LIBBY DAM STURGEON OPERATIONS 2020

13 May 2020
TMT Meeting

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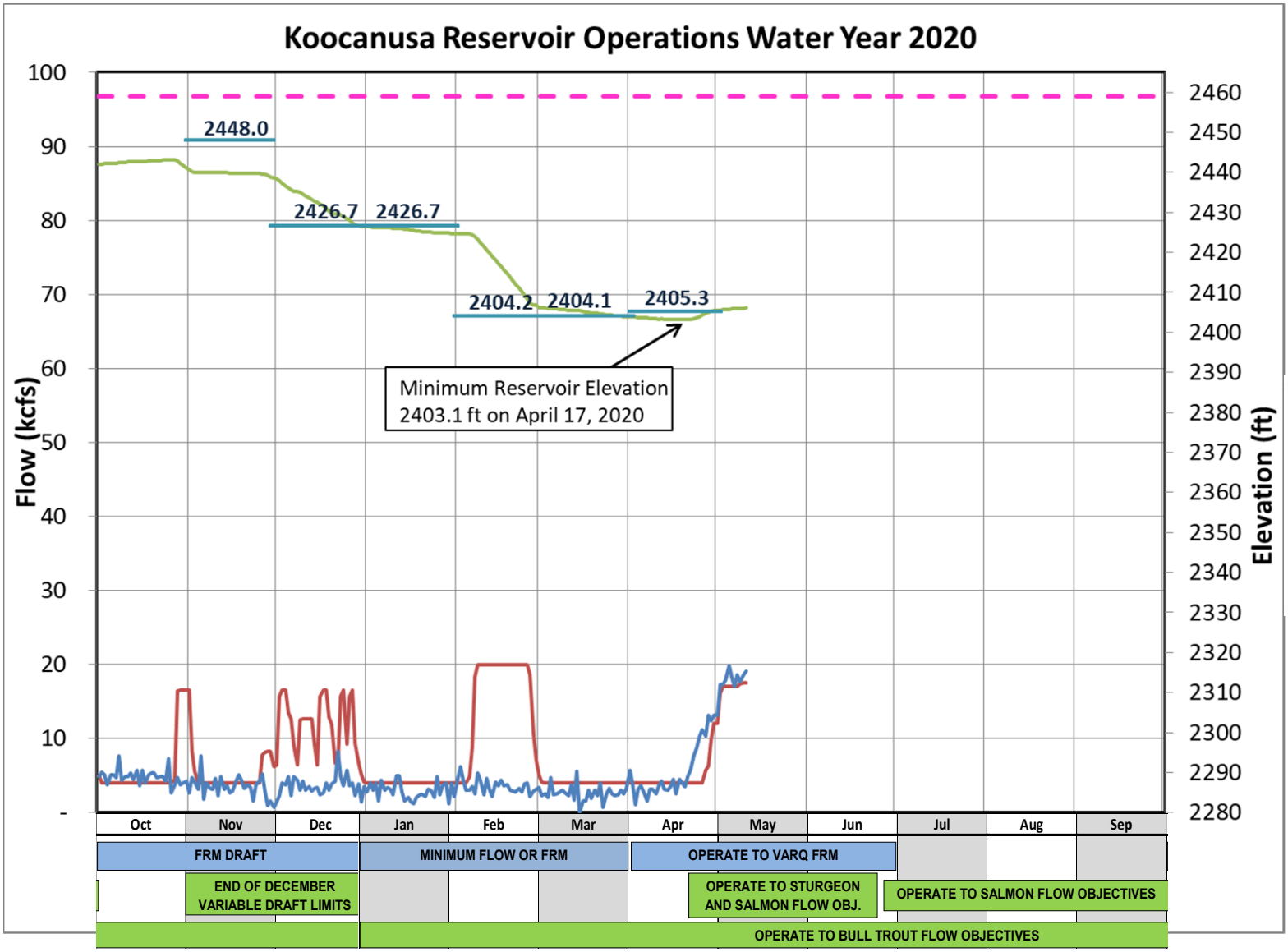
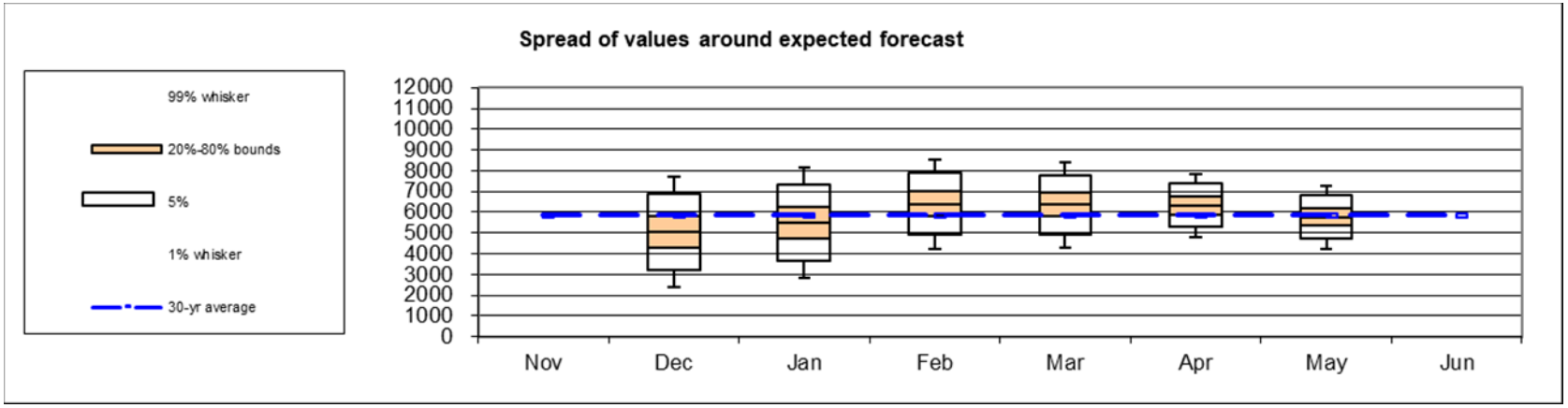

Koocanusa Reservoir Operations Water Year 2020
Flow (kcfs)
Elevation (ft)
2448.0
2426.7
2426.7
2404.2
2404.1
2405.3
Minimum Reservoir Elevation
2403.1 ft on April 17, 2020
Observed Outflow
Observed Inflow
Observed Elevation
Required Elev
Maximum Pool (2459 ft)
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
FRM DRAFT
MINIMUM FLOW OR FRM
OPERATE TO VARQ FRM
END OF DECEMBER VARIABLE DRAFT LIMITS
OPERATE TO STURGEON AND SALMON FLOW OBJ.
OPERATE TO SALMON FLOW OBJECTIVES
OPERATE TO BULL TROUT FLOW OBJECTIVES

MAY 1ST WATER SUPPLY FORECAST AND BIOP OBJECTIVES

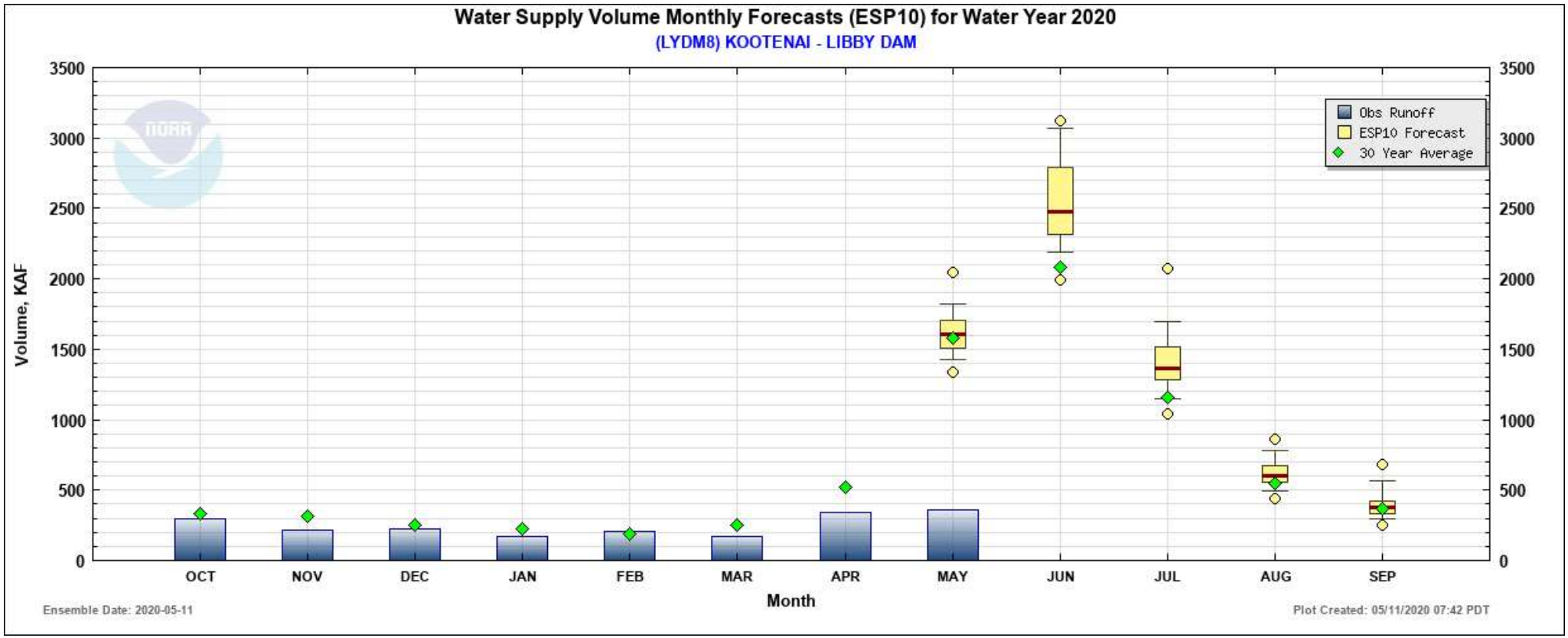
- April-August inflow forecast for Libby Dam is 5.76 million acre-feet (MAF)
  - Forecast is 98% of average
  - Sturgeon Volume is 0.92 MAF
  - Bull trout minimum flows following the Sturgeon Pulse through Aug 31 is 7 kcfs
  - Current VarQ Flow 17,500 cfs

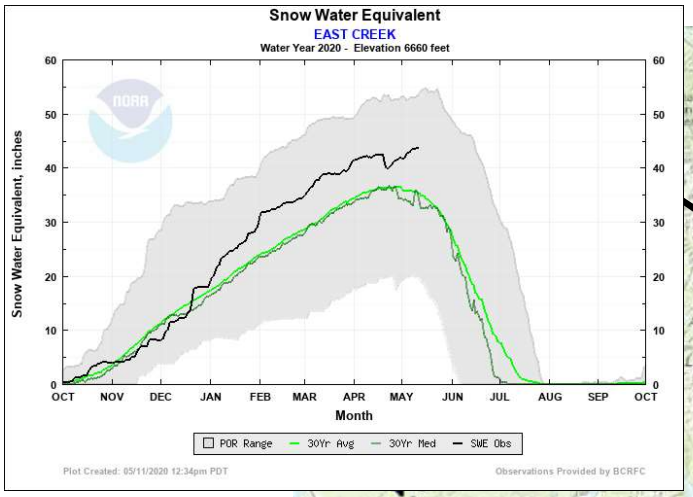
- Water supply forecast issued on May 7 for The Dalles is 87.3 MAF (100% of normal).
  - Libby flow augmentation draft to 10 ft from full (2449 ft) end of September

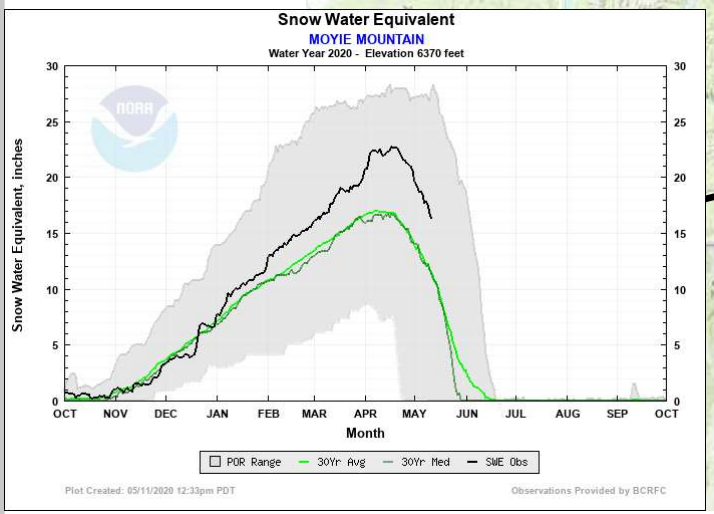
  - Libby Water Supply Forecast Trend:

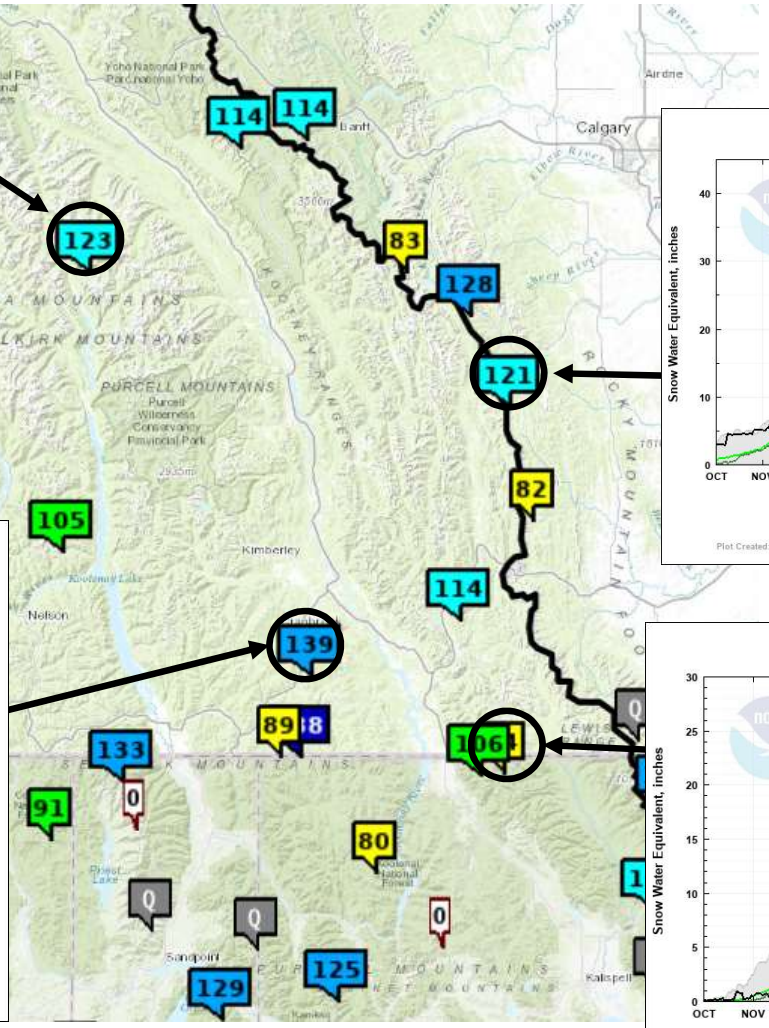


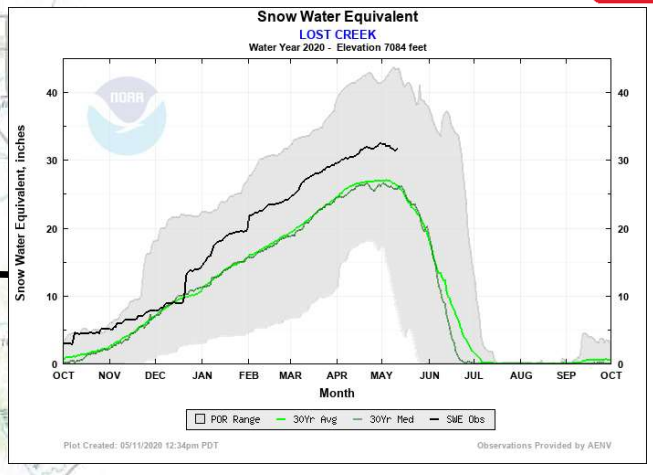
MONTHLY WATER SUPPLY VOLUME

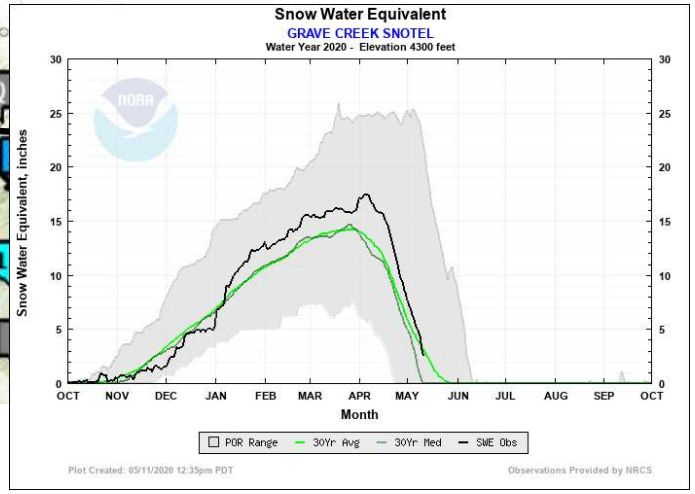










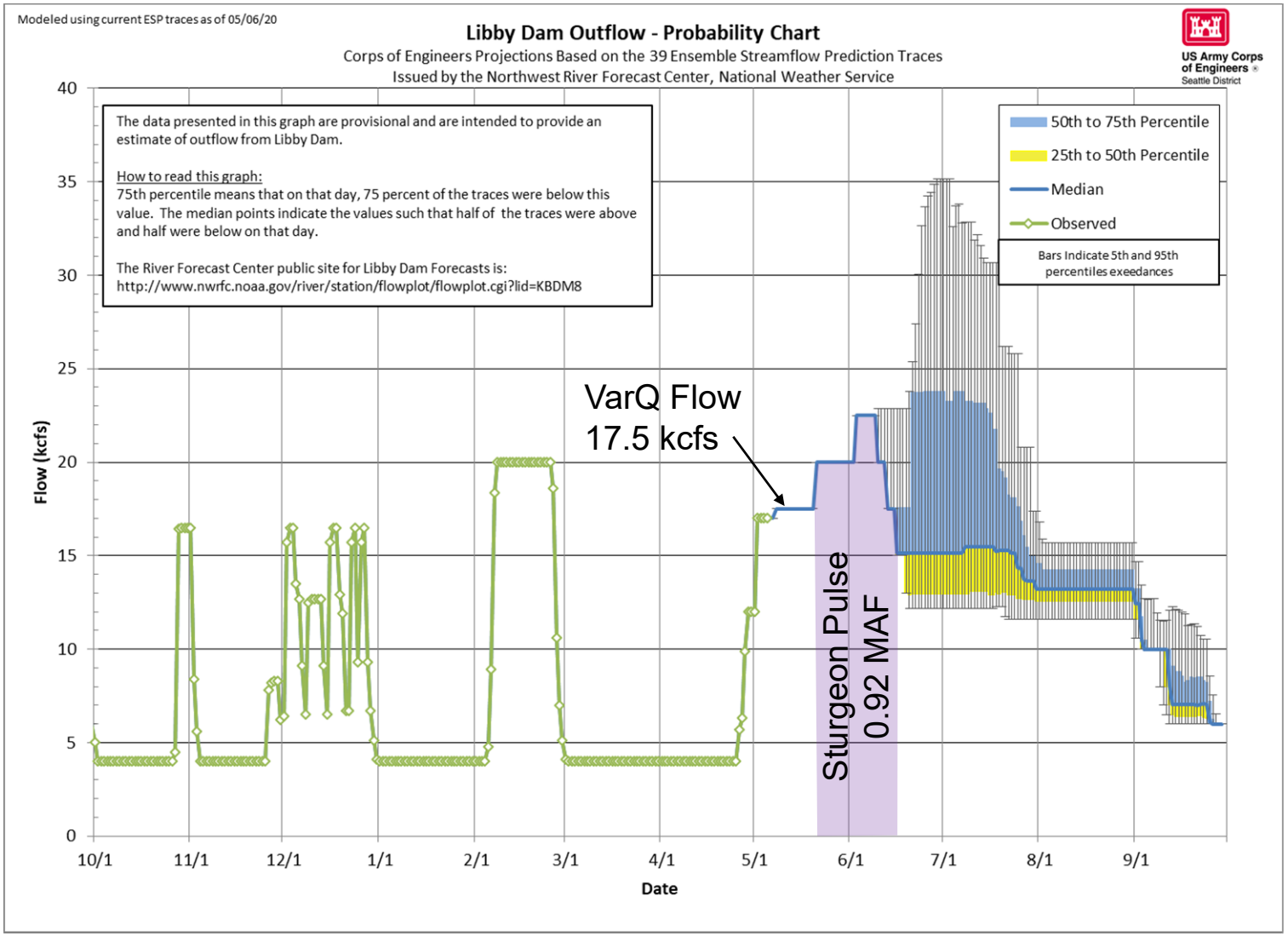


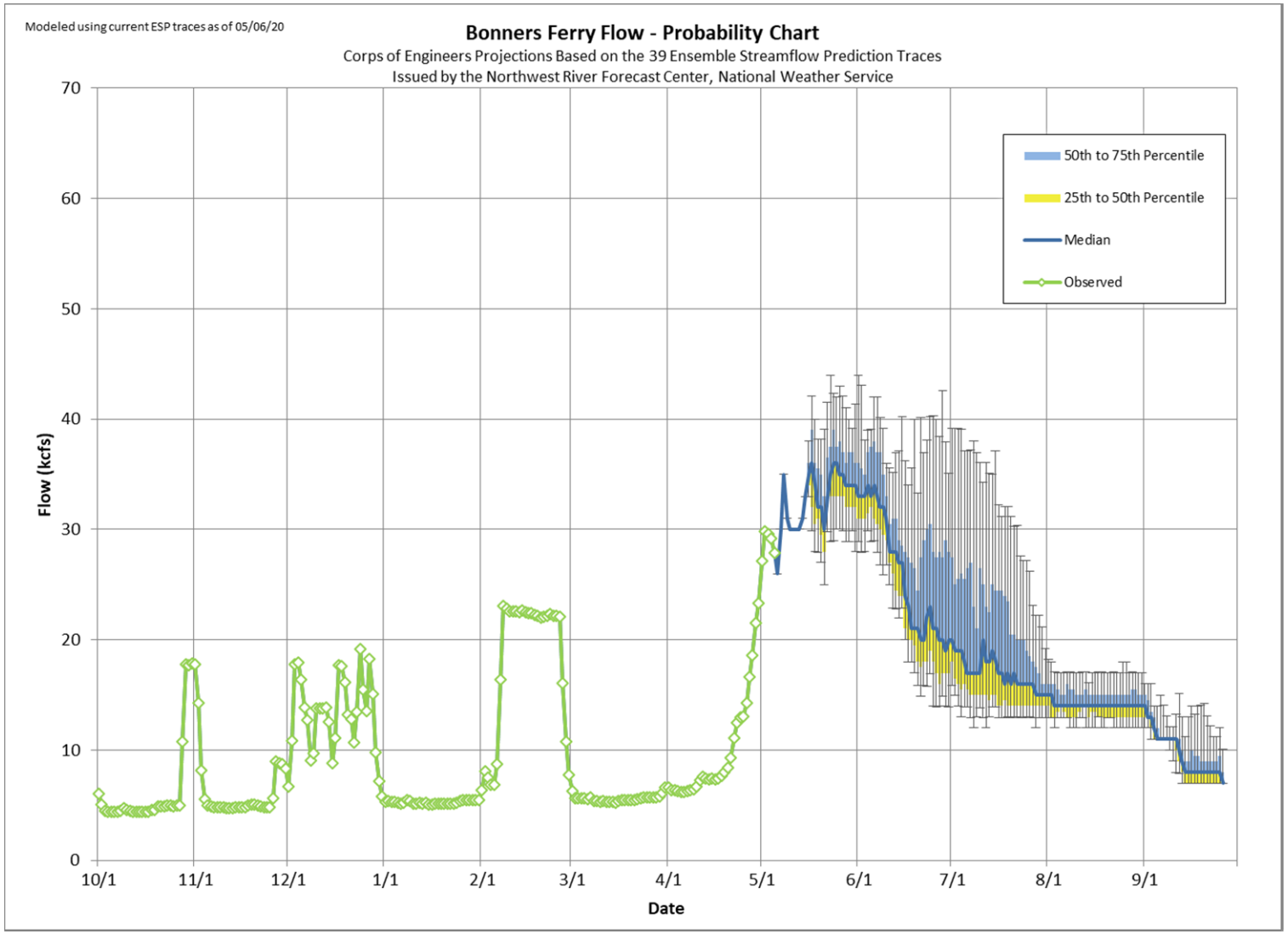
Snowmelt So Far
Data: May 11th 2020

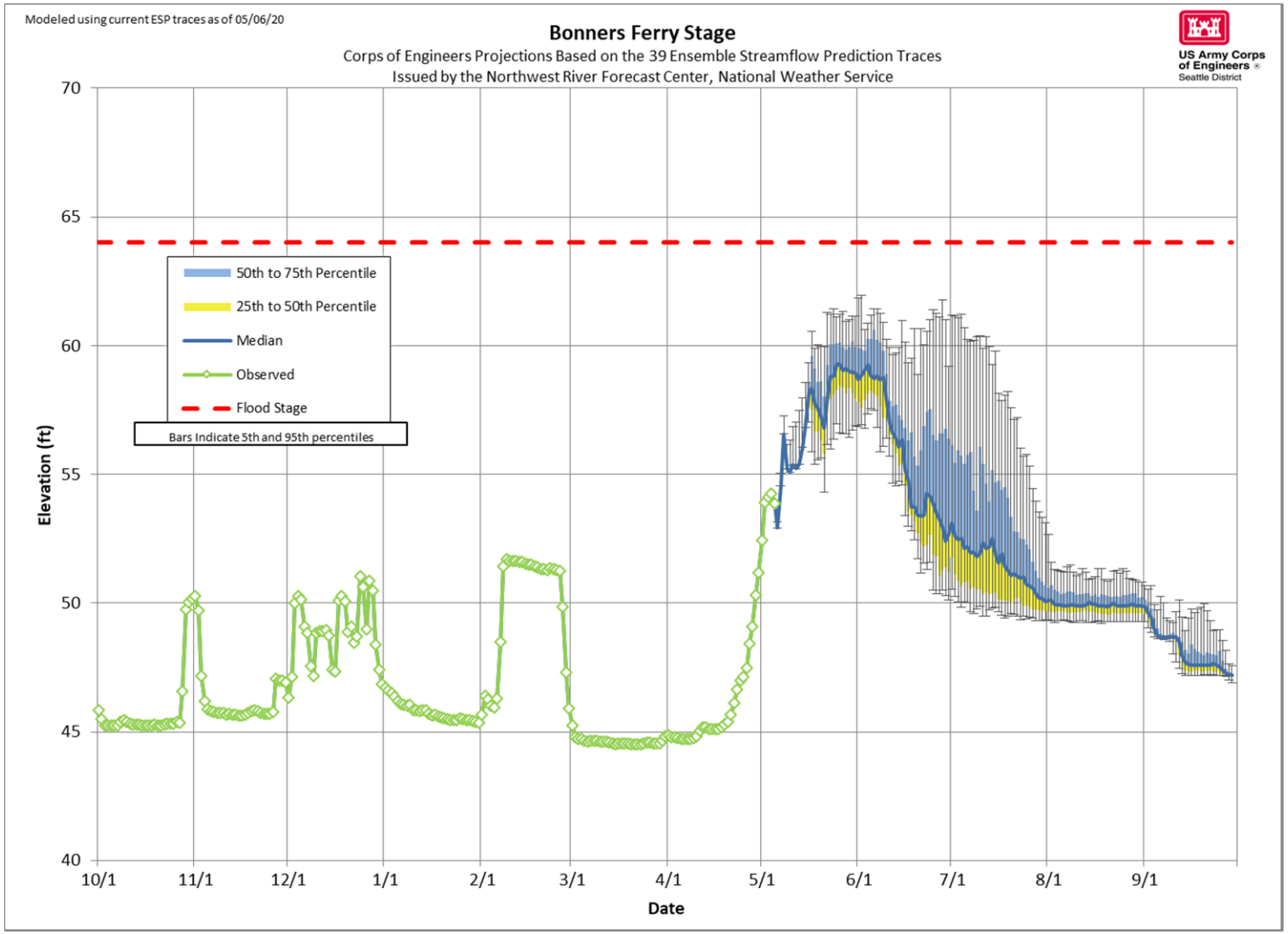
FLOW AUGMENTATION

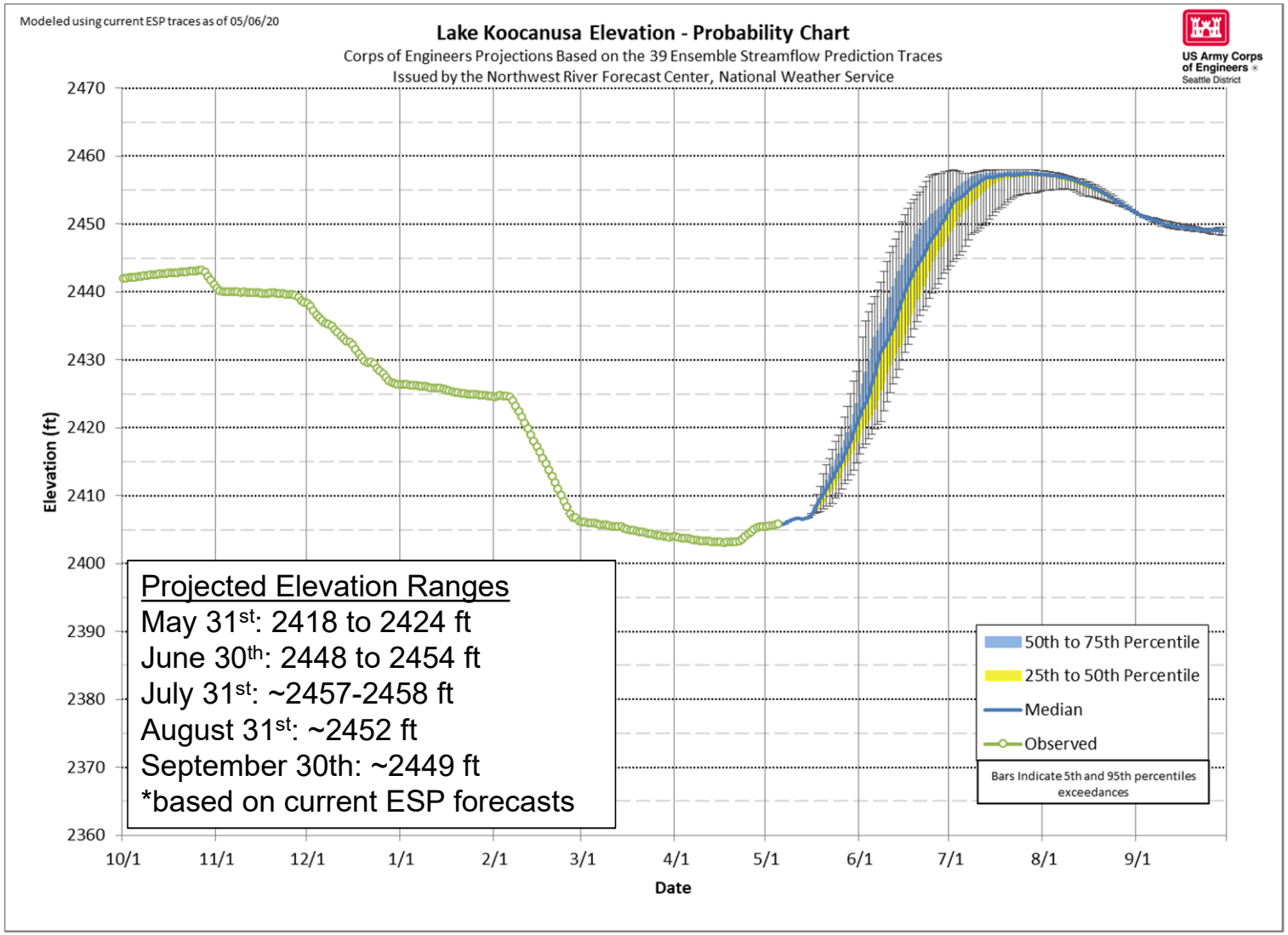
- Begin sturgeon augmentation flow operations on 21 May.
- 12-14 days of flows of 20,000 cfs discharge (pre-peak)
- Then increase discharge from Libby Dam to 22,500 cfs (peak, up to ~25,000). Maintain peak discharge for a period of ~7 days.
- Decrease discharge (post-peak) at Libby Dam to summer flat flow following 2006 BiOp ramping rates

- Will show the May 6th ESP modelling that was included in the SOR, and then afterwards will a recent update that shows some potential for in-season changes based on inflows.


Modeled using current ESP traces as of 05/06/20
Libby Dam Outflow - Probability Chart
Corps of Engineers Projections Based on the 39 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
17.5 kcfs
Sturgeon Pulse
0.92 MAF
Flow (kcfs)
0
5
10
15
20
25
30
35
40
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 05/06/20
Bonners Ferry Flow - Probability Chart
Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service
50th to 75th Percentile
25th to 50th Percentile
Median
Observed
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 05/06/20
Bonners Ferry Stage
Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service
US Army Corps of Engineers
Seattle District
50th to 75th Percentile
25th to 50th Percentile
Median
Observed
Flood Stage
Bars Indicate 5th and 95th percentiles
Elevation (ft)
70
65
60
55
50
45
40
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 05/06/20
Lake Koocanusa Elevation - Probability Chart
Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service
US Army Corps of Engineers
Seattle District
Elevation (ft)
2470
2460
2450
2440
2430
2420
2410
2400
2390
2380
2370
2360
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
Projected Elevation Ranges
May 31st: 2418 to 2424 ft
June 30th: 2448 to 2454 ft
July 31st: ~2457-2458 ft
August 31st: ~2452 ft
September 30th: ~2449 ft
*based on current ESP forecasts
50th to 75th Percentile
25th to 50th Percentile
Median
Observed
Bars Indicate 5th and 95th percentiles exceedances

QUESTIONS?