

FISH OPERATIONS PLAN IMPLEMENTATION REPORT

July 2026

**U.S. Army Corps of Engineers
Northwestern Division
Portland, OR**

Introduction

The 2026 Fish Operations Plan (2026 FOP) describes the U.S. Army Corps of Engineers' (Corps) planned operations for fish¹ passage at its four lower Snake River and four lower Columbia River dams during the 2026 surface spill operations in March through early April, spring and summer fish migration seasons, generally April 3 through August 31, and surface spill operations September through mid-November. The 2026 FOP is responsive to the U.S. District Court for the District of Oregon's (District Court) Preliminary Injunction Order issued February 25, 2026 and amended on March 2, 2026. The Corps will implement the 2026 FOP consistent with that order. The 2026 FOP is also consistent with spill operations for fish passage and the regional forum process for adaptive management and in-season management² provisions outlined in the Record of Decision for the Columbia River System Operations Environmental Impact Statement (CRSO EIS ROD) dated September 28, 2020, CRSO Final EIS, 2020 National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) Columbia River System (CRS) Biological Opinions (2020 CRS BiOps)³, the Corps' requirements under the Endangered Species Act (ESA), and the ongoing consultation and communications with the relevant wildlife agencies to ensure consistency with the ESA. Other project operations and water management actions not specifically addressed in this document will be consistent with other guiding operative documents, including the 2026 Water Management Plan (WMP), seasonal WMP updates, and the 2026 Fish Passage Plan (FPP).

The FOP Implementation Reports are produced to reflect implementation of the 2026 FOP for fish passage spill. This report describes the Corps' implementation of the 2026 FOP during the month of July. Information in this report includes the following:

- total flow: the total hourly river flow rate;
- generation flow: the hourly flow through the powerhouse units;
- target spill: the spill target for that hour (Table 1);
- adjusted spill: the hourly spill level that can be achieved considering that spill may vary as a function of total river flow, forebay elevation and generator capacity, and is subject to routine

¹ ESA-listed salmon and steelhead.

² Adaptive management and in-season management will be utilized for those operations not included in the Court's Preliminary Injunction Order, or as specifically ordered by the Court.

³ The Corps, in coordination with the other Action Agencies, and NMFS, employs the Regional Implementation Oversight Group (RIOG) and technical teams including the Technical Management Team (TMT) and Fish Passage Operations & Maintenance (FPOM) coordination group, to coordinate with state, tribal and other federal experts for recommendations for implementing operations consistent with the 2020 BiOps.

operational adjustments that limit the ability to spill to the target spill (see 2026 FOP, Section 4.1);

- actual spill: the hourly flow over the spillway;
- actual reservoir elevation: the hourly reservoir forebay elevation;
- upstream project tailwater elevation: the hourly reservoir elevation of the next upstream project.
- MOP (Minimum Operating Pool): the target forebay elevation range (Table 2); and,
- adjusted MOP: the adjusted MOP elevation range necessary to maintain project criteria. Adjusted can mean “raised” or “expanded” as specified in the 2026 FOP; and,
- resultant 12-hour average TDG for the tailwater at each project.

This report also provides information on issues and unanticipated or emergency situations that arose during implementation of the FOP in July 2026.

Data Reporting

I. For each project providing fish passage spill operations, this report contains a graph displaying the performance of the spring fish passage spill program for the month of July, with hourly spill, target spill, adjusted spill, generation, and total flows. The monthly spill graphs (Figure 1 through Figure 8) begin on July 1 and end on July 31 and reflect the following operations for the lower Snake River and the lower Columbia River projects:

- The black line represents the average hourly total river flow through the project in thousand cubic feet per second (kcfs).
- The orange line represents the average hourly generation flow through the powerhouse each hour in kcfs.
- The thin solid blue line represents the actual average hourly spill level through the spillway in kcfs.
- The dashed blue line represents the spill cap portion of the target spill estimated to reach the gas cap or target TDG.
- The thick light blue line represents the performance standard spill level portion of the target spill, where applicable.
- The thick dark blue line represents the adjusted spill cap spill: the hourly spill cap level that can be achieved taking into consideration that spill may vary as a function of total river flow, forebay elevation, and generator capacity, and is subject to routine operational adjustments that limit the ability to spill to the target spill (2026 FOP section 4.1).

II. For each project providing MOP operations, this report contains a graph displaying the performance of the MOP program for the month of July, with hourly reservoir forebay elevation, target reservoir forebay range, adjusted reservoir forebay range, and upstream project tailwater elevation. The monthly elevation graphs (Figure 9 through Figure 12) begin on July 1 and end on July 31 and reflect the following operations for the lower Snake River projects:

- The black line represents the hour ending reservoir elevation in feet.
- The thin solid blue line represents the upstream project tailwater elevation in feet.

- The dashed blue line represents the target MOP range.
- The thick light blue line represents the adjusted MOP range.

III. The average daily %TDG for the 12 highest hourly TDG measurements in a calendar day for all projects is shown in the July 2026 Average Percent TDG Values Table (Table 5). Red numbers indicate that the project exceeded the %TDG cap - i.e. 125% (tailwater) on that day.

General Implementation Remarks

For all projects that spill for fish passage, or are operated for MOP, the actual spill or reservoir levels may vary from the adjusted levels due to various conditions as described below. When actual spill or reservoir elevations varied from adjusted spill or MOP levels during fish passage season, the change in spill or reservoir elevation is described below in the July 2026 Spill Variance (Table 3).⁴ The Variance Table includes average hourly spill data; but when spill varies from adjusted spill for a portion of an hour, it is characterized as a variance for a full hour. Similarly, reservoir elevation levels are reported hourly as an instantaneous value, so an hourly variance from adjusted MOP may not have persisted throughout the hour. There are instances when the hourly adjusted spill levels are not achievable due to mechanical limitations in setting spill gates to implement the regionally coordinated spill pattern. The project operator sets the spill gate stops to closely approximate the adjusted spill to the extent practicable. Other routine activities that changed spill or MOP levels, which were coordinated with regional partners, are identified in the monthly Pre-Coordinated Operations Table (Table 4).

"Low flow" operations at the lower Columbia and lower Snake projects are triggered when inflow is insufficient to provide both minimum generation and the target spill levels. For this report, the decrease in target spill is represented as adjusted spill. In these situations, the projects operate at minimum generation and pass the remainder of project inflow as spill and through other routes, such as fish ladders, sluiceways, and navigation locks. As flows transition from higher flows to low flows, there may be situations when flows recede at a higher rate than forecasted. In addition, inflows provided by nonfederal projects upstream are variable and uncertain.

Actual spill levels at Corps projects may vary up to ± 2 kcfs within the hour as compared to the target spill rate, except as otherwise noted in the 2026 FOP. A number of factors influence actual spill, including hydraulic efficiency, exact spillway gate opening calibration, spillway gate hoist cable stretch due to temperature changes, and forebay elevation (e.g., a higher forebay results in a greater level of spill since more water can pass under the spill gate or over the surface spillway weir). Transition periods between gas cap spill and performance standard spill hours may result in actual hourly spill levels that are slightly higher or lower than target spill levels. Occurrences requiring an adjustment in spill operations and/or regional coordination are described in greater detail in the "Operational Adjustments" section below.

⁴ Forced spill conditions shown in the graphs are not considered variances and are not reported in the Spill Variance Table. Forced spill conditions may result from lack of load, high river inflows that exceed available powerhouse capacity, scheduled or unscheduled turbine unit outages or transmission outages of various durations, passing debris, etc.

In-season adjustments to MOP (expanded or raised) to maintain safe navigation or minimum upstream tailwater requirements will be described below as “Operational Adjustments.”

July Operations

The July observed precipitation was above normal with 110% of average precipitation observed at the Snake River above Ice Harbor and was below normal with 59% of average precipitation observed at the Columbia River above The Dalles.⁵ The NOAA Northwest River Forecast Center runoff summary for July indicated that the adjusted runoff for the Snake River at Lower Granite was 66% of the 30-year average (1991-2020) with a volume of 1.4 MAF (Million acre-feet). The July adjusted runoff for the Columbia River at The Dalles was 82% of the 30-year average (1991-2020) with a volume of 11.7 MAF.⁶

Summer spill operations occur June 16 – August 31 at the lower Columbia projects and June 21 – August 31 at the lower Snake projects. The Corps initiates spill at 0001 hours, or shortly after midnight, at each of the projects on the start date. Target spill levels for summer 2026 at each project are defined in Table 1 (Table 5 in the FOP). Spill may be temporarily reduced at any project to ensure navigation safety or transmission reliability, or in the event of adult salmonid migration delay (see 2026 FOP section 7.1). In order to operate consistently with state water quality standards, spill may also be reduced if observed gas bubble trauma (GBT) levels exceed those identified in state water quality standards (See [WASH. ADMIN. CODE § 173-201A-200\(I\)\(f\)\(ii\)\(B\)\(III\)](#) and *Order Approving a Modification to the Oregon’s Water Quality Standard for Total Dissolved Gas in the Columbia River Mainstem*, page 5).

⁵ Retrieved August 03, 2026: https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=5

⁶ Retrieved August 03, 2026: https://www.nwrfc.noaa.gov/runoff/runoff_summary.php

Table 1: Summary of 2026 summer target spill levels at lower Snake River and lower Columbia River projects (Table 5 in the 2026 FOP).

PROJECT	SUMMER SPILL^A (June 21/16 – August 31) (24 hrs/day)
Lower Granite	18 kcfs
Little Goose ^B	30%
Lower Monumental	17 kcfs
Ice Harbor ^B	30%
McNary ^B	57%
John Day ^B	35%
The Dalles ^B	40%
Bonneville	95 kcfs

A. Spill may be temporarily reduced below the FOP target summer spill level at any project if necessary to ensure navigation safety or transmission reliability, or to avoid exceeding State TDG standards.

B. From June 16 – August 31, all projects denoted by this footnote will adjust spill once a day to the indicated percentage level of the previous day’s average project outflow. The intent is to reduce the frequency of spillgate changes.

In its implementation of the 2026 FOP in July, the Corps evaluated conditions every day to establish spill caps at a level that was estimated to meet, but not exceed, the gas cap or target TDG in the tailrace (see Table 5).⁷ This evaluation considered environmental conditions (e.g., river flow, wind, water temperature, barometric pressure, incoming TDG from upstream, and water travel time) and project operations (e.g., spill level, spill pattern, tailwater elevation, proportion of flow through the turbines, and project configuration).

Minimum operating pool (MOP) operations occur beginning April 3 at 0001 hours at the four lower Snake River projects. MOP ranges for 2026 are specified in Table 2. Adjustments to MOP may be required to address navigation concerns or to meet minimum tailwater elevations. Current spill operations for fish passage result in complex downstream hydraulics that cause large fluctuations in tailwater elevations.

In its implementation of the 2026 FOP in July, the Corps evaluated reservoir conditions daily to ensure that minimum tailwater constraints, as well as navigation criteria, were met.

⁷ See 2026 FOP, Section 2.2

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 1.5-foot range.

Minimum Operating Pool Adjustments

1. Lower Granite

Due to sediment deposition in the confluence area of the lower Snake and Clearwater rivers near Lewiston, Idaho, the Corps will adjust MOP ranges at Lower Granite Dam as necessary to provide the required federal navigation channel depth of 14 feet. This operation will continue during the 2026 fish passage season (and/or until maintenance dredging occurs) with a 1.5-foot range above the minimum forebay elevation based on inflow to Lower Granite. At high flows (≥ 120 kcfs), the required navigation channel depth can be maintained with Lower Granite operating in the MOP range of 733.0–734.5 feet. However, at flows below 120 kcfs, the Lower Granite forebay must be operated progressively higher to maintain the navigation channel depth, as follows:

- Inflow 80–119 kcfs = Lower Granite forebay operating range 734.0–735.5 feet (1-foot raised MOP).
- Inflow 50–79 kcfs = Lower Granite forebay operating range 734.5–736.0 feet (1.5-foot raised MOP).
- Inflow below 50 kcfs = Lower Granite forebay operating range 735.0–736.5 feet (2-foot raised MOP).

Changes to the MOP at Lower Granite are governed by the short-term forecast (generally either from the River Forecast Center or Bonneville Power Administration). Adjustments between MOP ranges will generally not occur for short duration rises or decreases in flow. Because of forecast uncertainty, there may be a delay in changing between MOP ranges. Adjustments to MOP based on this operation can be seen in Figure 9.

2. Little Goose

After observing the Lower Granite Dam tailwater elevation below the minimum required level on June 17 in conjunction with the Little Goose forebay elevation over 1.0 ft above the MOP lower limit, a 1.0 ft raised MOP was implemented at Little Goose to maintain safe navigation. The 1.0 ft raised MOP remained in place throughout the remainder of June and July. This operation is illustrated in Figure 10.

3. Lower Monumental

After observing the Little Goose Dam tailwater elevation at the minimum required level on July 28 in conjunction with the Lower Monumental forebay elevation over 0.3 ft above the MOP lower limit, a 0.3 ft raised MOP was implemented at Lower Monumental. The minimum tailwater at Little Goose is required to maintain safe navigation. The 0.3 ft raised MOP remained in place through the end of July. This operation is illustrated in Figure 11.

Operational Adjustments

None.

Table 3: Variances – July 2026

Project	Parameter	Date	Time ^[1]	# of Hours	Type	Reason
Lower Monumental	Additional Spill	07/30	1300-1400	2	Maintenance	Hourly spill was 13 kcfs (greater than adjusted spill target of between 5 and 11 $\pm$ 2 kcfs) while generation was reduced for a line outage.
McNary	Reduced Spill	07/03	0100-0300	3	Human Error	Hourly spill was between 97 and 105 kcfs (less than adjusted spill target of 108 $\pm$ 2 kcfs) due to an error in the spill calculation.
McNary	Reduced Spill	07/06	1700	1	Health and Human Safety	Hourly spill was reduced to 87 kcfs (less than adjusted

^[1] Note: Data collected for reporting spill variances is reported using hourly-averaged data. Therefore, while spill may be increased or decreased for only a portion of an hour, it is represented in the Pre-Coordinated Operations Table as an hour.

						spill target of 96 ± 2 kcfs) when the spillway was shut down to rescue a stranded vessel in the forebay boating restriction zone.
McNary	Additional Spill	07/20	0800	1	Human Error	Hourly spill was mistakenly increased to 77 kcfs (more than the adjusted spill of 68 ± 2 kcfs).
John Day	Reduced Spill	07/03	0100-0200	2	Human Error	Hourly spill was 60 kcfs (less than adjusted spill target of 68 ± 2 kcfs) due to an error in the spill calculation.
The Dalles	Reduced Spill	07/03	0100-0200	2	Human Error	Hourly spill was 64 kcfs (less than adjusted spill target of 72 ± 2 kcfs) due to an error in the spill calculation.

Table 4: Pre-Coordinated Operations – July 2026

None.

Table 5: July 2026 Average Percent TDG Values

Station:	LWG	LGNW	LGSA	LGSW	LMNA	LMNW	IHRA	IDSW	MCNA	MCPW	JDY	JHAW	TDA	TDDO	BON	CCIW
Gas Cap %:		120		120		120		120		120		120		120		120
1-Jul	98	113	104	111	106	116	104	110	103	116	102	113	104	110	104	117
2-Jul	98	113	104	111	106	116	103	110	105	116	101	112	106	112	105	117
3-Jul	100	113	106	112	106	116	105	110	106	117	102	113	107	114	108	117
4-Jul	101	113	107	112	106	116	106	111	107	116	103	113	108	114	108	117
5-Jul	102	114	107	112	108	116	108	112	108	116	104	114	108	114	109	118
6-Jul	102	114	110	113	108	116	109	112	110	116	106	114	110	115	112	118
7-Jul	105	114	110	114	109	116	110	113	110	116	108	115	110	116	112	118
8-Jul	102	114	111	113	109	117	110	113	109	116	108	115	109	116	109	117
9-Jul	101	114	112	114	111	117	113	113	109	117	109	116	108	115	107	117
10-Jul	101	114	112	114	112	117	114	114	110	117	110	116	109	115	108	117
11-Jul	102	114	111	113	111	117	113	113	109	116	110	116	109	115	108	118
12-Jul	101	113	110	113	111	116	112	112	108	117	108	116	109	116	107	116
13-Jul	101	113	110	113	111	116	113	112	108	116	108	116	111	116	109	115
14-Jul	103	114	110	113	111	115	113	108	107	116	108	116	• ⁸	116	111	117
15-Jul	104	114	110	113	111	115	113	109	108	116	108	115	•	116	111	118
16-Jul	104	114	110	113	111	115	115	109	109	117	108	115	110	115	109	117
17-Jul	101	114	110	113	111	114	114	113	108	117	107	114	107	115	107	115
18-Jul	99	114	110	113	110	117	112	113	107	119	106	114	108	113	106	114
19-Jul	102	114	110	113	109	117	111	112	107	118	106	114	108	114	106	114
20-Jul	102	114	110	113	109	116	110	111	106	116	106	114	110	114	107	115
21-Jul	102	114	110	113	110	115	110	111	108	115	106	115	111	115	110	116
22-Jul	102	114	111	113	111	114	111	108	109	118	107	115	112	116	112	117
23-Jul	101	114	110	113	111	114	112	109	108	116	106	114	110	115	110	115
24-Jul	101	114	110	113	111	114	113	109	109	118	106	115	108	115	108	117
25-Jul	101	113	110	113	111	113	113	108	108	118	105	115	108	114	106	118
26-Jul	101	113	110	113	110	113	111	108	107	117	105	114	107	114	106	114
27-Jul	101	114	110	113	110	113	111	108	107	118	106	113	108	114	107	114
28-Jul	101	113	110	113	110	111	110	108	106	119	105	115	108	113	107	115
29-Jul	100	113	110	113	109	113	110	108	106	119	105	115	108	114	108	117
30-Jul	100	113	109	113	110	113	109	108	106	115	104	115	108	114	106	114
31-Jul	100	114	109	113	110	113	109	108	107	115	104	114	107	113	106	115
Exceedances:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

⁸ Missing data at TDA from 07/14 – 07/15 due to failed sensor.

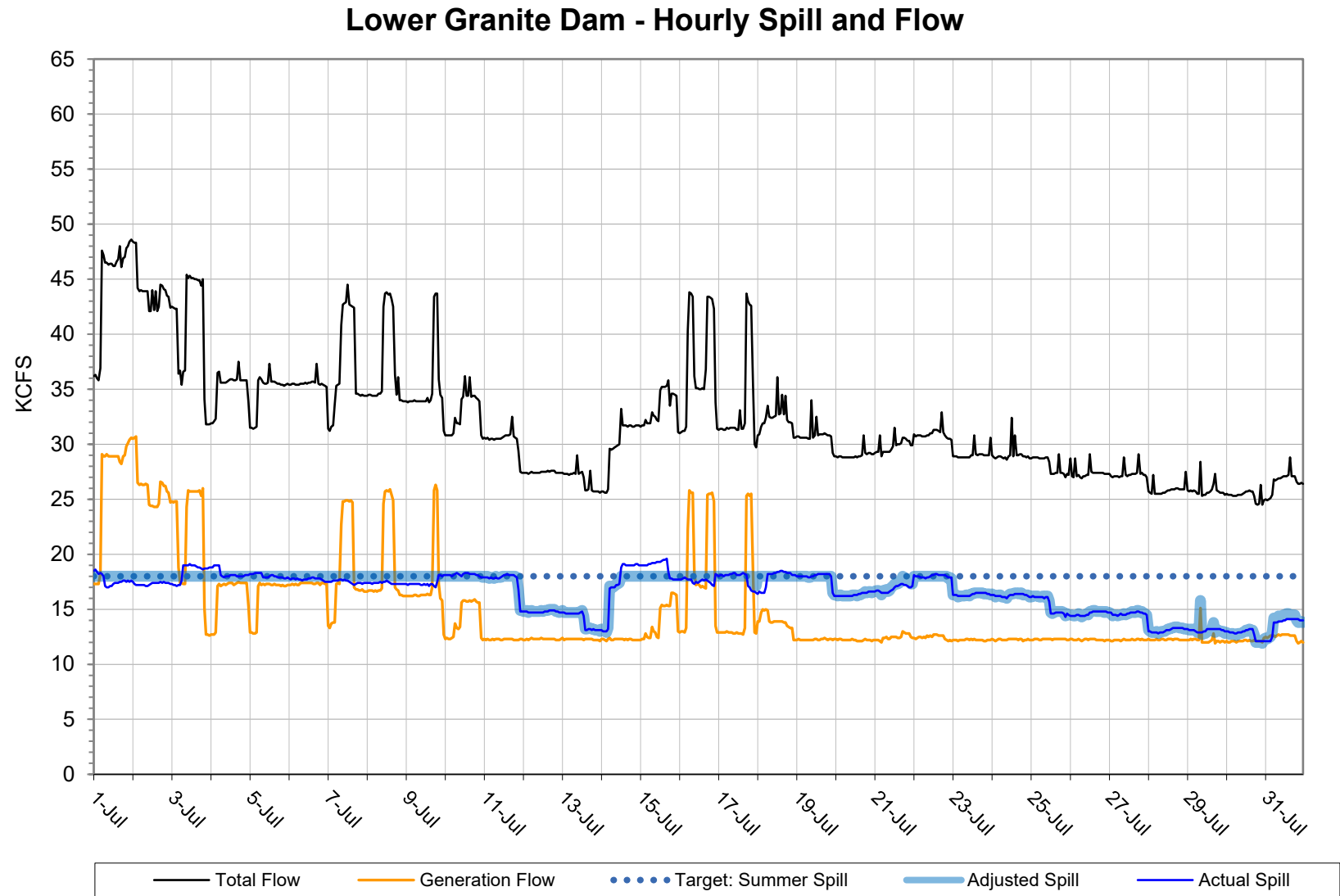


Figure 1: Hourly Spill and Flow at Lower Granite Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

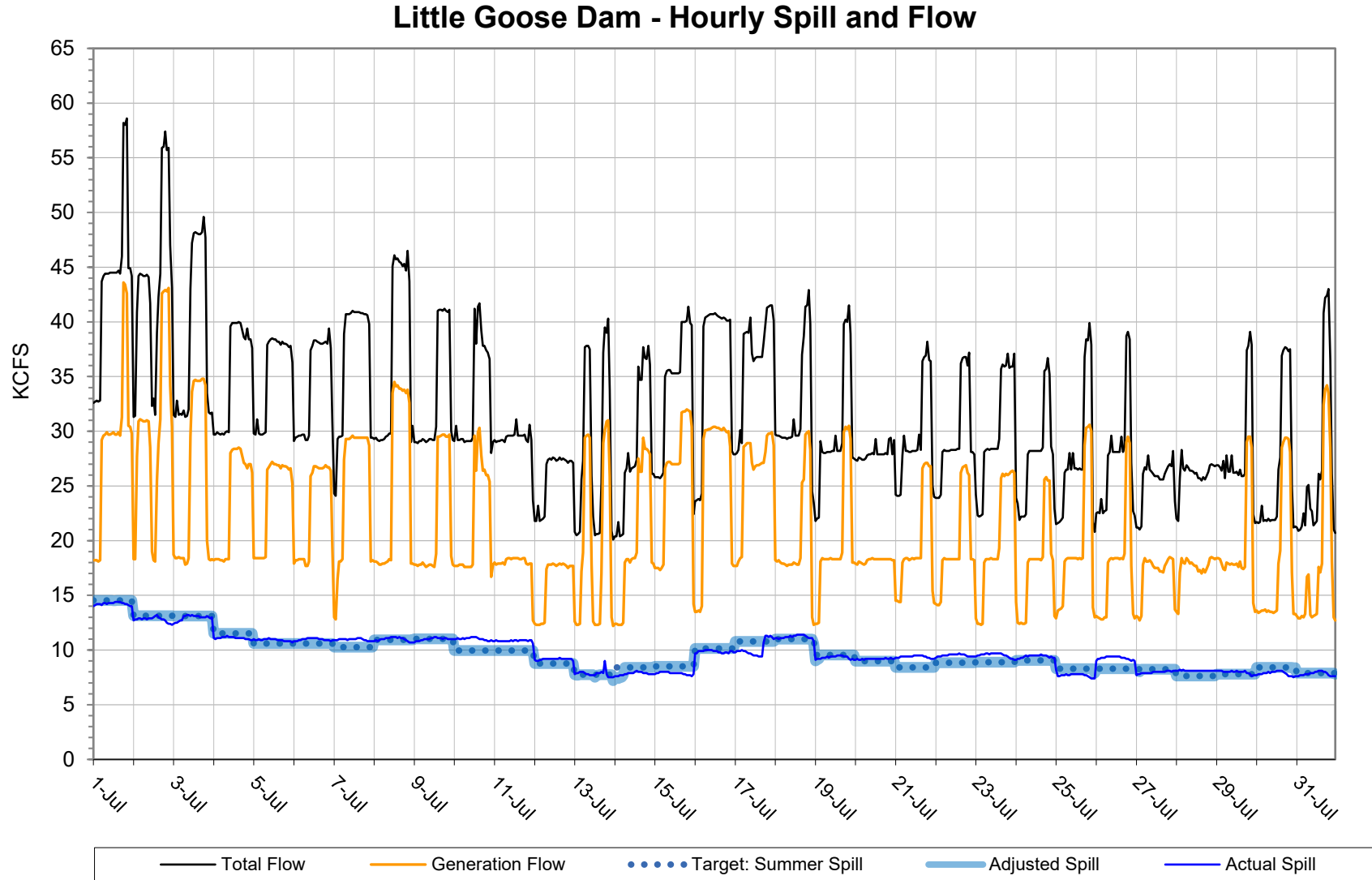


Figure 2: Hourly Spill and Flow at Little Goose Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

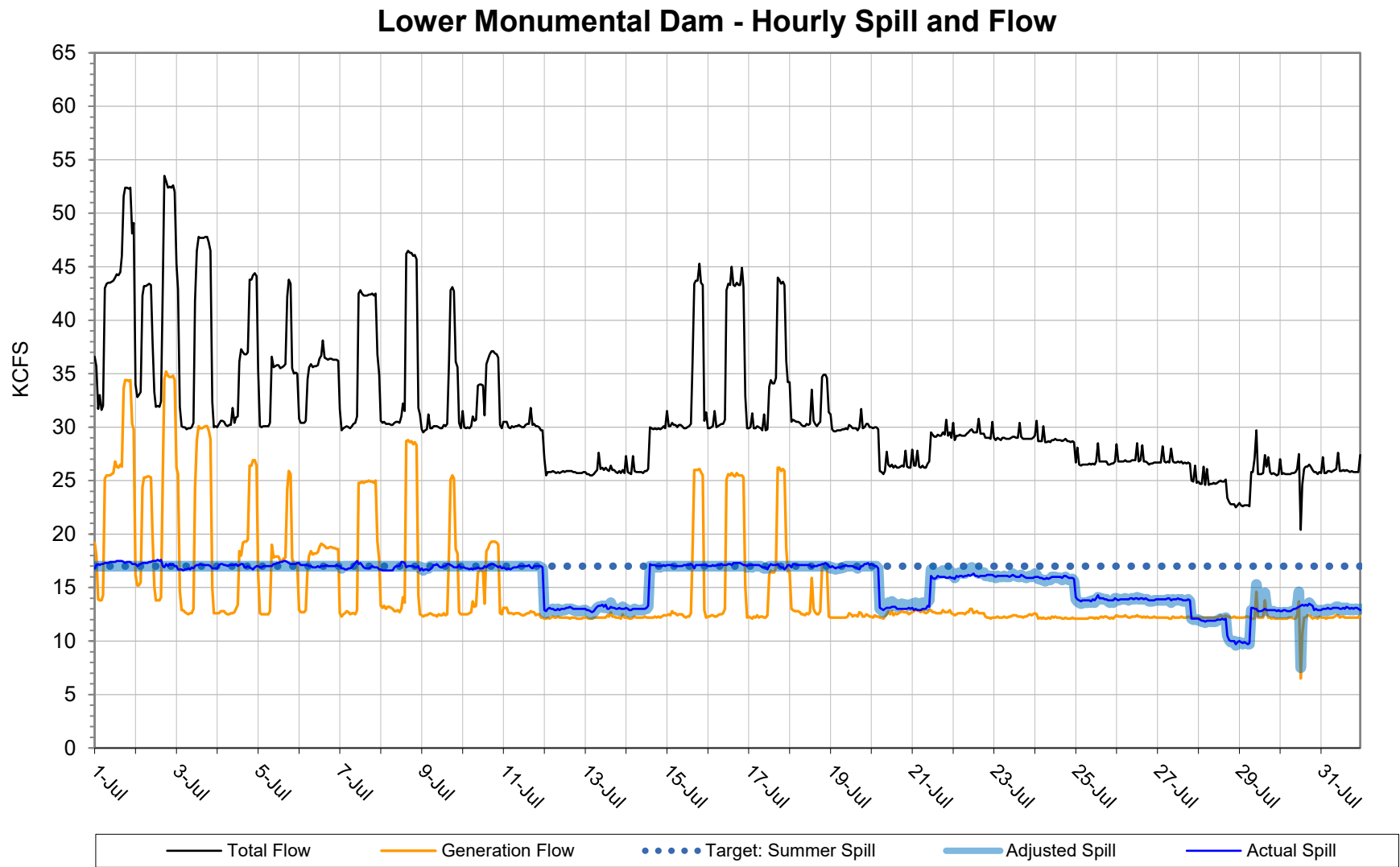


Figure 3: Hourly Spill and Flow at Lower Monumental Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

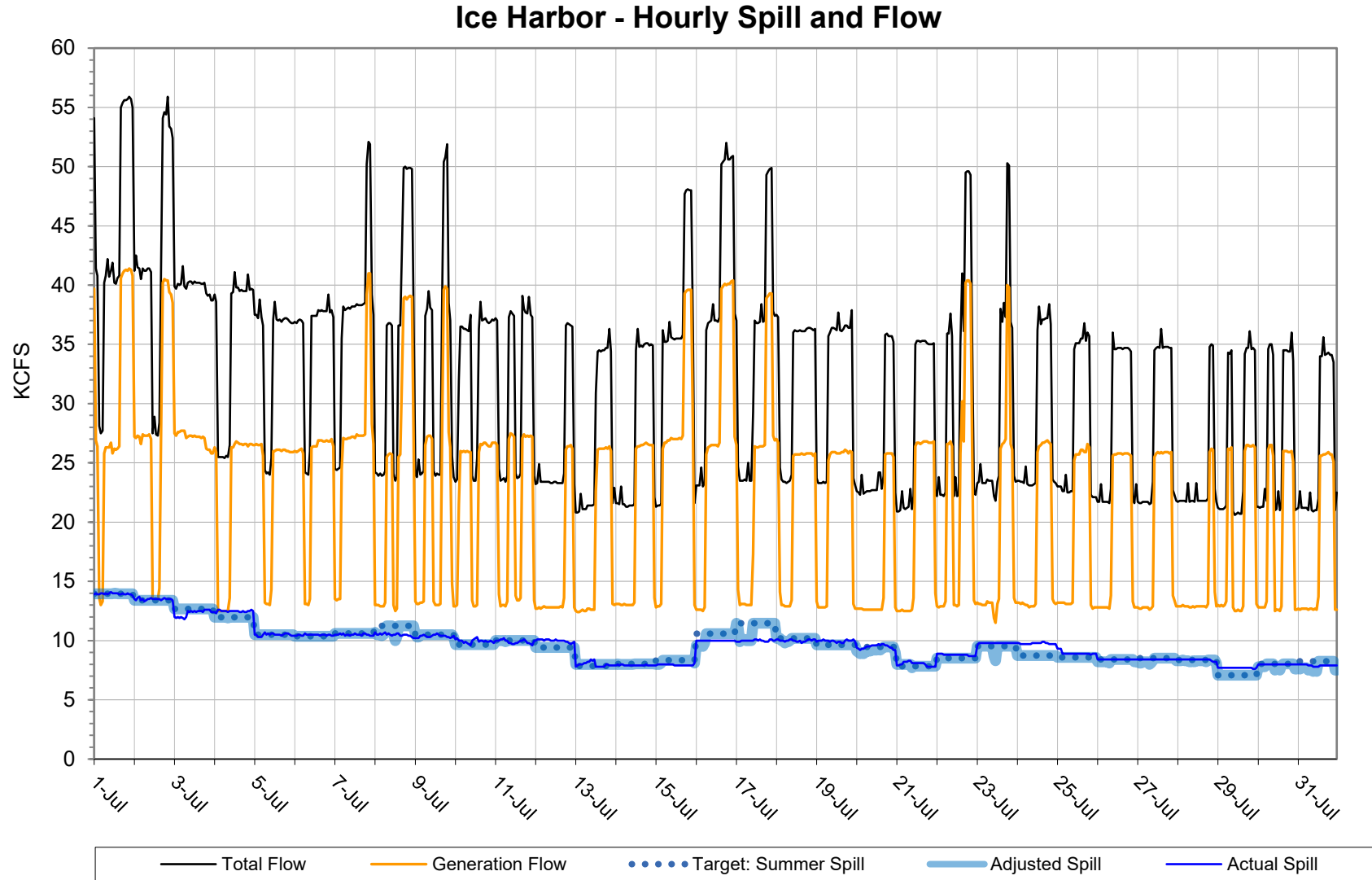


Figure 4: Hourly spill and flow at Ice Harbor Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

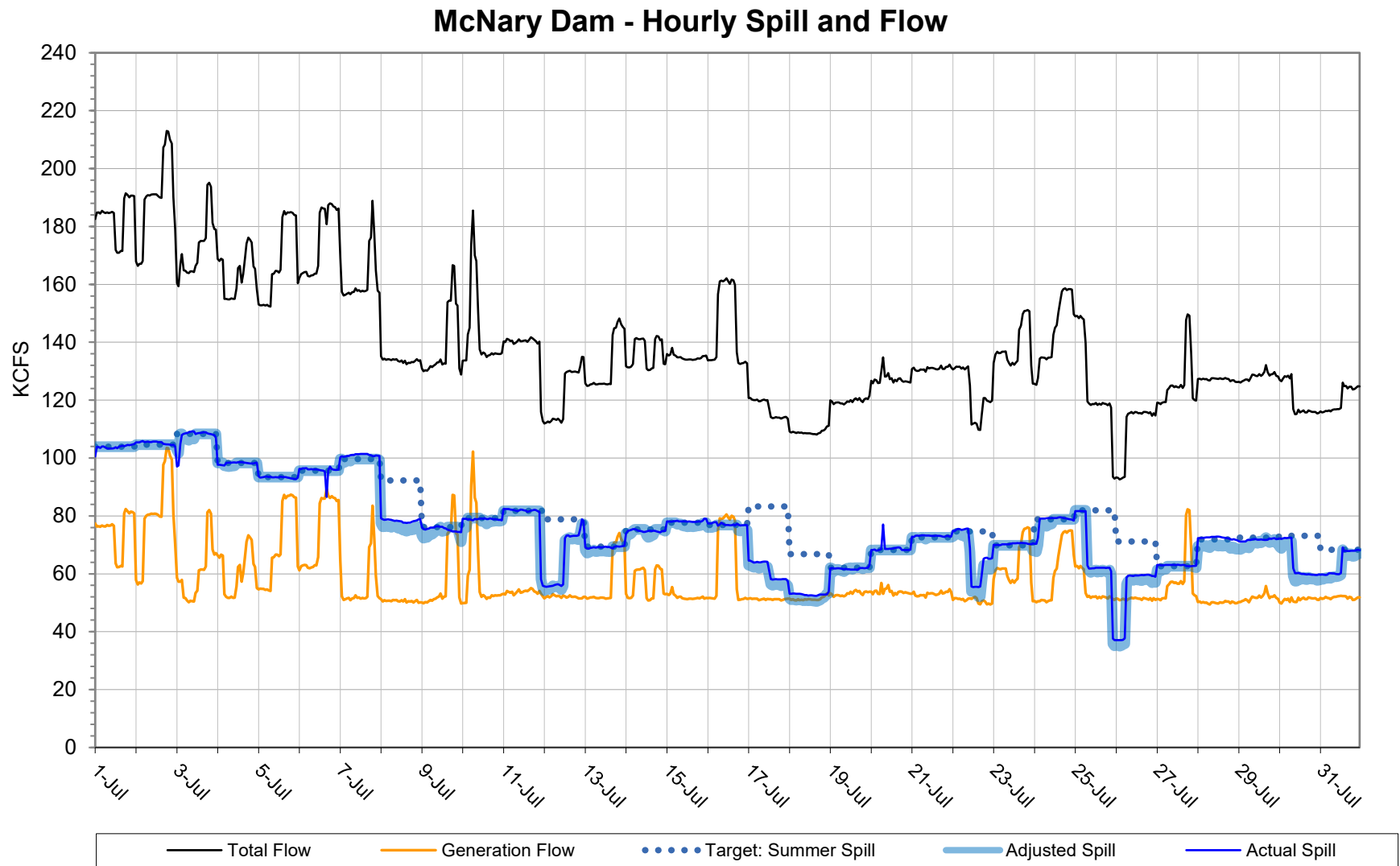


Figure 5: Hourly spill and flow at McNary Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

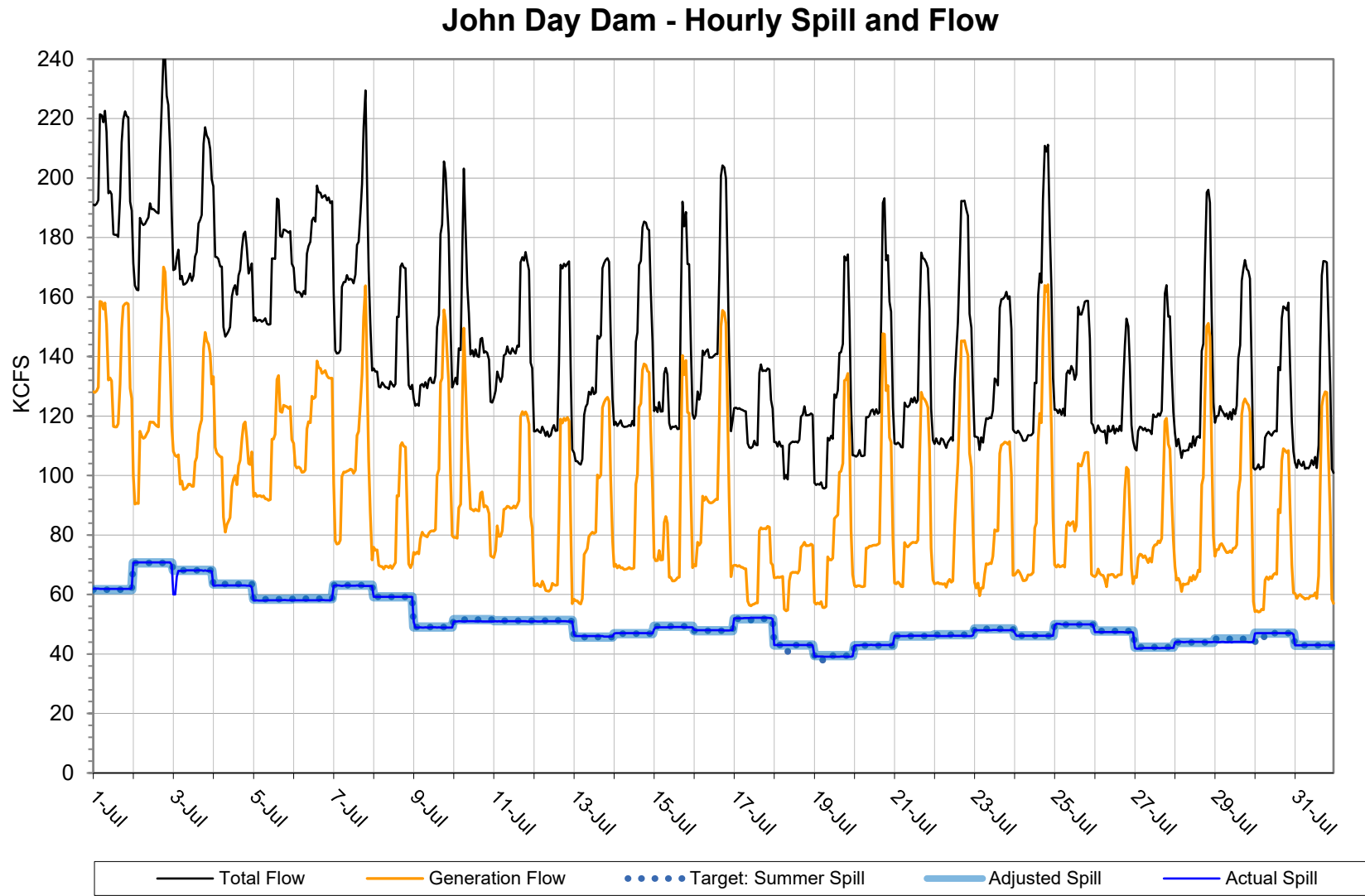


Figure 6: Hourly spill and flow at John Day Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

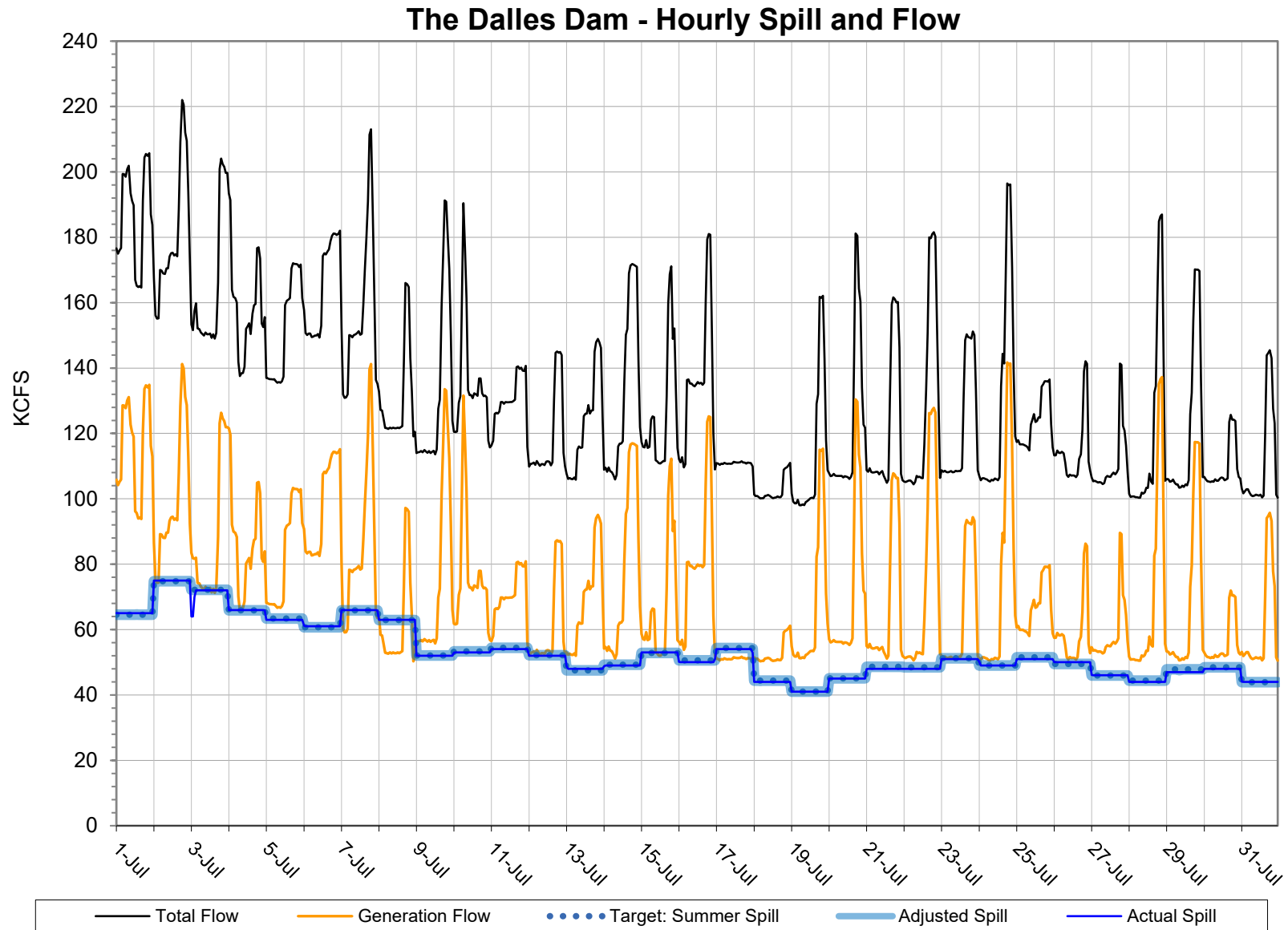


Figure 7: Hourly spill and flow at The Dalles Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

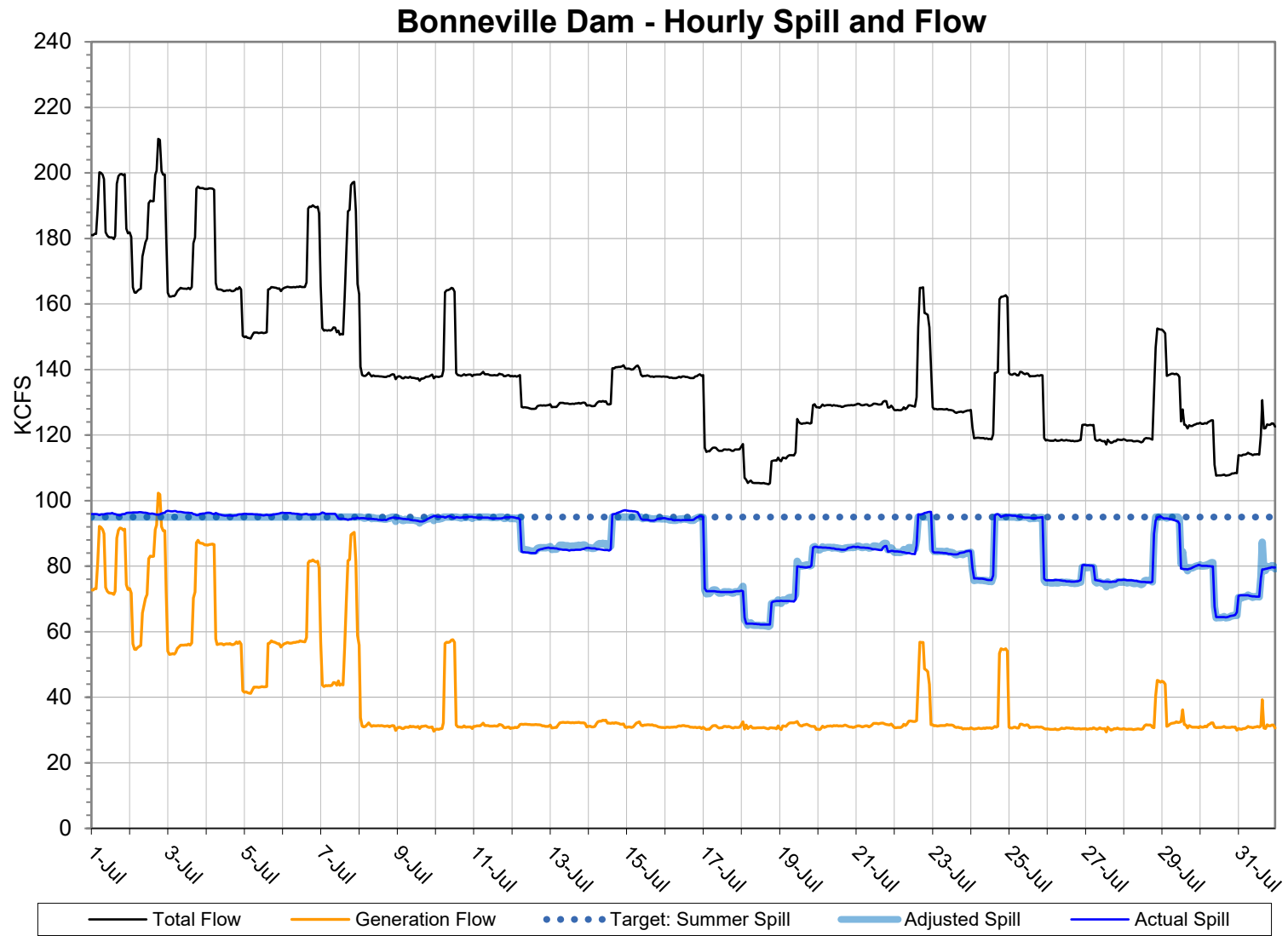


Figure 8: Hourly spill and flow at Bonneville Dam. The adjusted spill line is a simplified representation due to limitations of representing a range of minimum generation values. See Table 4 and Table 5 for spill variances and pre-coordinated operations.

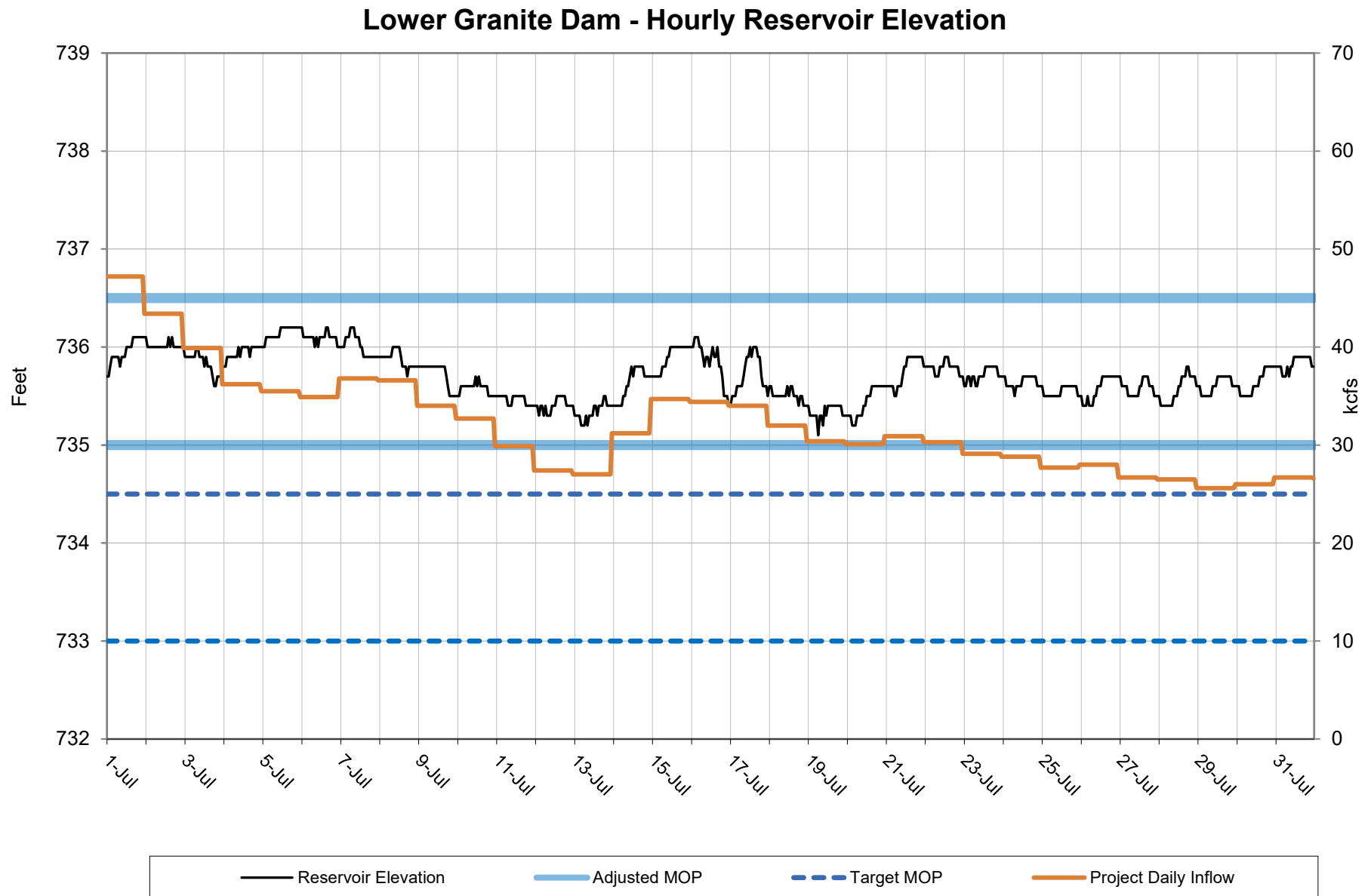


Figure 9: Hourly elevations at Lower Granite Dam.

Little Goose Dam - Hourly Reservoir Level

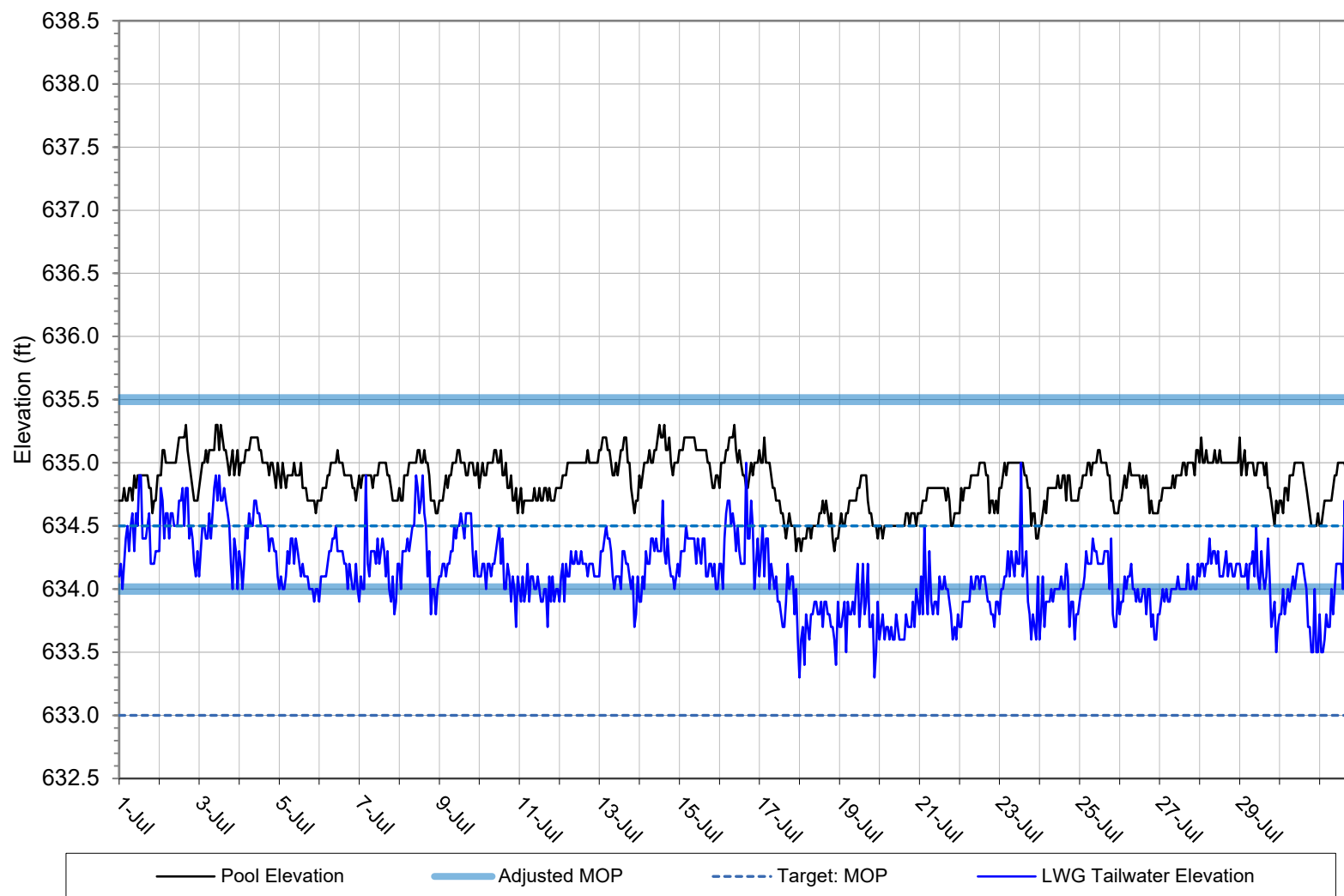


Figure 9: Hourly elevations at Little Goose Dam.

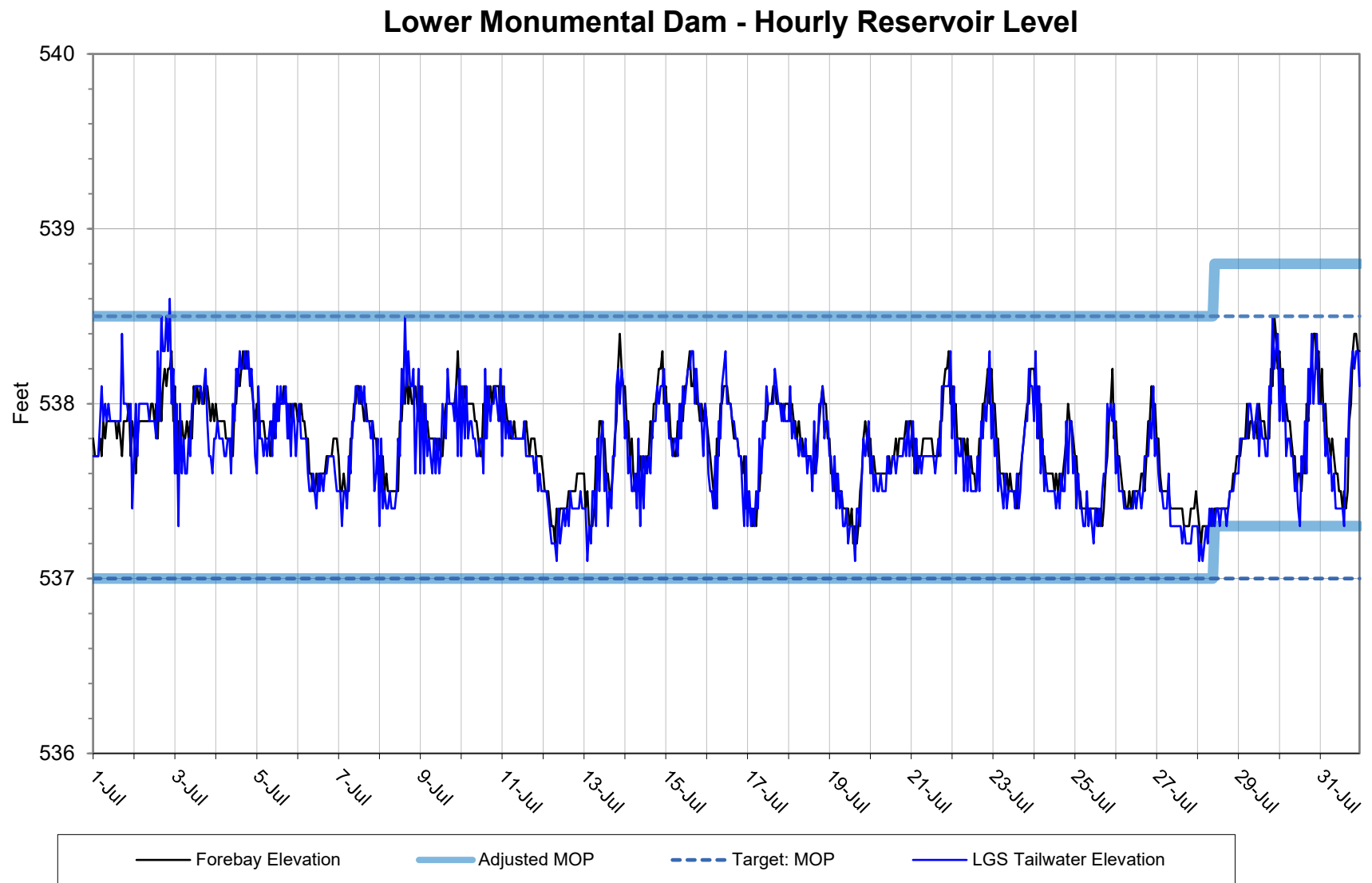


Figure 10: Hourly elevations at Lower Monumental Dam.

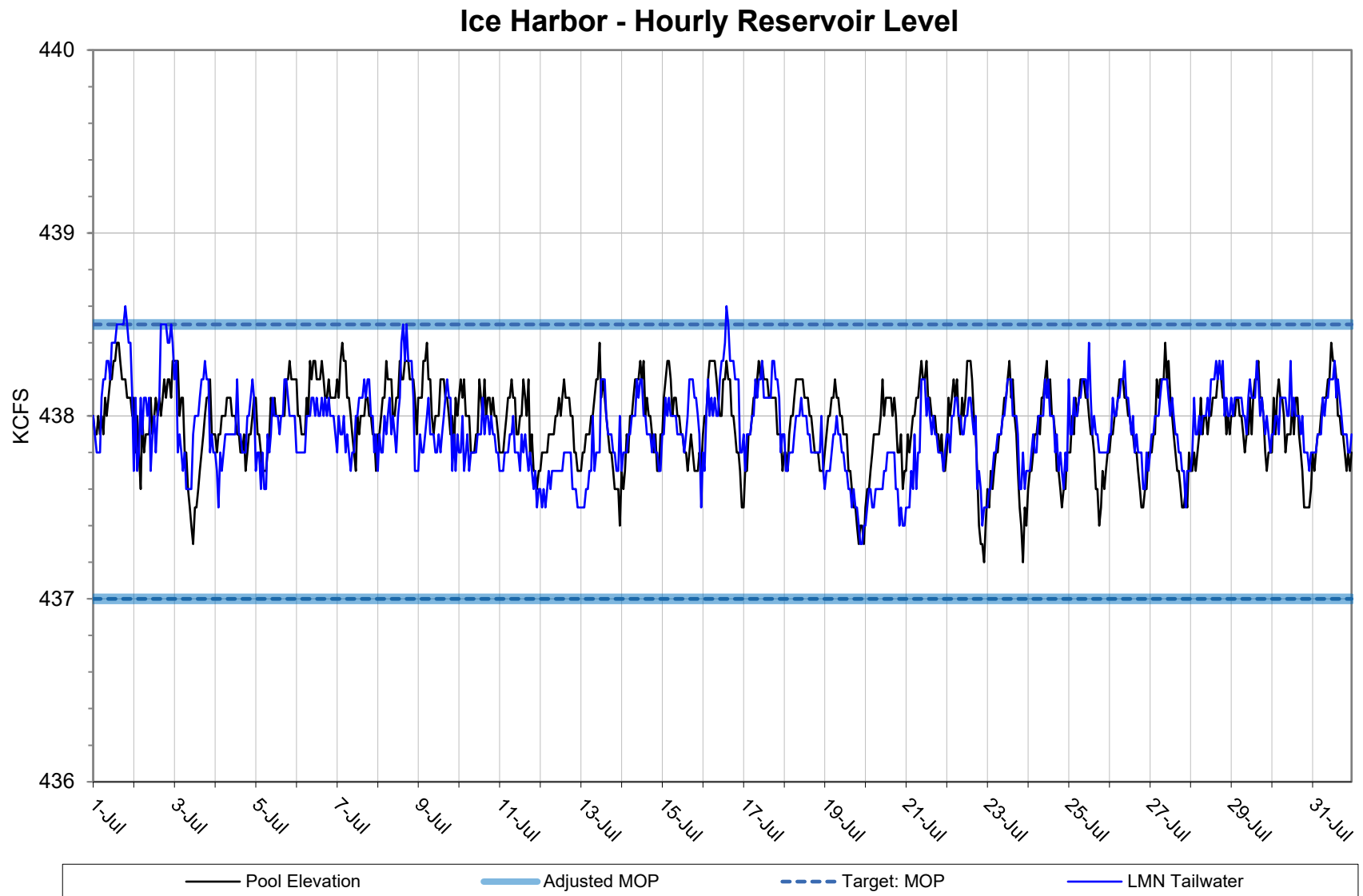


Figure 11: Hourly elevations at Ice Harbor Dam.