

Missouri River Basin Mountain Snowpack Report

2022-2023 Winter Season

Winter of 2022-2023. The July 1 forecasted runoff for the Missouri River Basin above Sioux City, IA for calendar year 2023 (CY 2023) is 29.2 million acre-feet (MAF), 114% of average. On July 1, 2023, the mountain snowpack Snow Water Equivalent (SWE) in both the Above Fort Peck and the Peck to Garrison reaches had melted. The mountain snowpack normally peaks in the Above Fort Peck and the Fort Peck to Garrison reaches near April 17. The following tabulation is a summary of this year's mountain SWE accumulations, and the CY 2023 runoff forecast for the first of each month.

CY 2023 Mountain Snowpack Accumulations in Percent of Average SWE									
Reach	Jan 1	Feb 1	Mar 1	Apr 1	May 1	Jun 1*	Jul 1*	Peak Accum.*	Peak Date
Above Fort Peck	112	107	105	116	111	16	0	117	Apr 24
Fort Peck to Garrison	104	99	101	109	98	15	0	109	Apr 6

*Percent of Normal April 17 Peak (Averages 1991-2020)

Forecasted CY 2023 Upper Missouri River Basin Annual Runoff in MAF									
Location	Jan 1	Feb 1	Mar 1	Apr 1	May 1	Jun 1	Jul 1	Aug 1	Sep 1
Above Sioux City, Iowa	20.8	21.1	21.5	26.4	26.9	26.8	29.2		
Percent of Average (25.7 MAF)	81%	82%	84%	103%	105%	104%	114%		

For comparison purposes, the mountain SWE for the previous two years were:

CY 2022 Mountain Snowpack Accumulations in Percent of Average SWE								
Reach	Jan	Feb	Mar	Apr	May		Peak Accum*	Peak Date
Above Fort Peck	89	86	80	73	92		85	Apr 29
Fort Peck to Garrison	86	83	80	73	96		91	May 3

*Percent of Normal April 17 Peak (Averages 1991-2020)

CY 2021 Mountain Snowpack Accumulations in Percent of Average SWE								
Reach	Jan	Feb	Mar	Apr	May		Peak Accum*	Peak Date
Above Fort Peck	78	78	94	88	78		86	Mar 31
Fort Peck to Garrison	82	78	94	94	91		96	Apr 26

*Percent of Normal April 15 Peak (Average 1981-2010)

SNOTEL Mountain snowpack SWE station data is provided by the USDA Natural Resource Conservation Service (NRCS). Normally by April 17, (Average 1991-2020) 100% of the peak mountain snowpack SWE accumulation has occurred. The snow melts during the May through July timeframe and provides significant Mainstem inflow, which is stored to prevent downstream flooding and later used to meet the Mainstem's authorized project purposes. Knowing the amount of mountain SWE at the first of each month for selected mountain snowpack areas does not reduce the considerable runoff variability because the weather conditions during the melt period greatly influences the runoff yield. The total percent of average SWE accumulation are shown for the first of each month through May. For the period of May through July, the percentages recorded are a percent of the peak SWE accumulation for the year. This indicates the remaining amount of snow to melt in the mountains.