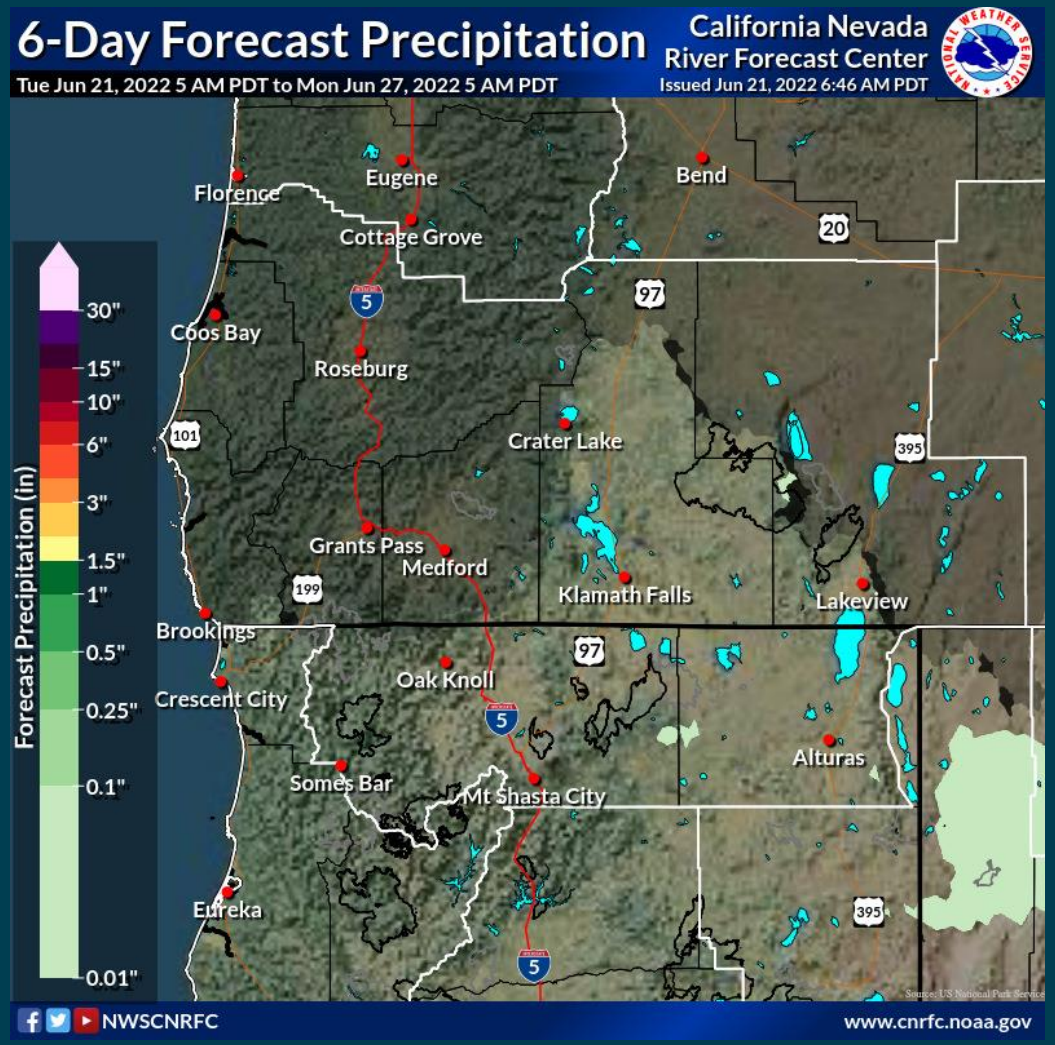
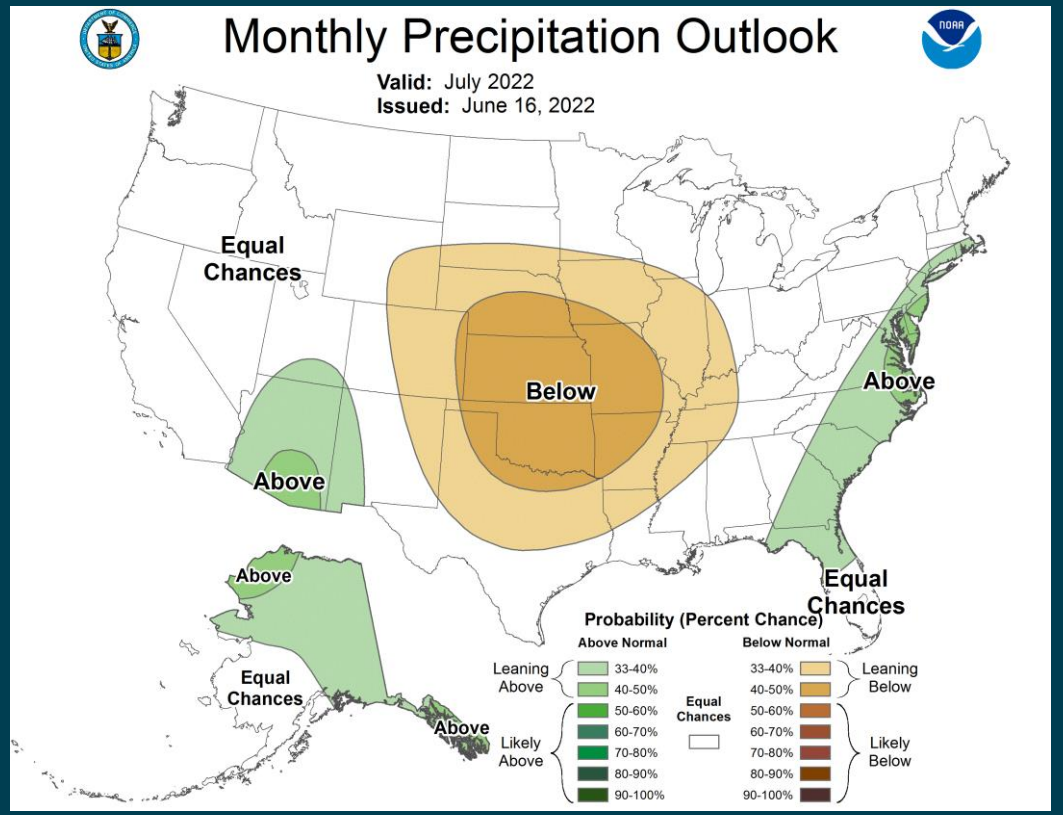
BUREAU OF RECLAMATION

Klamath River Basin Hydrologic Forecast Update

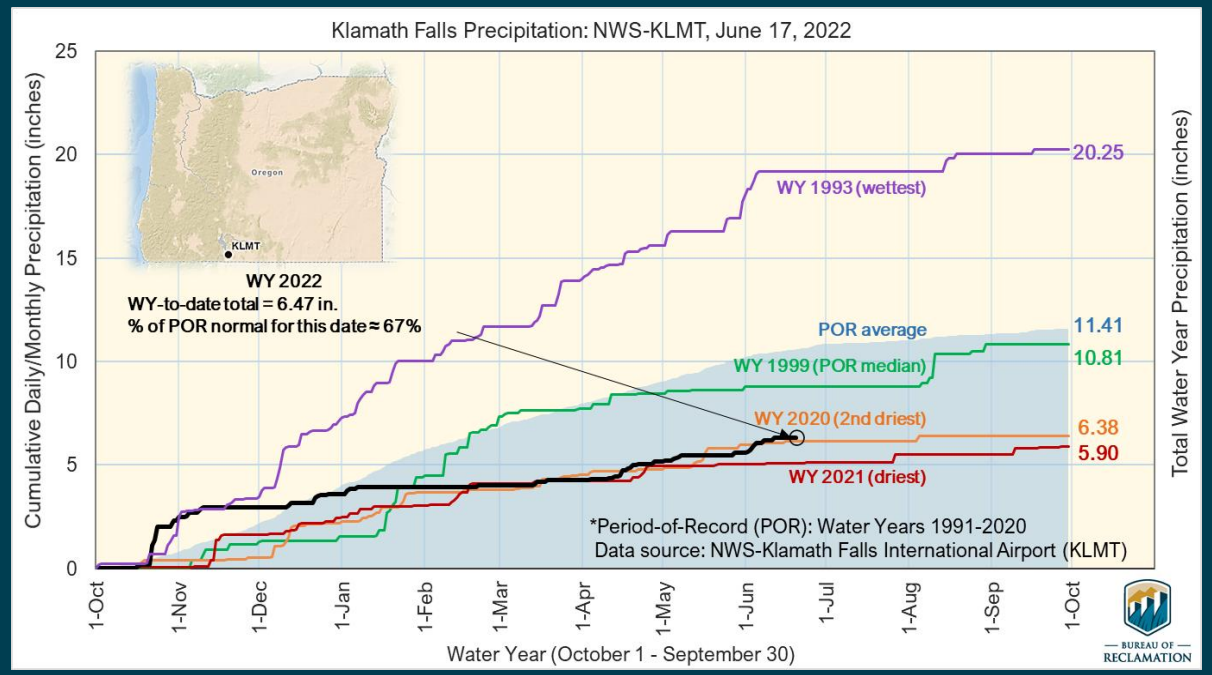
June 22, 2022

Hydrologic Overview — Current Conditions





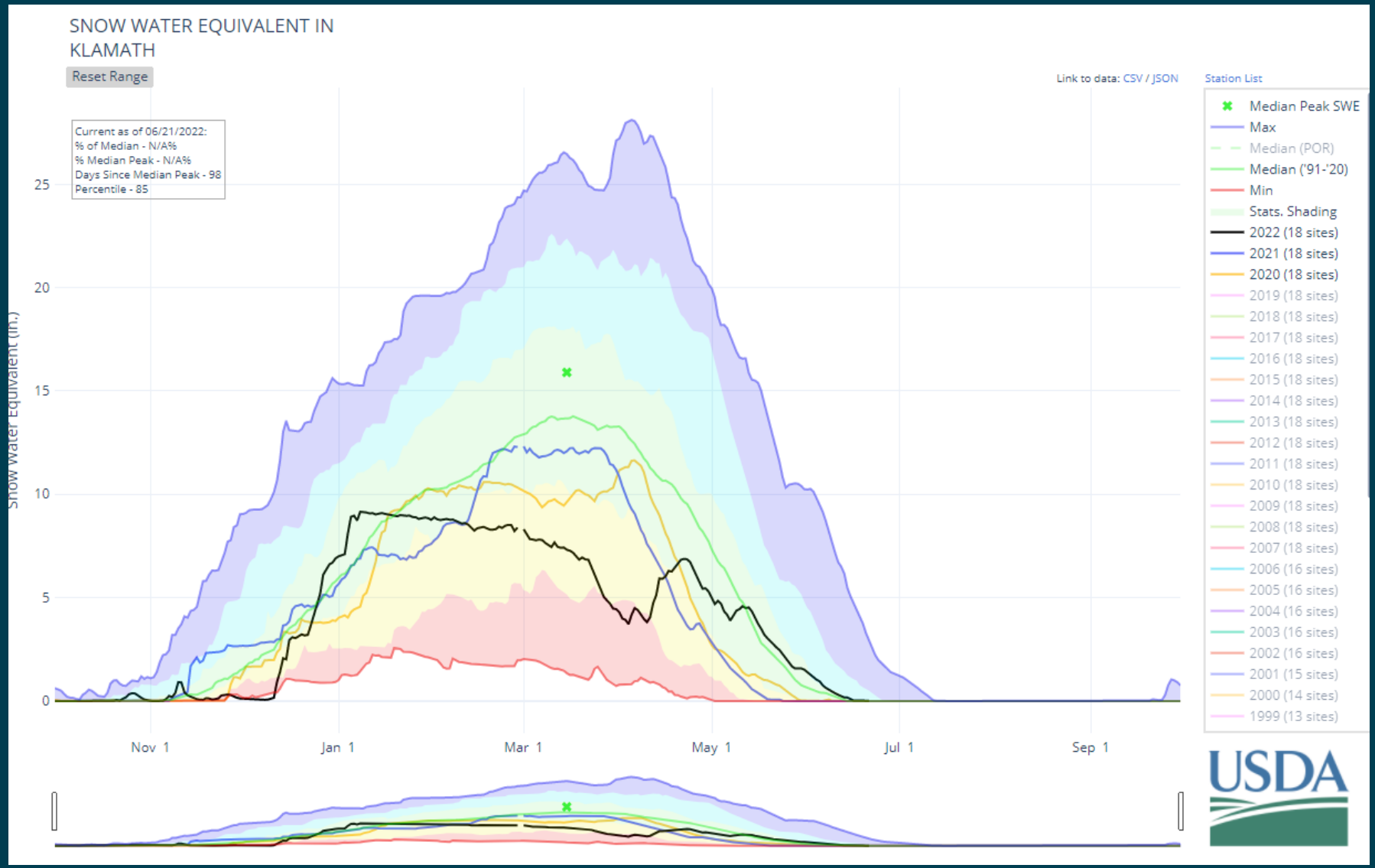
NWS Klamath Falls Airport Met Station WY 2022



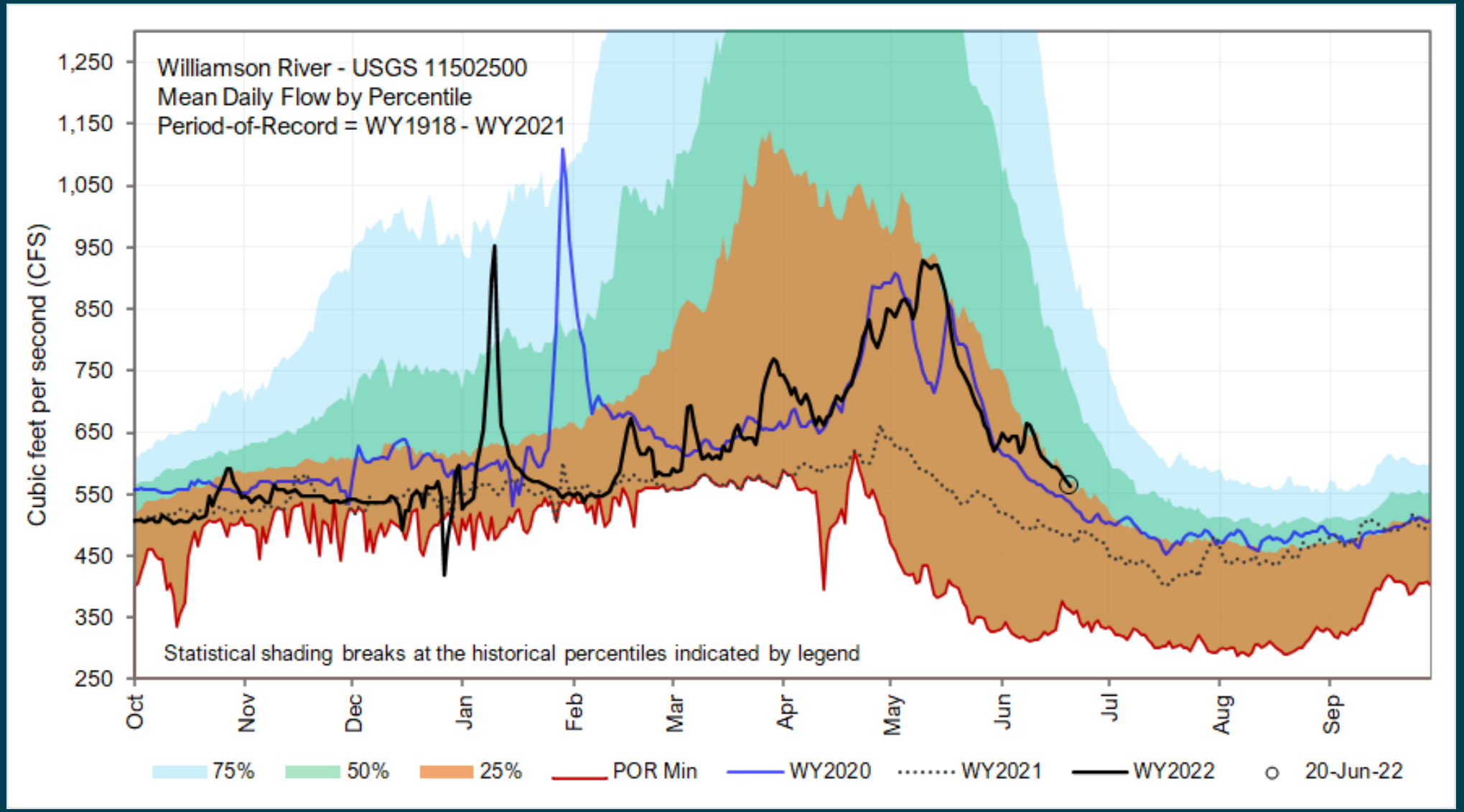
Klamath Falls International Airport (KLMT) Unit inches

Month	Monthly Total	Monthly Depart.	Monthly Normal	% Monthly Normal	WY Total	WY Depart.	WY Normal	% WY Normal
Oct	2.31	1.57	0.74	312%	2.31	1.57	0.74	312%
Nov	0.64	-0.74	1.38	46%	2.95	0.83	2.12	139%
Dec	0.65	-1.15	1.8	36%	3.60	-0.32	3.92	92%
Jan	0.34	-1.17	1.51	23%	3.94	-1.49	5.43	73%
Feb	0.05	-0.80	0.85	6%	3.99	-2.29	6.28	64%
Mar	0.29	-0.71	1.00	29%	4.28	-3.00	7.28	59%
Apr	0.98	0.09	0.89	110%	5.26	-2.91	8.17	64%
May	0.41	-0.60	1.01	41%	5.67	-3.51	9.18	62%
as of Jun 21	0.80	0.30	0.50	160%	6.47	-3.21	9.68	67%

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)
1992	535.908
2021	540.932
2022	**616.767**
1994	619.126
2014	654.957
2020	659.498
1991	678.806
2015	736.458
2001	748.763
2018	753.616
2013	778.355
2010	783.916
2005	819.998
1981	826.509
1990	831.276
2004	877.416
2003	894.808
1988	907.629
2009	910.796
2016	924.498
2002	924.884

WY	Cumulative UKL Net Inflow (TAF)
2012	930.961
2019	951.828
1987	983.159
2007	988.846
2008	1014.765
1995	1115.173
2011	1209.451
1989	1252.788
2000	1281.466
1993	1294.930
1985	1332.580
2017	1375.311
1998	1477.112
1986	1511.525
1996	1520.624
1997	1569.163
2006	1574.456
1999	1574.816
1983	1718.260
1982	1727.624
1984	1751.603

WY 2022 % of POR median ≈ 66%

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

USDA NRCS National Water & Climate Center

- - DATA CURRENT AS OF: June 1, 2022
- - Based on June 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
Sprague R nr Chiloquin	Jun-Sep	40	75	52	45	36	31	53
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
Williamson R bl Sprague R nr Chiloquin	Jun- Sep	109	83	129	117	101	89	132
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
Upper Klamath Lake inflow (2)	June-Sep	95	70	133	106	84	63	136
Clear Lake Inflow (2)	MAR-JUN	5.5	43	42	20	-9.4	-31	12.8

Footnotes:

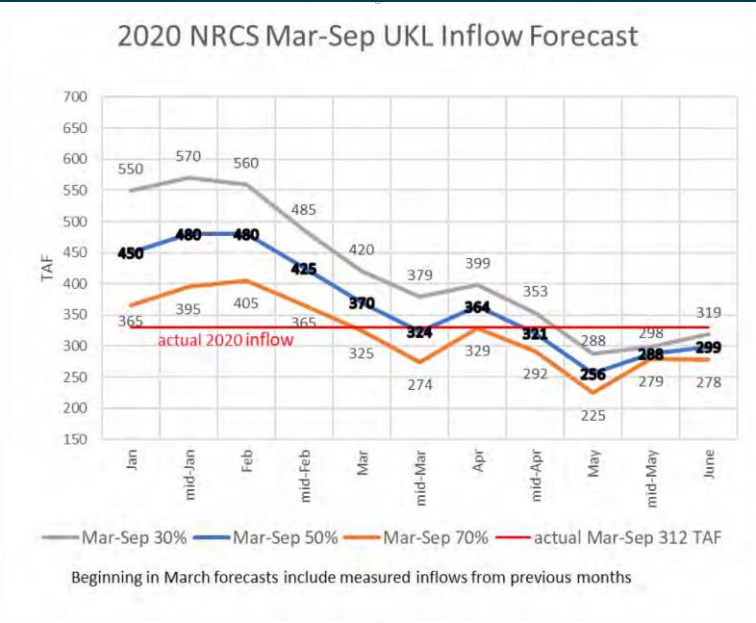
1) Max and Min are 5% and 95% chance that actual volume will exceed forecast

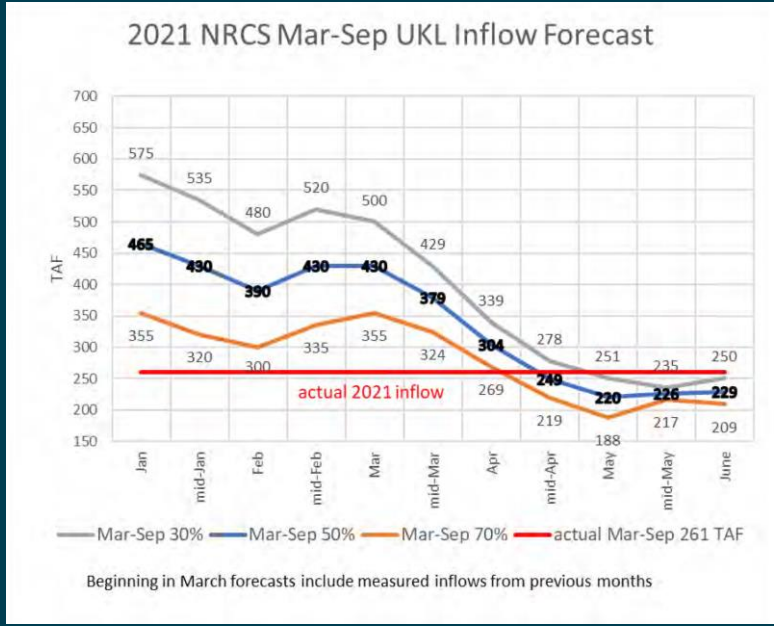
2) Streamflow is adjusted for upstream storage

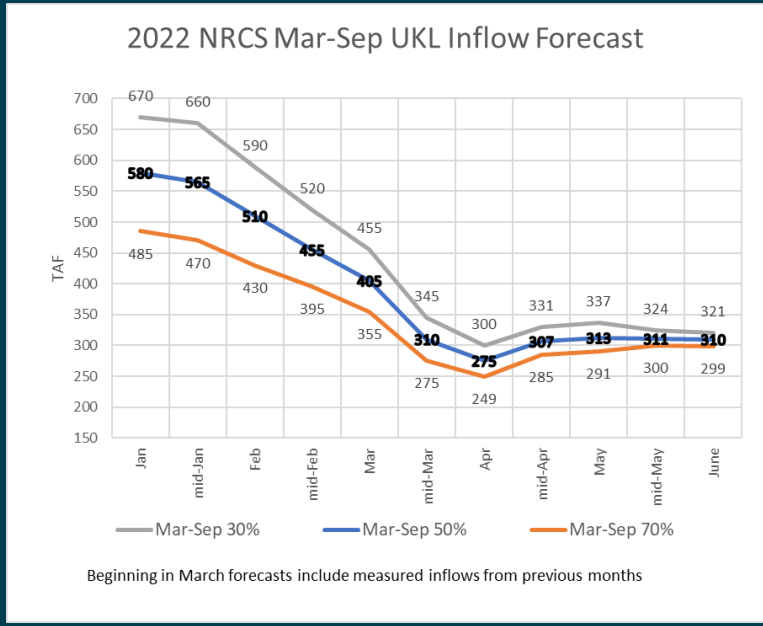
Forecasts are provisional and subject to revision based on hydrologic conditions

POR = Water Years 1991 -2020

NRCS UKL Net Inflow Projections (2020-2022)



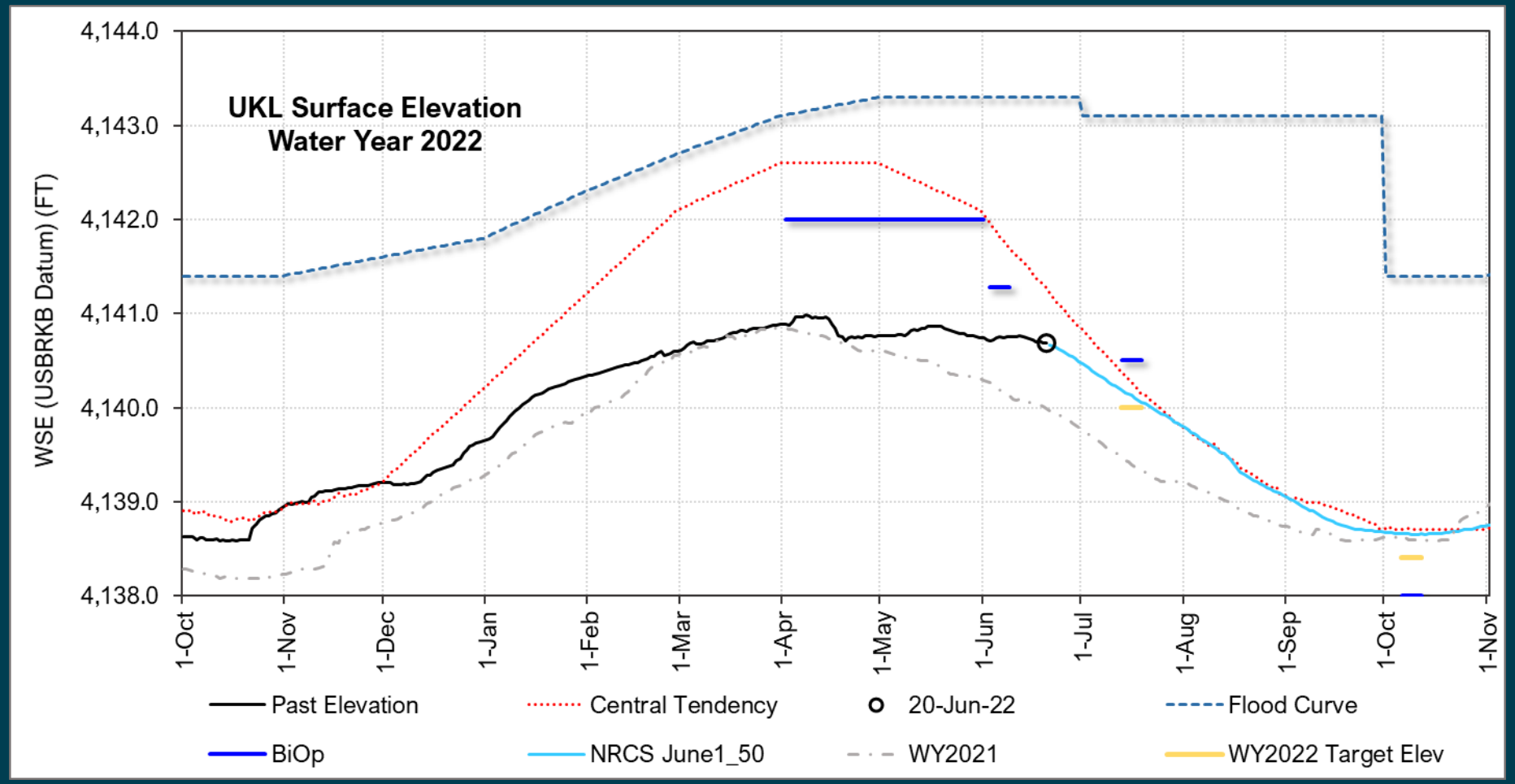




UKL supply adjustments to date

WY	1-Apr	1- May	1-Jun
Mar inflow (AF)	65150	65150	65150
Apr inflow (AF)		79436	79436
May inflow (AF)			70381
Jun inflow (AF)			
Apr-Sep forecast (AF)	210000		
May-Sep forecast (AF)		168000	
Jun-Sep forecast (AF)			95000
Mar-Sep total (AF)	275150	312586	309967
Inflow Increase (AF)		37436	-2619
Inflow Increase / 2		18718	-1309.5
Project Supply (AF)	50000	68718	67408.5
UKL EOS elev (ft)	4138.15	4138.42	4138.39
UKL vol (AF)	144597	163315	162006

Upper Klamath Lake Water Surface Elevation WY2022 - NRCS



Upper Klamath Lake Water Surface Elevation WY2022

NRCS June 1 50% Exceedance	Amount
2022 proj EOF elev (FT)	4140.60
2022 proj Mar-Sep inflow (TAF)	313
2022 proj Prj Supp (TAF)	68
2022 proj EWA (TAF)	407
EWA Augmentation (TAF)	0
2022 target min elev (FT)	4138.40

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