



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

Eagle Spring Weather

In Eagle, March was warmer than normal with precipitation near the long term average. The average monthly temperature of 13.8° F was 6.6° F warmer than normal. A cold snap March 10-16 brought temperatures as low as -42° F. Temperatures increased more than 75° F in 72 hours with a high temperature of 34° F on March 18. The warmest temperature of the month (50° F) occurred on March 28th. Total snowfall for the month was 5.6 inches. Normal is 6.1 inches. Snow depth throughout the month was between 18 and 22 inches.

With an average monthly temperature of 34.5° F, April 2015 was the 7th warmest April on record. Normal is 28.9° F. Precipitation totaled 1.20 inches of water in the form of both rain and snow. Normal April precipitation is 0.26 inches. It rained 0.65 inches on April 21, a daily record for the date. Snowpack melt-out at the airport occurred on April 27, three days earlier than the long-term mean.

May was hot and dry. Breakup on the Yukon River started on May 6. High temperature records were set 10 out of 11 days between May 15-25. With a high of 91° F, May 24 was well publicized as the new statewide record for the earliest day in the year with a temperature above 90° F. Precipitation was well-below normal with 0.53 inches compared to a normal of 1.10 inches for May.

Overall, the average spring temperature at Eagle was 34.1° F which is 6.7° F warmer than the 1981-2010 normal and 7.0° F warmer than the long-term average (1949-2015). It was the warmest spring since continuous and reliable records began in 1949. (see Figures 1,2, and 4; Table 1, 2, and 3).

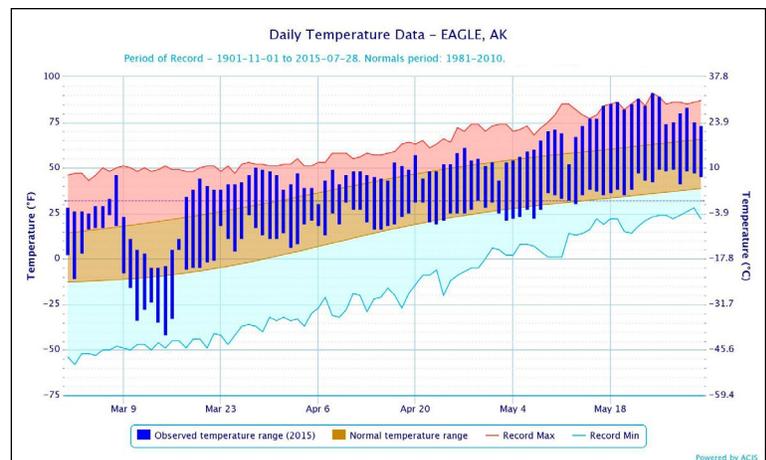


Figure 1. Spring 2015 daily temperatures at Eagle showing **record maximum** (red), **record minimum** (blue), **normal** (brown) and **2015 observed** range (blue bars).

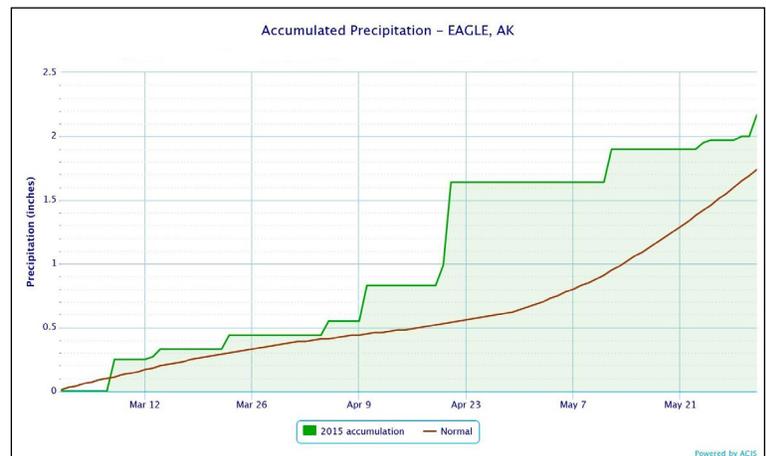


Figure 2. Spring **2015 accumulated precipitation** at Eagle (green) compared to **normal** (brown line).

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

Spring 2015	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
March	13.8	7.2	+6.6	50 / March 28	-42 / March 15
April	34.5	28.9	+5.6	61 / April 27	6 / Apr 2
May	54.0	46.1	+7.9	91* / May 24	21 / May 3

Spring Season Temperature Departure from Normal: +6.7°F

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

Spring 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
March	0.44	0.38	+0.06	0.05 / March 8	4
April	1.20	0.26	+0.94	0.65 / Apr 21	4
May	0.53	1.10	-0.57	0.26 / May 12	5

Spring Season Precipitation Departure from Normal: +0.43 inches (125% of normal)

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

Spring 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.	Snow Depth at end of month
March	5.6	6.1	-0.5	3.5 / March 8	47.7	18
April	5.0	3.1	+1.9	2.0 / April 5	52.7	0
May	0	1	-1.0	---	52.7	0

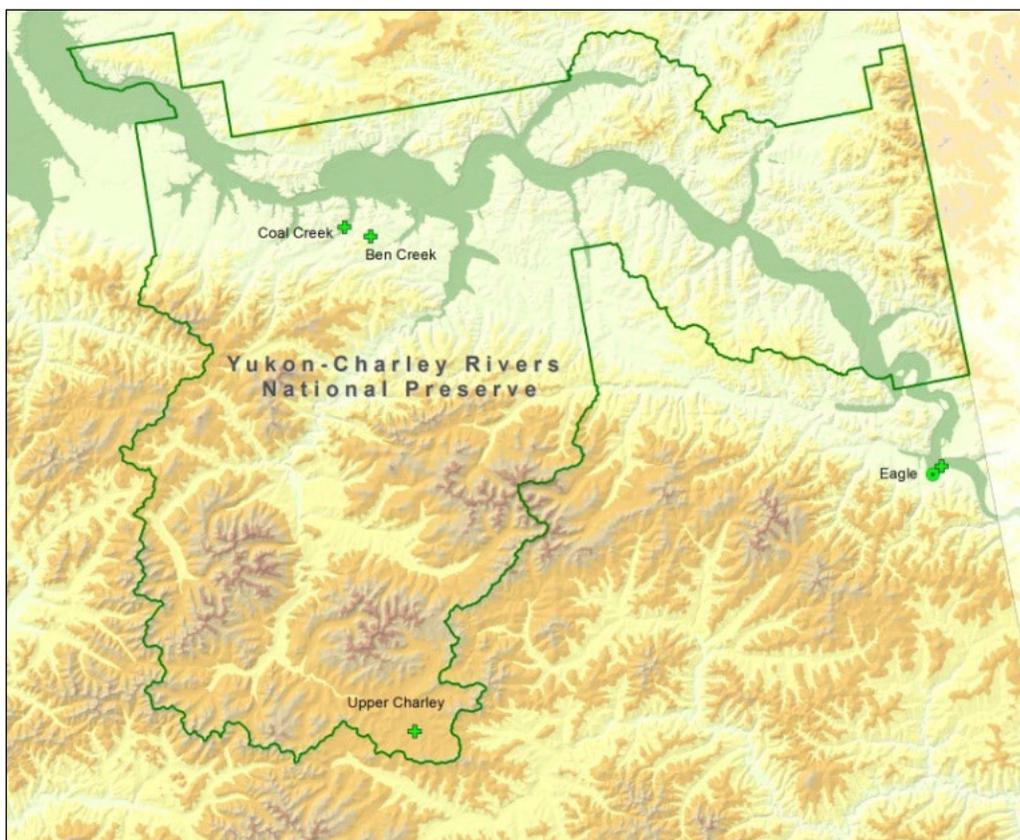


Figure 3. NPS climate stations in Yukon-Charley Rivers National Preserve.

Table 4. Summary of 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)	Max Snow Depth (inches)	Snow Off (date)	Average Temp. Spring Season (°F)
		Mar.	Apr.	May						
Ben Creek	1850	19.7	33.8	55.6	87	-23	33	--	--	36.4
Coal Creek	870	14.8	33.7	53.6	89	-40	13	30	May 3	34.0
Upper Charley	3654	13.0	28.0	47.7	73	-29	33	24	May 9	29.6

Climate Monitoring in Yukon-Charley Rivers National Preserve

The NPS climate stations in 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 spring weather data for NPS sites.

We have added a phenology camera to the Upper Charley climate station. The camera captures images four times per day; the images are downloaded once a year. The images are used to help quantify the snow season, green-up period, and other basic phenologic information.

Interesting Notes from the YUCH Climate Stations

- The low elevation Coal Creek station had the largest temperature swing for the spring season, with a low of -40° F on March 10 and a high of 89° F on May 24.
- The average April temperature at Upper Charley was 12.3° F in 2013; this year it was 28.0° F.
- It was the deepest snowpack at Coal Creek since 2005.

Eagle Spring Temperature Trend

The average spring temperature for 2015 was 34.1° F, which is 6.7° F warmer than the 1981-2010 normal (the latest climate normal period) and 7.0° F degrees warmer than the long-term average (1949-2015). It was the warmest spring on record since reliable, continuous measurements began in 1949. We calculate the average spring temperature by simply taking the average of March, April, and May monthly temperatures. There is not a significant trend in spring temperatures over the period of record. The 10-year moving average shows the warmest period in the late 1990s (Figure 4).

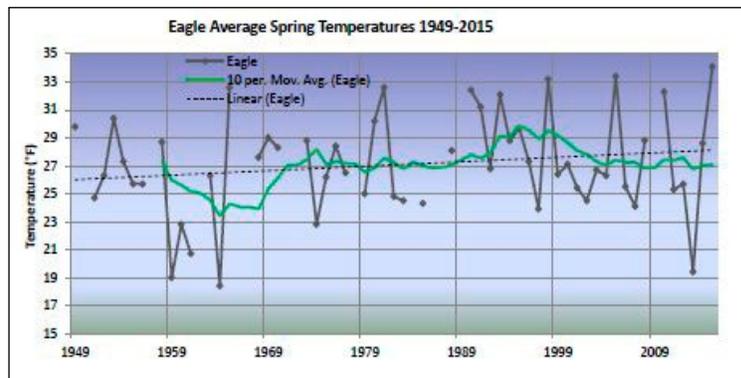


Figure 4. Average spring (Mar., Apr., May) temperatures in Eagle since 1949. The green line is a 10-year moving average. The dotted line is a simple linear regression.

Connecting Further

- New paper published – [Recent Sea Ice Increase and Temperature Decrease in the Bering Sea area, Alaska](#)
- 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

Pam Sousanes; pam_sousanes@nps.gov; ph 907-455-0677

Ken Hill; kenneth_hill@nps.gov; ph 907-455-0678

<http://science.nature.nps.gov/im/units/cakn>