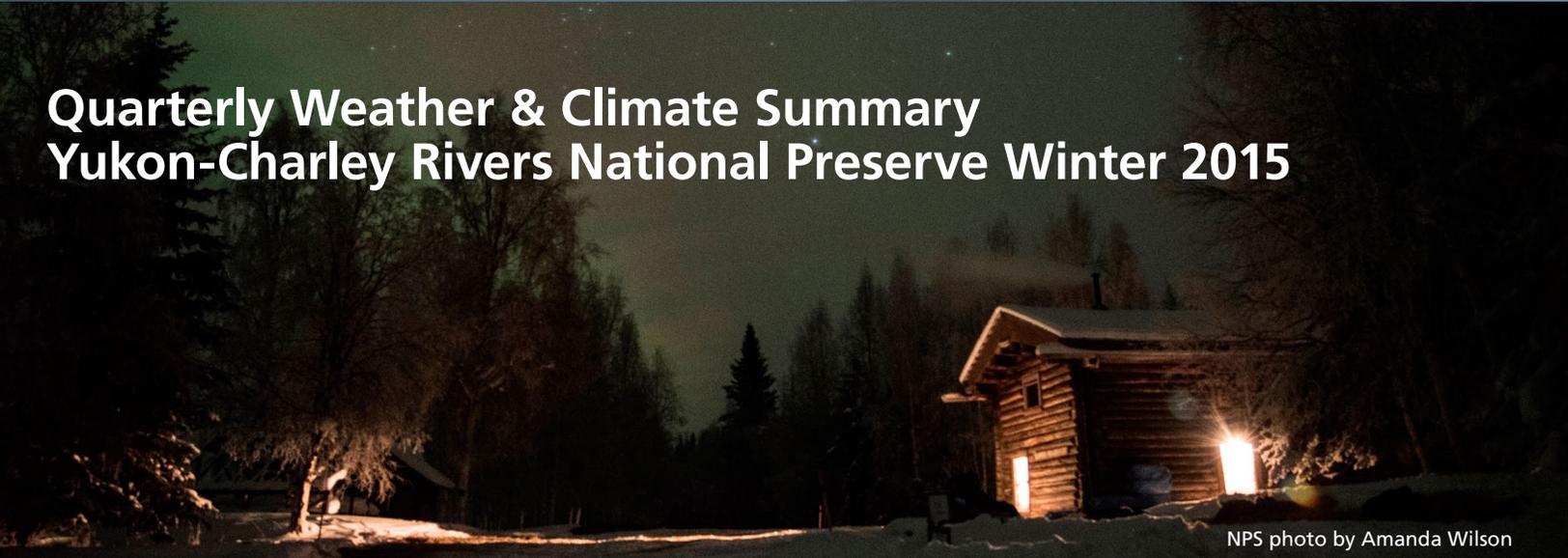




## Quarterly Weather & Climate Summary Yukon-Charley Rivers National Preserve Winter 2015



NPS photo by Amanda Wilson

### Eagle Winter Weather

In Eagle, December was warm and dry. The average monthly temperature of 6.2°F was 10.2°F warmer than normal. The low temperature for the month was only -25°F, not that cold for Eagle in December. The third week of the month was particularly warm with near record high temperatures. The monthly snowfall total was 6 inches, or 50% of normal. Most of the snow fell during the first week of the month.

The temperatures in January cooled a bit, but still came in above normal for the month. The average temperature was -5.7°F compared to a normal value of -9.5°F. It finally started to snow a bit more with a monthly total of 16.5 inches for January, which is ~ 206% of normal. A one day snow total of 7.5 inches was recorded on January 14.

Overall, temperatures were above normal for February. Temperatures were below normal for the first week of February bottoming out at -55°F on the 8th, but then climbed dramatically through the second week. A high temperature of 37°F was recorded on both the 18th and 19th of the month. There were five days in February where the daily high temperature was above freezing. Monthly snowfall totals were 56% of normal for the month, but the water content of the snow was near normal due to the warmer than normal temperatures.

Overall, the average winter temperature at Eagle was -1.0° F which is 4.7° F warmer than the 1981-2010 normal (Figure 1). The snowfall total was just below normal, but the water content was 0.34 inches more than normal (Figures 1 and 2; Tables 1, 2, and 3).

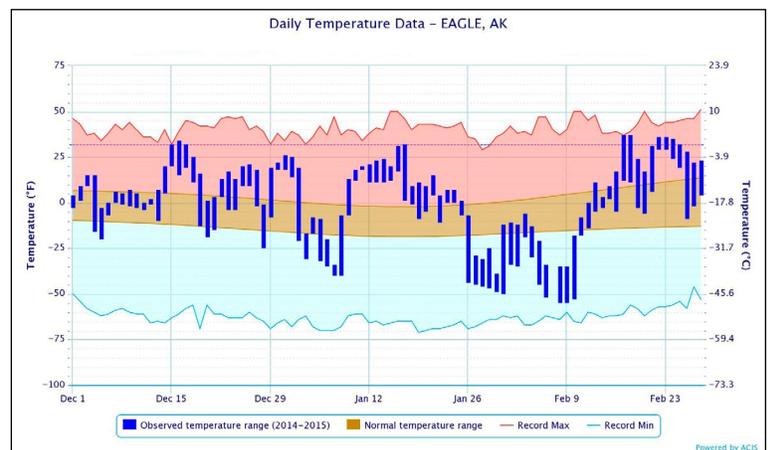


Figure 1. Winter 2015 daily temperatures at Eagle showing **record maximum** (red), **record minimum** (blue), **normal** (brown) and **2015 observed** range (blue bars).

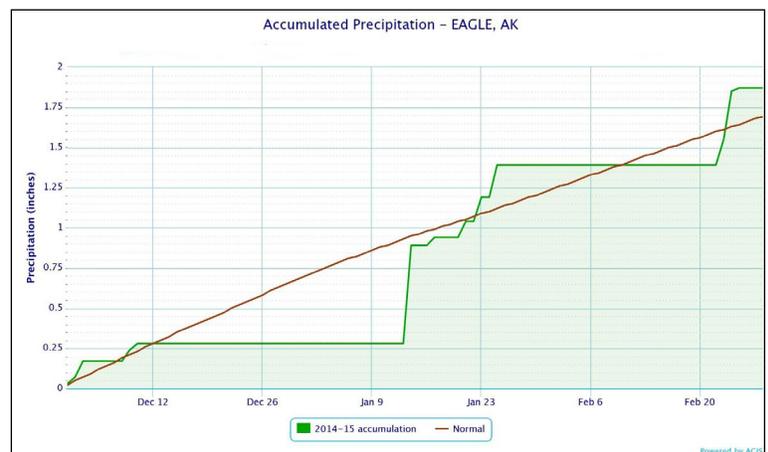


Figure 2. **Winter 2015** precipitation at Eagle (green) compared to **normal** (brown line).

Table 1. Temperature: Winter 2015 average monthly temperatures compared to the 1981-2010 normal.

Winter 2014-2015	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
December	6.2	-4.0	+10.2	34 / Dec. 16	-25 / Dec. 28
January	-5.7	-9.5	+3.8	32 / Jan. 17	-50 / Jan. 31
February	-3.5	-3.7	+0.2	37 / Feb. 17, 18	-55 / Jan. 7, 8, 9

Winter Season Temperature Departure from Normal: +4.7°F

Table 2. Precipitation: Winter 2015 monthly precipitation totals compared to normal.

Winter 2014-2015	Total Monthly Precip. in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. total in. / Date	# Days with >=0.01 in. water
December	0.28	0.69	-0.41	0.10 / Dec. 3	5
January	1.11	0.53	+0.58	0.61 / Jan. 14	5
February	0.48	0.47	+0.01	0.30 / Feb. 24	3

Winter Season Precipitation Departure from Normal: +0.18 inches (111% of normal)

Table 3. Snowfall: Winter 2015 monthly snowfall totals compared to normal.

Winter 2014-2015	Total Monthly Snowfall in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. snowfall total in. / Date	Cumulative snowfall since 1-July in.
December	6.0	12.0	-6.0	2.0 / Dec. 2	21.1
January	16.5	8.0	+8.5	7.5 / Jan. 14	37.6
February	4.5	8.0	-3.5	3.0 / Feb. 24	42.1

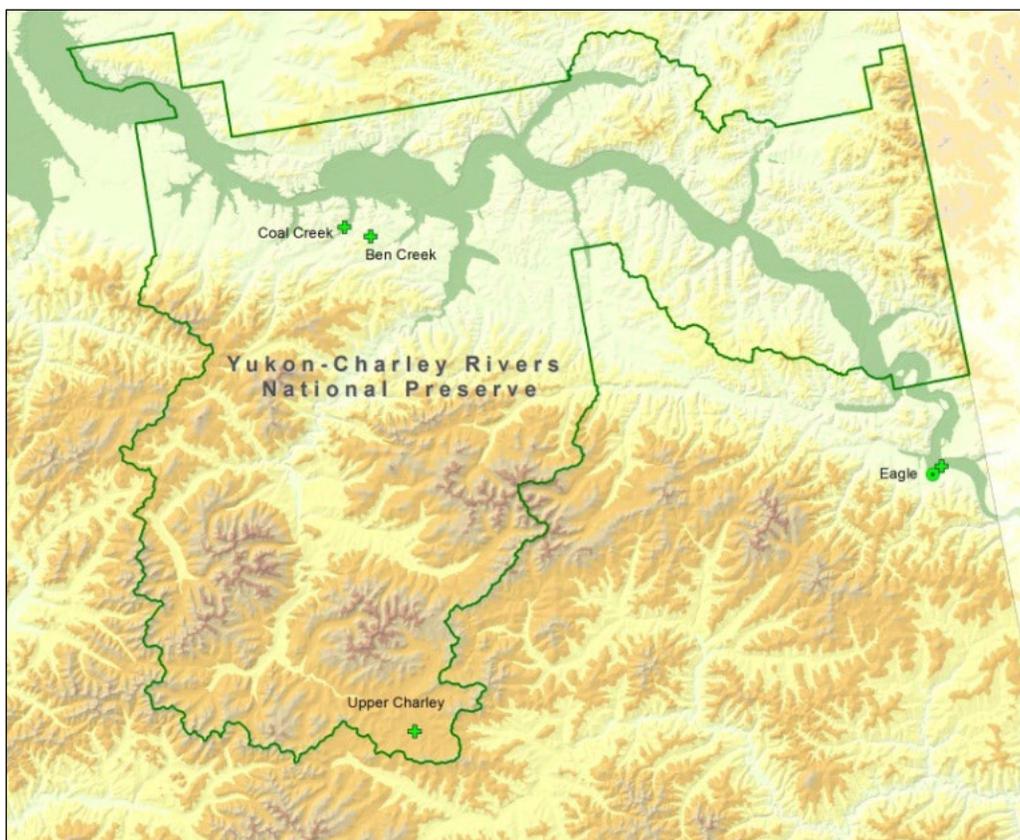


Figure 3. NPS climate stations in Yukon-Charley Rivers National Preserve.

Table 4. Summary of winter weather statistics from the YUCH climate stations. All data are preliminary and subject to review.

Site	Elev. (ft)	Average Temp °F			Extreme High (°F)	Extreme Low (°F)	Peak Wind (mph)	Snow Depth Feb. 28 (inches)	Average Temp. Winter Season (°F)
		Dec.	Jan.	Feb.					
Ben Creek	1850	—	—	—	—	—	—	—	
Coal Creek	870	0.5	-10.2	-4.9	39	-55	11	27	-4.9
Upper Charley	3654	9.4	0.9	5.5	31	-33	33	21	5.3

### Climate Monitoring in Yukon-Charley Rivers National Preserve

The NPS climate stations Yukon-Charley Rivers are approaching the 10-year mark for climate monitoring. The stations complement long-term records available from the National Weather Service station in Eagle. The Upper Charley station is providing critical high elevation data which helps characterize climate gradients and patterns affecting resources in Yukon-Charley Rivers National Preserve. Table 4 summarizes the winter weather data for NPS sites.

### Interesting Notes from the YUCH Climate Stations

- The monthly mean temperature for the 2014-2015 winter at the Upper Charley site at an elevation of 3654 ft. was 10.1° F warmer than Coal Creek at 870 ft.
- Over the past decade, the monthly temperature at Coal Creek in December has, on average, been -9.0°F; this December was almost 10°F warmer.

### Eagle Winter Temperature Trend

The average winter temperature for 2015 was -1.0°F, which is 4.7°F warmer than the 1981-2010 normal and 7.2°F degrees warmer than the long-term average (1949-2015). We calculate the average winter temperature by simply taking the average of December, January, and February monthly temperatures.

Average winter temperatures show tremendous variability with a range between -25.5°F in 2003 and 7.6°F in 1965. There has been a significant increase in winter temperatures over the past six decades based on a simple linear regression ( $p < 0.01$ ). The 10-year moving average shows the warmest period in the early 2000s. The winter of 2014-2015 ranks as the 9th warmest winter on record (Figure 4).

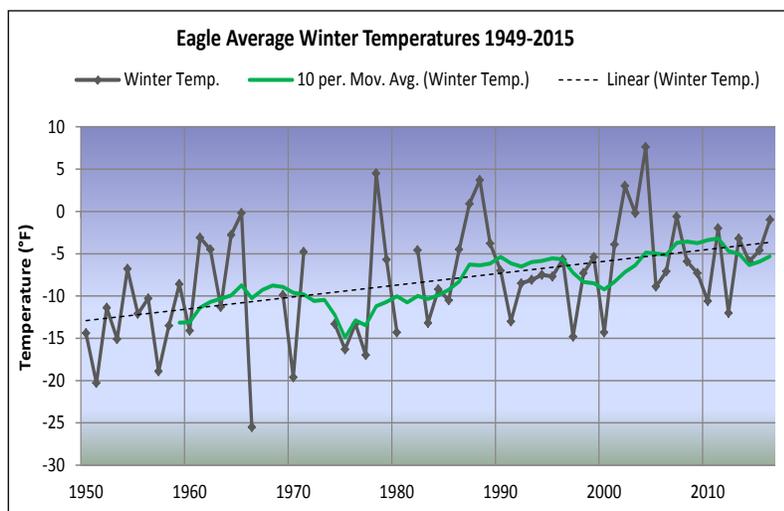


Figure 4. Average winter (Dec., Jan., Feb.) temperatures in Eagle since 1949. The green line is a 10-year moving average. The dotted line is a simple linear regression.

### Connecting Further

- Previous weather summaries and other climate monitoring documents on the [Central Alaska Network web portal](#)
- Access near real-time data from [Western Regional Climate Center](#) and [MesoWest](#)
- Statewide summary of weather highlights in the latest [Alaska Climate Dispatch](#) from the Alaska Center for Climate Assessment and Policy
- [Maps](#) of projected temperature and precipitation changes for Yukon-Charley Rivers National Preserve

### More Information

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