

**ENVIRONMENTAL ACCOUNT  
2021 WATER YEAR ANNUAL OPERATING PLAN  
Final Version**

**SUMMARY**

This upcoming 2021 water year, the U.S. Fish and Wildlife Service (Service) lists the spring whooping crane, and the late spring channel maintenance releases as high priorities. In addition, the late spring channel maintenance release may be extended to prevent vegetation from germinating within the channel. Priority target flow releases during the upcoming water year are listed in Table 1.

Low Lake McConaughy levels along with dry conditions across most of the basin have reduced the risk of the Environmental Account (EA) being reset to 100,000 acre-feet. This year the Service will release water for species and habitat purposes and at the same time balance the need for EA water to be carried over into future years.

**Table 1: Priority EA target flow releases for WY2021**

<i>Dates</i>	<i>Target Flow (cubic feet/sec [cfs])</i>		<i>Purpose</i>	<i>Priority</i>	<i>Median of Normal/Dry Shortage (kaf)</i>
	<b>Wet/Normal</b>	<b>Dry</b>			
<b>Feb 15-Mar 15</b>	<b>3,350/3,350</b>	<b>2,250</b>	<b>Channel maintenance, wet meadow recharge</b>	<b>Medium</b>	<b>87.9/61.0</b>
<b>Mar 23-May 10</b>	<b>2,400/2,400</b>	<b>1,700</b>	<b>Whooping crane</b>	<b>High</b>	<b>83.9/82.8</b>
<b>May 20 -Jun 20</b>	<b>3,400/3,400</b>	<b>800</b>	<b>Channel maintenance</b>	<b>High</b>	<b>153/23.5</b>
<b>Jun 21 – Sep 15</b>	<b>1,200/1,200</b>	<b>800</b>	<b>Terns &amp; plovers, and aquatic community</b>	<b>Medium</b>	<b>127/126</b>

It is estimated that the EA will gain approximately 87 thousand acre-feet (kaf) in Water Year 2021, which includes deliveries from the Pathfinder EA and Municipal accounts in September and October, 2021. Estimates of the EA credits, losses, and volume at the end of the water year (without any releases) are listed in Table 2. By the end of WY 2021, there may be nearly 204 kaf in the EA, if no releases are made. Since the EA volume may not exceed 200 kaf, releases do need to be made, and we envision releasing at least 100 kaf this upcoming water year.

**Table 2: EA carryover accounting for WY2021**

<b>Source</b>	<b>Volume (acre feet)</b>
WY2020 Carryover <sup>1</sup>	116,289
CPNRD Lease (Delivered 10/1/2020)	14,073
NCCW (Delivered 10/1/2020)	314
CNPPID Lease (Delivered 10/1/2020)	2,242
NPPD Leasing (Delivered 10/1/2020)	3,306
10% Storable Natural Inflows (estimated CNPPID)	46,700
Evaporation & Seepage Loss (Oct – Sep) (median 2000-2020)	-9,034
WY2021 Pathfinder Deliveries <sup>2</sup> (median 2012-2019)	29,841
Estimated WY21 EA Carryover(without releases)	203,731

<sup>1</sup>Includes September-October 2020 deliveries from Pathfinder EA and Municipal accounts.

<sup>2</sup>Pathfinder (EA and Municipal) to be delivered September-October, 2021.

## **BACKGROUND**

An Environmental Account of water in Lake McConaughy in Nebraska was established on October 1, 1999, as per Central Nebraska Public Power and Irrigation District (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 primarily to benefit four federally listed threatened or endangered “target” species (*i.e.*, whooping crane, interior least tern, piping plover, and pallid sturgeon). 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 or Program]) 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)*.”

## WATER YEAR 2021 RELEASE PRIORITIES

High priority releases for the upcoming water year are: the spring (March 23 to May 10) whooping crane release; and late spring (May 20 to June 20) channel maintenance release. Medium priority releases are the late winter (February 15 to March 15), and the summer (May 11 to September 15) target flows. Information, listed in chronological order about both the high and medium priority target releases, is summarized below.

### February 15 to March 15 (Channel Maintenance/Wet Meadow Recharge) Release Priority - Medium

*Purpose* - Referencing the Service's Target Flow document, this EA release is based on the Service priorities to: a) redistribute sediment in the active channel and maintain the geomorphology of the channel to target bird species, migratory birds and aquatic community; b) scour vegetation from the channel islands; and c) recharge wet meadows to benefit migratory birds.

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

The release has the potential to impact canal operators along the upper reaches of the central Platte River (see summary for the May 20 to June 20 [Channel Maintenance] Release) below. In addition, this release will not be made if there is presence of ice on the river that may result in ice jamming and subsequent flooding.

*Estimate of EA water required*- In a normal year, the median shortage is nearly 88 kaf. However, the EA volume actually used for shortage reduction is limited due to several factors, including ice in the river that may delay or cancel the release. In the past, actual releases used significantly less volume; for example, in 2016, 19,000 acre-feet of EA water was used.

### March 23 to May 10 (Whooping Crane) Release Priority - High

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

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

*Estimate of EA water required*- In a normal year, the median shortage for this release is 84 kaf. In practice the released volume is less, one reason is that the release is terminated when whooping cranes are no longer on the central Platte and have moved north. In 2019, the release used approximately 53,000 acre-feet.

## May 20 to June 20 (Channel Maintenance) Release

### Priority – High

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

This release may be extended until mid-July, at a rate of approximately 2,000 cfs, to help prevent vegetation from germinating in the stream channel.

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

Conversations with NPPD and CPNRD in 2019 indicated that their sand dam diversion structures would require 5,000 cfs, or more, of flow before they start seeing damage. The table below lists the sand dams and the maximum amount of flow they can withstand. The May 20 to June 20 release made in 2017 reached a maximum flow of 4,066 cfs at Maxwell, which was mainly a result of high flows originating from the South Platte, there was no flow contribution at Maxwell from the EA release.

**Table 3. Sand Dams and estimated flow to begin damage**

<i>Sand Diversion Dam</i>	<i>Flow (cfs)</i>
<b>Gothenburg</b>	5,000
<b>Dawson County</b>	5,000
<b>Cozad</b>	10,000 to 15,000
<b>Thirty-Mile</b>	10,000 to 15,000
<b>Orchard &amp; Alfalfa</b>	~5,000

Estimate of EA water required- The median shortage in a normal year for this flow target is 153 kaf. In practice, this release in generally has shorter duration with the aim to maintain flows above 3,000 cfs for at least 7 days. In 2017, the release resulted in 20 days of above 3,000 cfs and used approximately 49,000 acre-feet. This year the release may extend through mid-July, at about 2,000 cfs, to prevent encroachment of vegetation into the stream channel.

During dry hydrologic conditions the target flow is greatly reduced from wet/normal years. During dry years, the target is 800 cfs, in comparison to 3,400 cfs during wet/normal years. Under dry hydrologic conditions, discussions with the EDO and others would need to take place to determine the start date of the release intended to prevent vegetation encroachment.

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

Priority – Medium

Purpose - Referencing the Service's 1994 Instream Target Flow document, the target flow of 1,200 cfs under normal and wet 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 - The flow release will maintain ramp rates at safe levels for the Keystone 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 would not require bypass at the CNPPID or NPPD diversions.

Estimate of EA water required- In a normal year, that the medium shortage for this release, in a normal year is approximately 127 kaf. In practice, the release volume is capped at a lower level that attempts to maximize benefit with the available water.