LIBBY DAM STURGEON OPERATIONS 2022

Date: 11 May 2022

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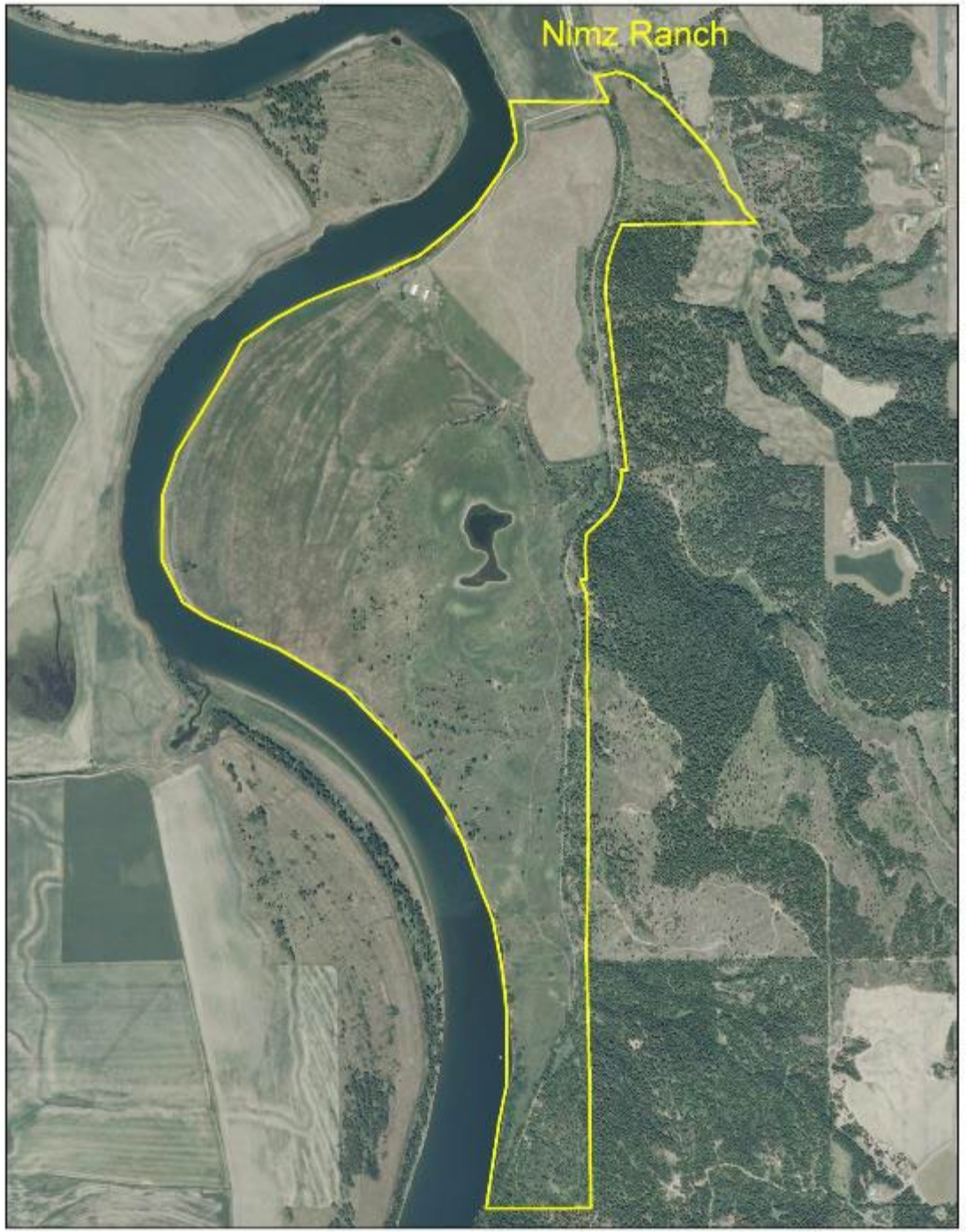
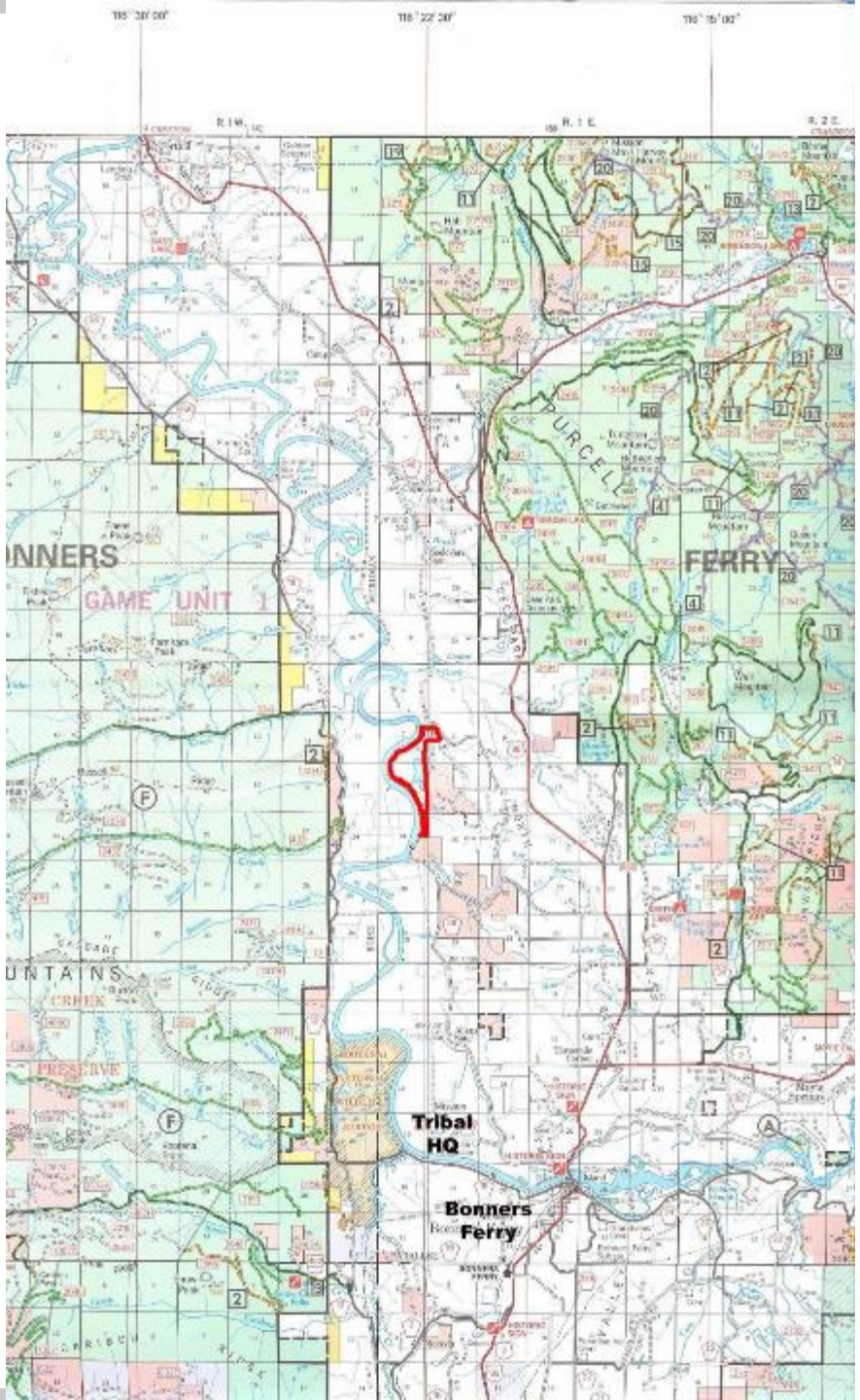
U.S.ARMY

US Army Corps of Engineers®

Nimz Ranch

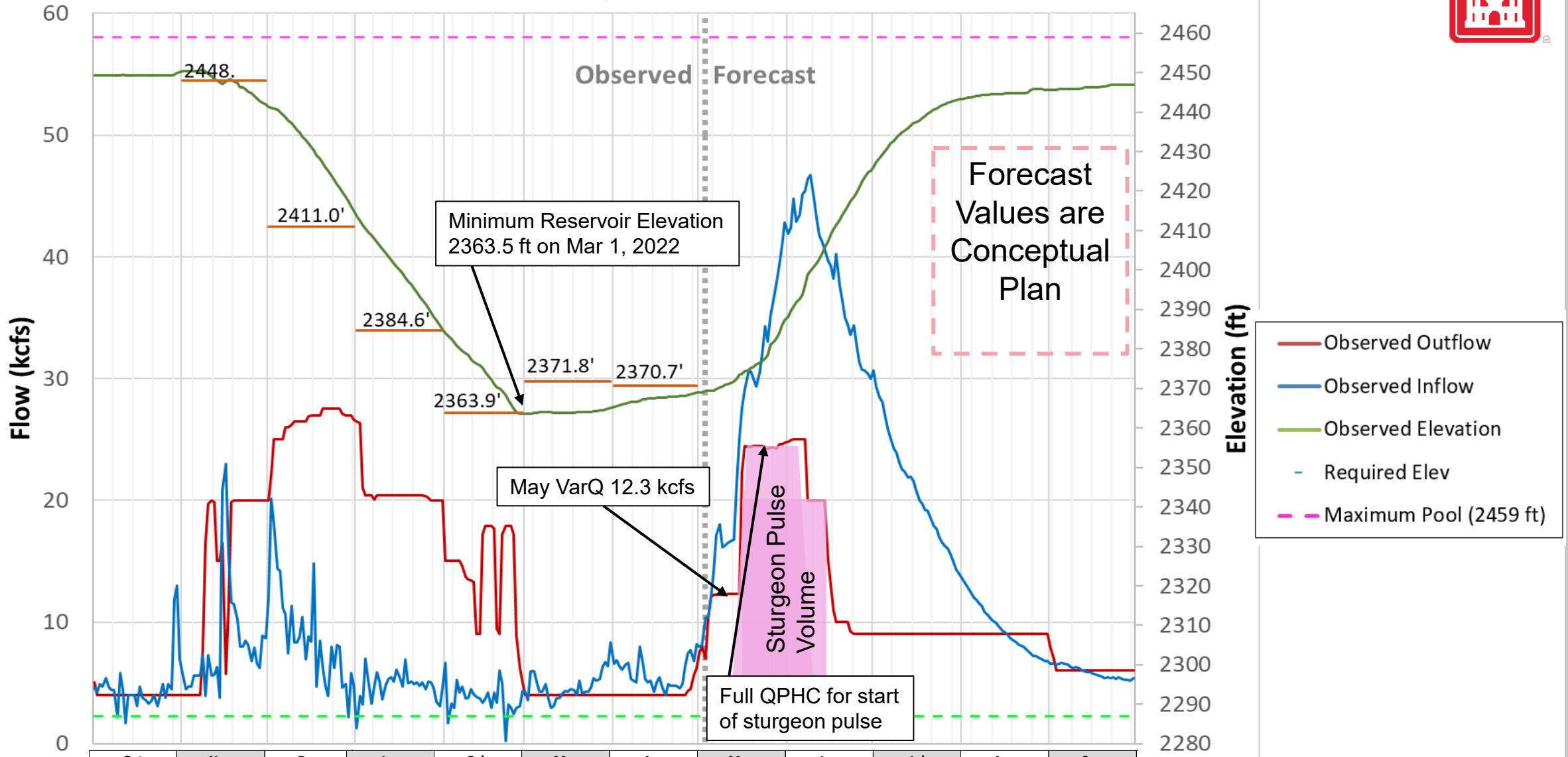

Alberta
British Columbia
British Columbia
Washington
Montana
Oregon
Idaho
Wyoming
Project Area
Columbia River Basin


Nimz Ranch


R 1 W.
R. 1 E.
R 2 E.
PURCELL
FERRY
GAME UNIT 1
Tribal HQ
Bonners Ferry


Legend
Reconnection excavation
2018 Estimated max inundation (1764')
Uninundated
0 0.05 0.1 0.2 0.3 0.4
Miles

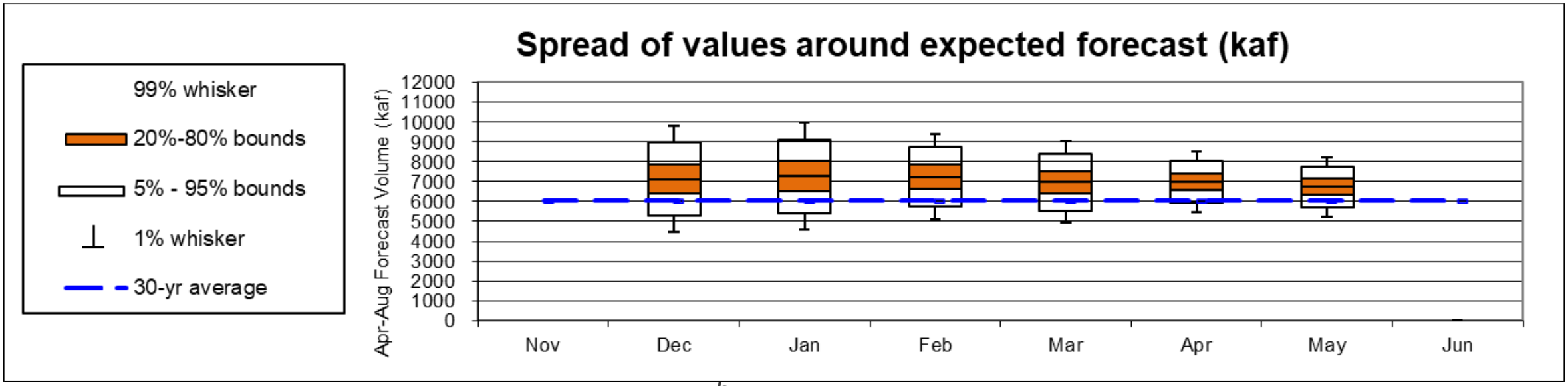
Koocanusa Reservoir Operations Water Year 2022

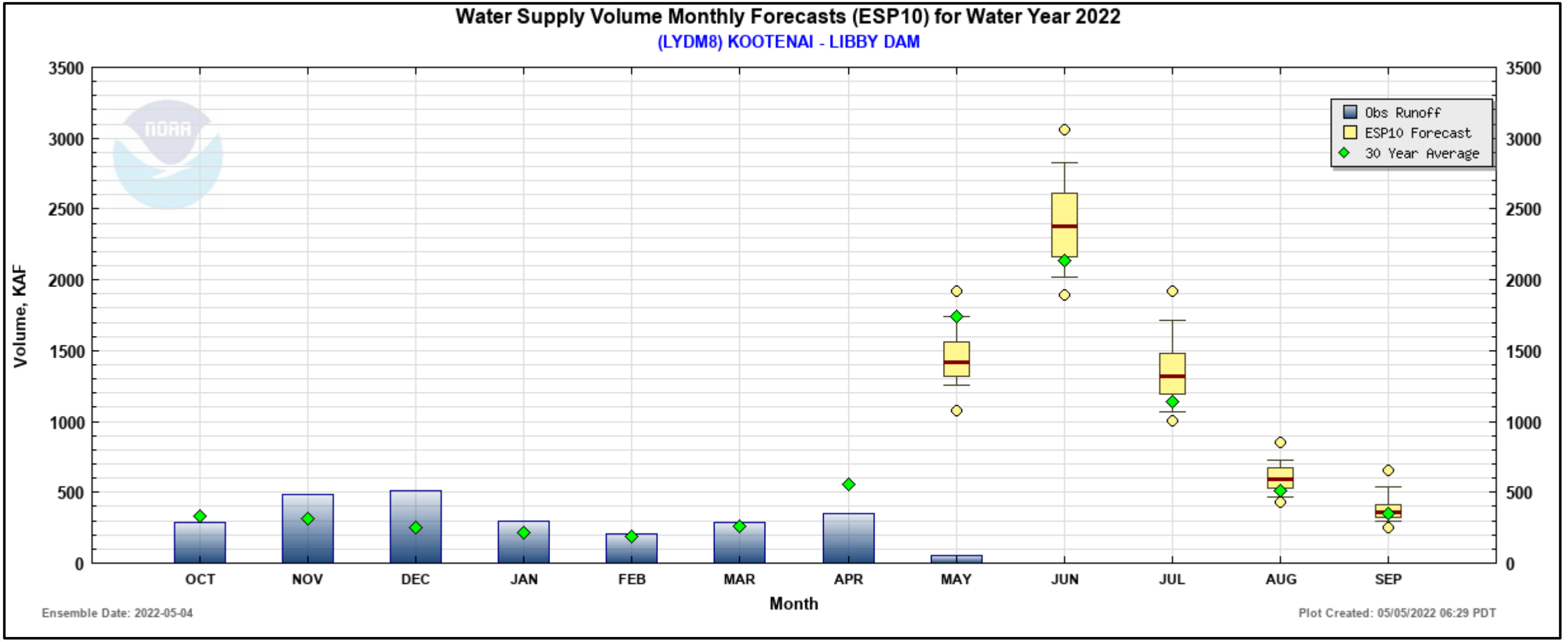


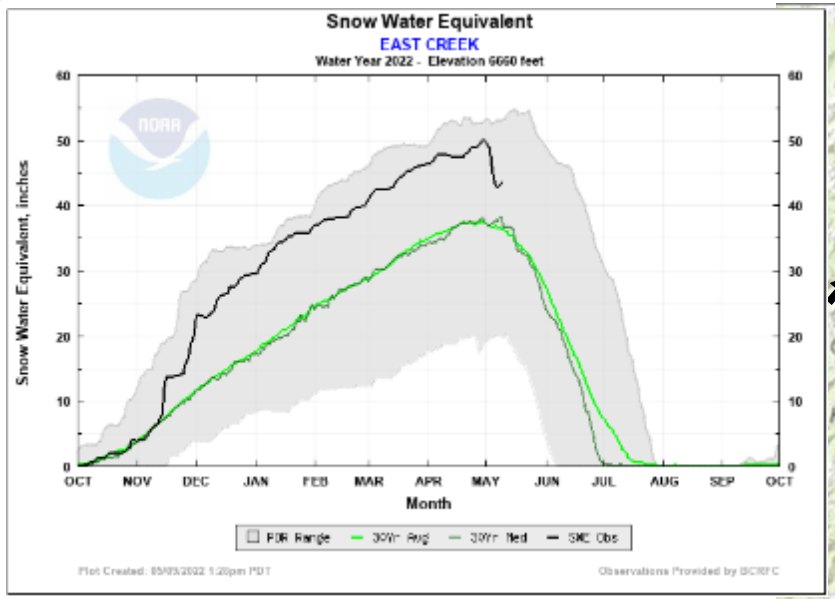
MAY 1ST WATER SUPPLY FORECAST AND BIOP OBJECTIVES

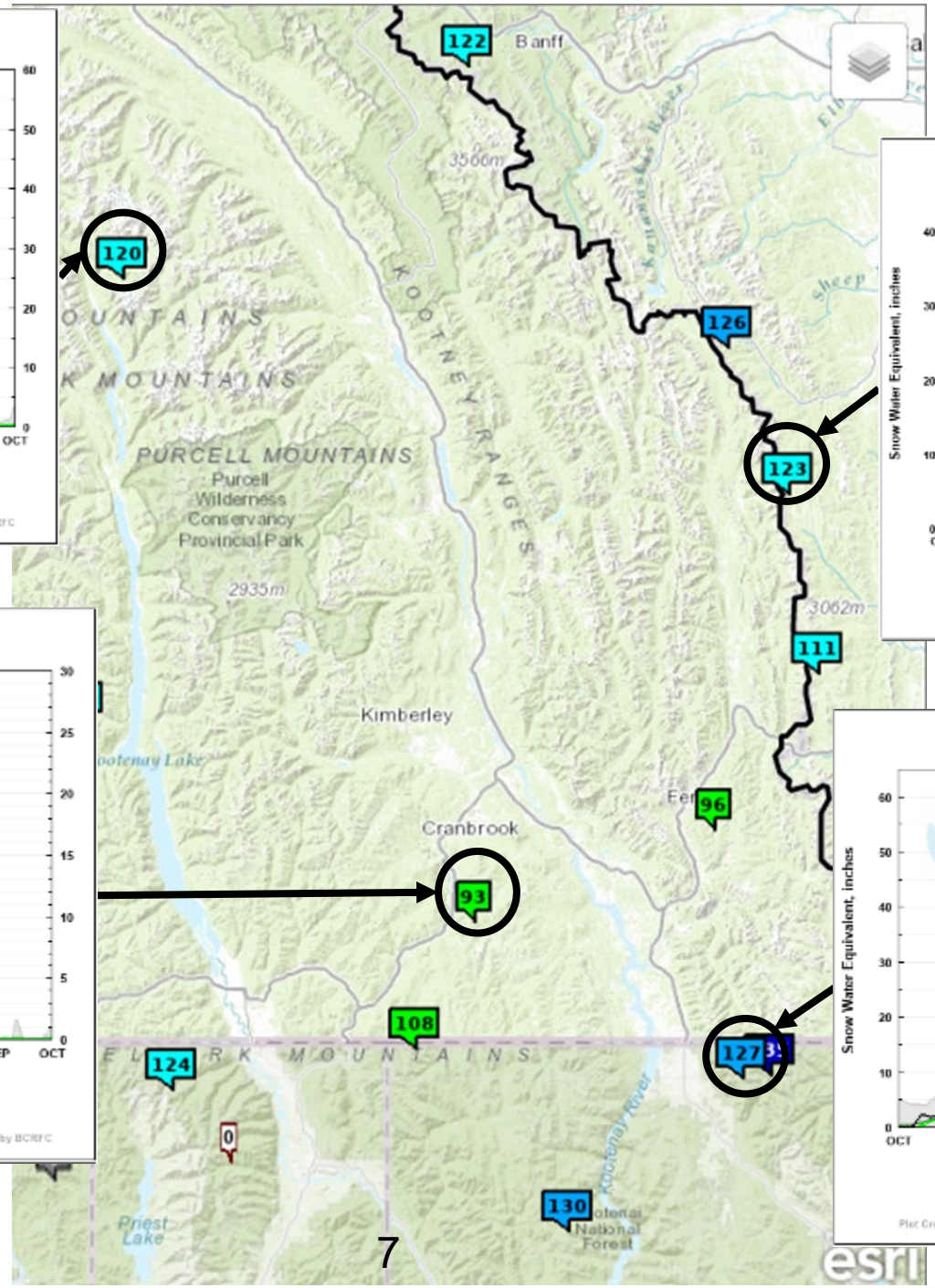
- April-August inflow forecast for Libby Dam is 6.74 million acre-feet (MAF)
  - Forecast is 111% of average
  - Sturgeon Volume is 1.18 MAF
  - Bull trout minimum flows following the Sturgeon Pulse through Aug 31 is 9 kcfs
  - Libby flow augmentation draft to 10 ft from full (2449 ft) end of September (67th percentile)

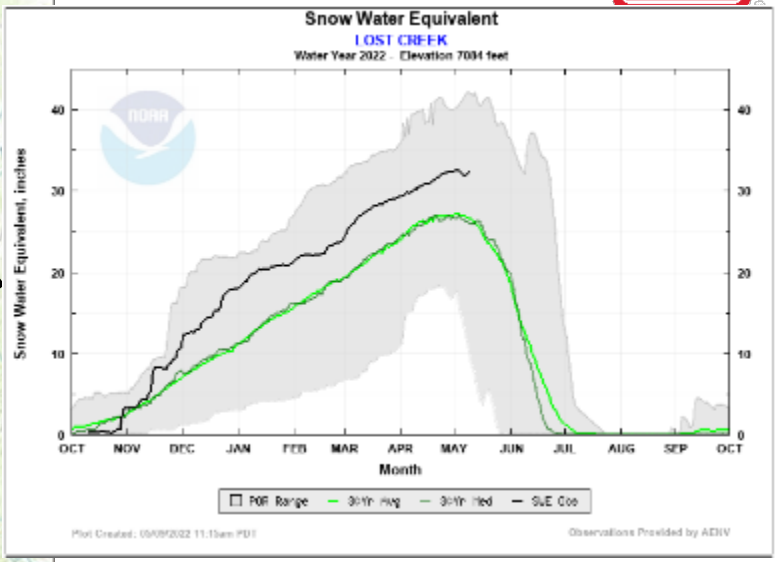
- Libby Water Supply Forecast Trend:

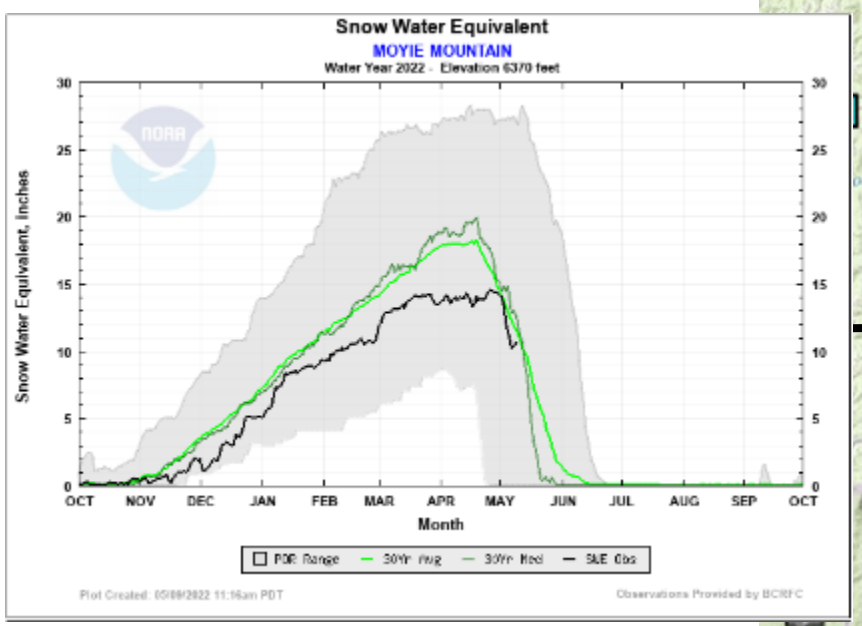


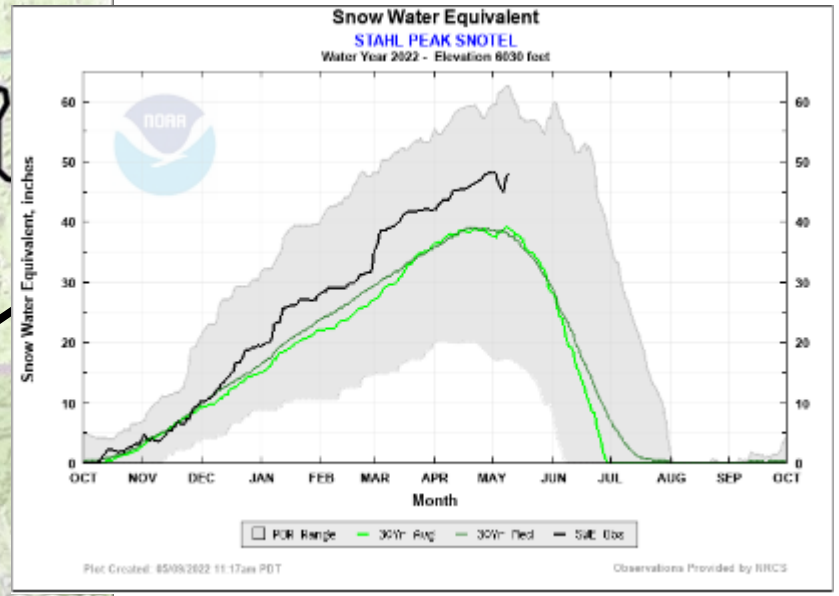

Water Supply Volume Monthly Forecasts (ESP10) for Water Year 2022
(LYDM8) KOOTENAI - LIBBY DAM
Volume, KAF
3500
3000
2500
2000
1500
1000
500
0
Obs Runoff
ESP10 Forecast
30 Year Average
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
Month
Ensemble Date: 2022-05-04
Plot Created: 05/05/2022 06:29 PDT











Snowmelt So Far
Data: May 9th 2022

FLOW AUGMENTATION PLAN

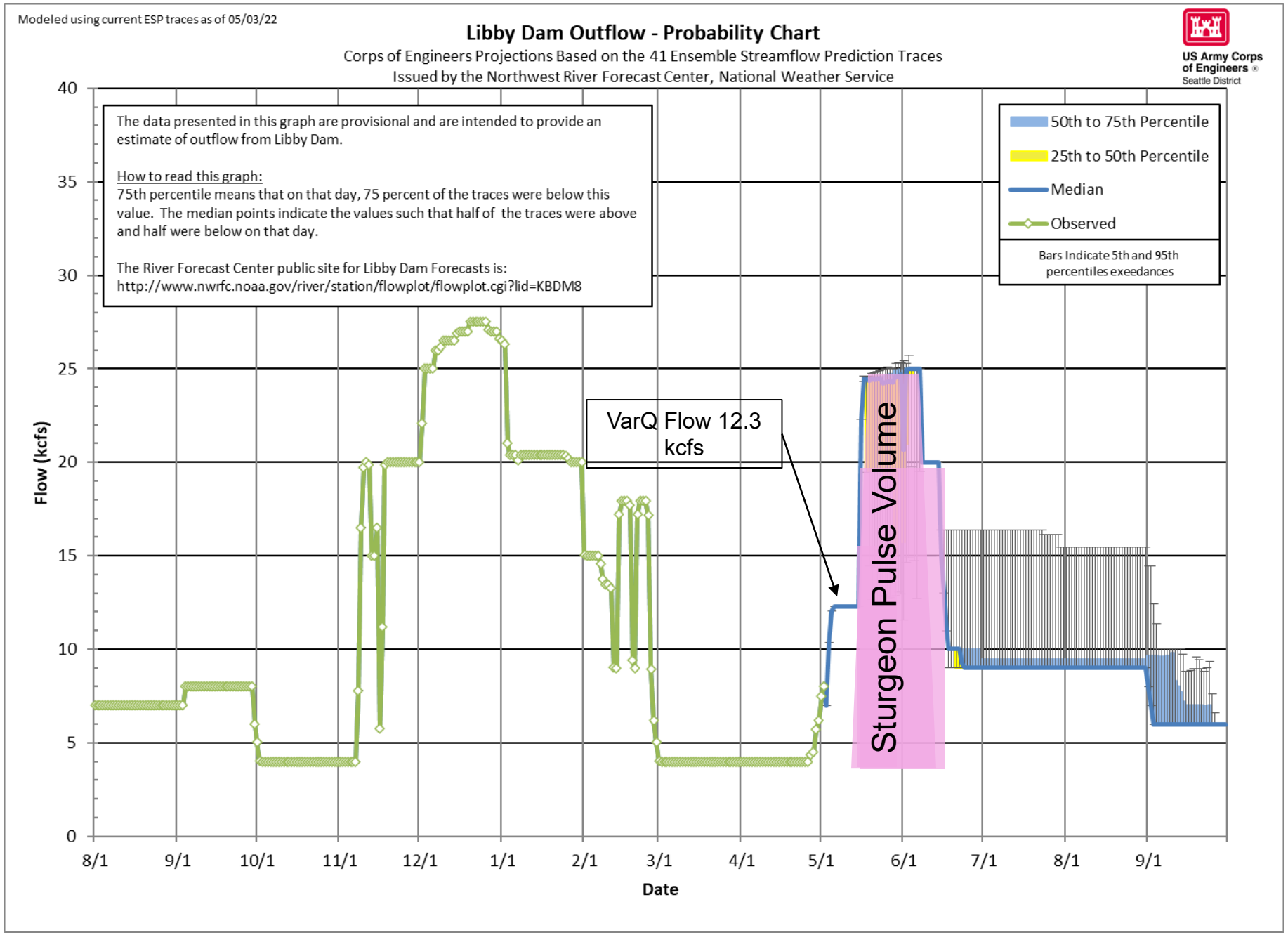
- Spring Refill Began on April 27th

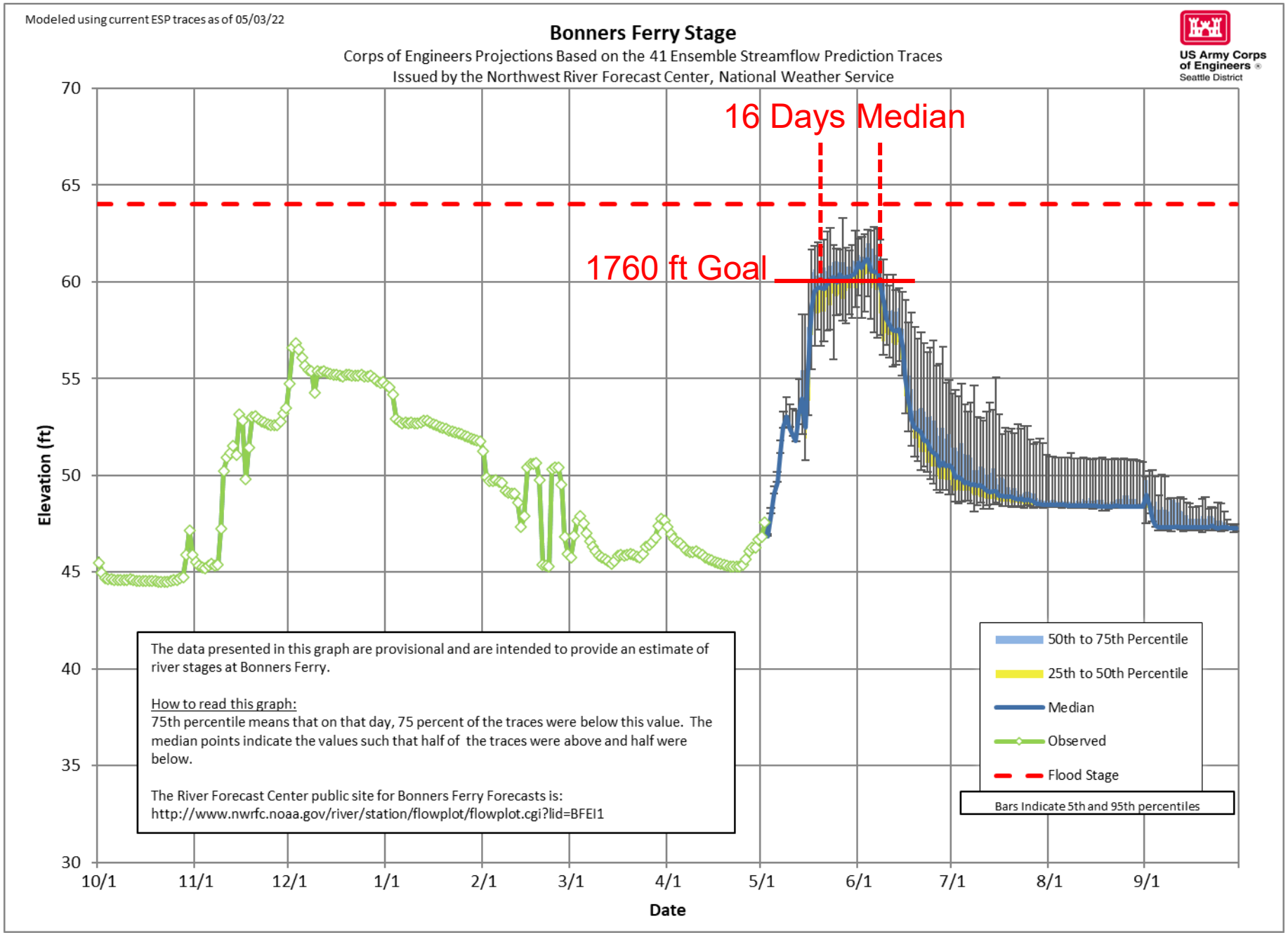
- Sturgeon augmentation flow planned to start on May 16th and ramp up discharges from Libby Dam to ~25 kcfs (powerhouse capacity). Maintain powerhouse pulse discharge for approximately ~22* days, followed by a period at ~20 kcfs.
  - Target to Maintain Bonners Ferry at or above 30 kcfs: ~30 Days Median
  - Target to Maintain Bonners Ferry stage at or above 1760': ~16 Days Median

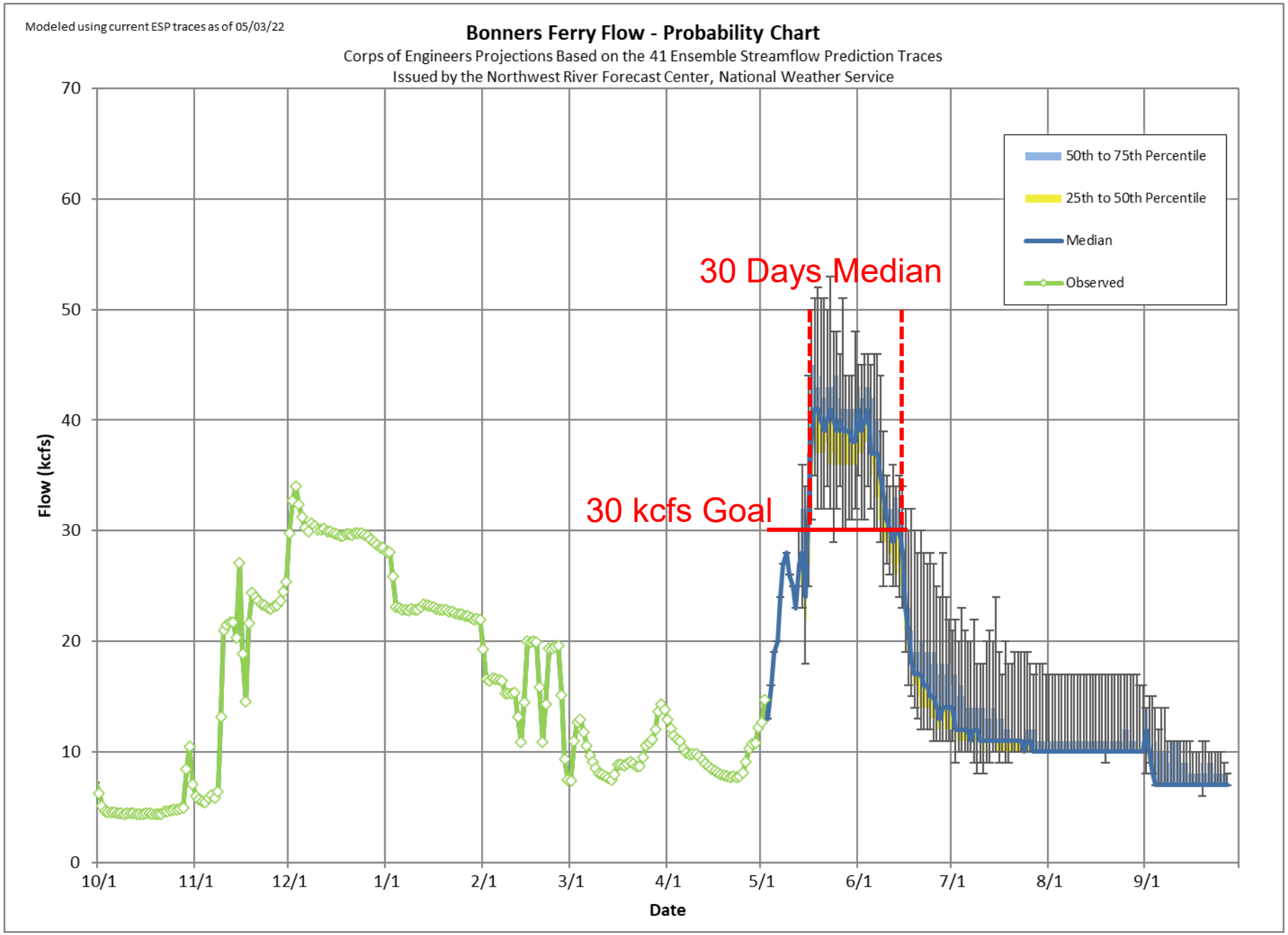
- Decrease discharge (post-powerhouse pulse) at Libby Dam to summer flat flow following BiOp ramping rates.

- Lake Koocanusa End of September Target is 2449.0 ft, depending upon inflows

* in season management and observed inflows may cause these values to change.


Modeled using current ESP traces as of 05/03/22
Libby Dam Outflow - Probability Chart
Corps of Engineers Projections Based on the 41 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service
US Army Corps of Engineers
Seattle District
The data presented in this graph are provisional and are intended to provide an estimate of outflow from Libby Dam.
How to read this graph:
75th percentile means that on that day, 75 percent of the traces were below this value. The median points indicate the values such that half of the traces were above and half were below on that day.
The River Forecast Center public site for Libby Dam Forecasts is:
http://www.nwrfc.noaa.gov/river/station/flowplot/flowplot.cgi?lid=KBDM8
50th to 75th Percentile
25th to 50th Percentile
Median
Observed
Bars Indicate 5th and 95th percentiles exeedances
VarQ Flow 12.3 kcfs
Sturgeon Pulse Volume
Flow (kcfs)
0
5
10
15
20
25
30
35
40
8/1
9/1
10/1
11/1
12/1
1/1
2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
Date


Modeled using current ESP traces as of 05/03/22
Bonners Ferry Stage
Corps of Engineers Projections Based on the 41 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service
US Army Corps of Engineers
Seattle District
16 Days Median
1760 ft Goal
Elevation (ft)
70
65
60
55
50
45
40
35
30
10/1
11/1
12/1
1/1
2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
Date
The data presented in this graph are provisional and are intended to provide an estimate of river stages at Bonners Ferry.
How to read this graph:
75th percentile means that on that day, 75 percent of the traces were below this value. The median points indicate the values such that half of the traces were above and half were below.
The River Forecast Center public site for Bonners Ferry Forecasts is:
http://www.nwrfc.noaa.gov/river/station/flowplot/flowplot.cgi?lid=BFEI1
50th to 75th Percentile
25th to 50th Percentile
Median
Observed
Flood Stage
Bars Indicate 5th and 95th percentiles

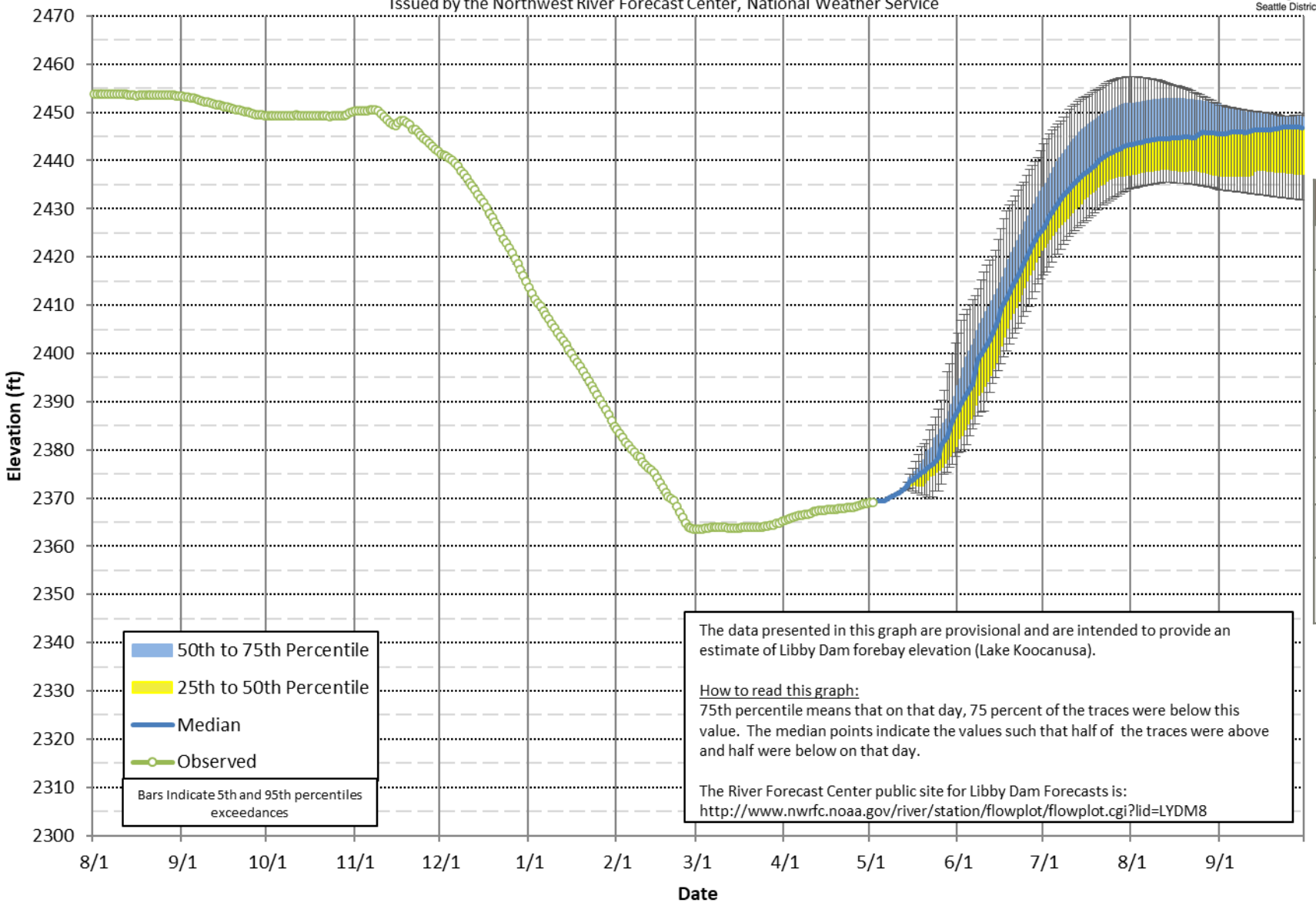

Modeled using current ESP traces as of 05/03/22
Bonners Ferry Flow - Probability Chart
Corps of Engineers Projections Based on the 41 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service
50th to 75th Percentile
25th to 50th Percentile
Median
Observed
30 Days Median
30 kcfs Goal
Flow (kcfs)
0
10
20
30
40
50
60
70
10/1
11/1
12/1
1/1
2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
Date

Modeled using current ESP traces as of 05/03/22

Lake Koocanusa Elevation - Probability Chart

Corps of Engineers Projections Based on the 41 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service

US Army Corps of Engineers
Seattle District



The data presented in this graph are provisional and are intended to provide an estimate of Libby Dam forebay elevation (Lake Koocanusa).

How to read this graph:
75th percentile means that on that day, 75 percent of the traces were below this value. The median points indicate the values such that half of the traces were above and half were below on that day.

The River Forecast Center public site for Libby Dam Forecasts is:
http://www.nwrfc.noaa.gov/river/station/flowplot/flowplot.cgi?lid=LYDM8

Most Probable Range		
May 31	2380.8	2391.4
June 30	2421.5	2433.5
July 31	2437.1	2451.8
Peak Elev	2438.1	2452.8
Peak Date	8/11	9/26
August 31	2436.9	2451.6
September 30	2437.2	2449.0

*Based on May 3rd ESP Traces

SUMMARY OF PLANNED REFILL OPERATIONS

- Spring Refill Began on April 27th

- Sturgeon augmentation flow planned to start on May 16th and ramp up discharges from Libby Dam to ~25 kcfs (powerhouse capacity). Maintain powerhouse pulse discharge for approximately ~22* days, followed by a period at ~20 kcfs.
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QUESTIONS?