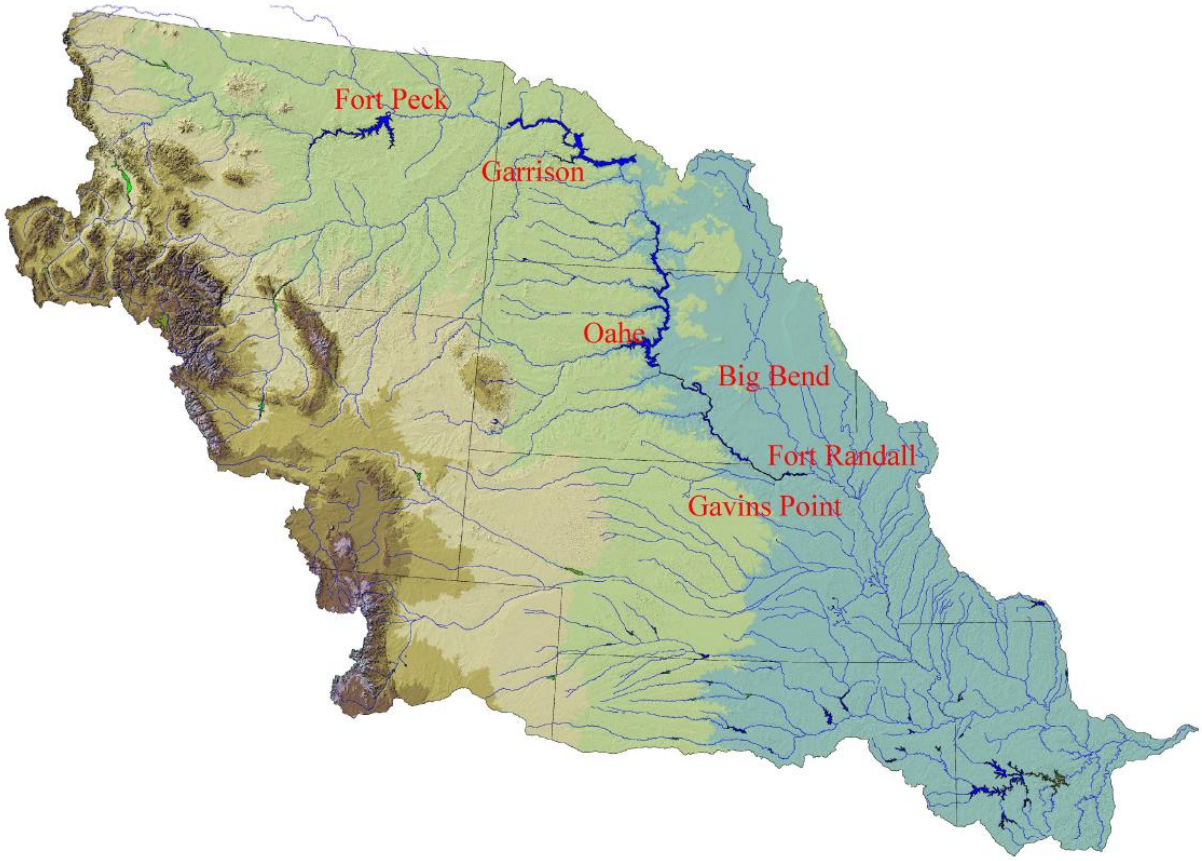
US Army Corps
of Engineers ®
Northwestern Division

Missouri River Mainstem Reservoir System

Summary of Actual 2025 Regulation

Missouri River Basin



US Army Corps of Engineers
Northwestern Division
Missouri River Basin Water Management Division
Omaha, Nebraska

June 2026

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Missouri River Mainstem Reservoir System
Summary of Actual 2025 Regulation
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Plate 2	Summary of Engineering Data – Missouri River Mainstem System

List of Abbreviations and Acronyms

ACIS	Applied Climate Information System
AOP	annual operating plan
AF	acre-feet
cfs	cubic feet per second
consultation	government-to-government consultation
USACE	US Army Corps of Engineers
CPC	Climate Prediction Center
CPFLP	coldwater permanent fish life propagation
CY	calendar year (January 1 to December 31)
deg C	degrees Celsius
deg F	degrees Fahrenheit
EOM	end of month
HPRCC	High Plains Regional Climate Center
kW	kilowatt
kWh	kilowatt hour
M	million
MAF	million acre-feet
Master Manual	Missouri River Mainstem Reservoir System Master Water Control Manual
MRBWM	Missouri River Basin Water Management
MW	megawatt
MWh	megawatt hour
NCEI	NOAA National Centers for Environmental Information
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
NOHRSC	National Operational and Hydrologic Remote Sensing Center
NRCS	Natural Resources Conservation Service
NWCC	NRCS National Water and Climate Center
NWD	USACE Northwestern Division
NWK	USACE Kansas City District
NWO	USACE Omaha District

List of Abbreviations and Acronyms

OPPD	Omaha Public Power District
PA	2004 Programmatic Agreement
plover	piping plover
P-S MBP	Pick-Sloan Missouri Basin Program
SNOTEL	SNOwpack TELemetry
SWE	snow water equivalent
System	Missouri River Mainstem Reservoir System
tern	interior least tern
TMDL	total maximum daily load
T&E	threatened and endangered
USBR	US Bureau of Reclamation
USDA	US Department of Agriculture
USGS	US Geological Survey
WCSC	Waterborne Commerce Statistics Center
Western	Western Area Power Administration
WPFLP	warmwater permanent fish life propagation

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MISSOURI RIVER MAINSTEM RESERVOIR SYSTEM

Summary of Actual 2025 Regulation

I. FOREWORD

This document contains a summary of the actual regulation of the Missouri River Mainstem Reservoir System (System) for the 2025 Calendar Year (CY). Two other reports related to System regulation are also available, the ***System Description and Regulation*** and ***Final 2024-2025 Annual Operating Plan.*** All three reports can be obtained by contacting the Missouri River Basin Water Management Division (MRBWM), Northwestern Division (NWD), US Army Corps of Engineers (USACE) at 1616 Capitol Avenue, Suite 365, Omaha, Nebraska 68102-4909, phone (402) 996-3841. The reports are also available on the MRBWM website at www.nwd-mr.usace.army.mil/rcc.

A Missouri River Basin (Basin) map is presented on **Plate 1** and the pertinent data for the System are shown on **Plate 2.**

II. REVIEW OF REGULATION – JANUARY THROUGH DECEMBER 2025

A. General

This report summarizes the System regulation as it pertains to all eight congressionally authorized purposes. During 2025, the System was regulated in accordance with the Master Water Control Manual (Master Manual) and the applicable provisions of the Final 2024-25 Annual Operating Plan (AOP), which was made available for review and comment by representatives of State and Federal agencies, Tribes, the general public, and specific interest groups. For the purposes of this report, the upper Missouri River Basin (upper Basin) is the Missouri River Basin above Sioux City, IA and the lower Missouri River Basin (lower Basin) is the Missouri River Basin from Sioux City, IA to the mouth.

B. Precipitation and Water Supply Available in 2025

Runoff in the upper Basin in 2025 was 19.9 million acre-feet (MAF). The hydrologic factors that most influenced runoff were soil moisture conditions, plains snowpack, mountain snowpack, and precipitation and temperatures. The following sections describe the hydrologic factors that influenced the 2025 water supply.

1. Soil Conditions

Modeled soil moisture conditions are shown on the National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center (CPC) Soil Moisture Anomaly and Soil Moisture Ranking Percentile maps (see **Figure 1**). The beginning of the runoff season is on or about March 1. Runoff from plains snowmelt and rainfall runoff decreases when soil moisture conditions are dry. At the end of February 2025, soil moisture conditions were drier than normal across most of the Basin except Montana, where above-normal precipitation and early plains snowmelt resulted in more normal soil conditions.

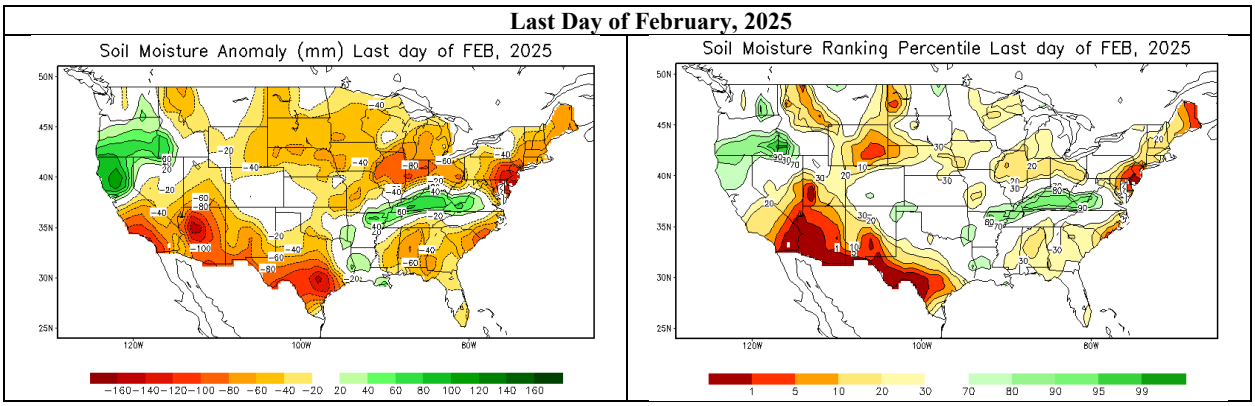


Figure 1. Soil moisture anomaly and percentile in February 2025. ***Source: NOAA CPC.***

Soil moisture conditions got better across most of the Basin during the mountain snowmelt period of May, June, and July. At the end of July 2025, soil moisture was generally drier-than-normal along the western edges of the Basin, near normal in the middle of the Basin, and wetter-than-normal along the eastern edges of the Basin (see **Figure 2**).

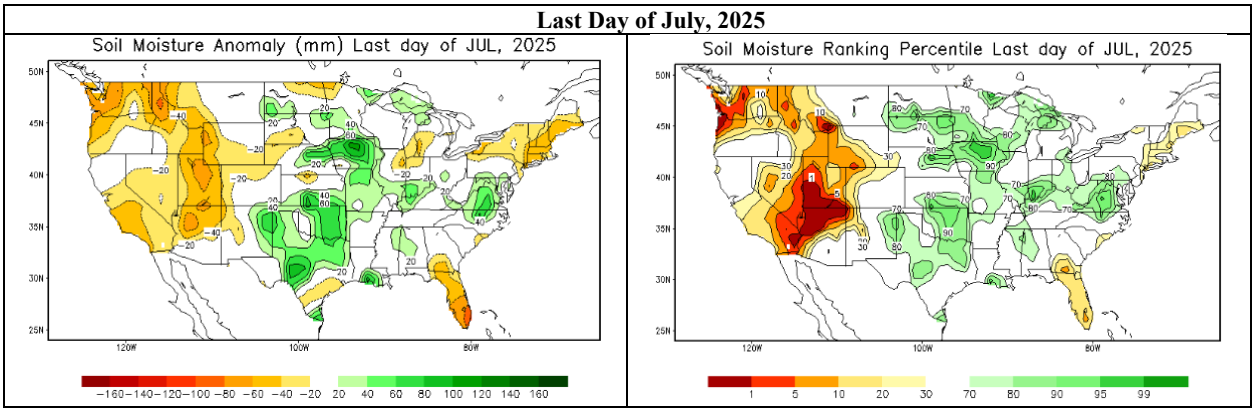


Figure 2. Soil moisture anomaly and percentile in July 2025. ***Source: NOAA CPC.***

2. Plains Snowpack

Plains snowpack is an important source of runoff that typically melts and enters the System from mid-February to April. Historically, about 25% of annual upper Basin runoff occurs in March and April originating from both melting snowpack and rainfall runoff. Intermittent warm-ups in January and February can result in plains snowmelt during those months. Plains snowpack accumulation, and more importantly the plains snow water equivalent (SWE), is a strong indicator of March-April runoff in the upper Basin. In addition, antecedent runoff, precipitation, average temperatures, and soil moisture conditions are factored into forecasting March-April runoff.

The 2024-25 seasonal plains snowfall totals were below average in most of the Basin. The snowpack peaked below normal in the eastern Dakotas but above normal in Montana, Nebraska, and Iowa. Although the snowpack peaked above normal in parts of the Basin on February 19 (see **Figure 3**) with a Basin average of slightly more than 1.4 inches of SWE, the snowpack across the entire Basin was still below normal. Based on the National Weather Service (NWS)

National Operational Hydrologic Remote Sensing Center (NOHRSC) modeled snow assessment, SWE amounts ranged from trace to two inches across the snow-covered areas except for Montana, which had widespread amounts of up to 4 inches of SWE and even some localized higher amounts. Most of the plains snowpack melted by the end of February.

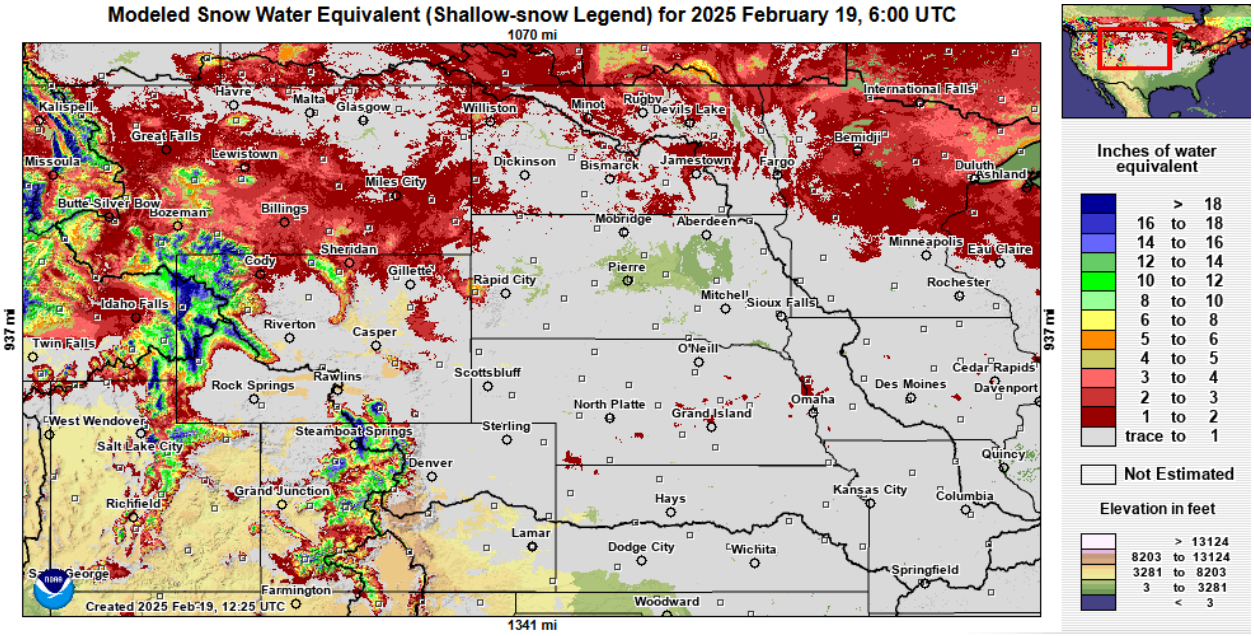


Figure 3. Modeled peak snow water equivalent (inches). ***Source: NWS NOHRSC–Interactive Snow Information***

During the January-March period, volunteers for the NWD MRBWM cooperative plains snow survey made snow depth and SWE measurements approximately two times per month until mid-March. These measurements are primarily used by the USACE and NOHRSC to monitor the accumulation and melt of plains snowpack in the upper Basin, and to verify NOAA NOHRSC modeled estimates of plains snowpack. The network of observers includes Omaha District (NWO) employees (e.g., project personnel at System projects and Pipestem), NWS employees, state agencies, county emergency managers, and the public. Snow measurements performed by the MRBWM cooperators are provided on the MRBWM website.

Seasonal plains snowfall totals for the winter of 2024-25 and four previous high snowfall seasons at locations in the plains are listed in **Table 1**. During the winter of 2024-25, snowfall totals were below normal in the upper and lower basins, except for Billings, MT and Kansas City, MO.

Table 1. Missouri River Basin – Plains Snowfall Totals (inches).

Location	2010-11 Total	2017-18 Total	2018-19 Total	2022-23 Total	2024-25 Total	Normals*
Billings, MT	72.2	106.1**	61.1	56.1	64.3	57.4
Glasgow, MT	108.6	63.9	45.4	64.9	21.1	40.7
Great Falls, MT	108.6	104.9	76.4	96.3	47.2	66.1
Bismarck, ND	85.4	44.1	60.3	101.4**	25.4	50.5
Aberdeen, SD	79.3	43.2	81.1**	74.3	22.5	42.7
Watertown, SD	79.4	53.1	81.7**	48.3	29.4	41.1
Sioux Falls, SD	45.1	70.4	52.4	79.7	17.6	45.3
Sioux City, IA	41.3	45.2	29.5	32.1	18.6	36.0
Omaha, NE	34.9	17.0	52.7	13.8	17.4	27.1
Kansas City, MO	36.9	7.7	29.1	9.0	22.0	18.2
Average	**69.2**	**55.6**	**57.0**	**57.6**	**30.0**	**42.5**

* Normals are official National Centers for Environmental Information (NCEI) 1991-2020 averages.
** Snowiest season on record.
Source: NOAA NCEI. Totals represent total snowfall from July to the following June.

3. Mountain Snowpack

Mountain snowpack is monitored by the USDA National Resources Conservation Service (NRCS) network of SNOwpack TELemetry (SNOTEL) stations. For purposes of monitoring the mountain snowpack and forecasting spring and summer runoff from the Rocky Mountains, average mountain snowpack expressed as inches of SWE is computed from the SNOTEL stations within the reservoir reaches above Fort Peck and from Fort Peck to Garrison. For the purposes of this report, the mountain snowpack reaches are referred to as "Fort Peck" and "Garrison". The 2024-25 mountain snowpack accumulation and melt pattern for the two reaches is illustrated in **Figure 4**, using data from the NRCS National Water and Climate Center (NWCC). The 2024-25 mountain SWE for the two reaches is summarized in **Table 2**. The table contains the mountain snowpack as a percent of the seasonal average occurring on the first day of each month, and as a percent of the average April 17 peak. In both reaches, the mountain SWE accumulated at below average rates until late January, when snow began accumulating at more average rates. Both reaches were below average for the entirety of the snow accumulation and melting periods. The Fort Peck reach SWE peaked on April 5 at 14.7 inches, 92% of the average April 17 peak. The Garrison reach SWE peaked on April 5 at 13.9 inches, 95% of the average April 17 peak. The mountain SWE in both reaches melted out by the end of June.

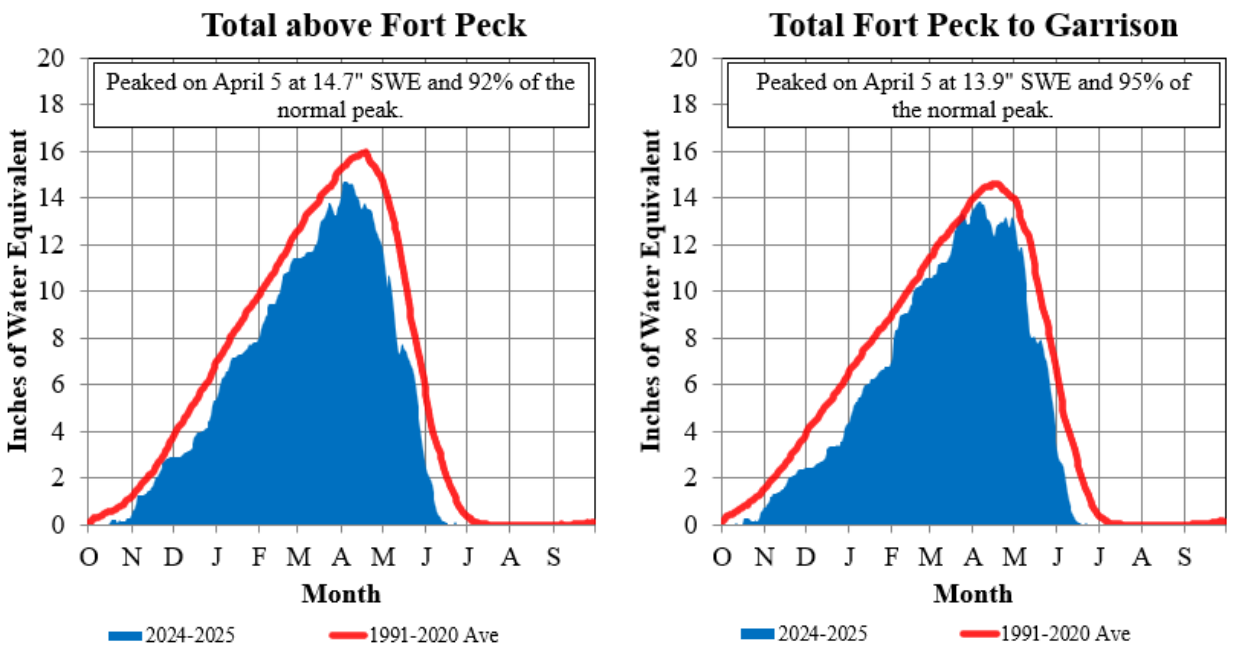


Figure 4. Missouri River Basin Mountain SWE. ***Source: USDA-NRCS NWCC.***

Table 2. Mountain SWE Accumulation, 2025.

Month	Above Fort Peck % of Average	Above Fort Peck % of Actual Peak Accumulation	Fort Peck to Garrison % of Average	Fort Peck to Garrison % of Actual Peak Accumulation
January 1	78	37	67	32
February 1	81	55	79	51
March 1	90	78	92	76
April 1	94	98	96	97
Peak	92** (April 5)	100	95** (April 5)	100
May 1*	79 / 73	79	93 / 89	94
June 1*	43 / 15	16	50 / 21	23
July 1*	0 / 0	0	0 / 0	0
Melt-out	June 19		June 19	

*Percent of May 1, June 1, or July 1 1991-2020 average / Percent of average April 17 peak
**Percent of normal peak

4. Weather Conditions

January-December statewide precipitation rankings compared to the last 131 years of record from 1895 to 2025 are shown in **Figure 5**. NOAA describes precipitation and temperature in the ranking maps in reference to annual averages. A precipitation ranking of 1 indicates the January-

December precipitation was Record Driest, while a ranking of 131 indicates precipitation was Record Wettest. In 2025, North Dakota, South Dakota, and Kansas precipitation ranked in the Above Average category. Montana, Wyoming, Nebraska, and Iowa ranked in the Near Average category. Colorado and Missouri ranked in the Below Average category with rankings of 31st and 39th driest, respectively.

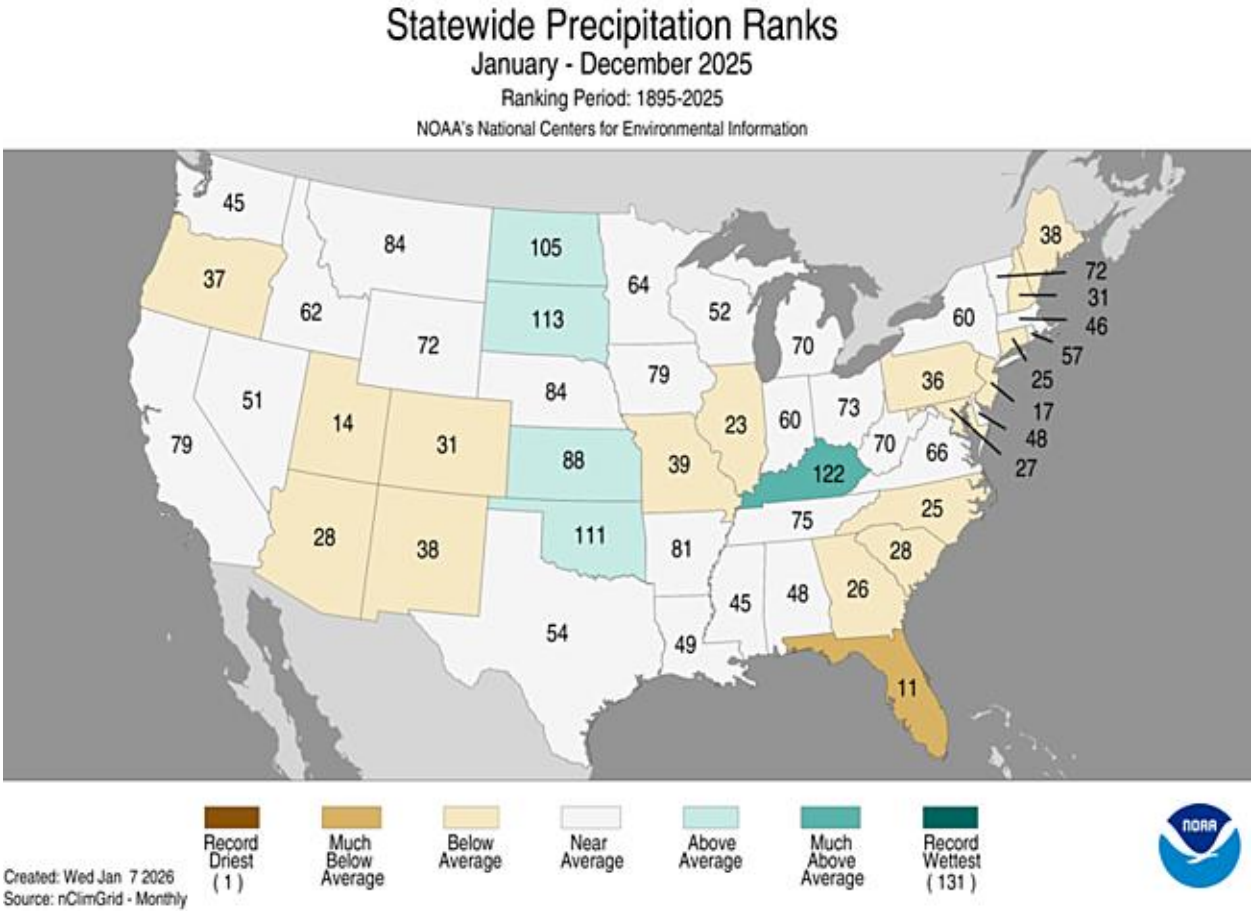


Figure 5. January-December 2025 Statewide Precipitation Ranks. ***Source: NOAA NCEI.***

January-December statewide temperature rankings compared to the last 131 years of record from 1895 to 2025 are shown in **Figure 6**. A temperature ranking of 1 indicates the January-December temperature was Record Coldest, while a ranking of 131 indicates temperature was Record Warmest. In 2025, temperatures throughout the Missouri Basin states were above average. Montana, Wyoming, Colorado, and Nebraska rankings all fell within the Much Above Average category. Out of 131 years of record, Wyoming ranked 129th (3rd warmest), and Colorado ranked 128th (4th warmest). Montana and Nebraska ranked 123rd and 125th, respectively. North Dakota, South Dakota, Iowa, Kansas and Missouri rankings fell in the Above Average category. Over a larger area, the Northern Rockies and Plains climate region, which includes Montana, Wyoming, North Dakota, South Dakota, and Nebraska ranked 120th (12 warmest) for temperature in 2025.

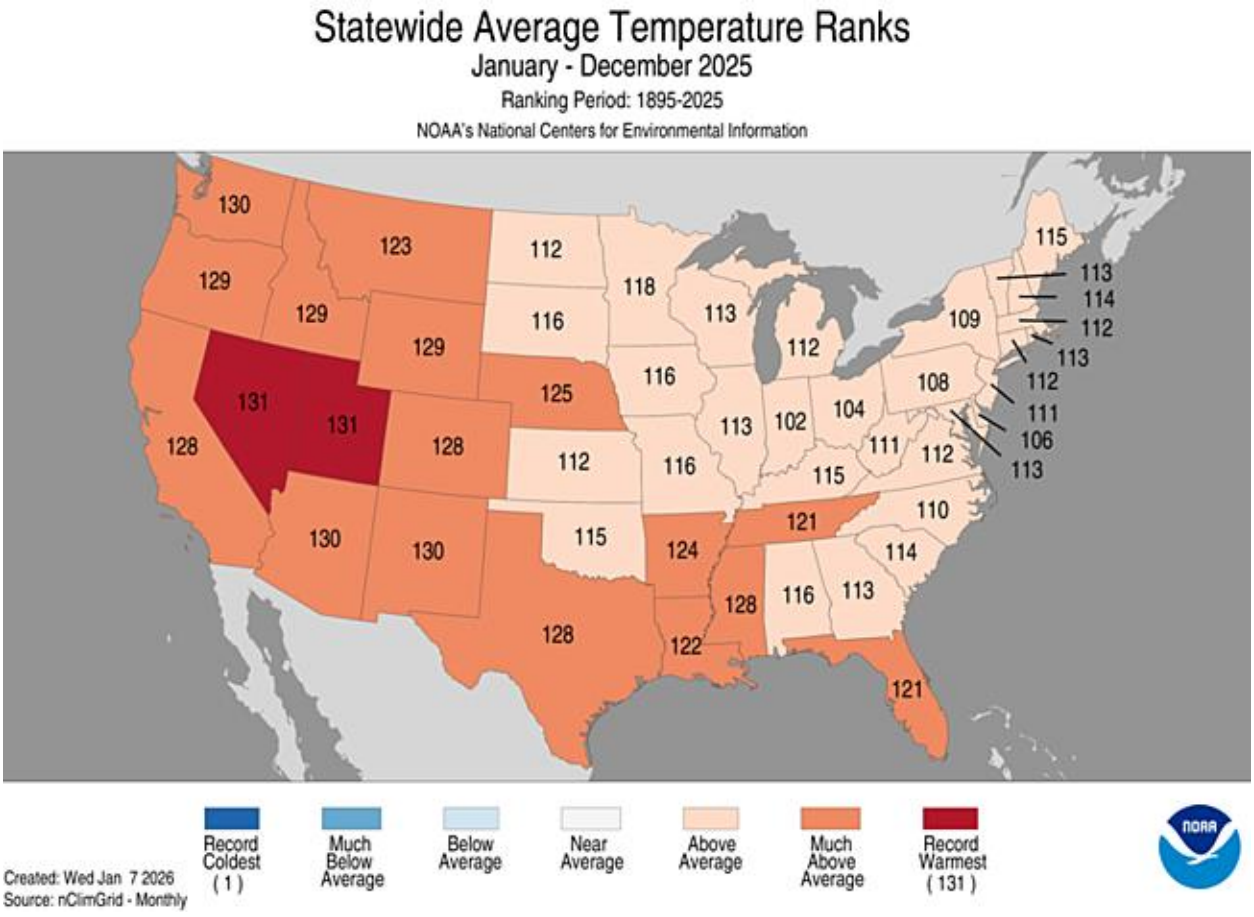


Figure 6. January-December 2025 Statewide Temperature Ranks. ***Source: NOAA NCEI*****.**

Figure 7 contains the National Drought Mitigation Center's drought maps at the beginning of the four 3-month periods during 2025. At the beginning of 2025, over 89% of the Basin was in some form of drought condition, with 37% in Severe (D2) to Exceptional (D4) Drought. By April 1, drought conditions had decreased to 79% of the Basin area, and D2 to D4 conditions decreased to about 25% of the Basin area. Drought conditions had improved to normal in central Montana, while Extreme (D3) conditions over the Yellowstone River watershed improved significantly. Drought conditions in the central and southern regions of the Missouri Basin experienced limited change by April 1.

Above average spring rainfall in areas of the plains alleviated drought conditions in the Dakotas, Wyoming, and Nebraska. Drought coverage expanded in Montana, Wyoming, Colorado, western South Dakota, and the panhandle of Nebraska. By July 1, Missouri Basin drought coverage had decreased to 62% of the Basin area, while D2 to D4 conditions dropped to about 10% of the Basin. Meanwhile, dry conditions in the northern Basin continued, allowing drought conditions to intensify to the Extreme (D3) Drought in northwestern Montana and D1 to D2 Drought in northern Montana.

From July 1 to October 7, precipitation was above normal in the Plains extending from eastern Montana through eastern Wyoming, the Dakotas, Nebraska, Iowa, and much of Kansas.

As a result, drought conditions improved throughout much of this region. On October 7, drought coverage had decreased to approximately 48% of the Missouri Basin. Most of the Plains were free of drought conditions or were Abnormally Dry (D0) or in Moderate Drought (D1). In the Northern Plains above average precipitation and drought improvement continued into the fall. Drought had intensified in eastern Kansas and Missouri with conditions ranging from D1 to D2 intensity. Drought conditions in the northern Rocky Mountains in Montana and Wyoming had intensified with an expansion of Severe Drought (D2) in western Montana and northwestern Wyoming, while Moderate Drought (D1) crept into central Wyoming. Furthermore, Severe Drought developed in the upper North Platte Basin in Wyoming and Colorado.

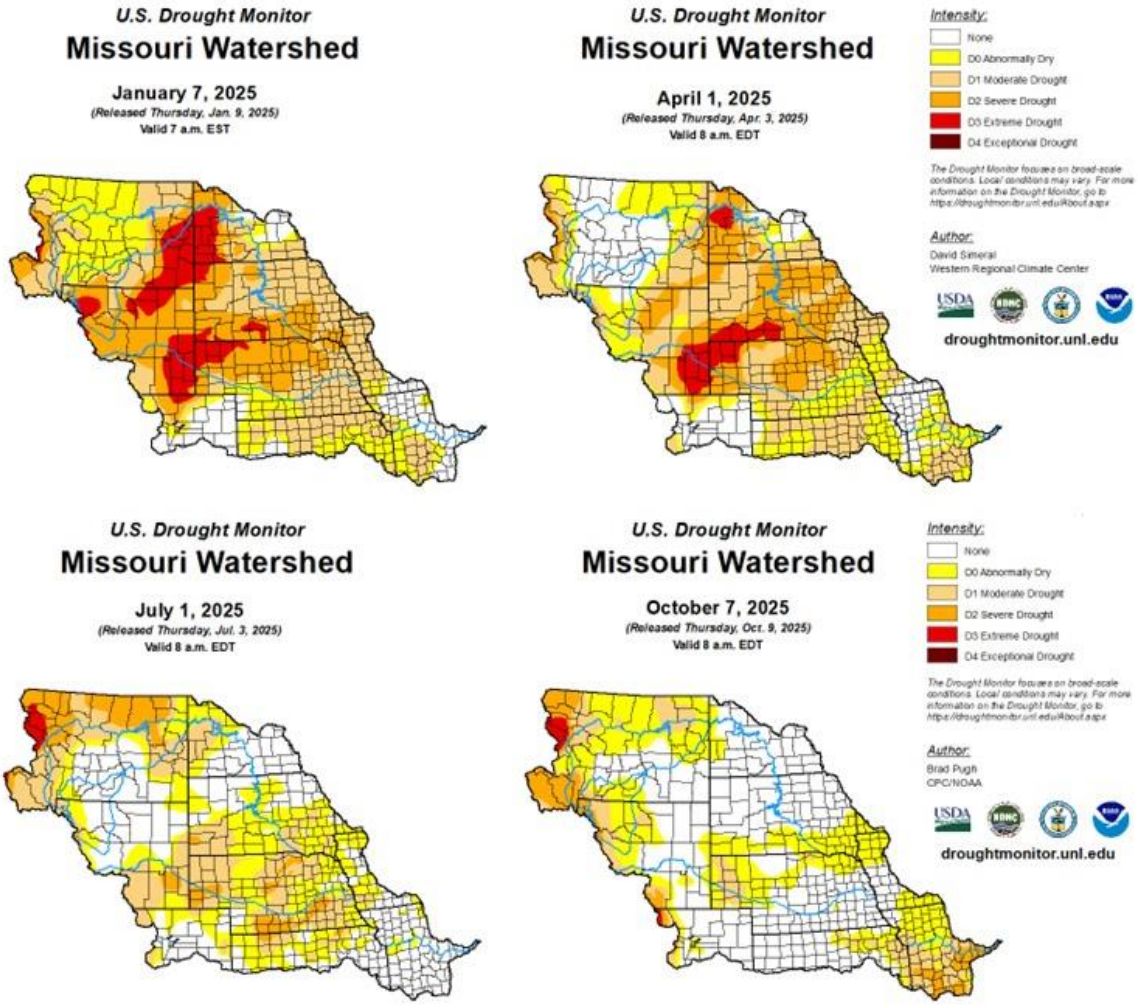


Figure 7. National Drought Mitigation Center's drought maps for early January, April, July, and October 2025. ***Source: National Drought Mitigation Center.***

Seasonal precipitation as a percentage of normal is shown in **Figure 8** in four 3-month periods for 2025. **Figure 9** shows departure from normal temperature in degrees Fahrenheit (deg F) for the same 3-month periods. These maps from the High Plains Regional Climate Center (HPRCC) utilize data from the Applied Climate Information System (ACIS) and reference normal conditions based on the 1991-2020 precipitation and temperature records.

Precipitation during the January to March period of 2025 was above normal in Montana and Wyoming, but well below normal in the Dakotas, Nebraska, Kansas, Iowa, and Missouri. A region east of the mountains extending from northern Montana to western Wyoming received greater than 150% of normal precipitation forming a moderately deep plains snowpack in these states. In contrast, most of North Dakota and South Dakota received less than 50% of normal precipitation, while most other areas of the Plains received less than 70% of normal precipitation during the winter resulting in a lighter plains snowpack. During the January through March period, the three-month average temperatures were mostly below normal. A large region from western Montana to central Kansas experienced 2 to 4 degrees F below normal temperatures. Temperatures in surrounding areas were near normal to slightly below normal. Above normal temperatures occurred in eastern South Dakota, and some parts of the central Rockies.

The April to June period, in which the Basin receives more precipitation than any other period, was much drier than normal in most of Montana and Wyoming while precipitation in other states was mixed. Northern and western Montana, and western and central Wyoming received less than 70% of normal precipitation. Northern North Dakota and southern South Dakota received below-normal precipitation. However, above-normal precipitation occurred in southern Montana, southern North Dakota, northern South Dakota, and central Nebraska. The Osage Basin in central Missouri also received above-normal precipitation during the April through June period. Average period temperatures in the Missouri Basin ranged from normal in the lower Basin to 2 degrees F above normal in the upper Basin. The mountainous regions of Montana, Wyoming and Colorado experienced temperatures ranging from 2 to 4 degrees F above normal.

Precipitation during the July to September period varied from region to region in the Missouri Basin. The mountainous regions of the basin received below-normal precipitation ranging from 50% to 90% of normal. In the plains, precipitation was generally above normal, ranging from 110% to over 150% of normal. Western and central South Dakota received between 150% and 200% of normal precipitation from July to September, while other areas in eastern Montana, northeast Colorado, Nebraska, Iowa and Kansas received greater than 150% of normal precipitation. In contrast, much of Missouri experienced dry weather during the climate period. Temperatures were generally near normal in the lower Basin, and near 2 to 4 degrees F above normal in the upper Basin.

Precipitation during the October to December period was marked by drastic differences between the upper Basin and lower Basin. Above-normal precipitation occurred in October and December over much of southern and eastern Montana, western North Dakota, northwest South Dakota, and Wyoming. Monthly precipitation in these areas ranged from 150 to 200% of normal. Three-month precipitation accumulations were greater than 150% of normal in some areas. In contrast, precipitation was well-below normal in southeast North Dakota, most of South Dakota, Nebraska, Iowa, Kansas, and Missouri. The driest areas of Nebraska received less than 50% of

normal precipitation during this period. Temperature departures ranged from 2 to 4 degrees F above normal in the Northern Plains to as much as 6 to 8 degrees F above normal in the Rocky Mountains. These warm temperatures inhibited mountain snow formation in October and November.

During the 2025 calendar year, near-average to above average precipitation occurred in the central states of the Missouri Basin, but below-average precipitation occurred in Colorado and Missouri. Temperatures throughout the Basin were above average and much above average in Montana, Wyoming, Colorado, and Nebraska.

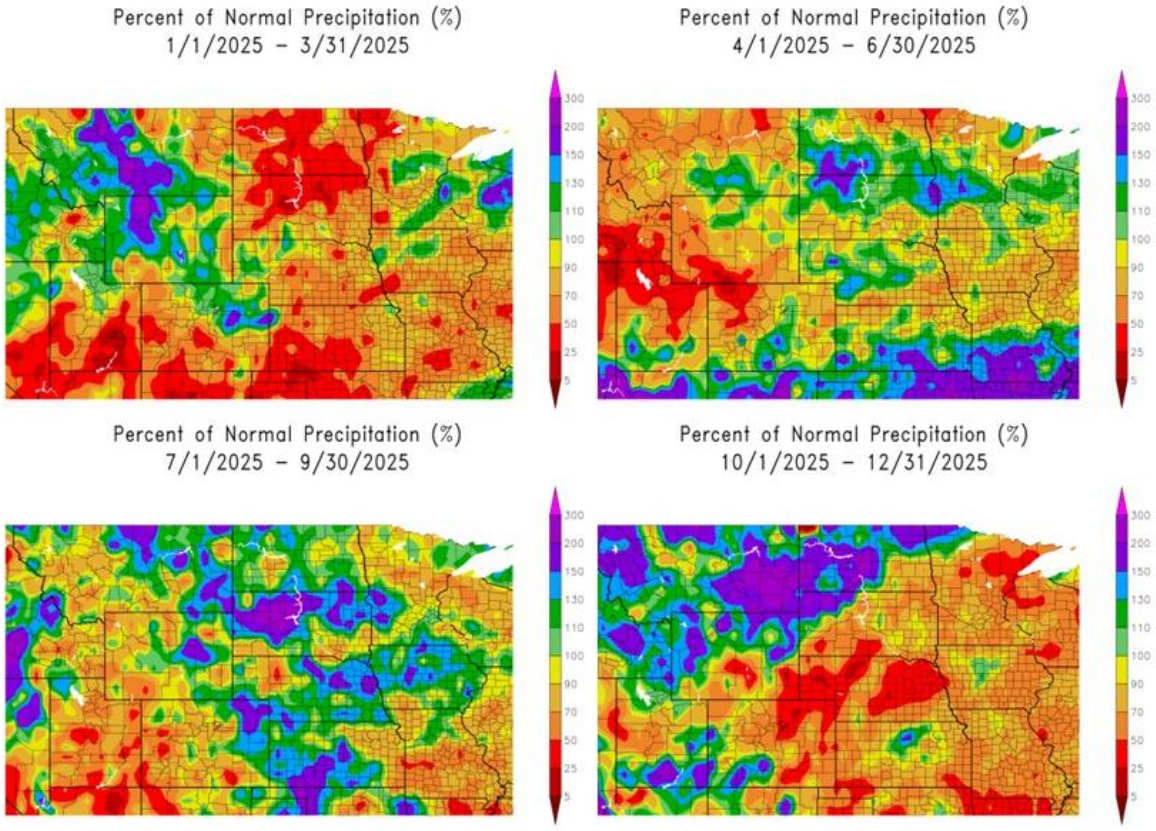


Figure 8. Percent of normal precipitation maps for the 2025 3-month periods: January-March, April-June, July-September, and October-December. ***Source: HPRCC.***

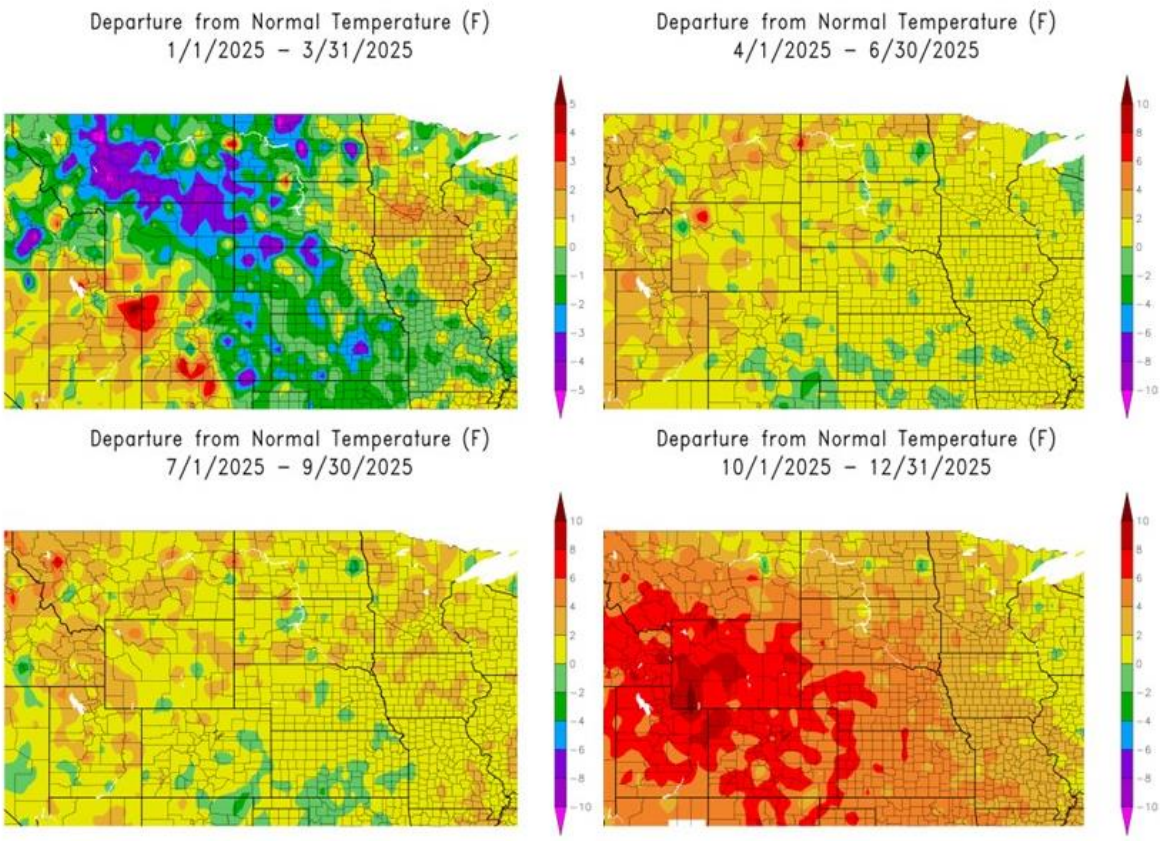


Figure 9. Departure from normal temperature maps for the 2025 3-month periods: January-March, April-June, July-September, and October-December. ***Source: HPRCC.***

5. 2025 Calendar Year Runoff

The 2025 unregulated runoff volume for the upper Basin totaled 19.9 MAF, 78% of average, based on the historical period of 1898-2024, as shown in **Table 3** and **Figure 10**. **Table 4** lists the runoff for the upper Basin by month and reach and compares the 2025 monthly and calendar year totals to the 1898-2024 historical period average. Monthly and calendar year totals are the adjusted compilation of runoff into the System. This forecast forms a basis for intra-system balancing of storage accumulated in the System and is updated by MRBWM on the first of each month to forecast the runoff for the remainder of the year. The monthly accumulation of actual runoff is shown under the "Accumulated Summation ab. Sioux City" column.

In 2025, runoff was below average to well below average in the above Fort Peck, Fort Peck to Garrison, Garrison to Oahe, and Oahe to Fort Randall reaches. The lower two reaches in the upper Basin had near-average runoff for the calendar year as shown in **Table 3**.

Runoff in the lower Basin, from Sioux City, IA to Hermann, MO, totaled 27.1 MAF, 64% of average (see **Table 3**). Runoff in the Sioux City to Nebraska City reach was near average; however, runoff in the lower two reaches was well below average.

Table 3. 2025 CY Runoff Volumes for Selected Reaches (1,000 acre-feet).

Reach	1898-2024 Average Runoff	2025 CY Runoff	% of Average Runoff
Above Fort Peck	7,210	4,770	66
Fort Peck to Garrison	10,789	8,085	75
Garrison to Oahe	2,524	2,150	85
Oahe to Fort Randall	954	518	54
Fort Randall to Gavins Point	1,755	2,001	114
Gavins Point to Sioux City	2,470	2,419	98
TOTAL ABOVE SIOUX CITY	**25,701**	**19,942**	**78**
Reach	**1958-2024 Average Runoff**	**2025 CY Runoff**	**% of Annual Runoff**
Sioux City, IA to Nebraska City, NE*	7,981	7,283	91
Nebraska City, NE to Kansas City, MO*	11,280	4,974	44
Kansas City, MO to Hermann, MO*	22,955	14,892	65
TOTAL BELOW SIOUX CITY*	**42,217**	**27,149**	**64**

** Runoff in the reaches from Sioux City, IA to Hermann, MO is not adjusted to 1949 depletion levels. Annual monthly averages are taken from the USGS Water Data Reports for the period 1958-2025.*

Total runoff in the Missouri River Basin was 47.1 MAF, 69% of average (1958-2024). **Figure 11** shows the total basin runoff since 1958, when the Missouri River at Hermann, MO stream gaging station was established. **Figure 12** illustrates the monthly variation of the runoff summation above Sioux City, IA compared to the long-term average variation of runoff based on the 1898-2024 historical period.

Table 4. Missouri River Basin Runoff above Sioux City, IA.

	Fort Peck	Garrison	Oahe	Fort Randall	Gavins Point	Sioux City	Summation above Gavins Point	Summation above Sioux City	Accumulated Summation ab. Sioux City
				Values in 1000 Acre-Feet					
JAN 2025	252	225	7	5	93	137	582	719	719
AVERAGE*	312	263	12	34	103	62	724	785	785
DEPARTURE	-60	-38	-4	-29	-11	76	-142	-66	-66
% OF AVG	81%	86%	62%	16%	90%	223%	80%	92%	92%
FEB 2025	393	239	45	116	105	135	898	1,033	1,752
AVERAGE*	364	362	101	62	137	109	1,027	1,136	1,921
DEPARTURE	29	-123	-56	54	-32	26	-129	-103	-169
% OF AVG	108%	66%	45%	186%	76%	124%	87%	91%	91%
MAR 2025	613	1,081	136	43	216	166	2,090	2,255	4,007
AVERAGE*	598	1,004	581	221	222	345	2,626	2,971	4,892
DEPARTURE	16	78	-445	-178	-7	-179	-537	-716	-885
% OF AVG	103%	108%	23%	19%	97%	48%	80%	76%	82%
APR 2025	462	560	63	61	130	161	1,275	1,436	5,443
AVERAGE*	644	1,083	502	150	184	403	2,563	2,966	7,858
DEPARTURE	-182	-523	-440	-88	-55	-242	-1,288	-1,530	-2,415
% OF AVG	72%	52%	13%	41%	70%	40%	50%	48%	69%
MAY 2025	839	1,559	647	92	168	119	3,305	3,423	8,867
AVERAGE*	1,087	1,288	337	158	193	351	3,062	3,413	11,271
DEPARTURE	-248	271	310	-66	-24	-232	242	10	-2,405
% OF AVG	77%	121%	192%	58%	87%	34%	108%	100%	79%
JUN 2025	632	1,985	226	58	218	166	3,118	3,284	12,151
AVERAGE*	1,621	2,750	441	162	190	361	5,166	5,526	16,797
DEPARTURE	-990	-766	-215	-105	27	-194	-2,047	-2,242	-4,646
% OF AVG	39%	72%	51%	36%	114%	46%	60%	59%	72%
JUL 2025	318	781	201	67	246	425	1,613	2,037	14,188
AVERAGE*	818	1,810	199	63	145	273	3,035	3,307	20,105
DEPARTURE	-500	-1,029	2	4	101	152	-1,422	-1,270	-5,916
% OF AVG	39%	43%	101%	106%	170%	156%	53%	62%	71%
AUG 2025	185	374	195	76	222	447	1,053	1,500	15,688
AVERAGE*	356	605	86	47	120	164	1,214	1,378	21,483
DEPARTURE	-171	-231	109	29	102	283	-161	121	-5,795
% OF AVG	52%	62%	228%	162%	184%	272%	87%	109%	73%
SEP 2025	132	229	389	97	190	246	1,038	1,284	16,971
AVERAGE*	325	449	111	41	115	133	1,041	1,173	22,656
DEPARTURE	-193	-219	278	56	75	113	-3	110	-5,685
% OF AVG	41%	51%	> 300%	236%	166%	186%	100%	109%	75%
OCT 2025	285	417	96	-36	136	186	899	1,085	18,056
AVERAGE*	378	530	73	1	122	108	1,104	1,212	23,868
DEPARTURE	-93	-113	23	-37	14	78	-205	-127	-5,812
% OF AVG	75%	79%	131%	< -100%	112%	172%	81%	89%	76%
NOV 2025	287	327	68	-71	124	119	734	853	18,909
AVERAGE*	380	388	67	-1	120	92	954	1,046	24,914
DEPARTURE	-93	-61	1	-71	4	27	-220	-193	-6,005
% OF AVG	76%	84%	101%	> 300%	103%	130%	77%	82%	76%
DEC 2025	372	308	77	9	155	113	921	1,034	19,942
AVERAGE*	327	257	13	15	103	71	716	787	25,701
DEPARTURE	45	50	64	-6	51	42	205	247	-5,758
% OF AVG	114%	119%	> 300%	61%	150%	160%	129%	131%	78%
				Calendar Year Totals					
	4,770	8,085	2,150	518	2,001	2,419	17,523	19,942	
AVERAGE*	7,210	10,789	2,524	954	1,755	2,470	23,231	25,701	
DEPARTURE	-2,440	-2,704	-374	-436	246	-51	-5,708	-5,758	
% OF NORM	66%	75%	85%	54%	114%	98%	75%	78%	

*1898-2024

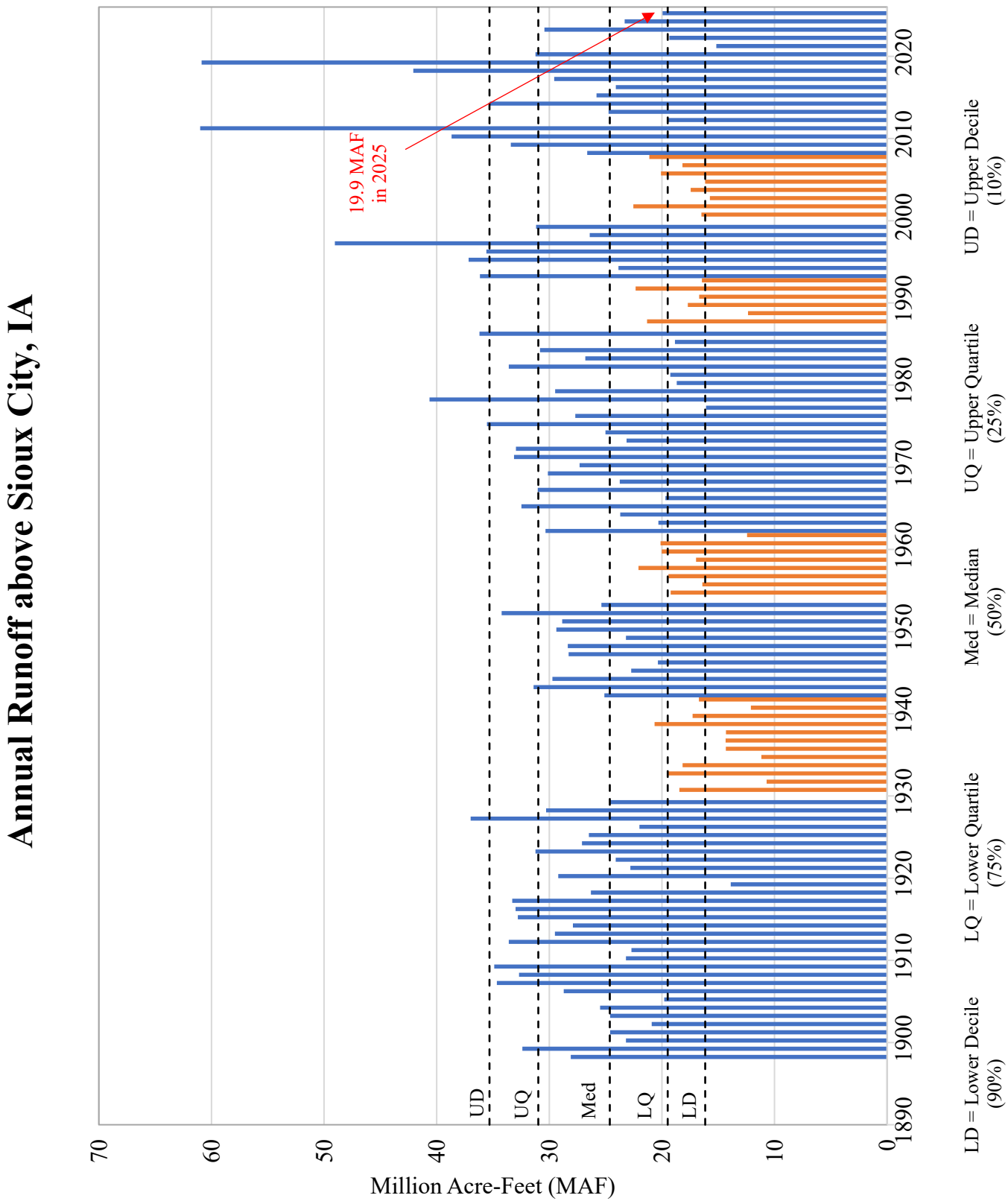


Figure 10. Missouri River Basin annual runoff above Sioux City, IA.

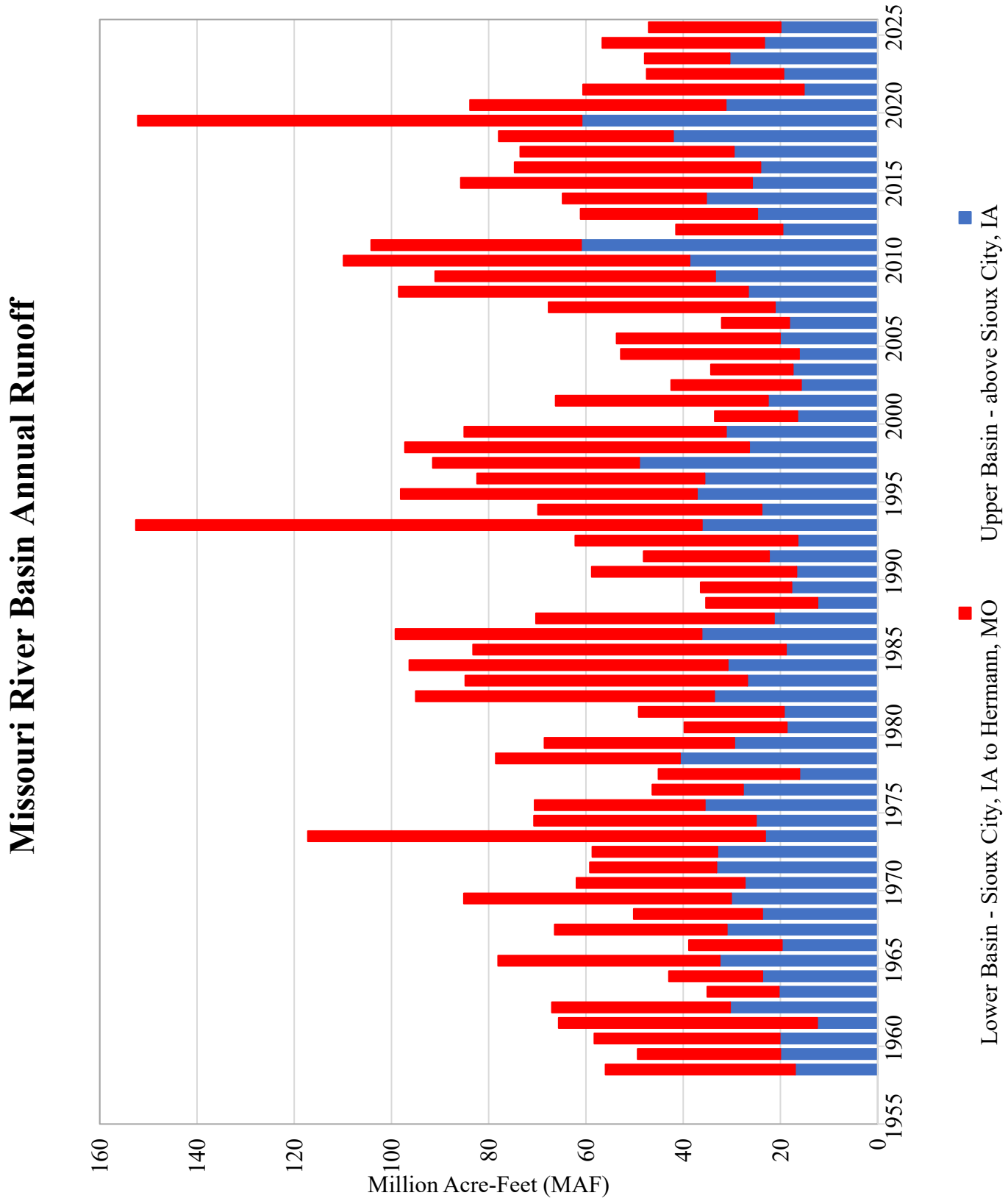


Figure 11. Missouri River Basin annual runoff above Hermann, MO.

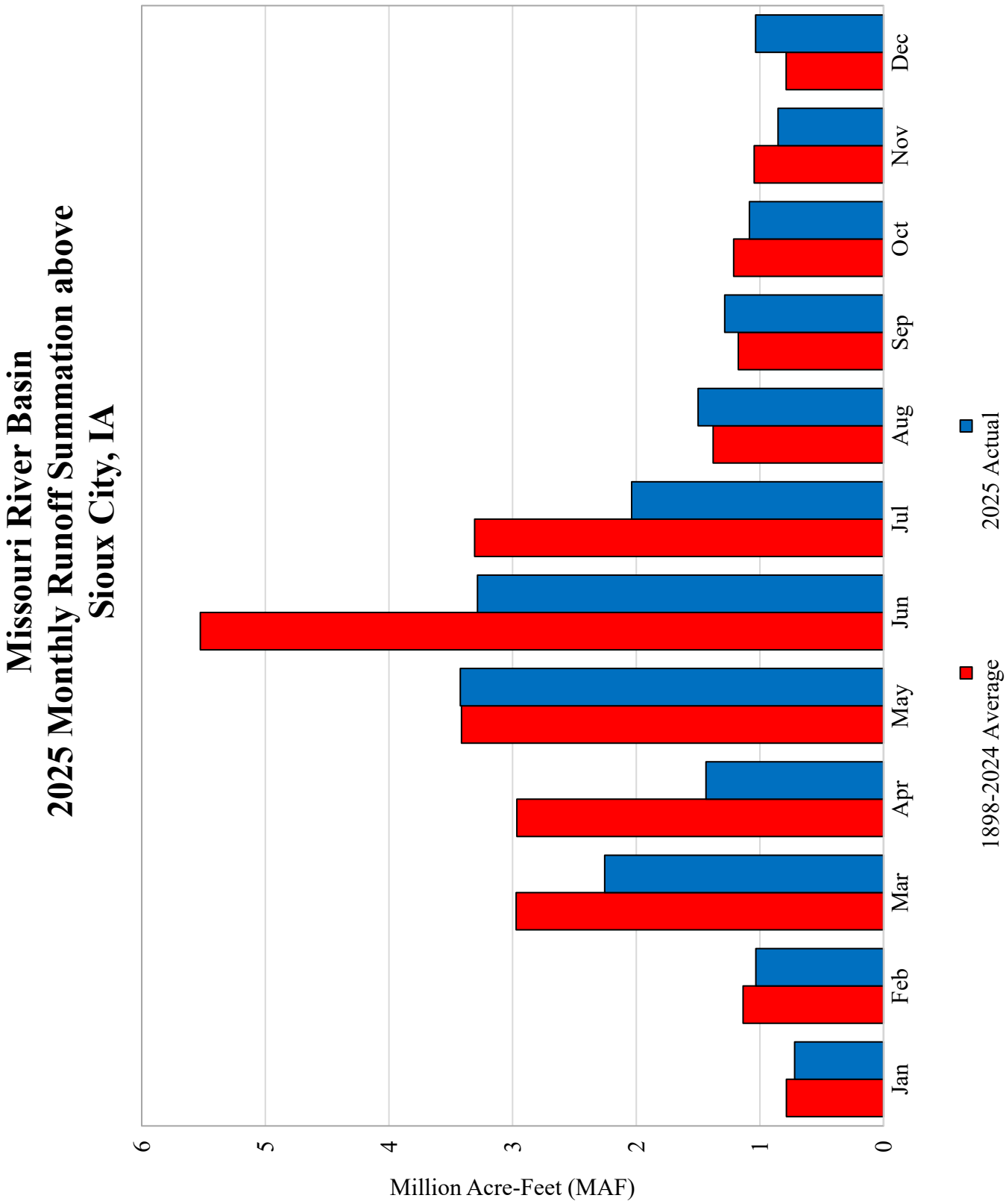


Figure 12. Missouri River Basin monthly runoff summation above Sioux City, IA.

C. System Regulation – January to December 2025

1. Basin Conditions and System Regulation

Runoff above Sioux City, IA in 2025 was 19.9 MAF, 78% of average (see **Table 4**). System storage remained below the base of the Annual Flood Control and Multiple Use Zone for all of 2025. Per Table VII-2 of the Master Manual, the System service level was initially set to 4,000 cfs below full service, or 31,000 cfs, for the first half of the navigation season. On July 1, the service level check determined the service level would be lowered 500 cfs to 30,500 cfs for the second half of the navigation season.

a. Conditions in January and February

System storage began the year at 50.3 MAF, or 5.8 MAF below the base of the Annual Flood Control and Multiple Use Zone. System storage decreased to around 50.1 MAF by the end of February. The upper Basin runoff above Sioux City was 92% of average in January and 91% of average in February (see **Table 4**). Mountain SWE totals for the Fort Peck and Garrison reaches were below average in January and February (see **Table 2**). While trace to two inches of SWE from plains snowpack was widespread across the upper and lower Basin in mid-January, only small areas of trace to two inches of SWE was left by the end of January in Montana, North Dakota, and Kansas. Widespread trace to four inches of SWE accumulated from snowstorms in mid-February, but all plains snowpack had essentially melted by the end of February. Peak plains snowpack occurred around February 19, with widespread areas of trace to four inches of SWE across the Basin.

b. Conditions on March 1

On March 1 the System storage was 50.2 MAF, 5.9 MAF below the base of the Annual Flood Control and Multiple Use Zone. Plains snowpack was mostly non-existent in the Basin on March 1. Mountain snowpack was below average in the Fort Peck and Garrison reaches (see **Table 2**). The March 1 annual runoff forecast was 22.1 MAF, 86% of average, for the upper Basin above Sioux City, IA. The below-average calendar year runoff forecast was based on 1) below-average mountain snowpack, 2) drier-than-normal soil conditions, and 3) below average plains snowpack in the upper Basin.

Based on the March 15 System storage of 51.0 MAF, navigation flow support was set at 4,000 cfs below full-service flow support for the first half of the navigation season per the Master Manual. System releases at Gavins Point Dam increased from 12,000 cfs to around 25,000 cfs in mid-March to meet navigation flow targets. Several different weather systems in March brought widespread or isolated areas of trace to two inches of SWE to the Basin but melted within two days.

c. Conditions on April 1

System storage on April 1 was 50.9 MAF, 5.2 MAF below the base of the Annual Flood Control and Multiple Use Zone. The April 1 upper Basin runoff forecast was 21.9 MAF, 85% of average. Mountain snowpack was below average in both reaches during the month of April and

peaked on April 5th at 92% of average in the Fort Peck reach and 95% of average in the Garrison reach.

System releases at Gavins Point Dam were maintained between 25,000 and 27,000 cfs during April. Observed runoff for April was 48% of average for the Basin above Sioux City.

d. Conditions on May 1

The May 1 annual runoff forecast decreased to 20.0 MAF, 78% of average. The May 1 System storage was 50.5 MAF, 5.6 MAF below the base of the Annual Flood Control and Multiple Use Zone. System releases from Gavins Point Dam were between 25,000 and 30,000 cfs in May to meet downstream navigation flow targets and as part of operations during the piping plover nesting season. May runoff in the upper Basin was 100% of average.

e. Conditions from June through August

The June 1 System storage was 51.4 MAF, 4.7 MAF below the base of the Annual Flood Control and Multiple Use Zone, and the June 1 annual runoff forecast was 19.7 MAF, 77% of average. System storage rose slightly during June, reaching 52.1 MAF by July 1. The July 1 annual runoff forecast was reduced slightly to 19.1 MAF, 74% of average, mostly due to June runoff in the upper Basin being 60% of average. July runoff in the upper Basin continued to be below average and was 62% of average.

Based on the July 1 System storage check, the service level was lowered an additional 500 cfs to 4,500 cfs below full service for the second half of the navigation season, and the navigation flow support season length was set to a full season. August 1 System storage was 51.6 MAF, 4.5 MAF below the base of the Annual Flood Control and Multiple Use Zone. System releases ranged from approximately 20,000 to 27,000 cfs during June through August.

System storage peaked at 52.1 MAF on June 29, 4.0 MAF below the base of the Annual Flood Control and Multiple Use Zone.

f. Conditions from September through December

September 1 System storage was 51.0 MAF, 5.1 MAF below the base of the Annual Flood Control and Multiple Use Zone. Based on the September 1 System storage check, the Gavins Point winter release was set to at least 12,000 cfs. The September 1 annual runoff forecast was 19.1 MAF, 74% of average. System releases ranged from 23,000 to 27,000 cfs from September to late November to meet navigation flow targets through the end of the flow support season (see **Figure 29** through **Figure 32**).

On October 1, System storage was 50.4 MAF, 5.7 MAF below the base of the Annual Flood Control and Multiple Use Zone. By November 1, System storage was 49.6 MAF, 6.5 MAF below the base of the Annual Flood Control and Multiple Use Zone. The Gavins Point release reduction for the winter season began on November 23, stepping down approximately 3,000 cfs a day from a release of 27,000 cfs to 15,000 cfs, ending the navigation flow support season. Releases were held at 15,000 cfs and then stepped down 1,000 cfs every five days, to 13,000 cfs. Due to a brief period of cold temperatures, releases were increased to 14,000 cfs for a few days,

and then reduced to the winter release rate, reaching 12,000 cfs on December 16. On December 1, System storage was 48.8 MAF, 7.3 MAF below the base of the Annual Flood Control and Multiple Use Zone.

2. Fort Peck Regulation – January to December 2025

a. General

Fort Peck, the third largest USACE storage reservoir, serves all authorized purposes. Fort Peck's primary functions are (1) to capture the snowmelt runoff and localized rainfall runoff from the large drainage area above Fort Peck Dam, which are metered out at controlled release rates to meet the authorized purposes while reducing flood damages in the Fort Peck to Garrison reach; (2) to serve as a secondary storage location for water accumulated in the System reservoirs from reduced System releases due to major downstream flood control regulation, thus helping to alleviate large pool increases in Garrison, Oahe and Fort Randall; and (3) to provide the water needed to meet all authorized purposes that draft storage during low-water years.

Table 5 lists the average monthly inflows and releases and the end-of-month (EOM) pool elevation for Fort Peck for 2024 and 2025 as well as the averages since the System first filled in 1967.

Table 5. Fort Peck – Inflows, Releases, and Elevations.

Month	Monthly Inflow (cfs)			Monthly Release (cfs)			EOM Elevation (feet)		
	2025	2024	1967-2024	2025	2024	1967-2024	2025	2024	1967-2024
January	4,900	5,500	7,000	5,500	5,600	10,200	2225.9	2229.4	2228.0
February	8,100	9,100	8,500	5,500	5,400	10,400	2226.6	2230.4	2227.4
March	8,900	8,300	11,500	5,600	5,000	7,500	2227.6	2231.2	2228.5
April	6,900	7,000	10,300	6,700	6,200	7,200	2227.6	2231.3	2229.3
May	9,900	13,100	15,600	9,100	11,400	9,100	2227.7	2231.6	2231.1
June	8,200	10,000	19,000	9,400	13,700	10,500	2227.1	2230.2	2233.3
July	6,600	6,300	11,600	9,100	9,000	10,500	2226.0	2229.0	2233.2
August	5,300	6,000	7,700	8,800	9,000	10,100	2224.4	2227.5	2232.0
September	4,400	6,600	7,600	9,100	6,900	8,900	2222.5	2227.0	2231.2
October	5,200	5,200	7,300	4,200	4,200	7,700	2222.3	2226.8	2230.7
November	4,500	4,900	7,000	3,900	4,500	8,000	2222.2	2226.5	2230.0
December	5,200	5,400	6,500	5,000	5,600	9,100	2222.7	2226.2	2229.0
Annual	**6,500**	**7,300**	**10,000**	**6,800**	**7,200**	**9,100**			

b. Winter Season 2024-25

The Fort Peck reservoir level was at elevation 2226.5 feet on December 1, 2024, 7.5 feet below the base of the Annual Flood Control and Multiple Use Zone and 3.1 feet below the previous year's level. The reservoir fell to elevation 2225.6 feet by mid-February before rebounding to 2226.6 feet, 7.4 feet below the base of the Annual Flood Control Multiple Use Zone on February 28. During the winter season the average monthly releases from Fort Peck were below average. December 2024 was 5,600 cfs (average is 9,100 cfs); January 2025 was 5,500 cfs (average is 10,200 cfs); and February 2024 was 5,500 (average is 10,400 cfs). The Fort Peck reservoir froze over on January 19, 2025 and was free of ice on April 11, 2025.

c. Winter River and Ice Conditions below Fort Peck

No special release reductions were required due to ice-jam flooding downstream of Fort Peck. The sub-zero temperatures (deg F) experienced in mid-January and late-February to early March produced an ice-cover on the Missouri River downstream of Fort Peck. When the Missouri River initially froze over, the stage rose about 7 feet at Wolf Point from December 11-17, up to 17.4 ft on December 15 (see **Figure 13**). The stage fluctuated into January and gradually declined into February. The stage fluctuated during rounds of sub-zero temperatures and warming in late February and early March, with the Wolf Point stage rising close to 15 feet on two different occasions. The ice cover remained through about mid-March. No reports of ice-affected flooding on the Missouri River reach below Fort Peck were recorded during the 2024-25 winter season.

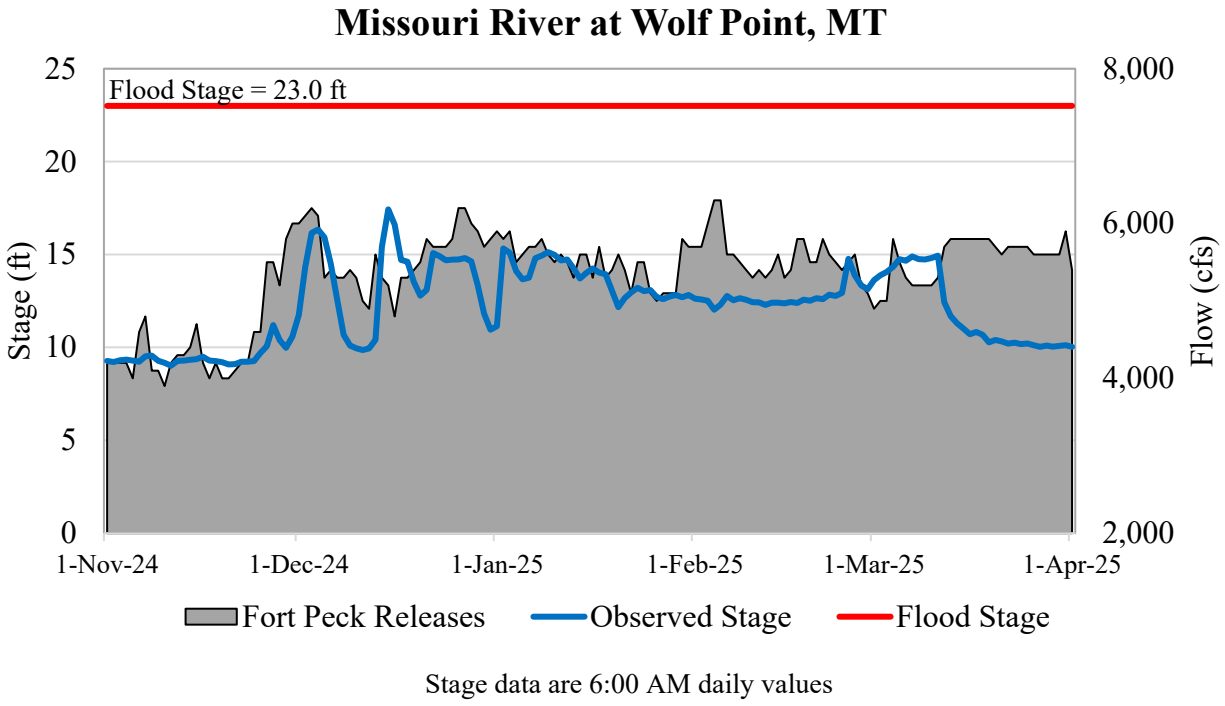


Figure 13. Winter ice season stages at Wolf Point, MT with Fort Peck releases.

d. Spring Open Water Season 2025

Seasonal plains snowpack was generally light across Montana and trace to 1-inch amounts of SWE were present near the end of March. The mountain snowpack above Fort Peck was below normal and peaked on April 5 at 14.7 inches of SWE (92% of average). Average monthly inflows to the reservoir were 6,900 cfs (67% of average) in April, 9,900 cfs (63% of average) in May and 8,200 cfs (43% of average) in June. Releases from Fort Peck averaged 6,700 cfs (93% of average) in April, 9,100 cfs (100% of average) in May, and 9,400 cfs (90% of average) in June. Fort Peck reservoir declined 0.5 feet from its March 31 elevation of 2227.6 feet to 2227.1 feet at the end of June, 6.9 feet below the base of the Flood Control and Multiple Use Zone. Fort Peck reservoir rose 0.1 feet during the critical fish spawning period from 2227.6 feet (March 31) to 2227.7 feet (May 31). The reservoir peaked at elevation 2227.8 feet on June 2.

e. Summer Open Water Season 2025

Monthly inflows averaged 6,600 cfs (57% of average) in July and 5,300 cfs (69% of average) in August as normal to below-normal precipitation was observed across much of Montana. Below-normal precipitation coupled with dry soil conditions persisted into September, resulting in below average inflows of 4,400 cfs (58% of average). Average monthly releases were 9,100 cfs (87% of average) during July, 8,800 cfs (87% of average) during August, and 9,100 cfs (102% of average) during September. During the 3-month period from July to September the reservoir level decreased 4.5 feet reaching 2222.5 feet on September 30.

f. Fall Open Water Season 2025

Releases were well-below average in October, November, and December due to a continuation of below-average precipitation coupled with dry soil conditions and release adjustments to balance storage in the upper three reservoirs. Average monthly releases were 4,200 cfs (55% of average), 3,900 cfs (49% of average), and 5,000 cfs (55% of average) in October, November, and December, respectively. Inflows were also below average, averaging 5,200 cfs in October (71% of average), 4,500 cfs in November (64% of average), and 5,200 cfs in December (80% of average). The pool elevation increased 0.2 feet over the 3-month period from 2222.5 feet (September 30) to 2222.7 feet (December 31), 11.3 feet below the base of the Annual Flood Control and Multiple Use Zone.

g. Summary

The Fort Peck pool elevation began the year 7.8 feet below the base of the flood control zone. The lowest Fort Peck midnight pool level during 2025 occurred on December 30 at 2222.0 feet, 12.0 feet below the base of the Annual Flood Control and Multiple Use Zone. The snowmelt and rainfall runoff caused only minor changes in the reservoir elevation in April, May, and June. The Fort Peck midnight pool peaked at elevation 2227.8 feet on June 2, 4.2 feet below the base of the flood control zone. The pool then generally receded throughout the remainder of the year. The average annual inflow of 6,500 cfs was 65% of average. The average annual release of 6,800 cfs was 75% of average.

3. Garrison Regulation – January to December 2025

a. General

Garrison, the largest USACE storage reservoir, is another key component in the regulation of the System. Its primary functions are (1) to capture the snowmelt runoff and localized rainfall runoff from the large drainage area between the Fort Peck and Garrison dams, which are metered out at controlled release rates to meet the authorized purposes while reducing flood damages in the Garrison to Oahe reach, particularly the urban Bismarck area; (2) to serve as a secondary storage location for water accumulated in the System from reduced System releases due to major downstream flood control regulation, thus helping to alleviate large pool increases in Oahe and Fort Randall; and (3) to provide water needed to meet all authorized purposes that draft storage during low-water years.

Table 6 lists the average monthly inflows and releases and the EOM pool elevation for Garrison for 2024 and 2025 as well as the averages since the System first filled in 1967.

Table 6. Garrison – Inflows, Releases, and Elevations.

Month	Monthly Inflow (cfs)			Monthly Release (cfs)			EOM Elevation (feet)		
	2025	2024	1967-2024	2025	2024	1967-2024	2025	2024	1967-2024
January	10,200	9,400	15,000	20,300	18,300	21,900	1832.9	1836.9	1832.7
February	10,700	15,700	18,200	23,500	24,900	23,200	1830.4	1835.1	1831.7
March	23,000	17,200	26,200	17,600	16,000	18,900	1831.4	1835.3	1833.1
April	15,100	16,300	23,300	17,900	15,900	18,900	1830.8	1835.5	1833.8
May	31,000	33,800	30,400	22,000	19,600	22,000	1832.6	1837.8	1835.3
June	37,000	45,800	48,500	23,100	21,600	25,400	1835.2	1842.2	1839.6
July	20,000	23,000	33,000	21,900	22,000	26,600	1834.3	1842.0	1840.5
August	15,000	14,300	18,400	20,300	22,100	25,600	1832.7	1840.1	1838.6
September	13,600	13,200	17,100	16,400	18,200	21,400	1831.8	1838.7	1837.3
October	14,100	11,000	17,300	13,800	14,100	19,100	1831.3	1837.5	1836.6
November	11,100	10,000	15,900	13,900	14,100	19,600	1830.4	1836.4	1835.5
December	10,500	10,800	13,900	15,600	16,100	19,400	1829.2	1835.3	1834.1
Annual	**17,600**	**18,400**	**23,100**	**18,900**	**18,600**	**21,800**			

b. Winter Season 2024-25

The Garrison reservoir level was at 1836.4 feet on December 1, 2024, 1.1 feet below the base of the Annual Flood Control and Multiple Use Zone. The reservoir level declined through the winter and reached 1830.4 feet, 7.1 feet below the base of the Annual Flood Control and Multiple Use Zone, on March 1. The Garrison average monthly releases were below average: December 2024 was 16,100 cfs (average is 19,400 cfs); January was 20,300 cfs (average is 21,900 cfs); and February was 23,500 cfs (average is 23,200 cfs). The Garrison reservoir froze over on January 4, 2025, and was free of ice on April 17, 2025.

c. Winter River and Ice Conditions Below Garrison

At Bismarck, ND the season's initial river ice formation occurred December 13-24. The stage rose from approximately 5 feet to approximately 11 feet during this period. Shortly thereafter, the stage dropped back down to just below 5 feet on January 1, then rose back to 10 feet by January 10. The Bismarck stage generally ranged from 9 to 11 feet through late February. (See **Figure 14**). Garrison releases gradually increased from 16,000 to 23,500 cfs in mid-January and were generally held at that rate until late February. In mid-March, warm temperatures melted a significant portion of the river ice. Temperatures moderated over the next few days, diminishing river ice. Releases from Garrison gradually stepped down as river ice conditions improved. The peak winter-season Missouri River stage at Bismarck was 10.9 feet on December

24, 3.6 feet below the Bismarck flood stage of 14.5 feet. The Missouri River at Bismarck had an ice cover from December 18 to March 11.

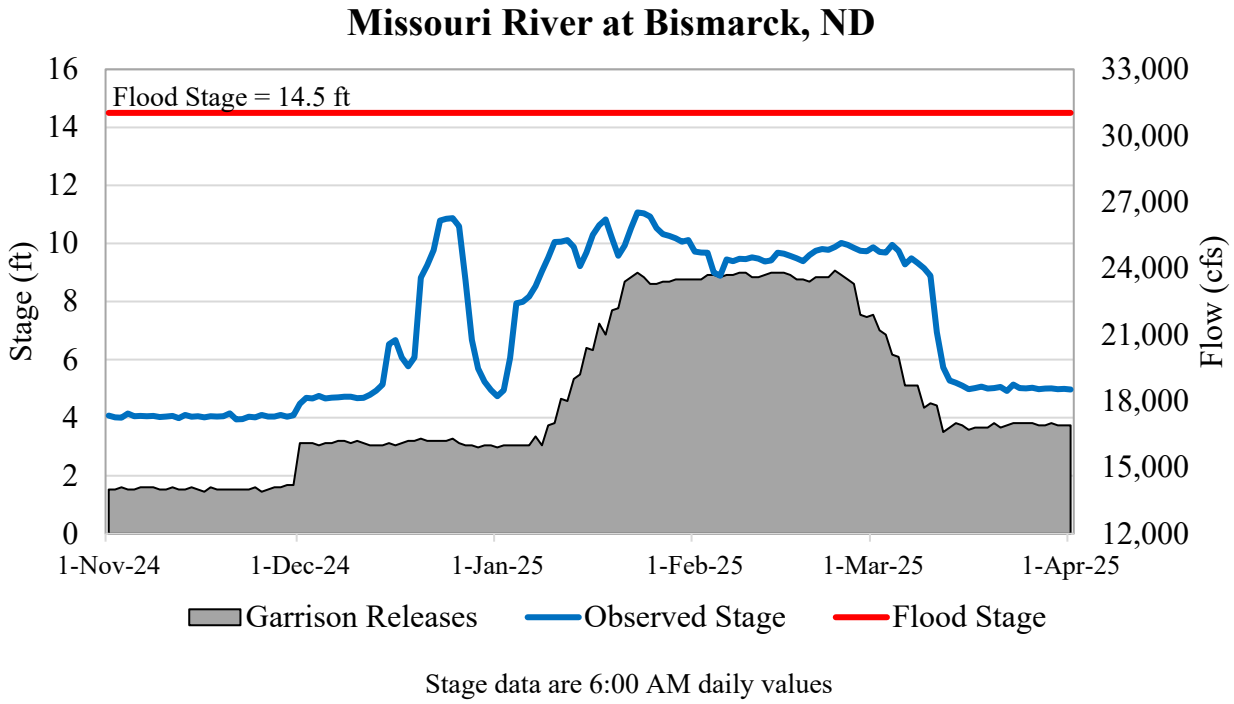


Figure 14. Winter ice season stages at Bismarck, ND with Garrison releases.

d. Spring Open Water Season 2025

Plains snowpack in the reach between Fort Peck and Garrison was below average. By the end of March, the NOHRSC snow model indicated trace to one inch of modeled SWE across portions of the Dakotas and virtually zero across the rest of the basin. The mountain snowpack in the Garrison reach was slightly below normal, peaking at 95% of normal on April 5. Average monthly inflows to the reservoir were 15,100 cfs (65% of average) in April, 31,000 cfs (102% of average) in May, and 37,000 cfs (76% of average) in June. Monthly releases were near average during the three-month span of April through June with April releases at 17,900 cfs (95% of average), May releases at 22,000 cfs (100% of average), and June releases at 23,100 cfs (91percent of average). The Garrison reservoir level rose 3.8 feet from its March 31 elevation of 1831.4 feet to 1835.2 feet at the end of June, 2.3 feet below the 16.5-foot flood control zone. The Garrison reservoir level rose 1.2 feet during the critical fish spawning period, from 1831.4 feet (March 31) to 1832.6 feet (May 31).

e. Summer Open Water Season 2025

Inflows into the Garrison reservoir peaked in June but were below average during the summer months. Inflows averaged 20,000 cfs during July (61% of average), 15,000 cfs during August (82% of average), and 13,600 cfs during September (80% of average) as precipitation was below average over much of the Garrison reach during July, August, and September. Releases were below average throughout the summer months averaging 21,900 cfs in July (82%

of average), 20,300 cfs in August (79% of average), and 16,400 cfs in September (77% of average). The reservoir level peaked at 1835.2 feet on July 4, 2.3 feet below the 16.5-foot flood control zone. Following the peak, the Garrison pool declined 3.4 feet to 1831.8 feet at the end of September. A daily peaking pattern was established at Garrison from May 21 through August 31 to protect T&E species nesting on sandbars below the project.

f. Fall Open Water Season 2025

Inflows remained below average during October (14,100 cfs; 82% of average), November (11,100 cfs; 70% of average), and December (10,500 cfs; 76% of average). Releases also remained below average during the October-December period: 13,800 cfs (72% of average), 13,900 cfs (71% of average) and 15,600 cfs (80% of average), respectively. Releases increased from 14,000 cfs to 16,000 cfs at the beginning of December and remained at that rate in anticipation of the freeze-in of the Missouri River between Washburn and Bismarck, ND. The December 31 Garrison pool elevation was 1829.2 feet, 8.3 feet below the Annual Flood Control and Multiple Use Zone.

g. Lake Audubon / Snake Creek Embankment

During the 2000-2007 drought, a restriction was put in place to limit the water level difference between Lake Audubon and Lake Sakakawea. This restriction required a Lake Audubon pool limit because of an underseepage evaluation of the Lake Audubon embankment by the NWO. Since the Garrison reservoir has returned to more average elevations following the 8-year drought, this water level restriction has not been an issue. Lake Audubon was drawn down to a winter level of 1845.0 feet in the fall.

h. Summary

The Garrison pool elevation began the year 2.2 feet below the base of the 16.5-foot flood control zone. The lowest Garrison midnight pool level during 2025 occurred on December 31 at 1829.2 feet, 8.3 feet below the base of the Annual Flood Control and Multiple Use Zone. The spring snowmelt and rainfall caused the pool to rise 3.8 feet during the months of April, May, and June. The peak midnight pool at Garrison of 1835.3 feet occurred on January 1 due to low runoff. The reservoir was drawn down throughout the winter and spring before rising to a midnight pool elevation of 1835.2 feet on July 4, 2.3 feet below the base of the 16.5-foot flood control zone. The pool then receded throughout the remainder of the year reaching an elevation of 1829.2 on December 31. The average annual inflow of 17,600 cfs was 76% of average. The average annual release of 18,900 cfs was 87% of average.

4. Oahe and Big Bend Regulation – January to December 2025

a. General

Oahe, the second largest USACE storage reservoir, serves all authorized purposes. Oahe's primary functions are (1) to capture snowmelt and localized rainfall runoff from the large drainage area between the Garrison and Oahe dams, which are metered out at controlled release rates to meet the authorized purposes, while reducing flood damages in the Oahe to Big Bend reach, especially in the urban Pierre and Fort Pierre areas; (2) to serve as a primary storage

location for water accumulated in the System from reduced System releases due to major downstream flood control regulation, thus helping to alleviate large reservoir level increases in Big Bend, Fort Randall and Gavins Point; and (3) to provide water needed to meet all authorized purposes that draft storage during low-water years, particularly downstream water supply and navigation. In addition, hourly and daily releases from Big Bend and Oahe fluctuate widely to meet varying power loads. Over the long term, their release rates are geared to back up navigation releases from Fort Randall and Gavins Point in addition to providing storage space to permit a smooth transition in the scheduled annual fall drawdown of Fort Randall. Big Bend, with less than 2 MAF of total storage, is primarily used for hydropower production, so releases from Oahe are generally passed directly through Big Bend.

Table 7 lists the average monthly inflows and releases and the EOM pool elevation for Oahe for 2024 and 2025 as well as the averages since the System first filled in 1967.

Table 7. Oahe – Inflows, Releases, and Elevations.

Month	Monthly Inflow (cfs)			Monthly Release (cfs)			EOM Elevation (feet)		
	2025	2024	1967-2024	2025	2024	1967-2024	2025	2024	1967-2024
January	19,300	16,300	22,200	17,100	16,300	20,800	1597.3	1600.0	1599.7
February	24,500	29,000	26,400	16,500	10,800	18,100	1598.8	1603.6	1601.2
March	20,500	19,700	30,200	20,300	20,300	18,300	1598.7	1603.5	1603.5
April	18,700	19,500	27,100	24,800	25,400	21,500	1597.4	1602.2	1604.5
May	31,100	23,500	28,700	24,200	17,700	22,300	1598.8	1603.0	1605.5
June	26,700	24,900	31,100	24,600	22,800	26,900	1599.0	1603.0	1606.0
July	24,900	24,000	29,300	21,800	11,900	30,900	1599.3	1605.6	1605.3
August	23,500	24,200	27,300	20,400	27,800	33,700	1599.5	1604.4	1603.5
September	23,900	19,800	23,100	17,500	30,200	30,300	1600.3	1601.4	1601.6
October	15,600	14,400	20,800	13,300	27,400	24,600	1600.4	1598.0	1600.4
November	15,200	15,400	21,100	15,800	22,300	23,400	1599.8	1596.2	1599.6
December	16,700	15,500	19,900	12,000	11,600	20,100	1600.7	1596.9	1599.3
Annual	**21,700**	**20,500**	**25,600**	**19,000**	**20,400**	**24,200**			

A settlement agreement was approved in an order of dismissal by the United States District Court, District of South Dakota on August 8, 2003, in the case of Lower Brule Sioux Tribe et al. v. Rumsfeld, et al. (Civil No. 02-3014 (D.S.D.)). The agreement provides that the USACE will consult with the Lower Brule Tribe and the Crow Creek Sioux Tribe during any review and revision of the Master Manual. This agreement also provides that the USACE will coordinate the regulation of Big Bend and the water level of the Big Bend reservoir with the two Tribes to include the following: the USACE will normally strive to maintain a Big Bend pool level

between elevation 1419.0 feet and 1421.5 feet and, when the level of the Big Bend reservoir drops below elevation 1419.0 feet or exceeds elevation 1421.5 feet, the Chief of MRBWM will provide notice to such persons as the Tribes shall designate in writing. When it is anticipated that the water level will drop below 1418.0 feet or rise above 1422.0 feet or, in the event the water level falls below 1418.0 feet or rises above 1422.0 feet, the Commander, NWD, or his designee, shall immediately contact the Chairpersons of the Tribes or their designees to notify them of the situation and discuss proposed actions to remedy the situation. During 2025, the Big Bend reservoir level varied in the narrow range between elevations 1420.1 feet to 1421.6 feet. As per the settlement agreement, no additional coordination was necessary.

Table 8 lists the average monthly inflows and releases and the EOM pool elevation for Big Bend for 2024 and 2025 as well as the averages since the System first filled in 1967.

Table 8. Big Bend – Inflows, Releases, and Elevations.

Month	Monthly Inflow (cfs)			Monthly Release (cfs)			EOM Elevation (feet)		
	2025	2024	1967-2024	2025	2024	1967-2024	2025	2024	1967-2024
January	17,100	16,000	20,300	17,200	16,200	20,300	1420.6	1420.8	1420.5
February	17,000	12,300	18,100	17,000	12,400	18,000	1420.5	1420.6	1420.5
March	20,500	20,500	19,000	19,900	20,000	18,900	1420.8	1421.1	1420.4
April	25,500	27,400	21,700	25,500	27,100	21,400	1420.9	1421.1	1420.5
May	25,000	18,200	22,400	24,500	18,700	22,300	1421.0	1420.4	1420.4
June	25,000	23,800	26,800	24,900	22,700	26,600	1420.8	1420.8	1420.3
July	21,900	12,500	30,000	21,700	12,100	29,600	1420.4	1420.8	1420.3
August	20,800	28,100	32,900	19,600	27,600	32,400	1421.0	1420.7	1420.3
September	19,100	30,500	29,700	18,900	29,700	29,100	1420.6	1420.9	1420.3
October	13,600	27,700	24,300	13,300	27,600	23,800	1420.5	1420.5	1420.5
November	15,900	22,700	23,000	15,200	22,100	22,900	1420.9	1420.8	1420.4
December	12,100	11,700	19,800	12,000	11,700	19,600	1420.9	1420.9	1420.5
Annual	**19,500**	**21,000**	**24,000**	**19,100**	**20,700**	**23,700**			

b. Winter Season 2024-25

No ice-induced flooding problems were experienced downstream of Oahe and Big Bend during the 2024-25 winter. This winter season experienced one significant sub-zero cold snap, in mid-January. No release adjustments were required for the ice formation downstream of the two projects, but some increases in releases were made to provide additional energy during critical periods. During the sub-zero cold snap, and subsequent ice formation, the notification stages were not exceeded at the Farm Island, Isaak Walton or LaFramboise Island gage locations. The

Missouri River conditions were closely monitored by USACE staff, and no issues were observed or reported.

A 100-MW minimum was implemented at Oahe from January 18 to February 24. The minimum generation of 100 MW is approximately a one-unit release of 8,000 cfs. The one-unit minimum ensures that water is always flowing in the Missouri River downstream of the Oahe Dam, which reduces river ice formation directly below the dam. The Oahe average monthly releases were below average for the entire winter: December 2024 was 11,600 cfs (average is 20,100 cfs); January was 17,100 cfs (average is 20,800 cfs); February was 16,500 cfs (average is 18,100 cfs). The Oahe reservoir froze over on February 7, 2025 and was ice free on March 17, 2025.

Big Bend was regulated in the winter season to follow power-peaking requirements and thus hourly releases varied widely. The average daily release during the winter season varied between 0 cfs and 27,000 cfs. The Big Bend reservoir froze over on January 2, 2025 and was free of ice on March 24, 2025.

c. Spring Open Water Season 2025

Plains snowpack in the reach between Garrison and Oahe reservoirs was lighter than normal in 2025. By the end of March, the NOHRSC snow model indicated trace to one inch of modeled SWE across portions of the Dakotas and virtually zero across the rest of the basin. Dry soil, below average plains snowpack, below-average precipitation, and below-average Garrison releases led to below-average inflows into Oahe during March (20,500 cfs; 68% of average), April (18,700 cfs; 69% of average), and May (31,100 cfs; 108% of average). Oahe releases were slightly above average during the March-May period in response to below average runoff below Oahe. Oahe releases averaged 20,300 cfs (111% of average), 24,800 cfs (115% of average), and 24,200 cfs (109% of average) during March, April, and May, respectively. The Oahe reservoir remained relatively steady between February 28 and May 31, beginning and ending the period at 1598.8 feet. The Oahe reservoir rose 0.1 feet during the critical fish spawning period, from 1598.7 feet (March 31) to 1598.8 feet (May 31).

d. Summer Open Water Season 2025

Oahe inflows in June, July, August, and September averaged 26,700 cfs (86% of average), 24,900 cfs (85% of average), 23,500 cfs (86% of average), and 23,900 cfs (103% of average), respectively. Oahe releases were below average during June-September. Releases in June, July, August, and September averaged 24,600 cfs (91% of average), 21,800 cfs (71% of average), 20,400 cfs (61% of average), and 17,500 cfs (58% of average). During the 4-month June-September period, the pool rose 1.5 feet from 1598.8 feet to 1600.3 feet.

e. Fall Open Water Season 2025

Oahe inflows remained below average from October through December. Inflows in October were 15,600 cfs (75% of average), 15,200 cfs in November (72% of average) and 16,700 cfs in December (84% of average). Releases for October were 13,300 cfs (54% of average), 15,800 cfs (68% of average) during November and 12,000 cfs (60% of average) during December. The December 31, 2025 pool elevation was 1600.7 feet, 6.8 foot below the base of the Annual Flood

Control and Multiple Use Zone. The reservoir pool level steadily rose throughout the year reaching the annual peak of 1601.2 feet on December 28, 6.3 feet below the base of the 12.5-foot flood control zone.

f. Summary

The highest 2025 Oahe midnight reservoir level of 1601.2 feet occurred on December 28, 6.3 feet below the base of the 12.5-foot flood control zone. The 2025 minimum midnight pool elevation of 1596.9 feet occurred on January 24, 10.6 feet below the base of the Annual Flood Control and Multiple Use Zone. Oahe's 2025 average annual inflow was 21,700 cfs, 85% of average. Oahe's 2025 average annual release was 19,000 cfs, 79% of average. Big Bend's annual minimum midnight pool elevation of 1420.1 feet was recorded on November 7. The annual maximum midnight pool elevation of 1421.6 feet was recorded on December 28.

5. Fort Randall Regulation – January to December 2025

a. General

Fort Randall, the fourth largest System reservoir, serves all authorized purposes. Fort Randall's primary functions are (1) to capture snow and localized rainfall runoff in the drainage area between Big Bend and Fort Randall dams, which are metered out at controlled release rates to meet the authorized purposes while reducing flood damages in the Fort Randall reach where several areas have homes and cabins in close proximity to the river; (2) to serve as a primary storage location along with the upstream projects for water accumulated in the System when System releases are reduced due to major downstream flood control regulation, thus helping to alleviate large pool increases in the very small Gavins Point reservoir; (3) to store the water necessary to increase winter hydropower energy by implementing an annual fall drawdown of the reservoir with a winter reservoir refilling that is unique to Fort Randall; and (4) to provide water needed to meet all authorized purposes, particularly navigation and downstream water supply, that draft storage during low-water years.

Table 9 lists the Fort Randall average monthly inflows and releases and the EOM pool elevation for 2024 and 2025 as well as the historic averages since the System was first filled in 1967.

Table 9. Fort Randall – Inflows, Releases, and Elevations.

Month	Monthly Inflow (cfs)			Monthly Release (cfs)			EOM Elevation (feet)		
	2025	2024	1967-2024	2025	2024	1967-2024	2025	2024	1967-2024
January	17,300	16,500	22,000	11,800	12,100	15,400	1345.0	1345.3	1346.8
February	18,700	16,000	20,100	11,700	7,100	13,500	1350.2	1352.1	1351.6
March	20,400	20,400	22,100	15,400	19,200	15,800	1353.8	1352.9	1356.1
April	26,000	30,200	24,300	23,400	25,000	22,000	1355.7	1356.5	1357.5
May	25,200	20,000	25,500	25,400	21,100	25,300	1355.2	1355.4	1357.4
June	25,200	26,500	29,700	23,700	19,000	28,700	1355.8	1360.1	1357.8
July	22,100	12,600	31,400	21,400	18,200	32,600	1355.8	1355.9	1356.6
August	20,100	27,600	34,200	20,000	27,900	35,000	1355.3	1355.2	1355.5
September	18,900	29,300	30,500	21,200	33,600	35,000	1353.1	1351.3	1351.6
October	12,500	25,500	24,000	22,200	33,400	33,000	1344.5	1343.9	1343.6
November	14,100	21,500	22,900	20,700	26,900	29,500	1337.5	1338.4	1337.1
December	12,100	11,900	20,800	10,000	10,600	17,100	1339.7	1339.6	1340.8
Annual	**19,400**	**21,500**	**25,600**	**18,900**	**21,200**	**25,200**			

b. Winter Season 2024-2025

No reports of ice-affected flooding on the Missouri River below Fort Randall were recorded during the 2024-25 winter season. Fort Randall's average daily winter release ranged from 7,800 cfs to 14,000 cfs. Fort Randall average monthly releases were below average for the entire winter season: December, January, and February releases averaged 10,600 cfs (62% of average), 11,800 cfs (77% of average) and 11,700 cfs (87% of average), respectively. The Fort Randall reservoir froze over on January 14 and was free of ice on March 16.

c. Spring Open Water Season 2025

The Fort Randall pool elevation was 1350.2 feet on February 28. The reservoir rose 5.0 feet during the spring months, ending the month of May at 1355.2 feet, near its typical spring and summer pool level. Releases were near average during March (15,400 cfs; 97% of average) while inflows were slightly below average for the month (20,400 cfs; 92% of average). Fort Randall average releases during April were 23,400 cfs (106% of average) while inflows averaged 26,000 cfs (107% of average). Releases during May averaged 25,400 cfs (100% of average) and inflows averaged 25,200 cfs (99% of average).

d. Summer Open Water Season 2025

Inflows receded to below average during the months of June through September. In June, inflows averaged 25,200 cfs (85% of average) and releases averaged 23,700 cfs (83% of average). Inflows and releases averaged 22,100 cfs (70% of average) and 21,400 cfs (66% of average), respectively, in July. Inflows averaged 20,100 cfs (59% of average) and 18,900 cfs (62% of average) during August and September, respectively. Releases averaged 20,000 cfs (57% of average) and 21,200 cfs (61% of average) during August and September, respectively. In June and July, the reservoir ranged from 1355.0 feet to 1356.5 feet. The reservoir declined 2.1 feet from 1355.2 feet at the end of May to 1353.1 feet on September 30.

A daily hydropower peaking pattern is typically established at Fort Randall during the T&E nesting season to provide flexibility to regulate over a range of releases while minimizing impacts to T&E species nesting below the project. This year the hydropower peaking pattern was between May 21 and August 31.

e. Fall Open Water Season 2025

Normal regulation of Fort Randall includes the lowering of the pool level during the fall, reaching 1337.5 feet by the end of the navigation season, 17.5 feet below the normal summer level, to make room for capture of winter powerplant releases from the upper reservoirs. During a full navigation season, the pool is maintained above 1353.0 feet through the Labor Day weekend before starting the lowering of the pool. In 2025, the reservoir ended September slightly above 1353.0 feet. Inflows and releases were below average during the October-December period. Inflows were 12,500 cfs (52% of average), 14,100 cfs (62% of average) and 12,100 cfs (58% of average) during October, November, and December, respectively. Releases were 22,200 cfs (67% of average), 20,700 cfs (70% of average), and 10,000 cfs (58% of average) during October, November, and December, respectively. On August 31, the pool level was 1355.3 feet, near the typical pool elevation for that time of year. The Fort Randall reservoir steadily declined and reached its lowest 2025 level of 1336.5 feet on November 20.

f. Summary

The highest 2025 Fort Randall midnight reservoir level of 1356.5 feet occurred on July 11. The lowest 2025 midnight reservoir level was 1336.5 feet on November 20. The average annual inflow was 19,400 cfs, 76% of average, and the average annual release was 18,900 cfs, 75% of average.

6. Gavins Point Regulation – January to December 2025

a. General

Gavins Point, the most downstream of the System projects, is primarily used for flow re-regulating to smooth out the release fluctuations of the upper System projects to better serve downstream purposes. With a total storage of 428,000 acre-feet (AF), it provides only a small amount of flood control and is generally maintained in a narrow reservoir elevation band between 1205.0 and 1208.0 feet. Due to the limited storage, releases from Gavins Point must be backed up with releases from the upper System projects. Gavins Point is the key location in the

initiation of release reductions for downstream flood control. Even though it has only a small amount of storage space for flood control, this volume is usually adequate to perform significant downstream flood control by coordinating Gavins Point release reductions with the upstream projects. Releases greater than the powerplant capacity, normally near 33,000 cfs, are passed through the spillway.

Table 10 lists the Gavins Point average monthly inflows and releases and the EOM pool elevation for 2024 and 2025 as well as the historic averages since the System was first filled in 1967.

Table 10. Gavins Point – Inflows, Releases, and Elevations.

Month	Monthly Inflow (cfs)			Monthly Release (cfs)			EOM Elevation (feet)		
	2025	2024	1967-2024	2025	2024	1967-2024	2025	2024	1967-2024
January	13,400	14,200	17,500	13,600	14,400	17,400	1207.2	1207.4	1207.4
February	13,800	12,700	16,700	13,900	13,000	17,400	1206.8	1206.6	1205.9
March	17,700	20,900	20,100	17,800	20,800	20,000	1206.6	1206.7	1205.8
April	25,900	29,900	25,800	25,700	29,400	25,700	1206.7	1207.8	1205.9
May	27,700	24,800	29,000	27,600	25,300	28,800	1206.6	1206.0	1206.1
June	27,400	26,600	32,100	27,200	26,000	31,900	1206.6	1207.0	1206.3
July	24,300	20,300	34,800	24,200	20,200	34,400	1206.3	1206.3	1206.7
August	22,800	29,300	36,800	22,300	29,000	36,400	1207.1	1206.5	1207.2
September	23,900	34,100	37,100	23,500	33,500	36,700	1207.7	1207.7	1207.6
October	24,500	33,700	35,400	24,400	33,600	35,100	1207.8	1207.6	1207.8
November	23,500	29,200	32,000	23,500	29,100	32,000	1207.7	1207.8	1207.6
December	12,700	13,000	19,300	12,800	12,900	19,300	1207.4	1208.0	1207.3
Annual	**21,500**	**24,100**	**28,100**	**21,400**	**24,900**	**27,900**			

b. Winter Season 2024-25

Gavins Point releases were stepped down in late November reaching the winter release rate of 12,000 cfs on December 13, 2024. Gavins Point releases were generally at the minimum winter release of 12,000 cfs and thus below average for the winter season. Gavins Point releases were held at the 12,000 cfs level until December 28, 2024 when they were increased to 14,000 cfs over two days to minimize impacts from downstream ice formation. Releases were held at 14,000 cfs until January 9 and then stepped down to 12,000 cfs. Gavins Point releases remained at 12,000 cfs until January 17, 2025 when they were increased to 14,000 cfs again to minimize impacts from downstream ice formation. Releases were reduced to 13,000 cfs on February 26 and 12,000 cfs on March 4. Releases were maintained at the level until March 17 when they

were increased for the 2025 navigation flow support season. The Gavins Point average monthly releases were below average for all three winter months. The December 2024 release was 12,900 cfs (average is 19,300 cfs); January 2025 was 13,600 cfs (average is 17,400 cfs); and February was 13,900 cfs (average is 17,400 cfs). The Gavins Point reservoir froze over on December 20, 2024 and was free of ice on March 15, 2025.

c. Winter River and Ice Conditions below Gavins Point

Freezing temperatures arrived in the Midwest in mid-December 2024. Floating ice was reported in the Sioux City area beginning on December 13, 2024. Sub-zero temperatures during the winter, combined with below-average releases created conditions to form floating ice that collided and bonded to build ice jams and bridges. During the winter of 2024-2025, Missouri River ice observers recorded 10 to 100% floating ice, and pans ranging in size from 2 to more than 30 feet. An ice jam is defined as an accumulation of ice at a given location, which in a river, restricts the flow of water. An ice bridge is defined as a continuous ice cover of limited size extending from shore to shore.

Reports of ice downstream of Gavins Point began on December 13, 2024, and all ice was melted out by March 4, 2025. Beginning around December 13, 2024, sub-zero temperatures resulted in 2- to 20-foot pans of floating ice, and later ice bridges and ice jams. An ice bridge occurred from Decatur to Blair, NE on January 22. The ice bridge migrated downstream and occasionally melted along the banks but did not start breaking up until February 27.

d. Spring Open Water Season 2025

Gavins Point releases were increased beginning March 17 from the winter release rate of 12,000 cfs up to 25,000 cfs by March 22 to meet navigation targets downstream. Releases were adjusted as needed during the spring to meet downstream navigation targets. During March, the average Gavins Point inflow was 17,700 cfs (88% of average) and the average release was 17,800 cfs (89% of average). The end-of-March pool elevation was 1206.6 feet, 0.8 foot above the average end-of-March pool elevation. During April, the average Gavins Point inflow was 25,900 cfs (100% of average) and the average outflow was 25,700 cfs (100% of average). The end-of-April pool elevation was 1206.7 feet, 0.8 feet above the average end-of-April pool elevation. Releases increased to 30,000 cfs in mid-May as part of the steady-release-flow-to-target operations during the piping plover nesting season. In May, the average Gavins Point inflow was 27,700 cfs (96% of average) and the average release was 27,600 cfs (96% of average). The end-of-May pool elevation was 1206.6 feet, 0.5 foot above the average end-of-May pool elevation.

e. Summer Open Water Season 2025

June inflows and releases were 27,400 cfs and 27,200 cfs, respectively, 85% of average. Tributary runoff downstream of Gavins Point increased during June, and releases were reduced from 30,000 cfs to 27,000 cfs on June 5, and down to 25,000 cfs on June 27. June releases ranged from 25,000 cfs to 30,000 cfs. The end-of-June pool elevation was 1206.6 feet, which is 0.3 foot above average. The average inflows in July and August were 24,300 cfs (70% of average) and 22,800 cfs (62% of average), respectively. The average releases in July and August

were 24,200 cfs (70% of average) and 22,300 cfs (61% of average), respectively. Releases in July and August ranged from 20,000 cfs to 25,000 cfs. The end-of-July pool elevation was 1206.3 feet, 0.4 foot below average, while the end-of-August pool elevation was 1207.1 feet, 0.1 foot below average.

f. Fall Open Water Season 2025

The average inflows during September and October were 23,900 cfs (64% of average) and 24,500 cfs (69% of average), respectively. The average releases during September and October were 23,500 cfs (64% of average) and 24,400 cfs (70% of average), respectively. The average inflows during November and December were 23,500 cfs (73% of average) and 12,700 cfs (66% of average), respectively. The average releases during November and December were 23,500 cfs (73% of average) and 12,800 cfs (66% of average), respectively. The end-of-December pool elevation was 1207.4 feet, 0.1 foot above the average end-of-December pool elevation. The Gavins Point winter release of 12,000 cfs for the 2025-2026 winter season was reached on December 16.

g. Summary

The highest Gavins Point midnight reservoir level in 2025 was 1208.5 feet, reached on December 9. The lowest midnight reservoir level in 2025 was 1205.7 feet, reached on February 20. The average annual inflow to Gavins Point was 21,500 cfs, 6,600 cfs below average. The average annual Gavins Point release was 21,400 cfs, 6,500 cfs below average.

D. Non-Routine Regulation and Other Items Pertaining to System Regulation

Numerous regulation activities are performed each year that, although at one time may have been considered special, are now considered routine. These include release restrictions from a particular project for a period to permit hydrographic surveys, to facilitate limited construction within or adjacent to the downstream channel, to pattern releases to facilitate measurements of downstream discharges and water surface profiles, and to respond to power emergencies. There were no other non-routine regulation activities in 2025.

E. Reservoir Elevations and Storage

Reservoir elevations and storage levels of the System reservoirs at the end of July 2025 are presented in **Table 11** and the same information for the end of December 2025 is presented in **Table 12**. The upper three reservoirs, Fort Peck, Garrison, and Oahe, contain approximately 90% of the total System storage and pool levels can vary, especially during high inflow (flood) or low inflow (drought) periods. The lower three reservoirs are generally regulated in such a manner that their pool levels do not fluctuate much from year to year. For the upper three reservoirs, the 12-month change columns for the end of July indicate that Fort Peck, Garrison, and Oahe were below their elevations from 2024. On December 31, Fort Peck, Garrison, and Oahe were 11.3, 8.3, and 6.8 feet below the base of their Annual Flood Control and Multiple Use Zones, respectively.

Table 11. Reservoir Levels and Storages – July 31, 2025.

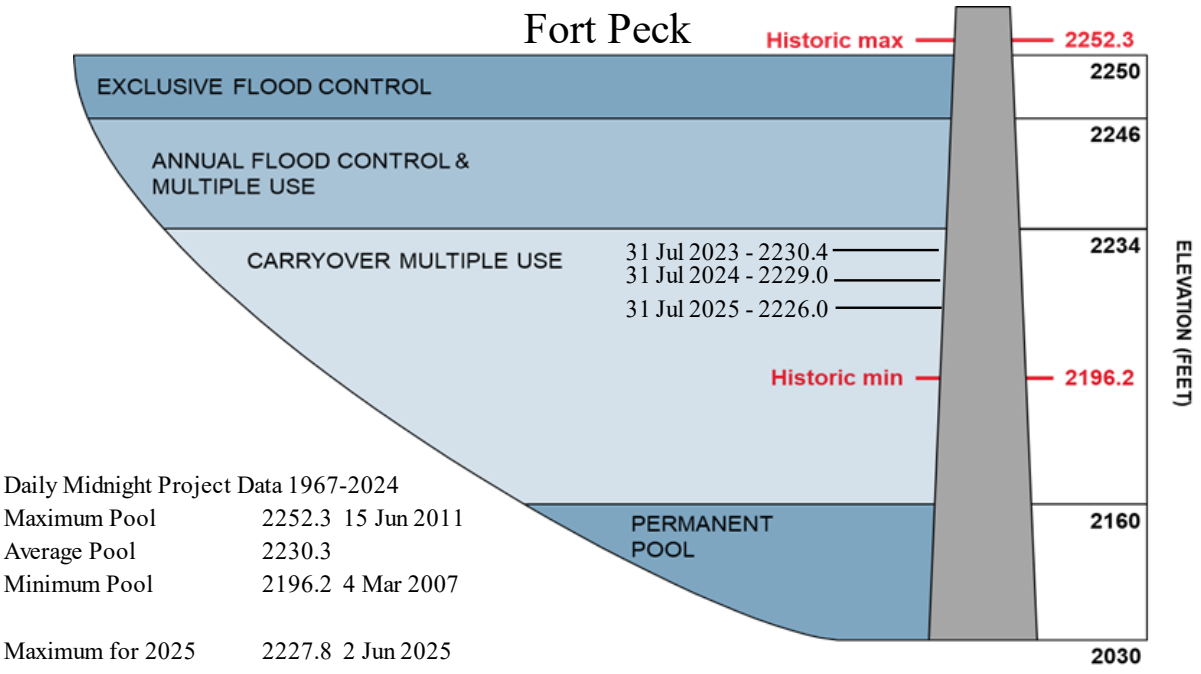
Project	Reservoir Elevation (feet)	Elevation 12-Month Change (feet)	Reservoir Total Storage (1,000 AF)	Storage Above Min. Level* (1,000 AF)	Storage 12-Month Change (1,000 AF)
Fort Peck	2226.0	-3.0	13,164	9,076	-605
Garrison	1834.3	-7.7	16,781	11,987	-2,418
Oahe	1599.3	-6.3	16,241	10,926	-1,800
Big Bend	1420.4	-0.4	1,657	26	-16
Fort Randall	1355.8	-0.1	3,481	2,012	-5
Gavins Point	1206.3	+0.0	332	37	-3

Table 12. Reservoir Levels and Storages – December 31, 2025.

Project	Reservoir Elevation (feet)	Elevation 12-Month Change (feet)	Reservoir Total Storage (1,000 AF)	Storage Above Min. Level* (1,000 AF)	Storage 12-Month Change (1,000 AF)
Fort Peck	2222.7	-3.5	12,434	8,346	-790
Garrison	1829.2	-6.1	15,313	10,519	-1,731
Oahe	1600.7	+3.8	16,681	11,366	+1,060
Big Bend	1420.9	+0.0	1,683	52	+4
Fort Randall	1339.7	+0.1	2,313	844	+3
Gavins Point	1207.4	-0.6	361	66	-14

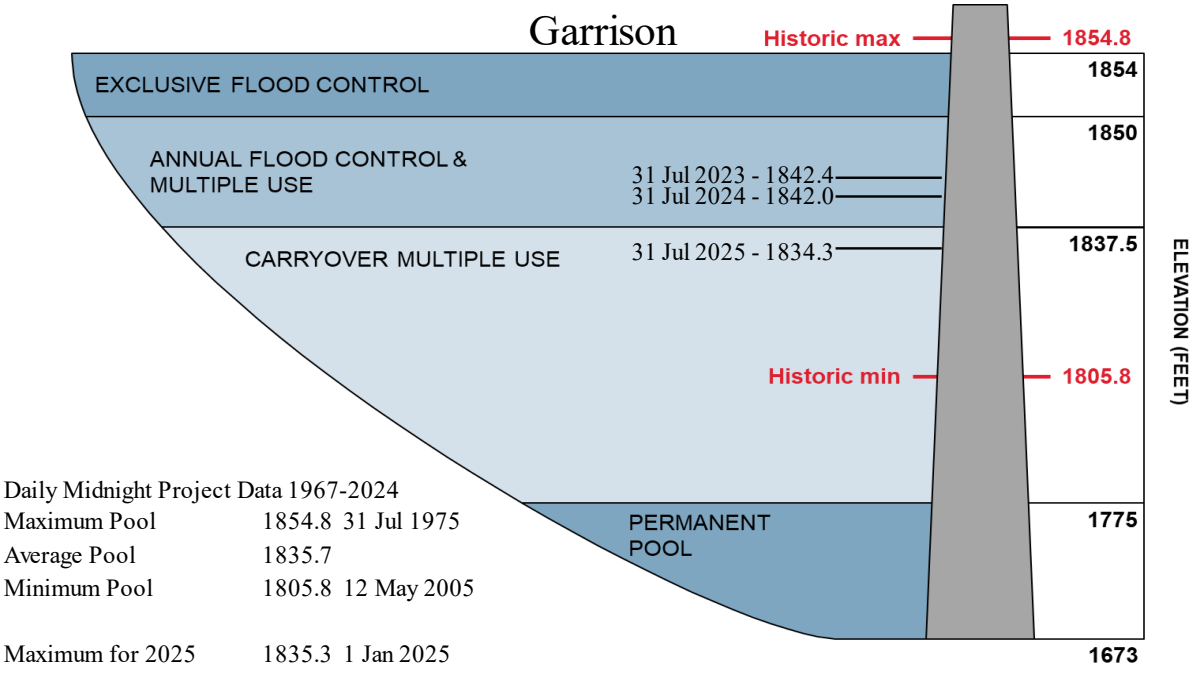
*Net usable storage above minimum reservoir levels established for power, recreation, irrigation diversions and other purposes.

Figure 15 and **Figure 16** show the end-of-July pool elevations for Fort Peck, Garrison and Oahe plus total System end-of-July storage for 2023 through 2025. Individual tables with the historic maximum, average and minimum pool elevations for each reservoir are also shown on **Figure 15** and **Figure 16**.



Daily Midnight Project Data 1967-2024

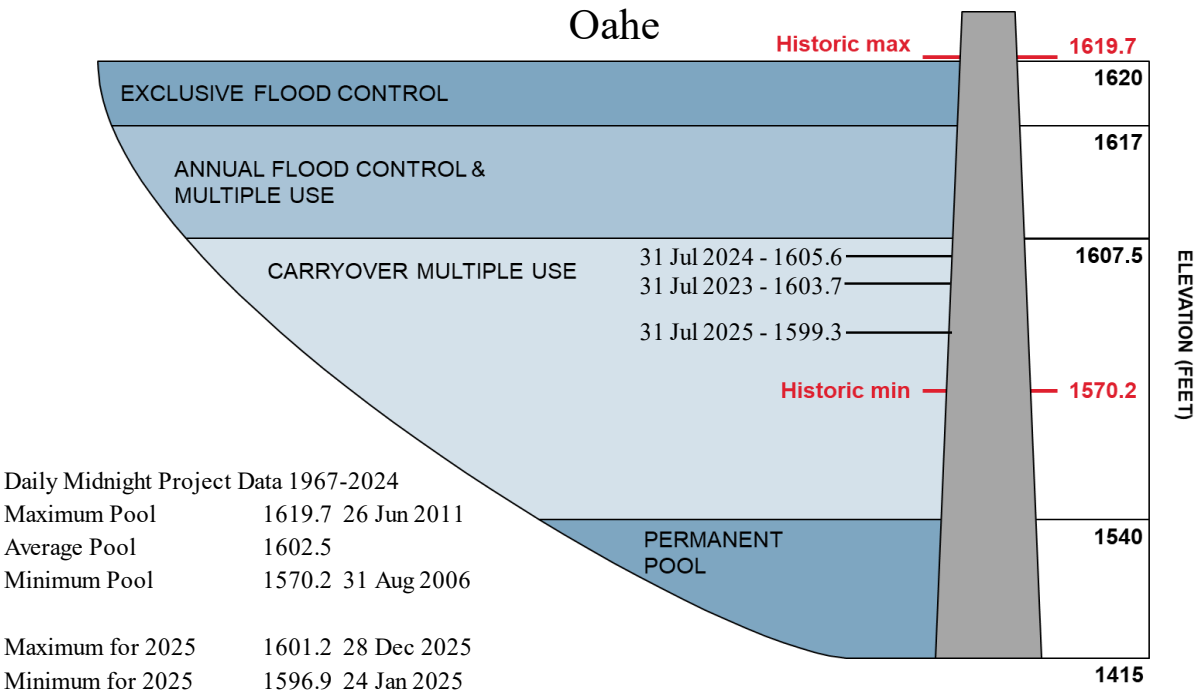
Maximum Pool	2252.3	15 Jun 2011
Average Pool	2230.3	
Minimum Pool	2196.2	4 Mar 2007
Maximum for 2025	2227.8	2 Jun 2025
Minimum for 2025	2222.0	30 Dec 2025



Daily Midnight Project Data 1967-2024

Maximum Pool	1854.8	31 Jul 1975
Average Pool	1835.7	
Minimum Pool	1805.8	12 May 2005
Maximum for 2025	1835.3	1 Jan 2025
Minimum for 2025	1829.2	31 Dec 2025

Figure 15. End-of-July pool elevations for Fort Peck and Garrison.



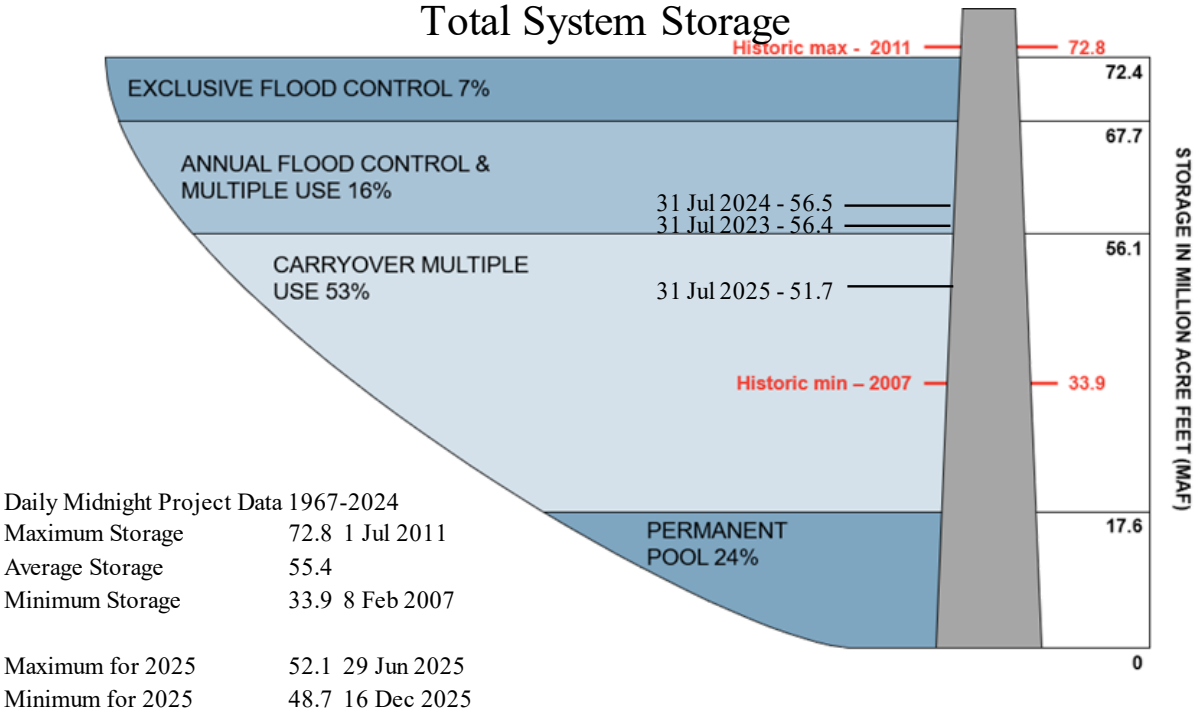


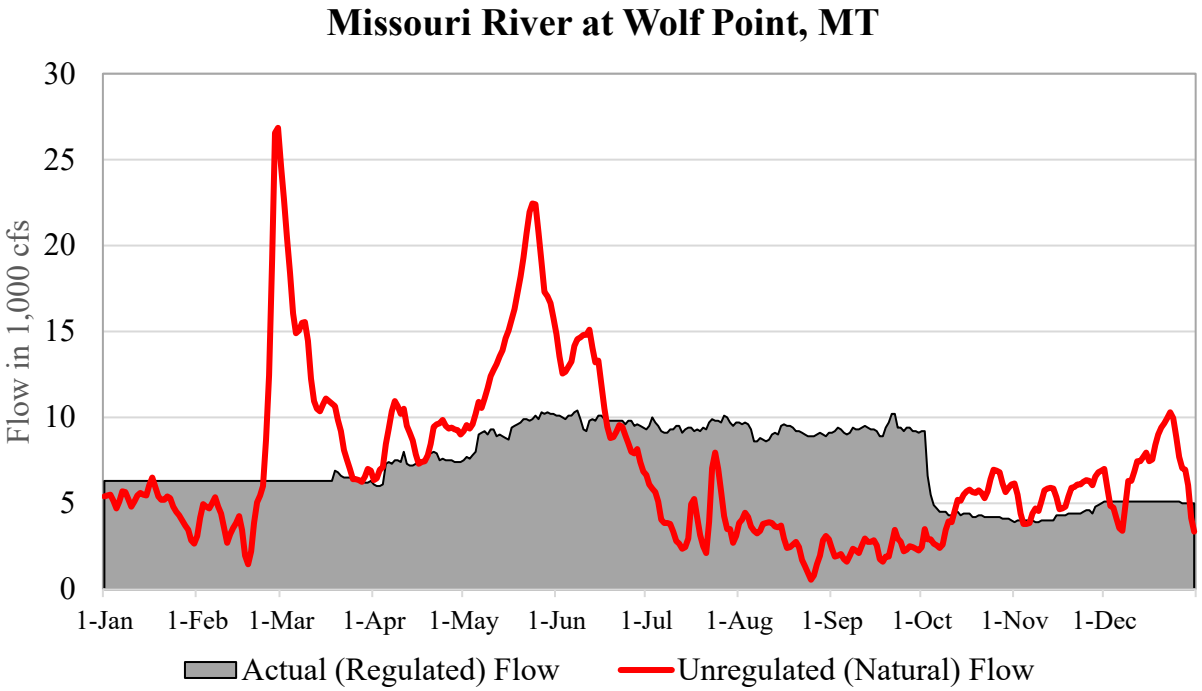
Figure 16. End-of-July pool elevations for Oahe and total System storage.

F. Summary of Results

1. Flood Control

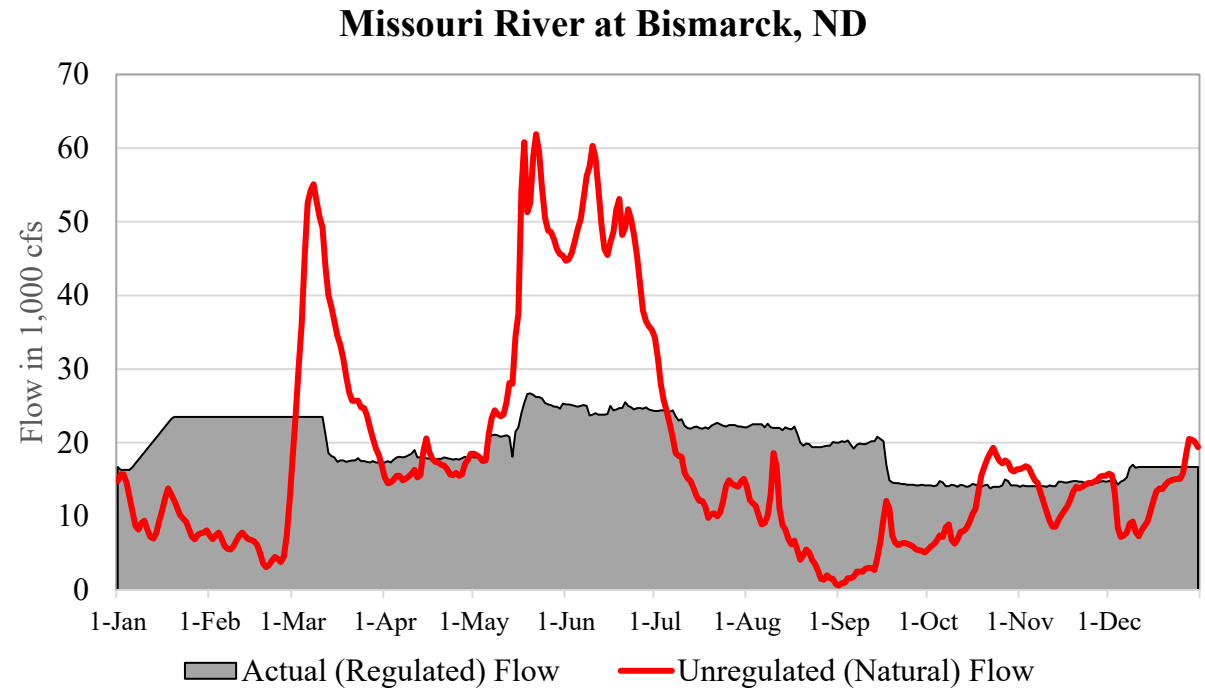
Operation of federal projects during significant runoff events in the NWO and Kansas City District (NWK) resulted in flood damage reduction. Plots of the 2025 regulated (actual experienced) Missouri River flow versus the unregulated (with no System reservoirs and tributary reservoirs) Missouri River flow are shown in **Figure 17** at Wolf Point, MT and **Figure 18** at Bismarck, ND; **Figure 19** at Sioux City, IA and **Figure 20** at St. Joseph, MO; and **Figure 21** at Boonville, MO and **Figure 22** at Hermann, MO. Compared to unregulated flows, actual flows at locations downstream of the mainstem projects were significantly reduced due to operation of the mainstem reservoirs.

The total flood damages prevented by all USACE-controlled reservoir projects, levees and emergency operations in the Missouri River Basin during 2025 were estimated to be about $2.3 billion ($114 million NWO; $2.2 billion NWK). Flood damages prevented by the System reservoirs in the NWO and NWK during 2025 were estimated to be $80 million. The System reservoirs were also estimated to have prevented $16.4 million of flood damages on the Mississippi River in 2025. The System flood damages prevented, indexed to the September 2025 price level, is illustrated in **Figure 23**. Since 1938, the total flood control damages prevented by the System were $111.8 billion, an annual average of about $1.3 billion, indexed to September 2025 price levels. The total un-indexed flood damages prevented at the original price levels is $51.4 billion, an annual average of about $584 million (see **Figure 24**). The bulk of the damages prevented occurred in 2018 and 2019, during the 6-year period from 1993 to 1999, and during the 4-year period from 2008 to 2011. For comparison purposes, **Figure 23** and **Figure 24** include the construction cost of the dams. Indexed to 2025 price levels, the dams cost approximately $36.4 billion, whereas the original un-indexed cost was $1.2 billion.



Actual flow prior to March 17 is ice-affected.

Figure 17. Actual and unregulated flows at Wolf Point, MT.



Actual flow prior to March 9 is ice-affected.

Figure 18. Actual and unregulated flows at Bismarck, ND.

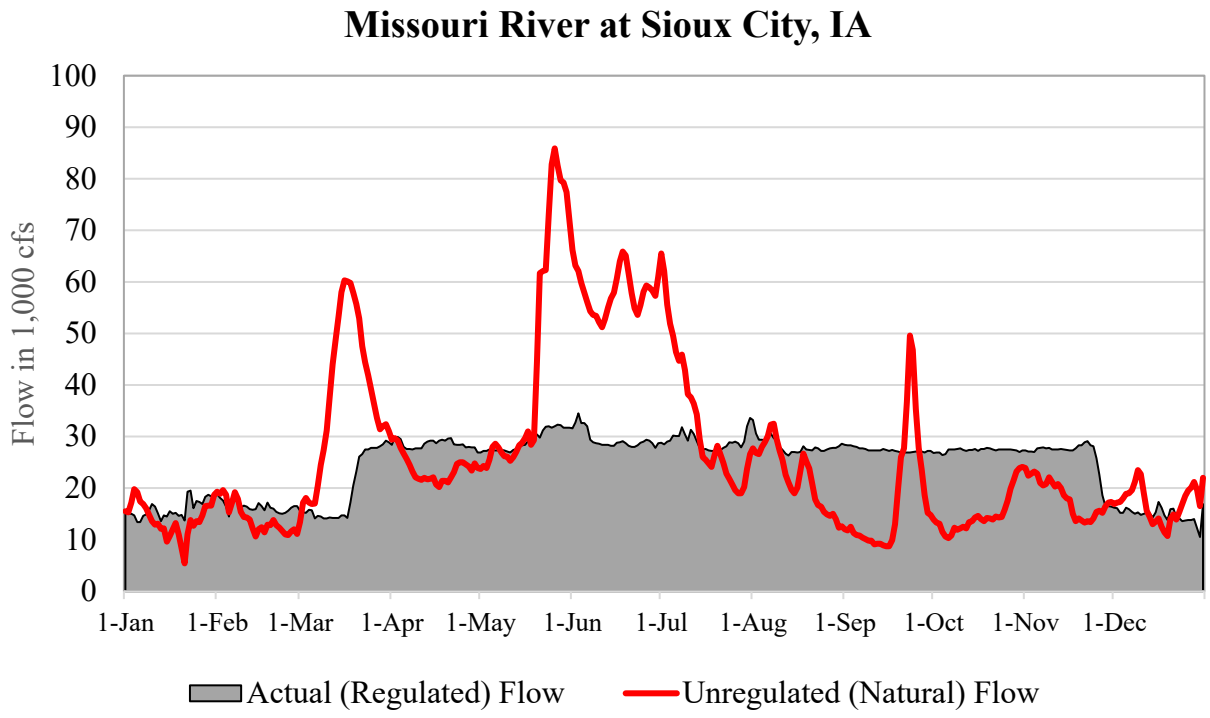


Figure 19. Actual and unregulated flows at Sioux City, IA.

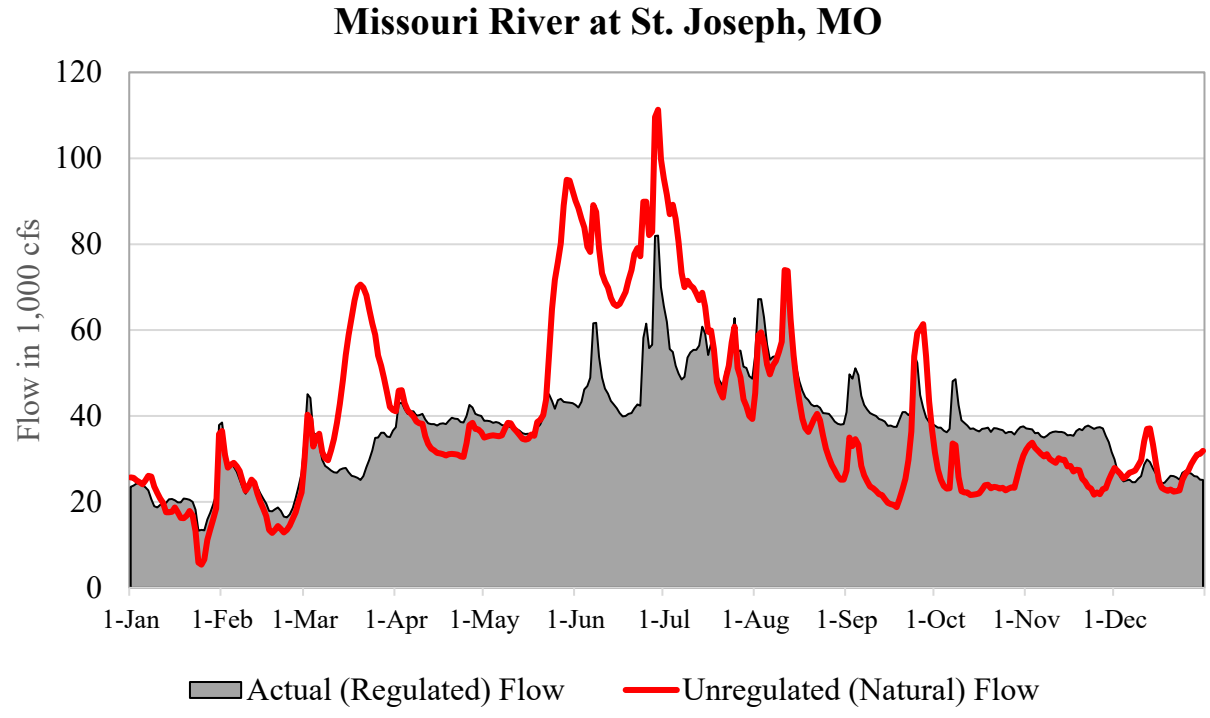


Figure 20. Actual and unregulated flows at St. Joseph, MO.

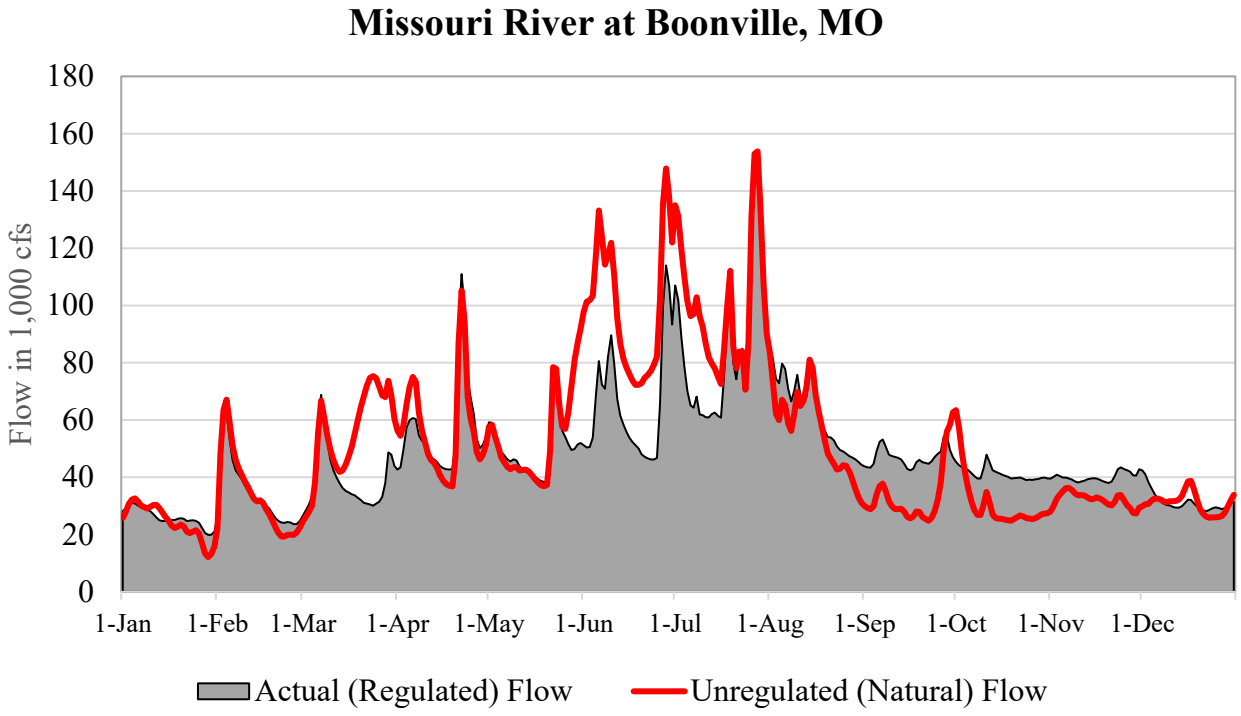


Figure 21. Actual and unregulated flows at Boonville, MO.

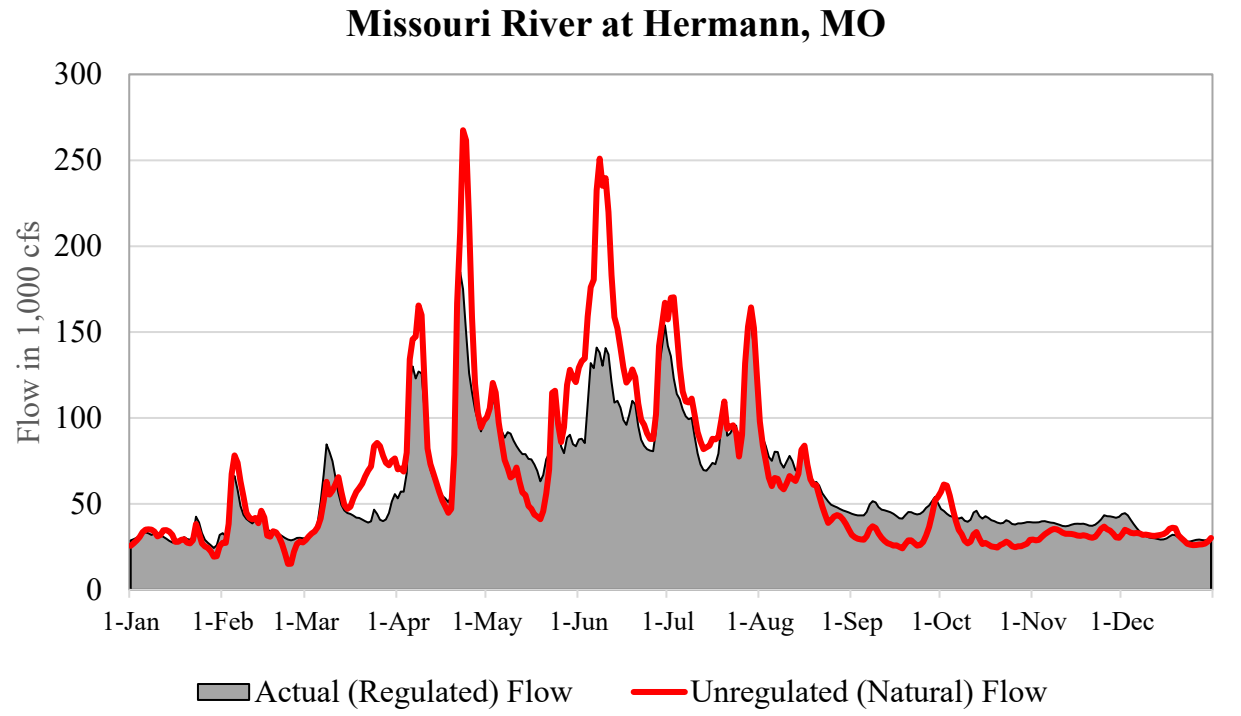


Figure 22. Actual and unregulated flows at Hermann, MO.

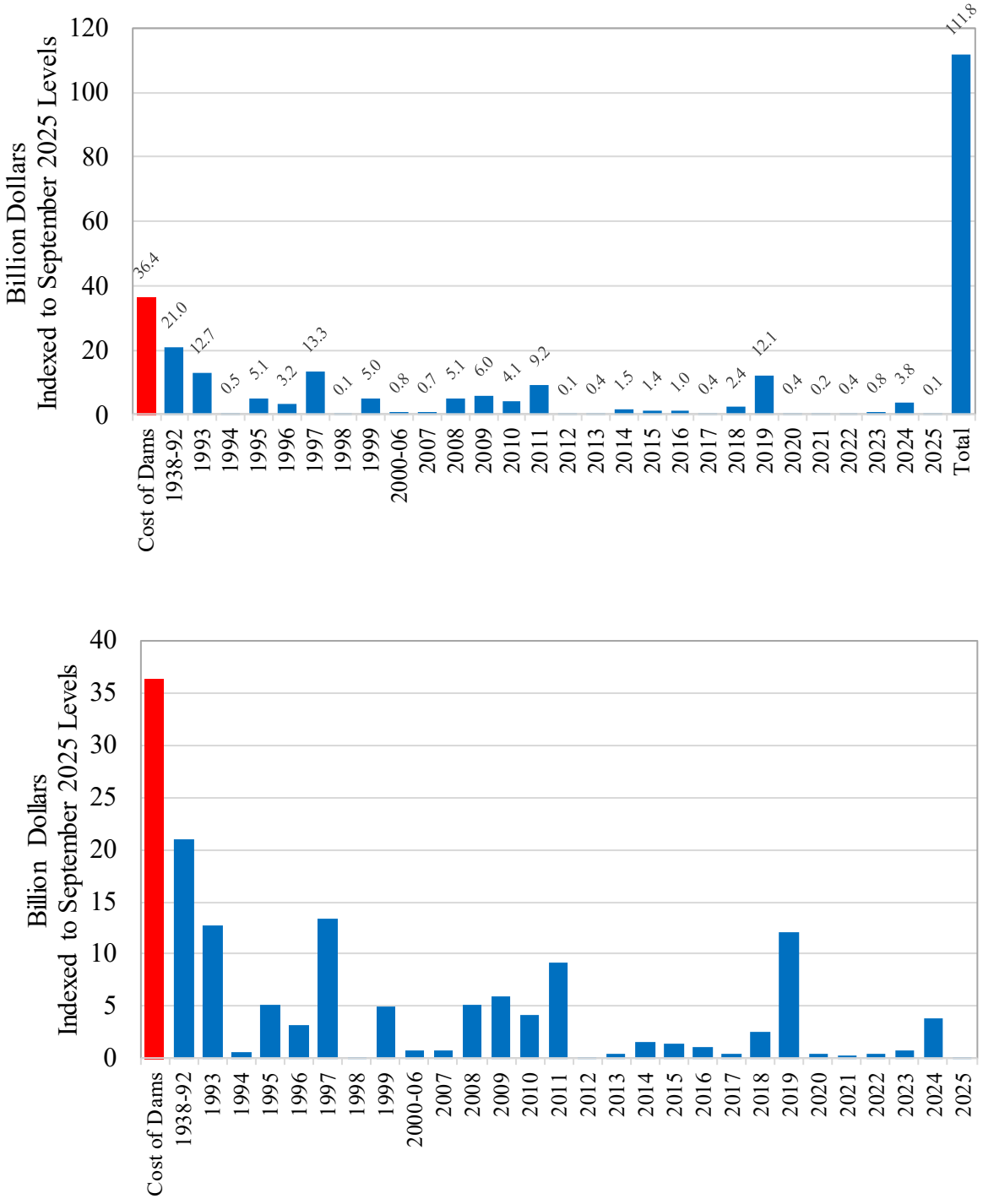


Figure 23. Missouri River flood damages prevented by the System – September 2025 levels. Bottom plot shows data without the total.

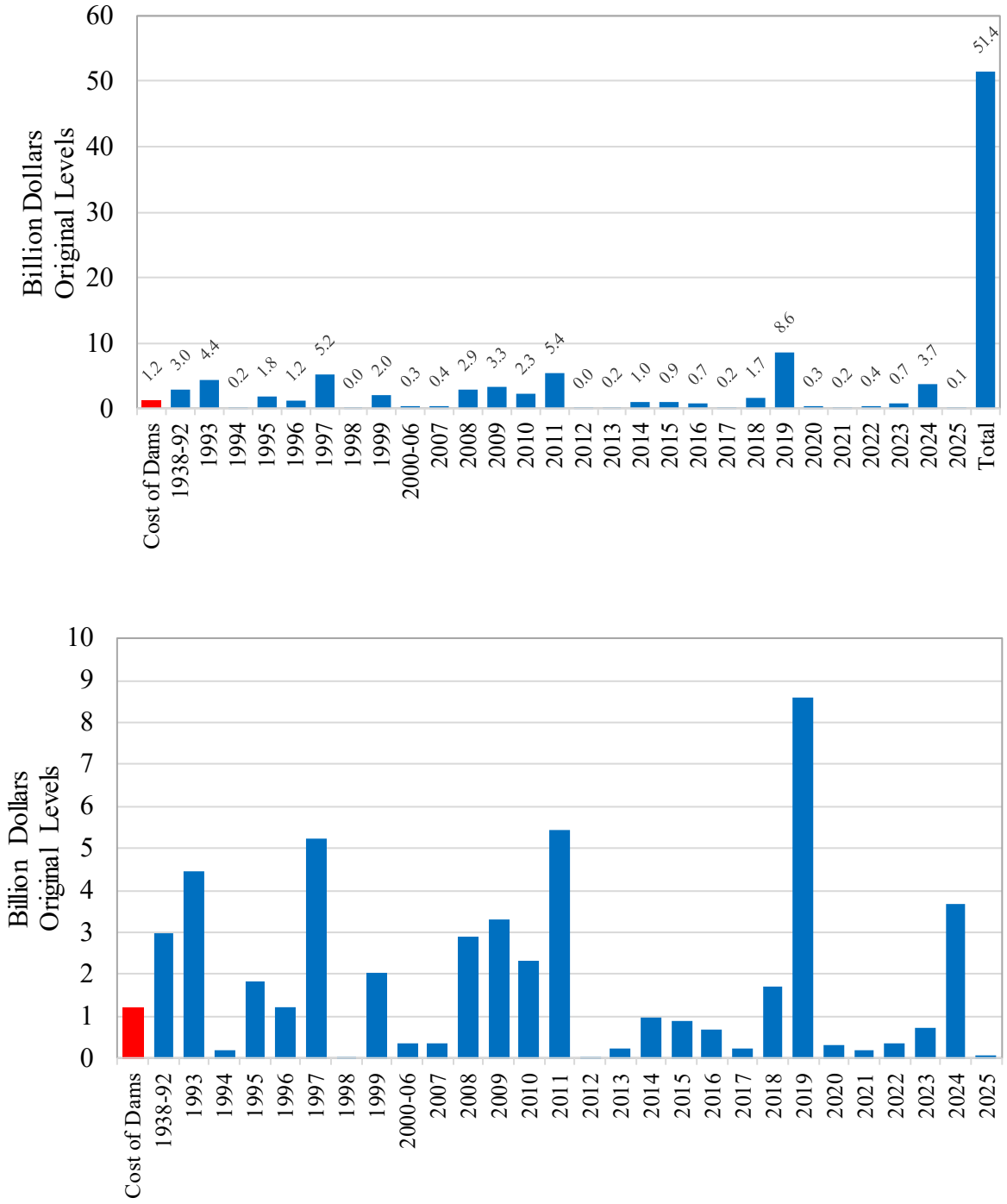


Figure 24. Missouri River flood damages prevented by the System – original price levels. Bottom plot shows data without the total.

2. Irrigation

Federally developed irrigation projects are not being served directly from the System reservoirs. The reservoirs, however, are being utilized by numerous private irrigators as well as federally financed projects that take water from the Missouri River. About 900 private irrigators pump directly from the reservoirs or river reaches.

Increased summer releases from Fort Peck Dam serve numerous irrigation intakes along the Missouri River by providing improved irrigation water access to irrigators. Historically, Fort Peck releases are reduced in mid-September, the typical end of the irrigation season in northeastern Montana. In 2025, the Fort Peck release was reduced at the end of September to provide additional irrigation water to agriculture producers. Maintaining the higher releases from Fort Peck Dam did not impact System releases from Gavins Point Dam in 2025, nor did it impact reservoir system operations beginning in 2026.

3. Water Supply

Problems at municipal and industrial intakes located in the river reaches and System reservoirs are related primarily to intake or river access problems rather than inadequate water supply. Intake owners today are generally better prepared to handle periods of low water with adjustments to intakes or regulation procedures. Some of these adjustments involve using warm water to keep ice formation from building up on intake screens; installing new pumps; lowering intakes; installing sediment redirection vanes and ice deflectors; obtaining, or arranging to obtain, alternate sources of water; and cleaning screens more thoroughly and frequently. While these remedial actions are sometimes expensive to install and operate, they significantly improve the ability of the intakes to operate at lower river stages and reservoir levels.

Based on the September 1, 2024 storage check, Gavins Point winter releases were set to no less than 12,000 cfs for the 2024-2025 winter period. Gavins Point releases can be increased temporarily during periods of cold temperatures when the river drops to mitigate intake access issues. An ice jam formed upstream of Maskell, NE during a short cold snap during December 19-21, 2024 causing stages to drop approximately 1.5 feet at Sioux City, IA. Due to the short nature of the cold temperatures, Gavins Point releases were not increased above the minimum winter release of 12,000 cfs. Cold temperatures were again forecasted to move into the lower basin in late December 2024. Gavins Point releases were temporarily increased to 14,000 cfs on December 28, 2024 in anticipation of ice formation on the Missouri River downstream of Gavins Point and remained at that level until January 10, 2025. An ice jam formed upstream of Ponca, NE during this period causing stages at Sioux City, IA to drop back to levels observed prior to the release increase. Cold temperatures were again forecasted in the lower basin beginning January 18, so Gavins Point releases were increased to 14,000 cfs on January 17, 2025 and were held at that rate through February 25, 2025. Three ice jams formed on the lower river during this period. The first formed near Ponca, NE and resulted in a stage reduction of approximately 2.0 feet at Sioux City, IA. A second formed between Omaha, NE and Blair, NE causing a stage reduction of approximately 1.5 feet at Omaha, NE. The third ice jam formed at the south edge of Omaha, NE. Stages at Plattsmouth, NE dropped approximately 4.0 feet. The ice jams contributed to water supply intake issues along the lower Missouri River.

4. Water Quality

a. Overview

During 2025, NWO conducted fixed-station ambient water quality monitoring at the mainstem reservoirs and on the lower Missouri River. Water quality conditions of the water discharged through each of the mainstem dams were continuously monitored. More detailed water quality monitoring information is available in NWO water quality reports on the NWO website at http://www.nwo.usace.army.mil/Missions/WaterInformation/WaterQuality/Reports.aspx.

NWO has identified six priority water quality issues that have relevance to the mainstem reservoirs. These identified priority issues are:

1. Evaluate how eutrophication is progressing in the mainstem reservoirs, especially regarding the expansion of hypoxic conditions in the hypolimnion during summer thermal stratification.
2. Determine how regulation of the mainstem dams and reservoirs affect water quality in the impounded reservoirs. Utilize the CE-QUAL-W2 hydrodynamic and water quality model to facilitate this effort.
3. Provide water quality information to support decision making (e.g., USACE reservoir regulation elements for effective surface water quality and aquatic habitat management, Tribes and States in the development of their Section 303(d) lists and development and implementation of total maximum daily loads (TMDLs) at NWO tributary projects).
4. Identify existing and potential surface water quality problems at NWO tributary projects and develop and implement appropriate solutions.
5. Evaluate surface water quality conditions and trends at NWO tributary projects.
6. Determine how flows released from mainstem reservoirs affect water quality in the downstream Missouri River. Utilize the HEC-RAS water quality model to facilitate this effort.

Table 13 provides a summary of water quality issues and concerns at each of the mainstem reservoirs and the lower Missouri River based on NWO monitoring and a review of current state integrated water quality reports.

b. Occurrence of "Two-Story" Fisheries at Mainstem Reservoirs

The Fort Peck, Garrison, and Oahe reservoirs maintain "two-story" fisheries comprised of warmwater and coldwater species. The reservoirs are able to maintain "two-story" fisheries due to thermal stratification in the summer, which allows coldwater habitat to be maintained in the deeper, colder region of the reservoirs (i.e., hypolimnion). Warmwater fish species inhabit the warmer, shallower areas of the reservoirs (i.e., epilimnion) while coldwater fish species inhabit the hypolimnion. Certain coldwater fish species are used extensively as forage by both coldwater and warmwater predator fish species in the reservoirs. Coldwater forage species that inhabit the reservoirs include the rainbow smelt (*Osmerus mordax*) and lake herring/lake cisco (*Coregonus*

artedi). Maintaining healthy populations of these coldwater forage fish is important to maintaining both the coldwater and warmwater recreational fisheries in the three reservoirs.

c. Bottom-Withdrawal Reservoirs

Bottom-withdrawal reservoirs have outlet structures located near the deepest part of the reservoir. During the summer while reservoirs are thermally stratified the bottom-withdrawal sends cold water from the deeper portions of the reservoirs downstream, during late summer this water may be hypoxic. Hypoxic conditions in the hypolimnion can result in the release of water with low dissolved oxygen and high levels of nutrients and other constituents. Bottom outlets can cause density interflows or underflows through the reservoir and generally provide little or no direct control over the quality of the water released through the bottom withdrawal. Garrison and Fort Randall are bottom withdrawal projects with both their power and flood tunnels drawing water from the bottom of the impounded reservoirs. Fort Peck Dam has a near-bottom withdrawal (i.e., 60 feet above the reservoir bottom) for the power and flood tunnels. The power tunnels at Oahe Dam draw water at a mid-depth elevation (i.e., 114 feet above the reservoir bottom); however, the flood tunnels draw water from the bottom of the reservoir. Both Big Bend and Gavins Point powerplants draw water from the bottom of the reservoir; however, these are shallower, re-regulation projects and water drawn into the powerplants is usually mixed through the reservoir water column.

d. Fort Peck Reservoir

Fort Peck reservoir is not assigned a coldwater fishery use by the State of Montana in their water quality standards. However, the reservoir supports a stocked put-grow-take salmon fishery and a naturally reproducing lake trout (*Salvelinus namaycush*) and lake cisco fishery; all are considered coldwater species. Since a coldwater fishery is currently supported in Fort Peck reservoir, it is seemingly an existing use to be protected pursuant to the anti-degradation provisions of the Federal Clean Water Act (40 CFR 131.3).

Dissolved oxygen concentrations below Montana's 5 mg/L, 7-day mean minimum water quality standard were monitored at the Fort Peck powerplant for the first time in 2012. A special water quality study was conducted by NWO in 2012 to evaluate the situation. When monitored on September 25, 2012 the area immediately downstream of the dam to just beyond the energy dissipation structures was below 5 mg/L dissolved oxygen, while the area from just downstream of the energy dissipation structures through the dredge cuts area was just above 5 mg/L. During 2021-2025 dissolved oxygen in the water discharged through the Fort Peck powerplant has remained above the 5 mg/L minimum water quality standard with minimum instantaneous values of 6.1 mg/L (2021), 6.1 mg/L (2022), 6.5 mg/L (2023), 5.9 mg/L (2024), and 6.0 mg/L (2025). The situation will continue to be evaluated to determine if corrective measures to meet State water quality standards are needed.

e. Garrison Reservoir

The State of North Dakota's water quality standards classify Garrison reservoir as a coldwater fishery. To protect the coldwater fishery use, the State has promulgated the following water quality standards for Garrison reservoir: a water temperature criterion of ≤ 59 deg F (or 15

deg C), a dissolved oxygen criterion of ≥ 5 mg/L, and a minimum reservoir volume of 500,000 AF (0.5 MAF) that meet these criteria.

Water temperature and dissolved oxygen depth profiles that were measured during water quality monitoring conducted at Garrison reservoir over the 5-year period 2020 through 2024 were used to estimate the volume of water in the reservoir that meets the coldwater fishery habitat conditions defined by the State of North Dakota. **Figure 25** shows estimated reservoir and coldwater fishery habitat volumes, by year, for 2021 through 2025. Water quality monitoring in 2025 indicates that North Dakota's 0.5 MAF minimum water quality standards criterion for coldwater fishery habitat was met. It is estimated that in late September of 2025 there was 664,667 AF of coldwater fishery habitat present as defined by the State of North Dakota's water quality standards.

To better assess the occurrence and support of coldwater fishery habitat in Garrison reservoir, NWO is currently updating their CE-QUAL-W2 hydrodynamic and water quality modeling of the reservoir. A comprehensive water quality report of Garrison reservoir, including application of the CE-QUAL-W2 model and how the USACE' regulation of the project influence water quality conditions can be found at the NWO Water Control and Water Quality Section's website.

Dissolved oxygen concentrations below North Dakota's 5 mg/L water quality standard have been monitored in late summer at the Garrison powerplant. To date, there is no evidence of current or past fish kills in the Garrison tailwaters. A Special Water Quality Study of the situation is being considered, and the situation will continue to be evaluated to determine if corrective measures to meet State water quality standards may be needed.

f. Oahe Reservoir

South Dakota's water quality standards protect Oahe for a Coldwater Permanent Fish Life Propagation (CPFLP) use (e.g., coldwater fishery). As such, a water temperature criterion of ≤ 65 deg F (18.3 deg C) and a dissolved oxygen criterion of ≥ 6 mg/L have been promulgated by South Dakota to protect the coldwater fishery of Oahe.

The occurrence of coldwater fishery habitat (i.e., water temperature ≤ 18.3 deg C and dissolved oxygen ≥ 6 mg/L) in Oahe was estimated from water quality monitoring conducted over the 5-year period 2021 through 2025. **Figure 26** shows estimated reservoir and coldwater fishery habitat volumes, by year, for 2021 through 2025. At least 2.0 MAF of coldwater fishery habitat was present in Oahe for all years.

g. Big Bend Reservoir

In 2023 the State of South Dakota in cooperation with the EPA reclassified the aquatic life beneficial use at Big Bend reservoir from CPFLP to Warmwater Permanent Fish Life Propagation (WPFLP). Water quality data showed that natural summer water temperatures of the Oahe powerplant discharge, especially during lower pool levels, did not meet the temperature requirements to support a CPFLP use. In 2024, Big Bend Reservoir was removed from the State of South Dakota Section 303(d) list of impaired waters and is in full support of all designated uses.

h. Fort Randall Reservoir

Hypolimnetic water is passed through Fort Randall Dam during power production in the summer and dissolved oxygen levels in the Fort Randall tailwaters fall below South Dakota's water quality standards' minimum dissolved oxygen criterion of 5 mg/L for protection of the designated WPFLP use. The low dissolved oxygen levels in the tailwaters are not impairing the designated WPFLP use as regions of refugia exist in the impacted area, and there is no evidence of current or past summer fish kills in the tailwaters attributable to low dissolved oxygen levels. If warranted, low dissolved oxygen levels in the Fort Randall tailwaters, during periods of hypolimnetic releases, could be mitigated by spilling surface water with higher dissolved oxygen concentrations down the spillway. The situation will continue to be evaluated to determine if corrective measures to meet South Dakota's water quality standards may be needed.

i. Gavins Point Reservoir

Gavins Point reservoir is currently identified as impaired by the State of Nebraska in their 303(d) listing of impaired waters. Nebraska identifies impairment to the use of aquatic life due to high chlorophyll-α levels and the recreational use as impaired due to *E. coli* concentrations. Of the six mainstem reservoirs, Gavins Point is exhibiting the most impact from nutrient loading and eutrophication. Eutrophication concerns at Gavins Point will likely increase as the reservoir continues to age. The current estimated volume loss of the Carryover Multiple Use Pool Zone (30%) in Gavins Point exceeds the State of Nebraska's criterion (25% volume loss) for listing the reservoir as impaired for aesthetics. Gavins Point is not currently listed as impaired for sedimentation by the State of Nebraska.

Table 13. Water Quality Issues and Concerns.

Project	Total Maximum Daily Load (TMDL) Considerations*				Fish Consumption		Other Potential Water Quality Concerns
	On 303(d) List	Impaired Uses	Pollutant/Stressor	TMDL Done	Advisory in Effect	Identified Contamination	
Fort Peck							
Fort Peck Lake	Yes (MT)	Drinking Water Supply Recreation	Lead, Murcury Aquatic Life	No No	Yes	Mercury	---
Missouri River, Fort Peck Dam to the Milk River	Yes (MT)	Aquatic Life Coldwater Fishery	Water temperature Degraded riparian vegetation Other flow regime alterations	No No	No	---	---
Missouri River, Milk River to the Poplar River	Yes (MT)	Aquatic Life Warmwater Fishery	Water temperature Degraded riparian vegetation Other flow regime alterations	No No	No	---	---
Missouri River, Poplar River to North Dakota	Yes (MT)	Aquatic Life Warmwater Fishery	Water temperature Other flow regime alterations	No No	No	---	---
Garrison							
Lake Sakakawea	Yes (ND)**	Fish Consumption	Methyl-mercury	No	Yes	Mercury	Coldwater fishery during drought conditions. Tailwater dissolved oxygen levels.
Missouri River, Garrison Dam to Lake Oahe	No	---	---	---	Yes	Mercury	Low dissolved oxygen in Garrison Dam tailwaters (associated with late summer hypolimnetic lake withdrawals).
Oahe							
Lake Oahe	Yes (SD)	Coldwater Permanent Fish Life Fish/Wildlife Propagation, Recreation, Stock Watering	Mercury in Fish Tissue	Yes	Yes	Mercury	Fish consumption advisory issued by North Dakota and Cheyenne River Sioux Tribe for Lake Oahe. TMDL completed by South Dakota for Mercury in Fish Tissue.
Big Bend							
Lake Sharpe	No	---	---	Yes	No	---	TMDL completed for sediment.
Fort Randall							
Lake Francis Case	No	---	---	---	No	---	Low dissolved oxygen in Fort Randall Dam tailwaters (associated with late summer hypolimnetic reservoir withdrawals).
Missouri River, Fort Randall Dam to Lewis and Clark Lake	No	---	---	---	No	---	Fish consumption assessment completed by Nebraska
Gavins Point							
Lewis and Clark Lake	Yes (NE)	Aquatic Life (NE)	E. coli (NE) Chlorophyll-a (NE)	No	No	---	Sedimentation. Emergent aquatic vegetation.
Missouri River, Gavins Point Dam to the Big Sioux River	Yes (NE)	Drinking Water Supply	Sulfate, Arsenic	No	No	---	Reduced suspended sediment and turbidity impacts to pallid sturgeon. Assimilative capacity and flow reduction.
Missouri River, Big Sioux River to Platte River	Yes (NE)	Drinking Water Supply Recreation	Sulfate, Arsenic E. coli	No	No	---	Reduced suspended sediment and turbidity impacts to pallid sturgeon. Assimilative capacity and flow reduction.
Missouri River, Platte River (NE) to NE-KS Stateline	Yes (MO, NE)	Drinking Water Supply Recreation Aquatic Life Fish Consumption Adv.	Arsenic E. coli Mercury	Yes (NE)	Yes (NE)	---	Reduced suspended sediment and turbidity impacts to pallid sturgeon. Assimilative capacity and flow reduction.

* Information taken from published state integrated water quality reports and impaired waters 303(d) listings as of January 1, 2026.

** Delisted in 2010 for impairment of the designated use "Fish and other Aquatic Biota" (warm water temperature and low dissolved oxygen) when Lake Sakakawea pool elevations recovered from drought conditions.

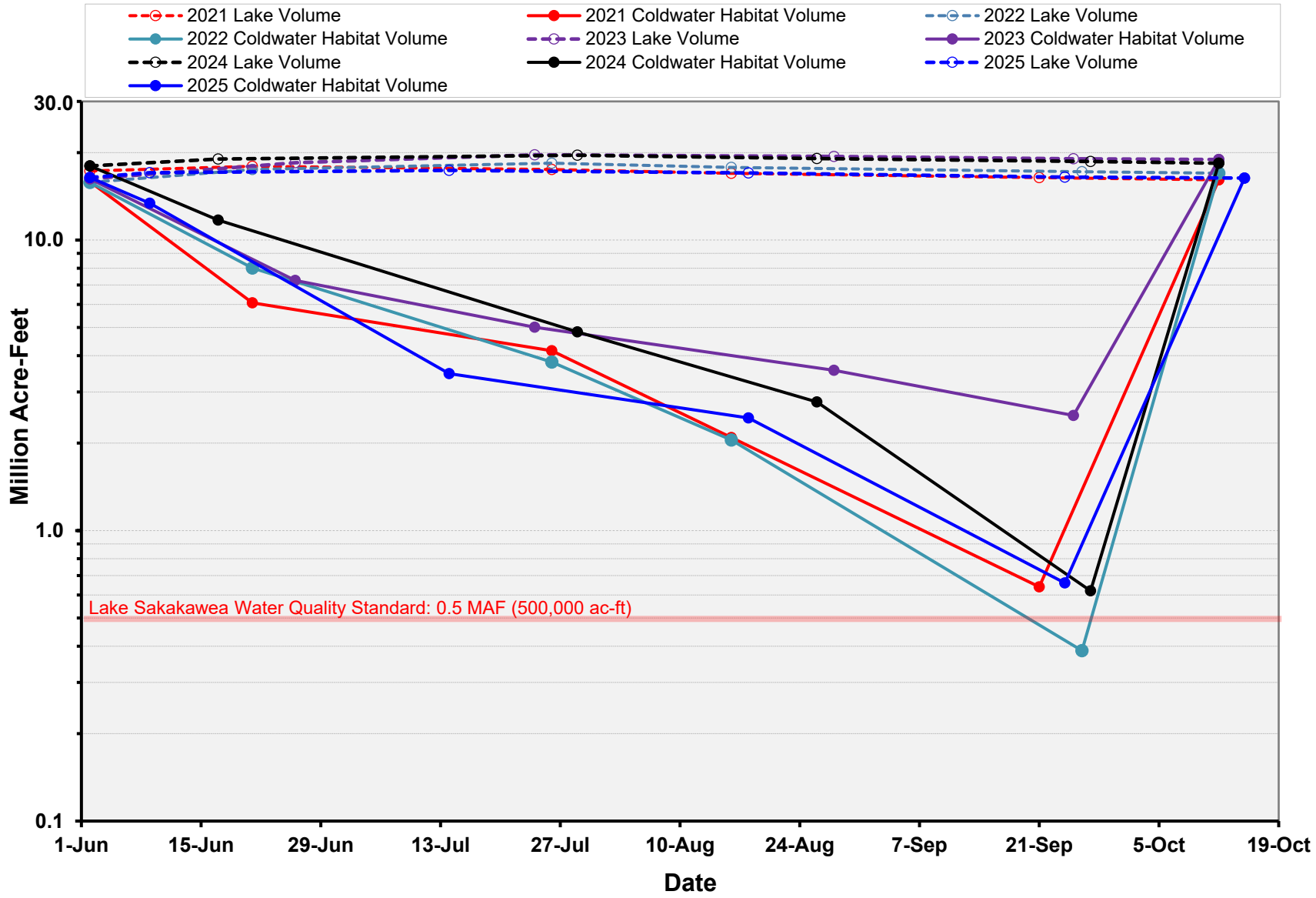


Figure 25. Garrison Estimated Reservoir & Coldwater Fishery Habitat Volumes.

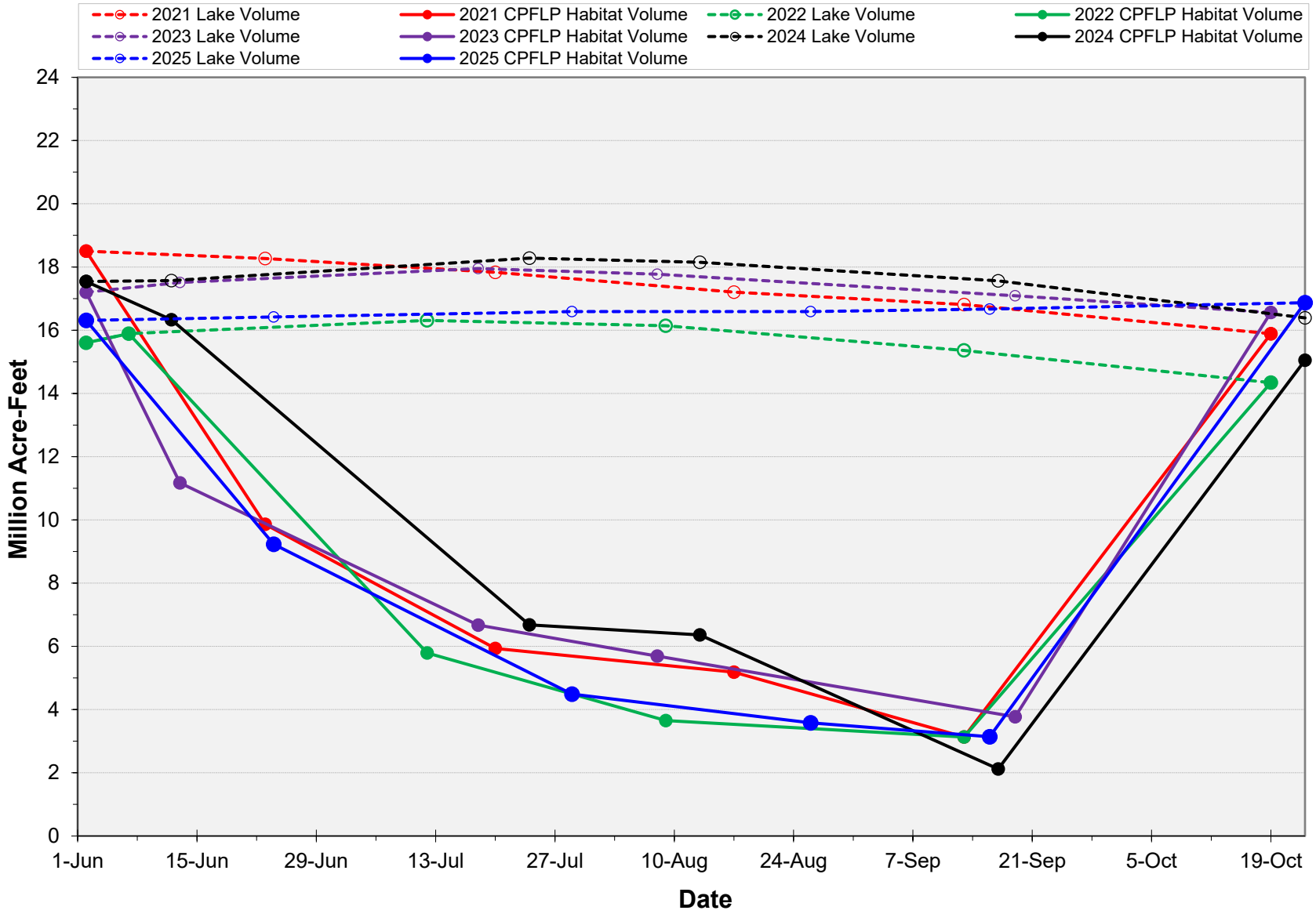


Figure 26. Oahe Estimated Reservoir & Coldwater Fishery Habitat Volumes.

5. Navigation

a. Barge Traffic

System releases provide navigation flow support in the Missouri River Bank Stabilization and Navigation Project (BSNP). Minimum-service navigation flow support, which is 6,000 cfs below full service, provides flow to ensure a minimum 8-foot channel depth. Full-service navigation flow support provides flow to ensure a 9-foot deep and 300-foot-wide channel in the BSNP. Navigation flow support for the first half of the navigation season is determined by the March 15 System storage check. Navigation flow support for the second half of the season, as well as season length, is determined by the July 1 System storage check. System releases are set to meet navigation target flows at four Missouri River locations – Sioux City, Omaha, Nebraska City and Kansas City.

The March 15 System storage check was 51.0 MAF, which set the flow support for the first half of the navigation season to 4,000 cfs below full service. The July 1 system storage check was 52.1 MAF and set the flow support for the second half of the navigation season to 4,500 cfs below full service and a full season length, ending on December 1 at the mouth.

On April 1, 2025, the USACE' Missouri River Project Office at Napoleon, MO reported that the first commercial loads entered the Missouri River at St. Louis, MO, destined for RM 361 at Kansas City. The project office boat reports during the week of November 24, 2025, indicated all commercial navigation was departing the lower Missouri River, prior to the close of the navigation flow support season on December 1, 2025, at the mouth of the Missouri River at St. Louis.

b. Tonnage

Table 14 shows the final Missouri River tonnage data for 2019-23 compiled by the USACE Waterborne Commerce Statistics Center (WCSC). Final navigation data is generally one year behind the summary of operations reporting year, because the WCSC needs an extended period to compile the data. However, the 2024 data has been further delayed due to staff reductions, and at the time of this report was not available. The most recent data available from 2023 shows a total of 4.969 million tons including 4.171 million tons of sand and gravel, 0.336 million tons of waterways materials, and 0.462 million tons of commercial goods. In 2023, the total tonnage increased by 0.331 million tons compared to 2022. The commercial tonnage decreased by 0.081 million tons to 0.462 million tons in 2023. The largest commercial tonnage occurred in 1977 at 3.34 million tons. **Figure 27** shows total navigation tonnage on the Missouri River since 1960. **Figure 28** shows the navigation tonnage value of the commodities, using 2023 present-worth computations. The 2023 tonnages and tonnage values shown in **Figure 27** and **Figure 28** are from the WCSC tabulations. Navigation tonnage and value in 2024 was not available at the time of this report, and 2025 estimates will not be available until 2027.

Navigation season target flows and System-supported navigation season lengths for past years are presented in **Table 15**. **Figure 29** through **Figure 32** illustrate flows at the four, navigation flow-target locations. There was no navigation support from the USACE' Kansas Basin projects in 2025.

The 2025 navigation season experienced no portions of the lower Missouri River being closed to navigation; although there were some trouble areas, nothing was impassable.

Table 14. Missouri River Tonnage by Commodity (1,000 Tons).

Commodity Classification Group	2019	2020	2021	2022	2023
Farm Products					
Corn	12	56	91	49	7
Wheat	7	3	6	11	6
Soybeans	56	234	58	67	102
	83	344	197	140	115
Nonmetallic Minerals					
Sand/Gravel	3,728	4,556	4,314	3,899	4,171
Misc Nonmetallic	7	15	22	25	23
	3,735	4,571	4,336	3,924	4,194
Chemicals					
Fertilizer	130	141	159	99	91
Other Chemicals	0	3	3	0	0
	130	144	162	99	91
Food and Kindred	0	0	0	1	0
Pulp and Paper	0	0	0	0	0
Petroleum (including Coke)	114	131	82	150	116
Stone/Clay/Glass	73	122	93	106	109
Primary Metals	20	17	47	22	8
Waterways Materials	104	331	302	196	336
Other (Misc Mineral Products)	0	0	0	0	0
Total Tonnage	4,259	5,660	5,219	4,638	4,969
Total Long-Haul Tonnage*	428	773	604	543	462

*Total tonnage excluding sand/gravel and waterways materials.

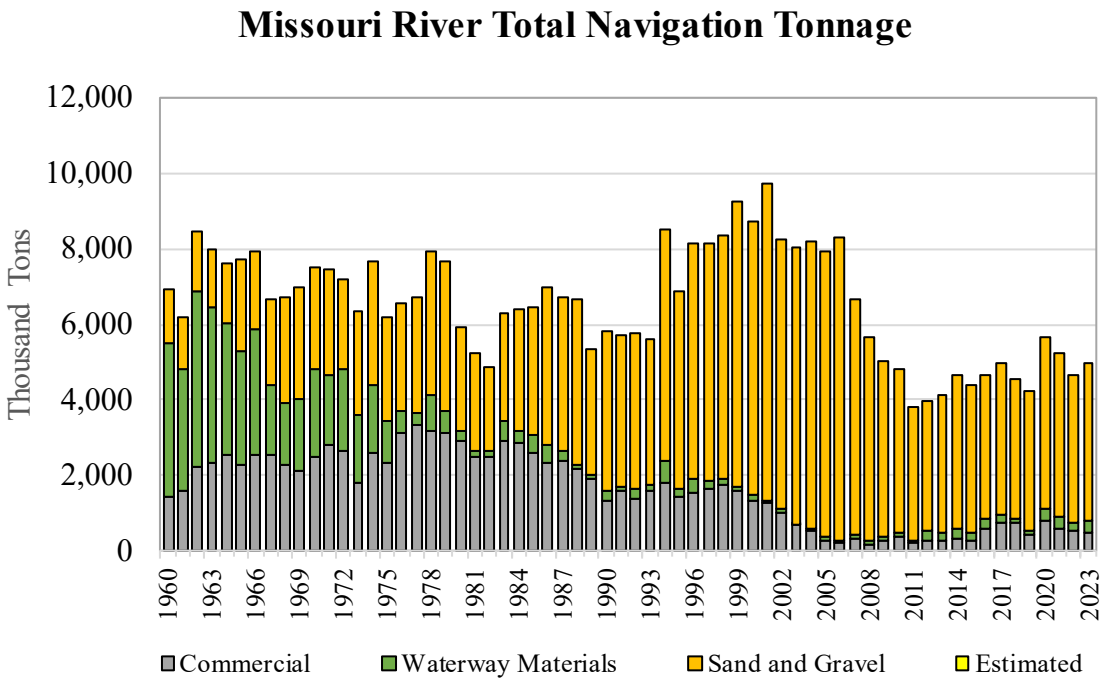


Figure 27. Missouri River total navigation tonnage since 1960.

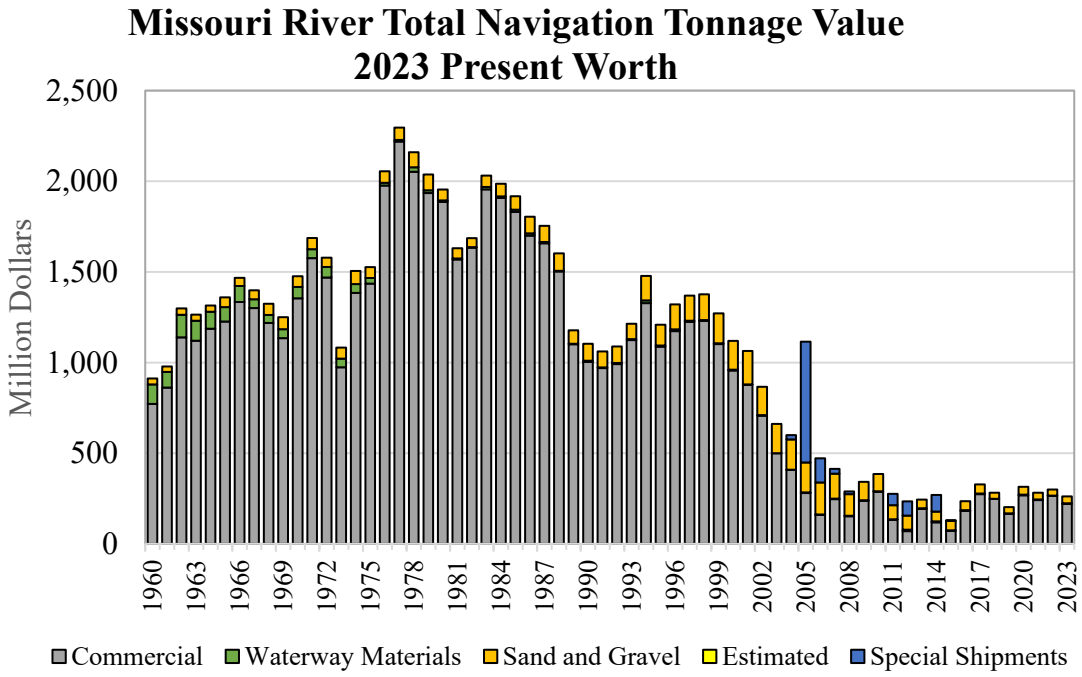


Figure 28. Total navigation tonnage value since 1960 – indexed to 2023.

Table 15. Navigation Season Length & Target Flows (1,000 cfs).

Year	Reservoir System Supported Length of Season (Months)		Sioux City	Omaha	Nebraska City	Kansas City
1967	8	Apr-Jun	28	28	34	38
(1)		Jul-Nov	31	31	37	41
1968	8 (2)	Apr-Dec	31	31	37	41
1969	8 (2)	Apr-Jun (3)	35-40	35-40	41-46	45-50
		Jul (3)	36	36	42	46
		Aug-Sep (3)	50-55	50-55	55-60	55-60
		Oct-Dec (3)	40-45	40-45	45-70	50-55
1970	8 (4)	Apr-May	31	31	37	41
		May-Sep (3)	36	36	42	46
		Oct-Dec (3)	40	40	46	50
1971	8 (2)	Apr-May (3)	36	36	42	46
		May-Dec (3)	45-50	45-50	50-55	55-60
1972	8 (2)	Apr-Dec (3)	40-50	40-50	45-55	50-60
1973	8	Apr-Nov	31	31	37	41
1974	8	Apr-Nov	31	31	37	41
1975	8 (2)	Apr	31	31	37	41
		May-Dec (3)	35-60	35-60	41-66	45-70
1976	8 (2)	Apr-Jul (3)	34-38	34-38	40-44	44-48
		Aug-Dec (3)	31-34	31-34	37-40	41-44
1977	8	Apr-Nov	31	31	37	41
1978	8 (2)	Apr	31	31	37	41
		May-Jul (3)	35-46	35-46	41-52	45-56
		Aug-Dec (3)	46-51	46-51	52-57	56-61
1979	8 (2)	Apr-Jul (3)	36-42	36-42	42-48	46-52
		Aug-Dec (3)	31-36	31-36	37-42	41-46
1980	8	Apr-Nov	31	31	37	41
1981	7 1/4 (5)	Apr-Nov (6)	31	31	37	41
1982	8 (2)	Apr-Sep	31	31	37	41
		Oct	31-36	31-36	37-42	41-46
		Nov-Dec (3)	36-46	36-46	42-52	46-56
1983	8 (2)	Apr-Jun	31	31	37	41
		Jul	31-36	31-36	37-42	41-46
		Aug-Dec (3)	36	36	42	46
1984	8 (2)	Apr-Jun	31	31	37	41
		Jul-Dec (3)	31-44	31-44	37-50	41-54
1985	8 (2)(7)	Apr-Dec	31	31	37	41
1986	8 (2)(7)	Apr (3)	36-41	36-41	42-47	46-51
		May-Dec (3)	41-46	41-46	47-52	51-56
1987	8	Apr-Nov	31	31	37	41
1988	7 1/2	Apr-Nov (6)	31	31	37	41
1989	6 3/4	Apr-Aug (8)	28	28	34	38
		Sep-Oct (8)	28	28	34	35
1990	6 3/4	Apr-Oct (9)	25	25	31	35
1991	6 3/4	Apr-Oct (9)	25	25	31	35

Year	Reservoir System Supported Length of Season (Months)		Sioux City	Omaha	Nebraska City	Kansas City
1992	6 3/4	Apr-Oct (9)	25	25	31	35
1993	8 (10)	Apr-Oct (9)	25	25	31	35
1994	8	Apr-Nov	31	31	37	41
1995	8 (2)	Apr-May	31	31	37	41
		Jun-Dec (3)	46-56	46-56	52-62	56-66
1996	8 (2)	Apr (3)	41	41	47	51
		May (3)	41-51	41-51	47-57	51-61
		Jun-Dec (3)	56	56	62	66
1997	8 (2)	Apr-Dec (11)	*	*	*	*
1998	8 (2)	Apr-Dec (11)	31	31	37	41
1999	8 (2)	Apr-Dec (3)	31-43	31-43	37-49	41-53
2000	8	Apr-Jun	31	31	37	41
		Jul-Nov (8)	29.5	29.5	35.5	39.5
2001	8	Apr-Nov (8)	28	28	34	38
2002	8 (12)	Apr-Jun (8)	27	27	33	37
		Jul-Nov (8)	25	25	31	35
2003	8 (13)(14)	Apr-Nov (9)	25	25	31	35
2004	6 1/2 (14)	Apr-Oct (15)	25	25	31	35
2005	6 1/2 (14)	Apr-Oct (15)	25	25	31	35
2006	6 1/2 (14)	Apr-Oct (15)	25	25	31	35
2007	6 3/4 (14)	Apr-Oct (15)	25	25	31	35
2008	7 (14)	Apr-Oct (15)	25	25	31	35
2009	8	Apr-Nov (16)	25/31	25/31	31/37	35/41
2010	8 (2)	Apr-Dec (3)	31-43	31-43	37-49	41-53
2011	8 (2)	Apr (3)	31-41	31-41	37-47	41-51
		mid-Apr (3)	41-46	41-46	47-52	51-56
		May (3)	46-56	46-56	52-62	56-66
		mid-May (11)	*	*	*	*
2012	8	Apr-Dec	31	31	37	41
2013	8	Apr-Jun (15)	25	25	31	35
		Jul-Dec (8)	28	28	34	38
2014	8 (2)	Apr-Jun (8)	28	28	34	38
		Jul-Dec (3)	31-46	31-46	37-52	41-56
2015	8	Apr-Nov	31	31	37	41
2016	8	Apr-Nov	31	31	37	41
2017	8	Apr-Jun (3)	36	36	42	46
		Jul-Nov	31	31	37	41
2018	8 (2)	Apr-Jun (3)	35-56	35-56	42-62	46-66
		Jul-Dec (11)	*	*	*	*
2019	8 (2)(17)	Apr-Dec (11)	*	*	*	*
2020	8	Apr (3)	41	41	47	51
		May-Nov	31	31	37	41
2021	8	Apr-Jun	31	31	37	41
		Jul-Nov (8)	29.5	29.5	35.5	39.5

Year	Reservoir System Supported Length of Season (Months)		Sioux City	Omaha	Nebraska City	Kansas City
2022	8 (14)	Apr-Jun (9)	25	25	31	35
		Jul-Nov (8)	25.5	25.5	31.5	35.5
2023	8	Apr-Jun (9)	25	25	31	35
		Jul-Nov (8)	29.5	29.5	35.5	39.5
2024	8	Apr-Nov (8)	30.5	30.5	36.5	40.5
2025	8	Apr-Jun (8)	27.0	27.0	33.0	37.0
		Jul-Nov (8)	26.5	26.5	32.5	36.5

(1) Mainstem Reservoir System first reached normal operating storage level in 1967.
(2) 10-day extension of season provided.
(3) Downstream flow targets above full-service navigation level as a flood control storage evacuation measure.
(4) 10-day extension and 10-day early opening provided.
(5) Full service flows for shortened season in preference to reduced service.
(6) Full service flows provided for shortened season.
(7) 10-day extension provided for 1985 season in trade for 10-day delayed support of 1986 season.
(8) Navigation targets below full service as a water conservation measure.
(9) Navigation targets at minimum service as a water conservation measure.
(10) Lower Missouri River closed: 57 days in 1993, 20 days in 1995, and 18 days in 1999.
(11) Releases determined by flood control storage evacuation criteria and not adjusted to meet specific navigation targets.
(12) To protect endangered shore birds below Gavins Point Dam, the USACE did not support navigation from July 3 to August 14, 2002. Average days towing industry off the river was 23 days.
(13) From Aug 11 to Sep 1 USACE did not support navigation flows to comply with lawsuit to follow 2000 Biological Opinion. Navigation industry left the river during this period.
(14) Season shortening; 6 days, 2003; 47 days, 2004; 48 days, 2005; 44 days, 2006; 35 days, 2007; 30 days, 2008; 3 days, 2022.
(15) Minimum service targets at Sioux City and Omaha not met during periods when there was no navigation in those reaches.
(16) Minimum service targets at Sioux City were not met during periods when there was no navigation in those reaches.
(17) Portions of the Lower Missouri River closed: 45 days in 2019.

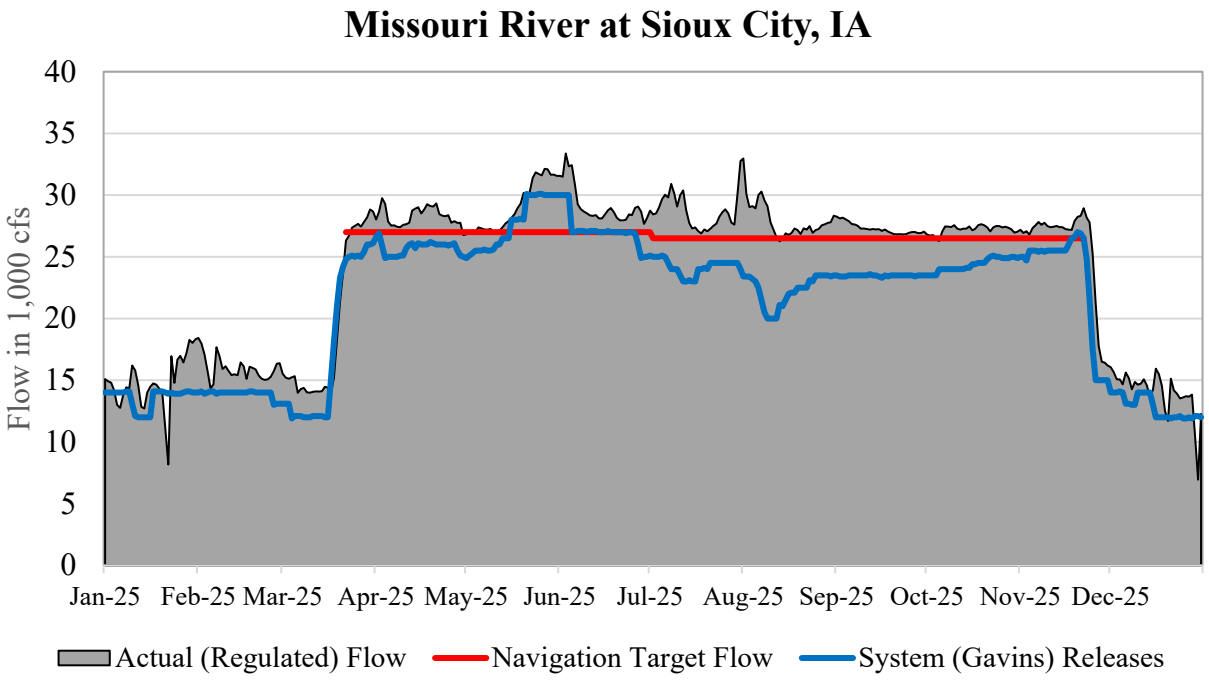


Figure 29. Actual flow with System releases, navigation, & flood target flows at Sioux City, IA.

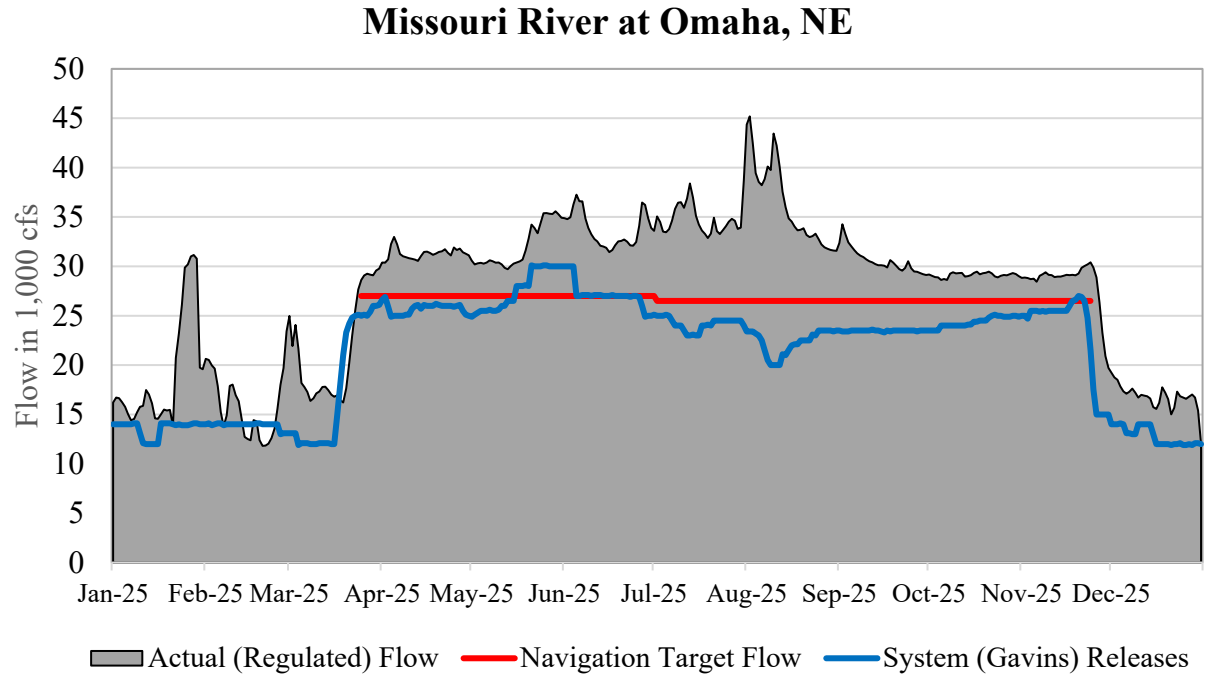


Figure 30. Actual flow with System releases, navigation, & flood target flows at Omaha, NE.

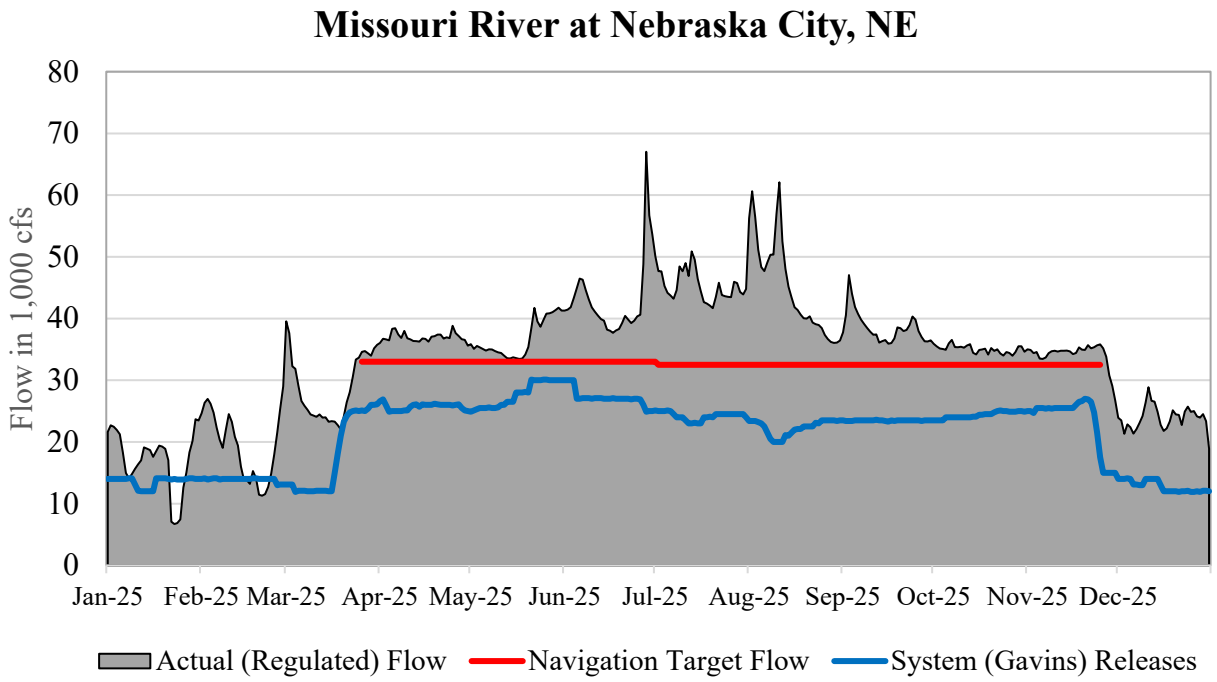


Figure 31. Actual flow with System releases, navigation, & flood target flows at Nebraska City, NE.

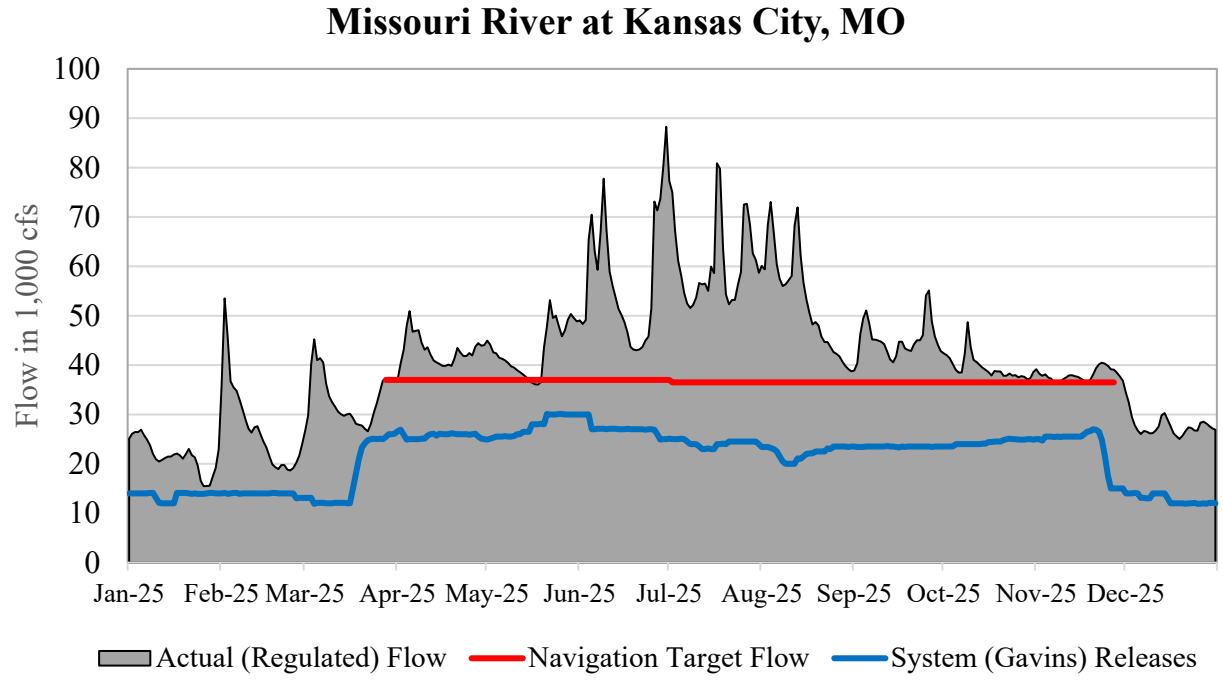


Figure 32. Actual flow with System releases, navigation, & flood target flows at Kansas City, MO.

6. Power – Eastern Division, Pick-Sloan Missouri Basin Program (P-S MBP)

The hydropower energy generated by the System is transmitted over a federal transmission system that traverses 7,831 circuit miles. On October 1, 2015, Western's transmission system became integrated with the Southwest Power Pool (SPP) regional transmission organization. During 2025, service was provided to approximately 340 wholesale customers. Customers receiving service include municipalities, federal agencies, state agencies, USBR projects, irrigation districts, rural electric cooperatives, public utility districts, private utilities, Native American services and power marketers. Additional marketing benefits have been realized with Western becoming an asset-owning market participant within the SPP integrated marketplace.

System generation with individual project distribution for each calendar year in million megawatt hours (MWh) since 1954 is shown on **Figure 33**. The total generation from the federal system (peak capacity and energy sales) for 2025 is shown in **Table 16**. The tabulations in **Table 17** and **Table 18** summarize the peak and total gross generation for the Eastern Division, P-S MBP marketing area system for the past operating year. Actual settlement figures at the end of the billing periods differ somewhat from the calendar month figures shown.

Hydropower generation in 2025 was 7.7 billion kWh, which was 82% of average since the System first filled in 1967. The 2025 generation was 0.5 billion kWh less than the 2024 generation of 8.2 billion kWh and 2.8 billion kWh more than the record low of 4.9 billion kWh, generated in 2008. Total generation was below average in 2025 due to the combination of below average runoff and reduced releases from the System projects to support less than full navigation service level flows for the year. Western purchased about 1,581 million kWh between January 1 and December 31, at a cost of $47.9 million, to supplement System hydropower production.

Per the Omaha Public Power District (OPPD) statistics, the average OPPD customer uses approximately 11,000 kilowatt hours (kWh) of energy annually. Based on the total System generation of 7.7 billion kWh, the energy generated in 2025 by this portion of the federal power system could have supplied all the yearly needs of about 695,000 residential OPPD customers. In addition to the clean, renewable energy supplied to our customers, System hydropower provides an added measure of stability to the SPP regional power system. Large coal-fired and nuclear units are backed up by other SPP member resources and the federal hydropower generation. Members of the SPP market benefit by being able to call for reserves during emergency events. In addition, hydropower and other SPP generation are integrated with wind generation to provide balance to the SPP system.

The reliability of System hydropower helps to maintain adequate reserves in both the Northwest Power Pool in Western Area Power Administration, Upper Great Plains West (WAUW) and the SPP.

Table 16. Gross Federal Power System Generation – Calendar Year 2025.

Powerplants	Energy Generation 1000 kWh	Peak Hour kW	Generation Date
USACE Powerplants – Mainstem			
Fort Peck	765,585	154,000	July 10
Garrison	2,015,127	405,000	January 28
Oahe	2,019,603	559,000	July 13
Big Bend	754,090	363,000	January 31
Fort Randall	1,423,863	328,000	May 22
Gavins Point	699,485	114,000	May 22
USACE Subtotal	**7,677,754**	**1,857,000**	**July 3**
USBR Powerplants			
Canyon Ferry	276,024	38,000	May
Yellowtail*	284,734	85,500	June
USBR Subtotal	**560,758**		
Federal System Total	**8,238,512**		

* Includes only half of total Yellowtail generation, which is marketed by the Eastern Division, P-S MBP.

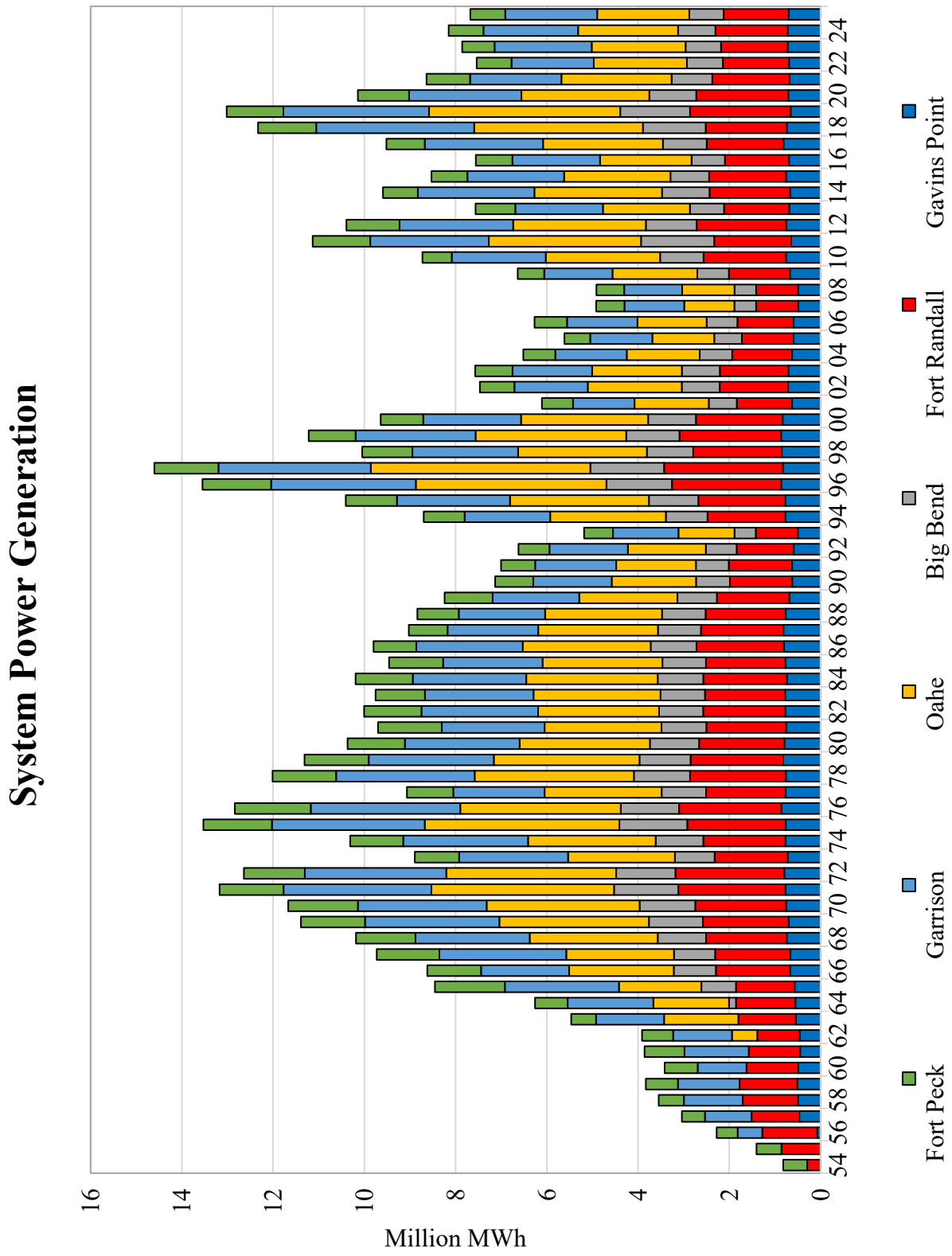


Figure 33. System power generation by project.

Table 17. 2025 Peak Generation & Load Data (1,000 kWh), Eastern Division, P-S MBP*.

Period	USACE Hourly Generation (Gross)**	(plus)	USBR Hourly Generation (Gross)**	(equals)	Federal Hour Generation (Gross)**	(plus)	Interchange and Purchases Received**	(equals)	Peak Total System Load	Peak Date	Peak Hour
January	944		69		1,013		870		1,883	6-Jan	1900
February	1,211		55		1,266		585		1,851	13-Feb	800
March	1,102		67		1,169		482		1,651	6-Mar	900
April	1,187		72		1,259		299		1,558	7-Apr	1000
May	1,340		67		1,407		132		1,539	9-May	1800
June	1,717		85		1,802		0		1,802	18-Jun	1700
July	1,633		79		1,712		112		1,824	25-Jul	1700
August	1,433		71		1,504		288		1,792	20-Aug	1700
September	1,422		60		1,482		179		1,661	16-Sep	1700
October	1,044		58		1,102		471		1,573	2-Oct	1700
November	782		67		849		813		1,662	30-Nov	1800
December	1,052		54		1,106		691		1,797	12-Dec	1900

* This tabulation summarizes the total gross generation and power operations for the Eastern Division marketing area system shown on **Table 16**.

** During hour of peak total system load.

Table 18. 2025 Total Generation & Load Data (1,000 kWh), Eastern Division, P-S MBP*.

Period	USACE Generation (Gross)	(plus)	USBR Generation (Gross)	(equals)	Federal Generation	(plus)	Scheduled Interchange and Purchases	(equals)	Total System Load
January	563,015		50,282		613,297		308,688		921,985
February	526,507		43,976		570,483		298,281		868,764
March	609,514		49,488		659,002		134,036		793,038
April	726,966		48,199		775,165		47,823		822,988
May	829,429		58,417		887,846		11,741		899,587
June	810,206		58,252		868,458		34,960		903,417
July	766,752		53,870		820,622		95,331		915,953
August	712,518		49,275		761,793		105,847		867,640
September	637,058		42,568		679,626		63,026		742,653
October	538,638		300,046		838,684		110,254		948,939
November	521,662		169,802		691,464		224,565		916,029
December	435,488		62,741		498,229		406,515		904,744

* Powerplants from **Table 16**.

7. Recreation

The System reservoirs provide outstanding opportunities for boating, fishing, swimming, camping and other outdoor recreation pursuits. Tourism related to the reservoirs is a major economic factor in all the states adjoining the System. However, when the reservoirs are drawn down due to extended drought periods, recreation may be adversely affected primarily due to access issues. Most of the recreational impacts of a drought are experienced at the upper three large reservoirs – Fort Peck, Garrison and Oahe. Due to the way they are regulated, the lower three reservoirs are not significantly impacted by drought. The Fort Peck pool elevation rose about 2 feet between February 21 and March 21, remained steady until May 31, then declined over 5 feet by the end of September. The Garrison pool elevation increased about 1.0 feet in March, declined slightly in April, then rose about 4.4 feet from mid-May to June 30. From July 1 to the end of 2025, the Garrison pool declined about 6 feet from elevation 1835.2 feet to 1829.2 feet. The Oahe pool rose about 2.5 feet from late January to mid-March, but it declined about 2 feet by early May. From mid-May to the end of the calendar year, the Oahe pool rose 3.6 feet. No accessibility problems were reported at System projects' boat ramps in 2025.

Access areas at the upper three reservoirs include USACE-owned, as well as Tribal-, state-, and privately-owned, facilities. In 2002, many of the federal recreation areas and boat ramps in South Dakota were turned over in fee title to the State of South Dakota and the Bureau of Indian Affairs through the Title VI process. Since the land transfer, both the Federal Treasury and the USACE have provided money to the South Dakota Game Fish and Parks, Cheyenne River Sioux Tribe and Lower Brule Sioux Tribe for operations and stewardship of the Title VI lands they received. Congress is also capitalizing a trust fund to cover these costs in the future.

Visitation data for fiscal years 2019-25 is presented in **Table 19**. The visitation methodology represents the number of unique individual visits for a specific activity or purpose that people used the reservoir and surrounding lands in any capacity. For example, a group of four people camping for the weekend counts as four visits. Four people pheasant hunting together counts as four visits per day. There are different weights and load factors assigned to different site types. The methodology also adds in a certain ratio of dispersed use for areas that USACE has no feasible way to monitor or meter.

Table 19. Visitation at System Reservoirs (Visits).

Project	2019	2020	2021	2022	2023	2024	2025
Fort Peck	653,190	667,921	611,785	554,225	541,289	585,821	653,783
Garrison	2,492,706	2,324,994	1,878,945	1,739,193	2,566,292	2,261,853	2,112,462
Oahe	3,147,201	3,024,501	1,392,988	1,262,975	1,440,610	1,336,023	1,122,640
Big Bend	980,489	1,123,549	1,096,630	731,376	777,053	510,750	515,759
Fort Randall	772,438	407,478	362,994	341,327	345,260	312,568	311,173
Gavins Point	1,920,086	2,160,863	1,081,246	1,132,680	1,057,200	996,820	965,981
System Total	9,966,110	9,709,306	6,424,588	5,761,776	6,727,704	6,003,835	5,681,798

8. Fish and Wildlife

a. Fish Management

Rainbow smelt are the primary forage species in both Garrison and Oahe reservoirs. Successful rainbow smelt reproduction is dependent on many factors including stable reservoir levels during the smelt spawning period, generally in April and early May. Most eggs are laid in water less than a foot deep and are subject to desiccation through wave action and slight drops in water level.

The upper Basin runoff in 2025 resulted in a slightly declining Garrison reservoir in April and early May, and then a rising reservoir from mid-May through June. Fort Peck reservoir fluctuated less than one foot during April through June. Oahe reservoir declined less than 2 feet in April and early May, rose in mid-May, and the remained generally steady through June.

b. Threatened and Endangered Species (T&E)

(1) Pallid Sturgeon

A record of decision (ROD) for the Fort Peck Dam Test Release Environmental Impact Statement (FPDTR-EIS), which identifies and compares alternative test releases from Fort Peck Dam, was signed on November 12, 2021. The purpose of the Fort Peck test flows is to evaluate the potential for achieving pallid sturgeon spawning and recruitment on the upper Missouri River using periodic Fort Peck releases that better replicate historical flows and temperatures. Fort Peck test flows were implemented in 2024. Data analysis and results from the 2024 test flows were not available in time to develop revised test flows for inclusion in the 2024-2025 Annual Operating Plan. Therefore, no test flows were implemented in 2025. For detailed discussion on Missouri River activities for the pallid sturgeon, see the Missouri River Recovery Program 2025 Adaptive Management ESA Compliance Report: (https://www.nwo.usace.army.mil/mrrp/).

(2) Piping Plovers

System regulation has considered impacts of operations to the piping plover (plover, threatened) since 1986, when they were federally listed as T&E species. The plovers nest on sparsely vegetated sandbars, islands and shoreline of the Missouri River and the reservoirs. Real-time telemetered streamgaging stations have been installed along the Missouri River to monitor river stages and flows during the nesting season. These gages provide a check, as well as a stage history, throughout the season to help relate the effects of regulation and natural events at intervals along the river. The gage data must be supplemented with observations of nesting activities and conditions to provide the information that is needed for regulation of the reservoirs. A dynamic flow routing model has been developed to predict river stages along the river reaches downstream from Fort Peck, Garrison, Fort Randall and Gavins Point for different combinations of daily and hourly power peaking. The USACE prevents inundation of nests where possible.

Beginning in 1999, NWO created a computerized T&E species Data Management System. Report data, which is updated daily, includes nest records, census and productivity data, site descriptions, field journals and field observations. This database is a valuable tool in aiding regulation decisions benefiting the plovers in years when the reservoirs are regulated to protect

nesting plovers. However, in 2025 no nest or productivity monitoring occurred on the Missouri River due to a federal hiring freeze, so no data were available for regulation decisions. An adult census was conducted in the last two weeks of June.

Adult plover abundance on the Missouri River increased 16% in 2025, likely due to little reservoir rise and low flows on river segments. The June adult census count of 2,337 plovers was the highest count on the Missouri River since monitoring began in 1993. Plover abundance increased on Lake Sakakawea, and Lake Oahe segments in the Northern Region and the river below Gavins Point Dam in the Southern Region. Decreases in plover counts on the river below the Garrison Dam were caused by a derecho that moved through the area south of Bismarck before the census could be completed and decreases on Lewis and Clark Lake and the river below the Fort Randall dam were likely due to habitat loss and a decline in habitat quality caused by vegetation encroachment. A detailed description of the factors affecting piping plover nesting, fledge ratios, management actions, and habitat conditions by reservoir and river reach can be found in the Missouri River Recovery Program's 2025 Adaptive Management ESA Compliance Report: (https://www.nwo.usace.army.mil/mrrp/).

9. Cultural Resources

As acknowledged in the 2004 Programmatic Agreement (PA) for the Operation and Management of the Missouri River Main Stem System, wave action and the fluctuation of reservoirs levels result in erosion along the banks of the reservoirs. Shoreline erosion can have severe effects on cultural resources. Drought conditions and declining pool levels further impact cultural resource sites by exposing vast acres of shoreline and beaches making cultural resources vulnerable to natural and human damages.

The USACE addresses impacts such as shoreline erosion by mitigation and protection methods. Currently affected sites are being monitored and evaluated to document and track impacts. In 2025, bank stabilization projects for cultural resource protection were completed at: Garrison/Lake Sakakawea, Gavins Point/Lewis and Clark Lake, and Oahe/Lake Oahe. Plans are being prepared for three sites at Fort Randall/Lake Francis Case and Oahe/Lake Oahe. A full summary of program activities can be found in the 2025 Annual Report: https://www.nwo.usace.army.mil/Missions/Civil-Works/Cultural-Resources/Documents/.

The PA established a shared stewardship philosophy of protection of historic properties. The objective of a PA is to address "…potential adverse effects of complex projects or multiple undertakings…" and to collaboratively develop a preservation program that would avoid, minimize, and mitigate the effects of the System regulation. All Tribes, whether signatory to the PA or not, may request government-to-government consultation (consultation) on System regulation and the resulting effect on historic and cultural properties and other resources.

A MRBWM letter, dated October 22, 2025, was sent to the Missouri River Basin Tribes offering technical meetings and consultation on the 2025-2026 AOP. To date, two Tribes have requested consultation. The Great Plains Tribal Water Alliance, Yankton Sioux Tribe, and Standing Rock Sioux Tribe, provided written comments on the AOP. The MRBWM office typically hosts semi-annual public meetings in locations throughout the Missouri River Basin. At these meetings, stakeholders can provide input on the upcoming year's reservoir operations. In-

person meetings were not held in the fall of 2025 due to the lapse in government funding. No tribes were recorded participating in the virtual fall AOP meeting, which was held in October. Tribal representatives can contact the MRBWM at any time to request more information or consultation.

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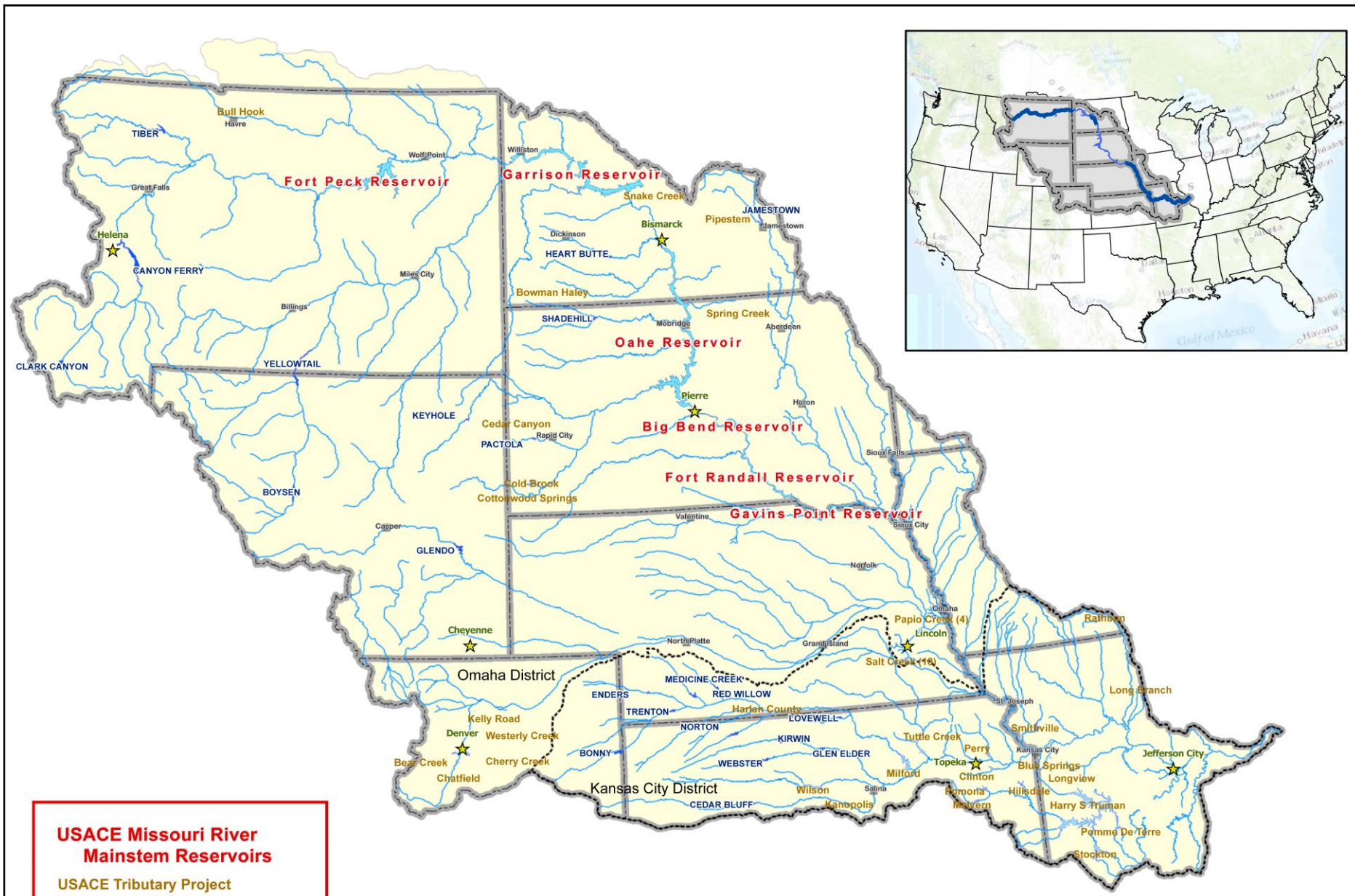


PLATE 1. Missouri River Basin Map.

Summary of Engineering Data -- Missouri River Mainstem System

Item No.	Subject	Fort Peck Dam - Fort Peck Lake	Garrison Dam - Lake Sakakawea	Oahe Dam - Lake Oahe
1	Location of Dam	Near Glasgow, Montana	Near Garrison, ND	Near Pierre, SD
2	River Mile - 1960 Mileage	Mile 1771.5	Mile 1389.9	Mile 1072.3
3	Total & incremental drainage areas in square miles	57,500	181,400 (2) 123,900	243,490 (1) 62,090
4	Approximate length of full reservoir (in valley miles)	134, ending near Zortman, MT	178, ending near Trenton, ND	231, ending near Bismarck, ND
5	Shoreline in miles (3)	1520 (elevation 2234)	1340 (elevation 1837.5)	2250 (elevation 1607.5)
6	Average total & incremental inflow in cfs	10,200	25,600 15,400	28,900 3,300
7	Max. discharge of record near damsite in cfs	137,000 (June 1953)	348,000 (April 1952)	440,000 (April 1952)
8	Construction started - calendar yr.	1933	1946	1948
9	In operation (4) calendar yr.	1940	1955	1962
	Dam and Embankment			
10	Top of dam, elevation in feet	2280.5	1875	1660
11	Length of dam in feet	21,026 (excluding spillway)	11,300 (including spillway)	9,300 (excluding spillway)
12	Damming height in feet (5)	220	180	200
13	Maximum height in feet (5)	250.5	210	245
14	Max. base width, total & w/o berms in feet	3500, 2700	3400, 2050	3500, 1500
15	Abutment formations (under dam & embankment)	Bearpaw shale and glacial fill	Fort Union clay shale	Pierre shale
16	Type of fill	Hydraulic & rolled earth fill	Rolled earth filled	Rolled earth fill & shale berms
17	Fill quantity, cubic yards	125,628,000	66,500,000	55,000,000 & 37,000,000
18	Volume of concrete, cubic yards	1,200,000	1,500,000	1,045,000
19	Date of closure	24 June 1937	15 April 1953	3 August 1958
	Spillway Data			
20	Location	Right bank - remote	Left bank - adjacent	Right bank - remote
21	Crest elevation in feet	2225	1825	1596.5
22	Width (including piers) in feet	820 gated	1336 gated	456 gated
23	No., size and type of gates	16 - 40' x 25' vertical lift gates	28 - 40' x 29' Tainter	8 - 50' x 23.5' Tainter
24	Design discharge capacity, cfs	275,000 at elev 2253.3	827,000 at elev 1858.5	304,000 at elev 1644.4
25	Discharge capacity at maximum operating pool in cfs	230,000	660,000	80,000
	Reservoir Data (6)			
26	Max. operating pool elev. & area	2250 feet 245,000 acres	1854 feet 383,000 acres	1620 feet 386,000 acres
27	Max. normal op. pool elev. & area	2246 feet 240,000 acres	1850 feet 365,000 acres	1617 feet 362,000 acres
28	Base flood control elev & area	2234 feet 211,000 acres	1837.5 feet 308,000 acres	1607.5 feet 311,000 acres
29	Min. operating pool elev. & area	2160 feet 89,000 acres	1775 feet 125,000 acres	1540 feet 115,000 acres
	Storage allocation & capacity			
30	Exclusive flood control	2250-2246 971,000 a.f.	1854-1850 1,495,000 a.f.	1620-1617 1,107,000 a.f.
31	Flood control & multiple use	2246-2234 2,704,000 a.f.	1850-1837.5 4,211,000 a.f.	1617-1607.5 3,208,000 a.f.
32	Carryover multiple use	2234-2160 10,700,000 a.f.	1837.5-1775 12,951,000 a.f.	1607.5-1540 13,353,000 a.f.
33	Permanent	2160-2030 4,088,000 a.f.	1775-1673 4,794,000 a.f.	1540-1415 5,315,000 a.f.
34	Gross	2250-2030 18,463,000 a.f.	1854-1673 23,451,000 a.f.	1620-1415 22,983,000 a.f.
35	Reservoir filling initiated	November 1937	December 1953	August 1958
36	Initially reached min. operating pool	27 May 1942	7 August 1955	3 April 1962
37	Estimated annual sediment inflow	17,200 a.f./year 1073 yrs.	21,600 a.f./year 1,086 yrs.	14,800 a.f./year 1553 yrs.
	Outlet Works Data			
38	Location	Right bank	Right Bank	Right Bank
39	Number and size of conduits	2 - 24' 8" diameter (nos. 3 & 4)	1 - 26' dia. and 2 - 22' dia.	6 - 19.75' dia. upstream, 18.25' dia. downstream
40	Length of conduits in feet (8)	No. 3 - 6,615, No. 4 - 7,240	1529	3496 to 3659
41	No., size, and type of service gates	1 - 28' dia. cylindrical gate 6 ports, 7.6' x 8.5' high (net opening) in each control shaft	1 - 18' x 24.5' Tainter gate per conduit for fine regulation	1 - 13' x 22' per conduit, vertical lift, 4 cable suspension and 2 hydraulic suspension (fine regulation)
42	Entrance invert elevation	2095	1672	1425
43	Avg. discharge capacity per conduit & total	Elev. 2250 22,500 cfs - 45,000 cfs	Elev. 1854 30,400 cfs - 98,000 cfs	Elev. 1620 18,500 cfs - 111,000 cfs
44	Present tailwater elevation	2032-2036 5,000 - 35,000 cfs	1668-1676 15,000- 60,000 cfs	1422-1427 20,000-55,000 cfs
	Power Facilities and Data			
45	Avg. gross head available in feet (14)	194	161	174
46	Number and size of conduits	No. 1-24'8" dia., No. 2-22'4" dia.	5 - 29' dia., 24' penstocks	7 - 24' dia., imbedded penstocks
47	Length of conduits in feet (8)	No. 1 - 5,653, No. 2 - 6,355	1829	From 3,280 to 4,005
48	Surge tanks	PH#1: 3-40' dia., PH#2: 2-65' dia.	65' dia. - 2 per penstock	70' dia., 2 per penstock
49	No., type and speed of turbines	5 Francis, PH#1-2: 128.5 rpm, 1-164 rpm , PH#2-2: 128.6 rpm	5 Francis, 90 rpm	7 Francis, 100 rpm
50	Discharge cap. at rated head in cfs	PH#1, units 1&3 170', 2-140' 8,800 cfs, PH#2-4&5 170'-7,200 cfs	150' 41,000 cfs	185' 54,000 cfs
51	Generator nameplate rating in kW	1&3: 43,500; 2: 18,250; 4&5: 40,000	3 - 121,600, 2 - 109,250	112,290
52	Plant capacity in kW	185,250	583,300	786,030
53	Dependable capacity in kW (9)	181,000	388,000	534,000
54	Avg. annual energy, million kWh (12)	1,031	2,285	2,648
55	Initial generation, first and last unit	July 1943 - June 1961	January 1956 - October 1960	April 1962 - June 1963
56	Estimated cost September 1999 completed project (13)	$158,428,000	$305,274,000	$346,521,000

Summary of Engineering Data -- Missouri River Mainstem System

Big Bend Dam - Lake Sharpe	Fort Randall Dam - Lake Francis Case	Gavins Point Dam - Lewis & Clark Lake	Total	Item No.	Remarks
21 miles upstream Chamberlain, SD	Near Lake Andes, SD	Near Yankton, SD		1	Elevations are in local
Mile 987.4	Mile 880.0	Mile 811.1		2	project datum (LPD).
249,330 (1) 5,840	263,480 (1) 14,150	279,480 (1) 16,000		3	(1) Includes 4,280 square miles of non-contributing
80, ending near Pierre, SD	107, ending at Big Bend Dam	25, ending near Niobrara, NE	755 miles	4	areas.
200 (elevation 1420)	540 (elevation 1350)	90 (elevation 1204.5)	5,940 miles	5	(2) Includes 1,350 square miles of non-contributing
28,900	30,000 1,100	32,000 2,000		6	areas.
440,000 (April 1952)	447,000 (April 1952)	480,000 (April 1952)		7	(3) With pool at base of flood control.
1959	1946	1952		8	(4) Storage first available for regulation of flows.
1964	1953	1955		9	(5) Damming height is height from low water to maximum
1440	1395	1234		10	operating pool. Maximum
10,570 (including spillway)	10,700 (including spillway)	8,700 (including spillway)	71,596	11	height is from average
78	140	45	863 feet	12	streambed to top of dam.
95	165	74		13	(6) Based on latest available storage data
1200, 700	4300, 1250	850, 450		14	(7) River regulation is attained
Pierre shale & Niobrara chalk	Niobrara chalk	Niobrara chalk & Carlile shale		15	by flows over low-crested spillway and through
Rolled earth, shale, chalk fill	Rolled earth fill & chalk berms	Rolled earth & chalk fill		16	turbines.
17,000,000	28,000,000 & 22,000,000	7,000,000	358,128,000 cu. yds	17	(8) Length from upstream face
540,000	961,000	308,000	5,554,000 cu. yds.	18	of outlet or to spiral case.
24 July 1963	20 July 1952	31 July 1955		19	(9) Based on 8th year (1961) of drought drawdown
Left bank - adjacent	Left bank - adjacent	Right bank - adjacent		20	(From study 8-83-1985).
1385	1346	1180		21	(10) Affected by level of Lake
376 gated	1000 gated	664 gated		22	Francis case. Applicable to
8 - 40' x 38' Tainter	21 - 40' x 29' Tainter	14 - 40' x 30' Tainter		23	pool at elevation 1350.
390,000 at elev 1433.6	620,000 at elev 1379.3	584,000 at elev 1221.4		24	(11) Spillway crest.
270,000	508,000	345,000		25	(12) 1967-2022 Average
					(13) Source: Annual Report on Civil Works Activities of the
1423 feet 62,000 acres	1375 feet 102,000 acres	1210 feet 29,000 acres	1,206,000 acres	26	Corps of Engineers. Extract
1422 feet 60,000 acres	1365 feet 94,000 acres	1208 feet 25,000 acres	1,146,000 acres	27	Report Fiscal Year 1999.
1420 feet 58,000 acres	1350 feet 76,000 acres	1204.5 feet 21,000 acres	984,000 acres	28	(14) Based on Study 8-83-1985
1415 feet 51,000 acres	1320 feet 36,000 acres	1204.5 feet 21,000 acres	437,000 acres	29	(15) 67,275 kW on per unit basis 64,684 kW on facility basis
1423-1422 61,000 a.f.	1375-1365 986,000 a.f.	1210-1208 54,000 a.f.	4,674,000 a.f.	30	
1422-1420 118,000 a.f.	1365-1350 1,306,000 a.f.	1208-1204.5 79,000 a.f.	11,626,000 a.f.	31	
	1350-1320 1,532,000 a.f.		38,536,000 a.f.	32	
1420-1345 1,631,000 a.f.	1320-1240 1,469,000 a.f.	1204.5-1160 295,000 a.f.	17,592,000 a.f.	33	
1423-1345 1,810,000 a.f.	1375-1240 5,293,000 a.f.	1210-1160 428,000 a.f.	72,428,000 a.f.	34	
November 1963	January 1953	August 1955		35	
25 March 1964	24 November 1953	22 December 1955		36	
3,445 a.f./year 525 yrs.	15,800 a.f./year 334 yrs.	2,700 a.f./year 159 yrs.	75,545	37	
	Left Bank			38	
None (7)	4 - 22' diameter	None (7)		39	
	1013			40	
	2 - 11' x 23' per conduit, vertical lift, cable suspension			41	
1385 (11)	1229	1180 (11)		42	
	Elev 1375			43	
	32,000 cfs - 128,000 cfs				
1351-1355(10) 25,000-100,000 cfs	1228-1237 10,000-60,000 cfs	1152-1160 15,000-60,000 cfs		44	
70	117	48	764 feet	45	
None: direct intake	8 - 28' dia., 22' penstocks	None: direct intake		46	
	1,074		55,083	47	
None	59' dia, 2 per alternate penstock	None		48	
8 Fixed blade, 81.8 rpm	8 Francis, 85.7 rpm	3 Kaplan, 75 rpm	36 units	49	
67' 103,000 cfs	112' 44,500 cfs	48' 36,000 cfs		50	
67,275 (15)	40,000	44,100		51	
517,470	320,000	132,300	2,524,350 kw	52	
497,000	293,000	74,000	1,967,000 kw	53	Corps of Engineers, U.S. Army
988	1,729	723	9,438 million kWh	54	Compiled by
October 1964 - July 1966	March 1954 - January 1956	September 1956 - January 1957	July 1943 - July 196	55	Northwestern Division
				56	Missouri River Region
$107,498,000	$199,066,000	$49,617,000	$1,166,404,000		August 2023

Plate 2