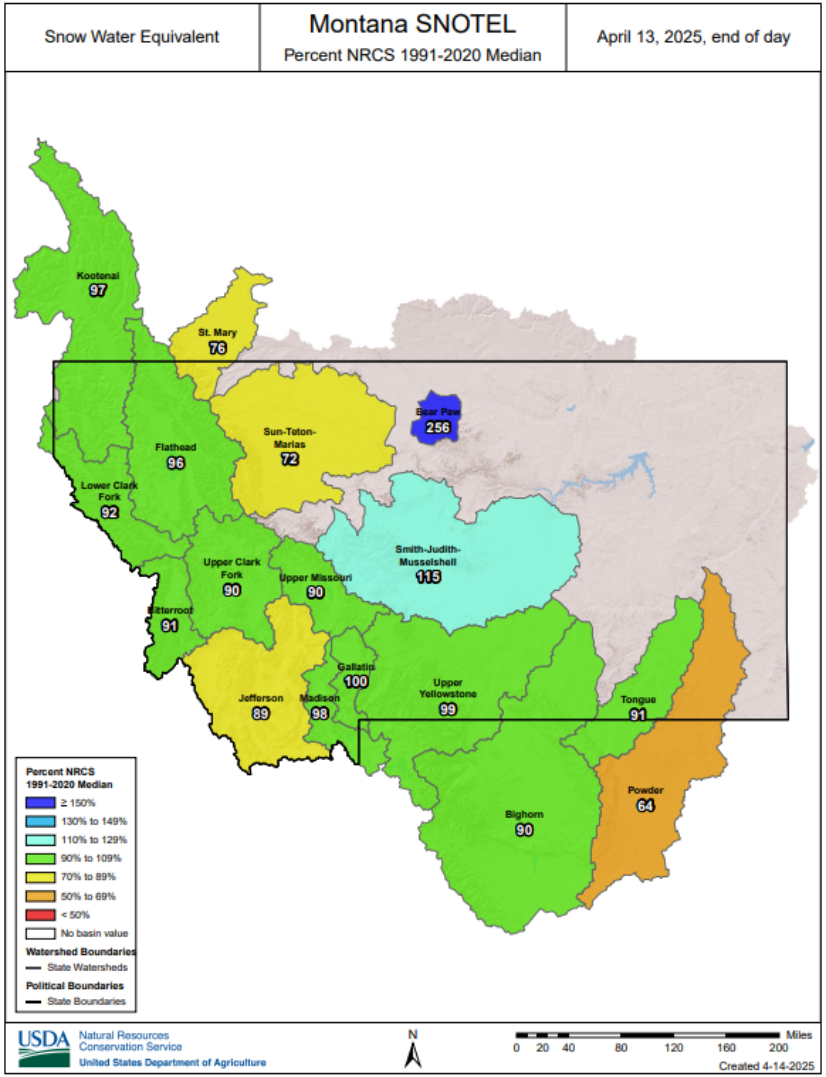
2025 Water Supply Outlook (04/16/25)

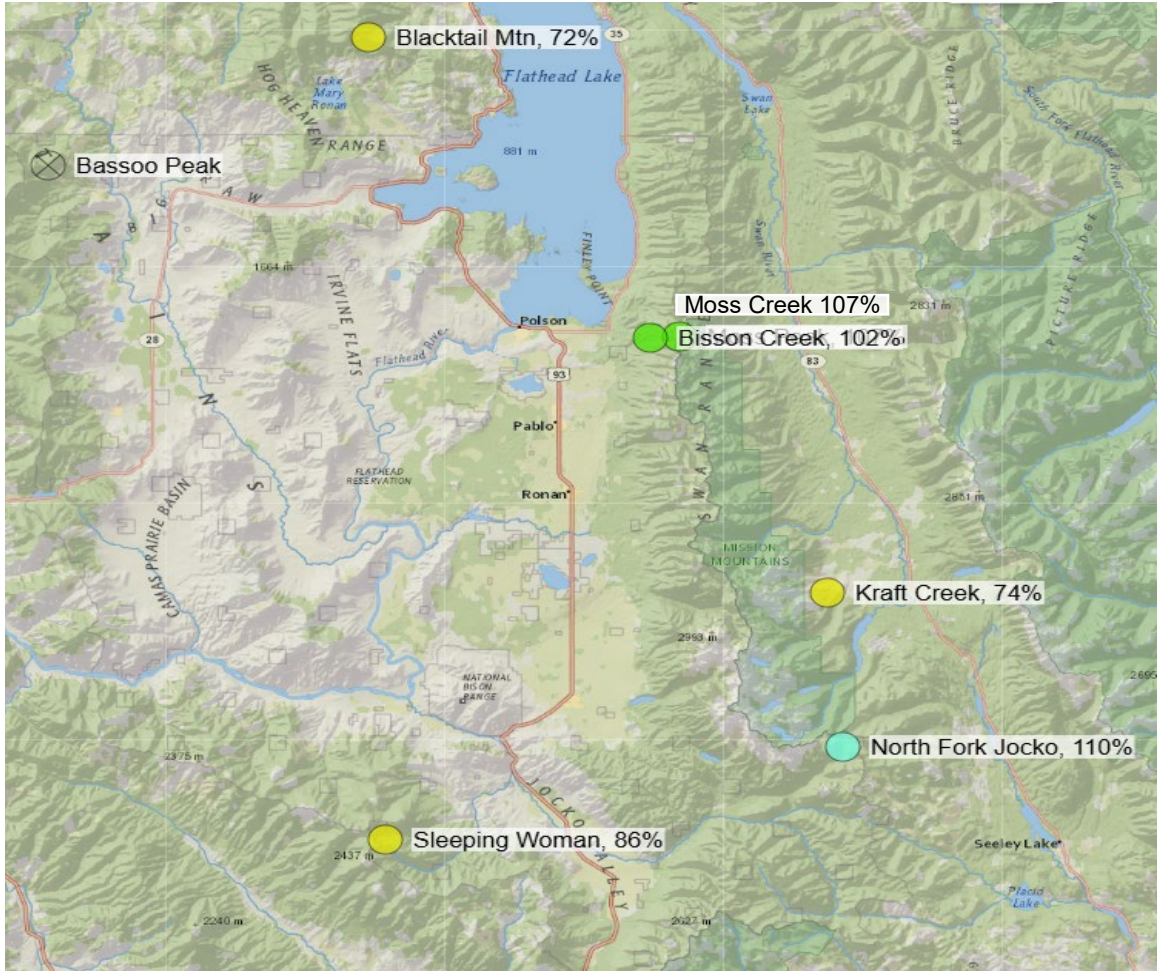
Approximate date	Purpose of Meeting
End of January	Review reservoir carryover and initial projection of water supply, tentatively categorize water-year type
End of February	Review reservoir carryover and initial projection of water supply, tentatively categorize water-year type, set March wet and normal year streamflow targets, modify MEF timing (if applicable) to match anticipated snowmelt runoff
End of March	Refine projection of water supply, tentatively categorize water-year type, and set April wet and normal streamflow targets, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Mid-April	Refine projection of water supply, categorize water-year type, update wet and normal streamflow targets for the month, set initial RDAs based on water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Early May	Refine projection of water supply, update water-year type (if applicable), set wet and normal streamflow targets for the month, review initial RDAs based on water year type, taking into account any changes in water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Mid-May	Refine projection of water supply, update water-year type, update wet and normal streamflow targets for the month, update RDAs based on any changes in water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Early June	Refine projection of water supply, update water-year type (if applicable), set wet and normal streamflow targets for month, quantify portion of RDAs used to date, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Mid June	Finalize projection of water supply and water-year type, update wet and normal streamflow targets for month, modify RDAs based on any changes in water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Early July	Set wet and normal streamflow targets for the month, evaluate RDAs, quantify portion of RDAs used to date
Mid July	Update wet and normal streamflow targets for the month
Early August	Set wet and normal streamflow targets for the month, evaluate RDAs, quantify portion of RDAs used to date
Early September	Set wet and normal streamflow targets for the month, quantify portion of RDAs used to date
Early October	Discuss annual reporting and water operations for the completed irrigation season, develop long-range forecast based on climatic indicators
Early December	Finalize annual reporting of water measurement, refine long-range forecast based on climatic indicators

Appendix 3.5 Timeline

SWE Volume

Snow Water Equivalent (SWE) – A measurement of the amount of water contained in snowpack. It can be considered as the depth of water that would theoretically result if the whole snowpack instantaneously melts. Snow water equivalent is the product of snow depth and snow density.

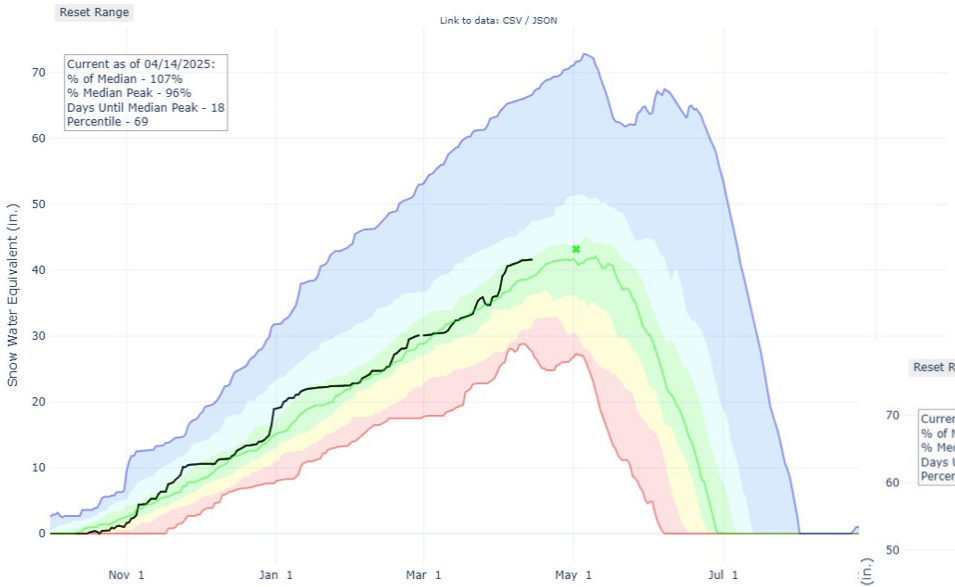




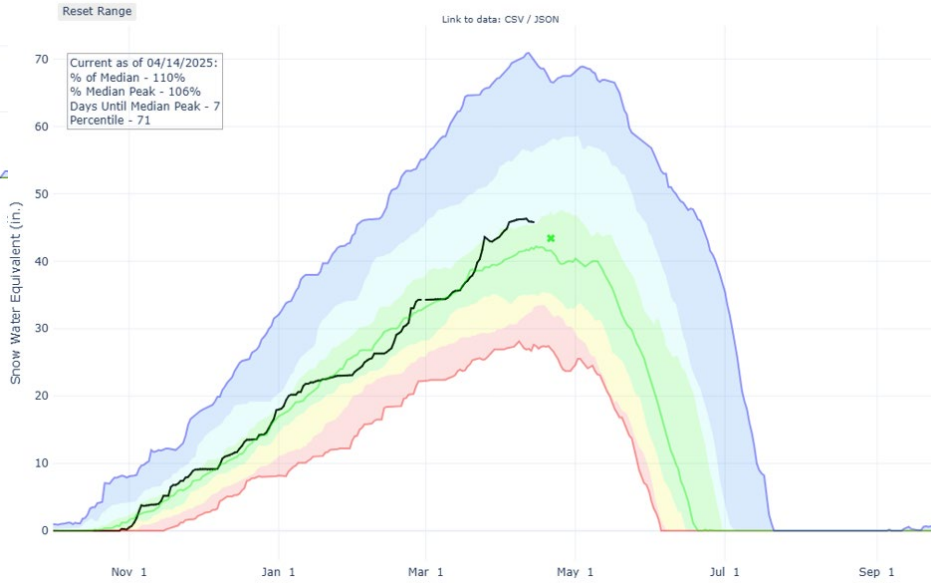
SNOTEL % Medians – April 14, 2025

DRAFT – Not Approved by CITT

Moss Peak – Elev. 6760’



North Fork Jocko – Elev. 6110’

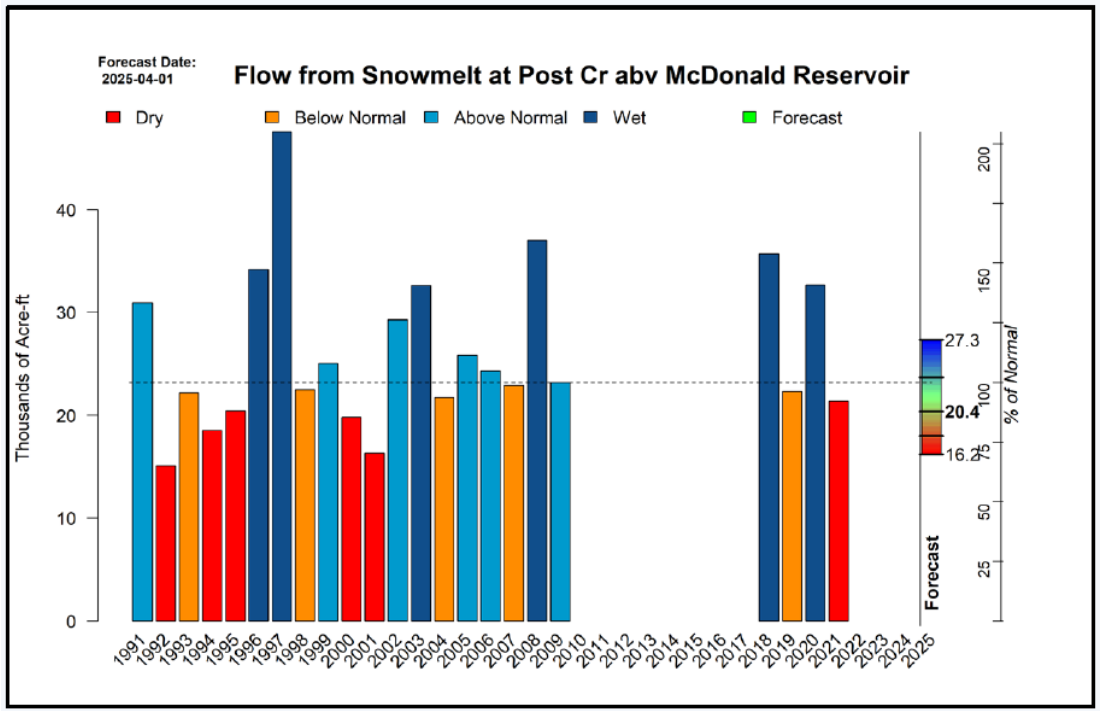


DNRC Forecasting – Post Creek Above McDonald

Courtesy of Todd Blythe – DNRC Hydrologist

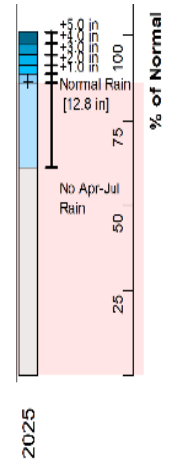
Snowmelt

The April 1 water supply forecast predicts a **below normal volume of 20,390 acre-feet** (Figure 3) of water from snowmelt, or 88% of normal.



Rainfall

If there is a normal amount (12.8 inches) of rain from April 1 – July 31, the total runoff is predicted to be 28,616 acre-feet. This is **4,676 acre-feet less than normal.** Any excess rain (more than 12.8 inches) could increase the volume substantially (Figure 4). If it rains 17.8 or more inches during the forecast period, 2025 could be more like 2006. The **effects of excess rain are visualized in Figure 4** as inches above normal.



NRCS Forecasts

Volumetric projections of April-July water supply in the 7 drainages identified in Appendix 3.7. These are provided by the NRCS near the beginning of each month in March, April, May, and June.

Forecasting – NRCS Basin Reports

Forecast Exceedance Probabilities For Risk Assessment
Chance that actual volume will exceed forecast

Flathead	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Hungry Horse Reservoir Inflow[1,2]								
	APR-JUL	1210	1490	1620	88%	1750	2030	1850
	APR-SEP	1290	1590	1730	88%	1870	2170	1960
SF Jocko R nr Arlee[1,2]								
	APR-JUL	25	30	33	94%	37	44	35
	APR-SEP	27	32	36	92%	40	48	39
MF Flathead R nr West Glacier[1,2]								
	APR-JUL	1040	1140	1220	83%	1290	1400	1470
	APR-SEP	1170	1280	1370	85%	1470	1600	1620
Hellroaring Creek ab Reservoir nr Polson[1,2]								
	APR-JUL	3.5	4	4.3	105%	4.9	5.5	4.1
	APR-SEP	4.5	5.1	5.5	106%	6	6.7	5.2
Mission Ck nr St. Ignatius[1,2]								
	APR-JUL	21	24	26	100%	28	32	26
	APR-SEP	25	28	31	100%	33	37	31
Sf Flathead R nr Hungry Horse[1,2]								
	APR-JUL	925	1010	1080	88%	1150	1230	1230
	APR-SEP	980	1080	1140	88%	1210	1310	1290
Flathead Lake Inflow[1,2]								
	APR-JUL	4060	4920	5310	94%	5700	6560	5670
	APR-SEP	4360	5350	5800	92%	6250	7240	6310
North Crow Creek nr Ronan[1,2]								
	APR-JUL	14.5	16.6	18.5	105%	20	23	17.7
	APR-SEP	17.4	19.7	22	100%	24	27	22
Agency Crk nr Arlee								
	APR-JUL	4.2	5.1	5.6	92%	6.3	7.2	6.1
	APR-SEP	4.7	5.5	6.1	86%	6.7	7.6	7.1
South Crow Ck nr Ronan[1,2]								
	APR-JUL	8.4	9.6	10.6	104%	11.8	13.4	10.2
	APR-SEP	9.5	10.8	11.8	103%	12.9	14.9	11.5
Flathead R at Columbia Falls[1,2]								
	APR-JUL	3730	4070	4360	90%	4620	5030	4870
	APR-SEP	4170	4580	4860	90%	5180	5660	5400
NF Flathead R nr Columbia Falls[1,2]								
	APR-JUL	1130	1250	1350	88%	1450	1600	1540
	APR-SEP	1280	1410	1530	90%	1630	1790	1700
Swan R nr Bigfork[1,2]								
	APR-JUL	405	455	495	94%	530	595	525
	APR-SEP	435	485	525	90%	560	630	585
Mill Ck ab Bassoo ck nr Niarada[1,2]								
	APR-JUL	2.1	3	3.7	79%	4.6	6.3	4.7
	APR-SEP	2.3	3.1	3.9	80%	4.8	6.3	4.9

1) 90% And 10% exceedance probabilities are actually 95% And 5%
2) Forecasts are For unimpaired flows. Actual flow will be dependent On management of upstream reservoirs And diversions

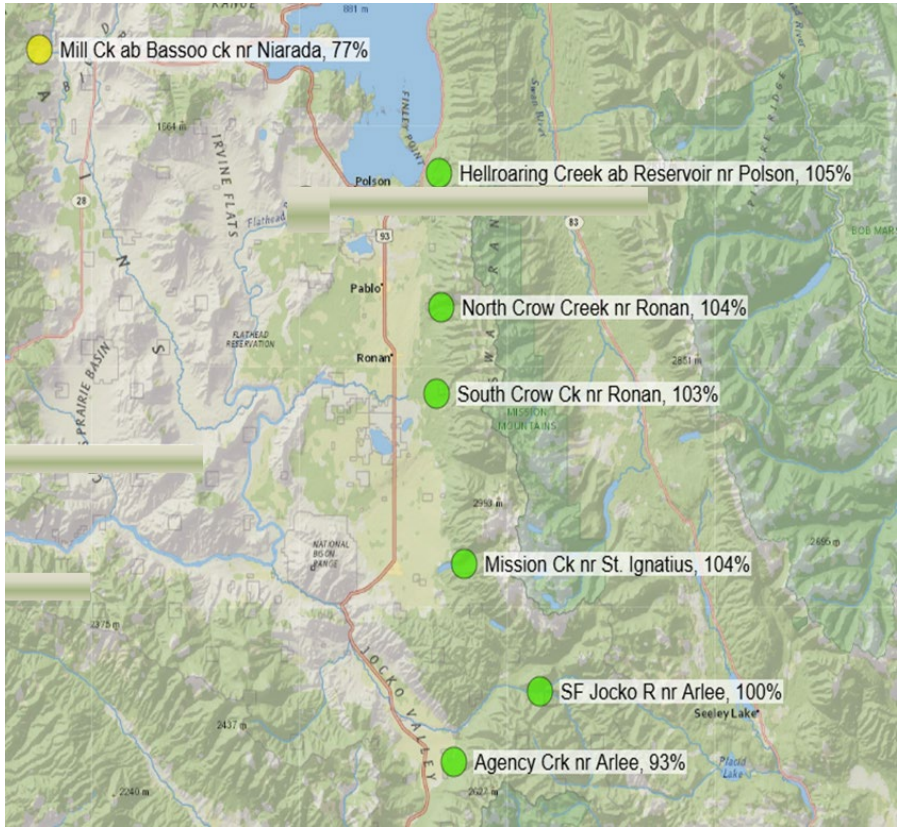


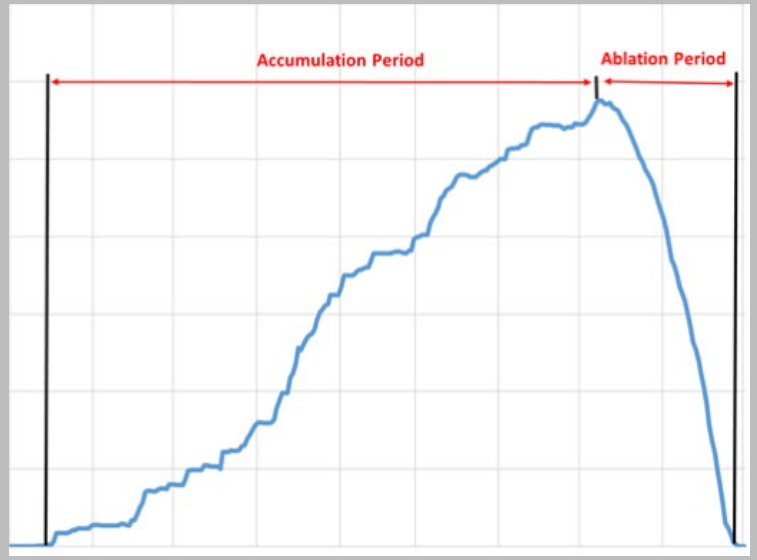
Table 1: April 2025 Water Year NRCS Streamflow Forecast

		April NRCS Forecast				Site-Specific Water Year Thresholds		
Geographic Area	Gage Site	70%	50%	30%	% Median	Dry Year	Normal Year	Wet Year
Jocko	South Fork Jocko near Arlee	30,000	33,000	37,000	94%	<24,000	24,000 - 36,000	>36,000
	Agency Creek	5,100	5,600	6,300	92%	<4,640	4,640-6,880	>6,880
Mission	Hellroaring Creek	4,000	4,300	4,900	105%	<3,350	3,350-4,750	>4,750
	North Crow Creek near Ronan	16,600	18,500	20,000	105%	<14,400	14,400-22,700	>22,700
	South Crow Creek near Ronan	9,600	10,600	11,800	104%	<7,700	7,700 - 11,800	>11,800
	Mission Creek	24,000	26,000	28,000	100%	<21,100	21,100 - 29,000	>29,000
Little Bitterroot	Mill Creek above Bassoo Creek near Niarada	3,000	3,700	4,600	79%	<2,200	2,200 - 4,900	>4,900

Wet
Normal
Dry

*all values are in acre feet

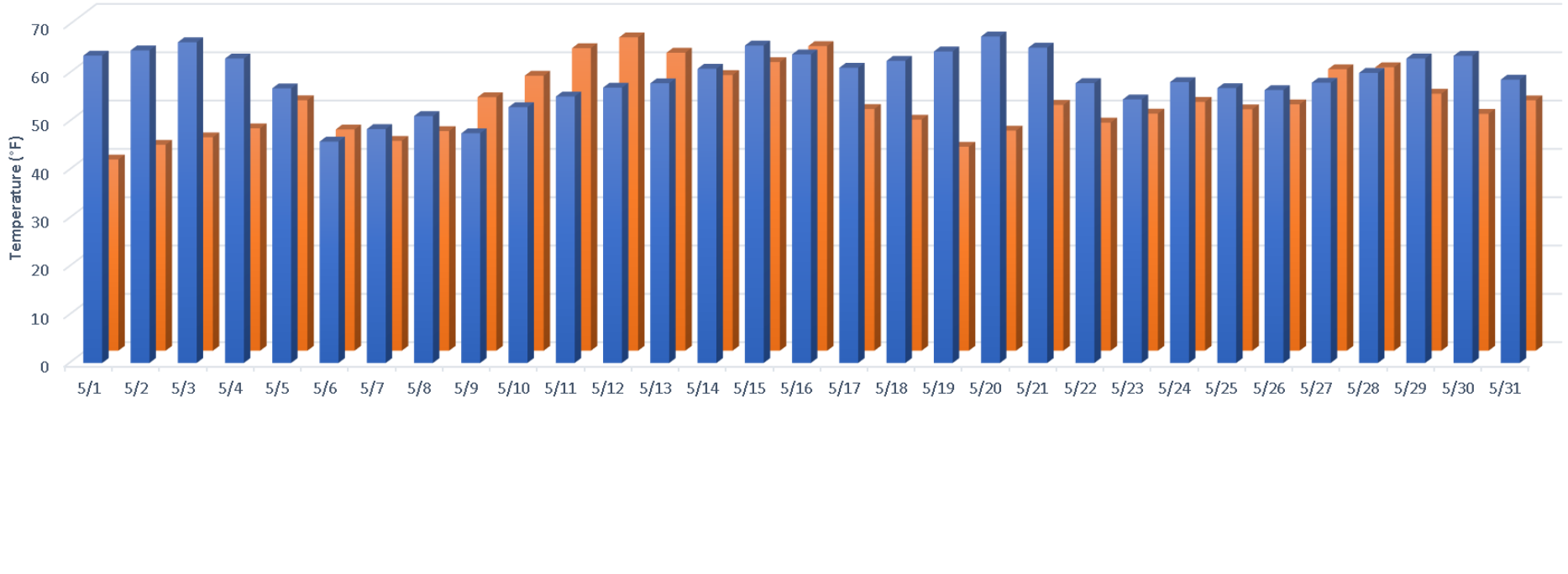
Melt-out Timing



MAY 2023 vs. MAY 2024 Average Daily Temps- St. Ignatius Agrimet

2023 Average: 59°F

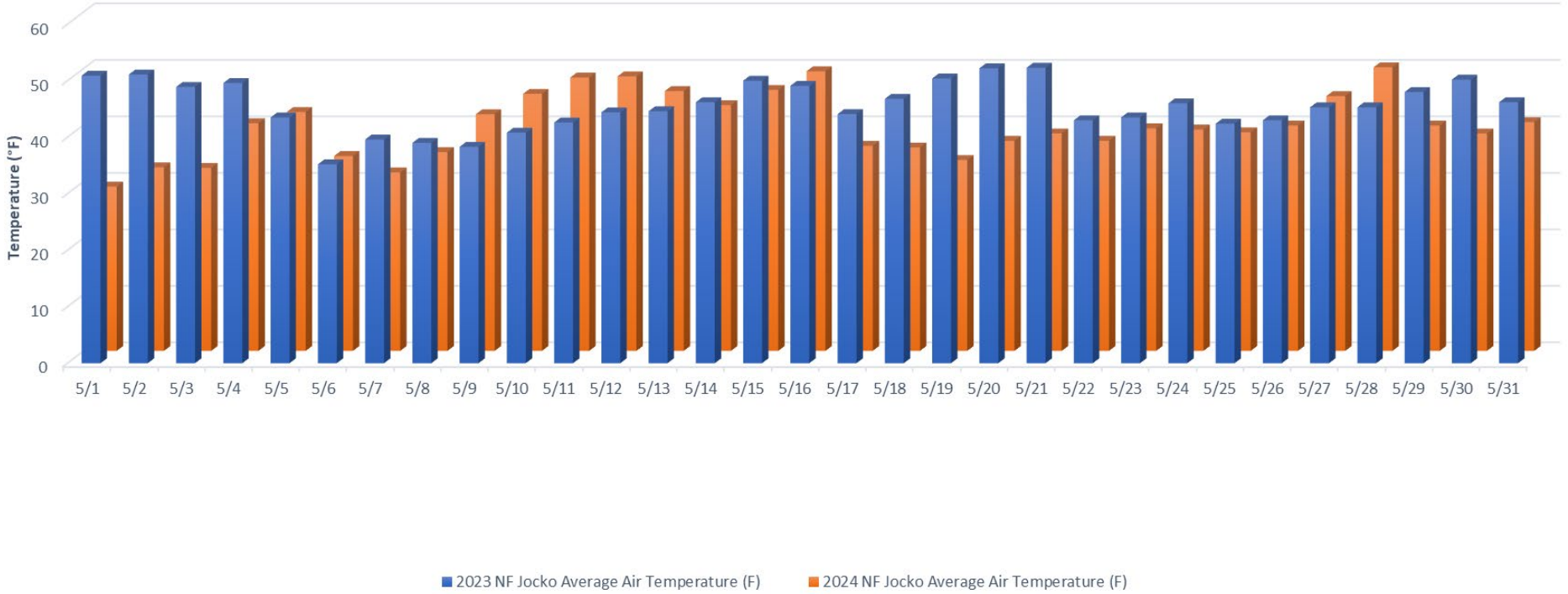
2024 Average 51.4°F



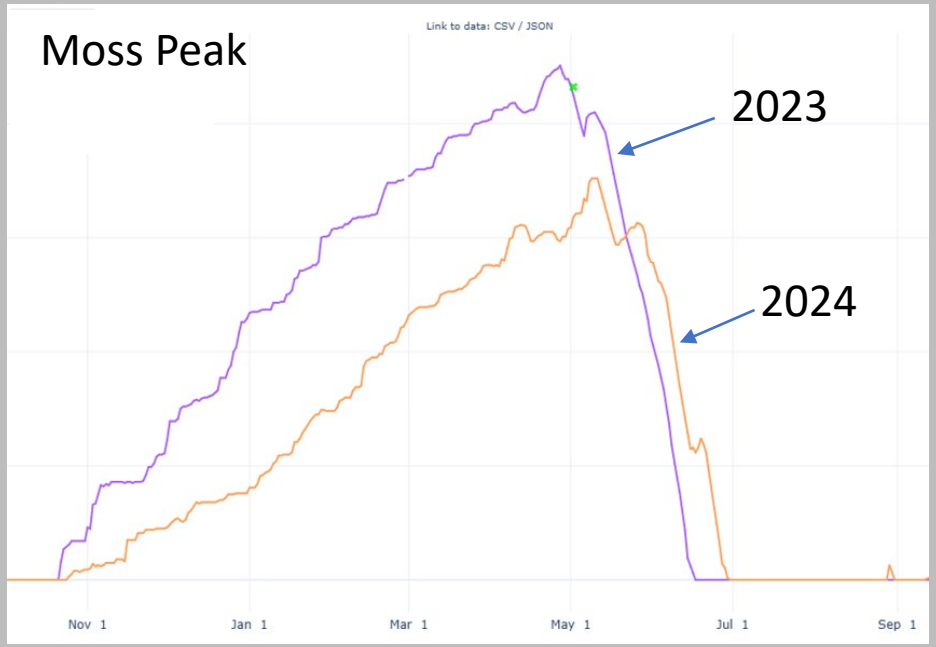
MAY 2023 vs. MAY 2024 Average Daily Temps- NF Jocko SNOTEL

2023 Average: 45.6°F

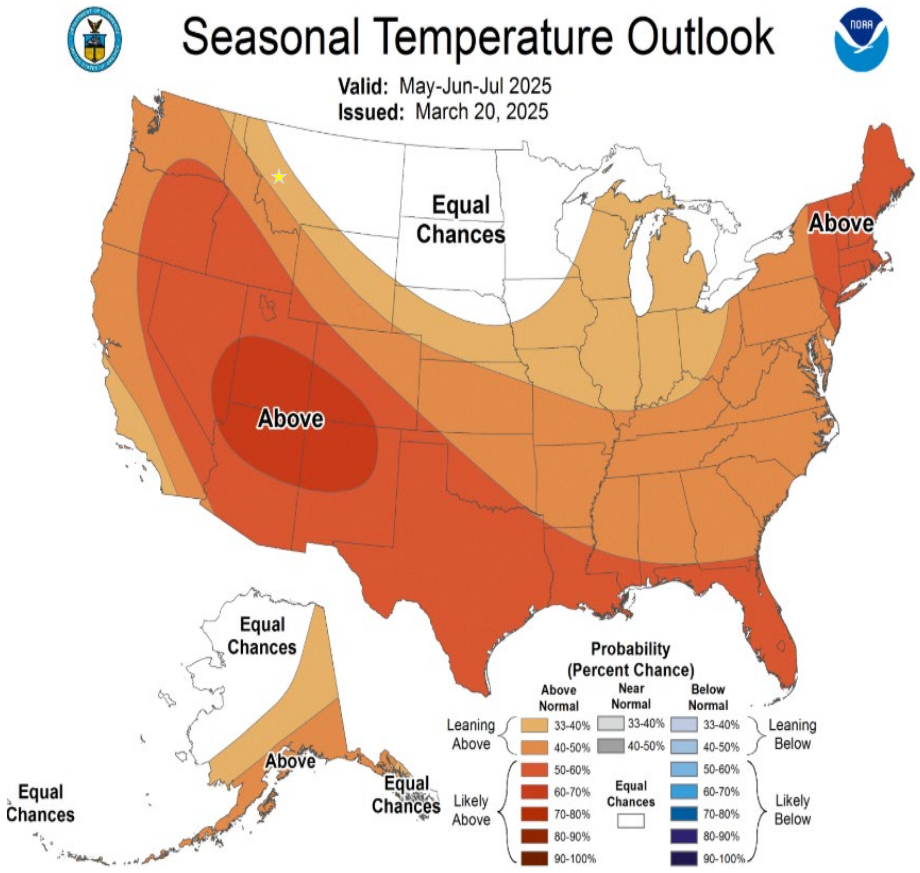
2024 Average 39.9°F

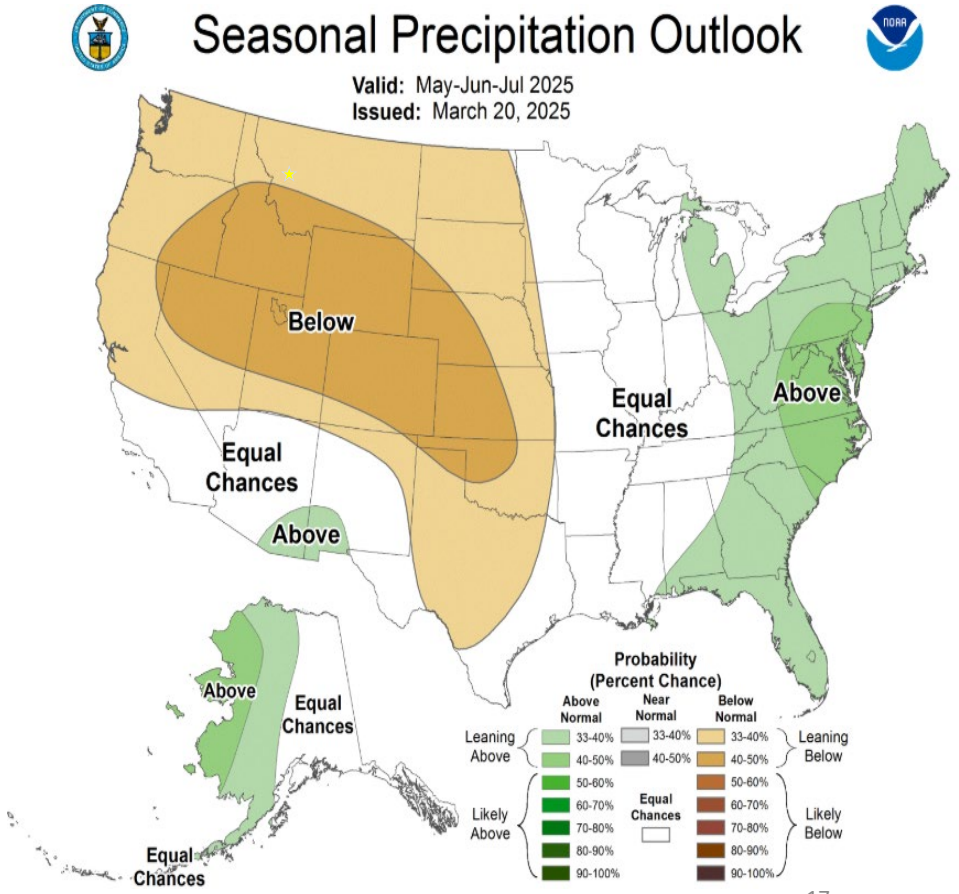


Melt-out Timing



Three Month Outlook – May/June/July 2025





DRAFT – Not Approved by CITT

2025 Water Supply Outlook Summary (04/16/25)

° Flathead Basin-Wide (96% Median) snowpack conditions near-average, with locally higher values.

°Current SWE conditions are improved from WY 2024.

°3 month outlooks indicate potential for 'leaning above' average temps and 'leaning below' average precip.

°Water Supply Forecasts indicate Normal Year outlook; future forecasts will refine water year determination.

Table 1: April 2025 Water Year NRCS Streamflow Forecast

		April NRCS Forecast				Site-Specific Water Year Thresholds		
Geographic Area	Gage Site	70%	50%	30%	% Median	Dry Year	Normal Year	Wet Year
Jocko	South Fork Jocko near Arlee	30,000	33,000	37,000	94%	<24,000	24,000 - 36,000	>36,000
	Agency Creek	5,100	5,600	6,300	92%	<4,640	4,640-6,880	>6,880
Mission	Hellroaring Creek	4,000	4,300	4,900	105%	<3,350	3,350-4,750	>4,750
	North Crow Creek near Ronan	16,600	18,500	20,000	105%	<14,400	14,400-22,700	>22,700
	South Crow Creek near Ronan	9,600	10,600	11,800	104%	<7,700	7,700 - 11,800	>11,800
	Mission Creek	24,000	26,000	28,000	100%	<21,100	21,100 - 29,000	>29,000
Little Bitterroot	Mill Creek above Bassoo Creek near Niarada	3,000	3,700	4,600	79%	<2,200	2,200 - 4,900	>4,900

Wet
Normal
Dry

*all values are in acre feet