

Project Name	SA Article 13: Minimum Flow June 2021 minimum flow reduction
Date Proposal Summited	5/26/2021, revised 6/2/2021
Date of Requested Decision	6/4/2021
Requested By	Travis Nelson
Date of Decision	6/4/2021

FTC Decision and Justification

Tacoma Power has consulted with the FTC on the proposed minimum flow reduction in order to support refill at Riffe Lake. The FTC concurs with proposed minimum flow reduction, which reflects changes requested by WDFW to downramp gradually from 5,000 cfs to 2,500 cfs over the month of June instead of downramping from 5,000 cfs to 3,500 cfs over two nights at the beginning of the month. These changes maintain significant improvements in refill probabilities while minimizing stage change and potential impacts to fish and other aquatic life.

The following FTC members were present at the FTC meeting: Ecology (Carol Serdar), WDFW (Bryce Glaser), NOAA Fisheries (Scott Anderson), and Tacoma Power (Travis Nelson). Tacoma Power consulted with the Yakama Nation (Bill Sharp) and the USFWS (Tim Romanski) following the meeting and received emails of support (attached).

The FTC acknowledged the need for timely decision in order to initiate the gradual minimum flow reduction. Tacoma Power committed to distribute the revised decision document by the end of the Thursday (June 3) and to make follow up phone calls to members not present at the meeting. This decision document was distributed on Wednesday (June 2) with the intent to begin reducing flows Friday evening (June 4).

Proposed Decision for Consideration

Tacoma Power is consulting with the FTC on a proposal to lower the minimum flows in the Cowlitz River below Mayfield Dam to improve reservoir refill probabilities this summer. The minimum flow would be reduced from 5,000 cfs plus fish transport flows to an average of 3,900 cfs plus fish transport flows. This would be achieved through a gradual reduction (~130 cfs daily starting June 4) that results in a minimum flow of 2,500 cfs by June 30. This flow reduction supports reservoir refill and also sets up a smooth transition to the period of limited flows necessitated by work scheduled at the Barrier Dam early in July.

Background

Since 2017, Tacoma Power has managed Riffe Lake with a “full” elevation of 749 ft, 29 ft below built capacity. This affects reservoir operations year round and makes balancing priorities including the environment, grid reliability, recreation, and power generation more challenging than under typical operations. Reduced capacity can make achieving spring refill, depending on the timing and volume of runoff, and then managing the reservoir draft throughout the summer for multiple uses particularly challenging. Construction planned at the Barrier Dam this summer will require discharge at Mayfield to be at or below 2,500 cfs for up to three weeks, starting on July 1. This further constrained the 2021 refill target to 746 ft on July 1, rather than 748 ft on or

after July 1, in order to leave capacity to hold inflows above 2,500 cfs in early July. That target may need to be refined during June in order to balance water storage and inflow capacity, depending on the rate and timing of inflows throughout the month, any remaining snowpack, and weather forecasts.

Hydrologic conditions in the late winter and early spring were promising for refill, including a snowpack that peaked at about 140% of normal in mid-April. Refill probabilities were high, 85% chance of refill, through that time. Tacoma Power intentionally positioned the reservoir to make room for a spring runoff typical of a very high snowpack. Although there was very low precipitation in March and April, the refill outlook remained robust after snowmelt initiated in mid-April (Figure 1). However, precipitation continued to be extremely low through May. Despite some rain in late May, March through May precipitation has been the lowest on record at Mayfield since recordkeeping began in 1981.

As of May 17, with instream flows at Mayfield following the normal minimum flow regime there was only a 35% chance of refill with the lowest scenario reaching only 733 ft after July 1 (Figure 2). The refill model does account for current snowpack, which was at or above normal at June Lake and White Pass. As of May 31, the chance of refill with the normal flow regime was only 8 percent, with the lowest scenario reaching 736 ft after July 1 (Figure 3). The refill model does not account for the climate forecast, which has been and currently is tilting warmer and drier than normal through the rest of spring and into summer. If instream flows at Mayfield are reduced to the proposed levels, the refill probability increases to 90% with the lowest scenario at 746 ft after July 1 (Figure 4). The proposed reduction to an average of 3,900 cfs protects against the lowest inflow scenarios, risks of which include losing summer access to the swim beach (curtailed 728 ft) and boat ramps (curtailed at 720 ft, 718 ft, and 709 ft) as well as limited opportunity for generation.

Tacoma may need to pick up inflows for generation sometime in June if the reservoir fills, or to manage the end-of-June elevation to allow the Mayfield Barrier Dam work to take place, or to cover Tacoma's own energy demand if very hot weather occurs.

This minimum flow reduction has been updated from the original (reduce to 3,000 cfs starting on June 3, emailed to the FTC May 26) and the interim (reduce to 3,500 cfs starting on June 3, FTC meeting June 1) proposals. The change to a gradual reduction was made following consultation at the June 1 FTC meeting. Leah Marquez-Glynn from Tacoma Power Resource Operations presented the proposal to reduce flows to 3,500 cfs over a two night period on June 2 and June 3. The presentation also included an overview on spring operations, conditions, and decision-making around reservoir refill, summer outlook information, and refill probabilities for two other scenarios (3,000 cfs and 4,000 cfs). She confirmed that the reduction to support refill was primarily to support recreation and power generation, which opened a discussion around different agency priorities when consulting on proposed reductions. WDFW asked whether Tacoma had considered a gradual reduction instead of two-day downramp to minimize stage change and potential impacts to fish. Tacoma took a brief side caucus to discuss, and came back with the FTC with a plan to evaluate a gradual reduction. The group agreed on a scenario targeting 2,500 cfs by the end of June using daily reductions of around 130 cfs. This decision document reflects that scenario. All scenarios considered during this process have been for the minimum flow plus fish transport flows.

In accordance with the Cowlitz license and in consultation with the FTC, Tacoma Power is seeking to reduce flows in the lower Cowlitz River for June of 2021 to an average of 3,900 cfs

plus fish transport flows to support refill at Riffe Lake. This would be achieved through a gradual reduction (~130 cfs daily starting June 4) that results in a minimum flow of 2,500 cfs by June 30. Tacoma Power has had to reduce minimum flows to improve reservoir refill, in accordance with License Article 13, during some portion of the spring in 9 of the last 23 years (Table 1).

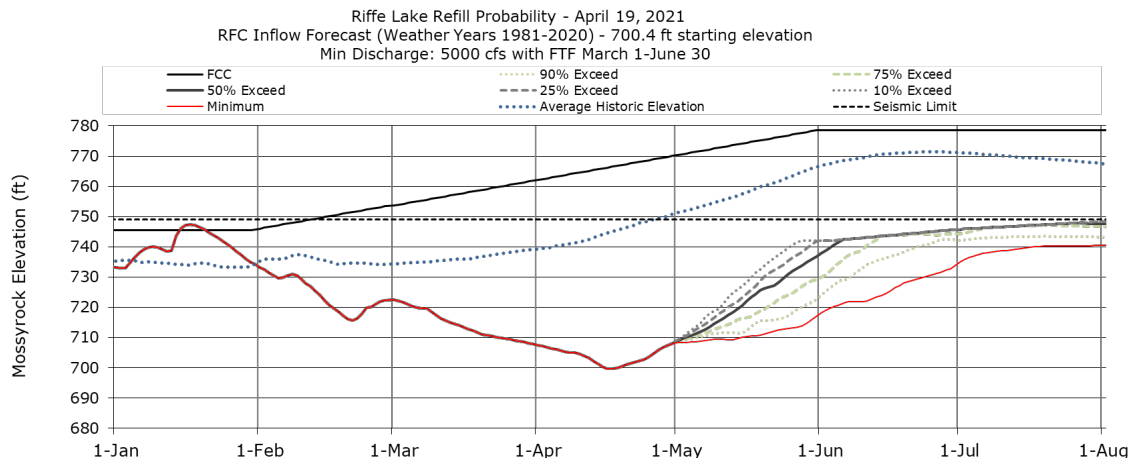


Figure 1. Riffe Lake refill probability curves starting April 19, 2021 using the NOAA River Forecast Center predicted inflow exceedances and standard minimum flow.

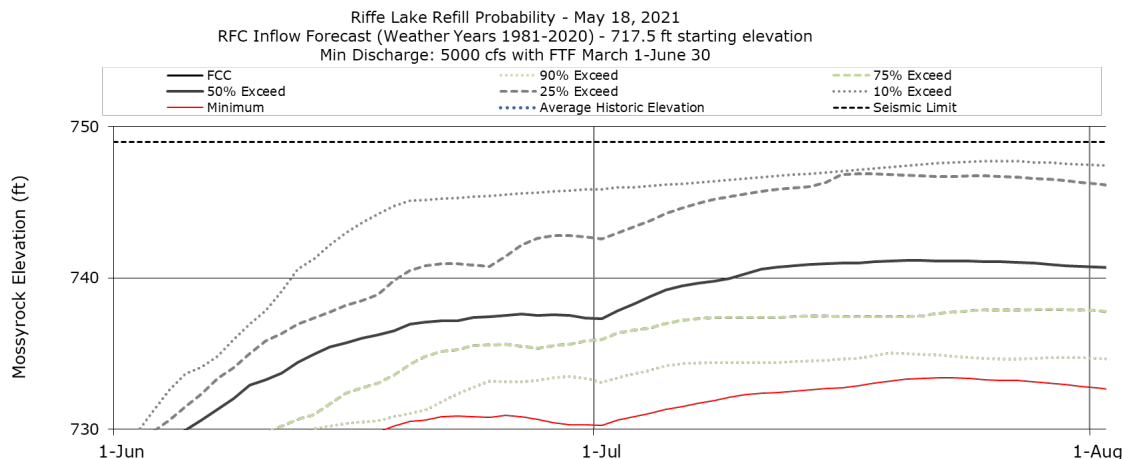


Figure 2. Riffe Lake refill probability curves starting May 17, 2021 using the NOAA River Forecast Center predicted inflow exceedances and standard minimum flow. Axes have been adjusted to focus on the refill period. See Figure 1 for January – May reservoir elevations, historical reservoir elevation, and flood control curve.

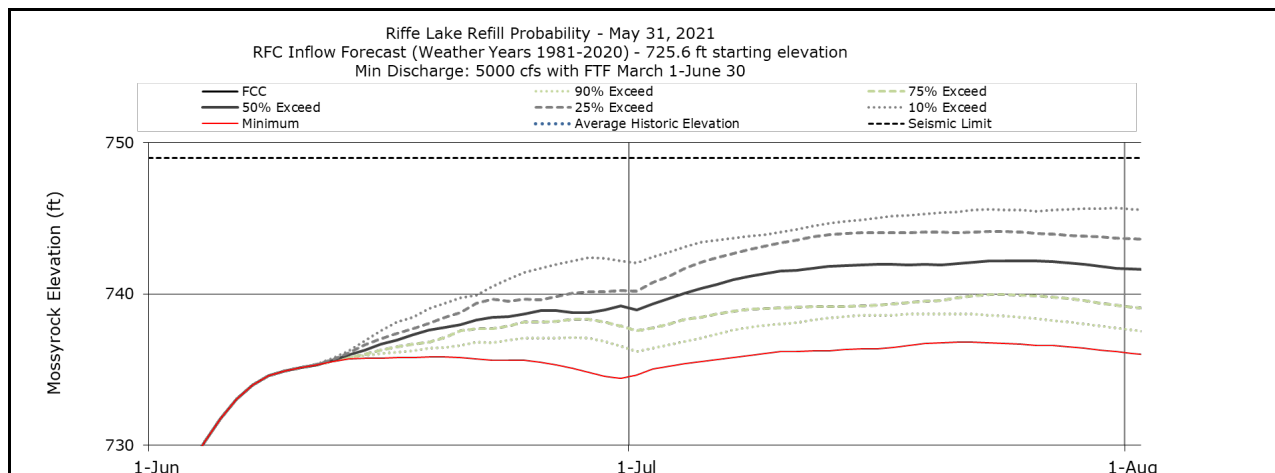


Figure 3. Riffe Lake refill probability curves starting May 31, 2021 using the NOAA River Forecast Center predicted inflow exceedances and standard minimum flow. Axes have been adjusted to focus on the refill period. See Figure 1 for January – May reservoir elevations, historical reservoir elevation, and flood control curve.

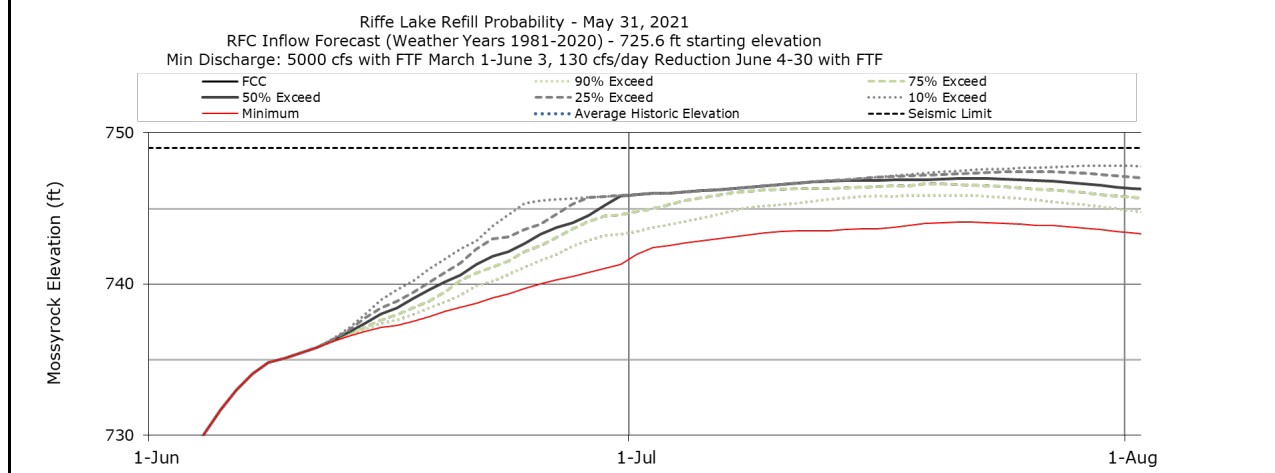


Figure 4. Riffe Lake probability curves starting May 31, 2021 using the NOAA River Forecast Center predicted inflow exceedances and June minimum flow reduction. See Figure 1 for January – May reservoir elevations, historical reservoir elevation, and flood control curve.

Table 1. Instream flow by month (March – June) in the Cowlitz River below Mayfield dam since 1998.

Year	Mar	Apr	May	Jun
1998	5,094	5,116	3,975	5,357
1999	8,312	6,000	5,071	8,904
2000	5,489	5,091	5,867	6,241
2001	2,573	2,560	2,561	2,593
2002	6,756	7,206	7,796	9,969
2003	9,380	8,385	5,157	3,855

2004	6,670	4,972	3,733	3,932
2005	3,876	3,546	4,087	4,118
2006	5,818	5,162	5,186	5,276
2007	9,557	10,000	5,344	3,911
2008	5,769	5,220	5,808	10,300
2009	5,196	5,193	7,329	8,238
2010	5,139	3,967	4,662	8,465
2011	6,524	10,920	9,815	7,597
2012	9,418	9,781	9,582	8,822
2013	7,317	7,422	6,654	5,801
2014	11,110	8,990	9,364	5,349
2015	4,488	4,251	3,159	3,299
2016	10,190	6,963	5,538	5,442
2017	12,850	11,330	12,850	9,001
2018	5,584	5,480	6,082	5,198
2019	5,175	3,319	2,998	3,005
2020	6,455	5,181	6,856	6,829
2021	7,538	6,029	5,207	

May 2021 MTD as of 5/19

monthly discharges more than 2,500 cfs and less than 3,500 cfs

monthly discharges more than 3,500 cfs and less than 5,000 cfs

License Requirement

LICENSE ARTICLE 13

The Licensee shall release minimum flows from the Project into the Cowlitz River for the protection and enhancement of fish and wildlife resources, riparian vegetation, aesthetic resources and water quality. Flows shall be released as follows:

a) March 1 – June 30

Minimum flow releases from Mayfield Dam shall be 5,000 cfs, unless the March 1 or later inflow forecasts indicate that this flow cannot be achieved and assure reservoir refill. A decision to reduce flows shall only be made after Tacoma has consulted with the Fisheries Technical Committee provided for in the August 2000 Settlement Agreement, or if the Settlement Agreement has become void, with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Washington Department of Fish and Wildlife and Washington Department of Ecology (referred to as “the FTC or agencies”). Once per week from March through the end of June, or as otherwise agreed with the FTC or agencies, Tacoma will conduct a 12-hour release at the lesser of 8,000 cfs or 120% of the preceding flows for juvenile fish transport flows. Natural flows (e.g., from the Tilton River) that provide the same magnitude of flow pulse may substitute for artificial flow pulsing.

Coordination Need

- Tacoma Power and the M&E group will discuss the need and/or opportunity for stranding monitoring needs during the flow reduction.
- Tacoma Power will offer a weekly conference call with FTC members to provide an update on the refill status and outlook for potential increases in instream flows in the latter part of June.
- There is no FTC meeting in July. Tacoma Power will send the FTC the typical hydro status update slide deck, including an update on reservoir refill, in early July.

Summary of Potential Changes

Minimum flow reduction of Cowlitz River below Mayfield Dam from the current 5,000 cfs (plus fish transport flows) to an average of 3,900 cfs (plus fish transport flows), starting June 4, 2021. Flow will be reduced daily starting June 4 for a gradual transition to a target of 2,500 cfs on July 1. Weekly fish transport flows will continue throughout June.

Email support from FTC members (Yakama Nation and US Fish and Wildlife Service):

From: Bill Sharp <Bill_Sharp@Yakama.com>
Sent: Tuesday, June 1, 2021 3:01 PM
To: Nelson, Travis <tnelson1@cityoftacoma.org>
Subject: Re: Cowlitz Flows - June

Travis,
Thanks for the discussion on this today. The Yakama Nation supports the recommendation as described below.

Bill

*Bill Sharp
Research Scientist
Yakama Nation Fisheries
PO Box 151
Toppenish, WA. 98948
cell 509.945.3167*

From: Nelson, Travis <tnelson1@cityoftacoma.org>
Sent: Tuesday, June 1, 2021 1:14 PM
To: Bill Sharp
Subject: Re: Cowlitz Flows - June

Hi Bill,

Can you support a reduction in flow using a daily reduction of 125cfs starting this Friday June 3rd with a targeted end flow of 2500 CFS by July 1st?

Tnelson1@cityoftacoma.org
253-502-8861 office
253-579-4082 mobile

**Cowlitz Fish Technical Committee
Decision Document**

2021-05

From: Romanski, Tim <tim_romanski@fws.gov>
Sent: Wednesday, June 2, 2021 2:52 PM
To: Nelson, Travis <tnelson1@cityoftacoma.org>
Subject: Re: [EXTERNAL] FW: Cowlitz Flows - June

Thanks, Travis. FWS supports this action as well based on other members' support. Thanks for keeping FWS in the loop.

"A peculiar virtue in wildlife ethics is that the hunter ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts, they are dictated by his own conscience, rather than that of onlookers. It is difficult to exaggerate the importance of this fact." -- Aldo Leopold

Tim Romanski
WA Section 10/NEPA Coordinator
U.S. Fish and Wildlife Service
510 Desmond Drive SE, Lacey, WA 98503
office: 360.753.5823 cell: 360.951.4303

From: Nelson, Travis <tnelson1@cityoftacoma.org>
Sent: Tuesday, June 1, 2021 3:02 PM
To: Romanski, Tim <tim_romanski@fws.gov>
Subject: [EXTERNAL] FW: Cowlitz Flows - June

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Tim,

Can you support a reduction in flow using a daily reduction of 125cfs starting this Friday June 3rd with a targeted end flow of 2500 CFS by July 1st?

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