

## May 15, 2023 Snow2Flow Update for Lochsa & Selway Rivers

For complete Snow to Flow Relationships see [Snow Melt / Peak Streamflow Relationships](#) (PDF; 146 KB) - Report by Kara Ferguson (2017) summarizing the relationship between snowmelt and peak streamflow timing on rivers throughout Idaho.

From:

<https://www.nrcs.usda.gov/wps/portal/wcc/home/quicklinks/states/idaho/watersupply/peak>

And NWS peak flow products and forecasts:

[Peak Flow and Stage Forecasts from NWS](#)

**Watch the weather and know your boating limits as rivers will be high for an extended period.**

# SNOW WATER EQUIVALENT IN LOCHSA

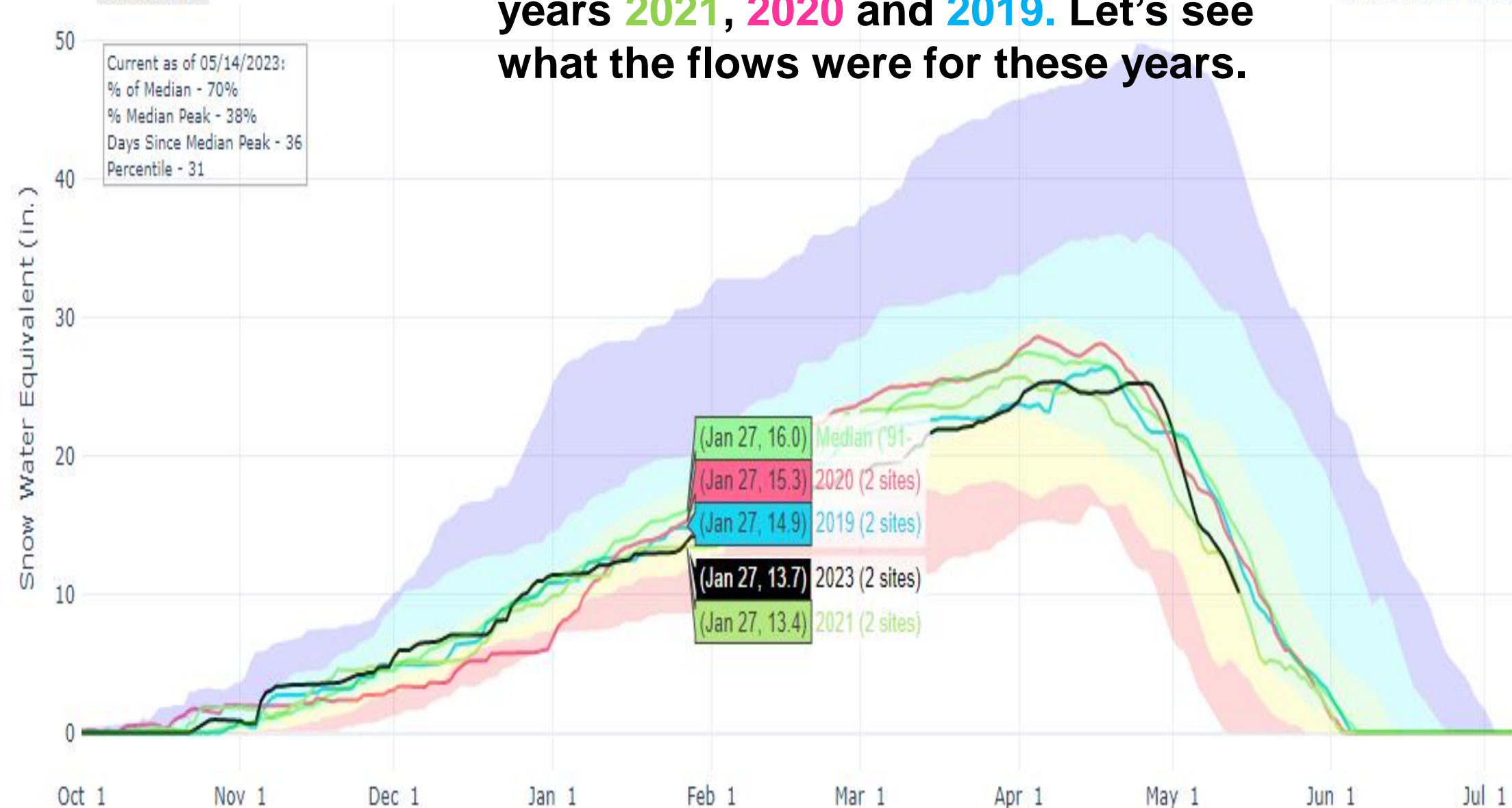
Reset Range

**2023 Lochsa SWE is similar to recent years 2021, 2020 and 2019. Let's see what the flows were for these years.**

[Link to data: CSV / JSON](#)

[Station List](#)

Current as of 05/14/2023:  
% of Median - 70%  
% Median Peak - 38%  
Days Since Median Peak - 36  
Percentile - 31



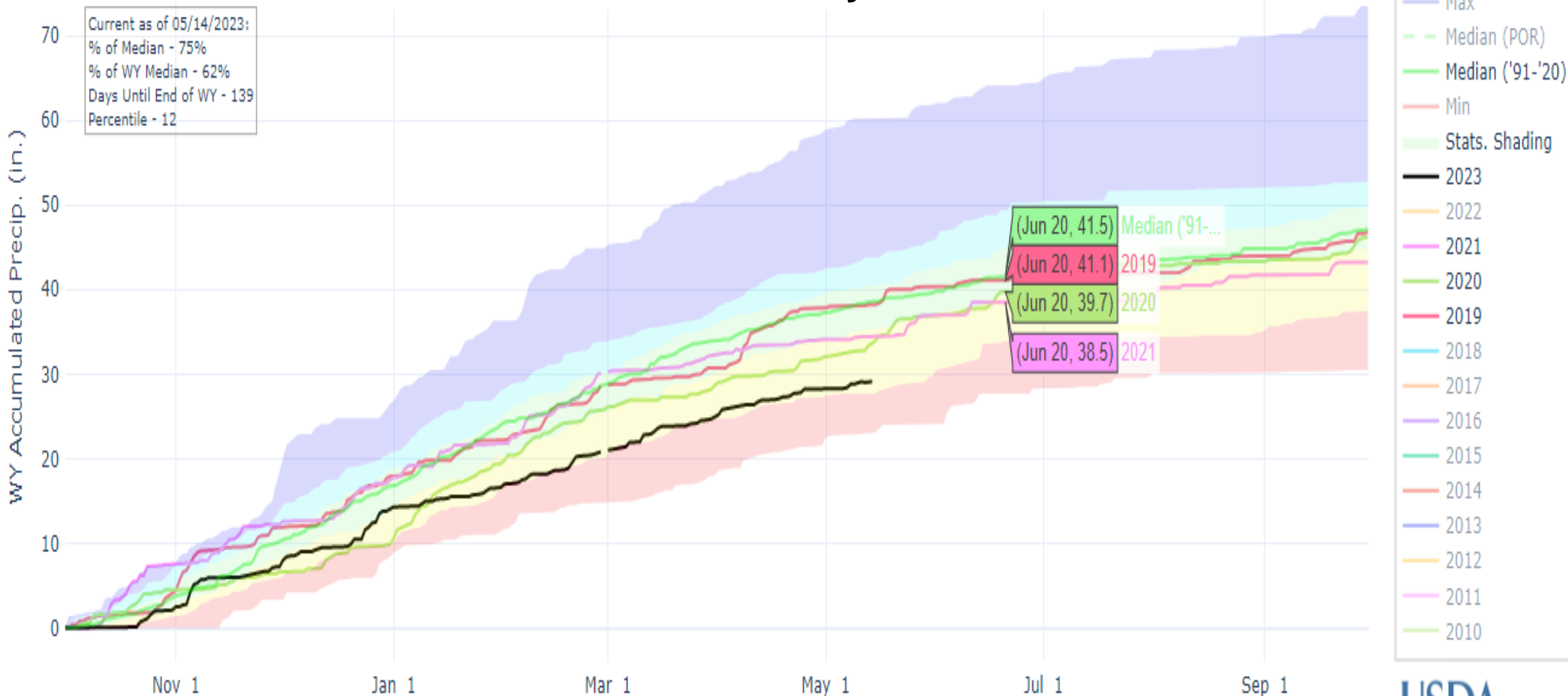
- ✱ Median Peak SWE
- Max
- Median (POR)
- Median ('91-'20)
- Min
- Stats. Shading
- 2023 (2 sites)
- 2022 (2 sites)
- 2021 (2 sites)
- 2020 (2 sites)
- 2019 (2 sites)
- 2018 (2 sites)
- 2017 (2 sites)
- 2016 (2 sites)
- 2015 (2 sites)
- 2014 (2 sites)
- 2013 (2 sites)
- 2012 (2 sites)
- 2011 (2 sites)

# PRECIPITATION AT LOLO PASS

Reset Range

## 2023 Lola Pass Precipitation is running lower than similar snow years.

[Link to data: CSV / JSON](#)





# SNOW WATER EQUIVALENT AT LOLO PASS

## LOCSHA RIVER AND LOLO PASS SNOTEL

On average, peak streamflow for the Lochsa River near Lowell, Idaho occurs when Lolo Pass SNOTEL is between **55 and 80%** melted.

Reset Range

Summary of years using only "snowmelt peak" and categorized by max SWE magnitude.

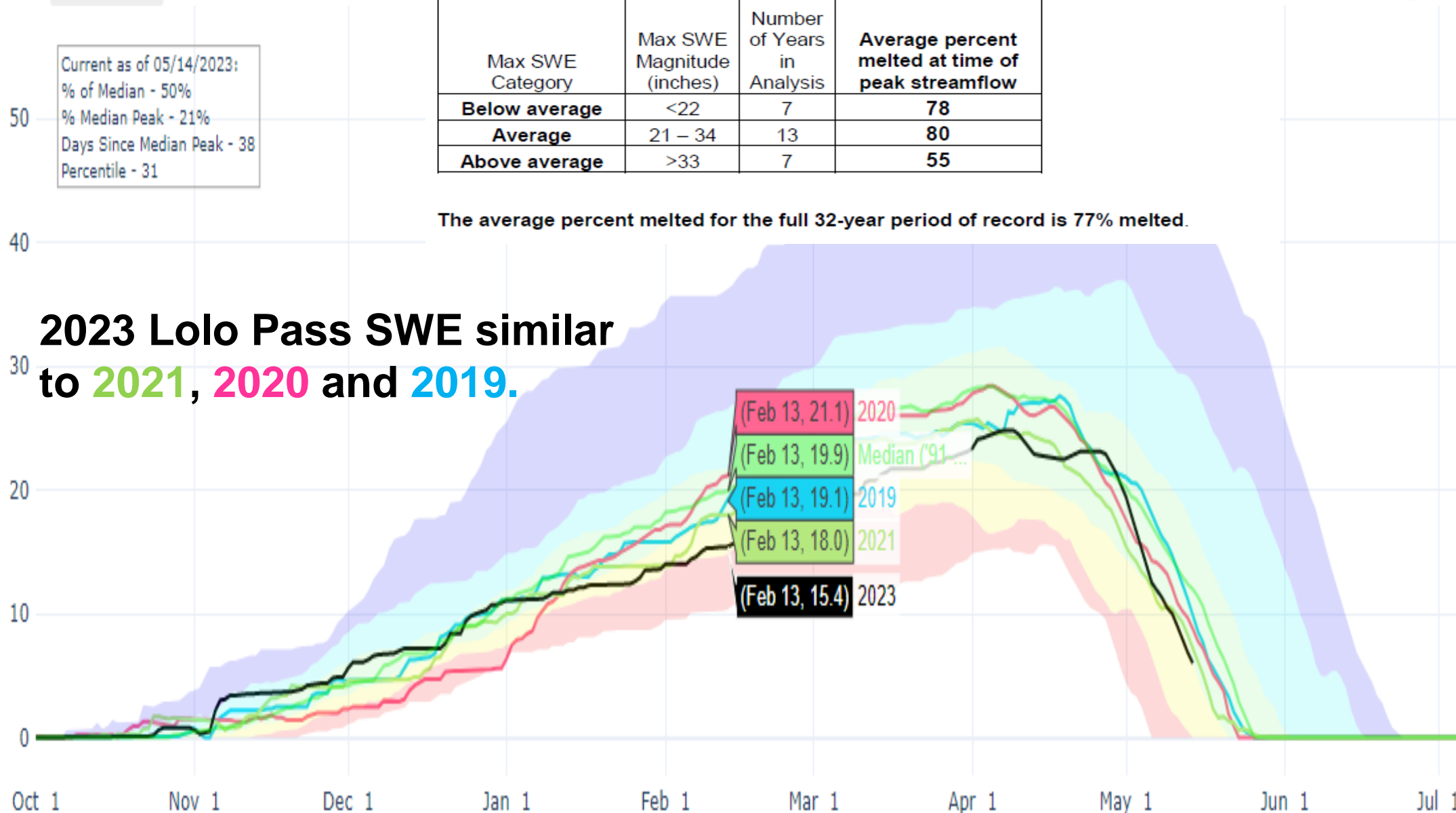
Link to data: [CSV](#) / [JSON](#)

Max SWE Category	Max SWE Magnitude (inches)	Number of Years in Analysis	Average percent melted at time of peak streamflow
<b>Below average</b>	<22	7	<b>78</b>
<b>Average</b>	21 – 34	13	<b>80</b>
<b>Above average</b>	>33	7	<b>55</b>

The average percent melted for the full 32-year period of record is 77% melted.

**2023 Lolo Pass SWE similar to 2021, 2020 and 2019.**

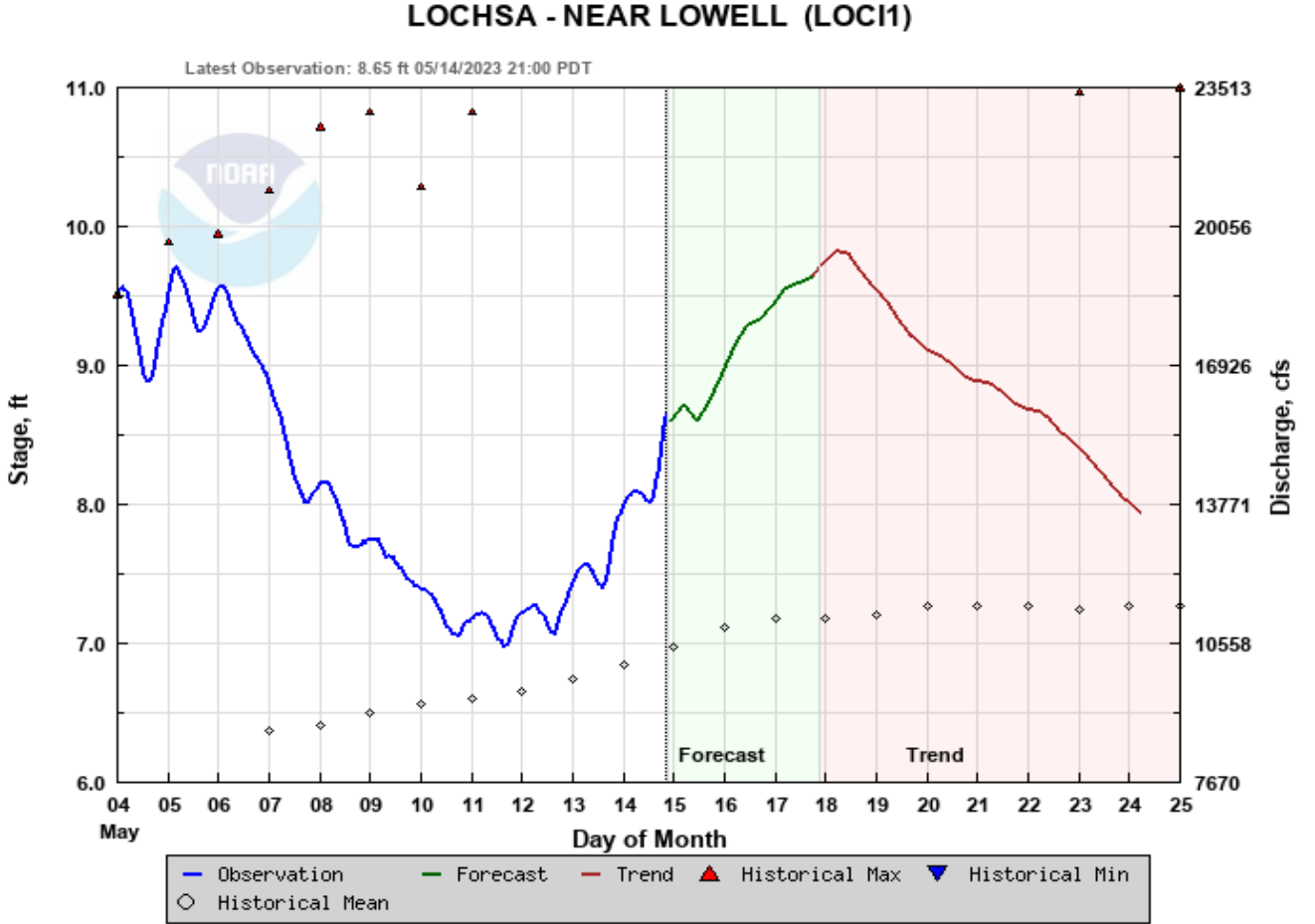
Snow Water Equivalent (in.)



Based on Lola Snow2Flow relationship – peak flows occurs around 80% melted. May 16 Lola will be at 5” of SWE, 80% melted. Hot temps will melt remaining snow at above normal rates to push the peak out as shown in NWS Forecast & Trend outlook.

May 1 Lochsa Volume Forecasts range from 805 to 1270 KAF with 50% chance exceedance forecast at 1040 KAF.

May - July runoff volumes in these similar years ranged from 988 to 1362 KAF.

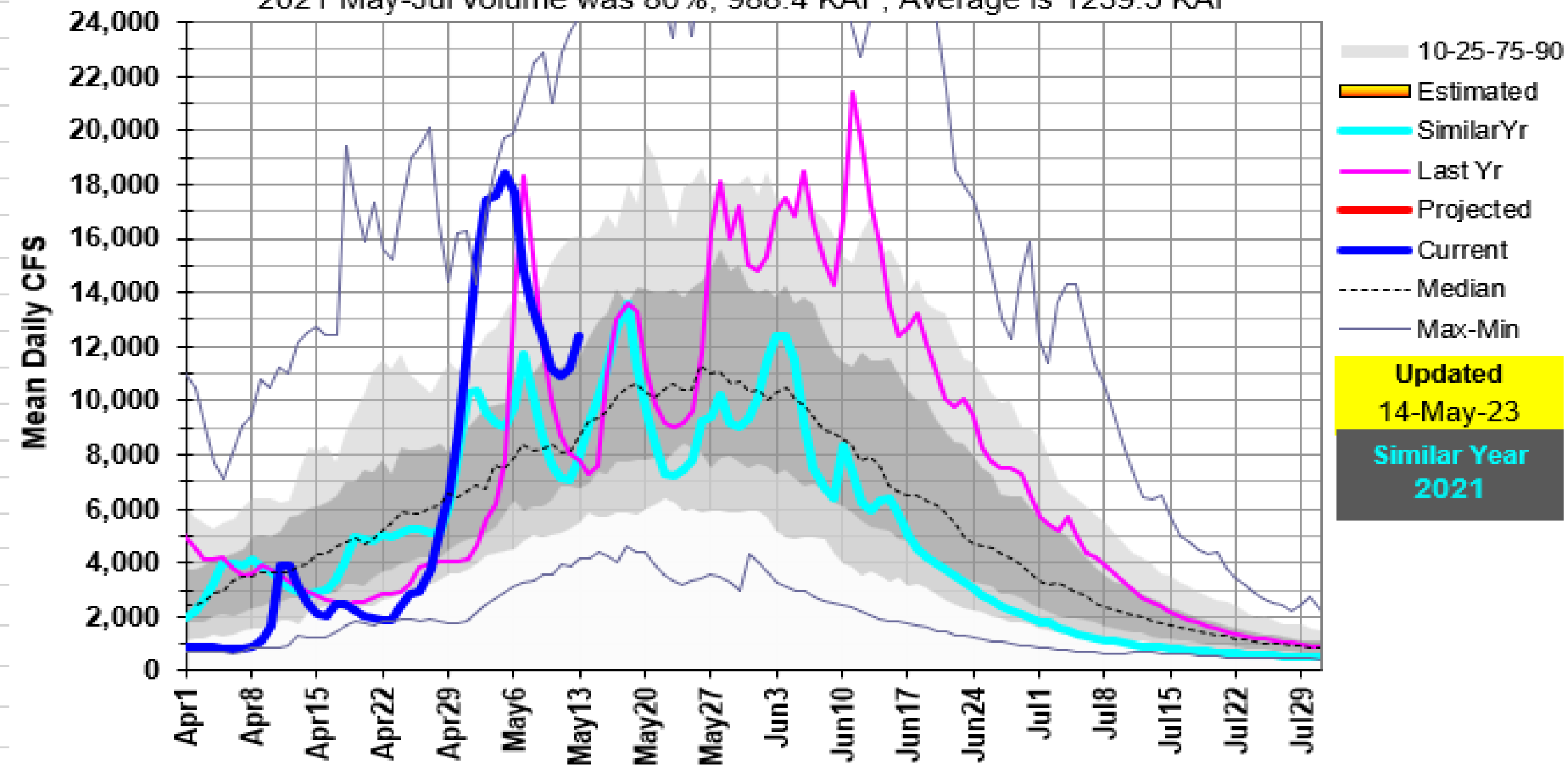


Clearwater River Basin Streamflow Forecasts - May 1, 2023

Forecast Point	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment						
		<---Drier-----Projected Volume-----Wetter-->						
		90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Med (KAF)
Selway R nr Lowell	MAY-JUL	1190	1370	1490	94%	1610	1790	1580
	MAY-SEP	1260	1450	1580	95%	1710	1910	1670
Lochsa R nr Lowell	MAY-JUL	805	945	1040	94%	1130	1270	1110
	MAY-SEP	855	1000	1100	94%	1200	1350	1170
Bennett R nr Lowell	MAY-JUL	1000	1100	1200	95%	1300	1400	1250
	MAY-SEP	1050	1150	1250	95%	1350	1450	1300

# 13337000: Lochsa R near Lowell, ID

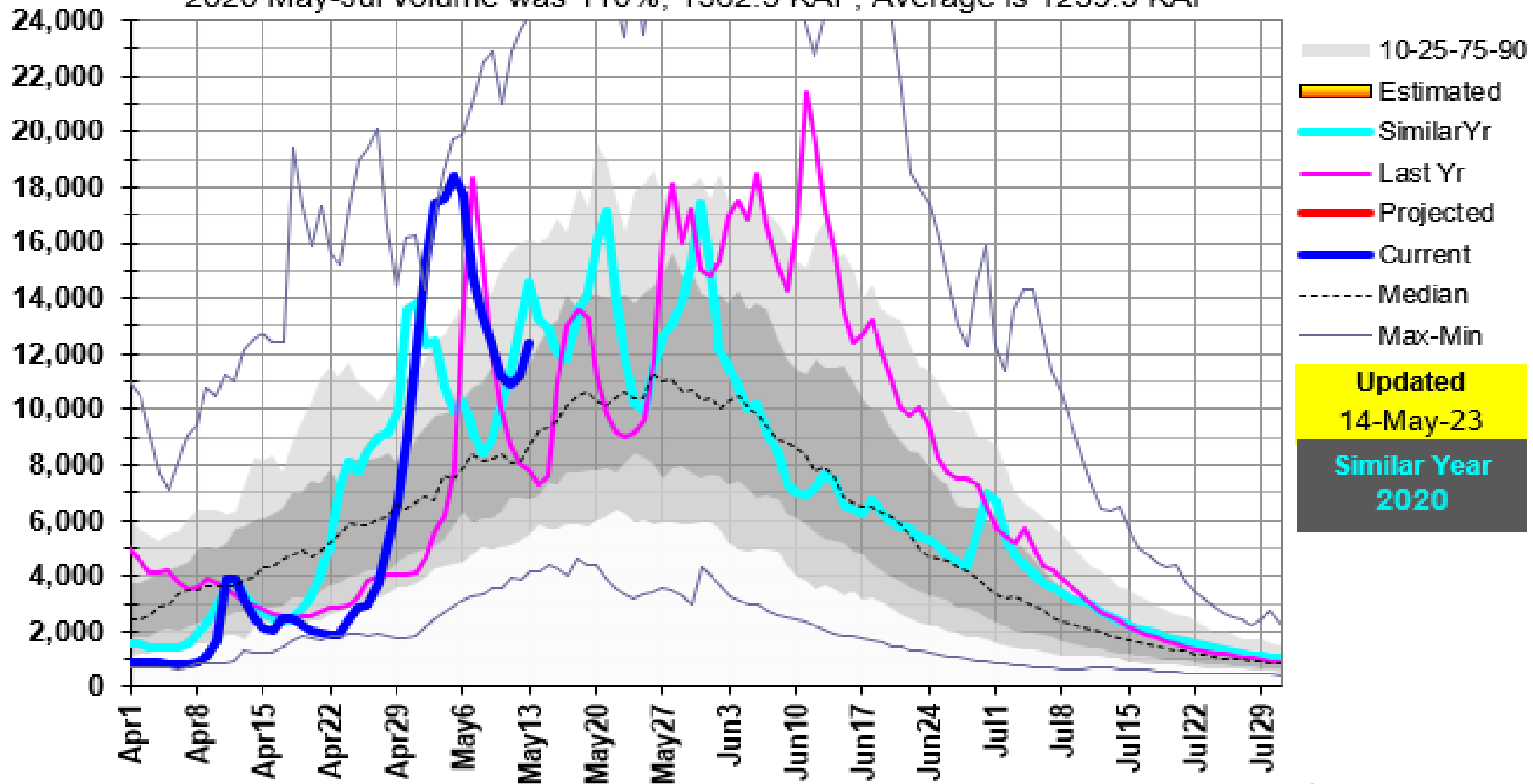
2021 May-Jul volume was 80%, 988.4 KAF, Average is 1239.5 KAF



# 13337000: Lochsa R near Lowell, ID

2020 May-Jul volume was 110%, 1362.5 KAF, Average is 1239.5 KAF

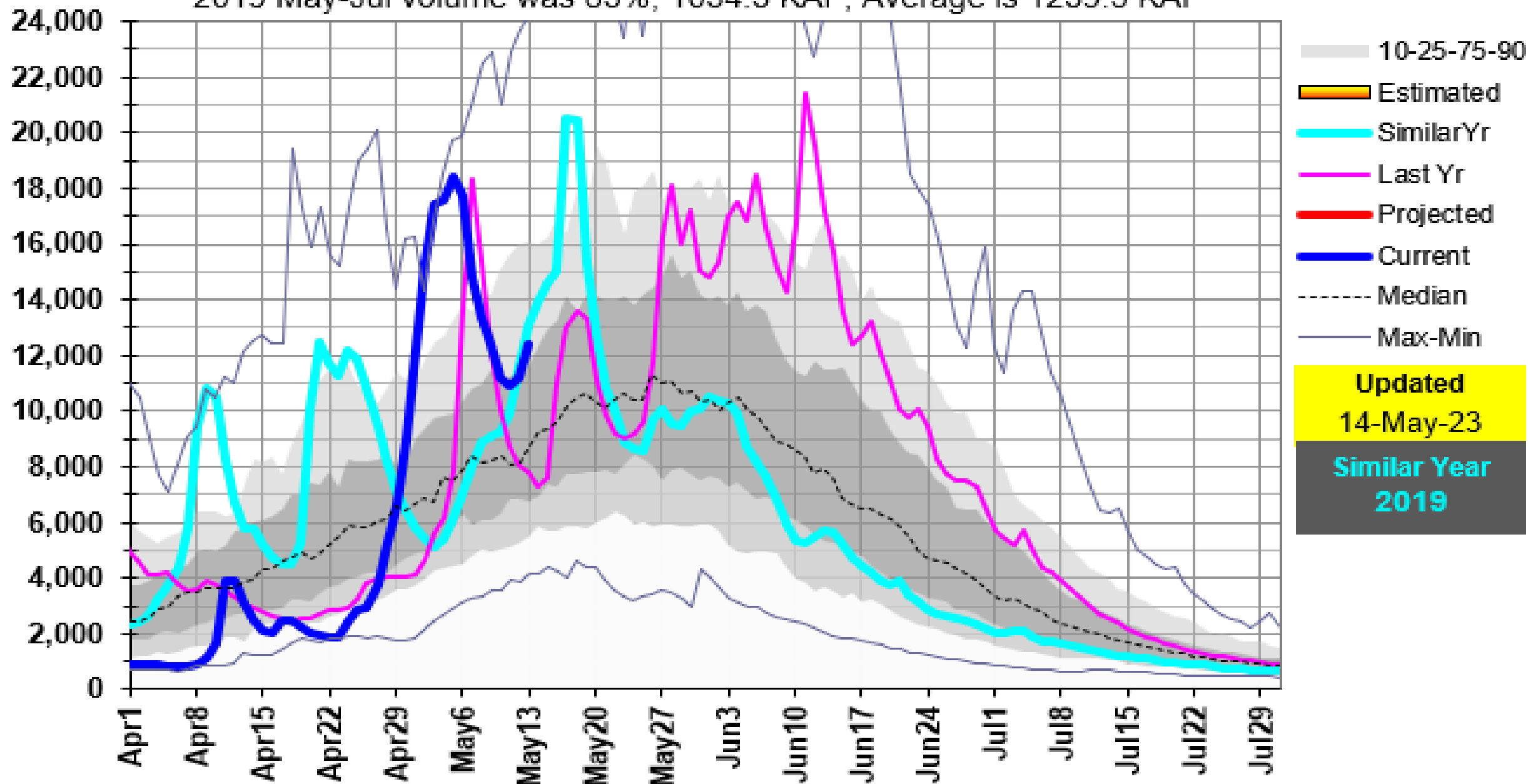
Mean Daily CFS



# 13337000: Lochsa R near Lowell, ID

2019 May-Jul volume was 83%, 1034.3 KAF, Average is 1239.5 KAF

Mean Daily CFS



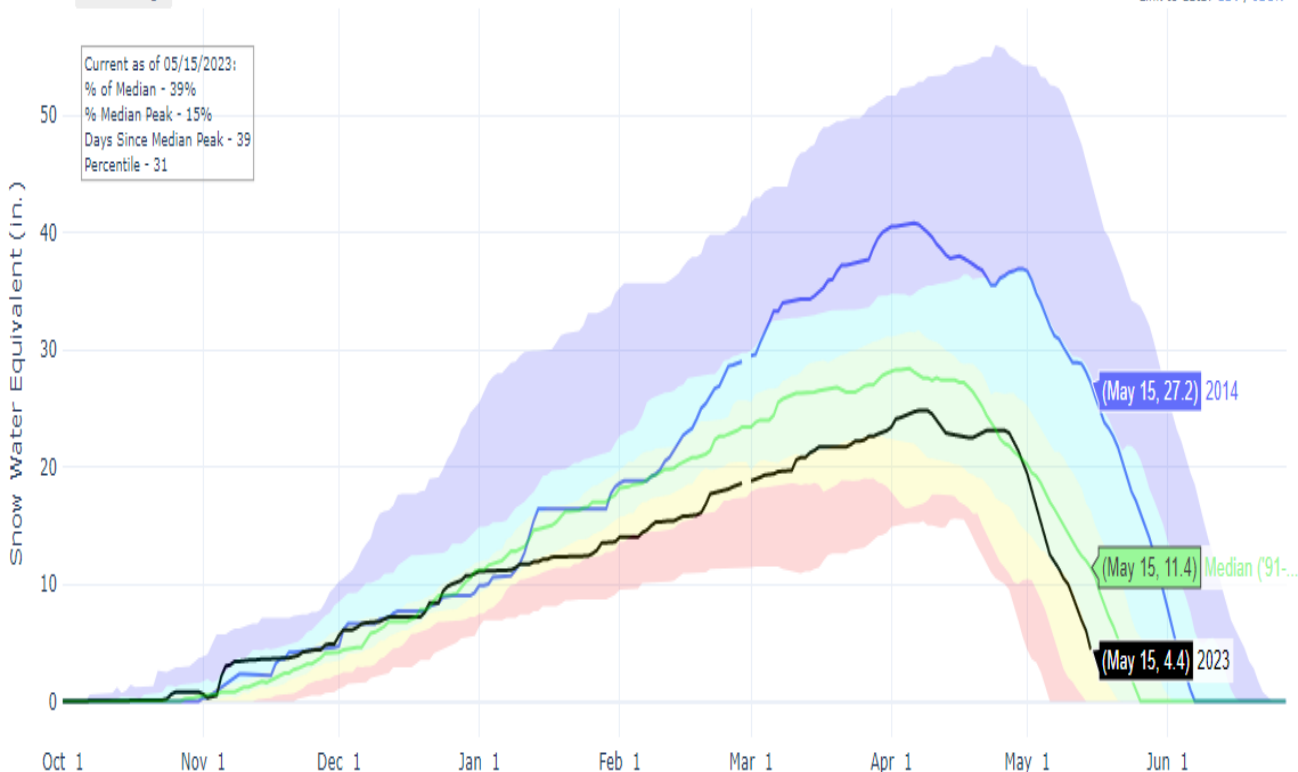


# SNOW WATER EQUIVALENT AT LOLO PASS

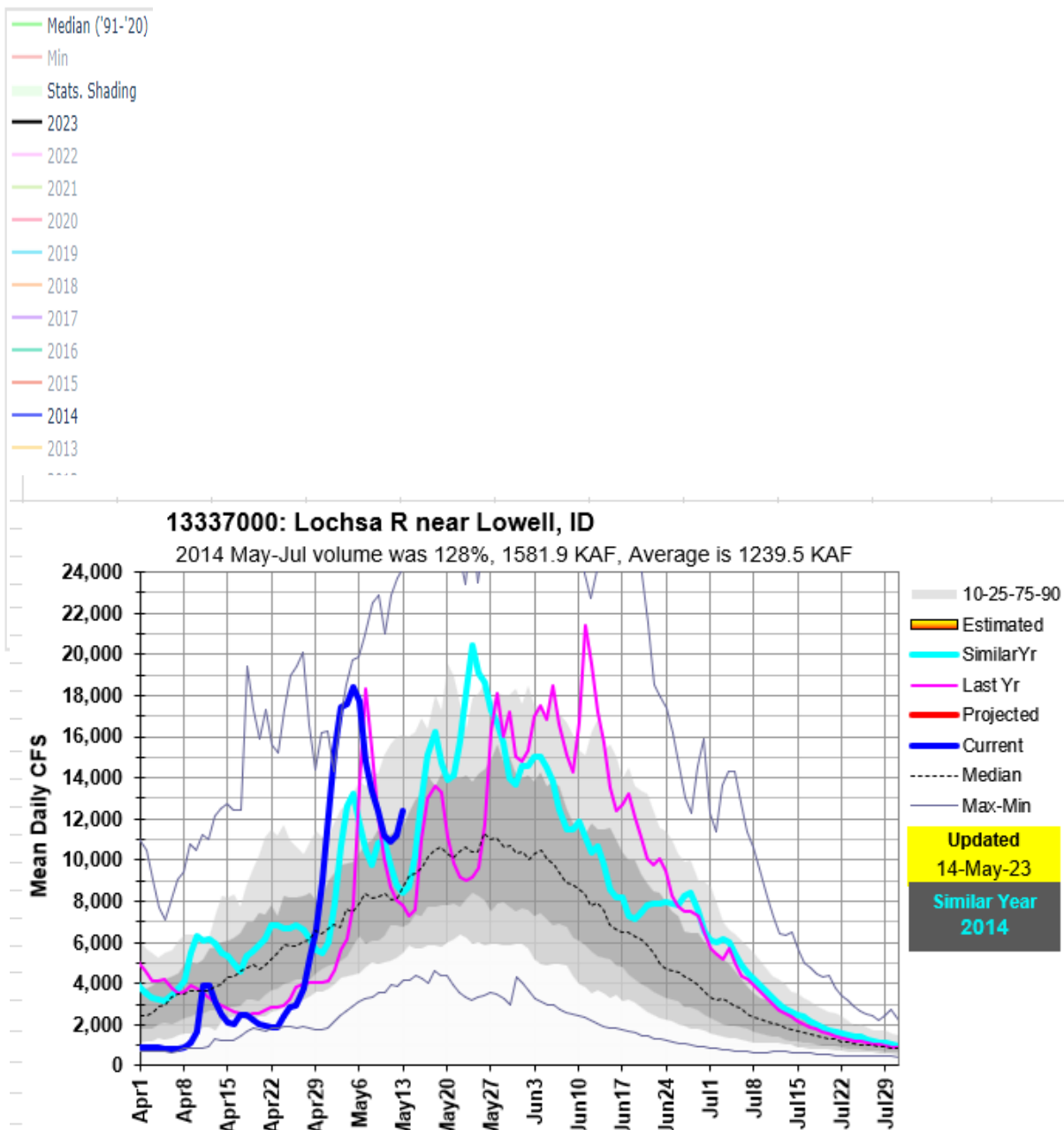
Reset Range

[Link to data: CSV / JSON](#)

Current as of 05/15/2023:  
% of Median - 39%  
% Median Peak - 15%  
Days Since Median Peak - 39  
Percentile - 31



**2014** had more snow than 2023 but similar flow pattern is occurring as this year just. Recession flows will be less than in 2014 without spring rains.







**Lochsa Falls  
June 14, 2022,  
around  
16,000 cfs**





**Selway Falls  
June 13, 2022,  
around  
23,000 cfs**





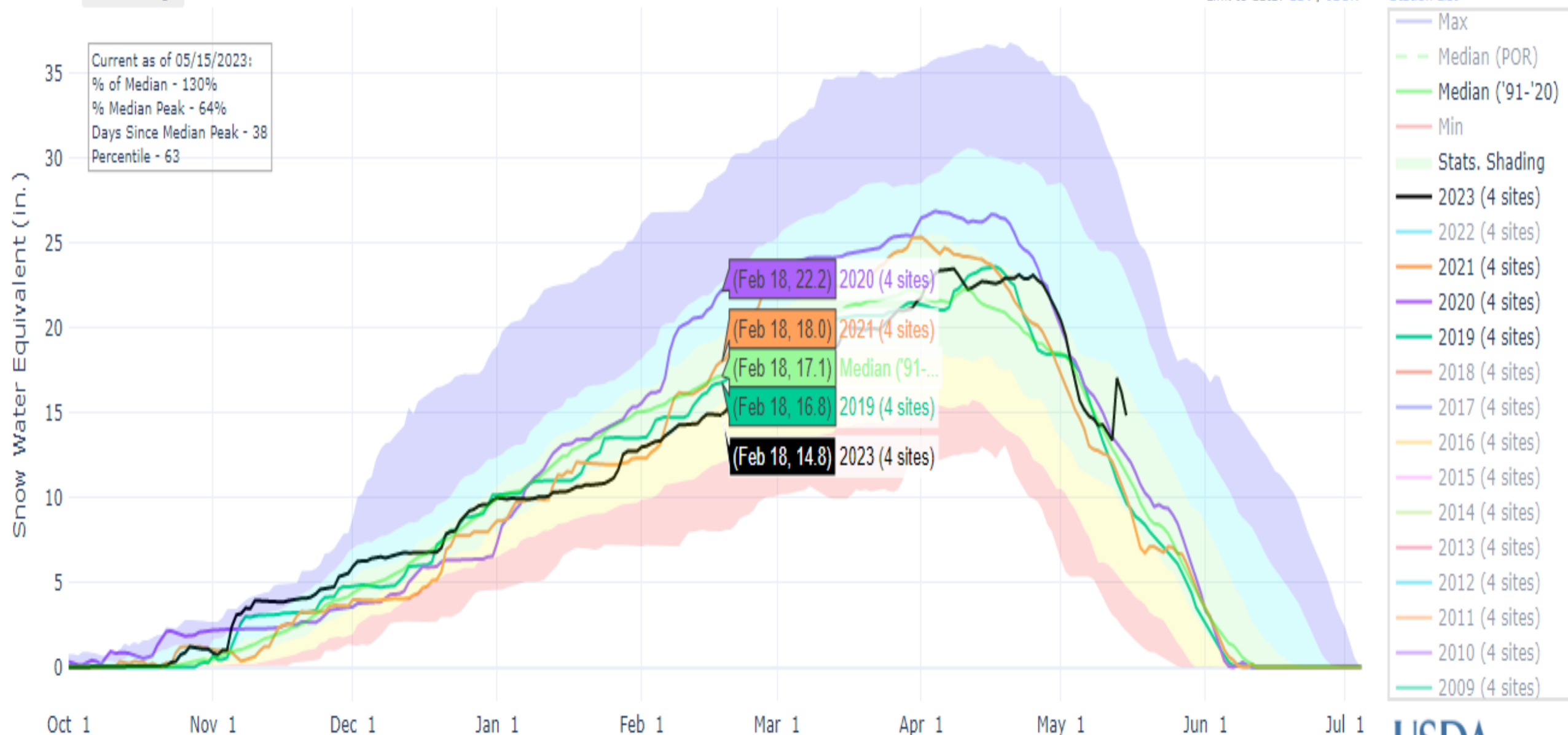
# SNOW WATER EQUIVALENT IN SELWAY

Reset Range

Similar 2023 Selway snow years  
are the same **2020**, **2021** and **2019**.

[Link to data: CSV / JSON](#)

[Station List](#)



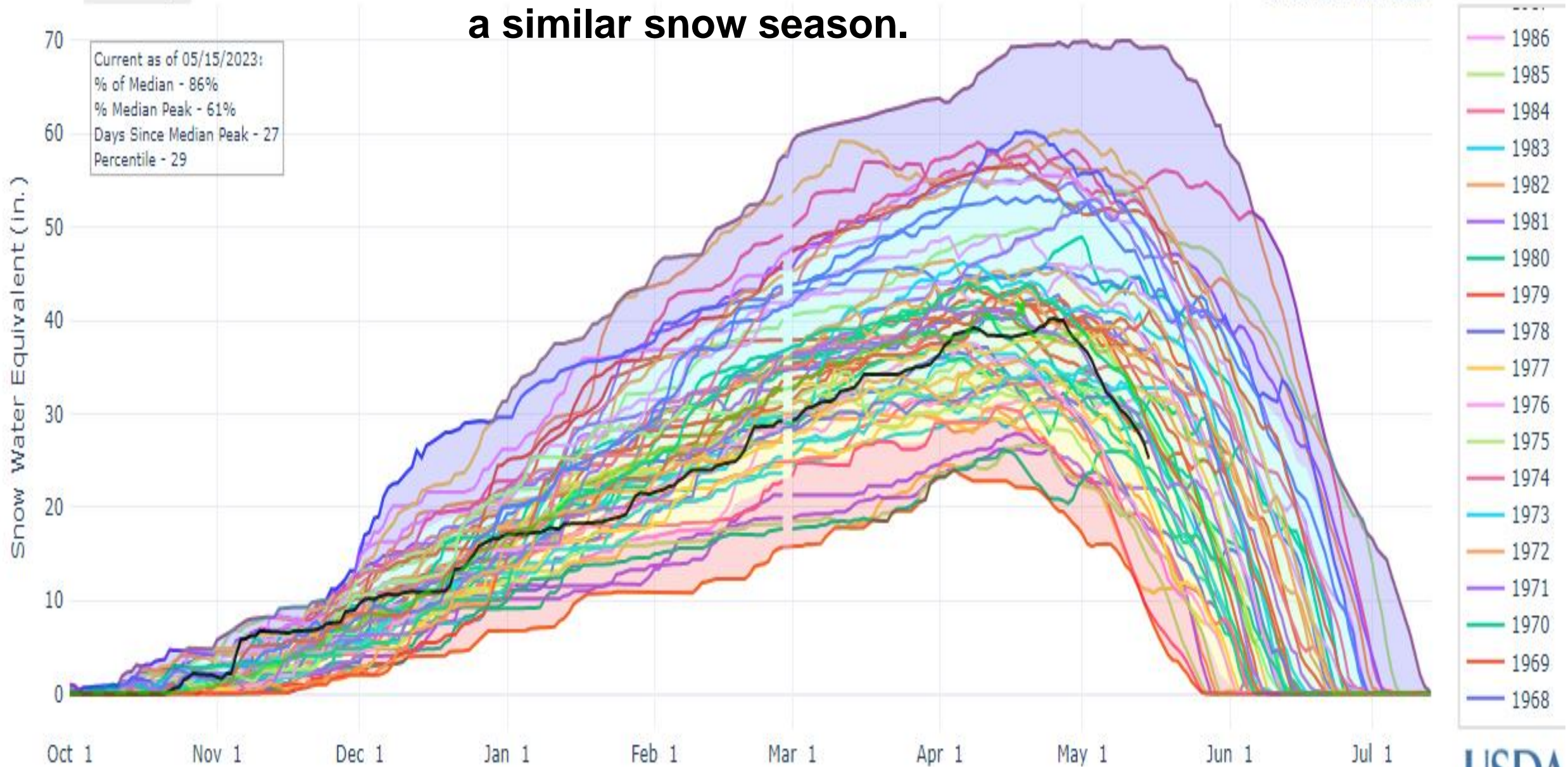
# SNOW WATER EQUIVALENT AT TWIN LAKES

Reset Range

Current as of 05/15/2023:  
% of Median - 86%  
% Median Peak - 61%  
Days Since Median Peak - 27  
Percentile - 29

**With daily SWE traces at Twin Lakes SNOTEL site starting in 1968, it should be easy to find a similar snow season.**

[Link to data: CSV / JSON](#)





# SNOW WATER EQUIVALENT AT TWIN LAKES

Reset Range

Current as of 05/15/2023:  
 % of Median - 86%  
 % Median Peak - 61%  
 Days Since Median Peak - 27  
 Percentile - 29

## SELWAY RIVER AND TWIN LAKES SNOTEL SITE

On average, peak streamflow for the Selway River near Lowell, Idaho occurs when Twin Lakes SNOTEL is between **26 and 33%** melted.

Summary of all years by max SWE magnitude

Max SWE Category	Range of Max SWE Magnitude (inches)	Number of Years in Analysis	Average percent melted at time of peak streamflow
<b>Below average</b>	<35	11	<b>33</b>
<b>Average</b>	34 – 49	25	<b>33</b>
<b>Above average</b>	>48	12	<b>26</b>

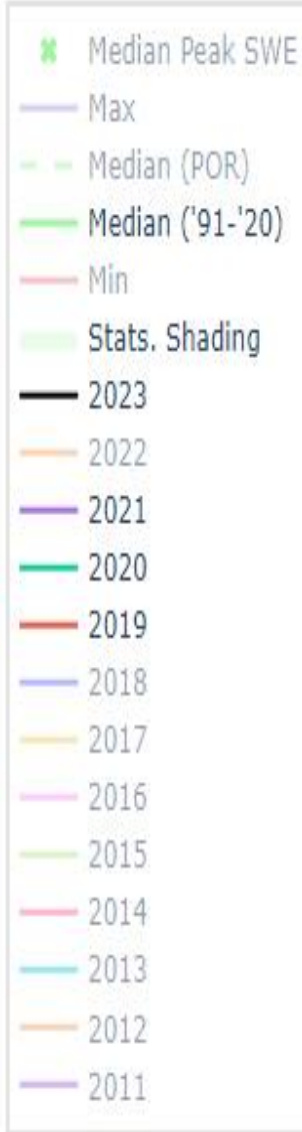
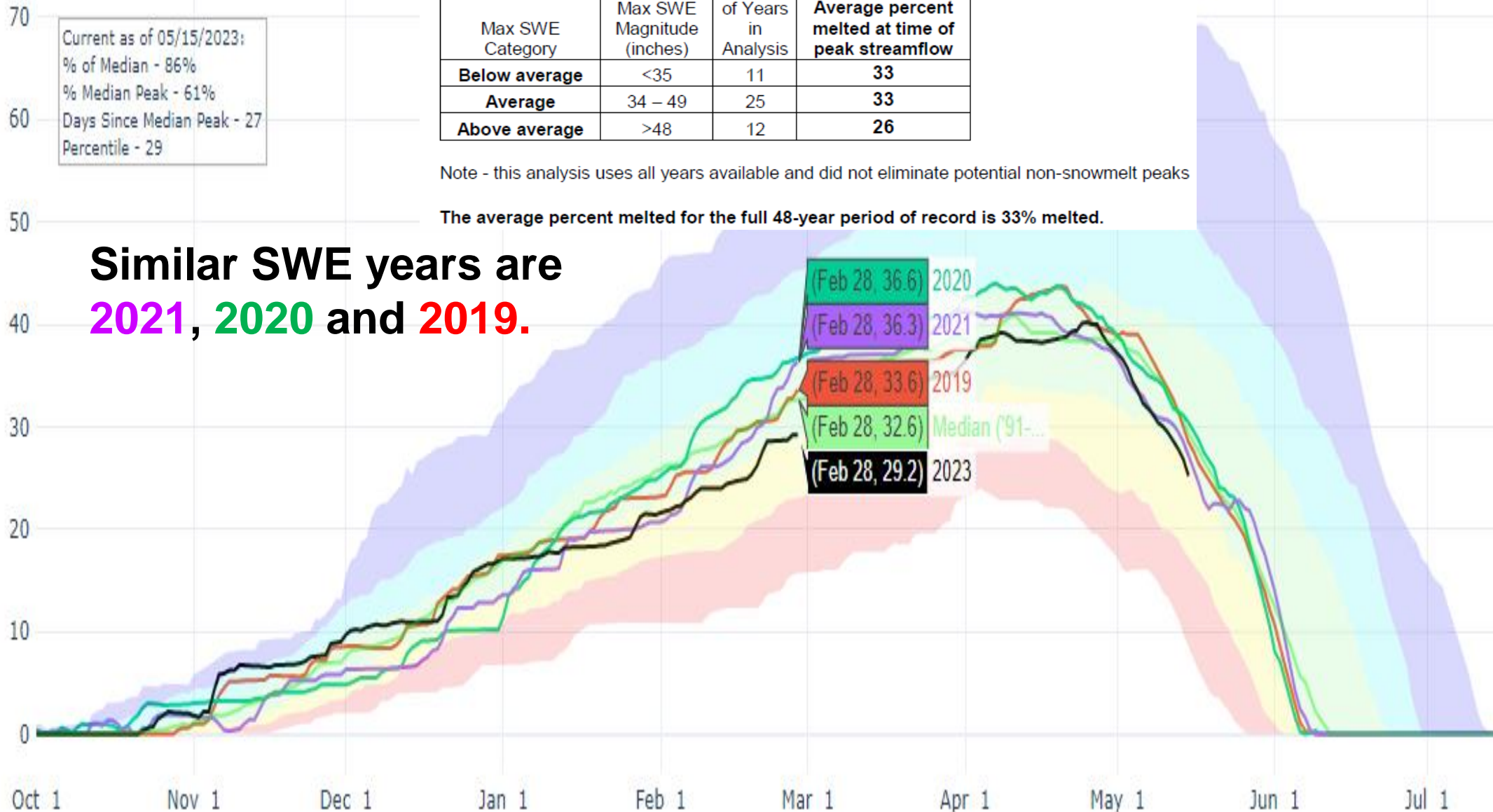
[Link to data: CSV / JSON](#)

Note - this analysis uses all years available and did not eliminate potential non-snowmelt peaks

The average percent melted for the full 48-year period of record is 33% melted.

Similar SWE years are  
**2021**, **2020** and **2019**.

Snow Water Equivalent (in.)

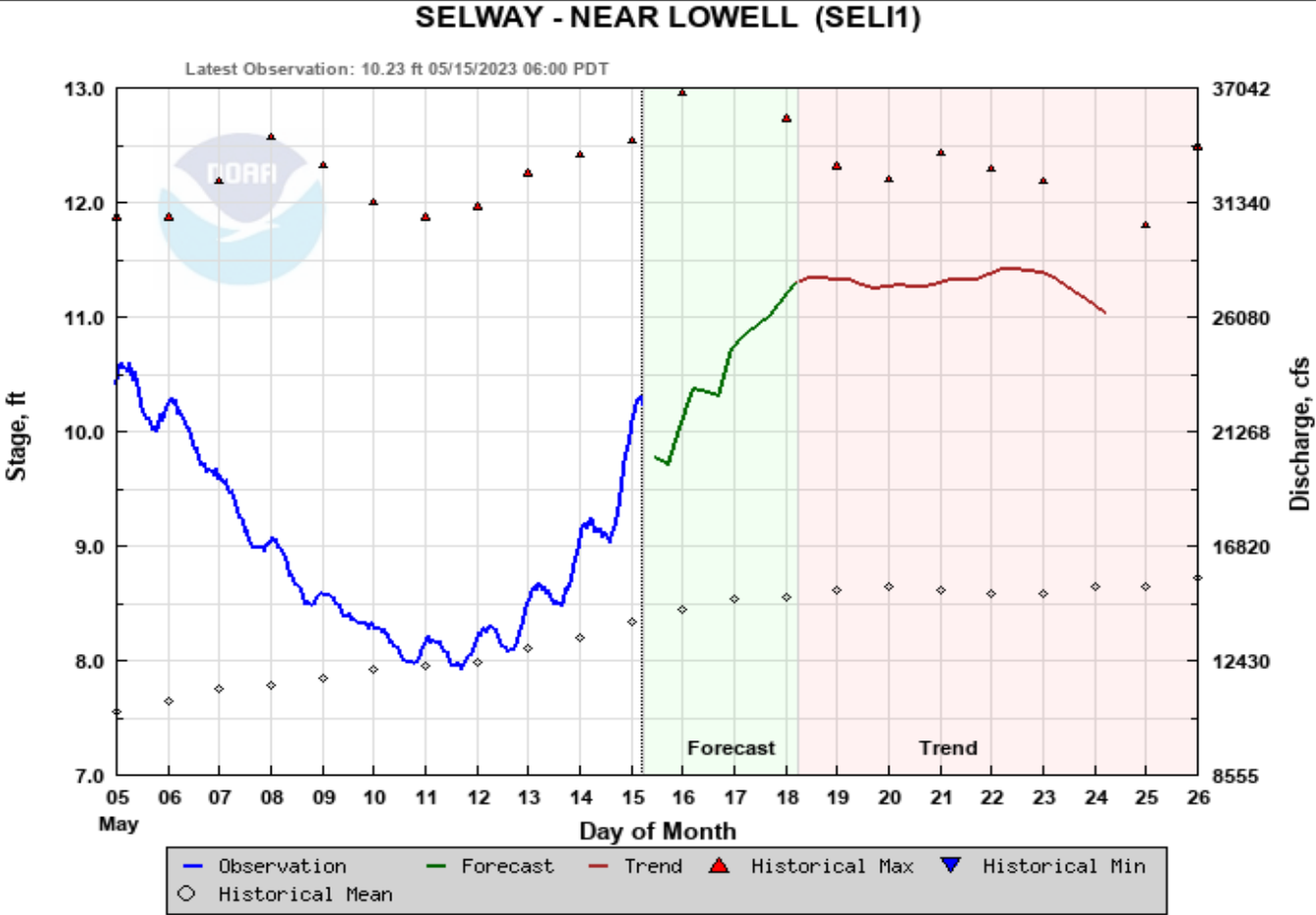




Based on Twin Lakes Snow2Flow relationship – peak flows occurs around 33% melted, which is happening today. Hot temps will push melt out a bit as NWS model shows flow topping off because of snow running that feeds the streams OR will hot temps produce greater melt and flow increase.

May 1 Lochsa Volume Forecasts range from 1190 to 1790 KAF with 50% chance exceedance forecast at 1490 KAF.

May - July runoff volumes in these similar years ranged from 1506 to 1970 KAF.



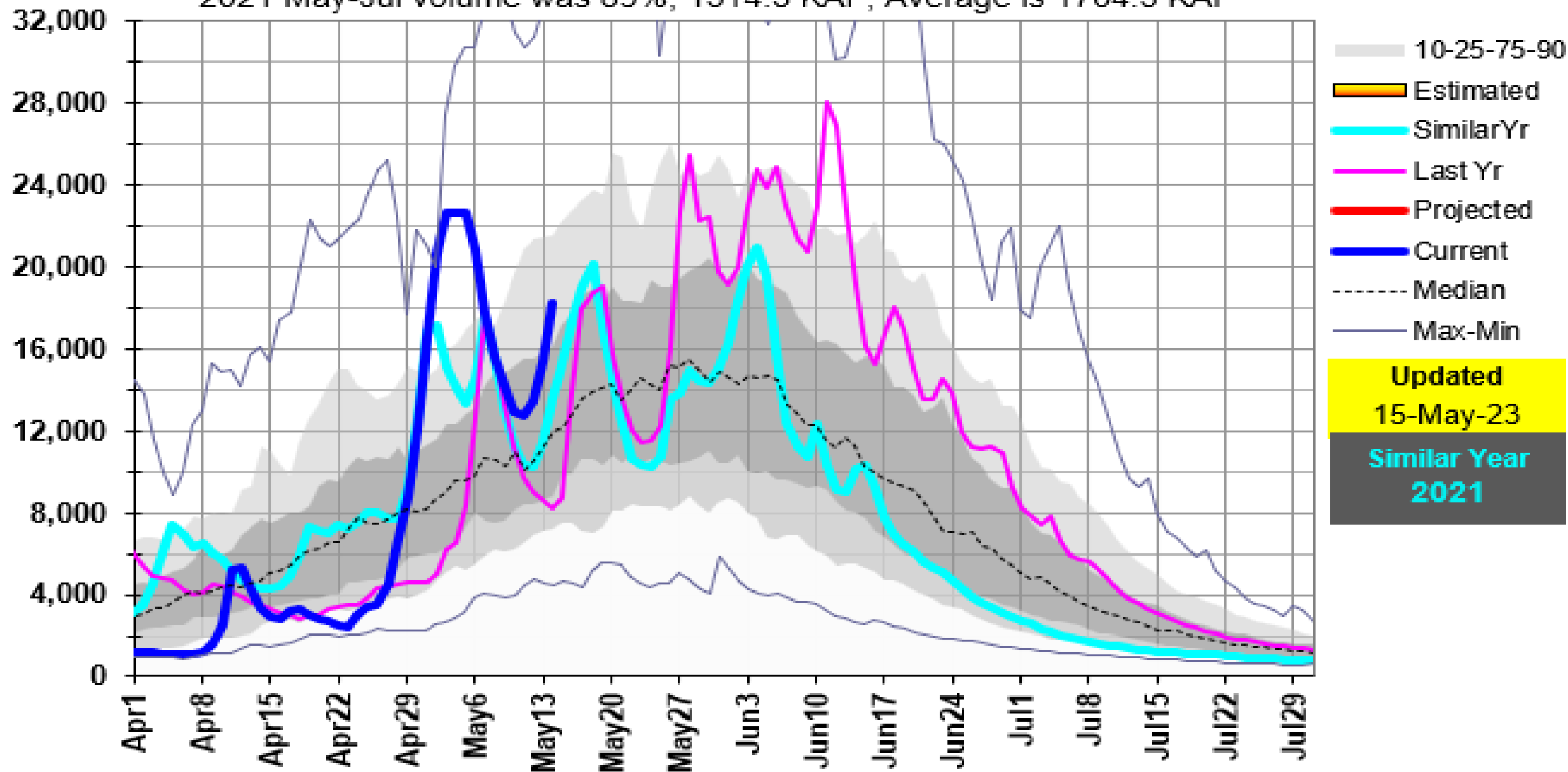
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Lochsa R nr Lowell	MAY-JUL	805	945	1040	94%	1130	1270	1110
	MAY-SEP	855	1000	1100	94%	1200	1350	1170
Overlook R nr Lowell	MAY-JUL	1000	1100	1200	95%	1300	1450	1250

# 13336500: Selway R near Lowell, ID

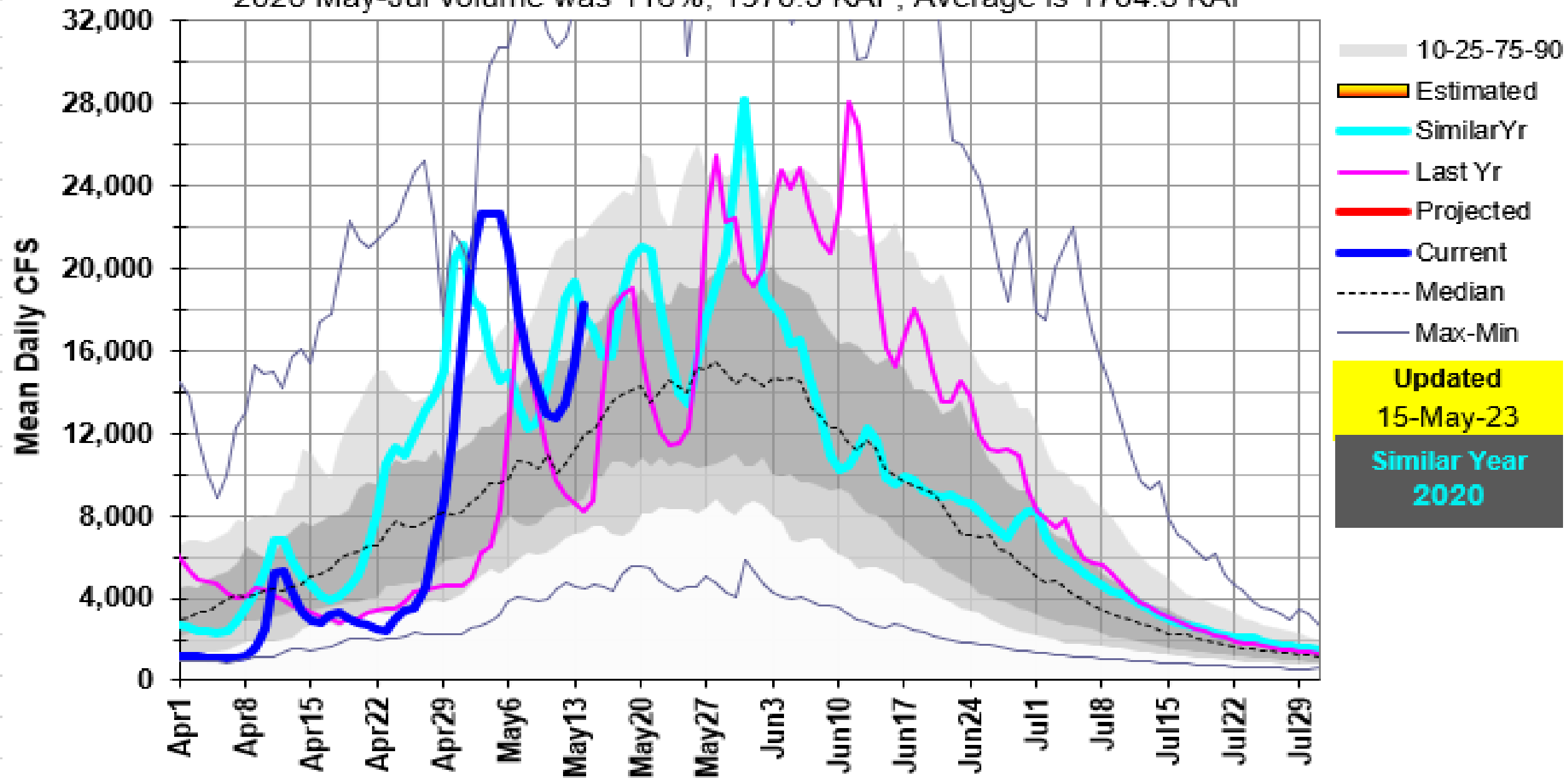
2021 May-Jul volume was 89%, 1514.3 KAF, Average is 1704.3 KAF

Mean Daily CFS



**13336500: Selway R near Lowell, ID**

2020 May-Jul volume was 116%, 1970.5 KAF, Average is 1704.3 KAF



**13336500: Selway R near Lowell, ID**

2019 May-Jul volume was 88%, 1506.1 KAF, Average is 1704.3 KAF

