

2025 Water Management Plan

Seasonal Update

November 1, 2024

1. Introduction

The annual Water Management Plan (WMP) is developed prior to U.S. Army Corps of Engineers (Corps), Bureau of Reclamation (Reclamation), and Bonneville Power Administration (BPA), collectively referred to as the Action Agencies (AAs), implementation of Columbia River System (CRS) operations identified in the following documents: 1) National Marine Fisheries Service (NMFS) 2020 CRS Biological Opinion (2020 NMFS BiOp); 2) U.S. Fish and Wildlife Service (USFWS) 2020 CRS BiOp (2020 USFWS BiOp); 3) AA’s 2020 CRS Biological Assessment (2020 CRS BA); 4) 2024 Fish Operations Plan (2024 FOP), and; 5) The December 14, 2023, Joint Motion to Stay Litigation Through 2028, specifically in the U.S. Government Commitments in Support of the “Columbia Basin Restoration Initiative” and in Partnership with the Six Sovereigns document that is Attachment 2 to the Memorandum of Understanding and these changes are referred to herein as the Resilient Columbia Basin Agreement. The 2025 WMP continues current operations; however, those operations are subject to change.

The WMP is also developed prior to the receipt of any seasonal information that may determine how many of the operation measures are implemented. The Seasonal Update is intended to supplement the WMP with more detailed information on operations as the water year progresses. Each section of the Seasonal Update will be updated when information is available and finalized when no further information is available.

The first update for the primary elements of Fall and Winter will be posted by November 1 of each year. The first update for the primary elements of Spring and Summer will be posted by March 1 of each year. The elements and operations included in the Seasonal Update are generally the same as have been previously presented in the Fall/Winter and Spring/Summer Updates to the WMP. The change to update in this manner is intended to present better continuity for tracking operations as they change throughout and across each season. The elements and operations described in the Seasonal Update and the approximate schedule for updates and finalization are as displayed in Table 1.

Table 1. Schedule for update and finalization of Seasonal Update elements and operations.

Section	Element	Begins	Finalized	Last Updated
2.1	Current Conditions (e.g., WSF, Streamflows)	October	July	-
2.2	Seasonal Flow Objectives	April	August	-
2.3	Flood Risk Management	January	June	November 1, 2024
2.4	Storage Project Operations	September	September	November 1, 2024
2.5	Water Quality (Spill Priority Lists)	January	December	-

	Specific Operations	Start Date	End Date	Last Updated
2.6	Burbot spawning temperature management (Libby Dam)	November	December 30	-
2.7	Lake Pend Oreille Kokanee (Albeni Falls Dam)	September 1	December 30	-
2.8	Upper Snake Flow Augmentation	April 1	August 31	-
2.9	Chum Flows (Bonneville Dam)	November 1	April 10	November 1, 2024
2.10	Hanford Reach Fall Chinook Protection	November	June	November 1, 2024
2.11	Snake River Zero Generation	December	February	
2.12	Minimum Operating Pool	April 3	-	-
2.13	Spill Operations	April 3	-	-
2.14	Transport Operations	May 1	-	-
2.15	Fish Passage Research	March	October	-

2. Seasonal Update Elements and Specific Operations

2.1. Current Conditions

Water Supply Forecasts – NWRFC

The final water supply forecast (WSF) is defined as the forecast posted on NOAA’s Northwest River Forecast Center (NWRFC) website at 5:00 pm Pacific Standard Time on the 3rd business day of the month. NWRFC water supply forecasts are available on the following website.

<http://www.nwrfc.noaa.gov/ws/>

Table 2. The Dalles Dam Final Water Supply Forecasts.

Forecast Issue Date	January-July 2025		April-August 2025	
	Volume (MAF)	% of 30-year (1991-2020) Average (103.7 MAF)	Volume (MAF)	% of 30-year (1991-2020) Average (89.2 MAF)
January 6, 2025				
February 5, 2025				
March 5, 2025				
April 3, 2025				
May 5, 2025				
June 4, 2025				
July 3, 2025				

Table 3. Grand Coulee Dam Final Water Supply Forecasts.

Forecast Issue Date	January-July 2025		April-August 2025	
	Volume (MAF)	% of 30-year Average (61.7 MAF)	Volume (MAF)	% of 30-year Average (58.2 MAF)
January 6, 2025				
February 5, 2025				
March 5, 2025				
April 3, 2025				
May 5, 2025				
June 4, 2025				
July 3, 2025				

Table 4. Lower Granite Dam Final Water Supply Forecasts.

Forecast Issue Date	April-July 2025		April-August 2025	
	Volume (MAF)	% of 30-year Average (1991-2020) (27.4 MAF)	Volume (MAF)	% of 30-year Average (1991-2020) 21.1 MAF)
January 6, 2025				
February 5, 2025				
March 5, 2025				
April 3, 2025				
May 5, 2025				
June 4, 2025				
July 3, 2025				

Table 5. Dworshak Dam Final Water Supply Forecasts.

Forecast Issue Date	April-July 2025	
	Volume (KAF)	% of 30-year (1991-2020) Average (2,474 KAF)
December 4, 2024		
January 6, 2025		
February 5, 2025		
March 5, 2025		
April 3, 2025		
May 5, 2025		
June 4, 2025		

Water Supply Forecasts - Corps

The Corps’ Seattle District produce the following volume inflow forecast for Libby and they are available on the following website.

<https://www.nwd.usace.army.mil/CRWM/Forecasts/>

Table 6. Libby Dam Water Final Supply Forecasts.

Forecast Issue Date	April-August 2025	
	Volume (KAF)	% of 78-year (1991-2020) Average (6,080 KAF)
December		
January		
February		
March		

April		
May		
June		

Water Supply Forecasts – Reclamation

Water supply forecasts for Hungry Horse Dam are produced by Reclamation.

Table 7. Hungry Horse Dam Final Water Supply Forecasts.

Forecast Issue Date	April-August 2025		Date-July 2025		May-September 2025	
	Volume (KAF)	% of 30-year Average (2,047 KAF)	Volume (KAF)	% of Average	Volume (KAF)	% of 30-year Average (1,782 KAF)
January						
February						
March						
April						
May						
June						

Weekly Weather and Precipitation Retrospectives

Week	Weekly Weather / Precipitation Retrospective
October 1, 2024	
October 6, 2024	
October 13, 2024	
October 20, 2024	
October 27, 2024	

2.2. Seasonal Flow Objectives

Project	Planning Dates	Seasonal Flow Objectives – (kcfs)	2025 Season Average Flow (kcfs)
Priest Rapids	Spring 4/10–6/30	135	
McNary	Spring 4/10–6/30	220	
	Summer 7/1–8/31	200	
Lower Granite	Spring 4/3–6/20	93	
	Summer 6/21–8/31		

- i. Varies according to NWRFC April forecast.
- ii. Varies according to NWRFC June forecast.

2.3. Flood Risk Management

Flood Risk Management (FRM) Elevations and April 10 objective elevations per each forecast period are listed in the table below. Forecasted FRM elevations will be calculated beginning in December after the Libby and Dworshak water supply forecasts are available. Subsequent forecasted FRM requirements will be updated after the final water supply forecasts are available January-April.

Grand Coulee and all Canadian projects will be operated for FRM. Hungry Horse and Libby will be operated for Variable Q (VARQ) Flood Control. Beginning in January, the Corps calculates Upper Rule Curve elevations based on the monthly official final forecasts. Projects are operated using these elevations as an upper limit, with the objective of reaching their spring refill elevations. Detailed FRM operations are available at the following website. <http://www.nwd-wc.usace.army.mil/report/colsum>.

The April 10 elevations shown in the table below are calculated by linear interpolation between the March 31 and April 15 forecasted FRM elevations.

Project	Elevation Date Objective	Dec	Jan	Feb	Mar	Apr
Libby	Dec 31					
	Jan 31					
	Feb 28					
	March 31					
	April 10					
	April 15					
	April 30					
Hungry Horse	Jan 31					
	Feb 28					
	March 31					
	April 10					
	April 15					
	April 30					
Grand Coulee	Jan 31					
	Feb 28					
	March 31					
	Drum Gate April 10					
	April 15					
	April 30					
Brownlee	Jan 31					
	Feb 28					
	March 31					
	April 15					
	April 30					
Dworshak	Jan 31					
	Feb 28					
	March 31					
	April 10					
	April 15					
	April 30					

FRM storage requirements for John Day and middle Columbia projects if needed for system FRM will appear here and will be updated throughout the season.

2.4. Storage Project Operations

Libby Dam

End of December Flood Risk Management Elevation: The Corps will provide inseason updates to this section.

As described in the 2020 CRS BA (page 2-12), Libby Dam operations follow a variable end-of-December FRM rule curve based on the water supply forecast. In most years, the target elevation is 2,411 feet, but this target may be relaxed up to 2,426 feet when the water supply forecast is below normal (5.9 MAF). The project is operated during the December-through-March period (into April if the start of refill has not been declared) in accordance with the updated VARQ FRM storage reservoir diagram, as shown in Figure 2.5. The drawdown is based on the first of month April-to-August water supply forecast, which then sets the end-of-month draft or drawdown targets. The use of the SRD and the first-of-the-month forecast results in higher water supply estimates that correspond to deeper reservoir drafts and shallower reservoir drafts for years during which water supply is forecasted to be low.

Variable Outflow (VARQ) FRM Elevation: The Corps will provide inseason updates to this section.

Follow updated VARQ FRM procedures. When not operating to minimum flows, the Corps will operate Libby Dam to achieve a 75 percent probability of reaching the elevation objective to provide spring flows (upper FRM rule curve on or about April 10; the exact date will be determined in season, based on the Corps Seattle District Libby Dam April through August forecast of water volume in the Kootenai River Basin of the CRS).

Bull Trout Flows: The Corps will provide inseason updates to this section.

From May 15 to May 31 and during the month of September, a minimum flow of 6,000 cfs will be discharged. Volume to sustain the basal bull trout minimum flow of 6,000 cfs from May 15 through May 31 will be accounted for with sturgeon volumes, and in the fall will be concurrent with the autumn FRM draft. The Action Agencies will provide minimum bull trout flows of 6,000 cfs May 15 through September, and up to 9,000 cfs after the sturgeon pulse through August 31, as determined by Table 9 below. Minimum flows of 4,000 cfs will be provided for the rest of the year.

Table 9. Minimum bull trout releases from Libby Dam after the sturgeon pulse–August 31, based on May final Libby water supply forecast for April–August period. The May 15–May 31 and all of September minimum is 6 kcfs.

Libby Forecast Runoff Volume (MAF*)	Minimum bull trout flows between sturgeon and salmon flows (kcfs)
forecast < 4.80	6 kcfs
4.80 ≤ forecast < 6.00	7 kcfs
6.00 ≤ forecast < 6.70	8 kcfs
6.70 ≤ forecast	9 kcfs

*MAF = million acre-feet

(This table has been modified from BA Table 2.3 to clarify implementation details, but there are no modifications to the operation that was consulted on with the Services)

Tiered Kootenai River White Sturgeon Augmentation Volumes: The Corps will provide inseason updates to this section.

Operate to provide tiered Kootenai River white sturgeon augmentation volumes to achieve habitat attributes for sturgeon spawning/recruitment during all or portions of in April, May, June, and July (as determined by WSF and sturgeon behavior), shaped by the FPIP team process in coordination with the Regional Forum including the TMT.

Summer Operations: The Corps will provide inseason updates to this section.

During the summer, the AAs draft Libby Dam within the specified draft limits in the 2020 CRS BA based on flow recommendations coordinated at TMT. The AAs consider a number of factors when developing flow recommendations for TMT to review, such as: the impact of flow fluctuations on bull trout and other resident fish below the project, the status of juvenile salmon outmigration in the lower Columbia River, attainment of flow objectives, water quality, and the effects that reservoir operations will have on other listed and resident fish populations.

Refill: The Corps will provide inseason updates to this section.

Provide for summer flow augmentation; attempt to refill within 5 feet of full (full is 2,459 feet) in July or early August while also managing total dissolved gas and meeting FRM objectives.

End of September Elevation Target: The Corps will provide inseason updates to this section.

Provide summer flow augmentation to provide flow augmentation draft limits for anadromous fish in the Columbia River as determined by the May Libby water supply forecast. The Corps attempts to draft consistent with the values provided in Table 2.1, and drafts range from 5 to 20 feet from full depending on water supply conditions.

As described below in the 2020 CRS BA (Page 2-13, Table 2.1), the end of September draft is based on the May final Corps Libby Dam water supply forecast from April to August.

End-of-September elevation draft limits for summer flow augmentation at Libby Dam

Local Water Supply Forecast (percentile) ^a	Minimum	Less than or Equal to 15th Percentile	25th Percentile	75th Percentile	Greater than or Equal to 85th Percentile	Maximum
End-of-September elevation target (feet)	2,439	2,439	2,449	2,449	2,454	2,454

^a Based on the May final Corps Libby Dam water supply forecast from April to August. The 15th percentile, or 15% driest years, is currently approximately 4.66 MAF, the 85th percentile is currently approximately 7.33 MAF—both based on the current official 30-year period of 1981 to 2010. These values will be updated based on the next official 30-year period from 1991 to 2020 in early 2021.

Minimum Outflows: From October 1 through May 14, release a minimum of 4,000 cfs for resident fish.

Limit Outflow Fluctuations: Limit outflow fluctuations by operating in accordance with the ramping rates to avoid stranding bull trout.

Hungry Horse Dam

Water Supply Forecast and Minimum Flows: The minimum flow requirements are measured at two locations 1) the South Fork Flathead River below Hungry Horse Dam and 2) the Flathead River at Columbia Falls. The minimum flows will be determined monthly, beginning in January, with the Reclamation’s WSF forecast for Hungry Horse Reservoir for the period of April 1 to August 31. The final flow levels, for the remainder of the calendar year, are based on the March Final forecast.

April 10 and June 30 Refill Objectives: The Reclamation will provide inseason updates to this section.

The Reclamation computes Hungry Horse’s final April 10 elevation objective by linear interpolation between the March 31 and April 15 forecasted flood control elevations based on the March Final WSF.

Summer Draft Limit: The Reclamation will provide inseason updates to this section.

The summer operation will target the reservoir elevation of 3540 feet to 3550 feet (20 feet to 10 feet from full) by September 30 and this will be based on the water supply forecast. The table below shows the end of September targets based of the Hungry Horse May water supply forecast. However, if the project fails to refill, especially during drought years, minimum flow requirements may draft the reservoir below the end of September target elevation.

Hungry Horse End of September Elevation Targets

Hungry Horse May-September inflow forecast (KAF)	Hungry Horse forebay target on Sept 30 (ft)
< 1410	3540
1410 – 1580	Interpolate between 3540-3550
> 1580	3550

Grand Coulee Dam

April 10 and June 30 Refill Objective: The Reclamation will provide inseason updates to this section.

The Reclamation computes Grand Coulee’s final April 10 elevation objective by linear interpolation between the March 31 and April 15 forecasted flood control elevations based on the March Final WSF for The Dalles.

The Lake Roosevelt Incremental Storage Release Program: The Reclamation will provide inseason updates to this section.

Lake Roosevelt releases requested for 2025.

“Bucket”	2025 Releases (acre-feet)	Total Lake Roosevelt Incremental Storage Releases Program (acre-feet)
Odessa		
M&I		
Instream Flow		

Summer Draft Limit: The Reclamation will provide inseason updates to this section.

The Grand Coulee summer draft limit is set by the magnitude of the RFC's July Final April-August WSF at The Dalles Dam.

Drum Gate Maintenance: The Reclamation will provide inseason updates to this section.

Banks Lake: The Reclamation will provide inseason updates to this section.

Dworshak Dam

Flood Risk Management Elevation: The Corps will provide inseason updates to this section.

Operate in accordance with FRM criteria; shift system FRM to Grand Coulee Dam when possible, unless modified by procedures under dry-water-year operations. The shift in system FRM space will end by April 30th, such that each project storage will satisfy their respective FRM space requirements.

April 10 Elevation Objective: The Corps will provide inseason updates to this section.

When not operating to minimum flows, operate to reach the upper FRM rule curve on or about April 10 elevation objective (the exact date to be determined during in-season management), to increase flows for spring flow management.

Variable Draft Limit: The Corps will provide inseason updates to this section.

Calculate a VDL in season to increase power generation from January to March, while protecting the ability to refill with 95% confidence based on the March 31 FRM upper rule curve.

Total Dissolved Gas: The Corps will provide inseason updates to this section.

Provide augmentation flows while not exceeding the state of Idaho TDG water quality standard of 110 percent saturation.

Refill: The Corps will provide inseason updates to this section.

Refill by about June 30 or earlier in dry years (exact date to be determined during in-season management).

End of August and September Forebay Elevations: The Corps will provide inseason updates to this section.

Draft no lower than an elevation of 1,535 feet by the end of August and to an elevation of 1,520 feet (80 feet from full) by the end of September, unless modified per the agreement between the United States and the Nez Perce Tribe for water use in the Dworshak Reservoir.

Outflows for Lower Granite Dam Tailwater Regulation: The Corps will provide inseason updates to this section.

Regulate outflow temperatures to attempt to maintain water temperatures in the Lower Granite Dam tailwater at or below 68°F, typically from July 1 through the end of September.

John Day and middle Columbia FRM Operations

The Corps will provide inseason updates to this section.

Water Quality

The AAs have coordinated the following spill priority lists with the TMT to date, and they may be found on the following website.

<http://pweb.crohms.org/tmt/documents/spill-priority/>

2.5. Burbot Spawning Operations

Provide the lowest discharge temperatures available in the reservoir forebay through use of Libby Dam’s selective withdrawal system to aid burbot migration and spawning in the Kootenai River in Idaho (October through February). An international interagency Memorandum of Understanding Concerning the Kootenai River/Kootenay Lake Burbot Conservation Strategy was completed in June 2005. Use of VARQ FRM procedure and implementation of the variable end-of-December FRM target elevation may increase the effectiveness of this operation in years with below average runoff forecasts (low flows / colder river temperature at Bonners Ferry).

2.6. Lake Pend Oreille Kokanee Elevation (Albeni Falls Dam)

Albeni Falls Dam drafted Lake Pend Oreille to within 0.5’ of its winter control minimum elevation for Kokanee spawning on 11 November. This half of foot band lasted until the end of Kokanee spawning on 31 December.

2.7. Upper Snake Flow Augmentation

The Reclamation will provide inseason updates to this section.

2.8. Chum Operation

The BPA and Corps will provide inseason updates to this section. The following summarizes the 2024/2025 TMT coordinated chum operation. Additional information on the TMT coordinated chum operation may be found in the TMT meeting minutes on the following website.

<http://pweb.crohms.org/tmt/>

Date	TMT Coordination Summary
October 23, 2024	

Dates	Chum Water Management Summary
October	
Nov 1-11	

Additional chum water management notes that will be updated in-season:

-

Chum survey data gathered at the Ives/Pierce Island Complex will be summarized in the table below. Data from all Chum survey areas, including the Ives/Pierce Island Complex, are provided by the Fish Passage Center and available on the following website.

https://www.fpc.org/spawning/spawning_surveys/ODFW_reports/2024spawningsurveys.htm

Chum Salmon Spawning Ground Surveys Below Bonneville Dam, 2024-2025.

**Survey Area
Ives/Pierce Island Complex**

Date	Lives	Deadⁱ	Reddsⁱⁱ	Visibility (feet)
16-Sep-24	0	0	0	6.5 ft.
23-Sep-24	0	0	0	6 ft.
30-Sep-24	0	0	0	6 ft.

i. Dead are newly samplly fish only.
 ii. Redds are an instantaneous count for the day, not cumulative.
 NC = No Count

***2.9. Vernita Bar/Hanford Reach Fall Chinook Protection Program Operations
(Non-BiOp Action)***

The Corps will provide inseason updates to this section.

The Hanford Reach Fall Cinook Protection Agreement (Agreement) ebstablishes the obligations of the Parties with respect to the protection of fall Chinook in the Hanford Reach of the Columbia River. The Parties agree that during the term of the Agreement these flow regimes address all issues in the Hanford Reacth with respect to fall Chinook protection and the impact of operation of the seven dams operatin under Mid’Columbia Hourly Coordination, including the obligations of

Grant, Chelan, and Douglas under any new licenses issued by the Federal Energy Regulatory Commission (FERC).

Beginning in mid-October, under the terms of the Hanford Reach Fall Chinook Protection Program Agreement, river flows are reduced every Sunday morning (day of lowest power demand) to the Priest Rapids Dam minimum operating discharge of 36,000 cubic feet per second (ft³/s) [1000 cubic meters per second (m³/s)]. This allows the Agency and Utility Party Monitoring Team to manually survey for redd distribution at Vernita Bar just downstream of Priest Rapids Dam. These drawdowns occur every Sunday morning until the initiation of fall Chinook spawning has been set both above and below the 50,000 ft³/s (1,416 m³/s) flow elevations. A final drawdown is conducted on the Sunday prior to Thanksgiving to establish the minimum critical flow needed to protect pre-emergent fall Chinook. Given the previously described limitations, this weekly reduction in river flow affords the best viewing conditions for aerial flights. Aerial flights are therefore scheduled to be conducted concurrent with the Sunday morning drawdowns, when possible.

Date	Summary
October 9, 2024	Reverse Load Factoring (RLF) at Priest Rapids Dam will begin on Tuesday, October 15, 2024. Based on current and projected inflows, the initial target will be 40-50 kcfs, which is consistent with the last few years. Flows will increase to a target of 55-70 kcfs in November when higher flows are released from Grand Coulee Dam to support Chum Salmon spawning in the lower river.

2.10. Snake River Zero Generation

Zero Generation Operations as described in the 2020 CRSO EIS ROD will no longer commence as early as October 15, and will instead commence once the previously defined implementation trigger of “few, if any” actively migrating anadromous fish (as described in SOR 2005-22) has been met. This trigger will be implemented in relation to both date (implementation will be limited to periods between December 1 and through February 28) and abundance.

Salmon Managers submitted System Operations Request (SOR) 2005-22 Snake River Zero Nighttime and Weekend Flow, to the Action Agencies (AA) on December 6, 2005. The SOR may be found on the following website:

<http://pweb.crohms.org/tmt/sor/2005/2005-22.pdf>

In the SOR, the Salmon Managers provided the AAs with the following table to define the criteria of “... few, if any ...” prior to the implementation of the Zero Generation Operation. The few migrating adult criterion trigger will be defined on a sliding scale outlined in the following table. The table applies to both “wild” and “total” categories of returning adult steelhead.

Table 12: The Few Migrating Adult Criterion Trigger (SOR 2005-22)

Run to date>#	Run to date≤ #	Few criteria< #
0	30,000	10
30,000	60,000	20
60,000	100,000	35
100,000	150,000	50
150,000	200,000	65
200,000	250,000	80
250,000		100

System Operations Request 2005-22 defined “few” migrating adults; this SOR has guided operations through 2019. Over time, these criteria have been slightly modified to include:

1. The number of adults migrating per day is defined as the number of upstream counts minus the number of downstream counts, as reported on the Fish Passage Center’s website (https://www.fpc.org/currentdaily/HistFishTwo_7day-ytd_Adults.htm).
2. A three-day moving average will be used to determine if the few migrating adult criterion has been met.
3. The criteria apply to both “Unclipped” and “total” categories of returning adult steelhead. “Unclipped” and “total” returns will be calculated separately. Only one of the categories is necessary to show that more than a few adults are migrating.
4. The run to date is defined as the cumulative number of adult steelhead in the “Unclipped” and “total” categories passing Lower Granite Dam since July 1st of the return year.

The timing of “*nighttime*” and “*dawn*” changes throughout the year. Based on the hours of actual Civil Twilight at Lower Granite Dam, the following hour ranges were coordinated during the October 21, 2020, TMT meeting to be consistent with the criteria identified in the 2020 CRS BA:

DATES	“NIGHTTIME” HOURS FOR ZERO GEN
December 1-14	1800-0600
December 15 - January 31	1800-0600 + up to 3 daytime hours
February 1-28	1900-0600 + up to 3 daytime hours

Sources for definitions and computation of nighttime hours:

<https://www.esrl.noaa.gov/gmd/grad/solcalc/glossary.html>

<https://www.esrl.noaa.gov/gmd/grad/solcalc/calcdetails.html>

2024-2025 Zero Gen Operations: BPA will provide inseason updates to this section.

2.11. Navigation Safety and Minimum Tailwater Elevations

Short-term adjustments in spill or minimum operating pool (MOP) elevations may be required at any of the fish passage projects to address navigation safety concerns.²³ This may include changes in spill patterns, reductions in spill, short-term spill curtailment, or operating above MOP. Adjustments to MOP may also be required to meet minimum tailwater elevations (Table 2). Current spill operations for fish passage result in complex downstream hydraulics that cause large fluctuations in tailwater elevations. The 2020 BiOps describe MOP at the lower Snake River projects as a 1.5-foot range above the minimum forebay elevation (Table 2). To clearly communicate the implementation of this operation, the term “MOP” will refer to the 1.5-foot operating range above the minimum forebay elevation at the lower Snake River projects (i.e., “MOP” is a 1.5-foot operating range).

The Corps will operate Lower Granite Dam at MOP with a 1.5-foot forebay operating range and a 1.0-foot range to the extent possible (referred to operationally as a “soft constraint”) from April 3 until August 31, unless adjusted on occasion to meet authorized project purposes, primarily navigation, except as noted below.²⁴ Little Goose, Lower Monumental and Ice Harbor dams will operate at MOP with a 1.5-foot forebay operating range and a 1.0-foot range soft constraint to

²³ The Corps conducts annual surveys to assess sedimentation in the reservoirs and under certain conditions. To ensure safe navigation, there may be a need to operate the pools above the MOP range.

²⁴ The Corps conducts a bathymetric survey of the federal navigation channel annually to assure a 14-foot depth is maintained in the federal navigation channel. With the dredging completed in winter 2022/2023, Lower Granite will operate in the normal MOP range (733.0-734.5 feet) from April 3 until August 31 (and within a 1.0-foot soft constraint range to the extent possible).

the extent possible from April 3 until August 14, unless adjusted on occasion to meet authorized project purposes, primarily navigation, except as noted below.

Table 2.— Normal and minimum operating pool (MOP) elevation ranges and minimum tailwater elevations for lower Snake River projects. ^A

Project	Normal Operating Elevation Range (ft) ^B		MOP Elevation Range (ft) ^C		Project Tailwater (ft)
	Minimum	Maximum	Minimum	Maximum	Minimum
Lower Granite	733.0	738.0	733.0	734.5	633.0
Little Goose	633.0	638.0	633.0	634.5	537.0
Lower Monumental	537.0	540.0	537.0	538.5	437.0
Ice Harbor	437.0	440.0	437.0	438.5	337.0

A. Elevations provided in feet above mean sea level (NGVD29).

B. August 15 – April 2, except at Lower Granite (September 1-April 2).

C. April 3 – August 14, except at Lower Granite (April 3 – August 31). Projects will be operated within a 1.0-foot range to the extent possible (referred to operationally as a “soft constraint”).

Lower Snake River MOP operations are discussed in greater detail in the 2024 Fish Operations Plan on the following website on page FOP-14.

<https://pweb.crohms.org/tmt/documents/fpp/2024/>

2.12. Minimum Irrigation Pool (MIP)

As described in the 2020 CRS BA (page 2-57), from April 10 – June 1 (or as feasible based on river flows), the John Day reservoir elevation will be held between 264.5 feet and 266.5 feet (an average of 265.5 feet) to deter Caspian terns from nesting in the Blalock Islands Complex. The Action Agencies intend to begin increasing the forebay elevation prior to initiation of nesting by Caspian terns to avoid take of tern eggs; operations may begin earlier than April 10 (when the reservoir is typically operated between 262.0 to 266.5 feet). The operation may be adaptively managed due to changing run timing; however, the intent of the operation is to begin returning to reservoir elevations of 262.5–264.5 feet on June 1, but no later than June 15, which generally captures 95% of the annual juvenile steelhead migration. The results of this action would be monitored and communicated with USFWS and NMFS. During the operation, safety-related restrictions would continue, including but not be limited to maintaining ramp rates for

minimizing project erosion and maintaining power grid reliability. Following this operation, the John Day reservoir elevation would return to MIP + 2 ft operation through August 31.

From June 1 through August 31, John Day Dam will be operated to minimize water travel time for downstream-migrating juvenile salmon by operating the forebay within the minimum irrigation pool (MIP) range of 262.5 to 264.5 feet, which is the lowest pool elevation that allows irrigation withdrawals.

This section will be updated throughout the season as new information becomes available.

2.13. Spill for Juvenile Fish Passage

This section will be updated following the issuance of the 2025 Fish Operations Plan that will include summaries of the planned spill operations.

2.14. Juvenile Transportation

This section will be updated following the issuance of the 2025 Fish Operations Plan that will address juvenile transportation.

2.15. Fish Passage Research

This section will be updated following the issuance of the 2025 Fish Passage Plan that will include fish passage research in 2025.