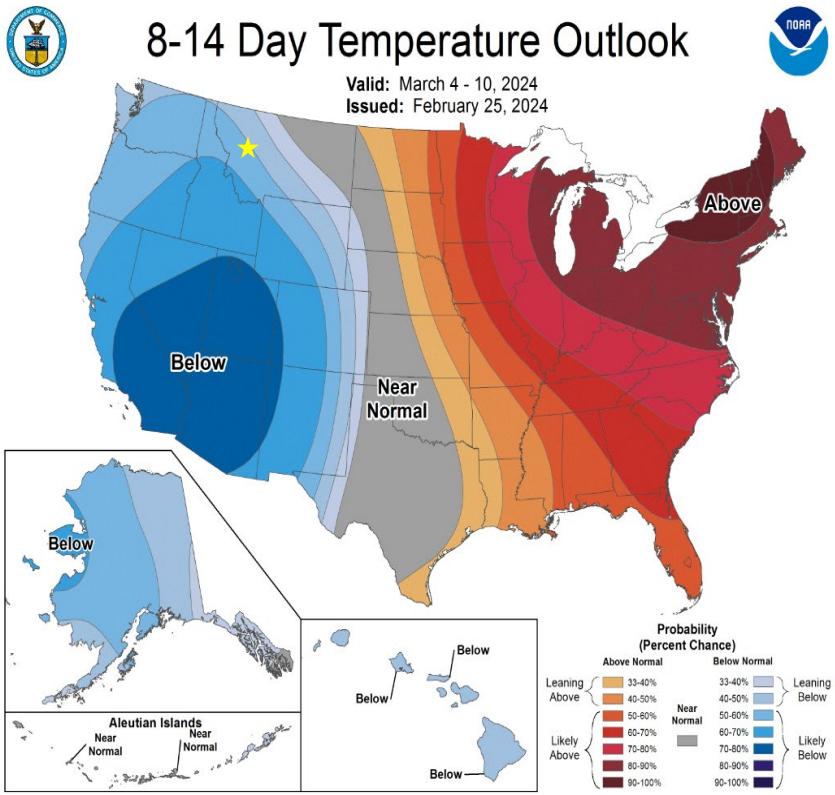
DRAFT – Not Approved by CITT

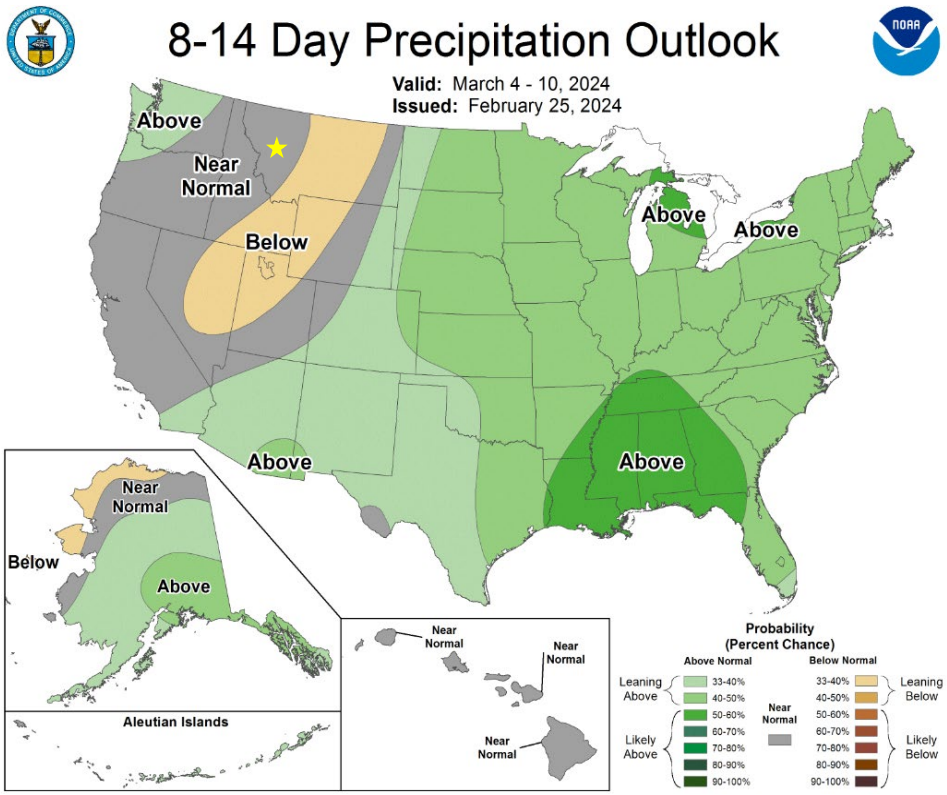
2024 Water Supply Outlook (02/26/24)

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

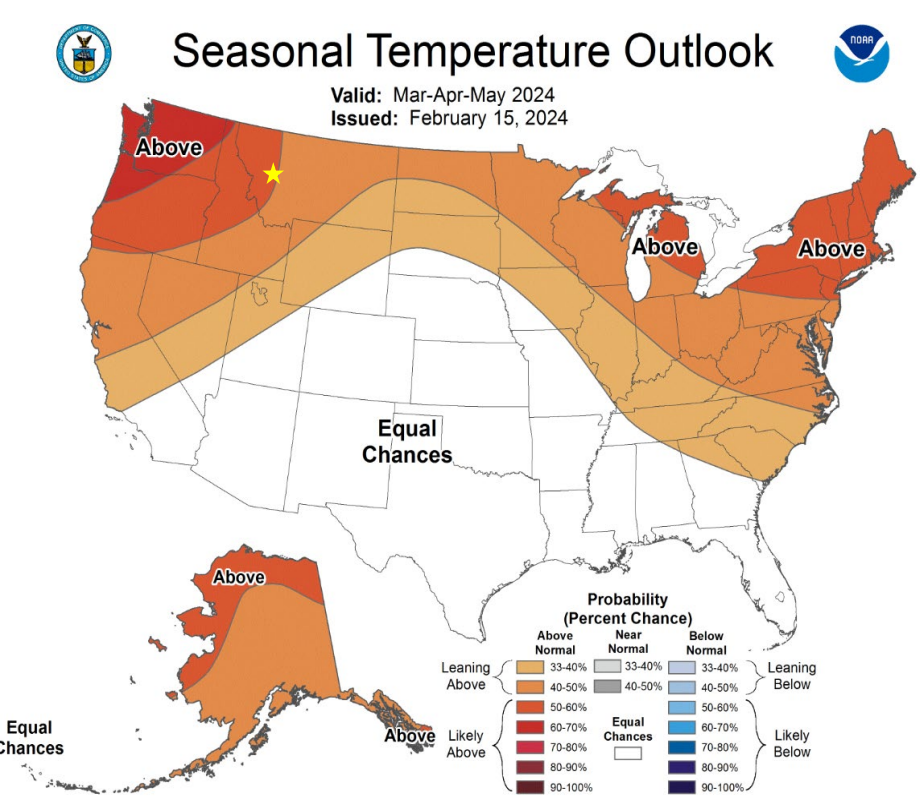
Appendix 3.5 Timeline

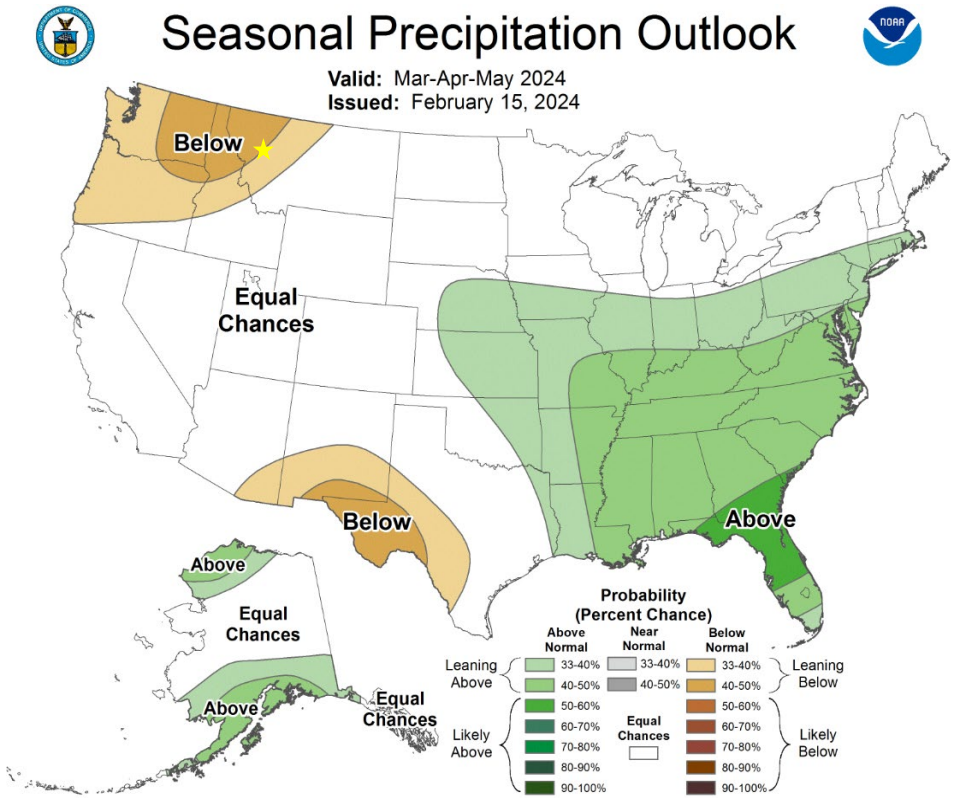
8-14 Day Outlook – Issued February 20, 2024





Three Month Outlook – Mar-April -May 2024





Forecasting – NRCS Basin Reports

Report Created:
2/16/2024 11:35:10 AM

Streamflow Forecast Summary: February 1, 2024
(Medians based On 1991-2020 reference period)

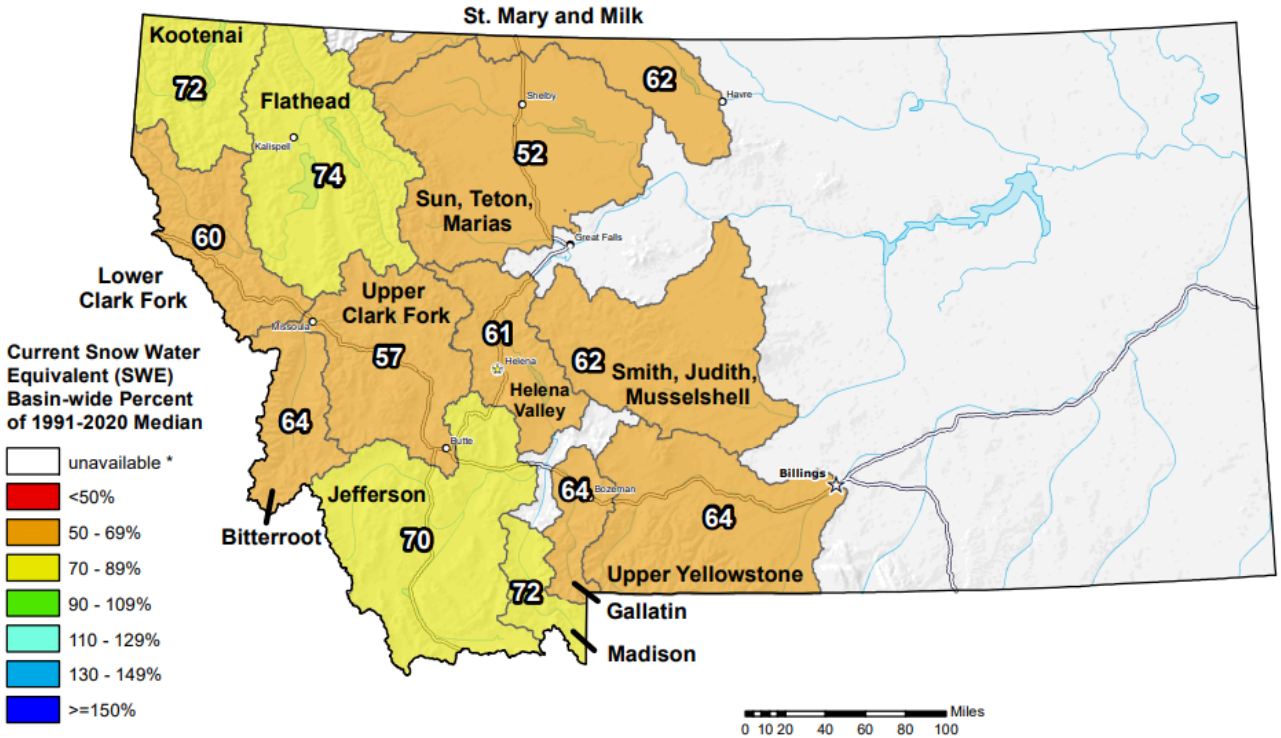
Flathead	Forecast Period	Forecast Exceedance Probabilities For Risk Assessment: Chance that actual volume will exceed forecast — 90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Swan R nr Bigfork[1,2]								
South Crow Ck nr Ronan[1,2]								
Hellroaring Creek ab Reservoir nr Polson								
SF Jocko R nr Arlee[1,2]								
Flathead R at Columbia Falls								
Mission Ck nr St. Ignatius[1,2]								
Hungry Horse Reservoir Inflow								
Flathead Lake Inflow								
NF Flathead R nr Columbia Falls[1,2]								
MF Flathead R nr West Glacier[1,2]								
Mill Ck ab Bassoo ck nr Niarada[1,2]								
Sf Flathead R nr Hungry Horse[1,2]								

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

– Not Approved by CITT

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

Feb 26, 2024



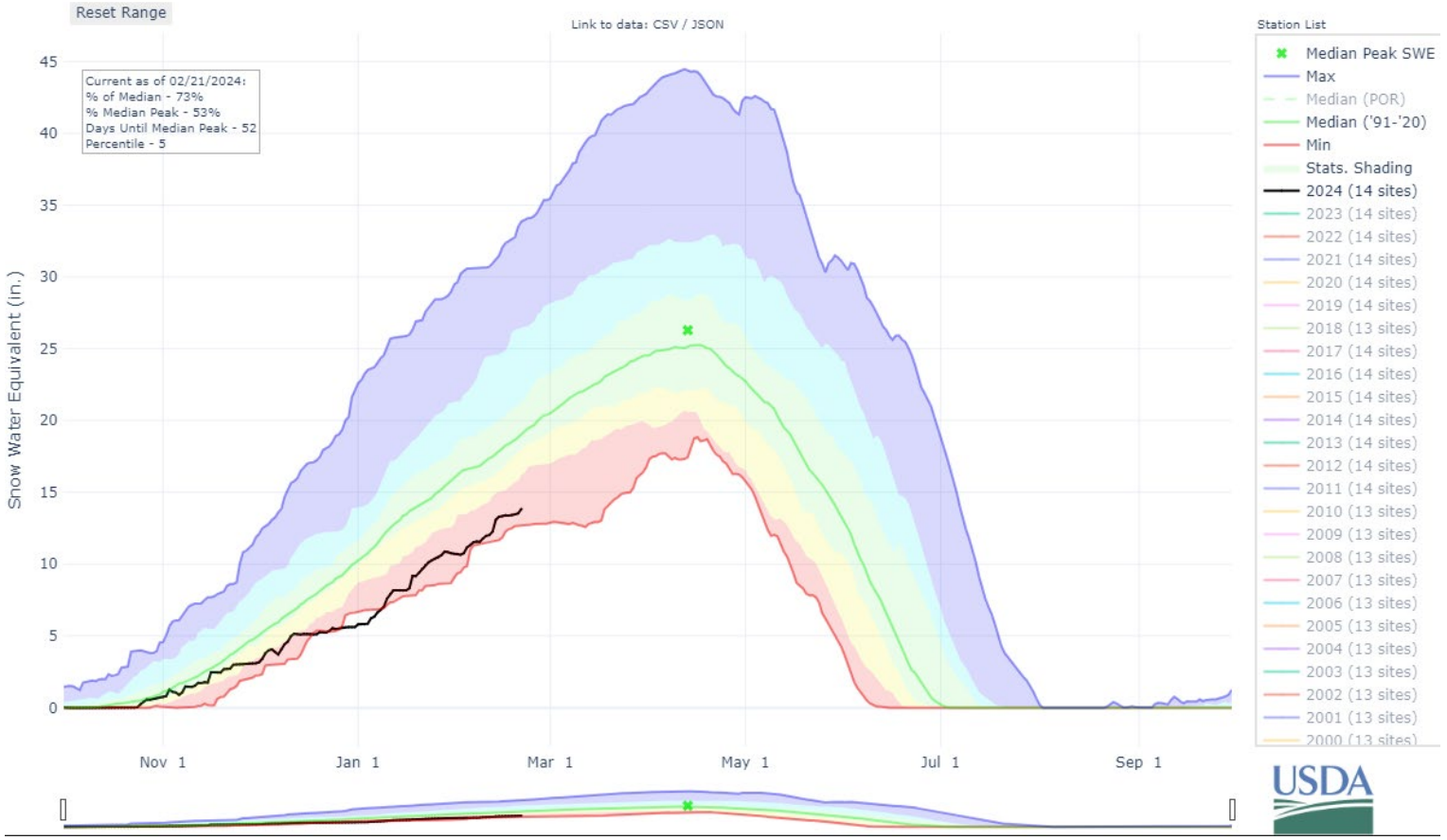
Provisional Data Subject to Revision

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
https://www.nrcs.usda.gov/wps/portal/wcc/home/

DRAFT – Not Approved by CITT

AWS Plot | SNOW WATER EQUIVALENT PROJECTION IN FLATHEAD

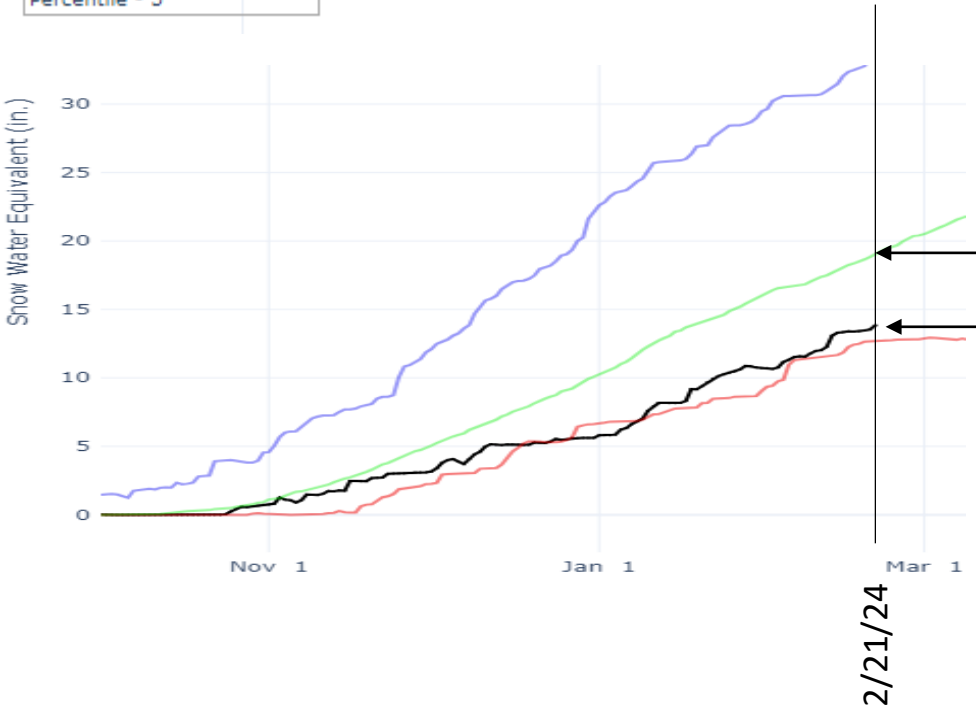


AWS Plot | SNOW WATER EQUIVALENT IN FLATHEAD

Snow Water Equivalent
- The amount of water the snowpack contains

DRAFT – Not Approved by CITT

Current as of 02/21/2024:
% of Median - 73%
% Median Peak - 53%
Days Until Median Peak - 52
Percentile - 5



Percentile:
- Percentile shows a value's relative position in a dataset. 0 percentile indicates that the observed value is the lowest recorded value (for today's date). 5 percentile is higher than 5% of all other observations.

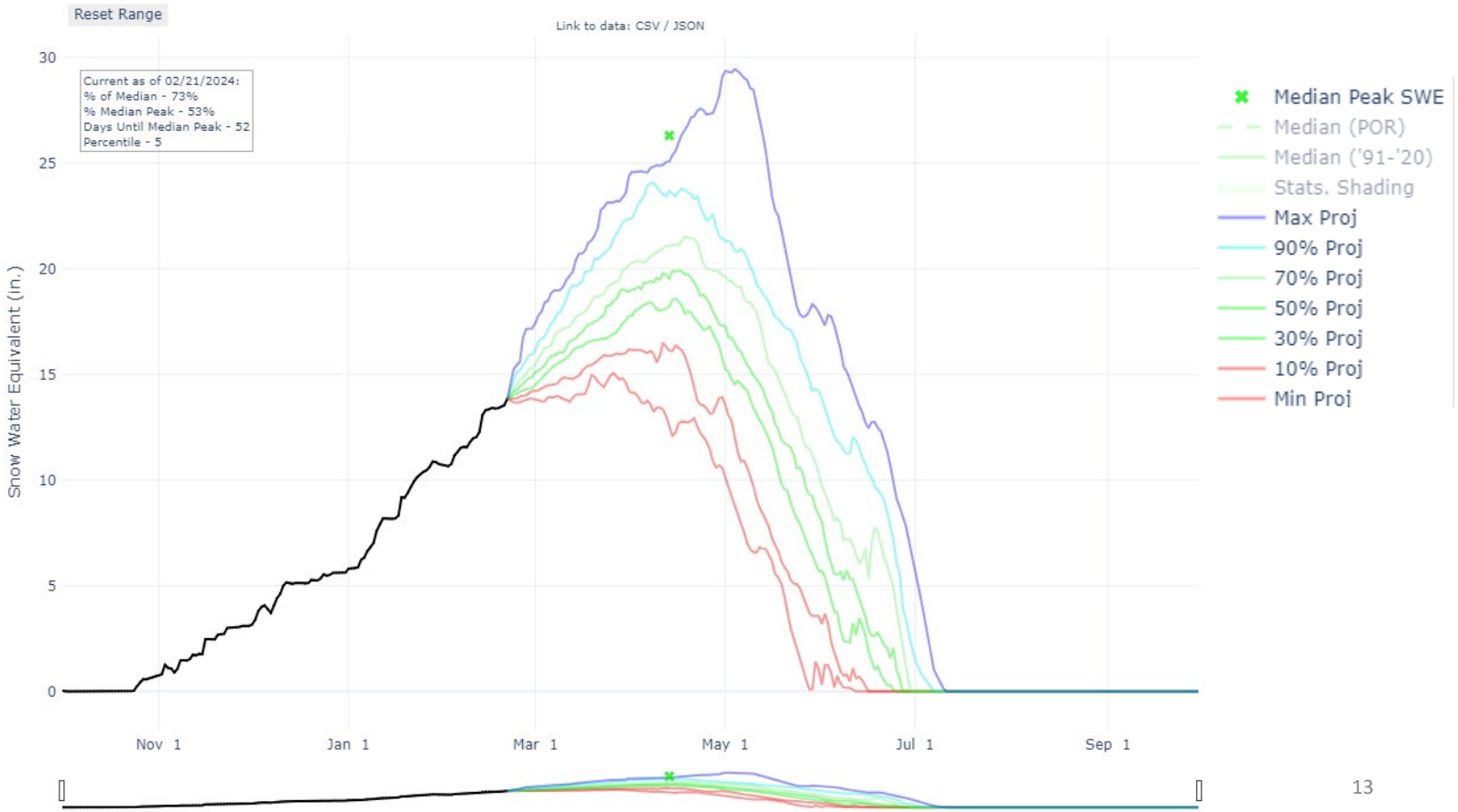
Median:
- The midpoint of an observed range of values (19.1 in).

February 21, 2024
- The observed values across Flathead Basin Stations (13.8 in).

% of Median:
- Percent of median compares a value to the median of the dataset, showing it's relative position.
- For the Flathead Basin 13.8 inches of SWE is **73%** of the median (13.8 inches / 19.1 inches = 0.73).

DRAFT – Not Approved by CITT

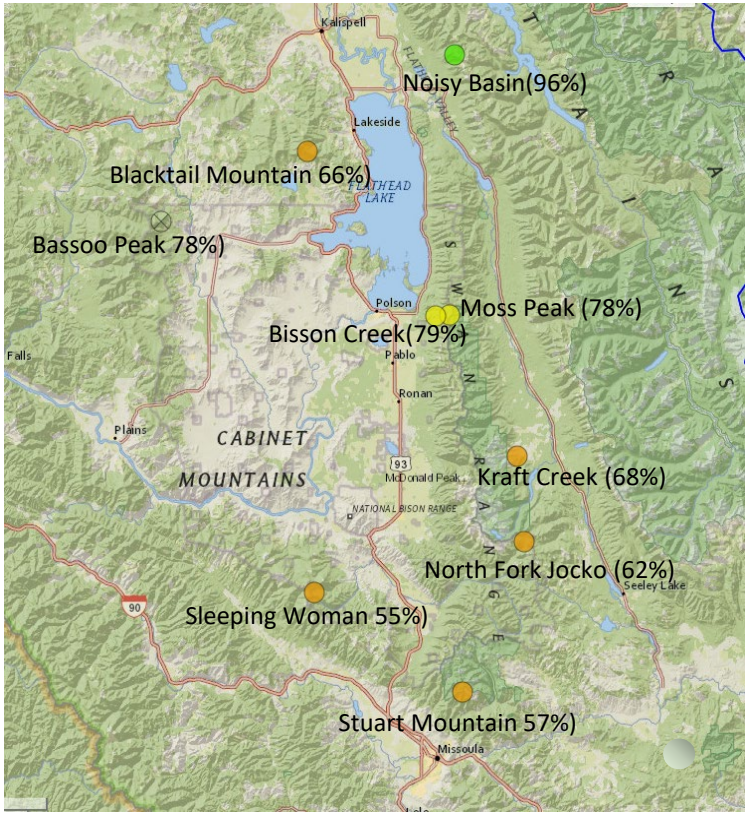
AWS Plot | SNOW WATER EQUIVALENT PROJECTION IN FLATHEAD



Snow Water Equivalent for Local NRCS SNOTEL Network (2/21/2024)					
Geographic Area	Snotel Gage	SWE (in)	Median (in)	% Median	Percentile
Jocko Area	North Fork Jocko	19.6	31.7	62%	0
	Sleeping Woman	6.5	11.7	55%	0
	Stuart Mountain	*13.9*	*24.6*	*57%*	*0*
Mission Area	Moss Peak	20.5	26.7	78%	11
	Bisson Creek	5.6	7.1	79%	16
	Kraft Creek	*7.1*	*11.1*	*68%*	*2*
Little Bitterroot Area	Blacktail Mtn	6.2	9.2	66%	0
	Bassoo Peak	4.5	5.8	78%	0

Exceedence Probabilities:

< 20%
20% - 80%
>80%



Notes:

- The determination of wet, dry, and normal years for the purposes of defining RDA, MEF, and TIF is based on <20, 20-80, and >80 percentile exceedance levels of natural streamflow for the Apr-Jul period (Appendix 3.7).
- Stuart Mountain and Kraft Creek are in adjacent drainages. They are included for information purposes since they are near drainage divides.
- Percentile indicates the relative position of a value in a dataset. 0th percentile indicates that the observed value is the lowest on record during the period of record for today's date. The corresponding exceedance probability would be 100%.

Median:

- Percent of median compares a value to the median of the dataset, showing it's relative position.

Percentile:

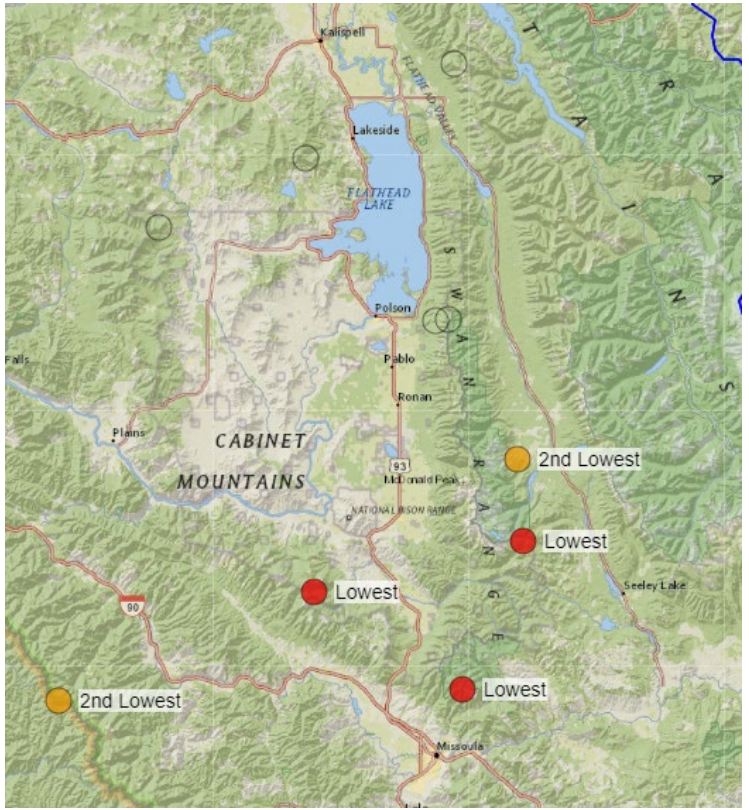
- Percentile shows a value's relative position in a dataset. 0 percentile indicates that the observed value is the lowest recorded value (for today's date). 3 percentile is higher than 3% of all other observations.

Snow Water Equivalent for Local NRCS SNOTEL Network (2/21/2024)

Geographic Area	Snotel Gage	SWE (in)	Median (in)	% Median	Percentile
Jocko Area	North Fork Jocko	19.6	31.7	62%	0
	Sleeping Woman	6.5	11.7	55%	0
	Stuart Mountain	*13.9*	*24.6*	*57%*	*0*
Mission Area	Moss Peak	20.5	26.7	78%	11
	Bisson Creek	5.6	7.1	79%	16
	Kraft Creek	*7.1*	*11.1*	*68%*	*2*
Little Bitterroot Area	Blacktail Mtn	6.2	9.2	66%	0
	Bassoo Peak	4.5	5.8	78%	0

Exceedence Probabilities:

< 20%
20% - 80%
>80%



Notes:

- The determination of wet, dry, and normal years for the purposes of defining RDA, MEF, and TIF is based on <20, 20-80, and >80 percentile exceedance levels of natural streamflow for the Apr-Jul period (Appendix 3.7).
- Stuart Mountain and Kraft Creek are in adjacent drainages. They are included for information purposes since they are near drainage divides.
- Percentile indicates the relative position of a value in a dataset. 0th percentile indicates that the observed value is the lowest on record during the period of record for today's date. The corresponding exceedance probability would be 100%.

Median:

- Percent of median compares a value to the median of the dataset, showing it's relative position.

Percentile:

- Percentile shows a value's relative position in a dataset. 0 percentile indicates that the observed value is the lowest recorded value (for today's date). 3 percentile is higher than 3% of all other observations.

DRAFT – Not Approved by CITT

2024 Water Supply Outlook Summary (02/26/24)

°Flathead Basin-Wide (74% Median) indicates below average snowpack conditions.

°Conditions have slightly improved since the January CITT meeting (64% Median SWE on 1/15/24).

°3 month outlooks do not signal a drastic improvement for temperature or precipitation.

°Pending Water Supply Forecasts will refine the outlook and inform water year determination.