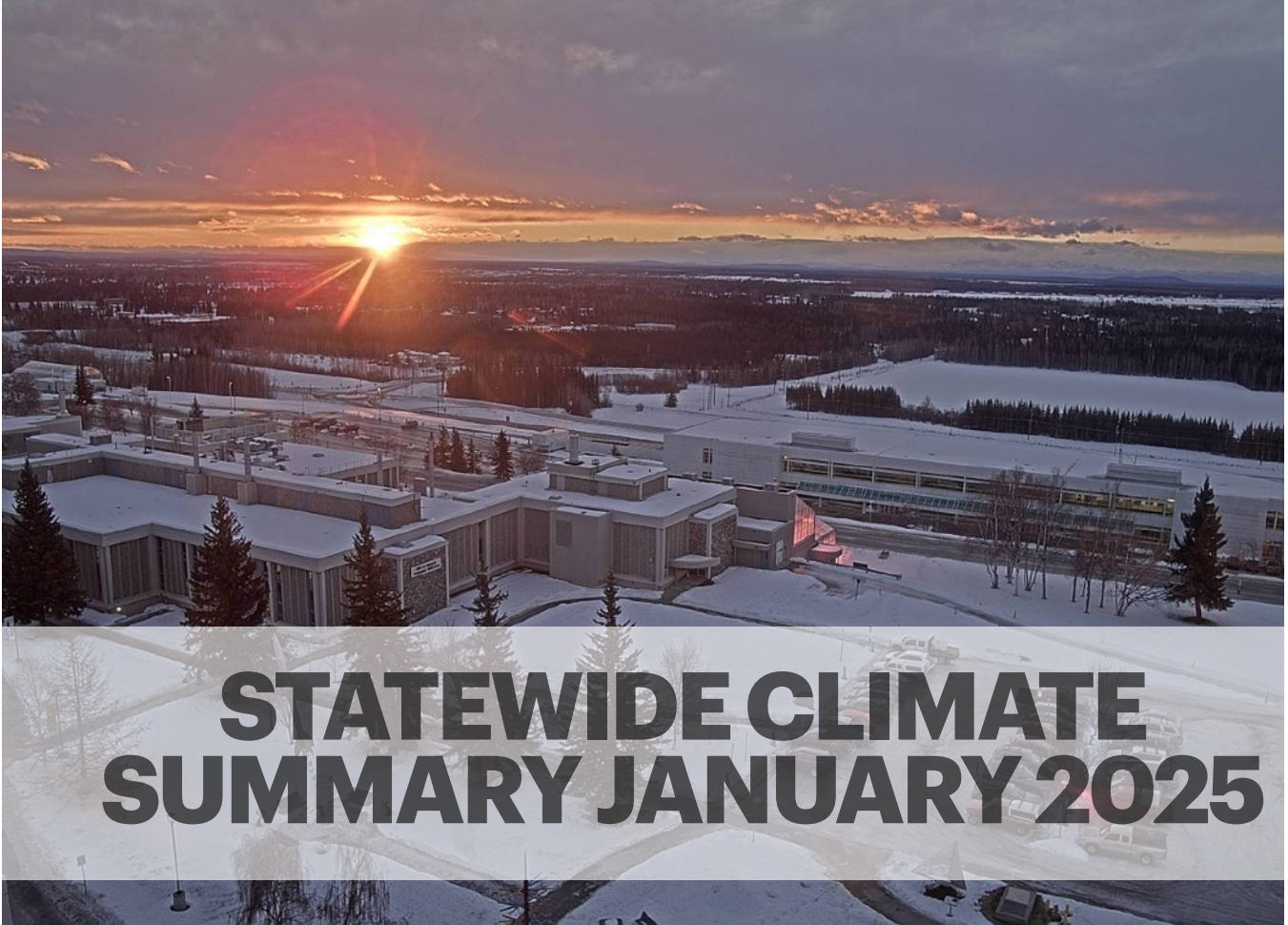




Alaska Climate Research Center
The Alaska State Climate Center



STATEWIDE CLIMATE SUMMARY JANUARY 2025

Sunrise over the Alaska Range on January 27 as seen by the ACRC panorama camera

IN THIS ISSUE

	Monthly
Highlights.....	pg. 2
Significant Weather Events and Synoptics.....	pg. 3
Statewide Temperatures.....	pg. 5
Precipitation and snow	pg. 8
Arctic Sea Ice.....	pg. 12
Newsworthy Information.....	pg. 15



Alaska’s Statewide Climate Summary for January 2025 provides an overview of weather for the month based on data from selected weather stations throughout the state. “Departure from normal” refers to the climatological average over the 1991-2020 normal period. Here, we report on temperature, precipitation and drought conditions in the state, as well as the condition of the Arctic sea ice.

HIGHLIGHTS

Daily temperatures more than 40°F above normal in the Interior

Numerous daily temperature records due to persistent warmth and Pineapple Express

New January precipitation record in Cold Bay, more than 500% of normal precipitation in Utqiagvik

High temperatures and rain decimated Anchorage snow pack

Very slow sea ice growth

Significant Weather Events and Synoptics

January in Alaska can be summed up as “warm and wet”. The month started out with a high pressure system over the Chukchi Sea and low pressure west of the Aleutians and in the Gulf of Alaska. For the eastern parts of the state, this resulted in a few days of relatively cool weather. Low pressure in the western Gulf and over the Aleutians gradually deepened during the first week of the month while ridging developed over the US Pacific Northwest and British Columbia.

This setup allowed warm, moist air to flow almost straight north. Along with rising temperatures, the associated frontal system brought very unsettled weather to Southcentral Alaska on January 6 and 7. The NWS issued various winter weather advisories for snow and freezing rain as well as high wind warnings. The combination of rapidly rising temperatures and rain on icy roads created challenging traffic conditions in Anchorage and surrounding areas. The stormy, wet conditions continued in the following days as series of storm systems moved through the Gulf of Alaska with back to back episodes of heavy precipitation, storm force winds, and related weather advisories and warnings. In the Interior, temperatures also rose to far above average levels with the influx of warm, moist air from the south. The larger scale synoptic pattern combined with Chinook winds over the Alaska Range lead to several new daily temperature records on January 12 and 13 in communities north of the Alaska Range. Fairbanks reached 47°F, easily beating the previous Jan. 12 record of 39°F set in 1984.

Temperatures briefly dropped to near normal as a colder system moved through the Interior on January 15 and 16. The rest of the state remained at above normal temperatures. The West Coast saw windy, wet weather due to another Bering Sea storm system and a flood advisory was issued for the Kuskokwim Bay.

The cooler weather did not last and things quickly shifted back to the pattern of northern Pacific low pressure pushing back to back storms into the Gulf of Alaska. Temperatures once more trended upwards and active weather with rain and snow resumed on the Gulf Coast and in mainland Alaska. The third week of January came with repeated winter weather advisories, a high wind warning for the Aleutians and a coastal flood watch for the Kuskokwim Delta.

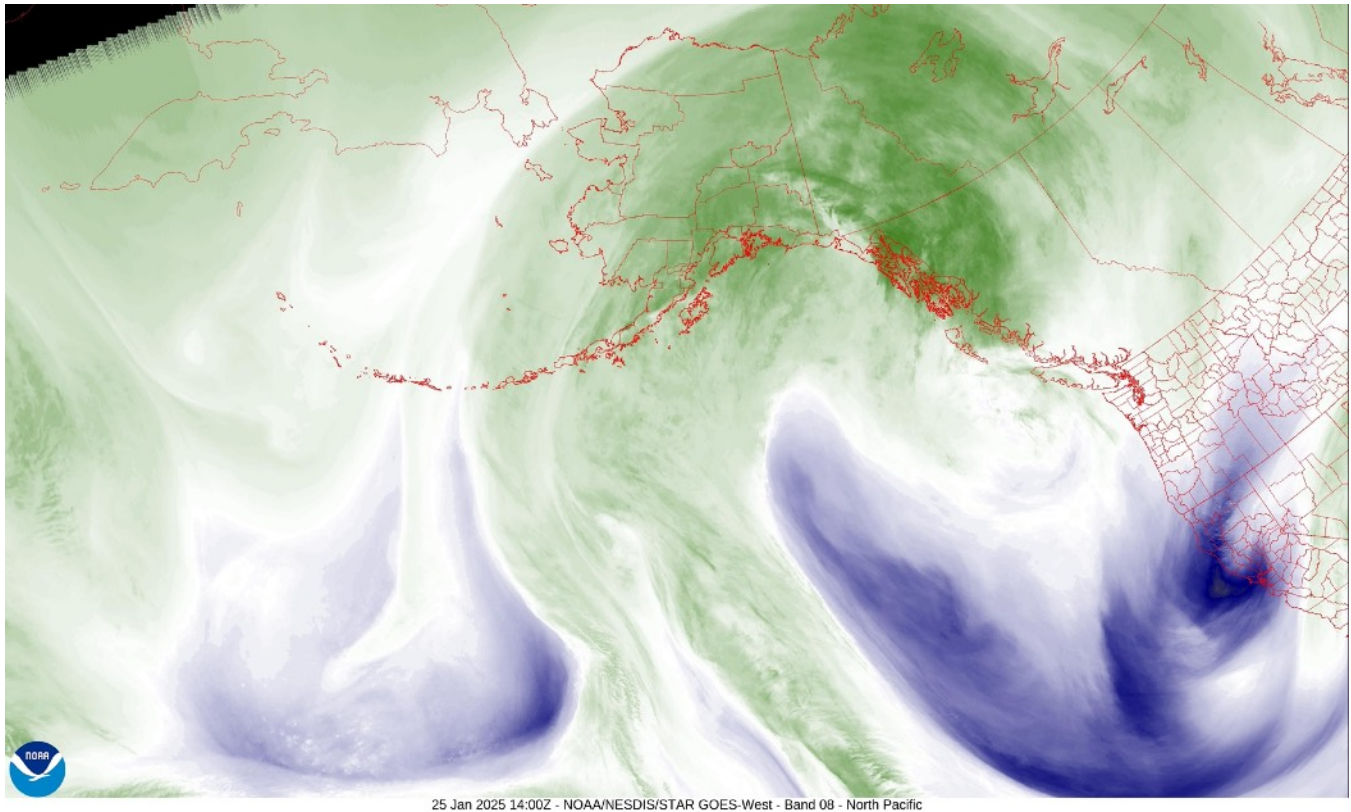


Figure 1. A “Pineapple Express” atmospheric river aiming straight for Alaska. Jan. 25 GOES West satellite image, upper-level water vapour. Image courtesy of [NOAA NESDIS](#).

The “warm and wet” weather pattern became even more pronounced on January 24. An atmospheric river (Fig. 1) brought heavy precipitation and more temperature records. This particular kind of system is also called Pineapple Express. The name relates to the origin of the air mass near Hawaii and indicates that the tropical weather suitable for growing pineapples is “exported” to northern latitudes. The Pineapple Express often lands the Pacific Northwest and occasionally makes it all the way to Alaska. In this case, the result was yet more warm, wet, windy weather with numerous winter weather advisories and wind warnings. Flood watches were issued in South Central due to prolonged rain on frozen ground and related drainage issues. High avalanche danger warnings were issued for the Chugach. The Parks Highway was closed after an avalanche hit a car and buried the road (the driver was unharmed). In the Interior, some areas saw heavy snow fall while others had freezing rain and severe traffic issues due to very icy roads. The NWS noted that many waterways in the Interior had water on top of the ice following this system, making travel on the frozen rivers more challenging. The Fairbanks airport remained

above freezing for more than 60 consecutive hours on January 25 to 26, a new record streak for January ([NWS social media post](#)).

January ended with a return to what many Alaskans consider “proper” winter weather. An Arctic front moved in from the north on January 29 and temperatures dropped fast and far. Bettles went from a high temperature of 37°F on January 24 to temperatures below -50°F from January 29 onwards. Even by Alaska standards, January was a very eventful weather month!

Temperature

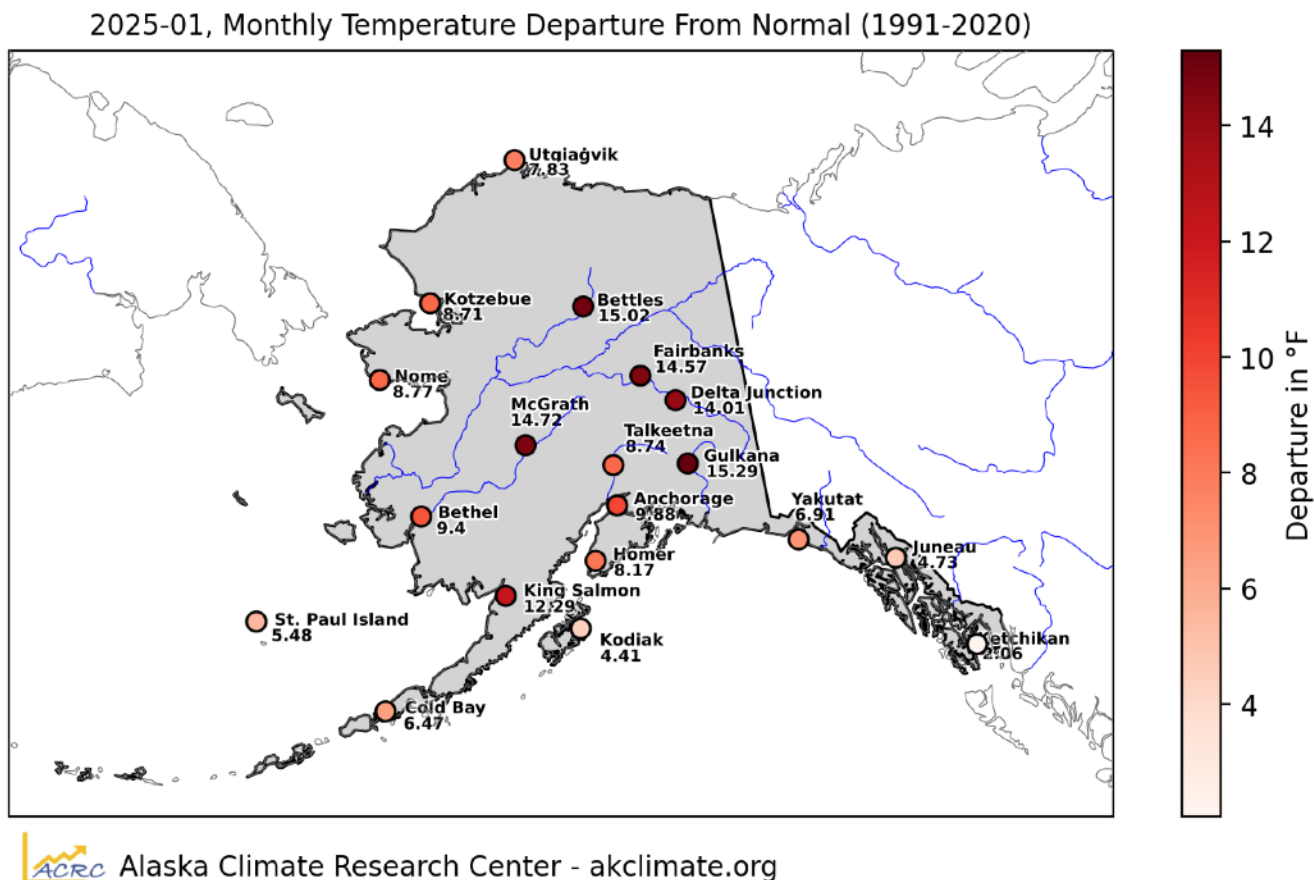


Figure 2. Monthly mean temperature departure from normal (°F), January 2025, at the selected First Order stations in Alaska.

For the second month in a row, all of the selected First Order Stations recorded above average monthly mean temperatures in January (Fig. 2, Table 1). Compared to last month, deviations from normal were considerably higher, especially in the Interior. Gulkana and Bettles both recorded monthly mean temperatures more than 15°F above the 1990-2020 climate normal. McGrath, Fairbanks, and Delta Junction were not far behind with 14.0 to 14.7°F above normal. King Salmon also had a high deviation with 12.3°F above normal. The lowest deviations were recorded in Southeast Alaska and the southwestern coastal areas. Ketchikan had the lowest monthly deviation with +2.1 °F. Juneau (+4.7°F) and Kodiak (+4.4°F) also count as relatively “cool” this month despite the warmer than average monthly totals. 4 to 5 degrees above normal pales against the +15°F deviations in the Interior.

While plotting this month’s graphic of daily temperature anomalies (Fig. 3), we had to adjust the vertical scale from our default settings to show the full range of data. The scale usually ends at +35°F. This month it goes to +45°F to accommodate the very large anomalies recorded at the Interior stations. Bettles, Fairbanks, Delta Junction, Gulkana, and McGrath all had multiple days with temperatures more than 40°F above the 1990-2020 climate normal this month. The North Slope, Interior, Southcentral and Southeast stations had a few below average days in early January. Then, an exceedingly warm period set in starting around January 6, as mentioned above. Western Alaska missed out on the cooler period early in the month and was persistently warmer than the 1990-2020 normal until the last week of the month. January ended cooler than normal at most stations following the arrival of the Arctic front on January 29.

The tables in the Appendix list all daily temperature records set in January. The lists are very long this month with 46 new daily records for daily mean temperature alone. Fairbanks set three consecutive records with daily means above freezing from January 24 to 26. On January 25, temperatures stayed above freezing even at night with a new record for daily minimum (33°F) that beat the previous record by more than 10°F (22°F in 1981). Delta Junction also set three consecutive records on the same dates with daily mean temperatures in the 40s. We refer to the Appendix for a comprehensive compilation of the month’s daily records.

Station	Observed (°F)	Normal (°F)	Departure (°F)
Anchorage	26.7	16.8	9.9
Bethel	16.4	7.0	9.4
Bettles	4.4	-10.6	15.0
Cold Bay	34.9	28.4	6.5
Delta Junction	13.1	-0.9	14.0
Fairbanks	6.3	-8.3	14.6
Gulkana	12.0	-3.4	15.3
Homer	33.6	25.4	8.2
Juneau	33.2	28.4	4.7
Ketchikan	37.7	35.6	2.1
King Salmon	28.9	16.6	12.3
Kodiak	35.6	31.2	4.4
Kotzebue	6.8	-2.0	8.7
McGrath	8.9	-5.7	14.7
Nome	14.4	5.6	8.8
St. Paul Island	30.8	25.3	5.5
Talkeetna	22.2	13.6	8.7
Utqiagvik	-3.7	-11.5	7.8
Yakutat	35.5	28.6	6.9

Table 1. Mean monthly air temperature, normal (1991-2020) and departure for selected stations throughout the state, January 2025. Color-coded to match Figure 2.

Daily mean temperature, departure from normal (1991-2020), 2025-01

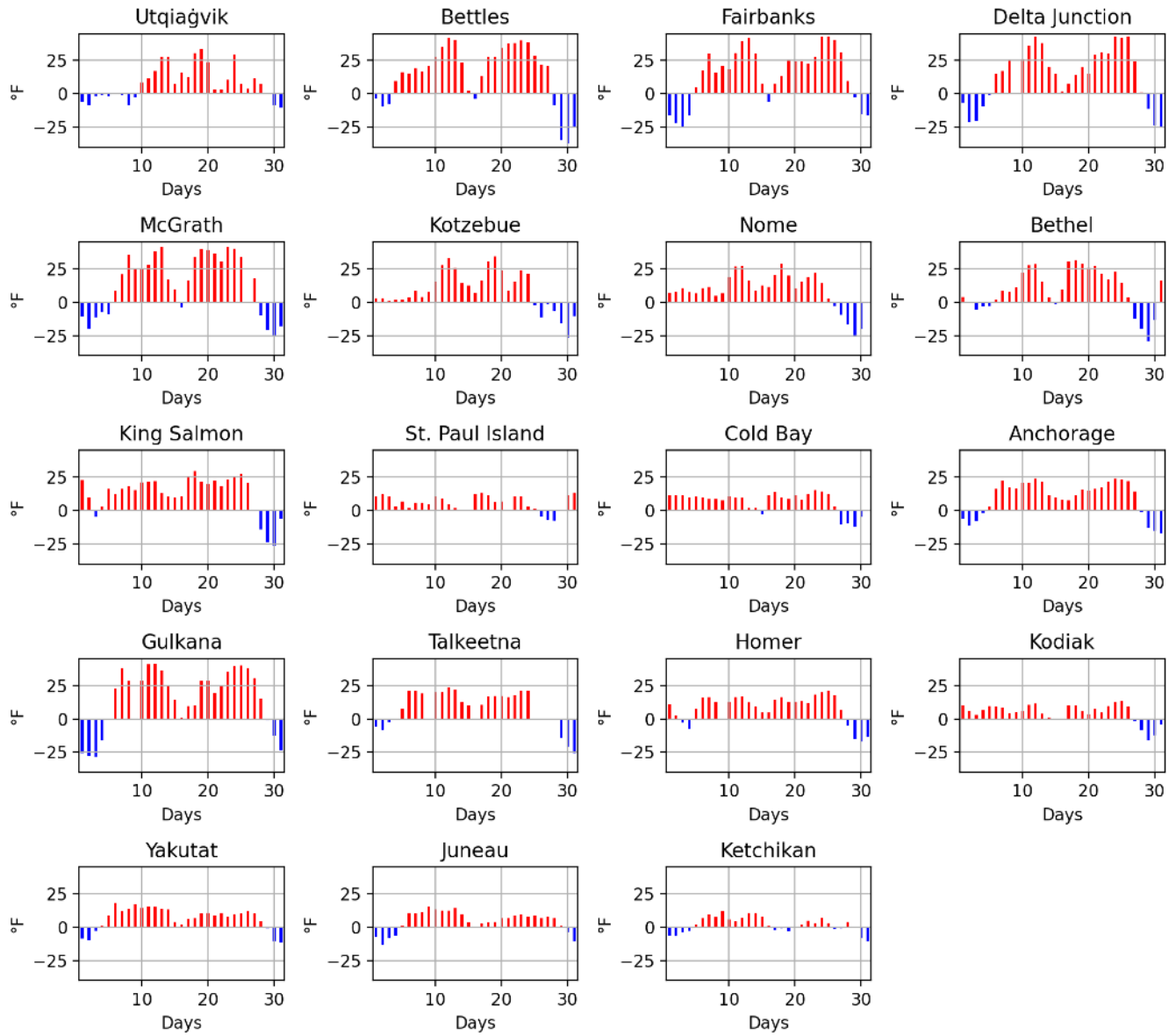
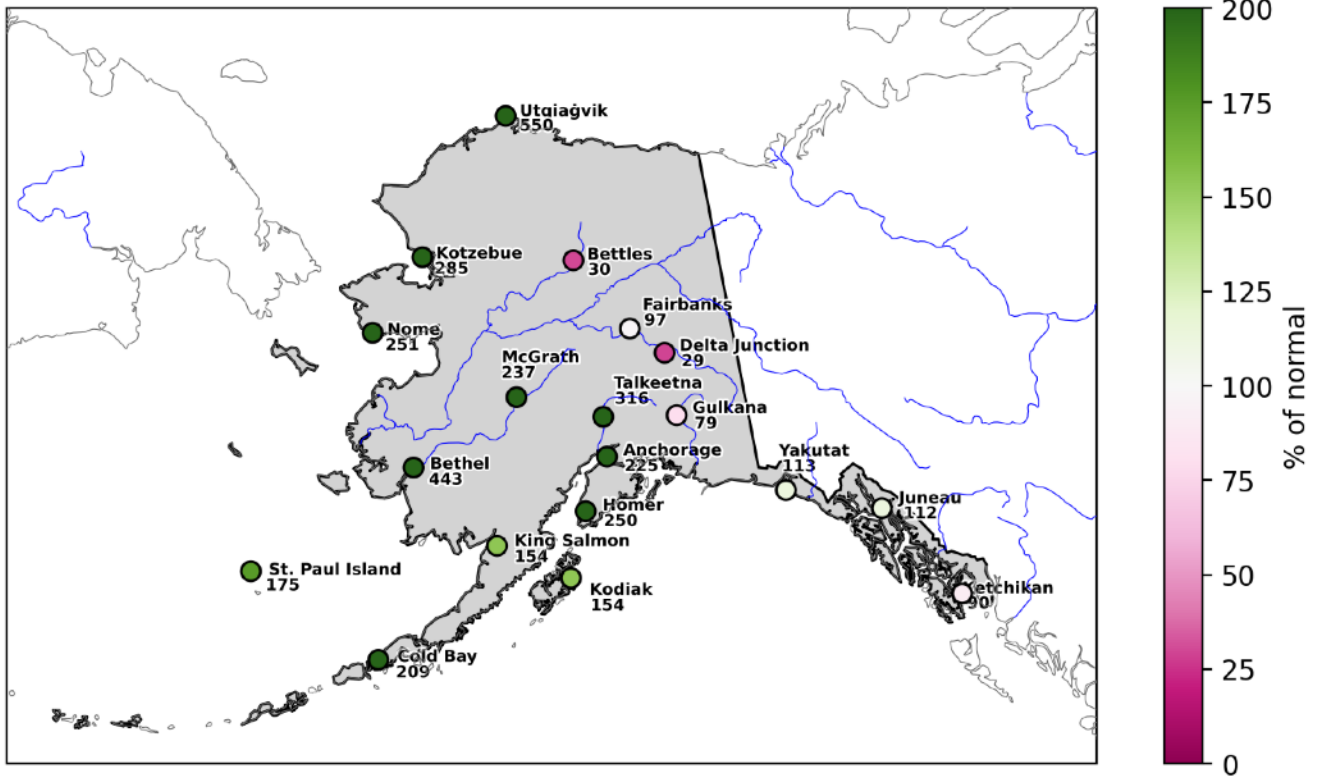


Figure 3. Daily mean temperature departures for each day in January 2025 at the selected stations.

Precipitation and snow

January was very wet, especially in western Alaska and on the North Slope. Utqiagvik had an impressive 550% of normal precipitation. Bethel is in second place with 443% of normal, followed by Talkeenta (316%) and Kotzebue (285%). Cold Bay, Anchorage, McGrath, Homer, and Nome also had more the 200% of their normal January

2025-01, Monthly Precipitation, % of Normal (1991-2020)




 Alaska Climate Research Center - akclimate.org

Figure 4. Monthly precipitation in percentage of normal (%F, 1991-2020 reference period), January 2025, at the selected First Order stations in Alaska.

precipitation (Fig. 4 & 5, Table 2). The Interior stations were relatively dry in comparison. Bettles and Delta Junction only recorded 30% and 29% of normal precipitation, respectively. Gulkana was also somewhat below normal at 79%. Fairbanks and the stations on the Panhandle were relatively close to normal. In absolute terms, Cold Bay set a new January record with 7.07 inches of total monthly precipitation. This is the wettest January in the time series for the station and beats the previous record, set only last year, by 0.25 inches.

Station	Precipitation (in)	Normal (in)	% of Normal
Anchorage	1.7	0.8	225.3
Bethel	3.4	0.8	442.9
Bettles	0.3	0.9	29.9

Station	Precipitation (in)	Normal (in)	% of Normal
Cold Bay	7.1	3.4	209.2
Delta Junction	0.1	0.2	28.6
Fairbanks	0.6	0.6	96.7
Gulkana	0.6	0.7	79.5
Homer	5.4	2.2	249.8
Juneau	6.7	6.0	112.0
Ketchikan	14.5	16.2	89.7
King Salmon	1.4	0.9	153.8
Kodiak	12.8	8.4	153.5
Kotzebue	1.8	0.6	285.5
McGrath	2.7	1.2	236.5
Nome	2.4	0.9	251.1
St. Paul Island	2.8	1.6	175.2
Talkeetna	4.2	1.3	315.7
Utqiagvik	0.8	0.1	550.0
Yakutat	14.0	12.4	112.7

Table 2. Monthly precipitation sum, normal (1991-2020) and departure expressed as a percentage of the normal (1991-2020) for selected stations throughout the state, January 2025. Colors match the color scale in Figure 4.

January snow fall was very variable at the four First Order stations that have long term snow records. Bettles had an exceedingly snowy month with more than 300% of normal snow fall and a jump to far above average snow depth. Fairbanks and Juneau had a bit more than half their normal January snowfall (55% and 60% of normal, respectively). Snow depth in Fairbanks hovered between 20 to 23 inches at the airport station throughout the month without any major jumps. Snow depth cannot tell us about the density and water content of the snow pack, which will have been affected by the warm

temperatures and rain. In Juneau, the airport station ends the month with about 3 inches of snow. There has not been a lasting seasonal snowpack at the site so far. Finally, Anchorage had over 200% of normal precipitation but only 19% of normal snow fall in January. This explains the nose dive in snow depth (grey line, Fig. 6) from 8 inches at the start of the month to no snow at all at the airport station on January 30. The combination of warm temperatures and lots of rain quite literally washed away the snow pack.

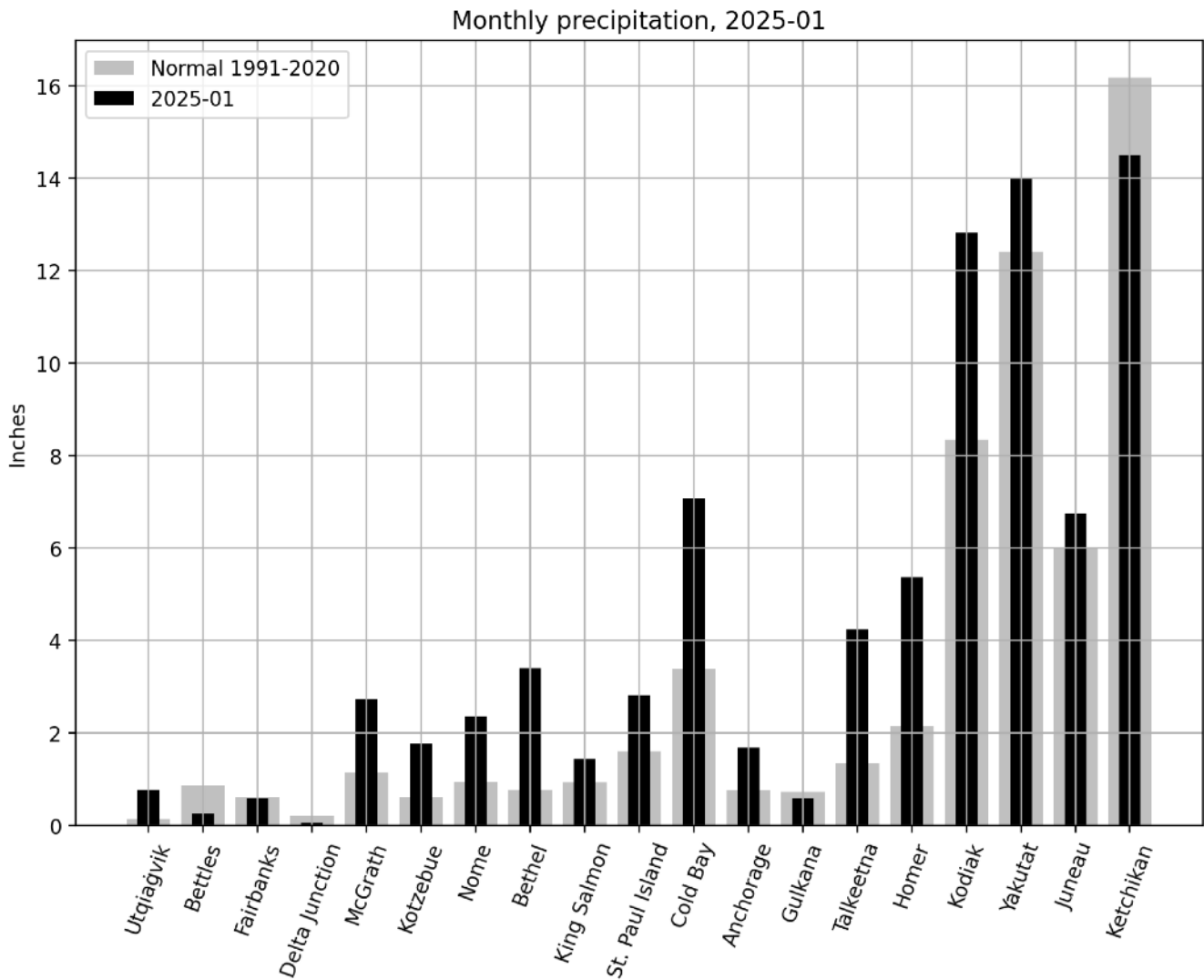


Figure 5. Monthly precipitation sum (black bars) compared to the 1991-2020 normal (grey bars) at the First Order stations.

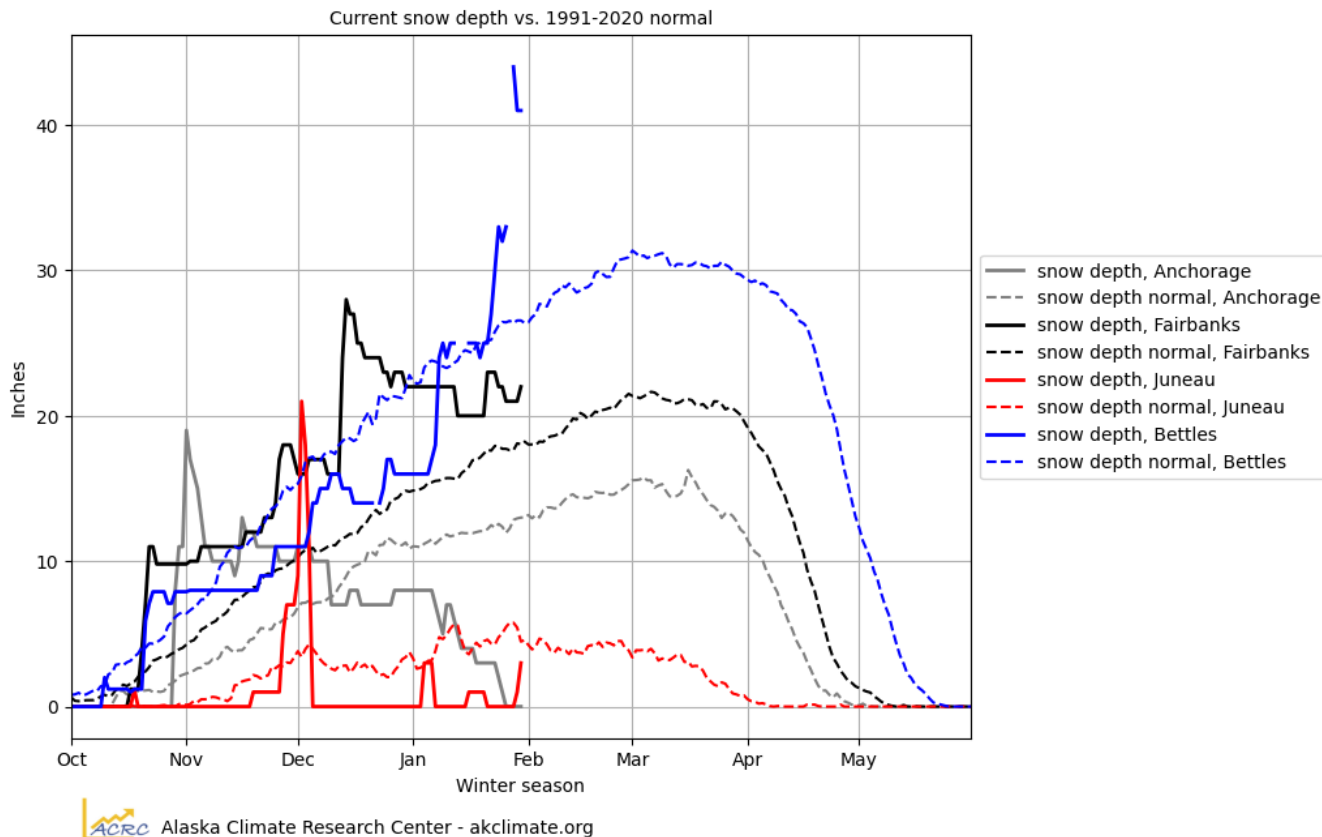


Figure 6. Current snow depth at the four First Order stations with long term records compared to the climatological normal.

Arctic Sea Ice

Arctic sea ice growth has slowed down to a crawl this month. January started with weekly growth rates between about 1.5% and 3%. During the last week of the month, sea ice extent actually decreased by -0.28%, which is very unusual for the time of year. The Arctic sea ice extent was 13.454 M km² as of January 30, compared to 12.118 M km² on December 26. Arctic Sea Ice extent remained near record low levels (in relation to the satellite time series) throughout the month.

Fig. 7 shows the current Arctic sea ice extent compared to climatology and previous notable years. Figures 8 A and B show Arctic sea ice extent and concentration on January 30, respectively.

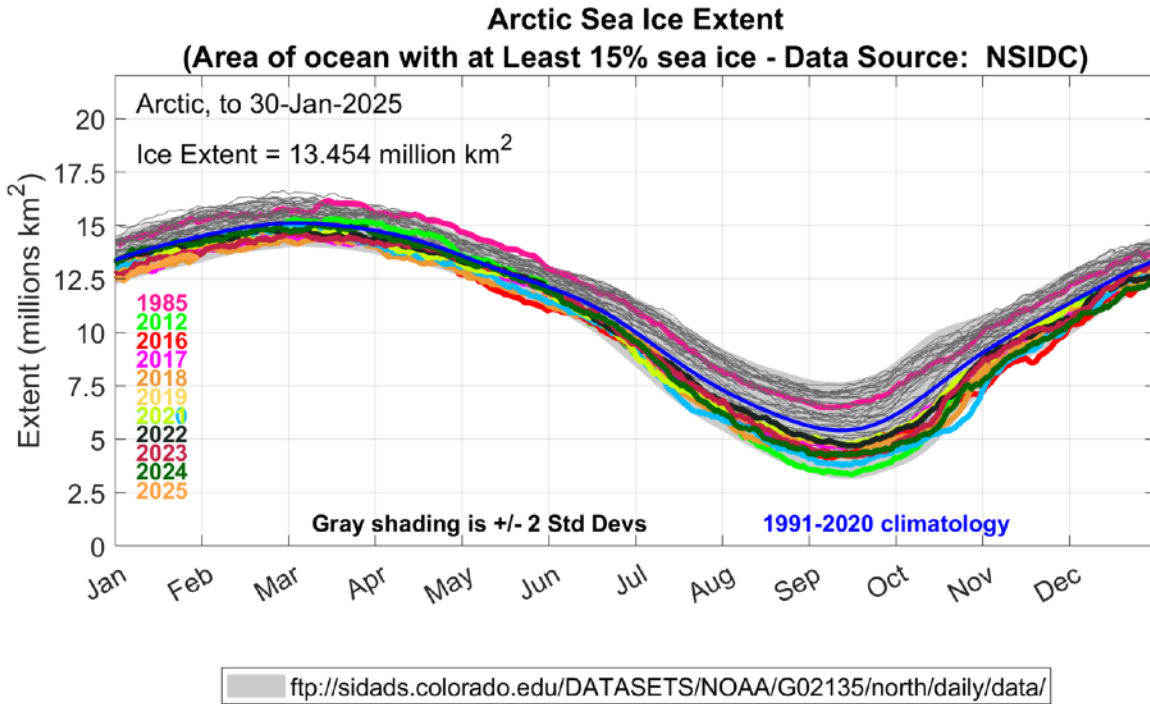


Figure 7. Time series of daily Arctic sea ice extent. This year's data (dark red) are updated until January 30, 2025. The median sea ice extent for the 1991-2020 reference period is depicted in blue. Specific years are highlighted in colors. Plot Compiled by: Howard J. Diamond, PhD; Climate Science Program Manager at NOAA's Air Resources Laboratory Data Source: National Snow & Ice Data Center (nsidc.org/)

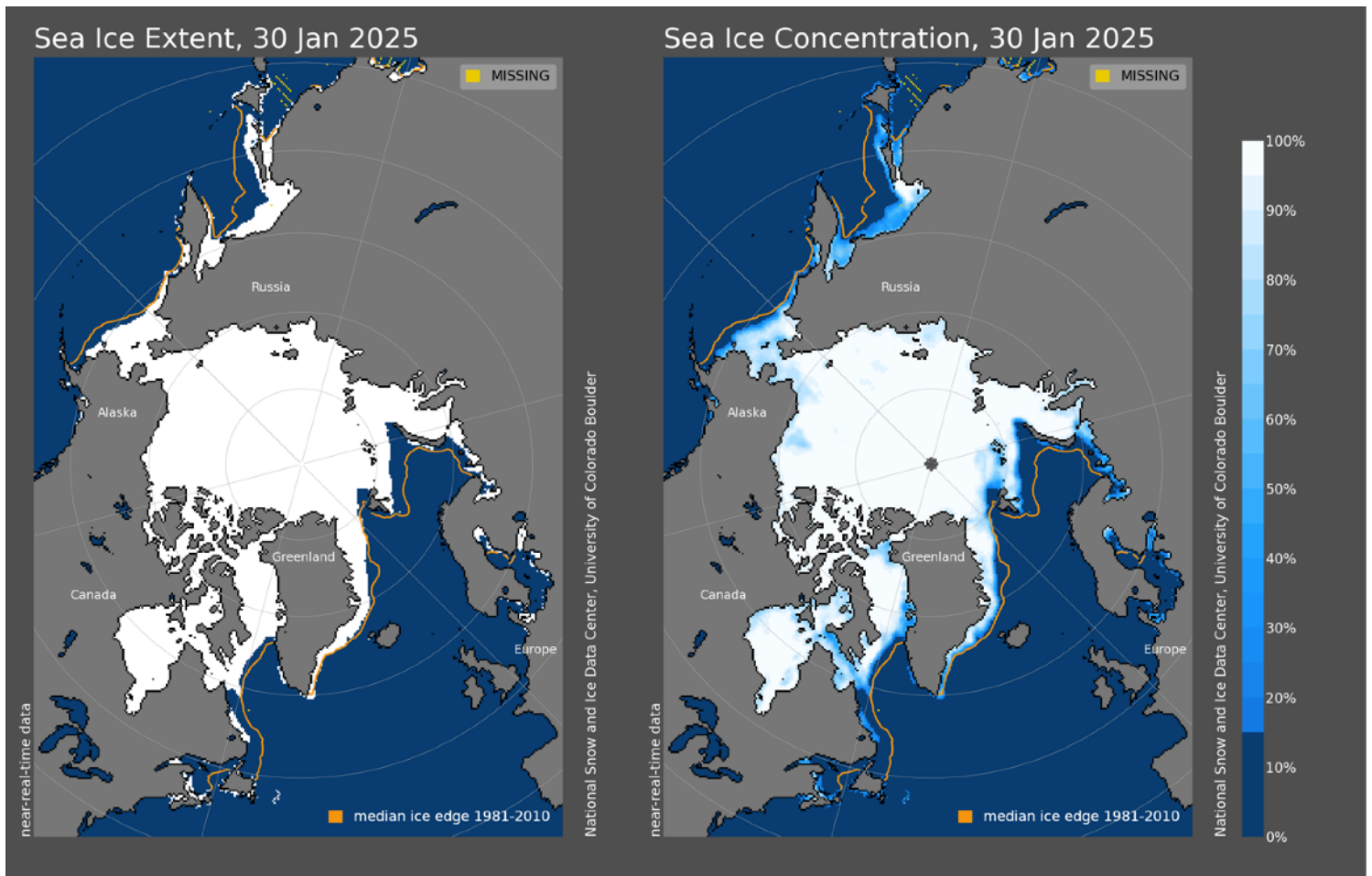


Figure 8. A (left) Arctic sea ice extent and B (right) concentrations as of January 30, 2025 compared to the average from 1981-2010 (Data and images: NSIDC)

Newsworthy Information

High temperatures and melting snow

The pronounced January warmth was repeatedly covered by regional news outlets. Notably, New Orleans has had more than twice as much snowfall as Anchorage this winter, prompting tongue in cheek demands that [Louisiana give the snow back to Alaska](#) by the Anchorage NWS office and ADN. An Anchorage resident with pet goats found that the goats rather enjoyed the lack of snow. The goats and their human were featured in an [Alaska News Source video segment](#).

Widespread impacts on traffic, skiing, mushing

High temperatures, heavy snow, freezing rain, and generally very poor road conditions impacted public life in many parts of the state. In the Interior, the January 24 rain event proved particularly disruptive. UAF cancelled afternoon classes on Jan. 24 and the Fairbanks North Star Borough School District cancelled all after school activities. [Avalanches hit the Parks Highway](#) near Cantwell on Jan. 24 and the weekend of the 25th. The highway remained closed to traffic until the debris could be cleared. High avalanche danger warnings were issued for the same weekend by the [Chugach National Forest Avalanche Information Center](#) and the [Hatcher Pass Avalanche Center](#). The Hatcher Pass road was closed over the weekend due to avalanche danger. The Hatcher Pass Avalanche Center reported that an avalanche deposited large amounts of snow in the Little Susitna River. This blocked the river and a camp ground was flooded.

The lack of snow and warm weather have also affected skiing and mushing conditions, especially in Southcentral and western Alaska. The [Kuskokwim 300 sled dog race was postponed](#) due to poor snow conditions. The Iditarod is currently set to [start as planned](#) and run the traditional southern route despite concerns about snow conditions and earlier news about [alternative routes being evaluated](#).

The Fairbanks ski resorts Moose Mountain and Skiland temporarily closed during the January 24-25 episode of warm, wet weather and very poor road conditions ([Moose Mountain: "wet mess continues"](#)). Cross country trails at Birch Hill were similarly affected. Skiland ended the month with another weather closure day on Jan. 31 due to temperatures dropping below their safe operating limit. On social media, they noted a 70°F temperature swing compared to the previous week of "wet mess".

Appendix

Highest Average Daily Temperature Record				
Station	Date	New Record (°F)	Year of Old Record	Old Record (°F)
Anchorage	2025-01-07	39.0	2001	36.5
Anchorage	2025-01-11	37.0	1985	34.5
Anchorage	2025-01-12	40.0	1984	34.5
Anchorage	2025-01-26	39.5	2014	39.0
Bettles	2025-01-11	23.5	1955	21.0
Bettles	2025-01-12	30.0	1984	19.0
Bettles	2025-01-13	28.5	1993	22.5
Bettles	2025-01-22	27.5	1987	26.0
Bettles	2025-01-23	29.5	1991	28.5
Cold Bay	2025-01-17	42.0	1963	41.0
Cold Bay	2025-01-23	44.0	1963	42.5
Cold Bay	2025-01-24	43.0	1963	42.5
Delta Junction	2025-01-11	33.5	1985	27.5
Delta Junction	2025-01-12	40.0	1984	31.0
Delta Junction	2025-01-24	43.0	1977	41.5
Delta Junction	2025-01-25	42.5	1977	40.0
Delta Junction	2025-01-26	44.0	2014	36.5
Fairbanks	2025-01-13	32.0	2013	26.0
Fairbanks	2025-01-24	35.0	2014	32.5
Fairbanks	2025-01-25	36.0	1981	31.5
Fairbanks	2025-01-26	33.5	1991	27.5
Gulkana	2025-01-07	33.5	1987	31.5

ALASKA CLIMATE RESEARCH CENTER

Gulkana	2025-01-11	36.0	1949	32.0
Gulkana	2025-01-25	38.0	1977	36.0
Gulkana	2025-01-26	36.5	2017	33.5
Homer	2025-01-06	41.0	1988	39.0
Homer	2025-01-11	41.0	1942	40.0
Homer	2025-01-24	45.5	1977	44.0
Homer	2025-01-25	47.0	2014	45.5
Juneau	2025-01-09	43.5	2002	42.0
King Salmon	2025-01-18	46.0	1930	38.5
King Salmon	2025-01-25	45.5	2014	41.5
Kodiak	2025-01-18	41.0	1961	40.5
Kodiak	2025-01-25	45.0	2014	41.5
Kotzebue	2025-01-11	25.0	2003	24.5
Kotzebue	2025-01-12	30.5	2013	23.0
Kotzebue	2025-01-19	32.0	1965	27.5
McGrath	2025-01-12	31.0	1984	30.5
McGrath	2025-01-19	33.5	1963	33.0
McGrath	2025-01-24	35.5	1991	31.0
St. Paul Island	2025-01-17	38.5	1927	38.0
St. Paul Island	2025-01-31	38.5	1927	38.0
Talkeetna	2025-01-12	36.0	1984	34.5
Yakutat	2025-01-06	46.5	1958	45.0
Yakutat	2025-01-11	44.0	1926	43.5

Yakutat	2025-01-12	43.5	1930	41.5
---------	------------	------	------	------

Table A1: January 2025 daily records of maximum daily temperature, i.e. highest/lowest values of maximum daily temperature ever recorded on specific days. Records are computed since the beginning of the respective time series. 46 new highest daily temperature records were set.

Highest Maximum Daily Temperature Record				
Station	Date	New Record (°F)	Year of Old Record	Old Record (°F)
Anchorage	2025-01-06	42.0	2014	41.0
Anchorage	2025-01-11	42.0	1989	40.0
Anchorage	2025-01-12	44.0	2003	41.0
Bettles	2025-01-12	37.0	1955	28.0
Bettles	2025-01-13	35.0	1981	32.0
Bettles	2025-01-24	37.0	1981	33.0
Cold Bay	2025-01-23	47.0	1963	45.0
Delta Junction	2025-01-07	44.0	1987	37.0
Delta Junction	2025-01-11	41.0	1984	35.0
Delta Junction	2025-01-12	45.0	1984	42.0
Delta Junction	2025-01-26	47.0	1948	41.0
Fairbanks	2025-01-12	47.0	1984	39.0
Fairbanks	2025-01-13	42.0	1984	33.0
Gulkana	2025-01-11	39.0	1949	36.0
Juneau	2025-01-09	47.0	1943	45.0
King Salmon	2025-01-18	51.0	1937	43.0
Kodiak	2025-01-25	46.0	1950	43.0
Kotzebue	2025-01-12	33.0	1993	30.0

McGrath	2025-01-12	44.0	1984	36.0
McGrath	2025-01-13	41.0	1993	39.0
McGrath	2025-01-23	42.0	2000	41.0
McGrath	2025-01-24	43.0	1961	39.0
St. Paul Island	2025-01-23	41.0	1980	40.0
Talkeetna	2025-01-06	42.0	2002	41.0
Talkeetna	2025-01-12	40.0	2003	39.0
Utqiagvik	2025-01-24	33.0	1991	31.0
Yakutat	2025-01-11	47.0	1926	46.0

Table A2: January 2025 daily records of maximum daily temperature, i.e. highest/lowest values of maximum daily temperature ever recorded on specific days. Records are computed since the beginning of the respective time series. 27 new highest and no new lowest maximum daily temperature records were set.

Highest Minimum Daily Temperature Record				
Station	Date	New Record (°F)	Year of Old Record	Old Record (°F)
Anchorage	2025-01-07	36.0	1977	29.0
Anchorage	2025-01-12	36.0	1984	32.0
Anchorage	2025-01-24	38.0	2014	35.0
Anchorage	2025-01-25	37.0	1977	35.0
Anchorage	2025-01-26	33.0	1975	32.0
Bethel	2025-01-18	36.0	1937	33.0
Bettles	2025-01-11	18.0	1955	17.0
Bettles	2025-01-12	23.0	1978	11.0
Bettles	2025-01-13	22.0	2013	18.0
Bettles	2025-01-22	24.0	1991	21.0
Cold Bay	2025-01-17	40.0	1963	38.0

ALASKA CLIMATE RESEARCH CENTER

Cold Bay	2025-01-23	41.0	1963	40.0
Cold Bay	2025-01-24	42.0	1963	40.0
Delta Junction	2025-01-11	26.0	1985	25.0
Delta Junction	2025-01-12	35.0	1985	23.0
Delta Junction	2025-01-24	41.0	1977	35.0
Delta Junction	2025-01-25	41.0	1977	32.0
Delta Junction	2025-01-26	41.0	2014	33.0
Fairbanks	2025-01-13	22.0	2013	19.0
Fairbanks	2025-01-24	28.0	1950	23.0
Fairbanks	2025-01-25	33.0	1981	22.0
Fairbanks	2025-01-26	28.0	1977	19.0
Gulkana	2025-01-07	30.0	1987	28.0
Gulkana	2025-01-11	33.0	1949	28.0
Gulkana	2025-01-12	33.0	1984	31.0
Gulkana	2025-01-24	35.0	2014	34.0
Gulkana	2025-01-25	36.0	1977	33.0
Gulkana	2025-01-26	33.0	1948	30.0
Homer	2025-01-06	37.0	1993	36.0
Homer	2025-01-24	44.0	1977	41.0
Homer	2025-01-25	44.0	1936	37.0
Juneau	2025-01-09	40.0	2002	39.0
Juneau	2025-01-12	39.0	1986	37.0
Ketchikan	2025-01-09	45.0	2010	44.0
King Salmon	2025-01-18	41.0	1930	36.0
King Salmon	2025-01-24	41.0	1977	39.0
King Salmon	2025-01-25	43.0	2016	39.0
Kodiak	2025-01-18	40.0	1963	39.0

Kodiak	2025-01-25	44.0	2014	40.0
Kotzebue	2025-01-12	28.0	2013	20.0
Kotzebue	2025-01-19	29.0	1985	24.0
McGrath	2025-01-24	28.0	1977	26.0
St. Paul Island	2025-01-31	38.0	1927	37.0
Talkeetna	2025-01-11	30.0	1926	28.0
Yakutat	2025-01-06	44.0	1958	41.0
Yakutat	2025-01-09	43.0	1981	42.0

Table A3: January 2025 daily records of inimum daily temperature, i.e. highest/lowest values of minimum daily temperature ever recorded on specific days. Records are computed since the beginning of the respective time series. 46 new highest and no new lowest minimum daily temperature records were set.

ALASKA CLIMATE RESEARCH CENTER

This information consists of climatological data compiled by the Alaska Climate Research Center, Geophysical Institute, University of Alaska Fairbanks. For more information on weather and climatology, visit the center website at <http://akclimate.org>. Please report any comments, ideas or errors to uaf-climate@alaska.edu.