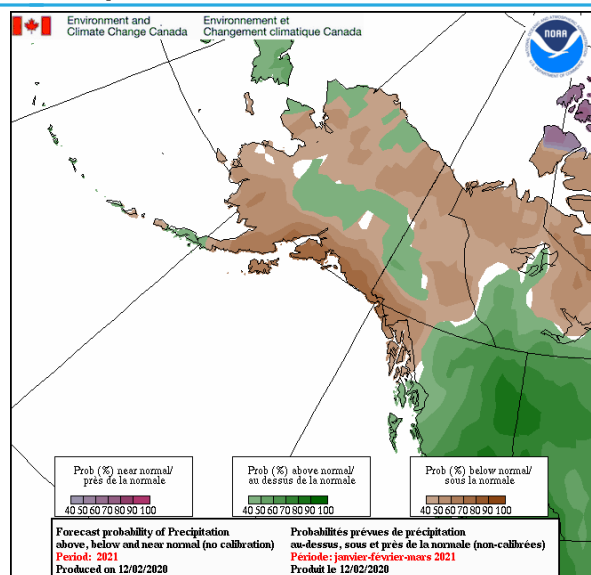
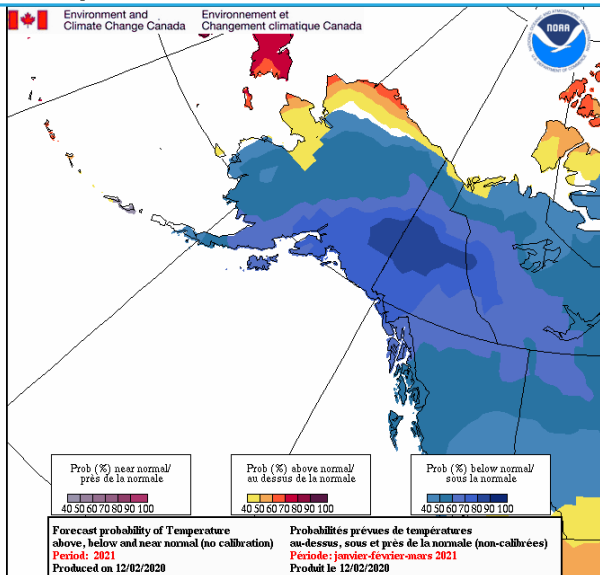
Sea Ice Concentration Conditions & Departure from Normal Conditions 30 November 2020 in the Chukchi and Beaufort Seas



Sea ice extent in the Beaufort and Chukchi Seas reached the annual minimum extent in the second half of September. Ice in the eastern Beaufort was never more than 75 miles (120 km) northeast of Kaktovik and expanded to the Alaska coast during October, with ice-over of the Beaufort Sea about two weeks earlier than 2019. The Chukchi Sea saw sea ice extent decrease to the second lowest on record (only 2012 slightly lower), with just 0.3 percent of the basin, as defined by the National Snow and Ice Data Center (NSIDC) having 15% or higher ice concentration in early September. There was no ice near the northwest Alaska Chukchi coast outside Barrier Island until the last days of October. During November, ice gradually increased, with the average November extent third lowest on record (only 2017 and 2019 lower). There was no significant ice at all in the Bering Sea until early November, when ice started to develop in protected bays. Overall, the Bering Sea average ice extent for November was the lowest in the 43 years of NSIDC records. Beaufort Sea minimum ice coverage was on 10 September at 30% whereas a minimum of 42% is usually reached a week later. Significant freeze-up in the Beaufort Sea area was delayed by about 3-4 weeks. Normally, the ice coverage would start to increase in mid-September; however it took until mid-October to see this.

Temperature Outlook: Jan-Mar 2021

Precipitation Outlook: Jan-Mar 2021



A combined Canada - USA forecast model is used to provide a temperature and a precipitation outlook for January to March 2021.

The temperature outlook map shows that most of Alaska, except for the north slope coastal areas, Yukon, Northwest Territories, British Columbia and most of Alberta has a 40 to 90% chance of below average temperatures (blue-purple areas). The highest probabilities are for central Yukon and central and southern parts of Alaska, and the eastern Aleutian Islands.

The precipitation outlook map shows that the majority of Alaska, Yukon, central and northern Northwest Territories have a 40 to 80% chance of below normal precipitation (brown areas). Some areas of northern coastal and central southern Alaska, western Aleutians, most of southern Northwest Territories, British Columbia and Alberta, will likely experience above normal precipitation (40 to 90% chance, green areas).

Content and graphics prepared in partnership with the Alaska Center for Climate Assessment and Policy 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 National Weather Service Alaska Region, NOAA / NESDIS / NCEI, Scenarios Network for Alaska + Arctic Planning.

ALASKA CENTER FOR CLIMATE ASSESSMENT AND POLICY CONTACTS:

RICK THOMAN
rthoman@alaska.edu

BRIAN BRETTSCHEIDER:
bbrett@schneider@outlook.com

ENVIRONMENT AND CLIMATE CHANGE CANADA WESTERN CONTACT

MARK BARTON
mark.barton@canada.ca