

KOOTENAI RIVER OPERATIONS SPRING/SUMMER 2020

Date: 14 May 2020

To start your audio, move your mouse to the bottom of the screen and select the phone icon. Then select "Call Me" and enter your phone number.

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Enter Access code: 1538710 followed by #

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KOOTENAI RIVER OPERATIONS SPRING/SUMMER 2020

If **online** participants experience any technical difficulties, send a note to “Host” with details of what you are experiencing.

If **call-only participants** experience any technical difficulties, please hang up and try your call again.

All participants’ phones will remain muted until the Discussion period later.

To submit a question:

- **Online:** Type a question at any time using the **Chat** window on the right side of your screen. Our team will read your question to all participants at the appropriate time.
- For **call-only** participants: We will open phones to questions at an appropriate time, alternating with questions submitted online.

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KOOTENAI RIVER OPERATIONS SPRING/SUMMER 2020

MEETING AGENDA

- **Introductions – Scott Lawrence, USACE**
- **Weather Update – Robin Fox, National Weather Service**
- **Libby Dam Operations– Jon Moen, USACE**
- **Sturgeon Operations – Jason Flory, U.S. Fish and Wildlife Service**
- **Libby Dam Recreation and Visitor Facilities– Susan James, USACE**

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2019-2020 Winter/Spring Overview

Libby Dam/Kootenai River Basin

Spring Meeting

May 14, 2020

Robin Fox

Meteorologist – Hydro Program Manager

National Weather Service Spokane

Overview

- **2019-2020 Winter Overview**
 - N ID & NW MT
- **Upcoming weather**
- **Seasonal Outlook**
- **NWS Resources**



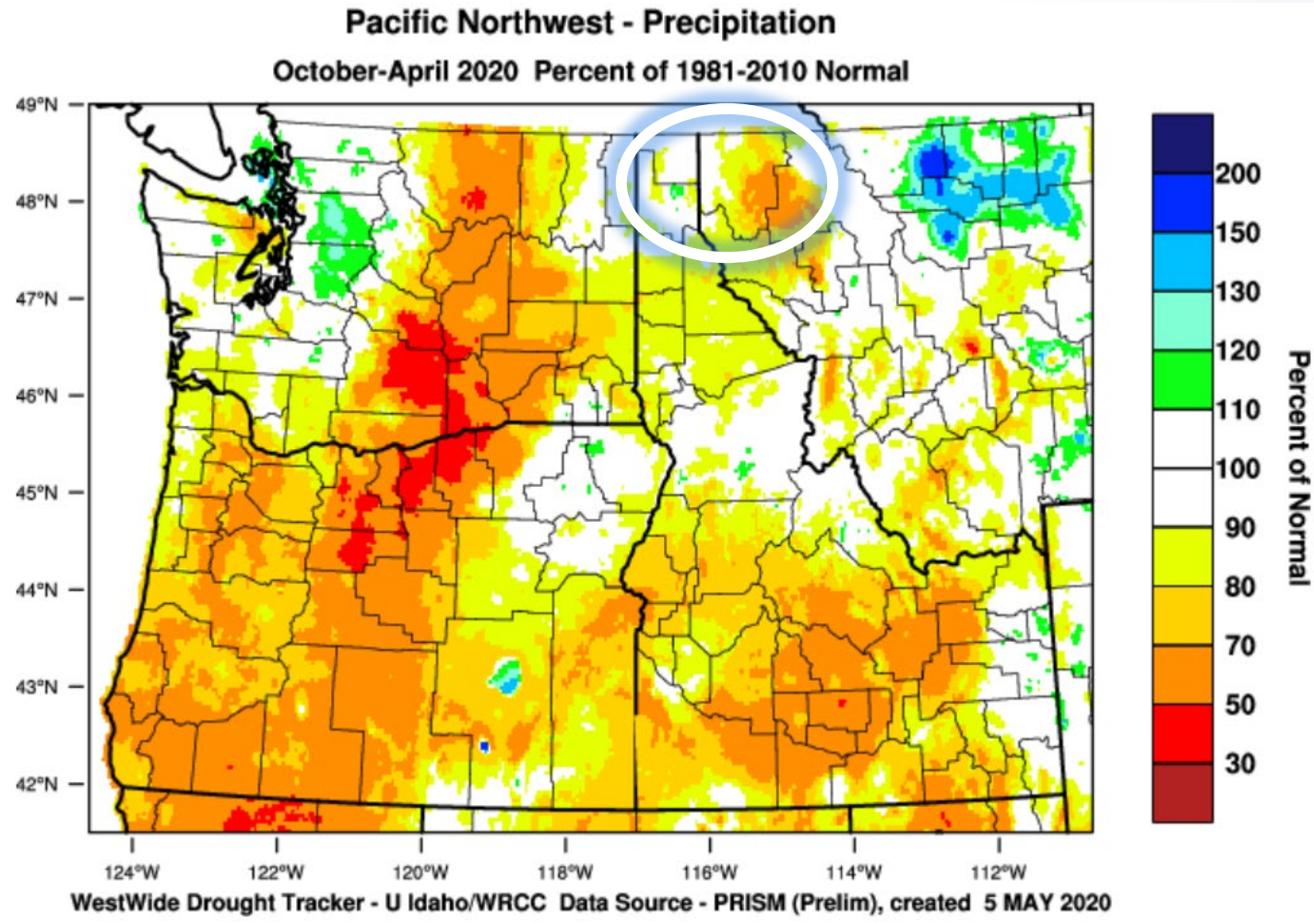


Percent of Average Precipitation

WY 2020: Oct 2019 to April 2020



- Boundary County has seen 90- 100% of average precipitation
- Northwest MT has seen a varied range from 70- 100% of average



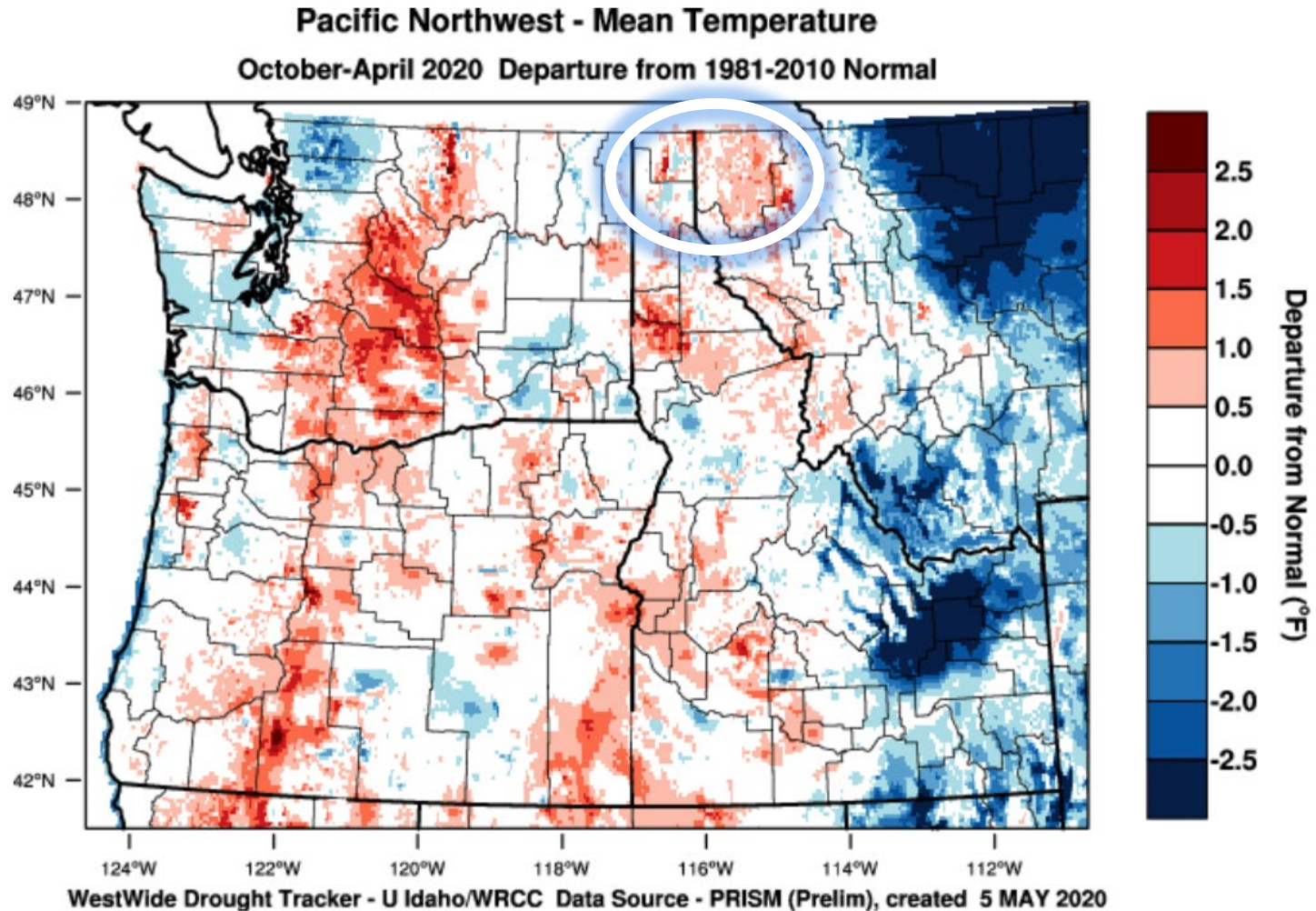


Difference in Average Temperatures



WY 2020: Oct 2019 - April 2020

- Boundary County has been near average temperatures
- Northwest MT has been near to slightly above average.





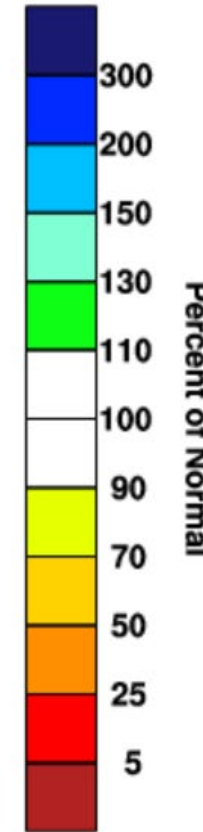
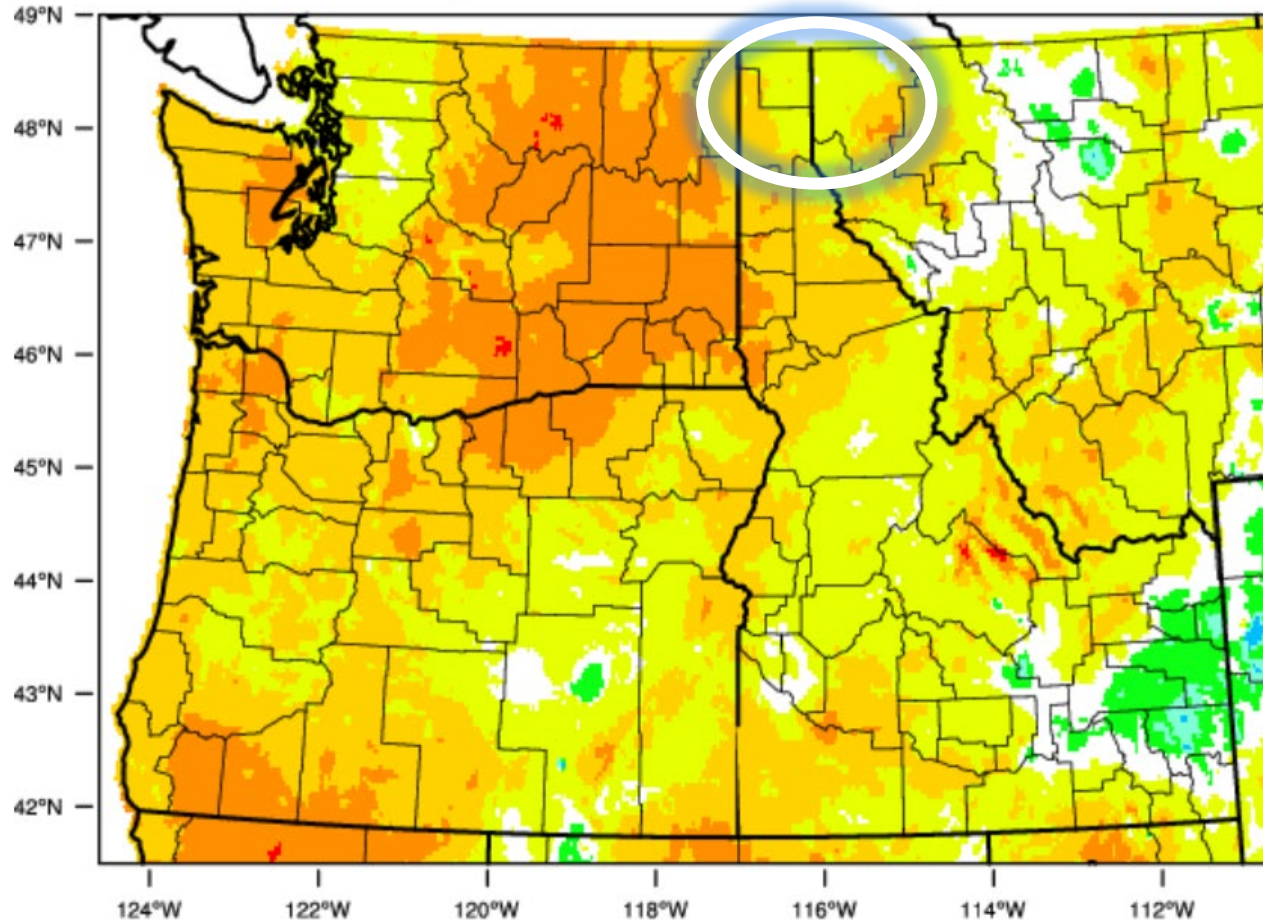
Percent of Average Precipitation

Spring: March 2020 - April 2020



Pacific Northwest - Precipitation

March-April 2020 Percent of 1981-2010 Normal



The bulk of the Water Year precipitation fell in December and January as snow.

Since March and even late February, precipitation has been 50-70% of normal.

WestWide Drought Tracker - U Idaho/WRCC Data Source - PRISM (Prelim), created 5 MAY 2020

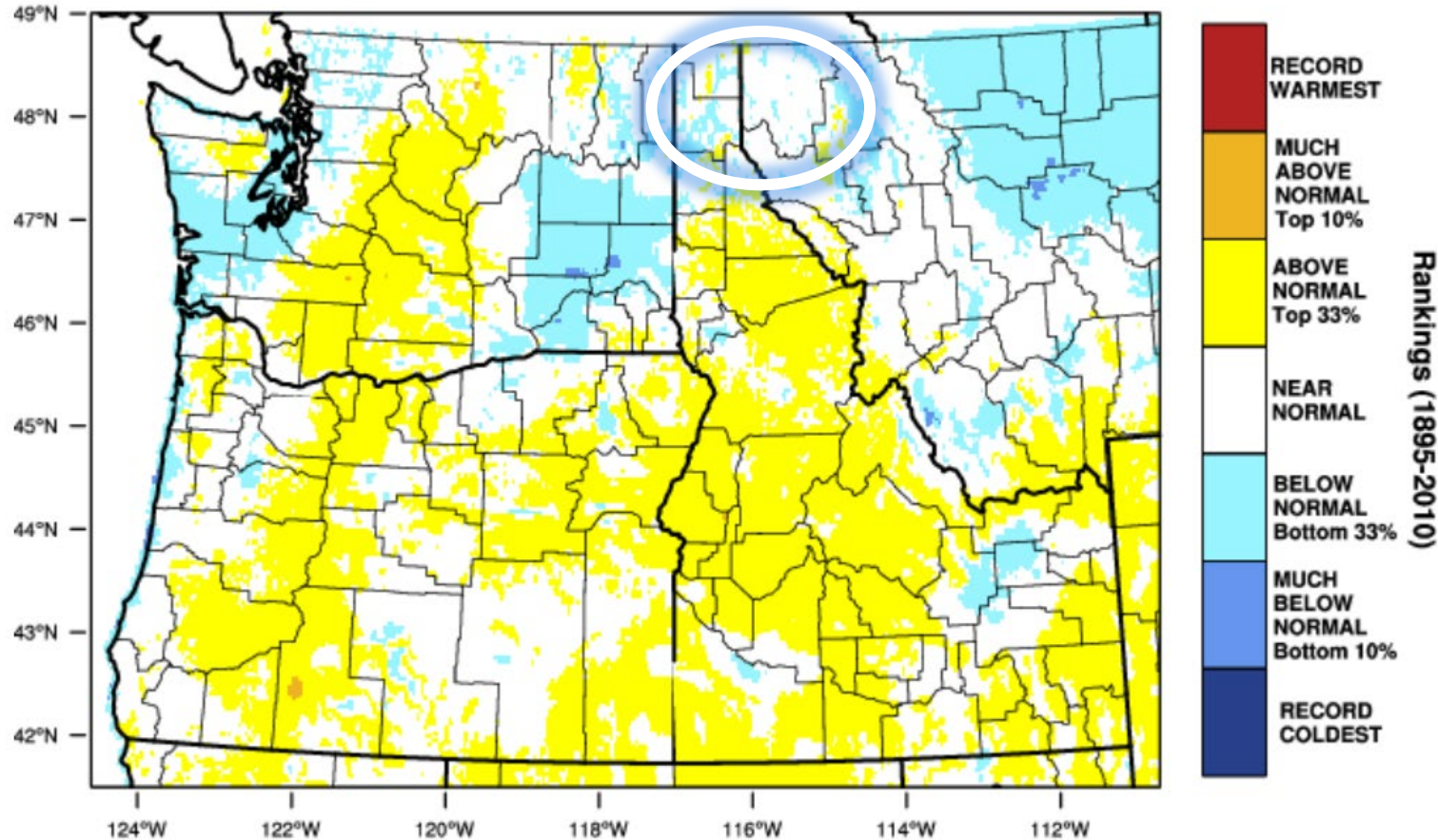


Difference in Average Temperatures



Spring: March 2020 - April 2020

Pacific Northwest - Mean Temperature
March-April 2020 Percentile



WestWide Drought Tracker - U Idaho/WRCC Data Source - PRISM (Prelim), created 5 MAY 2020

Temperatures were at to below normal for the onset of Spring, which allowed the mountain snow pack to accumulate.



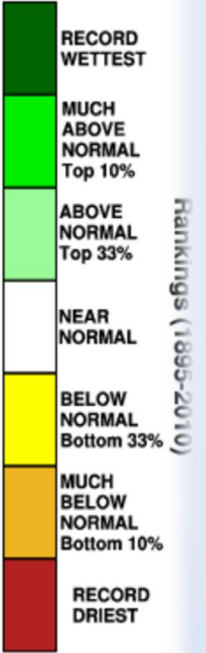
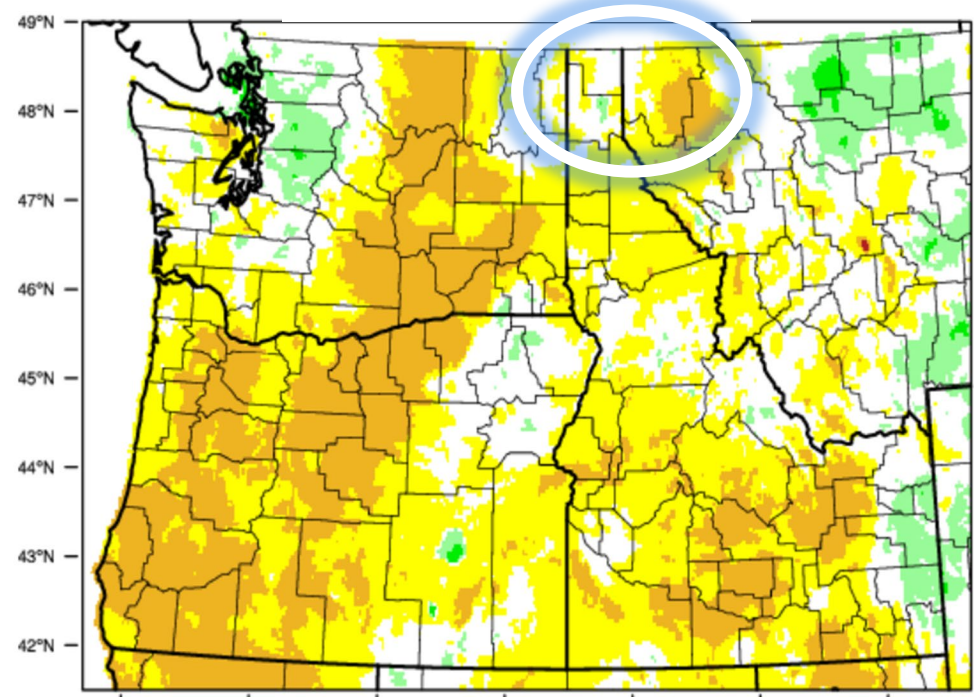
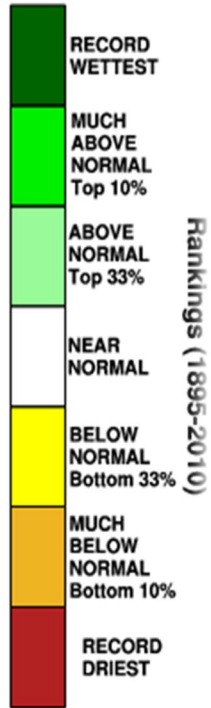
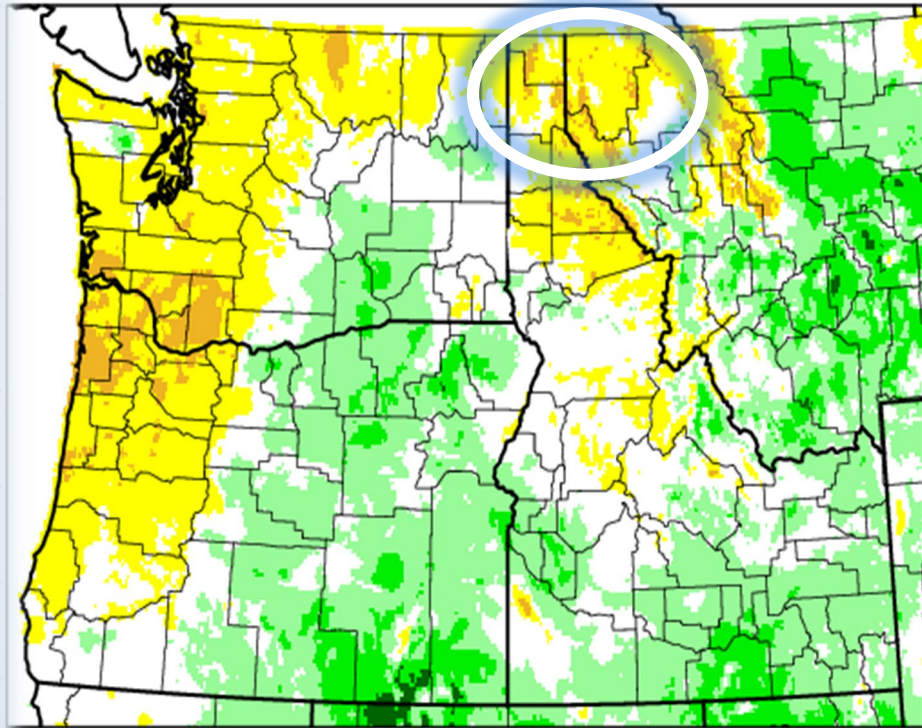
Winter Precipitation Comparison

2018-2019 vs. 2019-2020



2018-2019 Winter

2019-2020 Winter



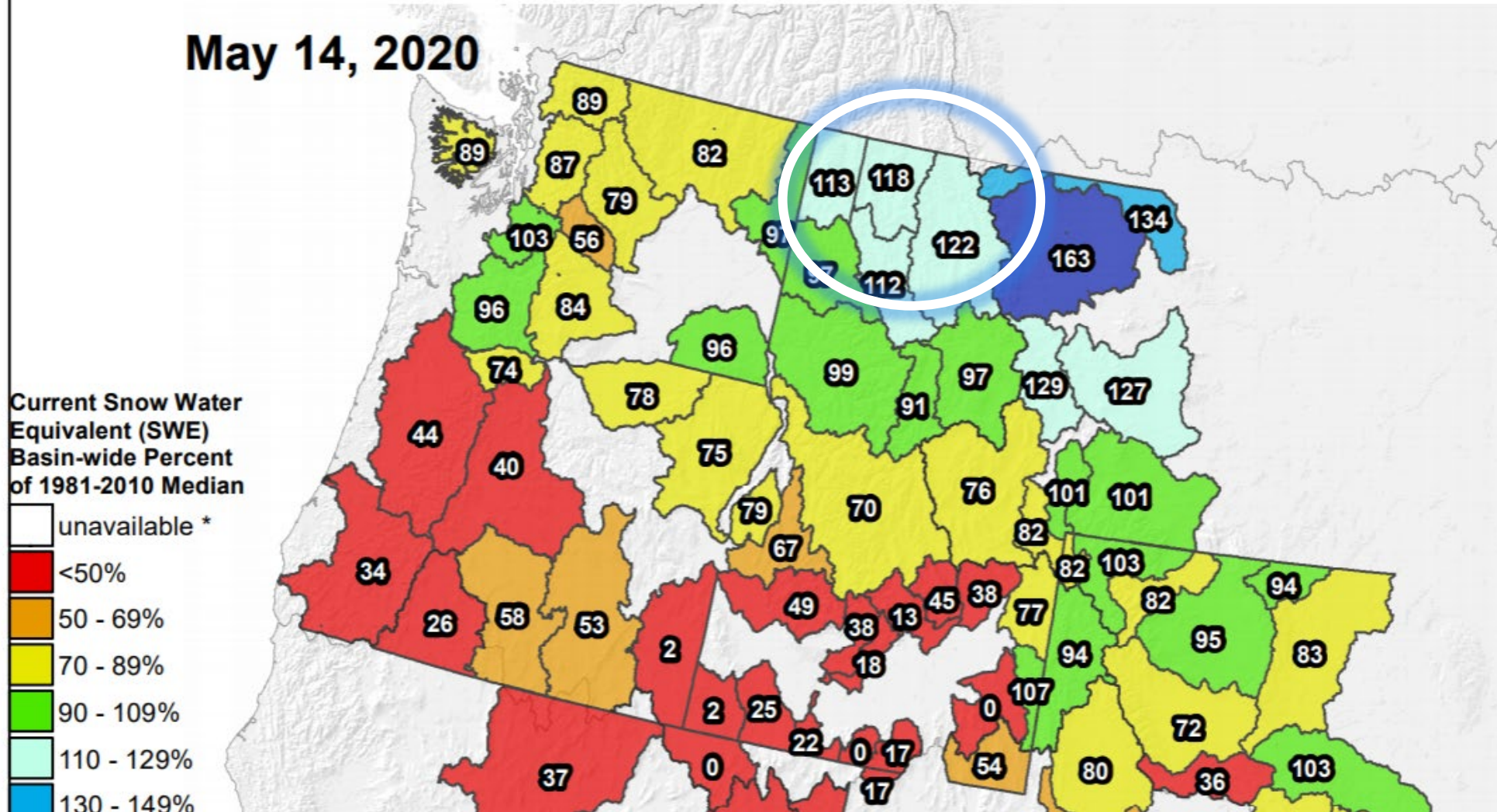
WestWide Drought Tracker - U Idaho/WRCC Data Source - PRISM (Prelim), created 16 APR 2019

WestWide Drought Tracker - U Idaho/WRCC Data Source - PRISM (Prelim), created 5 MAY 2020

Mountain Snow Water Equivalent

Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

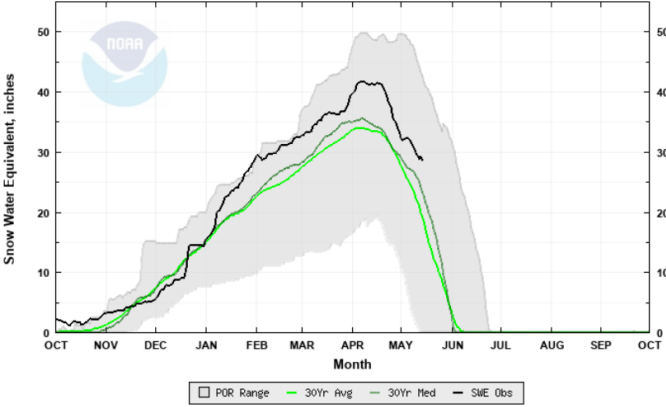
May 14, 2020



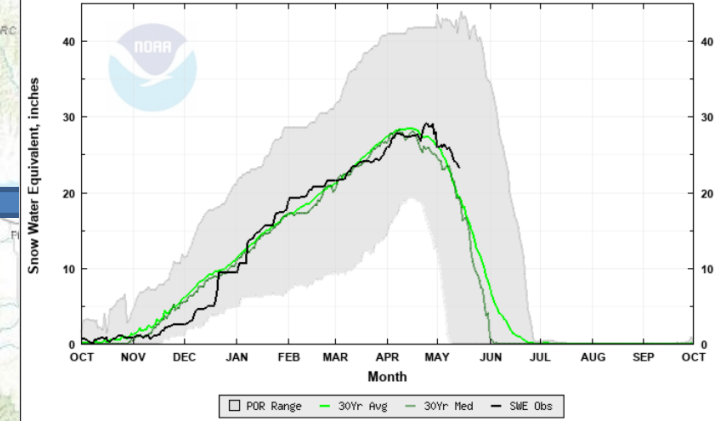


Mountain Snowpack - May 14

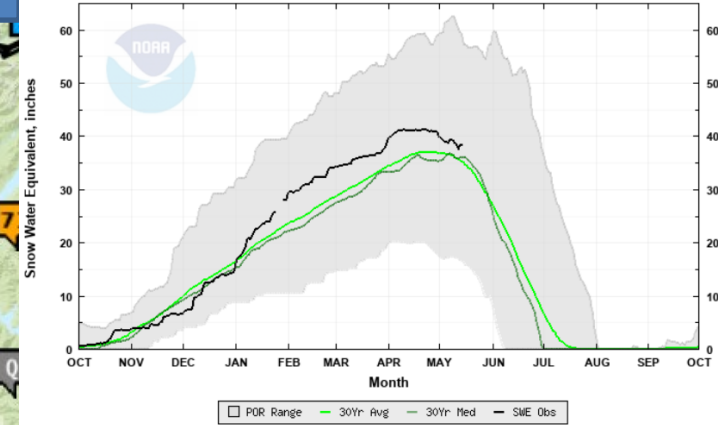
Snow Water Equivalent
HIDDEN LAKE SNOTEL
Water Year 2020 - Elevation 5040 feet



Snow Water Equivalent
MORRISSEY RIDGE
Water Year 2020 - Elevation 6100 feet

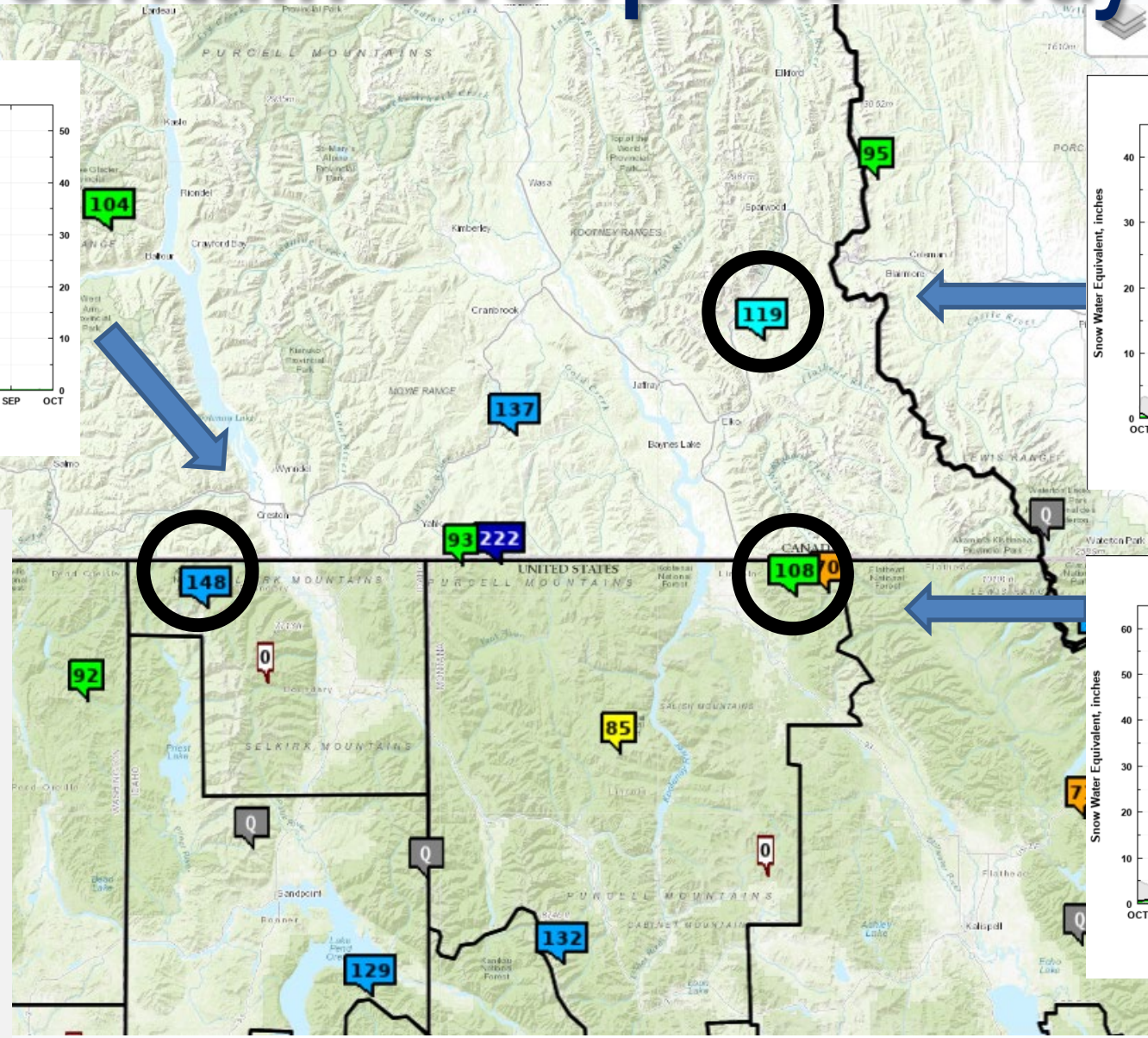


Snow Water Equivalent
STAHL PEAK SNOTEL
Water Year 2020 - Elevation 6030 feet



High mountain snow remains near to above normal, especially above 5000 ft.

Most locations are near peak and runoff has begun.

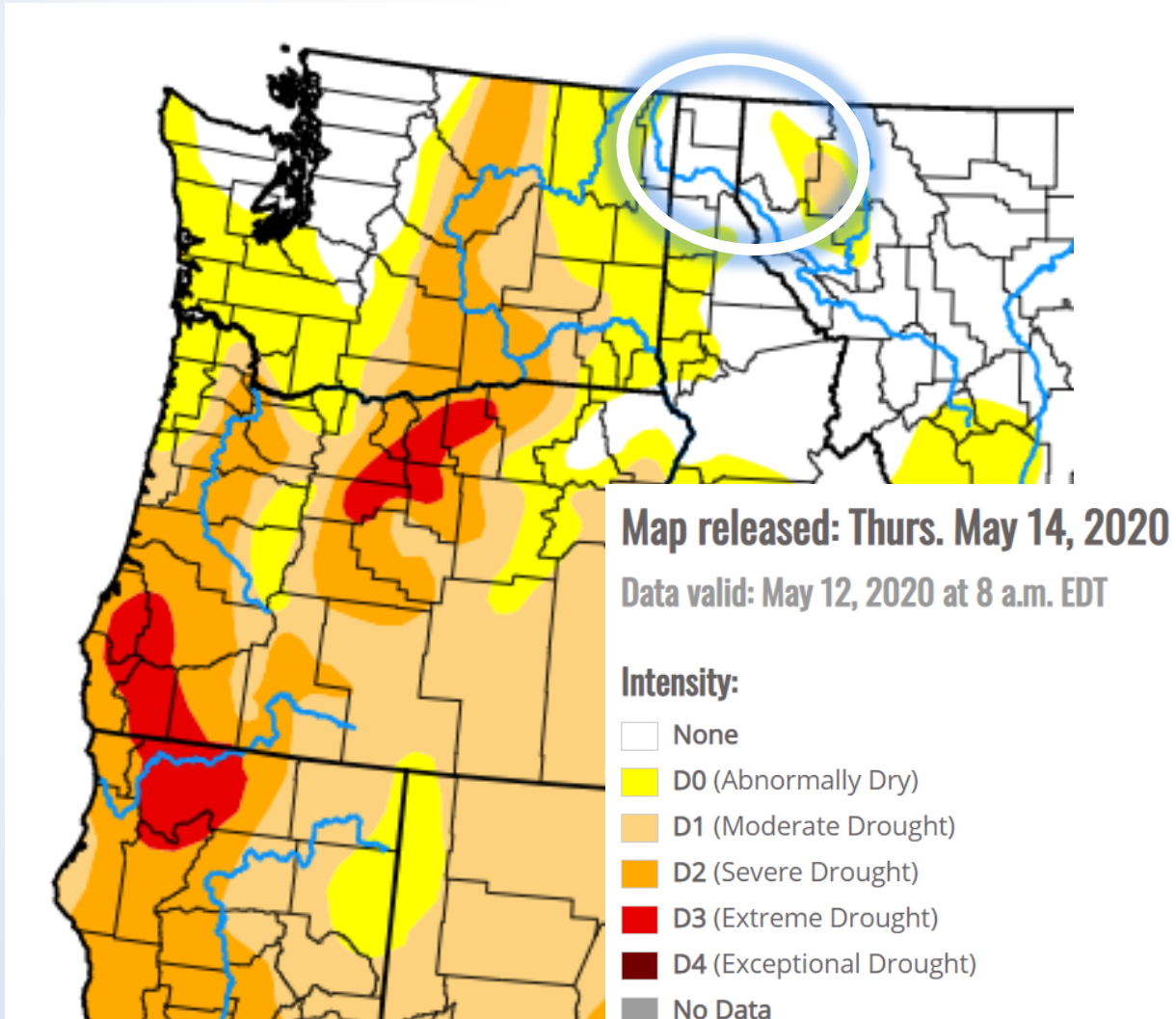




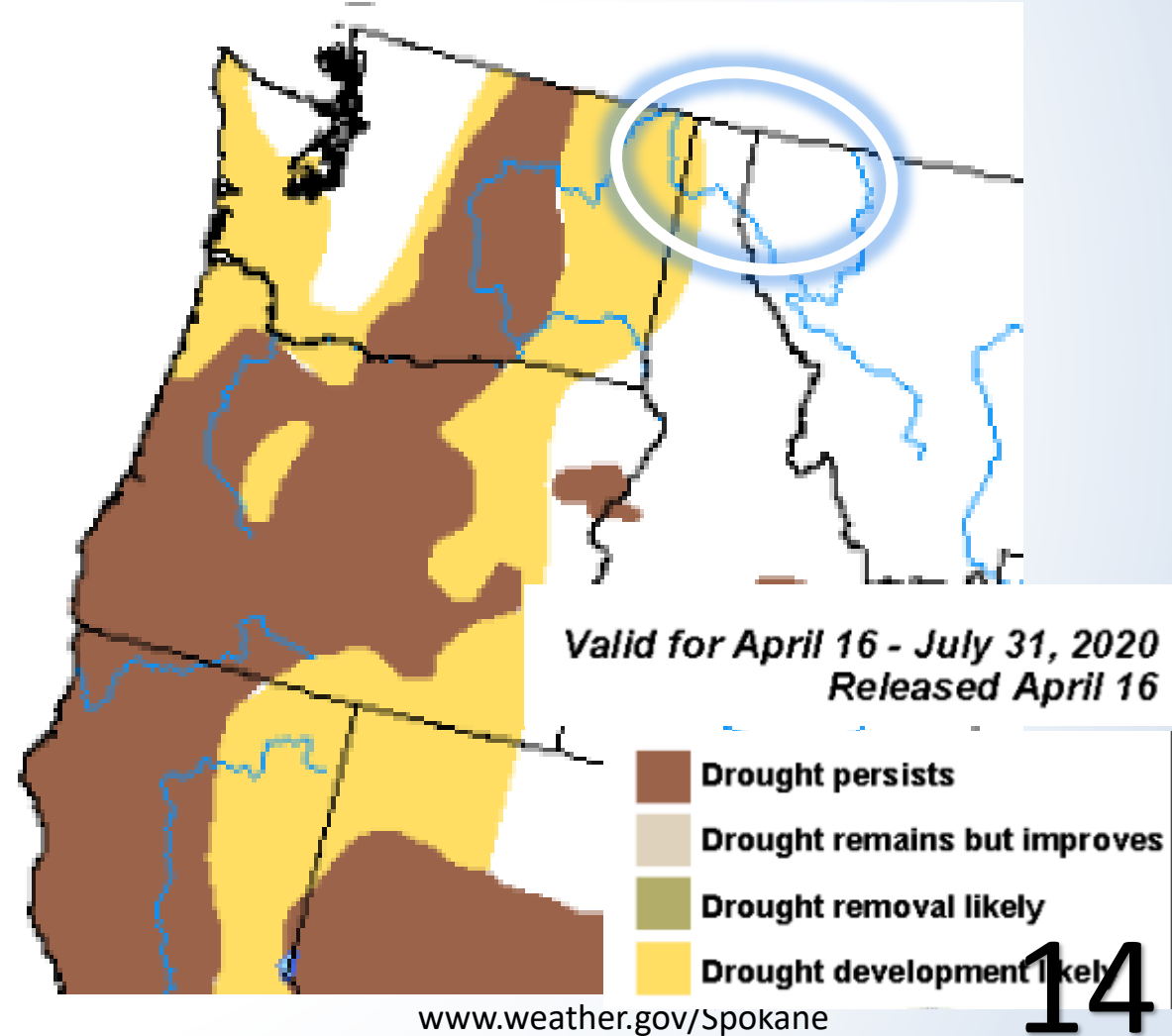
Drought Conditions



U.S. Drought Monitor

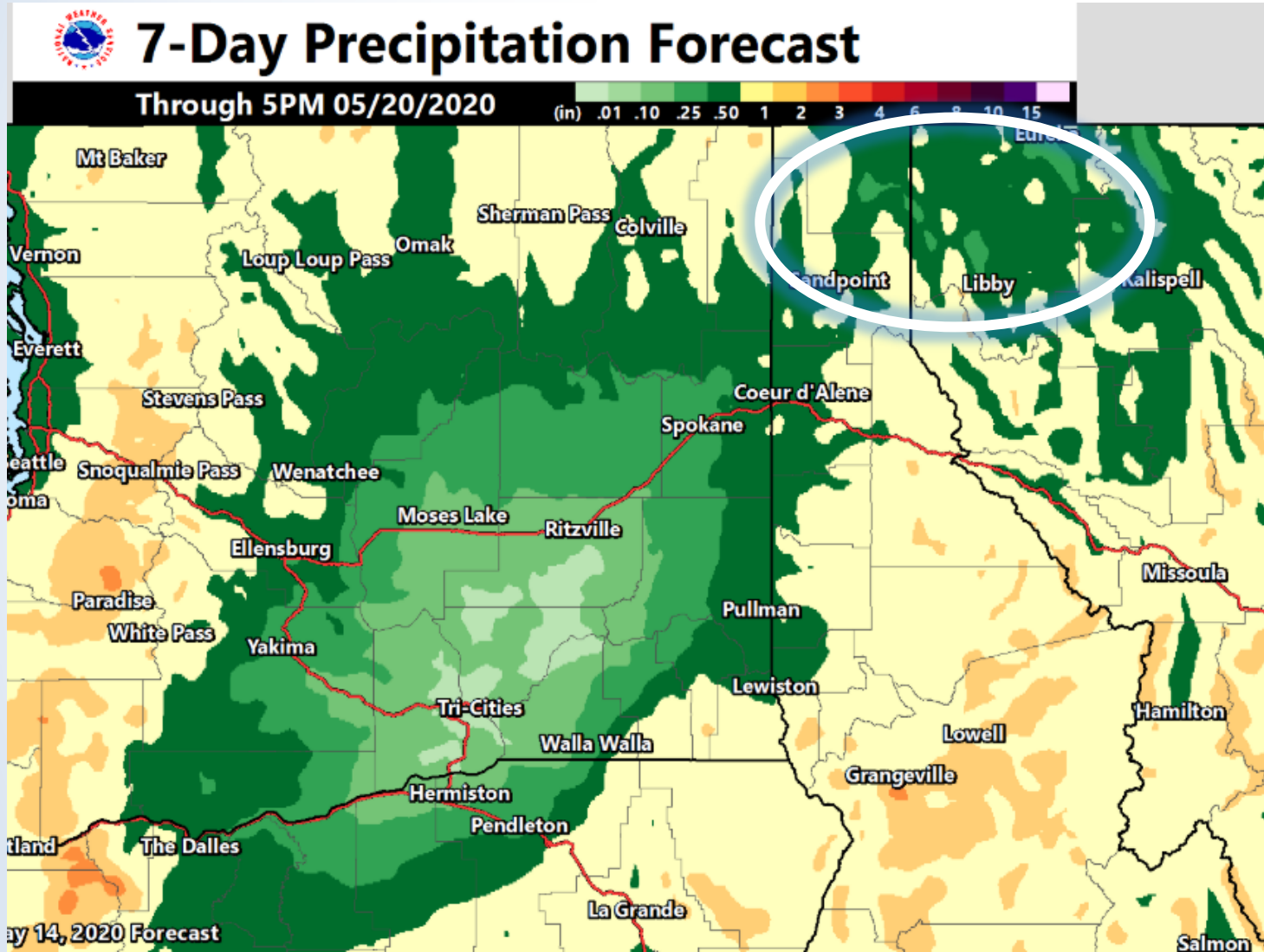


Seasonal Drought Outlook

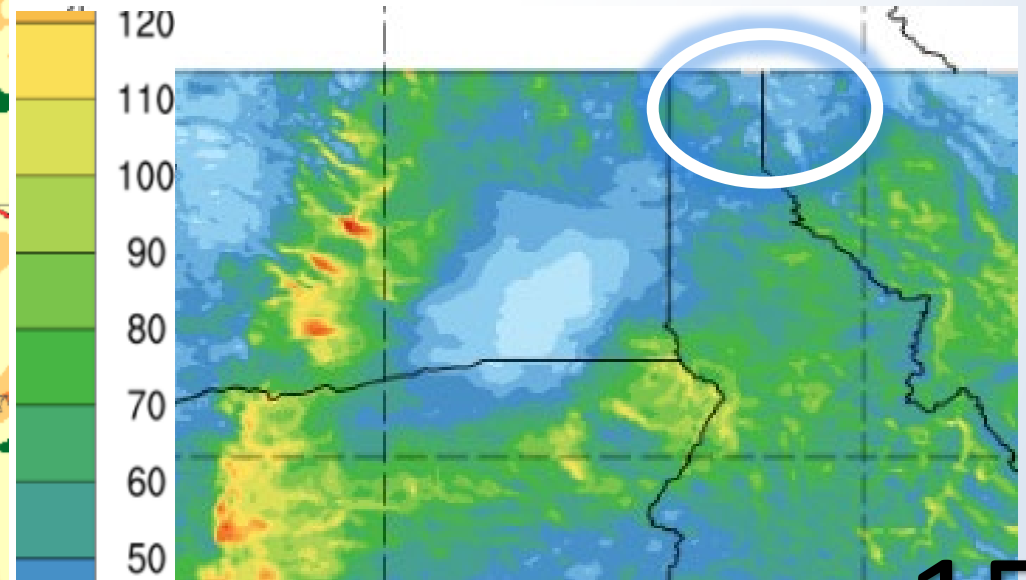




Wet weather Next Week



Percent of normal Precipitation for May



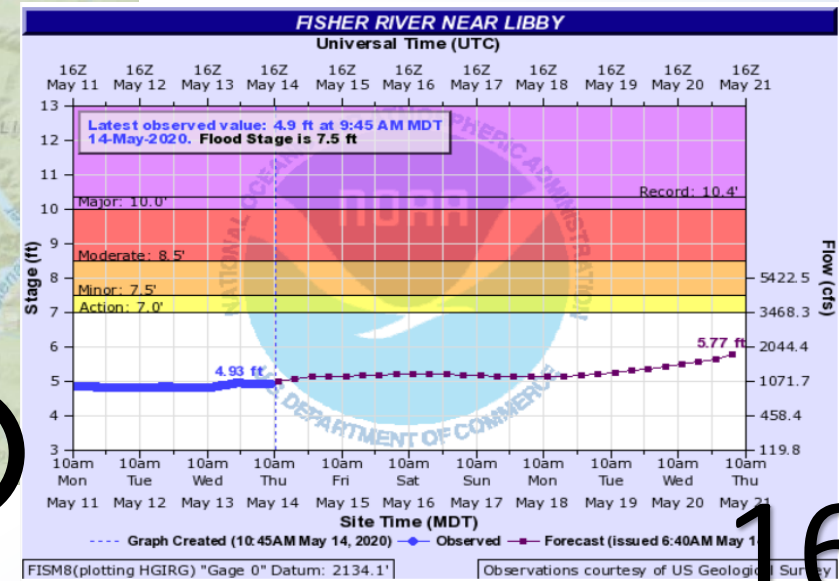
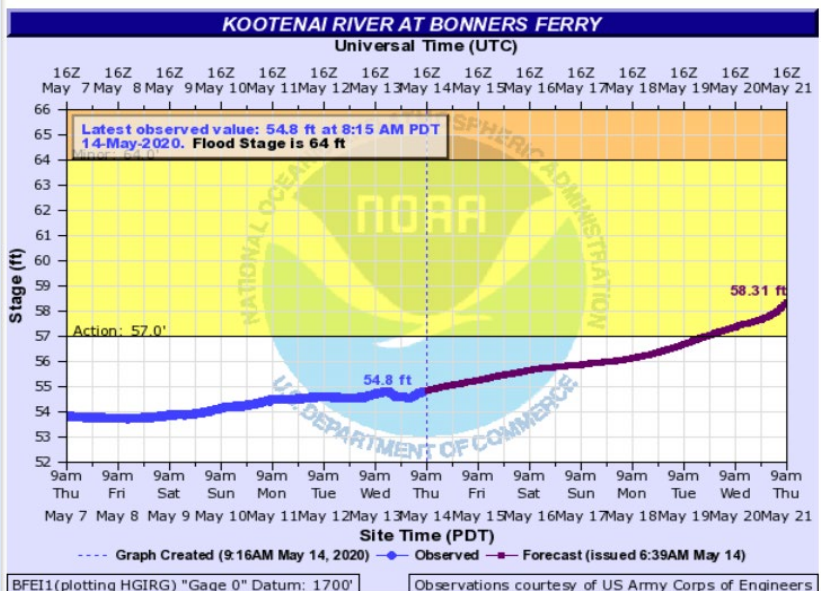
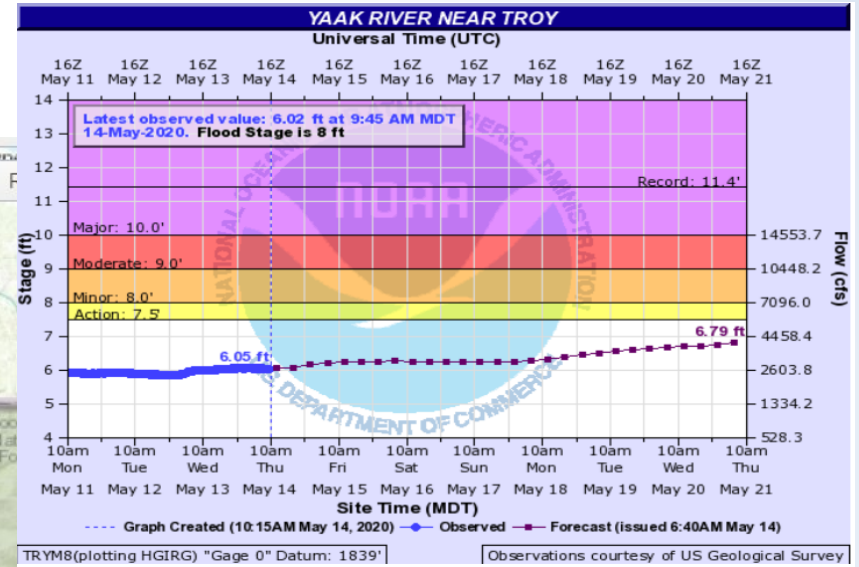
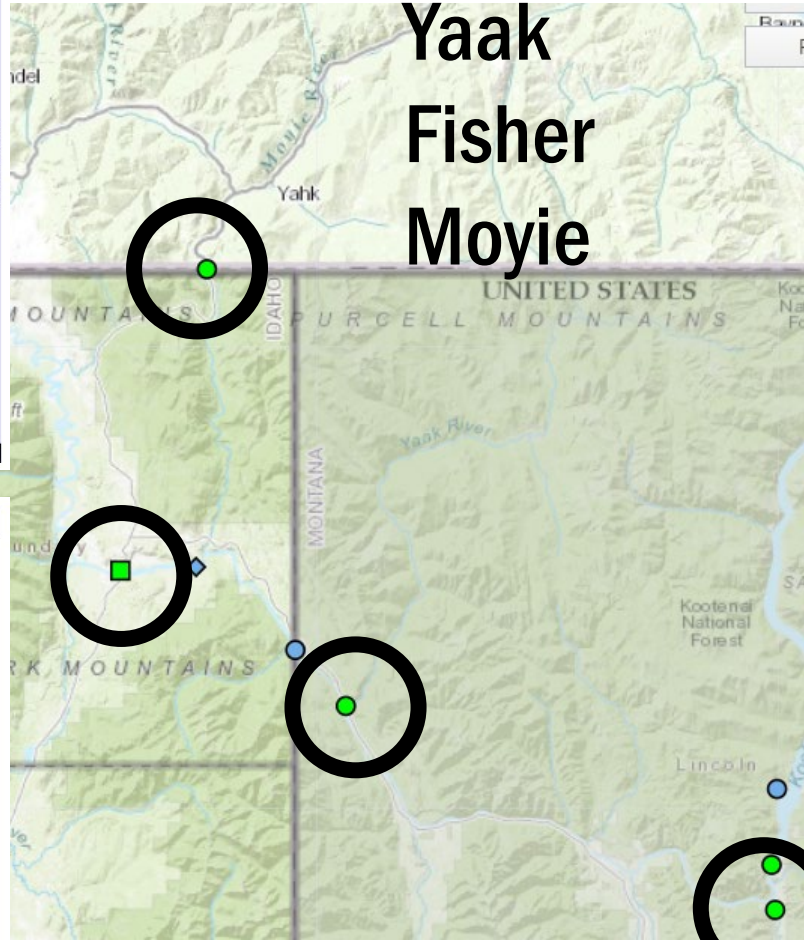
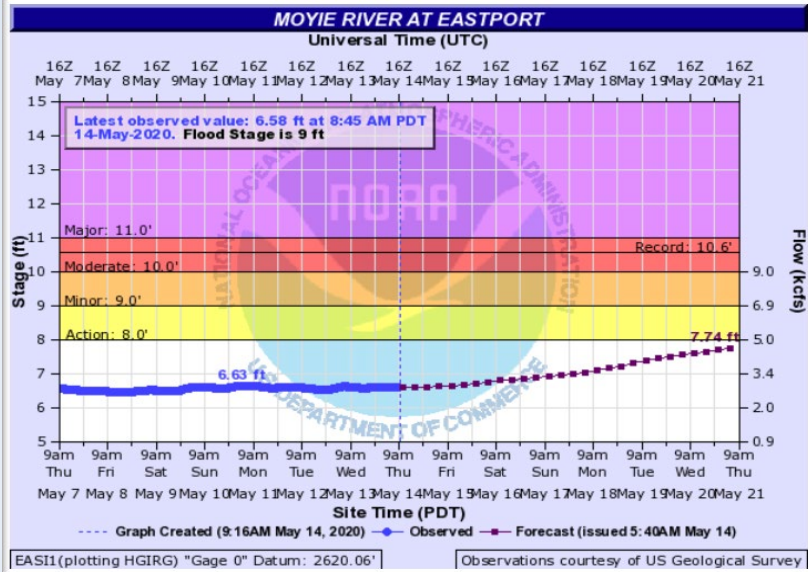


Rising Rivers next Week



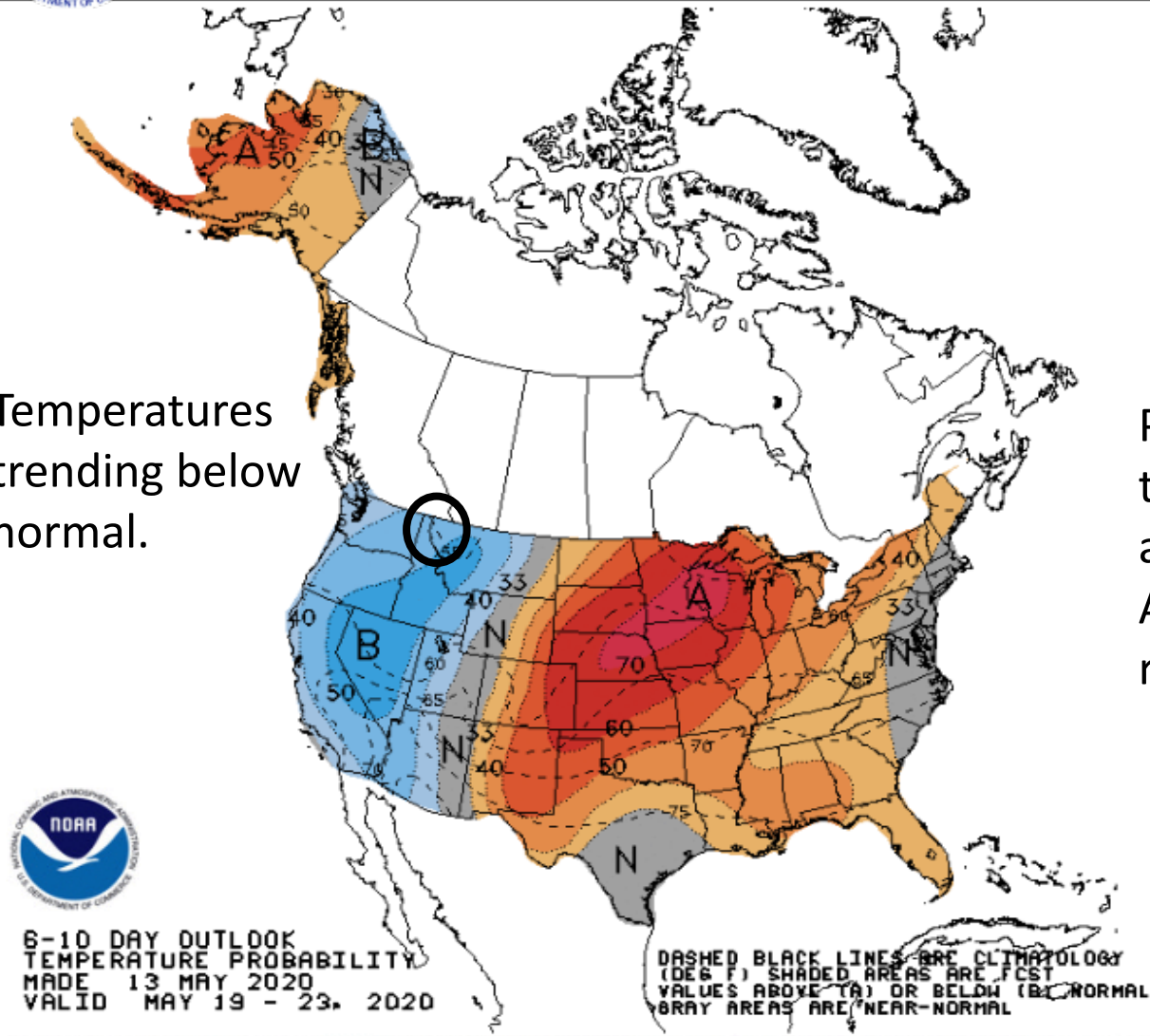
Kootenai

Yaak Fisher Moyie

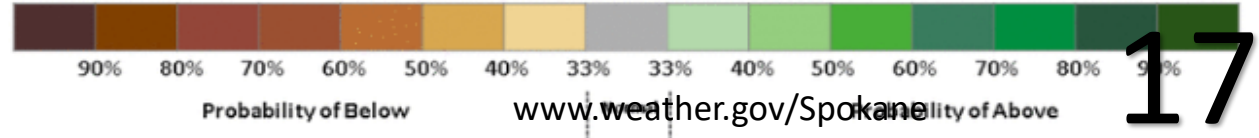
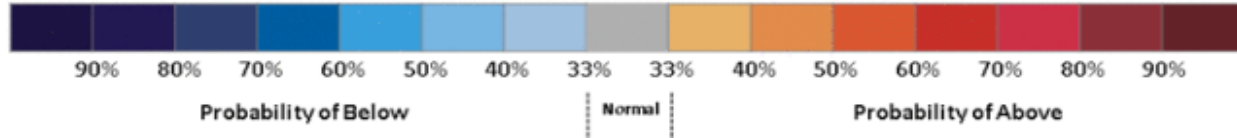
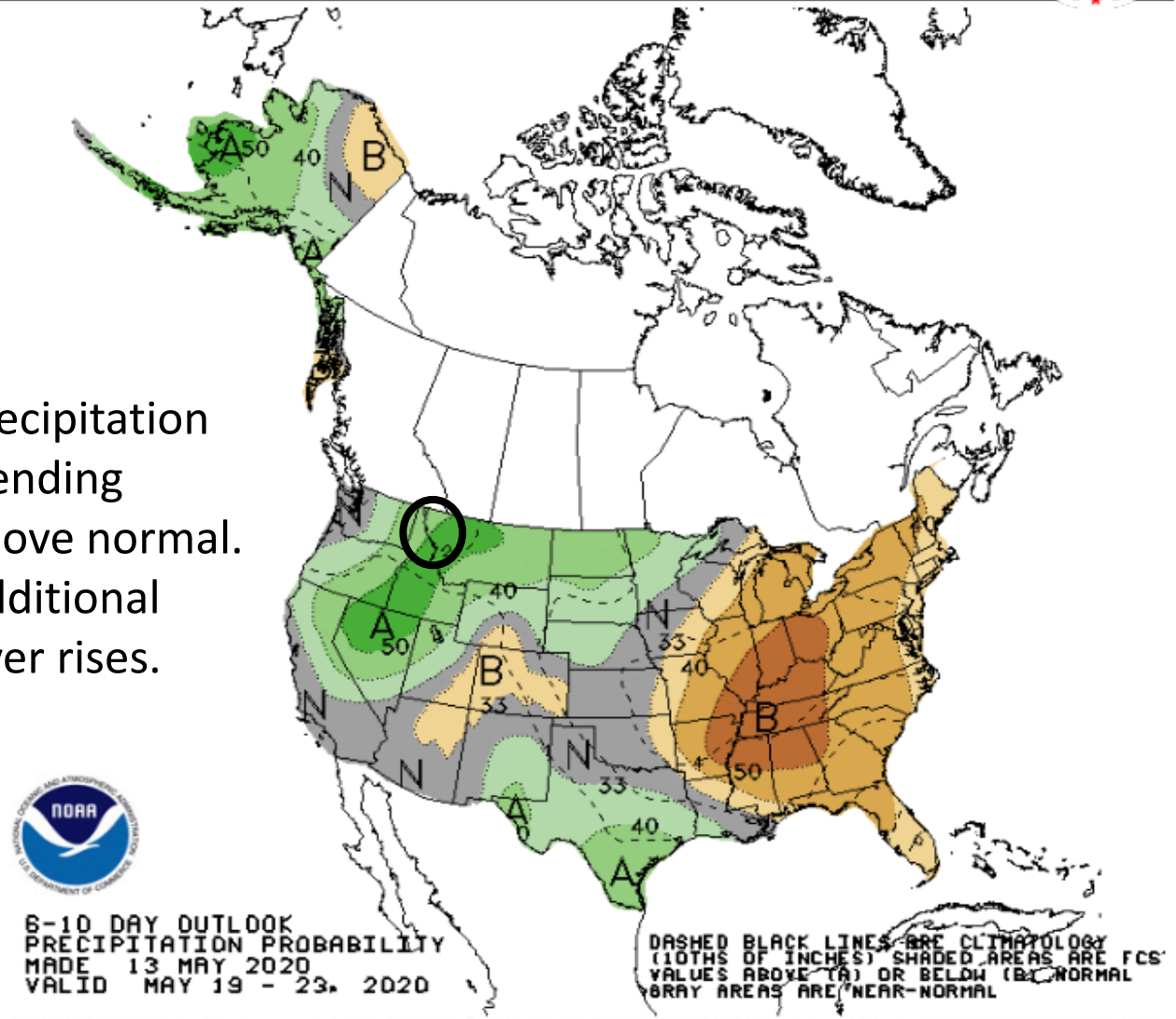


Mid May Outlook

Temperatures trending below normal.



Precipitation trending above normal. Additional river rises.

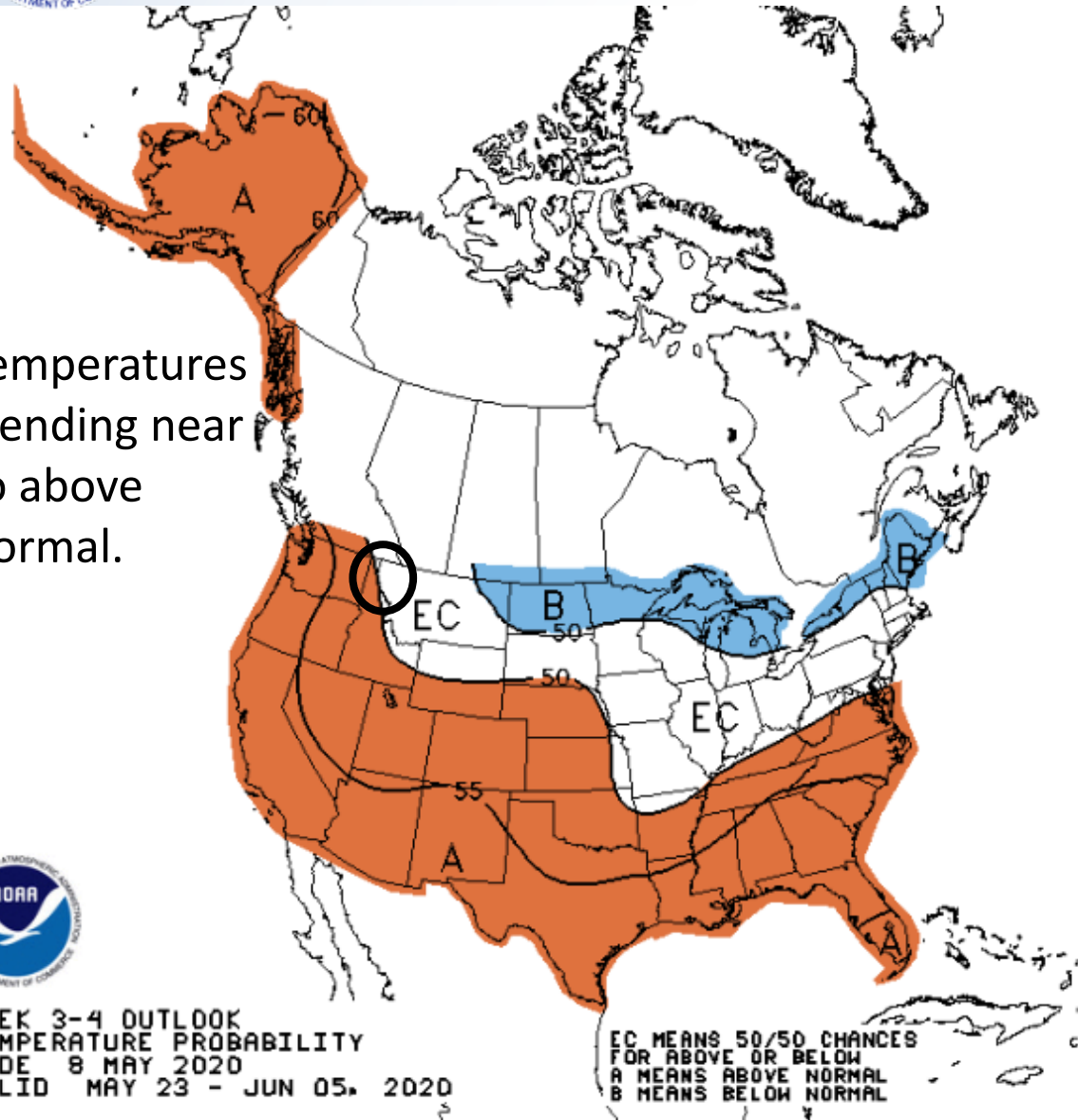




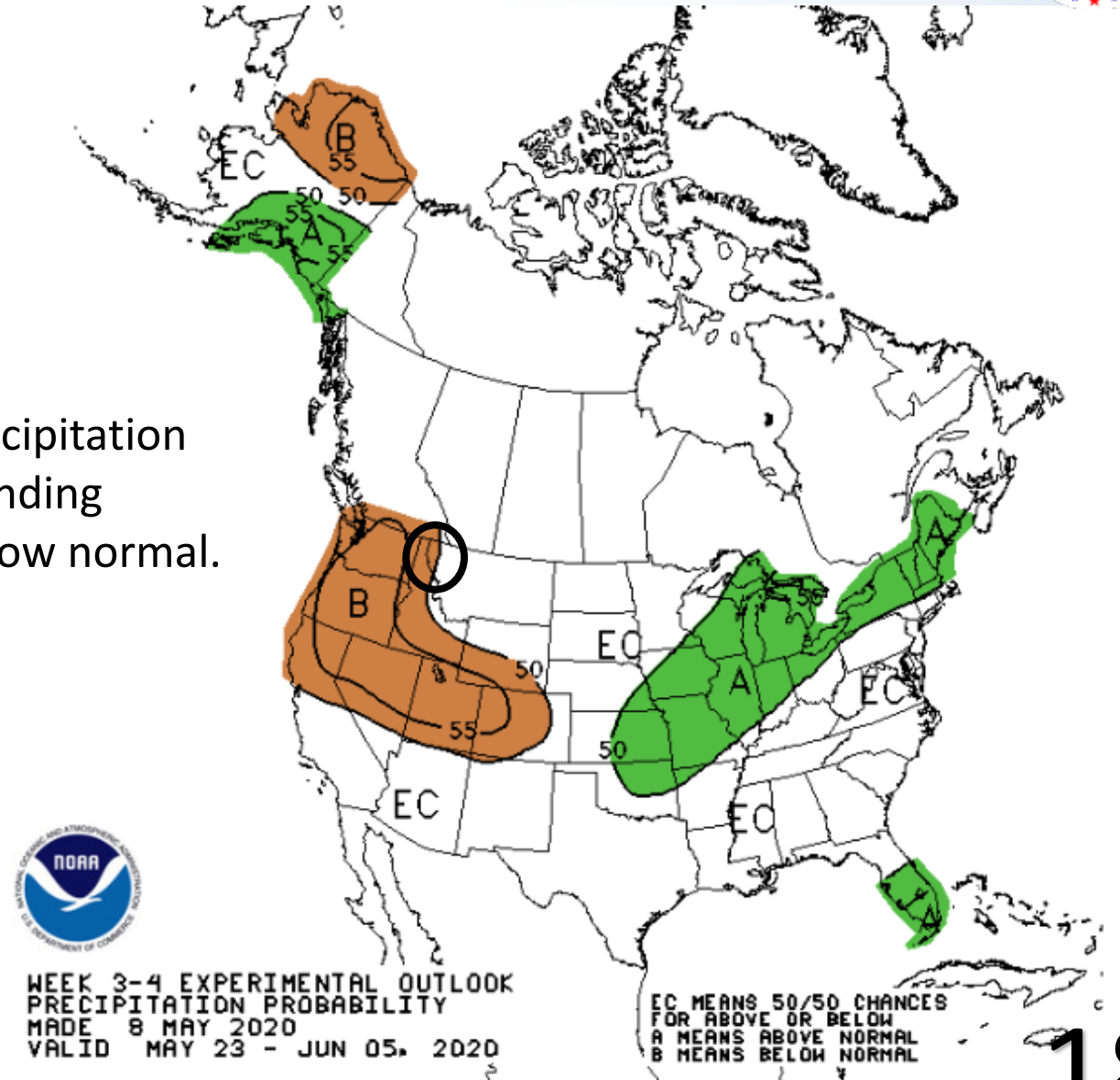
Late May - Early June Outlook



Temperatures trending near to above normal.



Precipitation trending below normal.



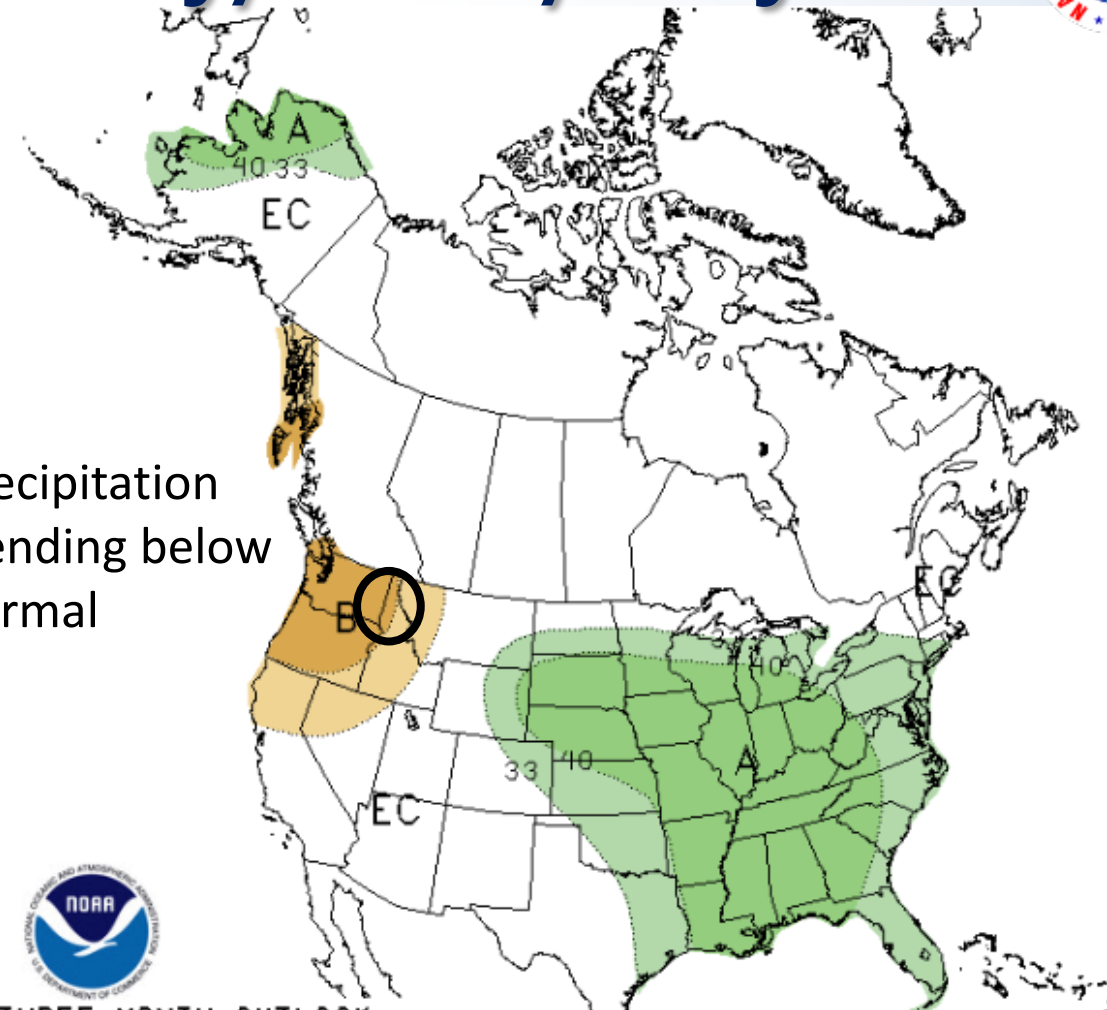
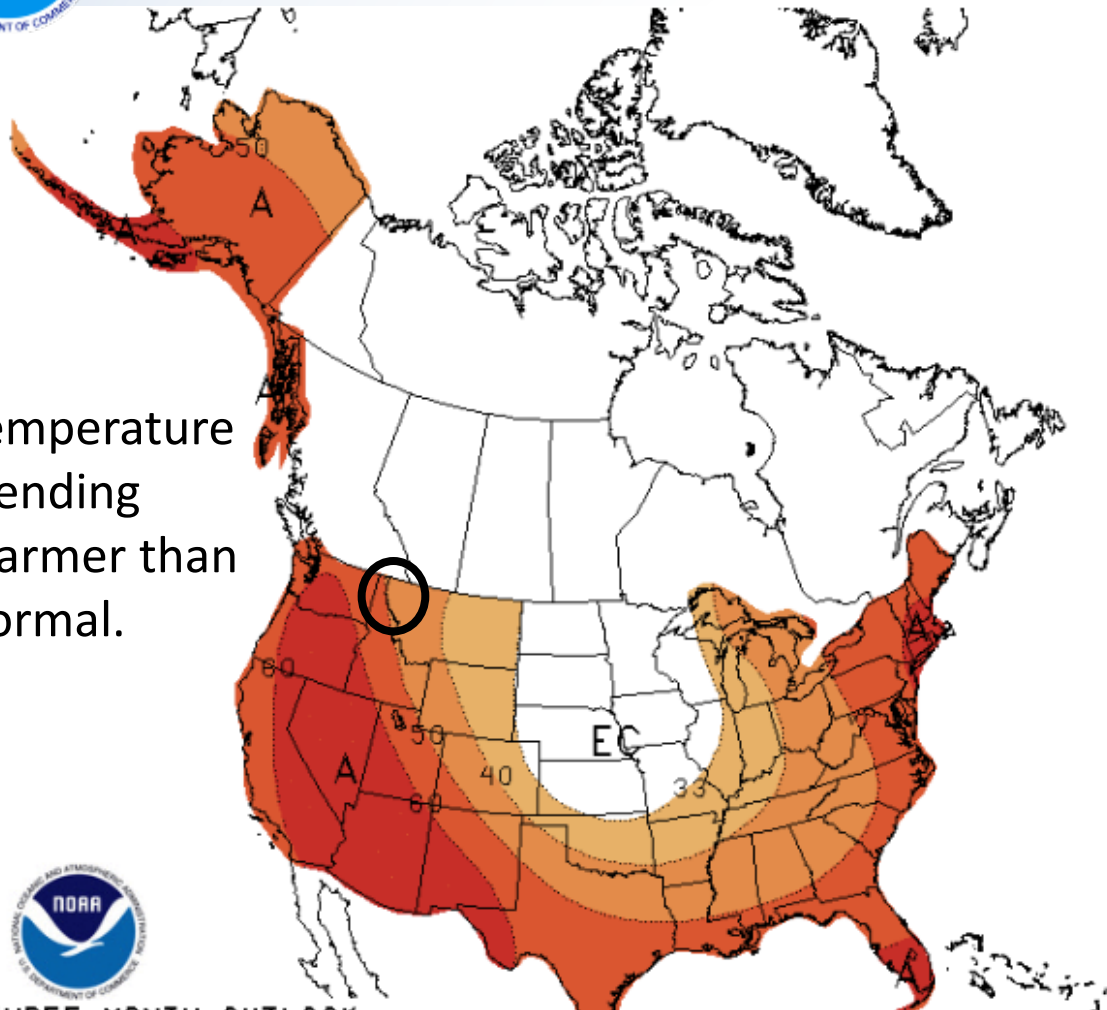


Seasonal Outlook – May/June/July



Temperature trending warmer than normal.

Precipitation trending below normal

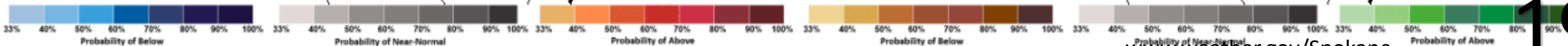


THREE-MONTH OUTLOOK
 TEMPERATURE PROBABILITY
 0.5 MONTH LEAD
 VALID MJJ 2020
 MADE 16 APR 2020

THREE-MONTH OUTLOOK
 PRECIPITATION PROBABILITY
 0.5 MONTH LEAD
 VALID MJJ 2020
 MADE 16 APR 2020

EC MEANS EQUAL CHANCES FOR A, N, B, C
 A MEANS ABOVE
 N MEANS NORMAL
 B MEANS BELOW

EC MEANS EQUAL CHANCES FOR A, N, B, C
 A MEANS ABOVE
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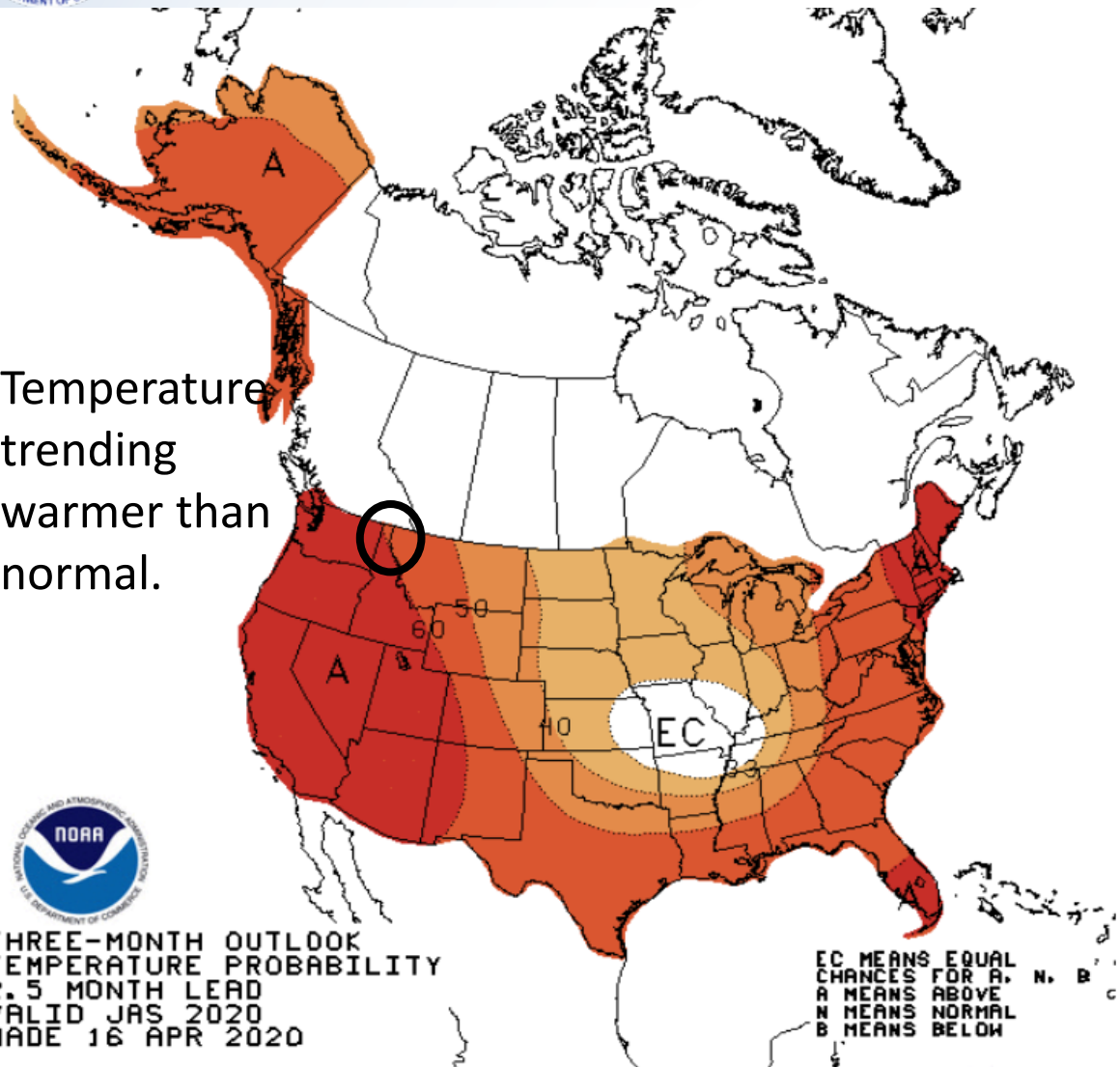




Seasonal Outlook – July/August/Sept



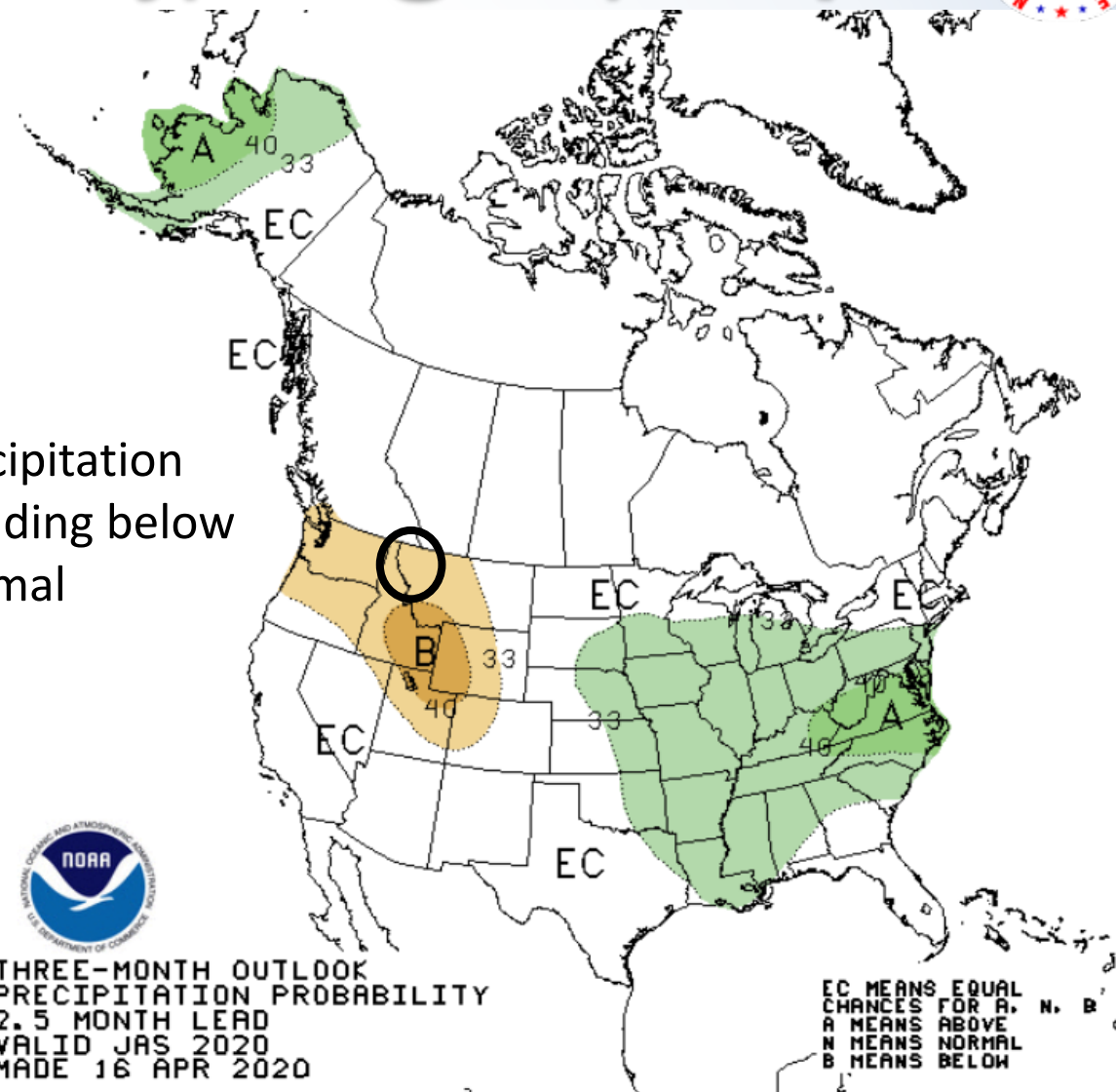
Temperature trending warmer than normal.



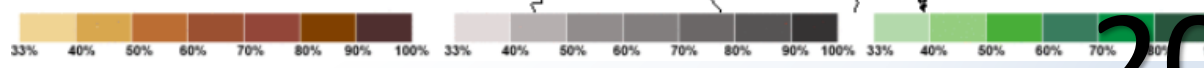
THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
2.5 MONTH LEAD
VALID JAS 2020
MADE 16 APR 2020



Precipitation trending below normal



THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
2.5 MONTH LEAD
VALID JAS 2020
MADE 16 APR 2020



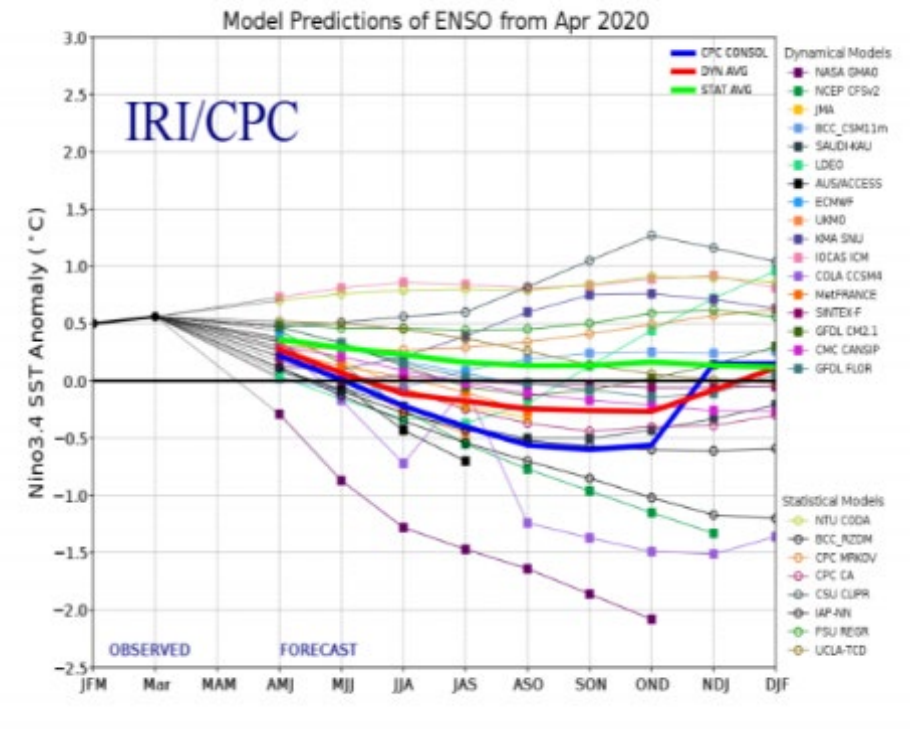
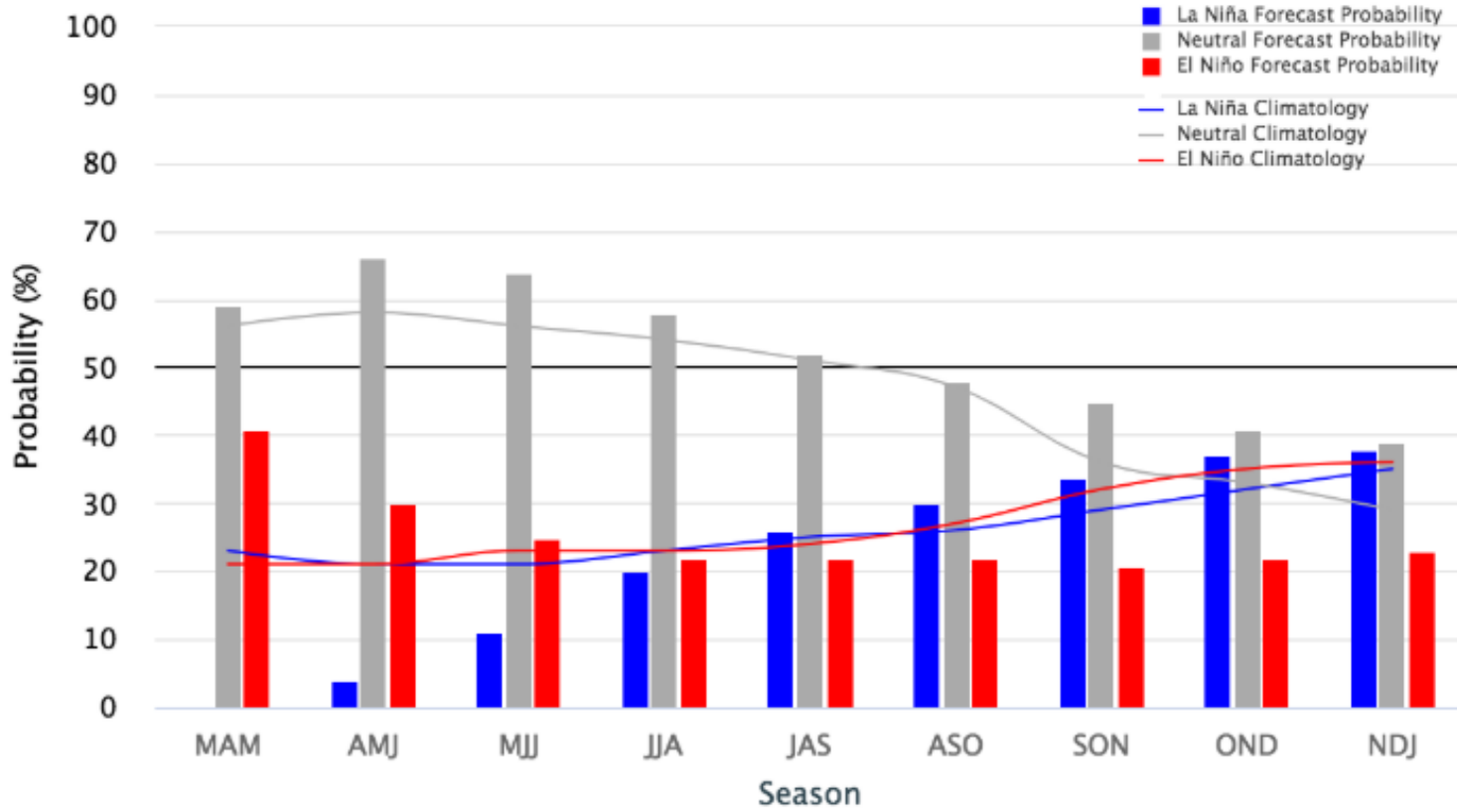


ENSO Long Range Forecast



Early-April 2020 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C



ENSO Neutral conditions persist and look to continue through the summer, with confidence decreasing in late 2020.



What it means for late Spring & Summer

- Temperatures trending near to above normal as summer approaches.
- Plenty of high elevation snow in north ID and northwest MT will be melting off.
- Above normal precipitation & snow melt over the next couple of weeks
 - River rises anticipated to near bank-full
 - Potential for minor flooding in some basins
 - Chance for rises on small streams and creeks
 - Mainly due to any prolonged rain events or rapid warm-ups
- Summer outlook trending warmer and drier than normal.
- Water supply looks normal.



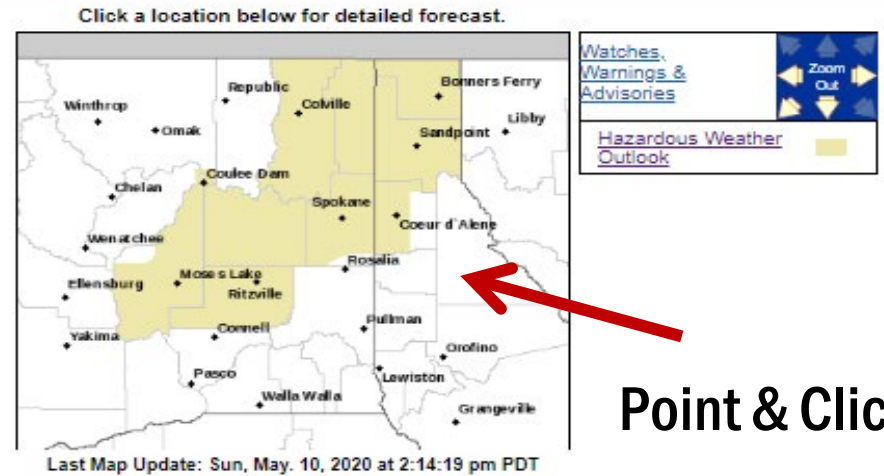
NWS Spokane Home Page



Weather
Observations

NWS Issues:

- Flood Statements – bank-full
- Flood Advisories* - minor flooding
- Flood Watches* - approaching FS
- Flood Warnings* - Above FS



Point & Click Forecast

st Discussion
Forecasts

Text Product Selector (Selected product opens in current window)
Latest Text Products Issued by OTX

*highlighted on map

| | | | | | |
|-------------------------|---------------------|---------------------|------------------------|-----------------------|---------------------|
| Social Media | Forecast Discussion | Local Radar | Satellite Images | Weather Maps | Graphical Forecasts |
| Weather Table Forecasts | Climate Graphics | Rivers and Lakes | Observations & Hazards | Fire Weather | Aviation Weather |
| Weekly Briefing | Hourly Forecasts | Drought Information | Climate | Submit a Storm Report | View Storm Reports |

Spokane



River Forecasts



Local forecast by "City, ST" or ZIP code

Go

Location Help

MY FORECAST
Spokane WA



Partly Cloudy

70°F

21°C

Got Detailed info

This Afternoon



Sunny
High: 74°F

Tonight



Partly Cloudy
Low: 48°F

change location

News Headlines

- Rivers on the Rise with Spring Snowmelt and Mild Temperatures
- NFDRS forecasts have expanded to 7-day!

NWS Forecast Office Spokane, WA

Weather.gov > Spokane, WA

Current Hazards Current Conditions Radar Forecasts **Rivers and Lakes** Climate and Past Weather Local

Winds & Fire Danger

Rough Lakes Thru MON

Spring Rising Rivers

Active We

Mild Spring Weather = Mtn Snowmelt



NATIONAL WEATHER SERVICE SPOKANE, WA

ISSUED: 11:44 AM Saturday

Show Caption

National Weather Service
Advanced Hydrologic Prediction Service

Home News Organization

National Observations WFO Observations

Weather Forecast Office Spokane, WA Northwest River Forecast Center

River Observations River Forecasts Long-Range Flood Risk Precipitation Download

Auto Refresh: OFF [Refresh] [Print this map] [Permalink] [Bookmark] [Social Media]

244 total gauges 0 gauges in flood

Map with gauges and flood risk indicators. Legend includes: Forecast available, Probability and forecasts available, Observations only available, Major Flooding, Moderate Flooding, Minor Flooding, Near Flood Stage, No Flooding, Observations Are Not Current, Out of Service, Flood Category Not Defined, At or Below Low Water Threshold.

Local weather forecast by "City, ST" [City, ST] [Go]

Adjacent Areas: [Zoom in/out]

Local Conditions: National Conditions, Satellite, Climate, Observed Precip

Local Conditions: Warnings, Weather, Forecast, Radar

AHPs Documentation: User Guide, User Brochure

What is AHPs?: Facts, Our Partners

Feedback/Questions: Provide Feedback, Ask Questions

WHEN FLOODED TURN AROUND DON'T DROWN

FLOODSMART.GOV USA.GOV USGS

Map Overlays: County Boundaries, WFO Boundary

Reset Overlays

Last map update: 05/10/2020 at 02:31:15 pm PDT / 05/10/2020 at 21:31:15 UTC

What is UTC time? Map Help Disclaimer



Social media



Facebook page for US National Weather Service Spokane Washington (@NWSSpokane). The page features a profile picture with the NWS logo and a cover photo of a mountain landscape. Navigation options include Home, Posts, About, Photos, Reviews, Videos, Events, Services, Shop, Notes, Groups, Offers, Jobs, and Community. A 'Promote' button and 'Visit Ad Center' link are also visible.

Twitter profile for NWS Spokane (@NWSSpokane). The profile shows 25K tweets, 237 following, and 21.8K followers. The bio identifies it as the official Twitter account for the National Weather Service Spokane WA, with a link to weather.gov/twitter and a location in Spokane WA. The account was joined in January 2009.

YouTube channel for nwsspokane with 548 subscribers. The channel features a banner image of a cloudy sky and navigation tabs for Home, Videos, Playlists, Channels, and Discussion. A 'SUBSCRIBE' button is prominently displayed. Below the channel name, there are thumbnails for various weather-related videos, including 'Line of Thunderstorms - Blowing Dust Possible' and 'Precipitation Last 30 Days'.

Follow, Like, and Subscribe for the latest information.



NWSSpokane



@NWSSpokane



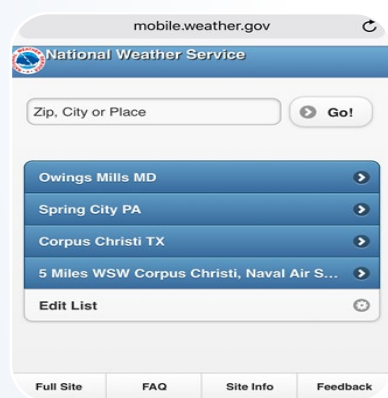
NWS Spokane



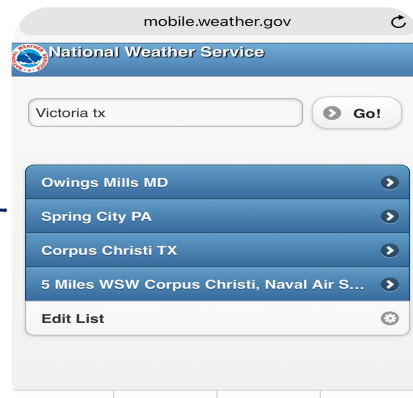
Stay Informed On Your Phone

Weather AND Water updates

Mobile.weather.gov



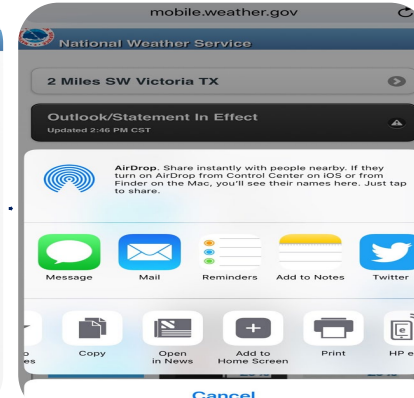
Mobile.Weather.gov
Smart Phone Enabled



Type in desired location
Hit 'Go'



Up pops current
conditions, hazards, and
forecast



Can add this website to
your 'Home' screen for
quick access



Home Screen



Questions?

Robin Fox
National Weather Service Spokane
robin.fox@noaa.gov
509.244.0110

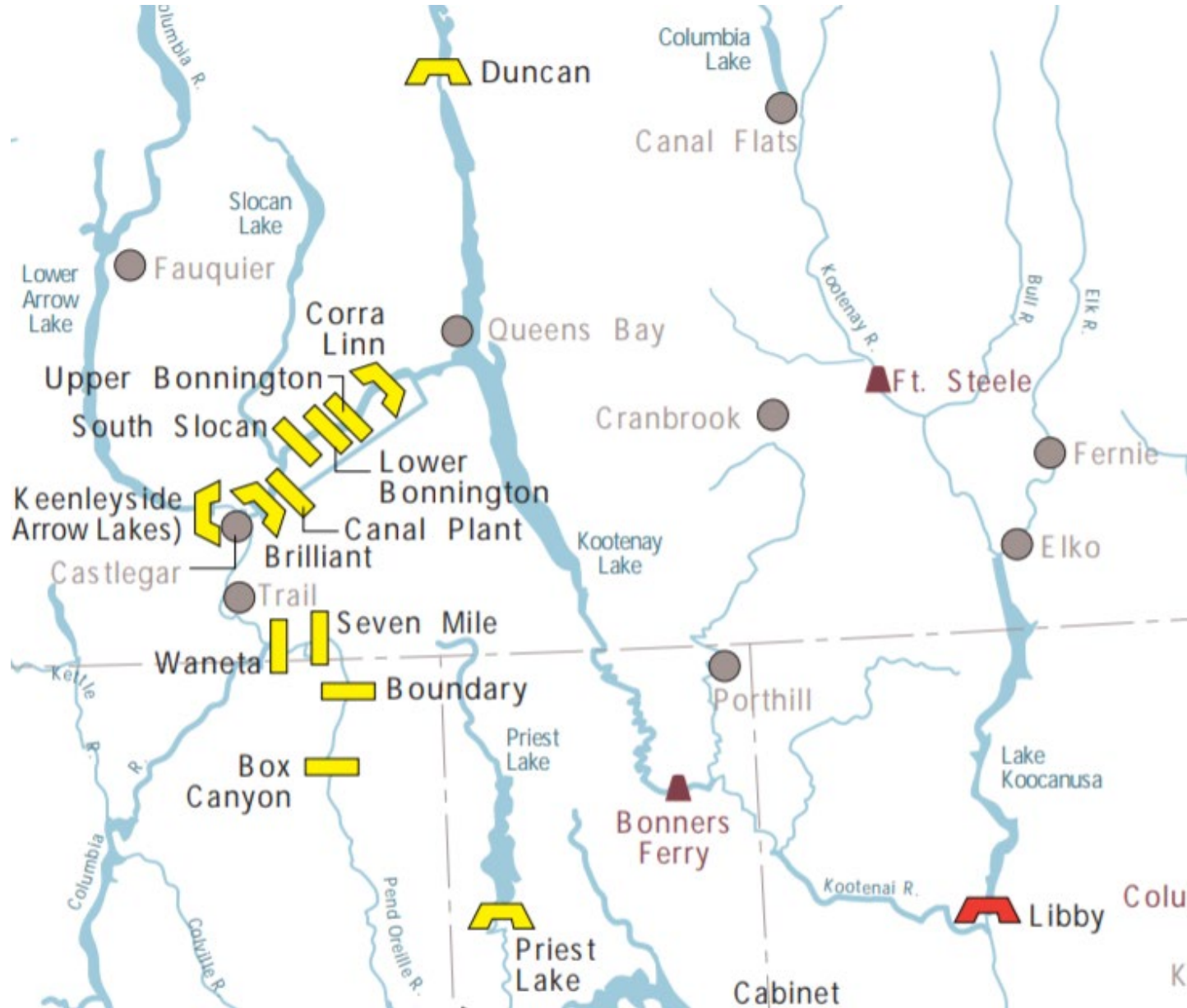


LIBBY DAM WATER MANAGEMENT

Jon Moen
Senior Water Manager
Seattle District, Army Corps of Engineers

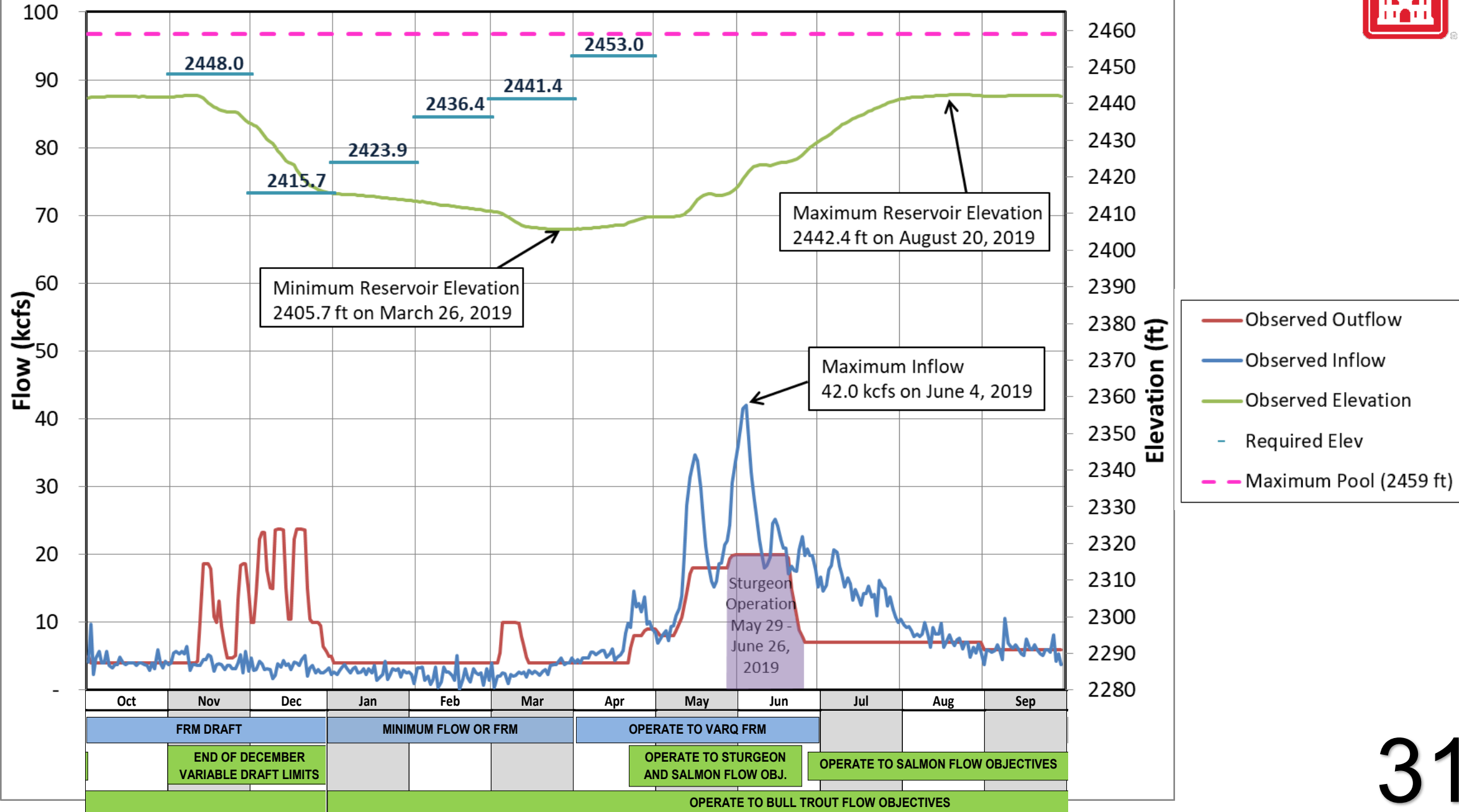


GENERAL BACKGROUND



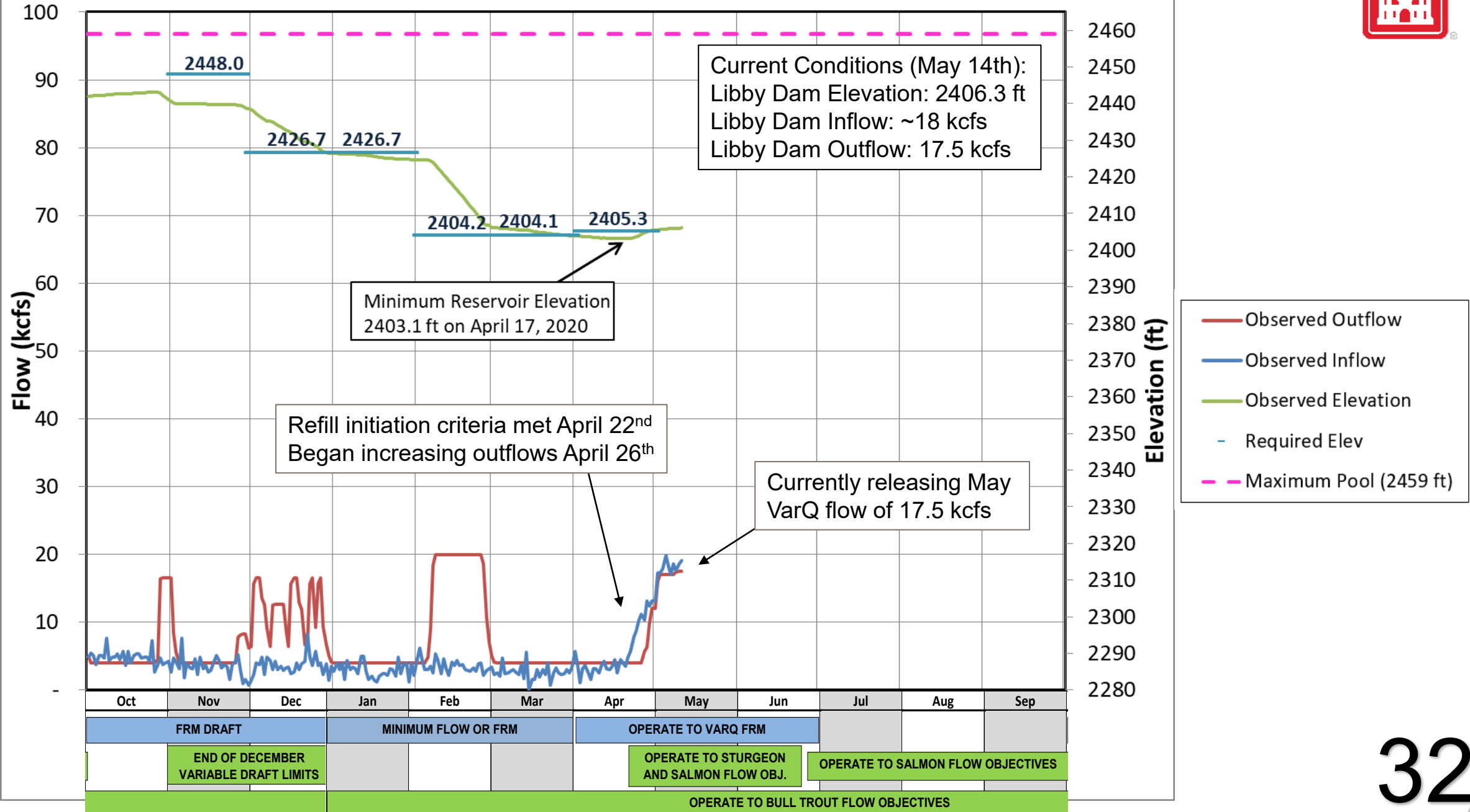


Koocanusa Reservoir Operations Water Year 2019



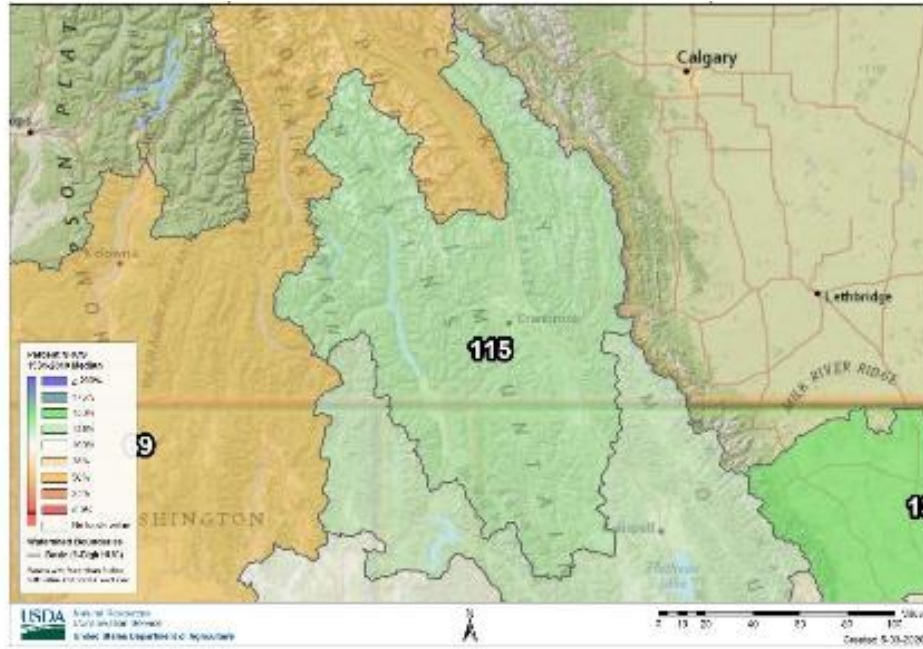


Koocanusa Reservoir Operations Water Year 2020

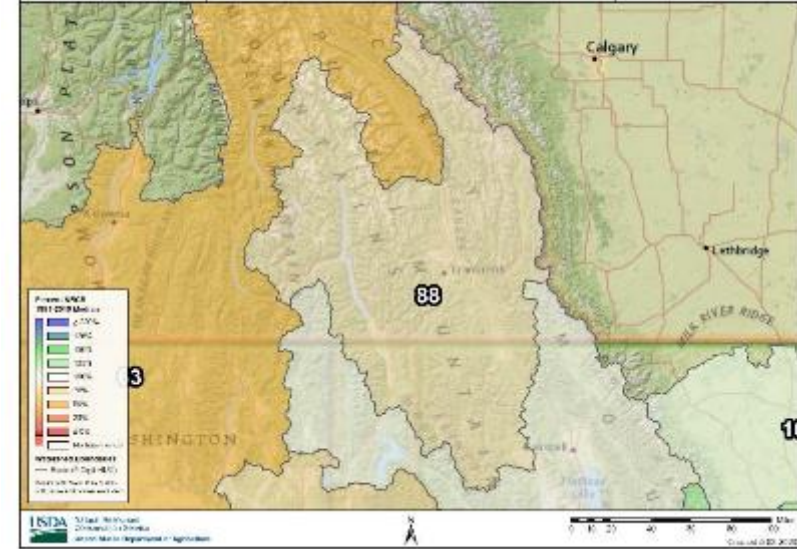




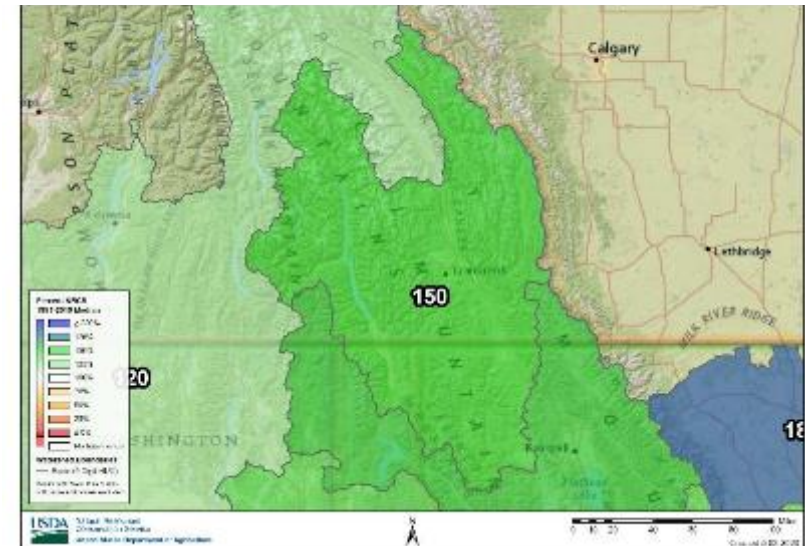
May 1 2020 Snow – Percent of Median



May 1 2019 Snow – For comparison



May 1 2018 Snow – For comparison



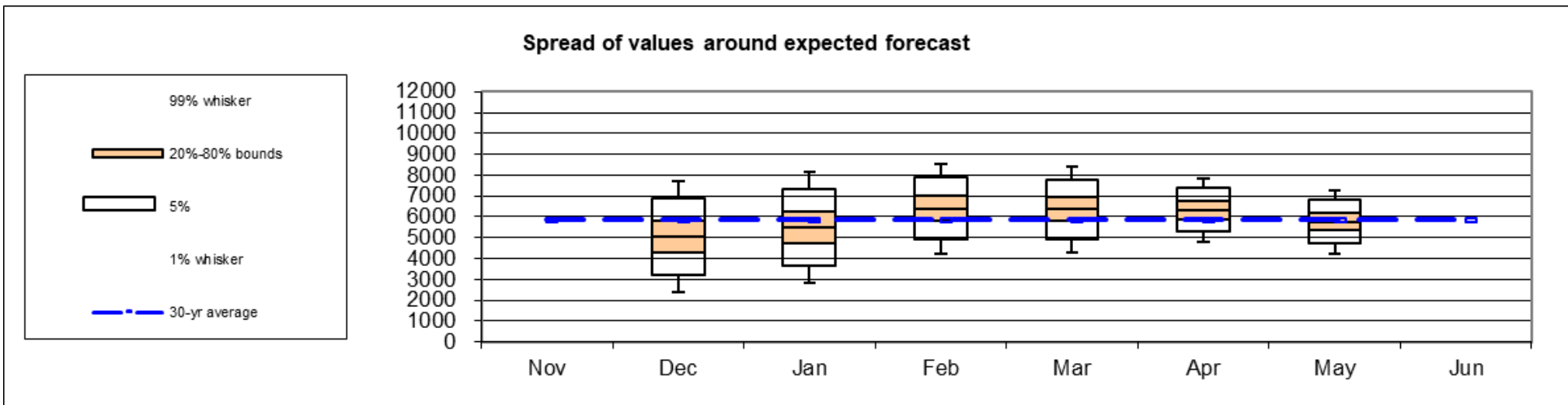
- May 1 snowpack was slightly above average this year (115% of average).
- More snow than May 1 2019, but much less than May 1 2018.
- In addition to snowpack, other factors including spring weather will affect runoff volume and timing.



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
 - Sturgeon pulse planned to begin May 21
 - Bull trout minimum flows following the Sturgeon Pulse through Aug 31 is 7 kcfs
 - Current VarQ Flow 17,500 cfs
- Libby Water Supply Forecast Trend:
- 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

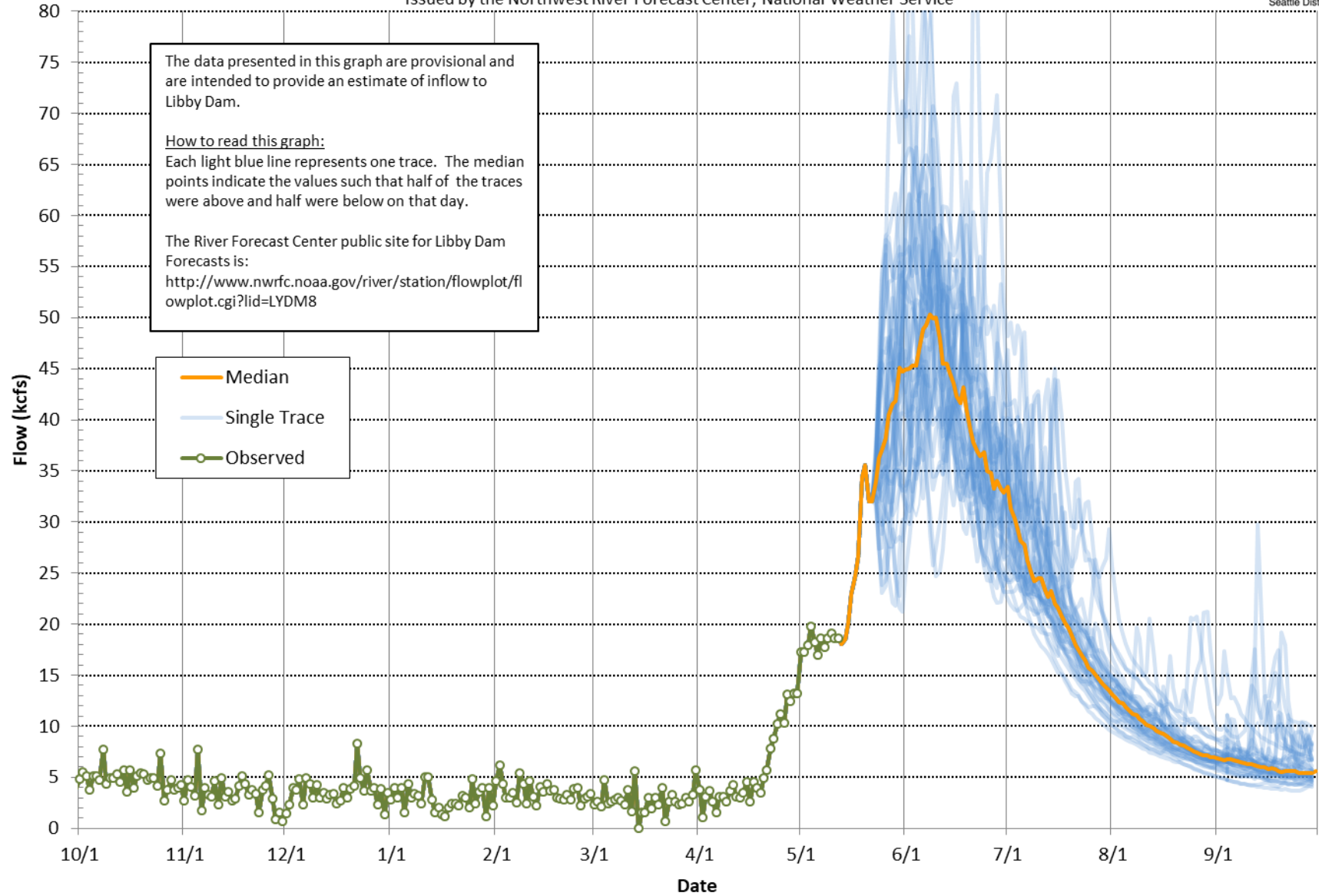




Modeled using current ESP traces as of 05/13/20

Libby Dam Inflow - Probability Chart

Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service

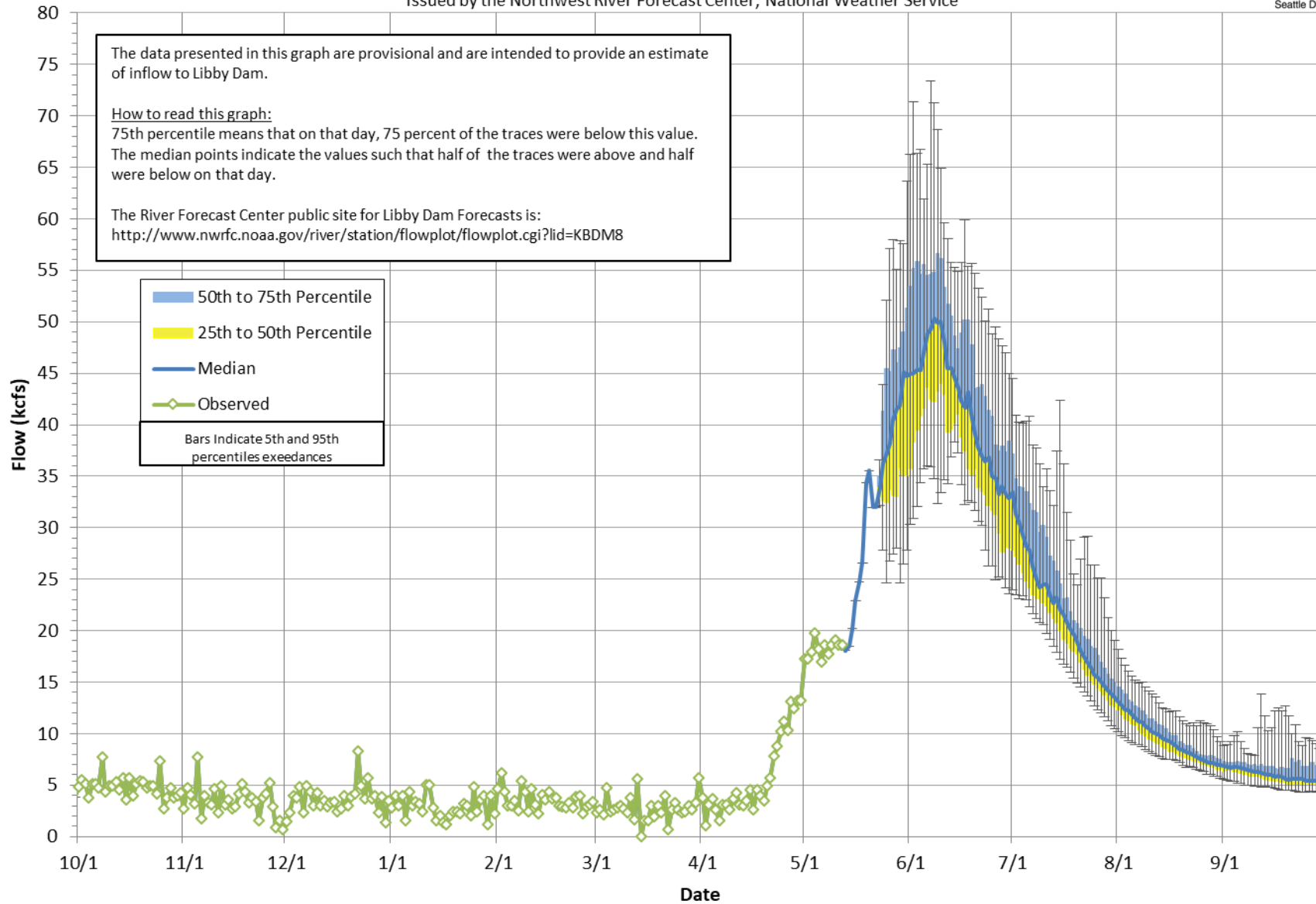




Modeled using current ESP traces as of 05/13/20

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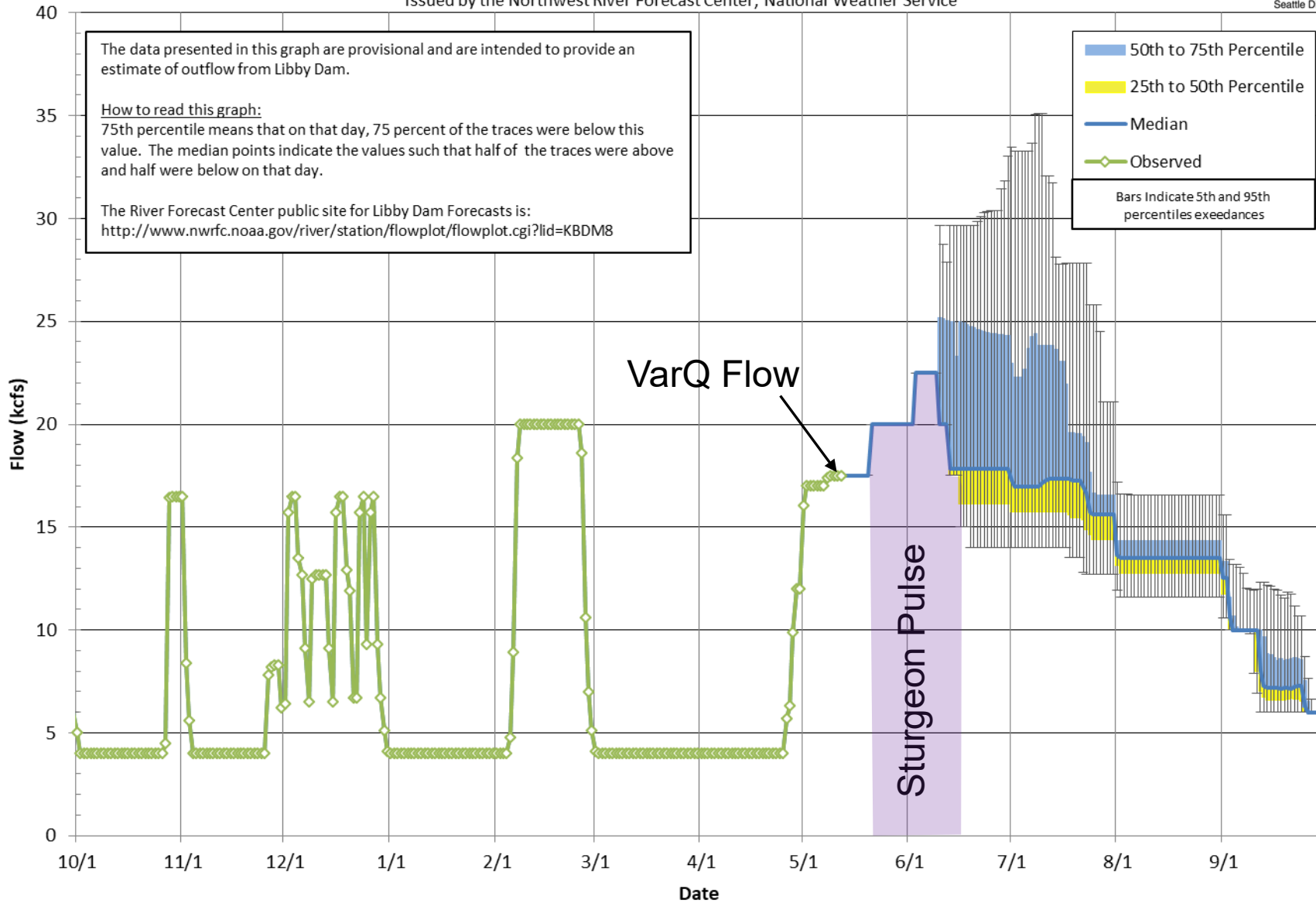




Modeled using current ESP traces as of 05/13/20

Libby Dam Outflow - Probability Chart

Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
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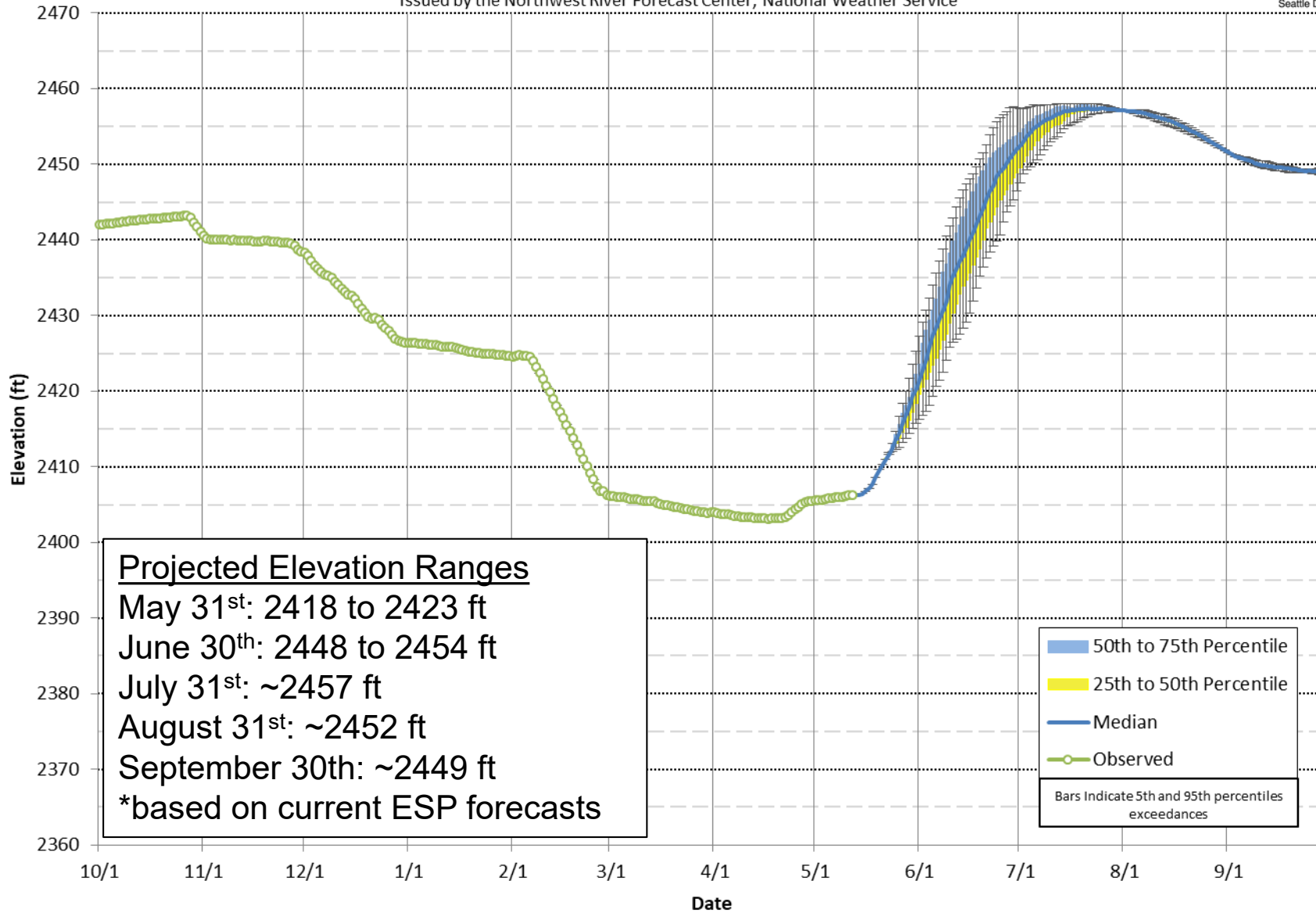




Modeled using current ESP traces as of 05/13/20

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

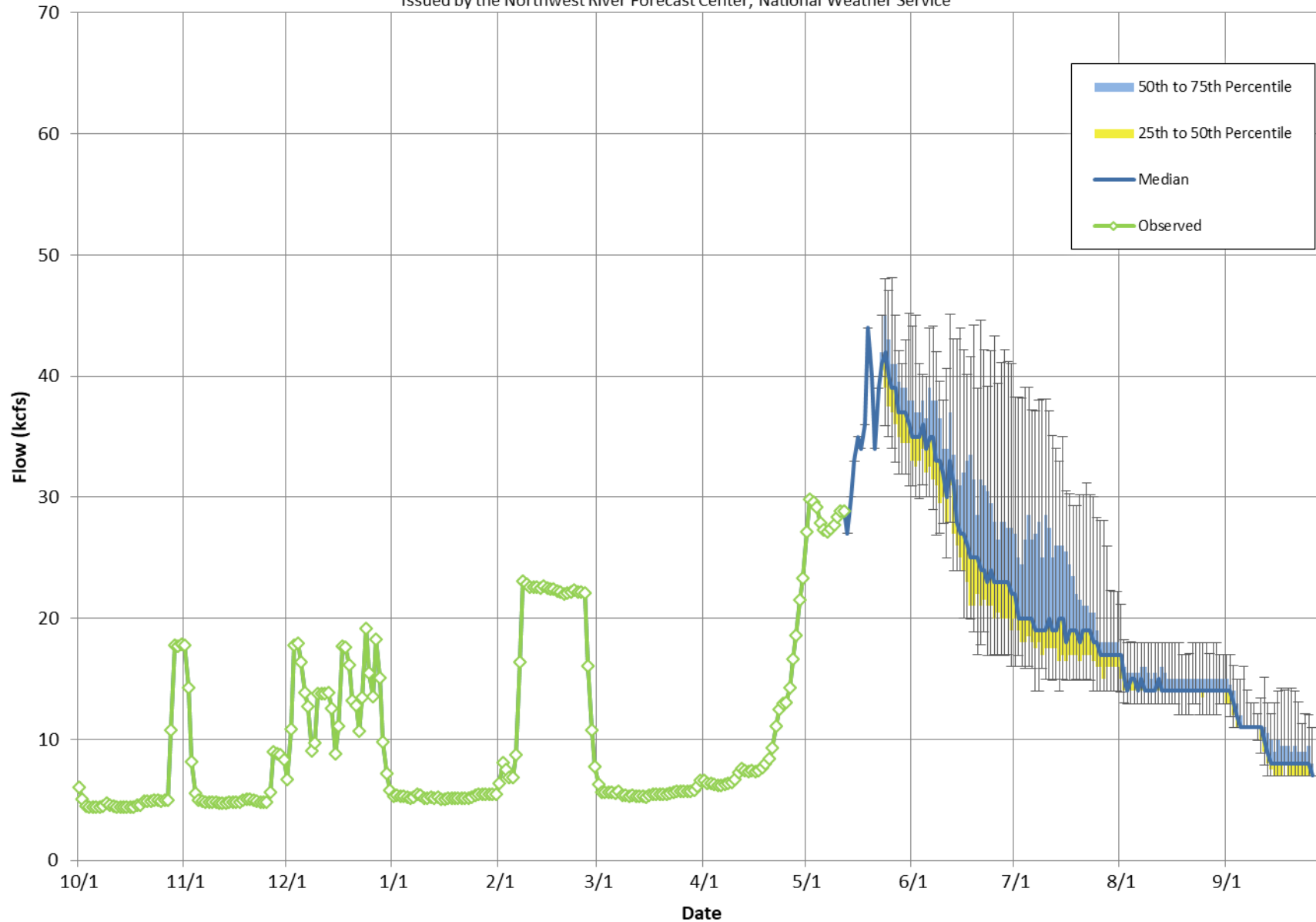




Modeled using current ESP traces as of 05/13/20

Bonnars 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

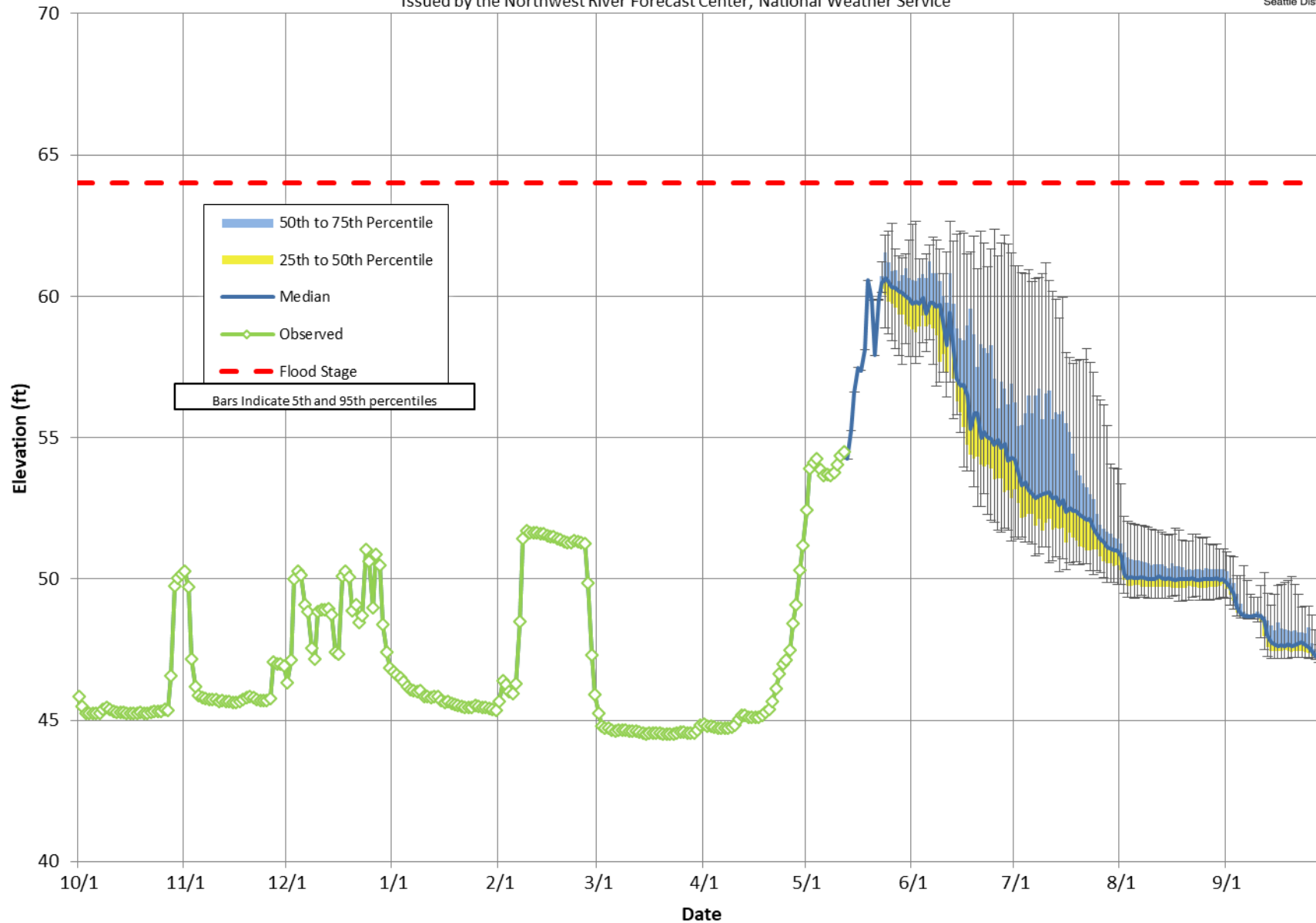




Modeled using current ESP traces as of 05/13/20

Bonnars Ferry Stage

Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
Issued by the Northwest River Forecast Center, National Weather Service

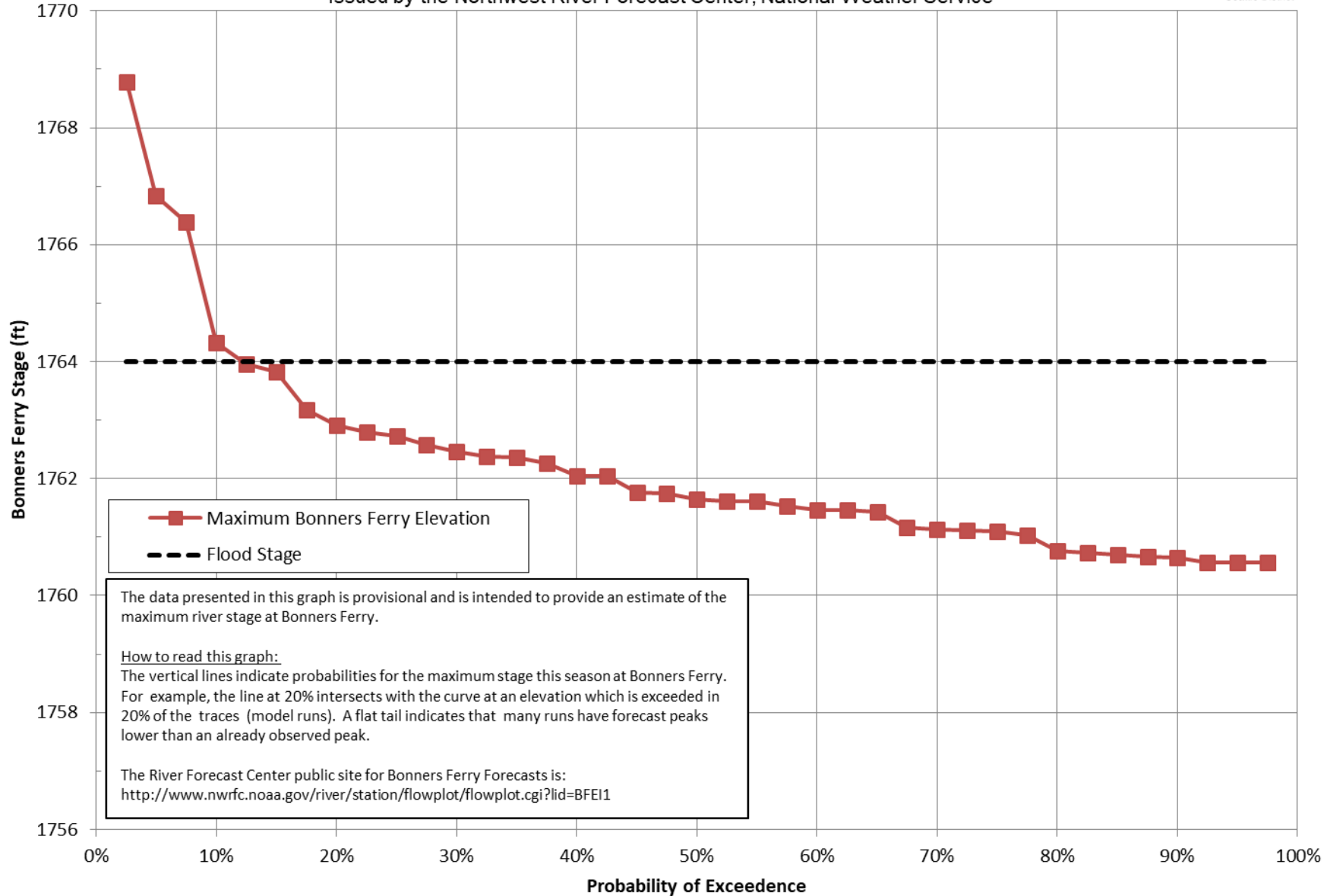




Modeled using current ESP traces as of 05/13/20

Maximum April-August Bonners Ferry Stage - Probability Chart

Corps of Engineers Projections Based on the 39 Ensemble Streamflow Prediction Traces
 Issued by the Northwest River Forecast Center, National Weather Service





COLUMBIA RIVER SYSTEMS OPERATIONS EIS



To view Draft EIS and for more information about CRSO, visit: <http://crso.info/>

To add your name to the CRSO EIS mailing list, send your contact information to info@crso.info



Or leave a message at **800-290-5033**

Columbia River System Operations EIS Process





QUESTIONS?

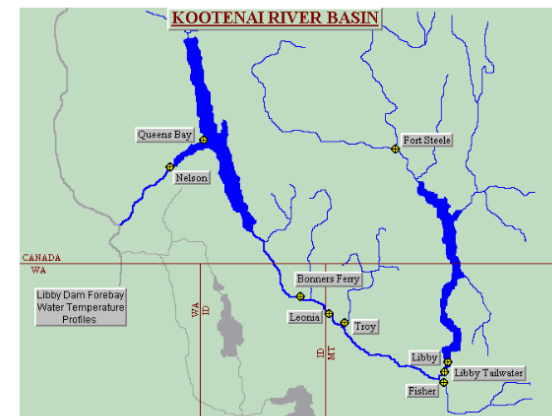
For emails regarding release changes and lake level updates email

- UpperColumbiaWM@usace.army.mil
- jonathan.c.moen@usace.army.mil

General Queries call (206) 764-6702

Seattle District water management data website :

<http://www.nwd-wc.usace.army.mil/nws/hh/www/index.html#>



- Stations**
- Bonners Ferry
 - Leonia
 - Troy
 - Moyie River Eastport
 - Libby
 - ESP
 - Below Moyie Nr Bonners
 - Libby Tailwater
 - Libby Water Temp Profiles
 - Fisher
 - Nelson
 - Fort Steele
 - Queen's Bay
 - Lake Kooconusa Summary Hydrograph

2020 KOOTENAI STURGEON OPERATIONS AND RECOVERY UPDATE

Jason Flory, Biologist
U.S. Fish and Wildlife Service

2020 Kootenai Sturgeon Operations and Recovery Update

- 2019 Summary
 - Low water year, with minimum sturgeon volume
 - Low Kootenai River stage during sturgeon spawning
 - Fewer tagged spawning sturgeon migrated into suitable habitats than previous two years
- 2020 Operations
 - Currently in a Tier 2 year for sturgeon volume (0.92 MAF)
 - Plan is to repeat strategy from recent years (maximizing days > 30 kcfs at Bonners Ferry)
 - Strategy has shown encouraging signs

- Recovery
 - Habitat restoration projects continue to be implemented
 - 2019: Ball Creek restoration
 - 2020: Ball Creek Ranch Wetland Connection Project (Trout Creek) (summer)
 - Flow management plus habitat projects (“pool ladder”) showing results
 - Increased numbers of tagged spawning sturgeon migrating to suitable habitats
 - First ever documentation of spawning in suitable habitats (2018)
 - Hatchery-origin sturgeon beginning to reach sexual maturity
- New Biological Opinion on Columbia River System Operations, including Libby Dam and Kootenai sturgeon, due June 2020

QUESTIONS



LIBBY DAM RECREATION AND VISITOR FACILITIES

Susan James, Park Ranger
Libby Dam Visitor Center



LIBBY DAM RECREATION AS OF MAY 2020



Boat ramps and Day-use areas remain open.
Visitor Center & tours remain closed until further notice.
Restrooms closed at the moment,
Please plan ahead, leave no trace and Recreate Responsibly.
Re-opening: MAYBE Campgrounds by Memorial Day weekend.
Watch our FB and webpage for news and announcements.

Social Distancing Means Keeping  US Army Corps of Engineers

6 FEET APART

FROM  **OTHERS** 

6FT/2M **6FT/2M**

Failure to follow CDC guidelines could result in area closures.



COVID-19 and #ResponsibleRecreation

We all play a part in keeping one another safe. Follow these steps to recreate responsibly:



Separate Yourself and Honor the 6-Foot Social Distance Rule for Others



Stay Away from Parks and Recreation Areas if You are Sick or Have Symptoms



Help Keep Your Parks Clean: Practice the "Pack In and Pack Out" Etiquette



Please Wear a Life Jacket When In, On, or Near the Water



US Army Corps of Engineers®





QUESTIONS