

DRAFT
LAKE MCCONAUGHY ENVIRONMENTAL ACCOUNT
2024 WATER YEAR ANNUAL OPERATING PLAN
October 10, 2023

SUMMARY

This document details the U.S. Fish and Wildlife Service (Service) Annual Operating Plan (AOP) for releases from the Lake McConaughy Environmental Account (EA). For the upcoming Water Year (WY) 2024, the Service identifies the spring whooping crane release and the June-July germination suppression release as high priorities. The late spring channel maintenance release is considered to be a medium priority. Snowpack and upstream reservoir levels on the North Platte River in Wyoming will be monitored to determine if there is a risk that Lake McConaughy will fill to levels that would result in a reset of the EA. The WY2024 releases will balance benefits for the target species and their habitat with minimizing the risk of losses due to EA reset and carrying over EA water into the 2025 water year.

Currently, the Service is planning for a spring whooping crane release and a germination suppression release. This would be the first spring whooping crane release since 2021. Releases for germination suppression were made each year from 2020-2023 as a flow experiment for the Platte River Recovery Implementation Program (PRRIP); 2024 would be the 5th consecutive year for the germination suppression experiment.

Additional releases to provide species benefits may be considered, especially if above average snowpack is observed and there are other indications of significantly wetter hydrologic conditions across the Platte River basin. Potential releases for the upcoming year, their priorities, and flow targets are listed in **Table 1** below.

Table 1: Priority EA target flow releases for WY2024

<i>Date</i>	<i>Target Flow (cfs)</i>			<i>Purpose</i>	<i>Priority</i>
	<i>Wet</i>	<i>Normal</i>	<i>Dry</i>		
Mar 6-Apr 29	2,400	2,400	1,700	Whooping Crane	High
May 20-June 20	3,400	3,400	800	Channel Maintenance	Medium
June 1-July 15	1,500	1,500	1,500	Germination Suppression	High
June 21-Sep 15	1,200	1,200	800	Terns & Plovers, Aquatic Community	Low

LAKE MCCONAUGHY EA ACCOUNTING

Based on an accounting analysis by the Nebraska Department of Natural Resources, the EA volume was 116,002 AF on September 30, 2023, including recent deliveries from Pathfinder Reservoir. Additional lease water is credited to the EA in October each year, and 10% of the October-April Storable Natural Inflows

(SNI) as measured at the North Platte River at Lewellen gage are credited to the EA. Estimates of EA credits and losses for WY2024 are listed in **Table 2**. Without any releases, the EA volume would be approximately 193,000 AF at the end of WY2024.

Table 2: Lake McConaughy EA carryover accounting

Source	Volume (AF)
WY2023 Carry-Over ¹	116,002
Central Platte Natural Resources District (CPNRD) Lease ²	+10,666
Nebraska Public Power District (NPPD) Lease ²	+2,456
Net Controllable Conserved Water (NCCW) ²	+314
Central Nebraska Public Power and Irrigation District (CNPPID) Irrigator Lease ²	+990
10% SNI ³	+44,800
Estimated WY2024 Pathfinder Deliveries ⁴	+28,400
Evaporation & Seepage Loss ⁵	-10,500
WY2024 EA Carry-Over (without releases)	193,128

¹ Includes June and September 2023 deliveries from the Pathfinder Municipal Account and Pathfinder EA

² Lease water credited to the Lake McConaughy EA in October 2023

³ Based on CNPPID/NPPD projection of 448,000 AF at Lewellen from October 2023-April 2024

⁴ Average 2012-2023

⁵ Average 2007-2022

BACKGROUND

An Environmental Account of water in Lake McConaughy in Nebraska was established on October 1, 1999, per CNPPID and Nebraska Public Power District (NPPD) (collectively, Districts) Federal Energy Regulatory Commission (FERC) licenses, for Project 1417 and Project 1835, respectively.

The EA, managed by an EA Manager appointed by the U.S. Fish and Wildlife Service, was established to benefit four federally listed species and other federal trust resources. Federally listed species include the whooping crane, piping plover, pallid sturgeon, and, formerly, the interior least tern. Federal trust resources are listed in the District's licenses and are too numerous to describe here. The interior least tern was delisted on February 12, 2021, from the list of federally threatened or endangered species, but continues to be managed as a federal trust resource. The EA Manager is required to develop an Annual Operating Plan (AOP) for releases from the EA in coordination with the EA Committee (a subcommittee of the Platte River Recovery Implementation Program; PRRIP) by the end of October of each year.

Guidelines and operating rules for the EA are described in the FERC licenses and in Attachment 5, *An Environmental Account for Storage Reservoirs on the Platte River System in Nebraska*, of the *Platte River Recovery Implementation Program*. Release priorities for the EA are based on the 1994 Service document titled: *"Instream flow recommendations for the Central Platte River, Nebraska (Instream Flow document)"* and the 2019 document titled: *"Water Management through the First Increment Extension of the Platte River Recovery Implementation Program."*

WATER YEAR 2024 RELEASE PRIORITIES

The high priority releases for the upcoming water year are the spring (March 6-April 29) whooping crane

release and the germination suppression release targeting 1,500 cfs at Grand Island between June 1 and July 15. The late spring (May 20 to June 20) channel maintenance release is a medium priority but also has considerable temporal overlap with the planned germination suppression release. The WY2024 summer (June 21 to September 15) release is a low priority. Information, listed in chronological order about all the potential priority releases, is summarized below.

March 6 to April 29 (Whooping Crane) Release

Priority – High

Purpose – This release provides in-channel habitat for the whooping crane.

Good Neighbor Conflicts and Other Conflicts – This medium priority release would not require bypass at the CNPPID or NPPD diversions. Flow releases would maintain ramp rates at safe levels for the NPPD Sutherland Canal and the North Platte River. The release would not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake.

Estimate of EA water required – The timing and magnitude of spring whooping crane releases tend to be highly variable depending on both hydrology and the duration of whooping crane presence in the central Platte River corridor. Recent spring whooping crane releases included about 52,300 AF from March 19-April 30, 2018, and 12,500 AF from March 30-April 13, 2021. There were no spring whooping crane releases in 2017, 2019, 2020, 2022, or 2023.

May 20 to June 20 (Channel Maintenance) Release

Priority – Medium

Purpose – Referencing the Service’s 1994 Instream Target Flow document, the target pulse flow from May 20 to June 20 is intended to: a) maintain and enhance the physical structure of wide, open, unvegetated, and braided river channel, b) maintain and rehabilitate aquatic characteristics of large river habitats in the lower Platte River for animals such as the endangered pallid sturgeon; c) maintain and enhance the occurrence of soil moisture and pooled water for lower trophic levels of the food chain in lowland grasslands; and d) maintain and rehabilitate backwaters and side channels as spawning and nursery habitats for the aquatic community

Good Neighbor Conflicts and Other Conflicts – This medium priority release would not require bypass at the CNPPID or NPPD diversions. Flow releases would maintain ramp rates at safe levels for the NPPD Sutherland Canal and the North Platte River. The release would not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake.

Conversations with NPPD and the Central Platte Natural Resources District (CPNRD) in 2019 indicated that their sand dam diversion structures would require flows of 5,000 cfs or greater before damage begins to occur. The table below lists the sand dams and the maximum amount of flow they can safely withstand.

Table 3: Sand dams and estimated flow to begin damage

Source	Volume (acre feet)
Gothenburg	5,000
Dawson County	5,000
Cozad	10,000 to 15,000
Thirty Mile	10,000 to 15,000
Orchard-Alfalfa	~5,000

Estimate of EA water required – In 2017, the late-spring release ran from May 13 to June 12 and used approximately 50,600 AF of EA water. The most recent channel maintenance release ran between April 29 and June 2, 2020, with a total release volume of about 50,900 AF.

June 1 to July 15 (Germination Suppression) Release

Priority – High

Purpose – The germination suppression release was developed through coordination with the PRRIP and is not an instream flow developed by the Service in our 1994 document. This is a prioritized test release that differs in magnitude from the Service’s instream flow for this time period. It is hypothesized that flows of 1,500 cfs during the period from June 1 to July 15 should be adequate to inundate approximately 95 percent of the stream channel and leave a minimal area of sandbars exposed. The water inundation, for 30 days within the June 1 to July 15 period, should suppress plant growth by reducing transpiration and/or preventing the establishment of vegetation.

Good Neighbor Conflicts and Other Conflicts – The flow release will maintain ramp rates at safe levels for the NPPD Sutherland Canal and the North Platte River. The release will not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake. The release will not require intentional bypass at the CNPPID or NPPD diversions, except as limited by the canal capacities.

Consistent with protocols employed during the 2022 and 2023 germination suppression releases, it is anticipated that planning and coordination meetings will be held twice weekly during the 2024 release period. Participants in these meetings include the Service EA Manager and staff, PRRIP staff, operations personnel from CNPPID and NPPD, and water administration personnel from the Nebraska Department of Natural Resources. The purpose of these meetings is to review weather forecasts, irrigation demands, and other factors that may require planning for adjustments to the EA release.

Estimate of EA water required – The June 1-July 15 period reflects the dates between which EA water is desired to be present at the Grand Island gage during the germination suppression release. Travel time through the Platte River system is such that water released from the Lake McConaughy EA on day 1 reaches Grand Island on day 8. In order for the germination suppression flow to reach Grand Island on June 1, the EA release needs to begin no later than May 25. If the flow at Grand Island is to be maximized on June 1, the EA release may need to start a few days earlier to accommodate ramp rates in the NPPD Sutherland Canal and/or the North Platte River channel.

Release volumes for germination suppression were 29,036 AF in 2020 (June 11-July 12), 57,880 AF in 2021 (May 24, June 2-July 2), 79,359 AF in 2022 (May 25-June 24), and 49,870 AF in 2023 (May 24-June 14). Each successive year from 2020-2022 was progressively drier and thus required more EA water to augment natural flow to achieve the 1,500 cfs germination suppression flow target at Grand Island.

Extensive precipitation, particularly along the Front Range of Colorado, resulted in an extended period of high flows on the South Platte River and Platte River in June-July 2023 and reduced the amount of EA water that needed to be released. Streamflow at Grand Island remained above 1,500 cfs from May 31-July 20.

In 2022, high release rates were possible for the first half of the germination suppression EA release, with average daily releases of 1,600 cfs or greater for nearly two weeks in late May and early June. Rapid increases in irrigation demand and the corresponding loss of available carriage capacity in the North Platte River channel around the 3rd weekend in June resulted in sharp curtailment of the EA release. EA release rates were drawn down much quicker than planned during the final week. A similar pattern would be anticipated if dry conditions return in 2024.

June 21 to September 15 (Tern and Plover/Aquatic Community) Release

Priority – Low

Purpose – Referencing the Service’s 1994 Instream Target Flow document, the target flow of 1,200 cfs under normal year types is required to: a) prevent least terns and piping plovers from nesting on low elevation sandbars; b) maintain high diversity of aquatic habitats for the aquatic community; c) reduce the frequency of lethal water temperature maximums to protect aquatic organisms; d) maintain habitat for the fish community; and e) prevent encroachment of non-native aquatic species

Good Neighbor Conflicts and Other Conflicts – This low priority flow release would maintain ramp rates at safe levels for the Keystone Canal and the North Platte River. The release would not require the retiming of water at Lake Maloney, Jeffrey Reservoir, or Johnson Lake. The release would not require bypass at the CNPPID or NPPD diversions.

Estimate of EA water required – Mid- to late-summer releases to provide species benefits have been rare in recent years. The most recent release for this purpose ran from July 10 to August 9, 2017, at a constant rate of 250 cfs for a total of nearly 15,400 AF.