

RECLAMATION

Managing Water in the West

Nebraska-Kansas Area Office

Report

To The

Republican River

Compact Administration

Concordia, Kansas



— BUREAU OF —
RECLAMATION

U.S. Department of the Interior
Bureau of Reclamation
Missouri Basin Region
Nebraska-Kansas Area Office

August 28, 2025

REPUBLICAN RIVER COMPACT MEETING

August 28, 2025
Concordia, Kansas

2024 Operations

As shown on the attached Table 1, precipitation in the Republican River Basin varied from 77 percent of normal at Lovewell Dam to 120 percent of normal at Red Willow Dam. Total precipitation at Reclamation project dams ranged from 19.70 inches at Enders Dam to 28.61 inches at Norton Dam.

Inflows varied from 38 percent of the most probable forecast at Bonny Reservoir to 99 percent of the most probable forecast at Lovewell Reservoir. Inflows into Bonny Reservoir totaled 1,692 AF while inflows at Harlan County Lake totaled 104,720 AF.

Average farm delivery values for total irrigable acres were as follows:

<u>District</u>	<u>Farm Delivery</u>
Frenchman Valley	0.0 inches
Frenchman-Cambridge	5.3 inches
Almena	2.2 inches
Bostwick in NE	6.5 inches
Kansas-Bostwick	11.5 inches

2024 Operation Notes

Bonny Reservoir – Remained empty at elevation 3638.00 feet, 34.0 feet below the top of conservation. The annual computed inflow totaled 1,692 AF. Reservoir inflows were bypassed the entire year as ordered by the State of Colorado. No water was bypassed into Hale Ditch in 2024.

Enders Reservoir – The reservoir level began the year at a level of 3,080.75 feet (31.5 feet below the top of conservation). This was the second lowest start of the year elevation recorded since initial filling and is 0.75 feet above the outlet works intake (Deadpool). The reservoir level increased gradually during the spring to a peak elevation of 3,082.21 feet on May 24th. Due to the extremely low water supply available, no water was released from Enders Reservoir during the irrigation season. The end of the year reservoir level was 3,080.64 feet (31.7 feet below the top of conservation). The Frenchman Valley Irrigation District did not divert natural flow from Frenchman Creek in 2024.

Swanson Lake – The lake level began the year at elevation 2,738.64 feet (13.4 feet below the top of conservation) and gradually increased throughout the late winter and spring to a yearly peak elevation of 2742.90 on June 8th. The irrigation releases decreased the reservoir level to an elevation of 2737.59 on September 3rd. The end of year elevation was 2,737.24 feet (14.8 feet below the top of conservation). The district diverted 14,686 AF into Meeker-Driftwood Canal.

Hugh Butler Lake – The reservoir level at the first of the year was 2,566.63 feet (15.2 feet below the top of conservation). Irrigation releases started June 23rd. The irrigation releases decreased the reservoir level to elevation of 2562.87 on August 29th. The end of year elevation was 2,563.79 feet (18.0 feet below the top of conservation). The district diverted 4,251 AF into Red Willow Canal and 7,099 AF into Bartley Canal.

Harry Strunk Lake – The reservoir level at the beginning of the year was 2,361.96 feet (4.1 feet below the top of conservation). The reservoir filled on March 22nd and a minimum gate release was initiated to keep water from going over the uncontrolled spillway. On April 15th the Nebraska Department of Natural Resources issued an administration notice for all Reclamations reservoirs upstream of Harlan County. Frenchman-Cambridge Irrigation District elected to release the combined inflows of Reclamation reservoirs from Harry Strunk exclusively. Approximately 3,440 AF was released before the notice was lifted on April 26th. The reservoir level peaked at elevation 2,366.71 feet (0.61 feet above conservation) on June 5th. Irrigation releases drew the lake down to elevation 2358.10 feet on September 6th. The district diverted 23,195 AF into Cambridge Canal and delivered 10,812 AF to 13,750 acres of district lands (a delivery efficiency of 47 percent). The end of year elevation was 2,362.98 feet (3.1 feet below the top of conservation).

Keith Sebelius Lake – The reservoir elevation was 2,294.55 feet (9.8 feet below the top of conservation) at the first of the year. Late winter, spring and summer inflows gradually increased the lake level to a summer peak of 2,296.00 feet on June 5th. Irrigation releases began July 15th and finished for the season on August 8th. Approximately 2,489 AF was released from Norton Dam for irrigation of which 1,753 AF was diverted into the Almena Canal with an additional 590 AF diverted from Prairie Dog Creek below the diversion dam. Inflows in November and December exceeded evaporation, gradually increasing the elevation to the end of year elevation of 2,292.61 feet (11.7 feet below top of conservation).

Harlan County Lake – Harlan County Lake began the year at 1,937.98 feet (7.8 feet below the top of conservation). The conservation pool did not fill in 2024 but did peak at 1943.07 feet (2.7 feet below top of conservation) on June 20th. The conservation pool was split June 13th as irrigation releases began. The projected irrigation supply at the end of June was 119,000 AF. It was determined that Water Short Year Administration would not be in effect in 2024. Bostwick in Nebraska Irrigation District diverted 32,828 AF in 2024. Kansas-Bostwick Irrigation District diverted 62,869 AF in 2024. A ten-year summary of Harlan County Lake operations is shown on Table 3. The end of year elevation was 1,937.59 feet (8.1 feet below the top of conservation).

Lovewell Reservoir – The reservoir elevation at the beginning of 2024 was 1,580.13 feet (2.5 foot below top of conservation). Rains in early June raised the lake elevation to a yearly peak

of 1584.83 (2.2 feet above top of conservation). All flood water accumulations were utilized for irrigation. Irrigation releases for canal seasoning/flushing began May 30th with releases in earnest starting mid-June and continuing until September 16th. Irrigation releases lowered the lake to an annual low of 1573.27 (9.3 feet below conservation) on August 30th. Republican River flow was diverted via the Courtland Canal into Lovewell Reservoir after the irrigation season. The pool level at the end of the year was 1,578.87 feet (3.7 foot below top of conservation)

Current Operations (As of 7/31/25)

Bonny Reservoir – The reservoir is currently empty. No water has been released into Hale Ditch in 2024. Bonny Dam has recorded 10.06 inches of precipitation during the first seven months of the year (85% of average).

Enders Reservoir - The reservoir level is currently 30.9 feet below full and 0.26 feet above last year at this time. Enders Dam recorded 13.72 inches of precipitation during the first seven months of the year (104% of normal). This is also the twenty-second consecutive year that Frenchman Valley Irrigation District has not received storage water for irrigation.

Swanson Lake – The lake level is currently 14.7 feet from full and is 2.4 feet below last year at this time. Precipitation for the year is at 90% of normal (12.22 inches). Irrigation releases began on June 15th.

Hugh Butler Lake – The lake level is currently 16.4 feet below full and is 0.1 feet above last year at this time. Due to low lake levels, irrigation releases will not be made in 2025. The precipitation total so far this year is 12.38 inches (95% of normal).

Harry Strunk Lake – The lake level is currently 4.7 feet below the top of conservation. Precipitation at the dam during the first seven months of the year was 10.15 inches (72% of normal). Irrigation releases began on April 21st. The lake level is currently 1.0 feet below last year at this time.

Keith Sebelius Lake – The lake is currently 13.0 feet below full. Lake level is 2.5 feet below last year at this time. Precipitation at the dam during the first seven months of the year was 11.64 inches (73% of normal).

Harlan County Lake – The lake level is approximately 8.9 feet below full. The lake level is 3.9 feet below last year at this time. Harlan County Dam has recorded 13.28 inches of precipitation so far this year (88% of normal). Irrigation releases started on June 9th. The available irrigation supply from Harlan County Lake on June 30th was 101,200 AF.

Lovewell Reservoir – The reservoir level is currently 2.4 feet above the top of conservation and approximately 5.2 feet above last year's elevation at this time. Lovewell Dam recorded 20.66 inches of precipitation during the first seven months of the year (118% of average). Canal releases began on May 28th. Heavy rains in the White Rock Creek drainage above Lovewell on June 29th and 30th caused the lake to sharply raise 3.5 feet in 2 days. The

reservoir peaked at elevation 1587.02 (4.4 feet in the flood pool). Flood releases began July 2nd and continued until July 14th. Lovewell dam recorded another 6.22” of rain the following week and the reservoir came up another 1.8 feet to elevation 1586.14 (3.5 feet in the flood pool). Flood releases started again on July 22nd and continued until August 5th when irrigation demand was sufficient to draw the lake back to conservation level.

A summary of data for the first seven months of 2025 is shown on Table 2.

TABLE 1
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows
CALENDAR YEAR 2024

Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-23 AF	Storage 12-31-24 AF	Gain or Loss AF	Maximum Content AF	Storage Date	Minimum Content AF	Storage Date	Total Inflow AF	Percent Of Most Probable %
Box Butte	12.30	71	12,786	10,409	-2,377	20,905	6/3	7,169	9/5	13,565	85
Merritt	16.09	75	61,451	61,262	-189	66,668	6/21	33,853	9/13	195,582	101
Calamus	21.05	83	100,936	99,084	-1,852	121,766	5/21	55,396	10/16	281,347	103
Davis Creek	29.31	112	13,661	13,765	104	31,616	7/9	12,570	4/15	55,942	115
Bonny	20.84	118	0	0	0	0	#N/A	0	#N/A	1,692	38
Enders	19.70	102	7,948	7,884	-64	8,891	5/24	7,437	10/17	3,664	75
Swanson	20.32	100	55,612	51,020	-4,592	70,882	6/8	49,110	11/6	25,249	95
Hugh Butler	23.97	120	16,306	13,607	-2,699	18,898	6/5	12,779	10/18	7,845	78
Harry Strunk	25.44	120	27,835	29,362	1,527	35,783	6/5	22,581	9/6	32,505	80
Keith Sebelius	28.61	114	17,260	14,685	-2,575	19,361	6/5	14,360	11/2	5,616	85
Harlan County	24.87	106	219,693	215,465	-4,228	279,882	6/20	209,285	11/1	104,720	95
Lovewell	21.54	77	27,797	24,409	-3,388	42,704	6/7	14,123	8/30	48,571	99
Kirwin	26.79	112	58,237	44,817	-13,420	65,160	6/5	43,912	11/1	15,942	53
Webster	21.48	90	30,064	12,608	-17,456	34,340	5/30	12,290	11/1	9,086	47
Waconda	19.88	78	160,397	148,467	-11,930	166,562	3/14	144,790	10/30	57,181	40
Cedar Bluff	23.87	112	72,874	66,233	-6,641	73,437	2/8	65,247	11/2	8,062	71

TABLE 2
NEBRASKA-KANSAS AREA OFFICE
Summary of Precipitation, Reservoir Storage and Inflows

JANUARY - JULY 2025

Reservoir	Precip. Inches	Percent Of Average %	Storage 7/31/2024 AF	Storage 7/31/2025 AF	Gain or Loss AF	Inflow AF	Percent Of Most Probable %
Bonny	10.06	85	0	0	0	1,085	34
Enders	13.72	104	8,184	8,340	156	2,477	73
Swanson	12.22	90	59,221	51,085	(8,136)	21,324	100
Hugh Butler	12.38	95	15,029	15,144	115	5,159	78
Harry Strunk	10.15	72	28,526	27,071	(1,455)	20,527	76
Keith Sebelius	11.64	73	16,178	13,063	(3,115)	4,737	99
Harlan County	13.28	88	251,681	207,379	(44,302)	83,409	106
Lovewell	20.66	118	25,994	41,288	15,294	24,910	86

Inflow at Swanson Lake includes water from augmentation (pumping) projects.

**TABLE 3
HARLAN COUNTY LAKE**

Year	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Precipitation		End of Year Content (AF)	Projected Irrig. Water Supply On June 30th (AF)
					Harlan County Dam* (% of Average)	Rep. Basin Dams (% of Average)		
2015	106,728	54,502	33,652	28.85	125%	115%	167,416	79,600
2016	126,679	63,972	35,920	27.82	120%	109%	194,203	103,500
2017	118,889	52,764	36,081	26.60	115%	104%	224,247	111,600
2018	120,146	53,451	35,914	29.61	128%	128%	255,028	106,600
2019	402,546	272,471	55,374	30.94	134%	132%	329,729	139,716
2020	125,674	130,068	45,704	17.38	75%	74%	279,631	143,392
2021	130,998	88,222	42,022	28.22	121%	91%	280,385	141,404
2022	64,506	70,579	48,842	17.02	73%	66%	225,470	130,000
2023	95,417	65,068	36,126	28.30	121%	102%	219,693	119,000
2024	104,720	64,971	43,977	24.87	106%	94%	215,465	119,000

NOTE: On June 30, 2025 Projected Irrigation Water Supply was 101,200 AF.

* Average Annual Precipitation at Harlan County Dam is 23.13 inches