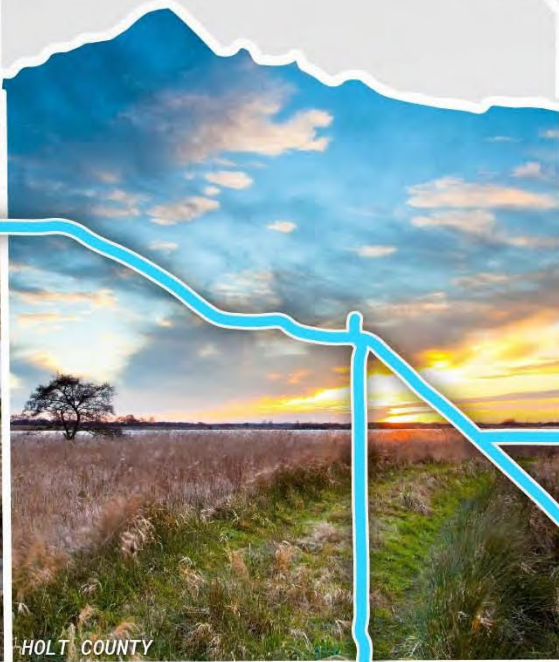




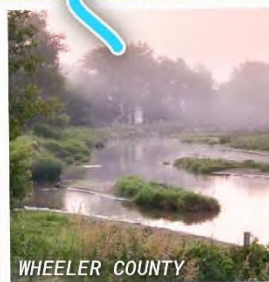
ROCK COUNTY



HOLT COUNTY



ANTELOPE COUNTY



WHEELER COUNTY

JOINTLY DEVELOPED BY

**Upper Elkhorn**

Natural Resources District

**NEBRASKA**

DEPT. OF WATER, ENERGY, AND ENVIRONMENT

# IMP Annual Review of 2024 Activities

July 16, 2025

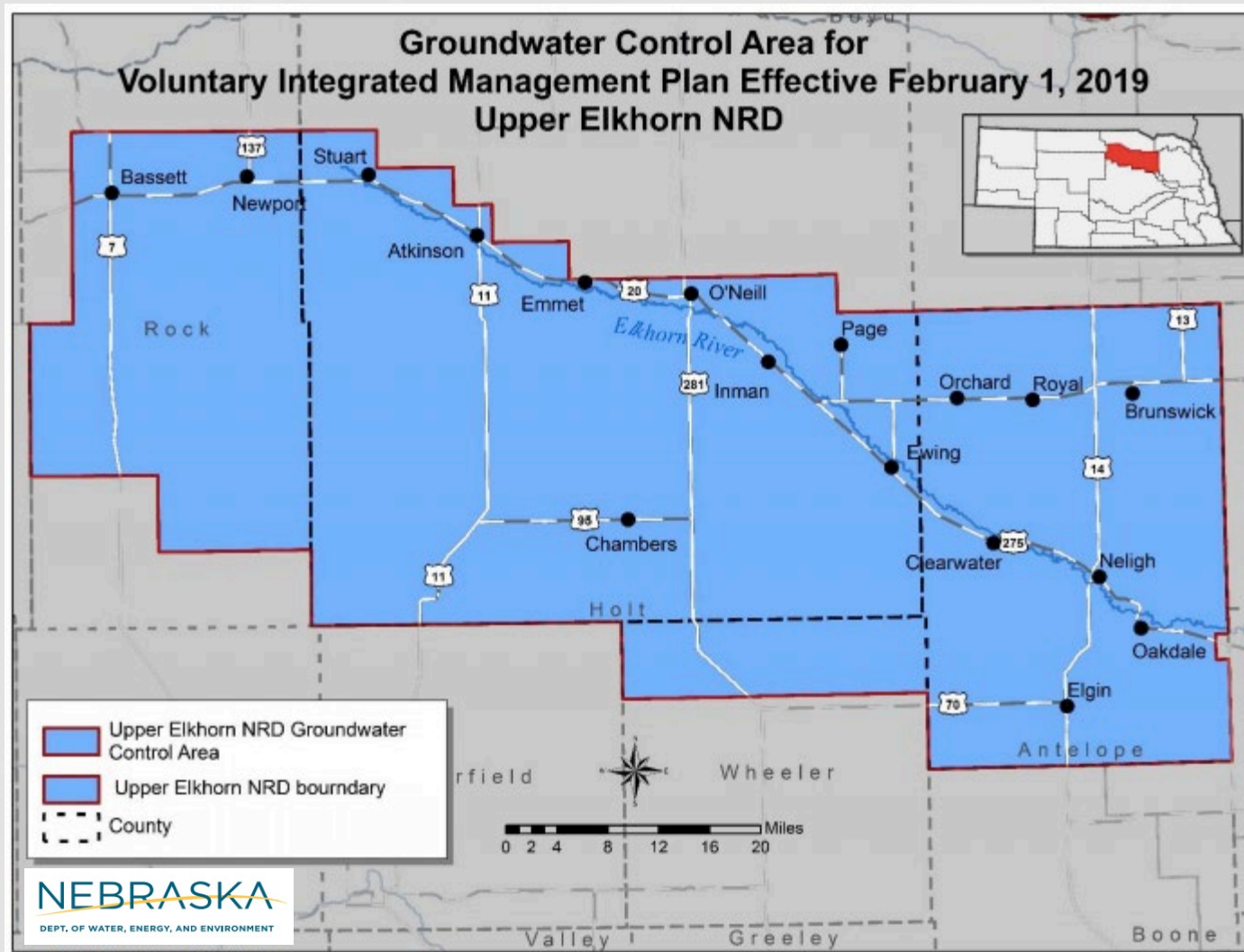
# Overview

- Reporting of UENRD Data
- Reporting of DWEE Data
- Lower Platte River Basin Coalition Activities
- Evaluation of data reporting & communication
- Review of IMP Goals/Objectives/Action Items
  - Any changes needed moving forward

# Groundwater Controls

1. Certification of groundwater irrigated acres
2. Establish a limit on the expansion of groundwater irrigated acres

# Groundwater Controls

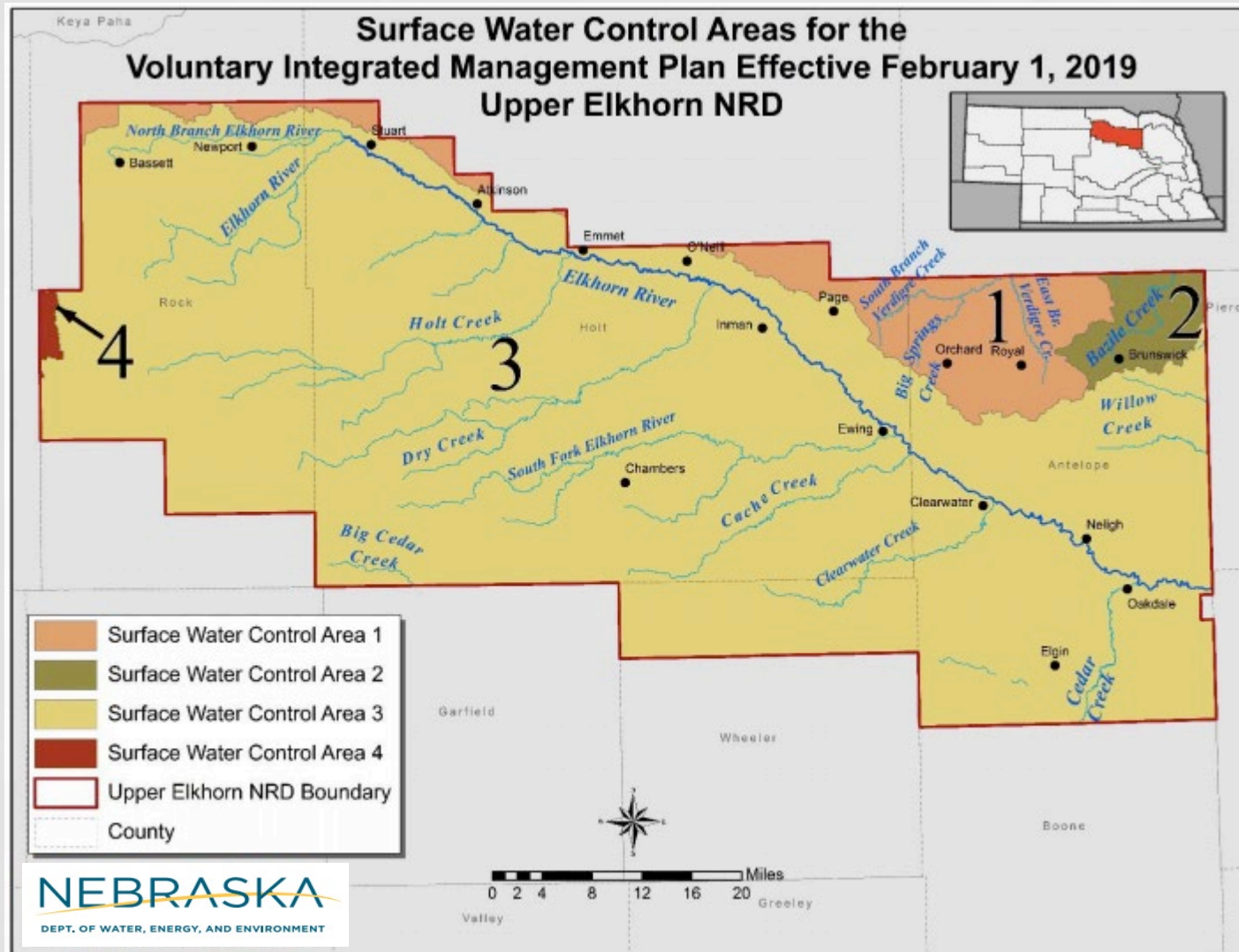


# Surface Water Controls

1. Surface Water Control Area 1 (Lower Niobrara Basin)
  - Moratorium or restriction on additional surface water irrigated acres
2. Surface Water Control Area 2 (Upper Missouri Tributaries Basin)
  - Education
3. Surface Water Control Area 3 (Lower Platte Basin)
  - Limitation on expansion of surface water irrigation
4. Surface Water Control Area 4 (Middle Niobrara Basin)
  - Temporary stay on development of surface water irrigation (expired 2/4/2020)



# Surface Water Controls Areas Map





# DATA COLLECTION & MONITORING

# Data Collection and Monitoring

- NRD Monitoring
  - Expansion of irrigated acres
  - Groundwater level measurements
  - Municipal water use
- DWEE Monitoring
  - Surface water permitting activities
  - Groundwater Permitting
  - Water administration activity
  - Voluntary water use survey
  - Surface water pumpsite inspections
  - DWEE streamgage measurements

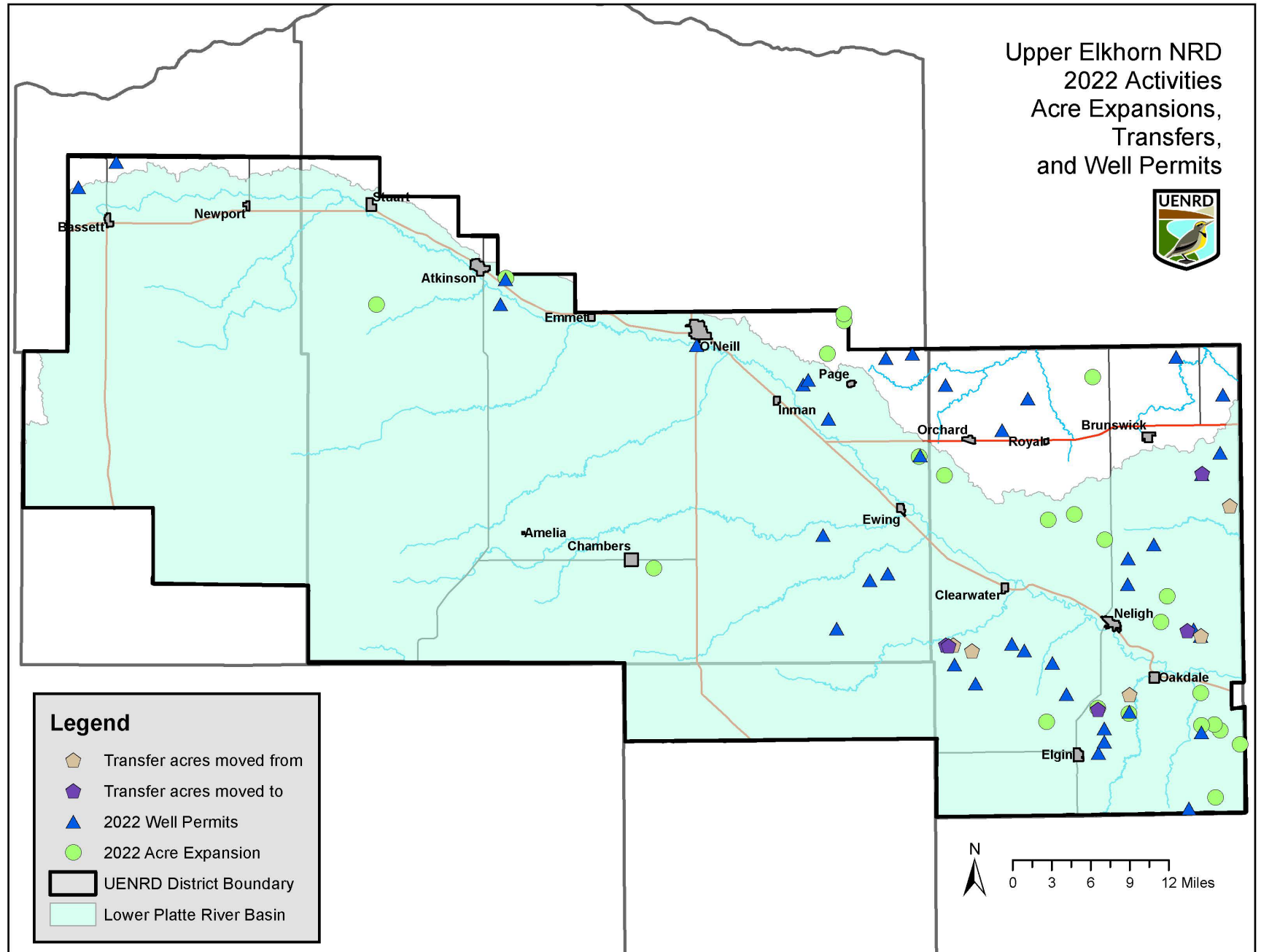




# Groundwater monitoring and data collection

- 22 well permits issued
  - 14 New
  - 8 Replacement
- Static water level monitoring at 365 monitoring and irrigation wells in Spring & Fall 2023.
- Nitrate sample collection from 683 irrigation wells
- Certification of groundwater irrigated acres
  - As part of the V-IMP Groundwater Controls the UENRD will certify all groundwater irrigated acres by February 2021.
  - As of February 9, 2024, **486,325** acres have been certified.

# Upper Elkhorn NRD 2024 Activities



# Groundwater Acre Transfers\*

	Number of Acres	Transfer FROM	FROM Depletion Estimate (AF)	Transfer TO	TO Depletion Estimate (AF)	Change in Depletion
	48.61	SW 33-25-11	0.79	NW 33-25-11	0.79	0.00
	48.61	SW 33-25-11	0.79	NE 33-25-11	0.79	0.00
<b>TOTAL</b>	<b>97.22</b>					<b>0.00</b>

2 acre transfer applications were approved.

\*Reported as submitted for LPRBC annual report. Not all of UENRD is in LPRB.

# Groundwater Acre Expansions\*

Legal	Number of Acres	NIR (ft)	SDF %	% Depletion	Depletion Estimate (AF)
NE 28-24-08	5.45	0.65	0.29	0.3	0.30
	5.45				0.30

3 acre expansion applications were approved; 1 application shown in chart\*

\*Reported as submitted for LPRBC annual report. Not all of UENRD is in LPRB.

# Municipal Water Use

Municipality	1/1/23 - 12/31/23 Gallons Pumped	Per Capita Use (gals/person/day)	Population Served	2020 Census Data	2006 - 2015 Average Annual Gallons Pumped	Baseline Pumping Rate	Number of Wells
Atkinson	102,601,000	215.06	1,306	1,298	98,922,370	218	3
Bassett	57,027,000	223.04	700	538	54,020,000	239	3
Brunswick*	16,688,000	304.60	150	154	NA*	NA*	2
Chambers <sup>4</sup>				268	NA <sup>1</sup>	NA <sup>1</sup>	3
Clearwater	29,775,200	254.75	320	320	NA <sup>1</sup>	NA <sup>1</sup>	2
Elgin	69,988,000	267.75	717	712	NA <sup>2</sup>	NA <sup>2</sup>	3
Ewing	32,337,500	229.37	386	377	41,170,250	291	3
Neligh	83,544,700	143.68	1,592	1,516	NA <sup>1</sup>	NA <sup>1</sup>	4
Newport	7,864,000	269.13	80	69	NA <sup>1</sup>	NA <sup>1</sup>	2
Oakdale <sup>4</sup>				322	NA <sup>1</sup>	NA <sup>1</sup>	2
O'Neill	239,279,000	176.87	3,704	3,547	233,851,800	173	5
Orchard*	58,884,000	425.37	379	362	NA*	NA*	2
Page	5,335,400	88.00	166	167	NA <sup>1</sup>	NA <sup>1</sup>	2
Royal* <sup>4</sup>			45	56	NA*	NA*	1
Stuart	58,033,600	326.93	486	482	67,884,530	315	3
Summerland Public School <sup>3</sup>	4,679,875 <sup>3</sup>	23.30 <sup>3</sup>	550	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	1

Per Capita Use was estimated using 01/01/2023 – 12/31/2023 gallons pumped, divided by the population served in that period, divided by 365.25 days (1 year). Baseline Pumping Rates was estimated using 2006 – 2015 (10 year) average annual gallons pumped, divided by the 2010 Census Data, divided by 365.25 days. All data provided by municipalities.

\*Not part of LPRBC, 3<sup>rd</sup> year collecting data

<sup>1</sup> Several municipalities are still working on getting previous years pumping data to UENRD: Chambers, Clearwater, Neligh, Newport, Oakdale, and Page.

<sup>2</sup> Elgin's data only went back to 2009, so an average annual baseline pumping rate (2006 – 2015) was unable to be calculated.

<sup>3</sup> Summerland Public School's well was new in August 2021 so there is no data before this time. Also not part of census.

<sup>4</sup> 2023 pumping data has not been reported to UENRD.



# Data Collection and Monitoring

- NRD Monitoring
  - Expansion of irrigated acres
  - Groundwater level measurements
  - Municipal water use
- DWEE Monitoring
  - Surface water permitting activities
  - Groundwater Permitting
  - Water administration activity
  - Voluntary water use survey
  - Surface water pumpsite inspections
  - DWEE stream gage measurements



# DWEE Surface Water Permitting Actions

January 1, 2024, to December 31, 2024

- New surface water applications approved = 0
- Cancellations of surface water appropriations = 0
- Transfers of surface water appropriations = 0

# DWEE Groundwater Permitting Actions

January 1, 2024, to December 31, 2024

- Groundwater permits cancelled = 0
- Groundwater permits issued = 0

*Includes groundwater permits for the following uses*

- *Application to Drill Without Regard to Spacing*
- *Industrial Groundwater Transfers*
- *Industrial Transfer Notice*
- *Municipal Groundwater Transfers*
- *Municipal Notice of Intent*
- *Permit to Violate Well Spacing*
- *Permit to Transfer to Adjoining State*

# DWEE Water Administration Actions

## Year 2024

Surface Water Administration in Elkhorn River Basin in 2024						
Water Divison	Date of Close	Date Reopened	Permit Type	No. Affected	Reason for Closure	Reason for Reopening
2B - Elkhorn River Basin	9/5/2024	10/31/2024	Natural flow	10	Not enough water for NGPC instream flow right	Water for NGPC instream flow right has been exceeded
			Storage	67		
	9/6/2024		Natural flow	72		
			Storage	20		

# Pumpsite Inspections 2024

As time and conditions allow, the DWEE field office staff visit pumpsites (as mapped) for each appropriation to check for compliance and collect various data.

UENRD contains a total of 86 surface water irrigation rights. During 2024, a total of 84 site inspections were completed, 21 were found to have pumps set up and 10 were in operation at the time of the inspection.

Pumpsite Inspections				
	Surface Water Rights	Site Inspections	Pumps Set Up	Pumps Running
Upper Elkhorn	86	104	16	10



# Voluntary Water Right Use Reporting

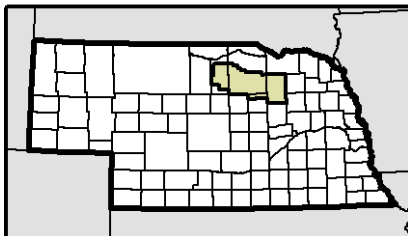
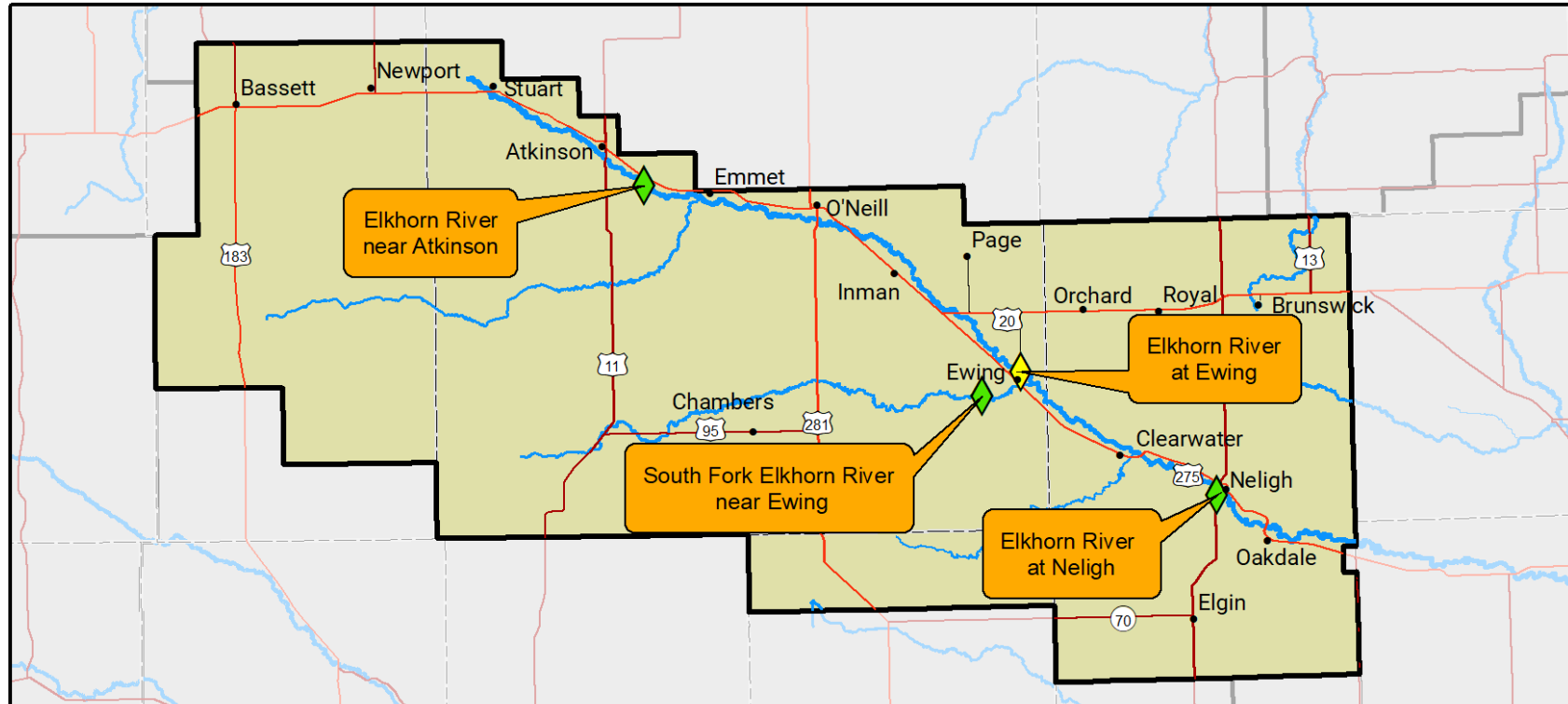
The Department received responses on 20 out of 86 sent for the voluntary water use survey in the UENRD. These appropriators provided information for the year 2024 as follows:

Of the 8 appropriations that reported use, all were irrigation from a naturally flowing source. No reservoir use was reported in 2024.

Upper Elkhorn Voluntary Water Right Use				
Water Type	Appropriators	Surface Water Irrigation (acre)	Average Inches per Acre	Remarks
Surface	8	486	2.5	
Surface / Ground (comingled)	0			
Ground Water Only	6			
Dryland	12			

# Streamgauge Locations in UENRD

## Streamgages in the Upper Elkhorn NRD IMP Area



Created by NeDNR | Updated by AJP 6/15/2021

### Active Streamgauge Operator

- Yellow diamond: USGS, with funding provided by UENRD
- Green diamond: NeDNR

Green outline: Upper Elkhorn NRD

- Black dot: Cities
- Blue line: River/Stream
- Red line: NE Hwy
- Orange line: US Hwy

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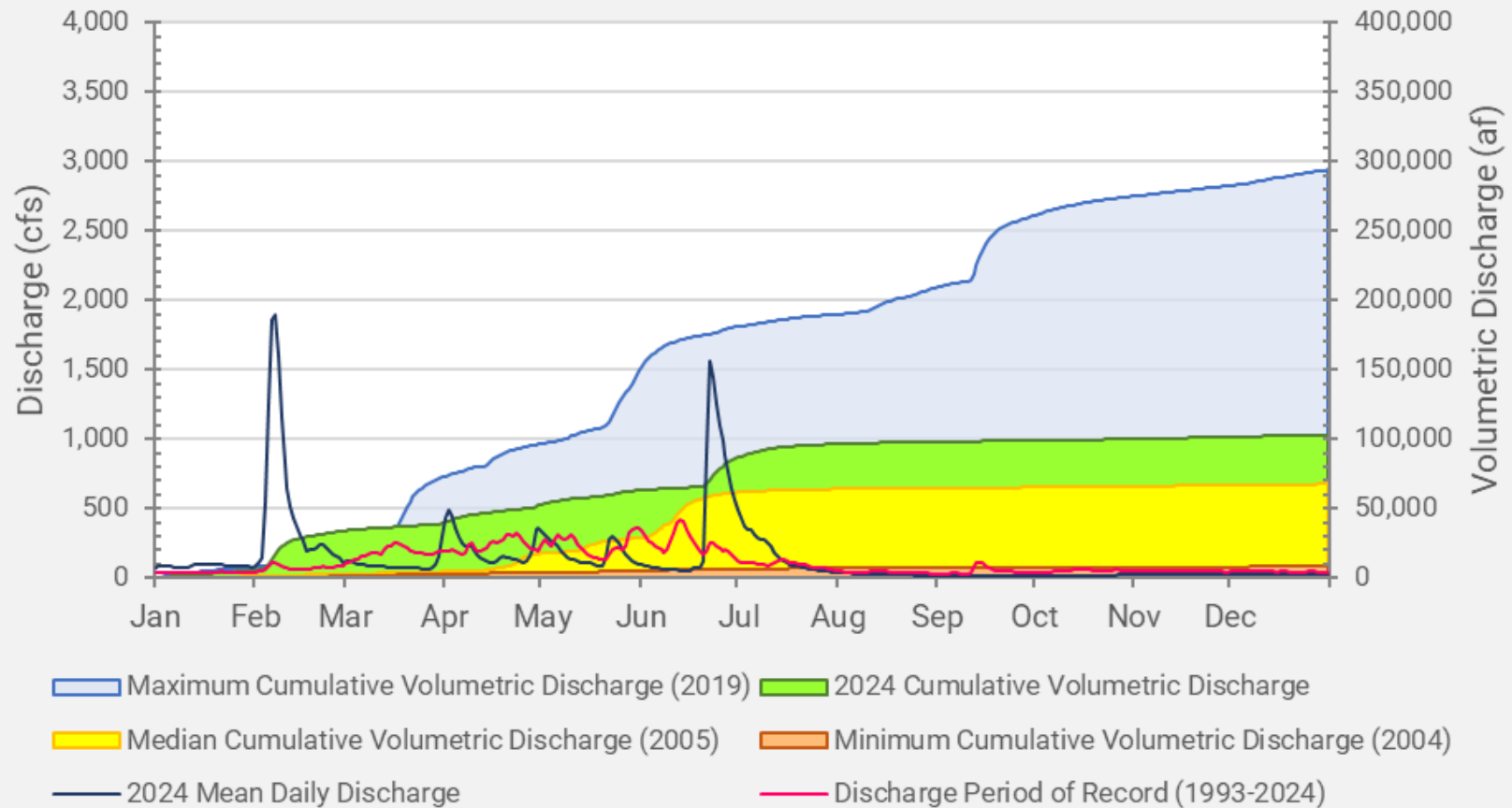


0 5 10 20 Miles

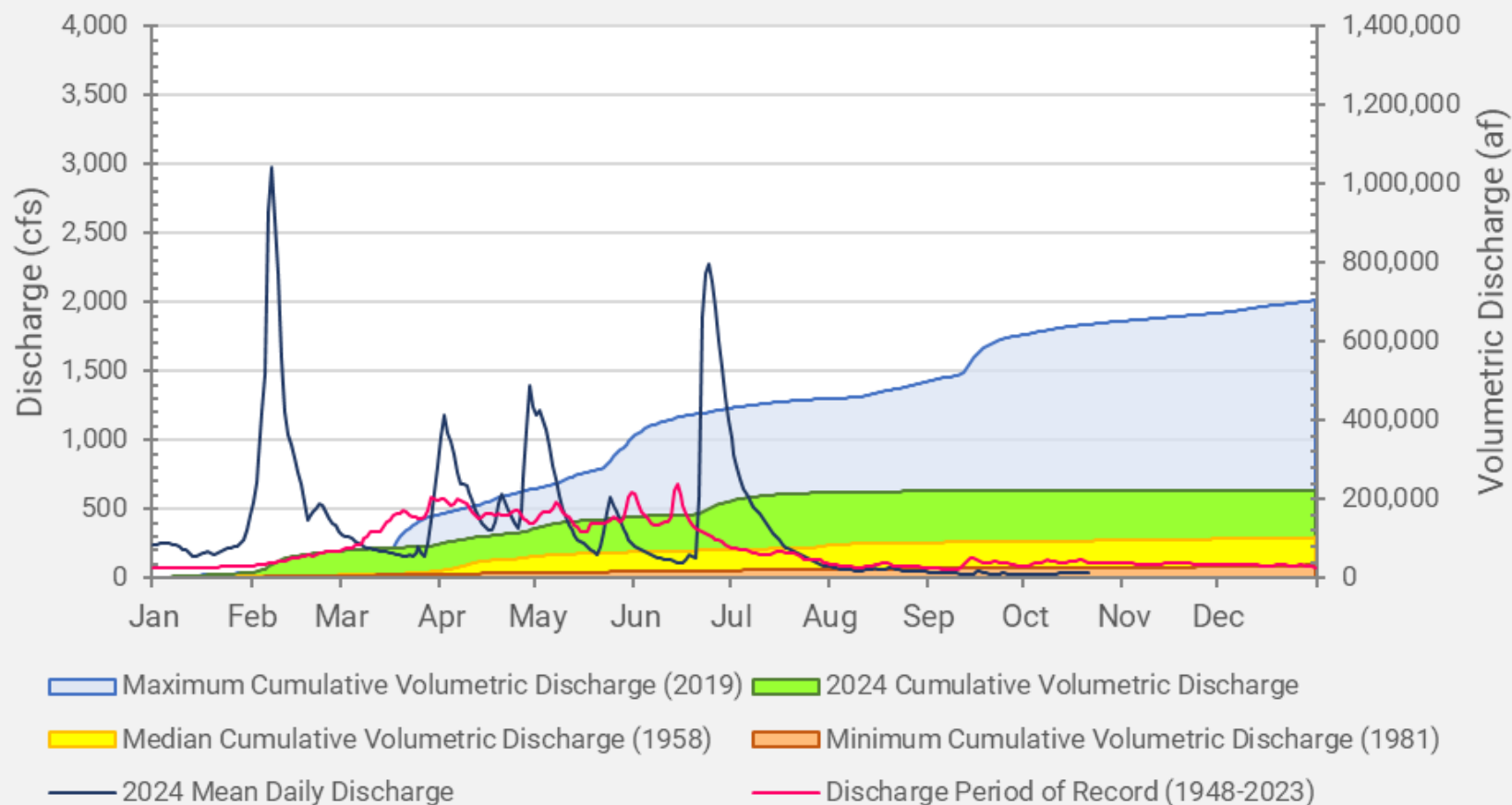
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## Elkhorn River near Atkinson NeDNR #06796973

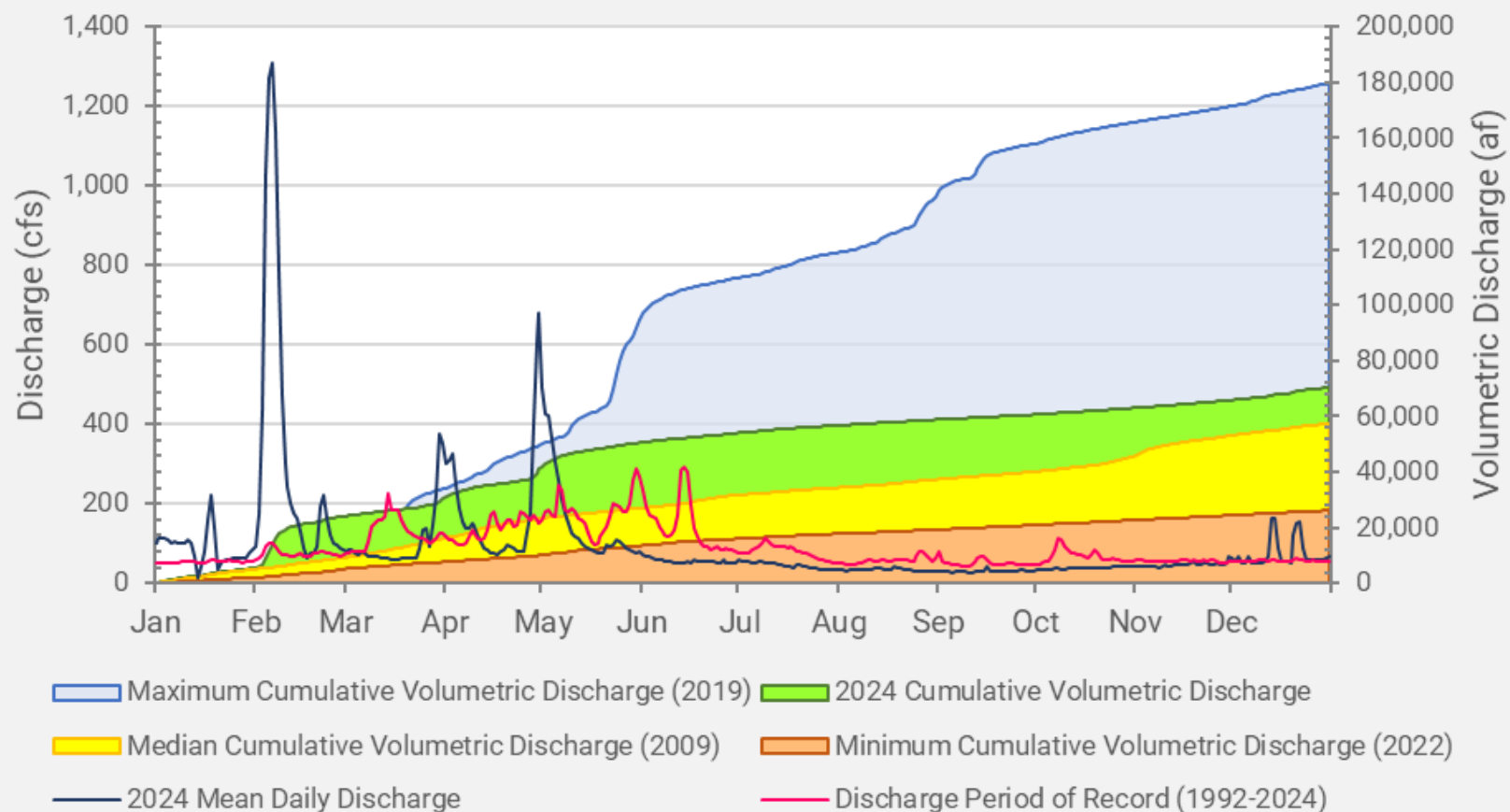


## Elkhorn River at Ewing USGS #06797500



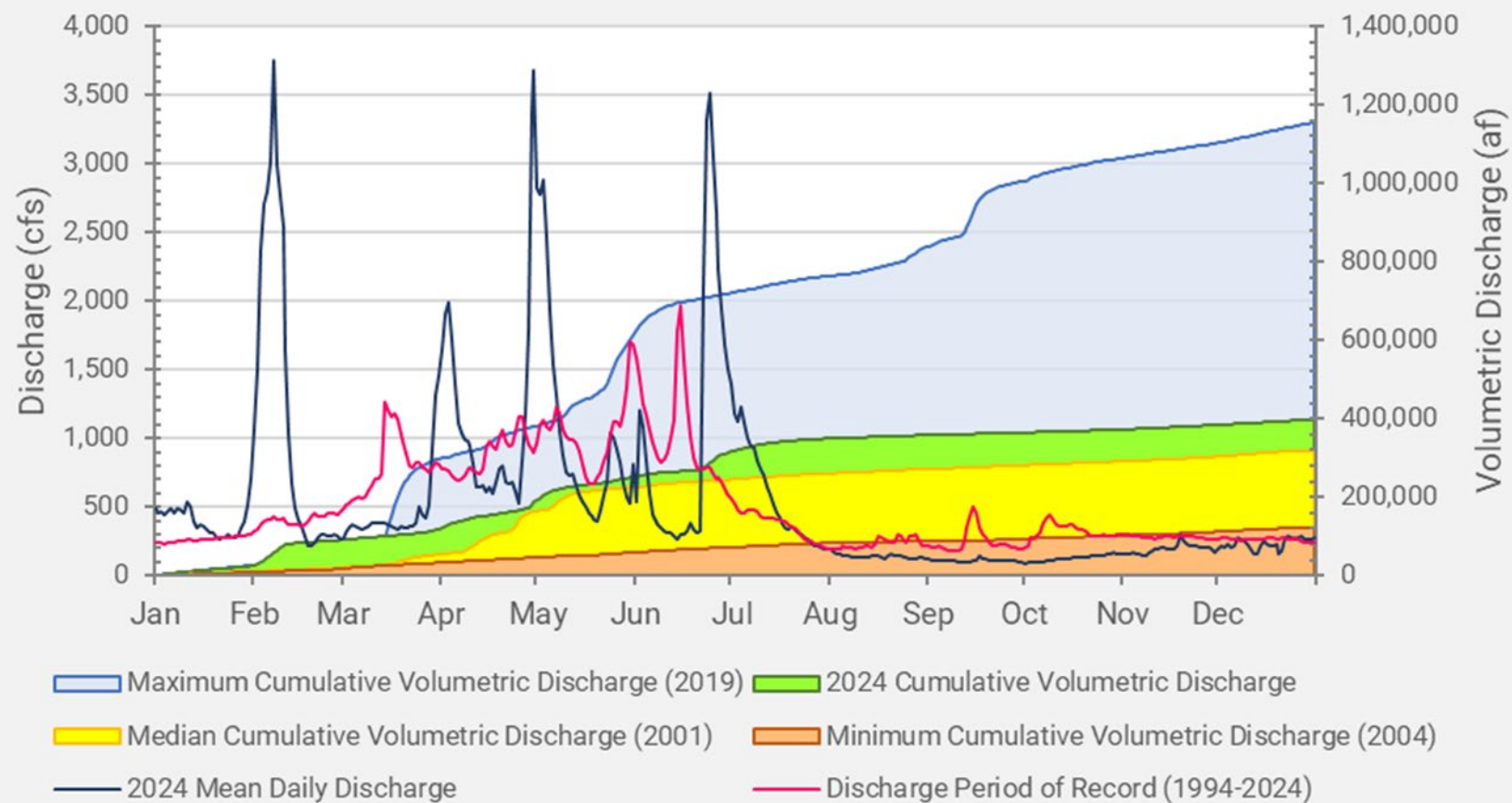
Note: Gage was ice affected starting 10/22/2024.

## South Fork Elkhorn River near Ewing NeDNR #06798000

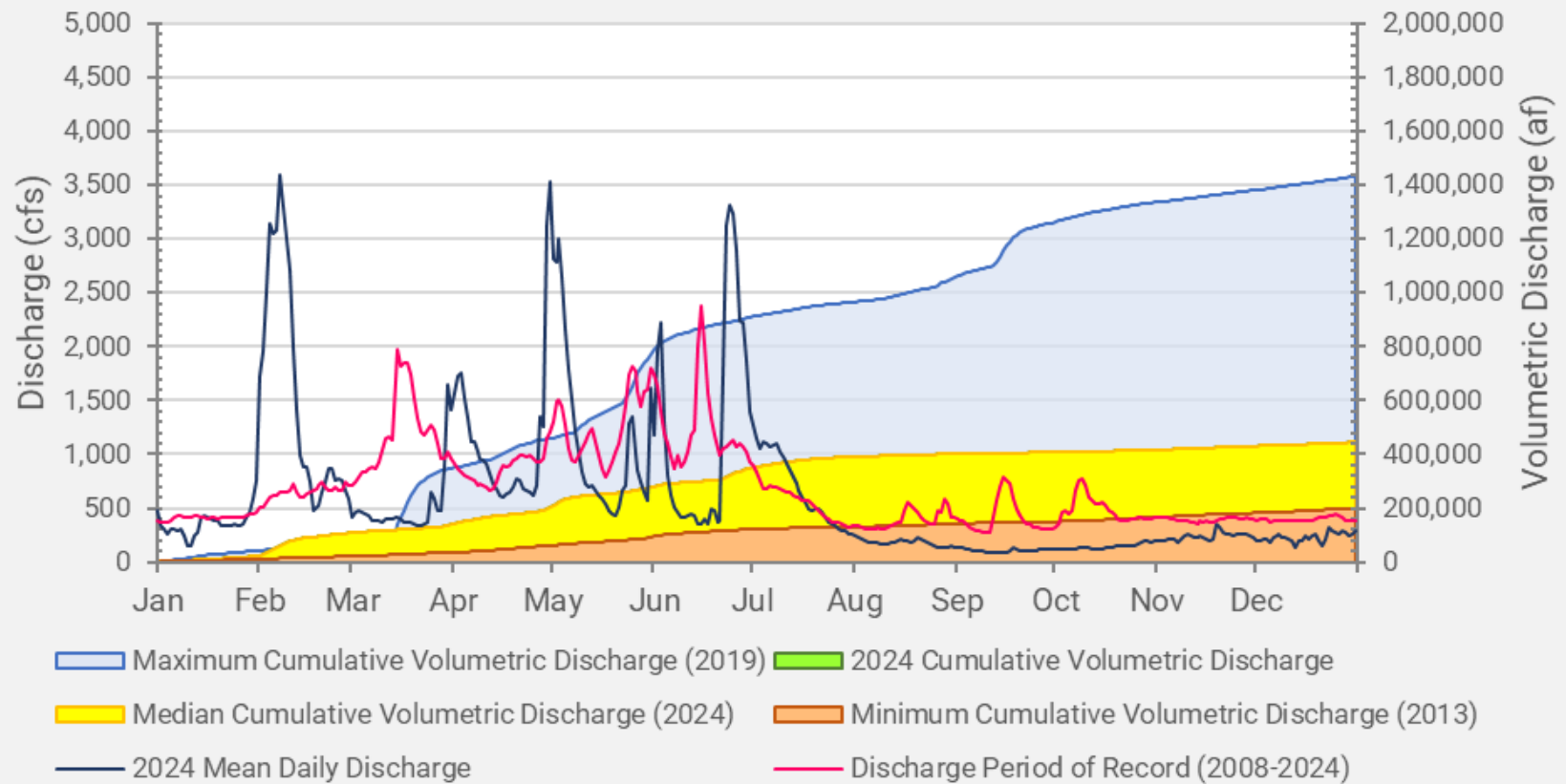




## Elkhorn River at Neligh NeDNR #06798500



## Elkhorn River near Tilden NeDNR #06798780



Note: Median Cumulative Volumetric Discharge and 2024 Cumulative Volumetric Discharge are the same, so 2024 Cumulative Volumetric Discharge is hidden

# LOWER PLATTE RIVER BASIN-WIDE ACTIVITIES

# Lower Platte River Basin Activities

- Both UENRD and DWEE participate in the Lower Platte River Basin Coalition (LPRBC)
  - Managers' and Technical Team meetings
  - Annual reporting (see next slide)
  - Annual Reporting Database
    - Tool to report and store annual water use data
  - Lower Platte Missouri Tributaries Model
    - Tool to analyze aquifer-stream interactions – includes Elkhorn and Lower Platte Rivers

# New Depletions Accounting

## Lower Platte River Basin Second Increment 2024

**TABLE 1 - PEAK SEASON DEPLETIONS**

NRD	PEAK SEASON 5-YR ALLOWABLE DEPLETION (AF)	2022 NRD Reported NET Depletion (AF)	NRD - Percent of Allowable	2022 DWEE Reported Depletion (AF)	DWEE- Percent of Allowable	Combined Percent of Allowable
Upper Loup NRD	5353.96	51.3	1.00%	0	0.00%	1.00%
Lower Loup NRD	11913.52	-54.5	-0.50%	200	1.70%	1.20%
Upper Elkhorn NRD	2926.95	2.5	0.10%	0	0.00%	0.10%
Lower Elkhorn NRD	8088.09	433.7	5.40%	169.7	2.10%	7.50%
Papio-Missouri River NRD	1753.4	48.2	2.70%	294.4	16.80%	19.50%
Lower Platte South NRD	2066.465	0	0.00%	50.9	2.50%	2.50%
Lower Platte North NRD	3571.438	177.1	5.00%	33.4	0.90%	5.90%
<b>TOTALS</b>	<b>35,674</b>	<b>658</b>	<b>1.80%</b>	<b>748.4</b>	<b>2.10%</b>	<b>3.90%</b>

**TABLE 2 - PEAK SEASON DEPLETIONS AND CONSUMPTIVE USE**

NRD	PEAK SEASON 5-YR ALLOWABLE DEPLETION (AF)	2022 NRD Reported NET Depletion (AF)	DWEE Reported Depletion (AF)	NRD Prior Years Peak Season Consumptive Use (AF)	2022 NRD Peak Season Consumptive Use (AF)	NRD Total Peak Season Consumptive Use (AF)	DWEE Total Peak Season Consumptive Use (AF)	Total New Peak Season Depletions	Total New Peak Season Consumptive Use	Remaining 5-YR Allowable Depletion (AF)	Percent of Remaining 5-YR Allowable Depletion
Upper Loup NRD	5435	51.3%	0.00%	1093.8	207.4	1301.2	0	51.3	1,301.20	5,302.70	97.60%
Lower Loup NRD	11910	-54.5	200	2305.2	137.4	2442.6	200	145.5	2,642.60	11,768.00	98.80%
Upper Elkhorn NRD	2965	2.5	0	687.2	8.4	695.6	0	2.5	695.6	2,924.50	98.60%
Lower Elkhorn NRD	8346	433.7	169.7	3394	1014.7	4408.7	169.7	603.4	4,578.40	7,484.70	89.70%
Papio-Missouri River NRD	1826	48.2	294.4	192.9	87.6	280.6	294.4	342.6	575	1,410.80	77.30%
Lower Platte South NRD	2098	0	50.9	26.5	0	26.5	50.9	50.9	77.4	2,015.60	96.10%
Lower Platte North NRD	3736	177.1	33.4	2183.7	593.4	2777.1	33.4	210.5	2,810.50	3,360.90	90.00%
<b>TOTALS</b>	<b>36,316</b>	<b>658</b>	<b>748</b>	<b>9,883</b>	<b>2,049</b>	<b>11,932</b>	<b>748</b>	<b>1,407</b>	<b>12,681</b>	<b>34,267</b>	<b>94%</b>

# Education and Outreach Activities in 2024

## DWEE

- Sandhills Ranch Expo

## UENRD

- Sandhills Ranch Expo

# Jointly Identified Actions for Next Two Years

- Continue to monitor progress made in reaching targets described in the goals and objectives of the IMP
  - Reevaluate and revise, as necessary
- Continue to participate in basin-wide and regional planning efforts such as the Lower Platte River Basin Coalition (LPRBC)
- Continue effort to develop depletion/consumptive use tracking database as a part of LPRBC
- UENRD will continue process of certifying groundwater irrigated acres.
  - As part of this effort, UENRD and the Department are working together to assess the associated data needs.
- Participate in public outreach opportunities in the UENRD area, as they are available.
  - Sandhills Ranch Expo 2025/6
- Review data from local studies, as available
  - Comparison of CENEB and ELM models



**Thank you!**

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Nebraska Department of Water, Energy, and Environment