



— BUREAU OF —
RECLAMATION

Klamath River Basin Hydrologic Forecast Update

May 12, 2022

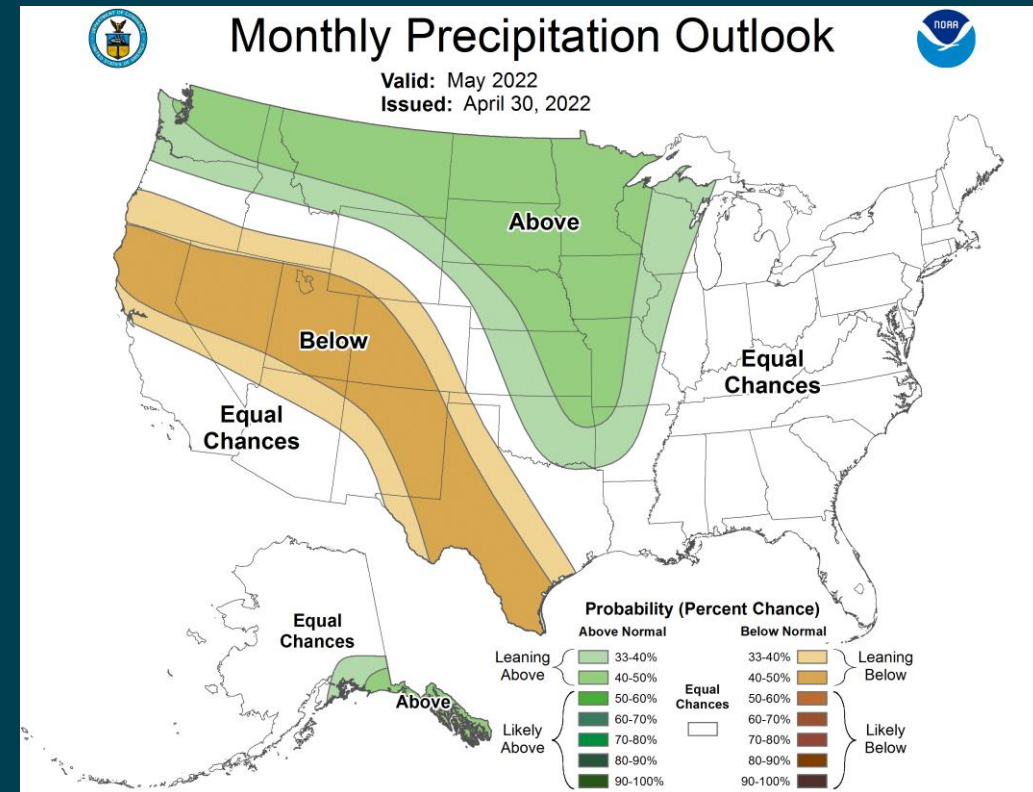
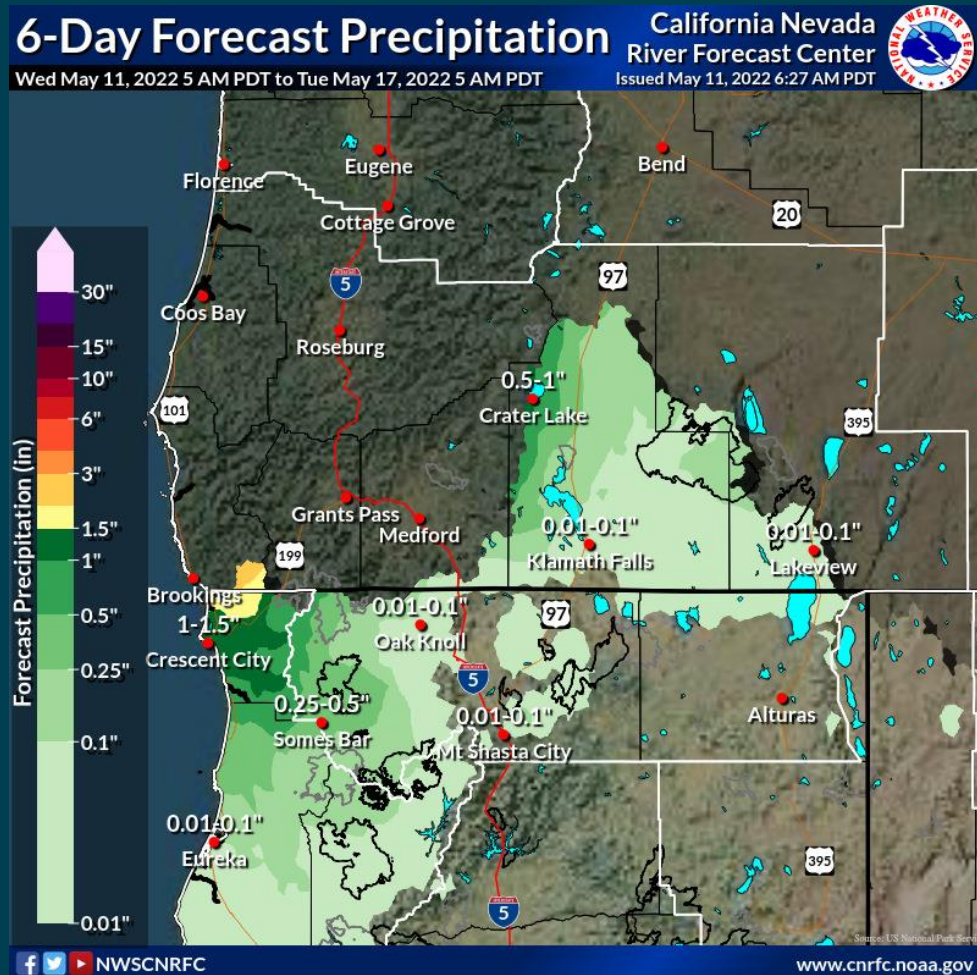
Spring/Summer Operations

- 2022 Annual Operations Plan — April 11, 2022
- 2022 Surface Flushing Flow — April 15-18, 2022*
 - Peak flow at Link River Dam= 4,400 cubic feet per second (cfs) (1 hr)
 - Peak flow at Iron Gate Dam = 4,500 cfs (5 hrs)
 - Total Volume utilized 25,056 acre-feet (AF)
- 2022 Drought Plan — April 29, 2022
- Weekly Coordination on Klamath Project Delivery & Demand

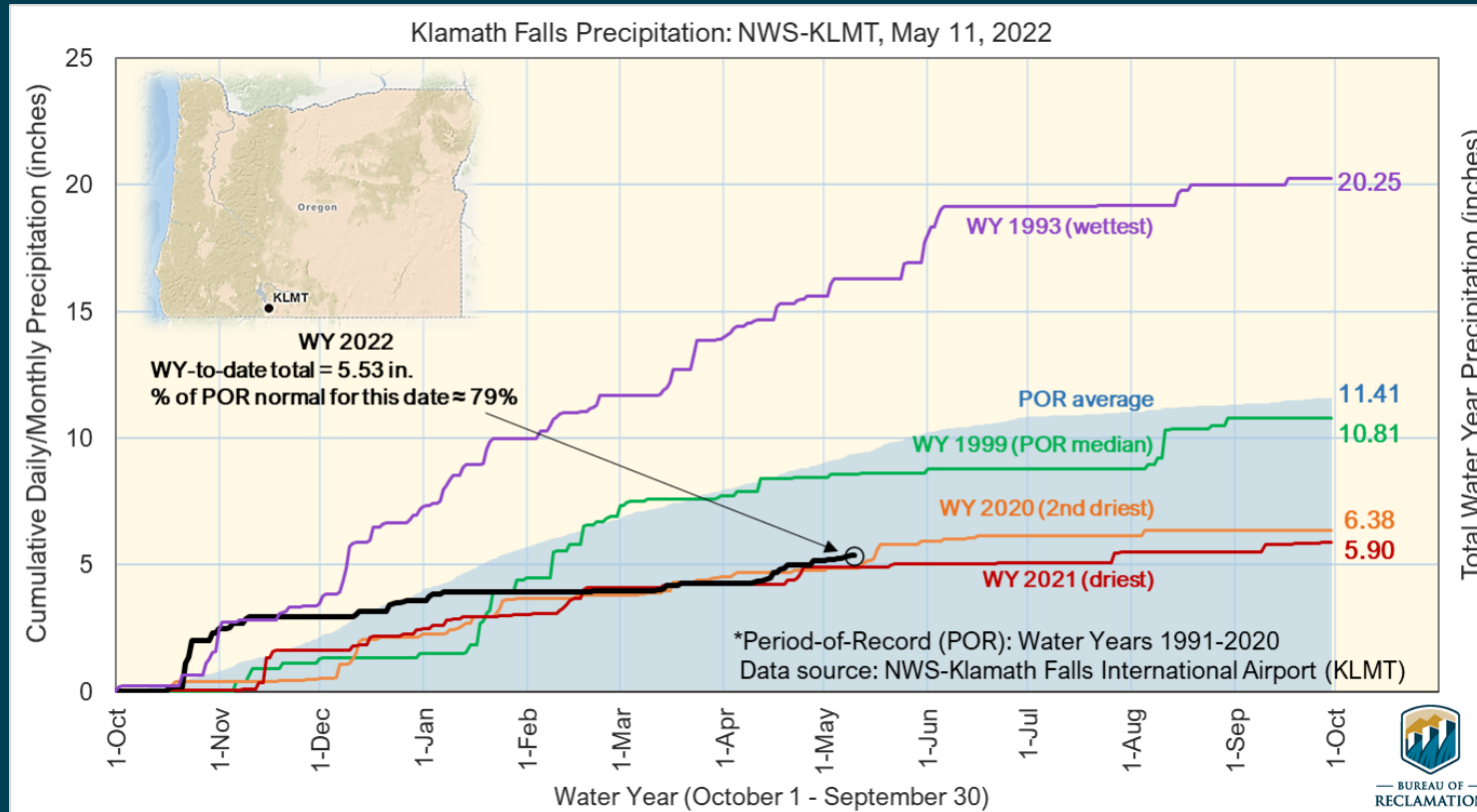
Citation: *Bureau of Reclamation. (April 22,2022). *Surface Flushing Flow presented to FASTA*



Hydrologic Overview — Current Conditions



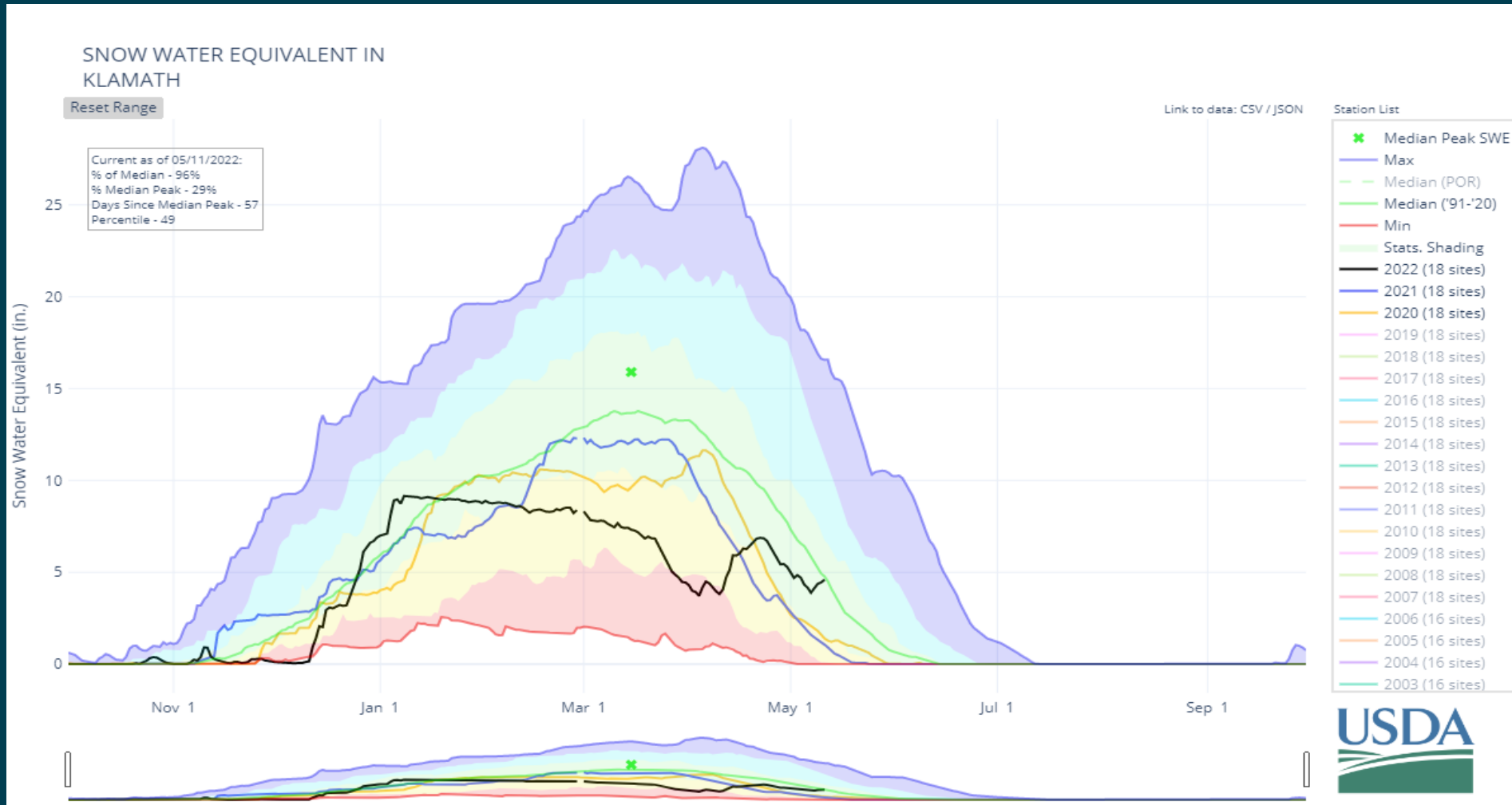
NWS Klamath Falls Airport Met Station WY 2022



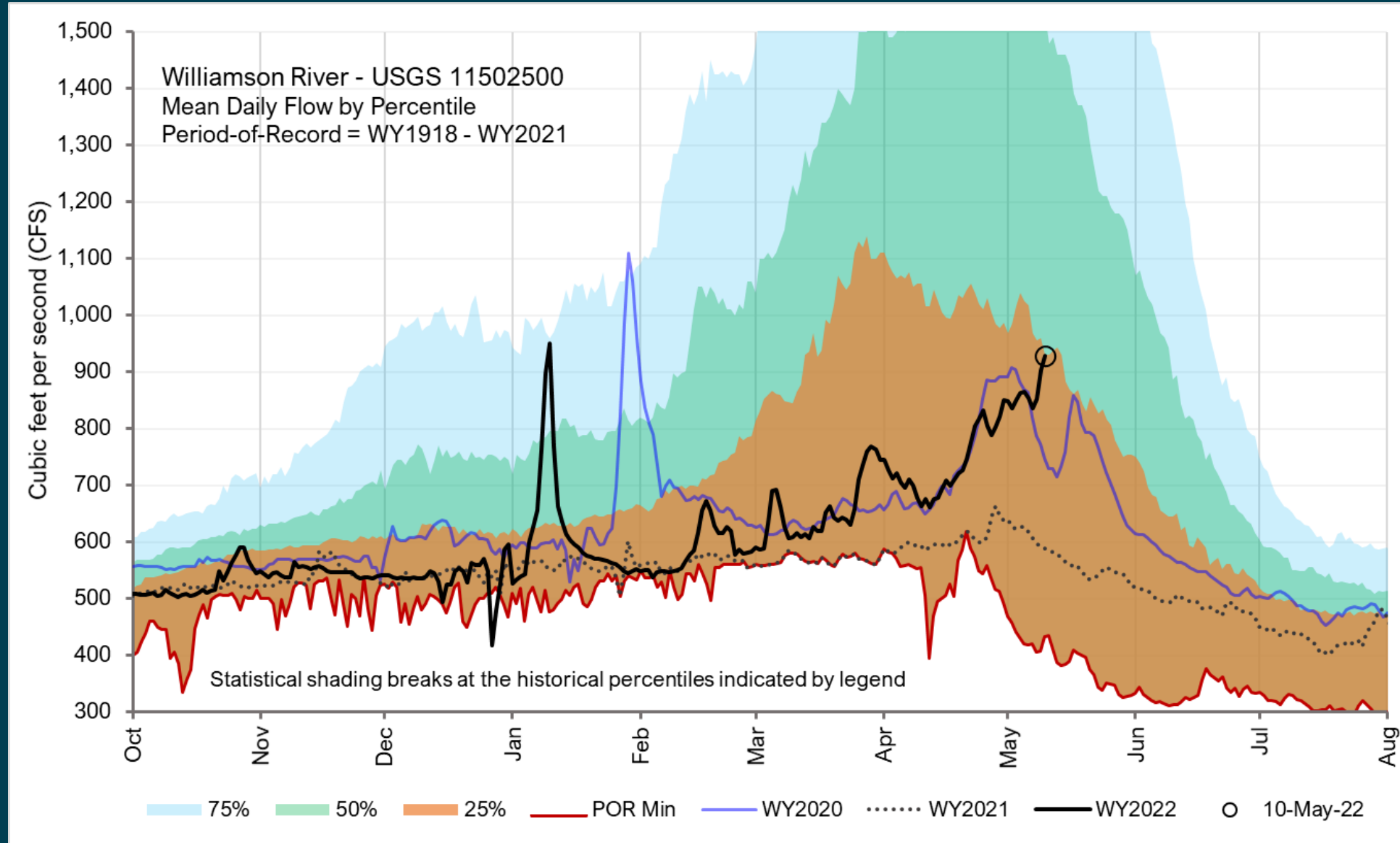
Water Year: 2022, Unit: Inches



Upper Klamath Basin Snow Water Equivalent – NRCS WY 2022



Williamson River - USGS 11502500



UKL Cumulative Net Inflow WY 2022 & Period-of-Record (POR)-to-Date

WY	Cumulative UKL Net Inflow (TAF)
2021	493.047
1992	529.515
2022	533.934
1994	577.845
2020	579.032
1991	607.823
2014	626.402
2005	652.2
2010	659.657
2018	673.151
2015	677.742
2001	701.67
2013	732.775
1990	740.76
1981	748.116
2009	767.079
2004	795.145
2003	798.577
1988	808.339
2012	822.476
2019	833.486

WY	Cumulative UKL Net Inflow (TAF)
2008	838.634
2002	848.123
2016	852.403
2007	911.261
1987	911.467
1995	941.777
2011	989.035
1993	1064.861
1989	1110.459
2000	1136.453
1988	1175.19
1985	1192.158
2017	1217.273
1999	1324.223
1996	1327.256
2006	1349.311
1986	1374.654
1983	1418.751
1997	1442.184
1984	1464.095
1982	1521.826

WY 2022 % of POR median $\approx$ 64%



WY 2022 UKL Net Inflow Forecast – NRCS March – September 2022

USDA NRCS National Water & Climate Center

- - DATA CURRENT AS OF: May 1, 2022
- - Based on May 1, 2022 forecast values

Max (10%), 30%, 50%, 70% and Min (90%) chance that actual volume will exceed forecast.

Medians are for the 1991-2020 period.

All volumes are in thousands of acre-feet.

KLAMATH RIVER BASIN

Forecast Point	Period	50% (KAF)	% of Med	Max (KAF)	30% (KAF)	70% (KAF)	Min (KAF)	30- Year Med
Gerber Reservoir Inflow (2)	MAR-JUN	16.4	92	33	23	9.5	-0.53	17.8
Sprague R nr Chiloquin	MAR-SEP	150	70	225	179	123	89	215
Sprague R nr Chiloquin	APR-SEP	117	74	184	142	94	64	159
Sprague R nr Chiloquin	MAY-SEP	71	66	105	84	59	44	108
Williamson R bl Sprague R nr Chiloquin	MAR-SEP	295	82	395	335	255	198	360
Williamson R bl Sprague R nr Chiloquin	APR-SEP	235	82	325	270	200	147	285
Williamson R bl Sprague R nr Chiloquin	MAY-SEP	159	76	210	179	139	110	210
Upper Klamath Lake Inflow (2)	MAR-SEP	405	78	580	455	355	260	520
Upper Klamath Lake Inflow (2)	APR-SEP	290	79	445	335	250	168	365
Upper Klamath Lake Inflow (2)	MAY-SEP	168	65	250	192	146	103	260
Clear Lake Inflow (2)	MAR-JUN	5.5	43	42	20	-9.4	-31	12.8

Footnotes:

1) Max and Min are 5% and 95% chance that actual volume will exceed forecast

2) Streamflow is adjusted for upstream storage

Forecasts are provisional and subject to revision based on hydrologic conditions

POR = Water Years 1991 -2020

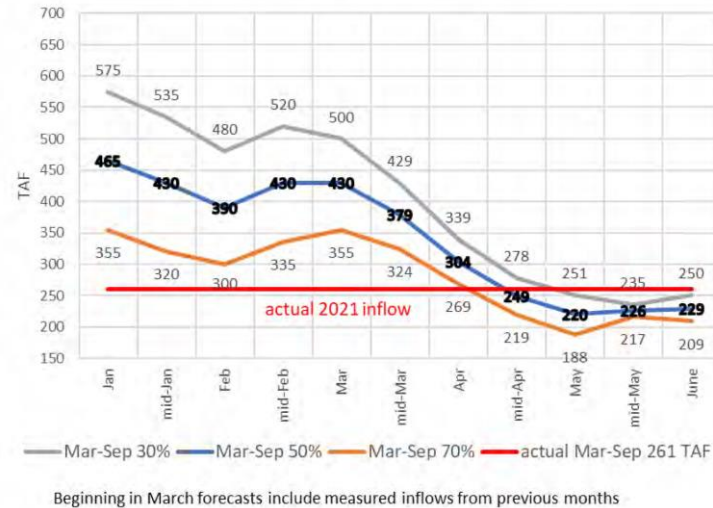


NRCS UKL Net Inflow Projections (2020-2022)

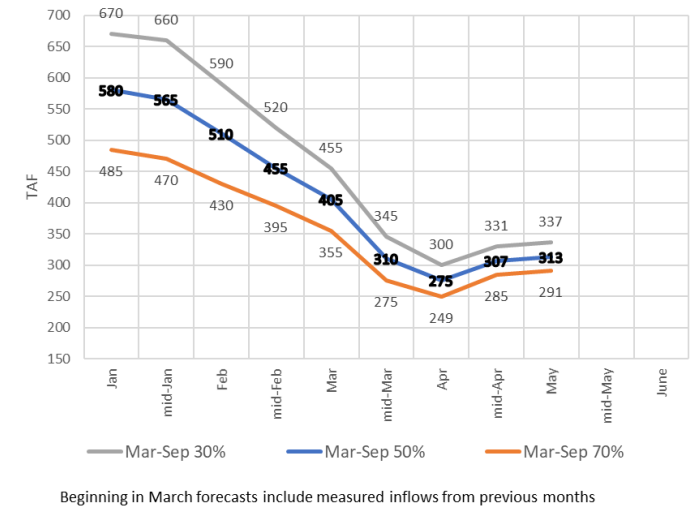
2020 NRCS Mar-Sep UKL Inflow Forecast



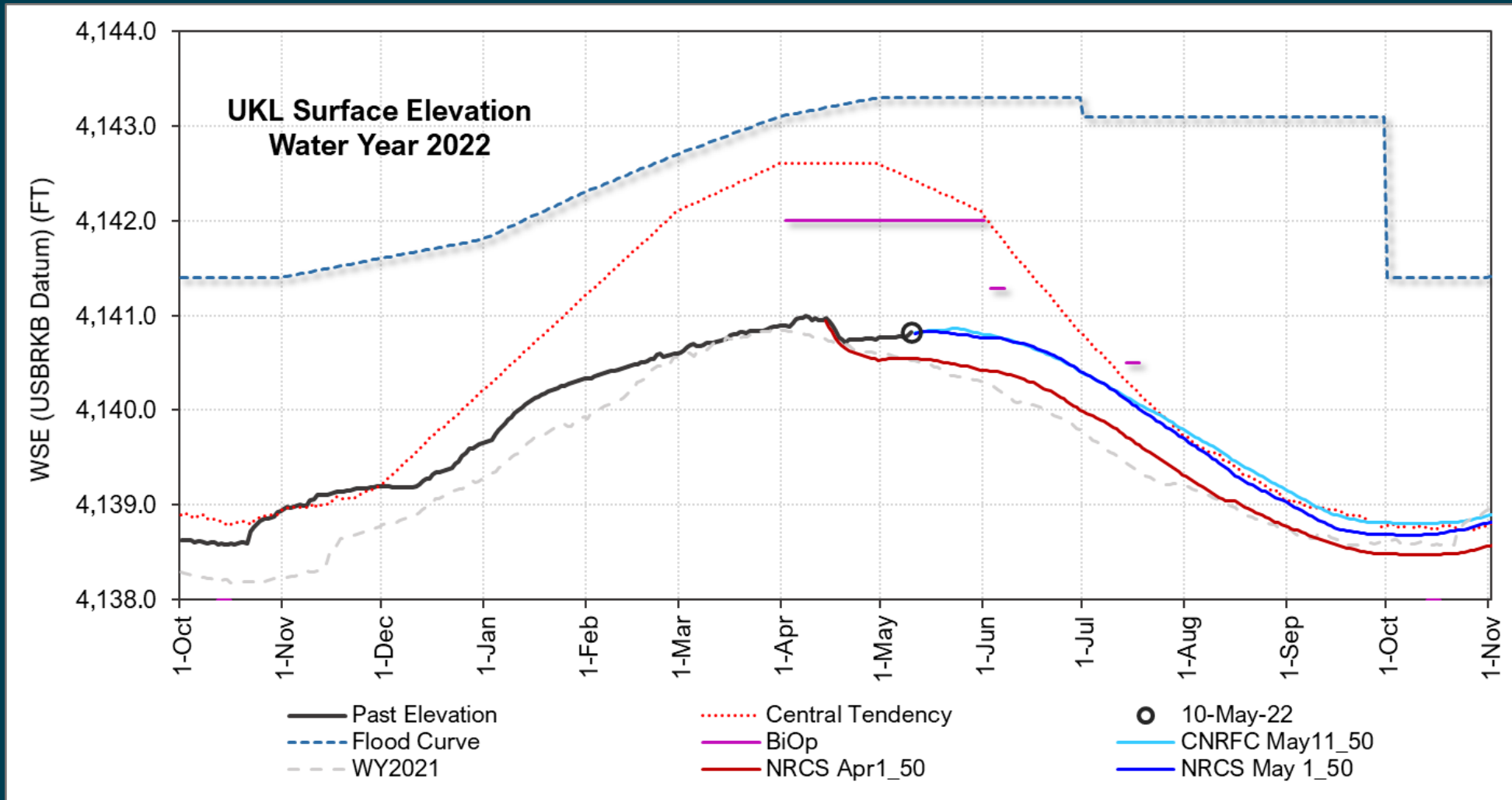
2021 NRCS Mar-Sep UKL Inflow Forecast



2022 NRCS Mar-Sep UKL Inflow Forecast



Upper Klamath Lake Water Surface Elevation WY2022 - NRCS



Upper Klamath Lake Water Surface Elevation WY2022

NRCS May 50%	Amount
2022 proj EOF elev (FT)	4140.60
2022 proj Mar-Sep inflow (TAF)	313
2022 proj Prj Supp (TAF)	69
2022 proj EWA (TAF)	407
EWA Augmentation (TAF)	0
2022 target min elev (FT)	4138.42

CNRFC May 50%	Amount
2022 proj EOF elev (FT)	4140.60
2022 proj Mar-Sep inflow (TAF)	326
2022 proj Prj Supp (TAF)	69
2022 proj EWA (TAF)	407
EWA Augmentation (TAF)	0
2022 target min elev (FT)	4138.42

EOF = End-of-February

Prj Supp = Project Supply

EWA = Environmental Water Account

Min elev = Seasonal minimum elevation

F/W = Fall/Winter



Assumptions

- UKL Net Inflow (UKLNI) Projections

- Forecasts used:

- NRCS April 50% forecast used to project April-September inflow
 - NRCS May 50% forecast used to project May-September inflow
 - NRCS June 50% forecast used to project June-September inflow
 - CNRFC 50% forecast used after June and through end of season

- Accretions

- *Lost River*: set to 0% contribution to Klamath River → Iron Gate Dam flows
 - *Lake Ewauna*: volume & pattern set to historical percentile -or- WY analog; downscaled to account for Lost River
 - *F/FF Pumping Plant*: volume & pattern set to historical percentile -or- analog WY
 - *Keno-Iron Gate*: volume & pattern set to multi-model forecast through March 2022, then set to historical percentile -or- WY analog through September 2022



Assumptions cont.

- Project Supply
 - Allocation calculation in accordance with 2022 Ops and Drought Plans
 - Modified based on observed inflows
 - Project diversions based on historical pattern as modified by discussions with irrigators
 - Will be tracked weekly with irrigators
- IGD flows include boat dance



Thank You

