

IDWR State Water Supply Meeting

April 11, 2019

**Little Salmon River
down stream from Zims Hot Springs
Monday April 8, 2019**



**Round Valley Creek above Rainbow Bridge
Monday April 8, 2019**



**Ron Abramovich
Water Supply Specialist
Snow Survey** 
Boise, Idaho

 **NRCS** Natural Resources
Conservation Service

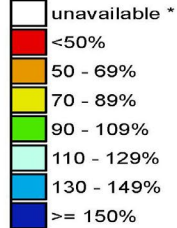
Snow

Water Year to Date Precipitation

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

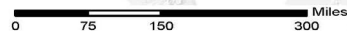
Apr 10, 2019

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision



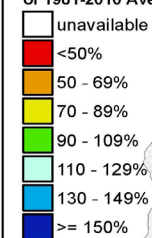
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

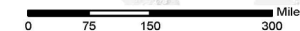
Apr 10, 2019

Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average



* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision

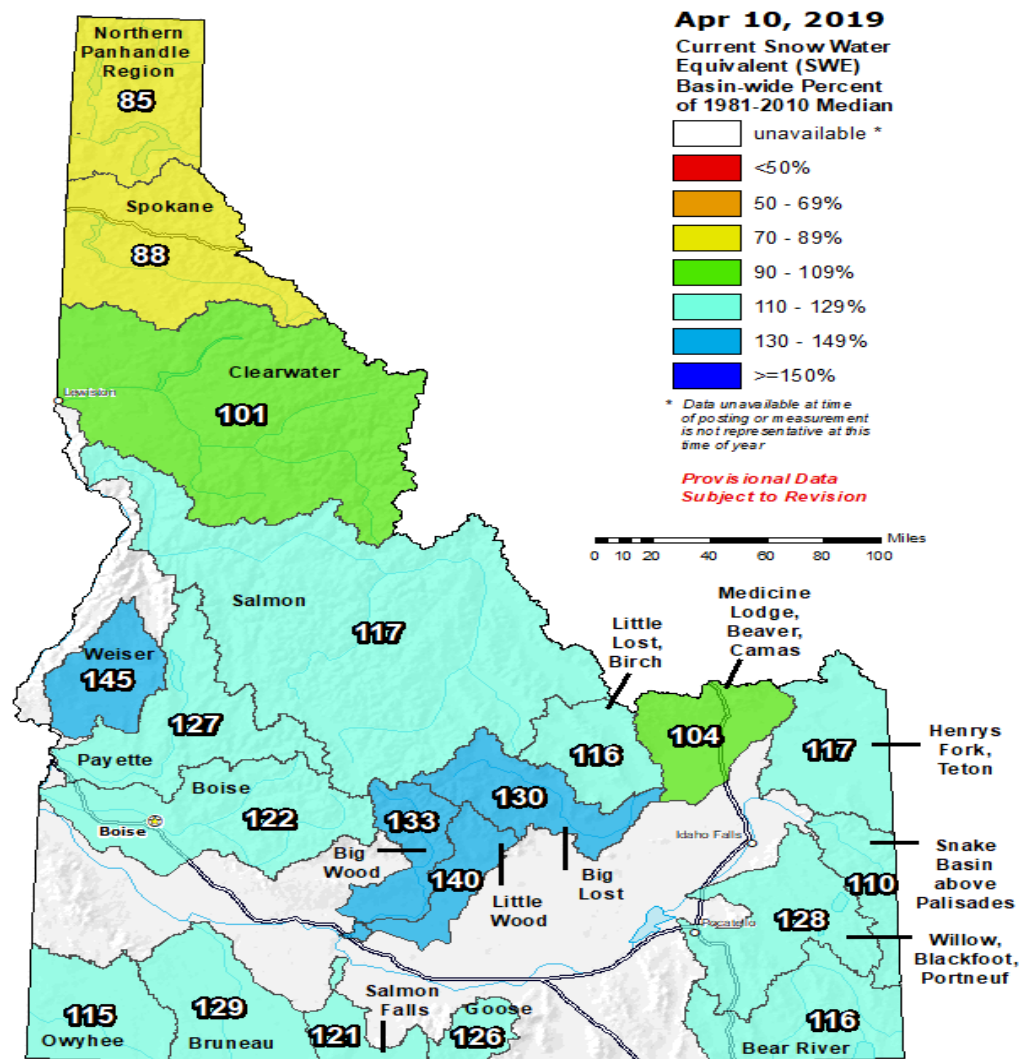


The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

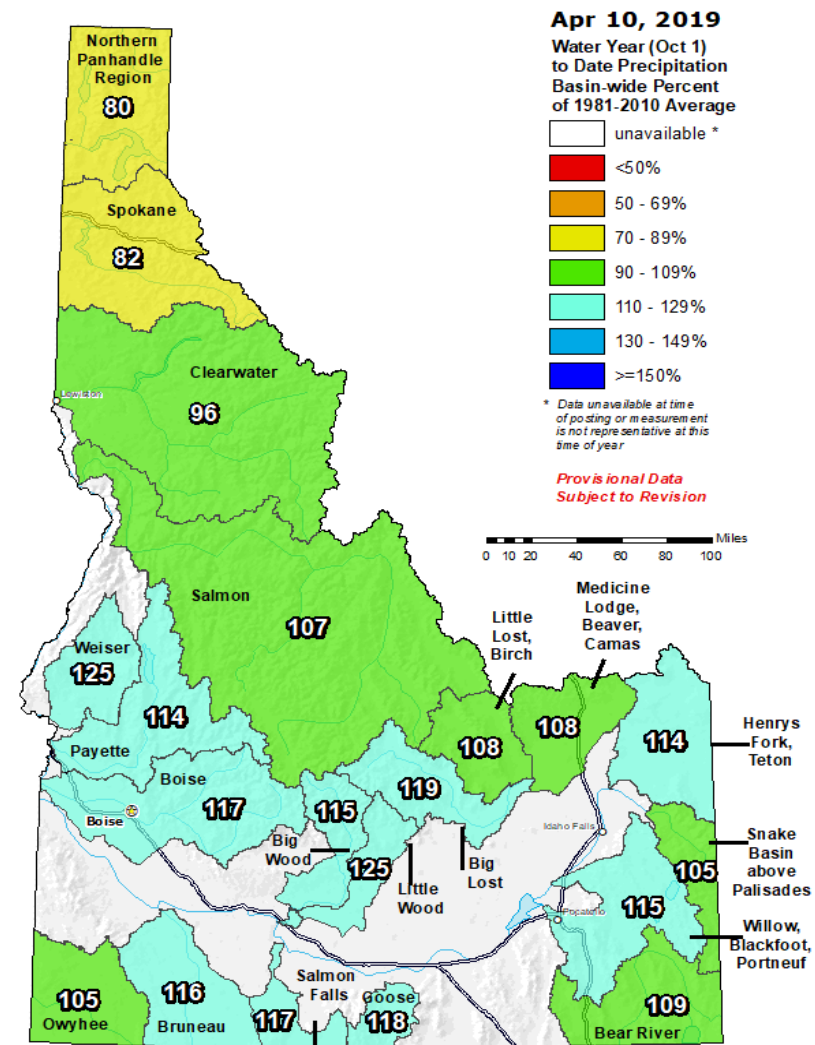
Snow

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



Water Year to Date Precipitation

Idaho SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

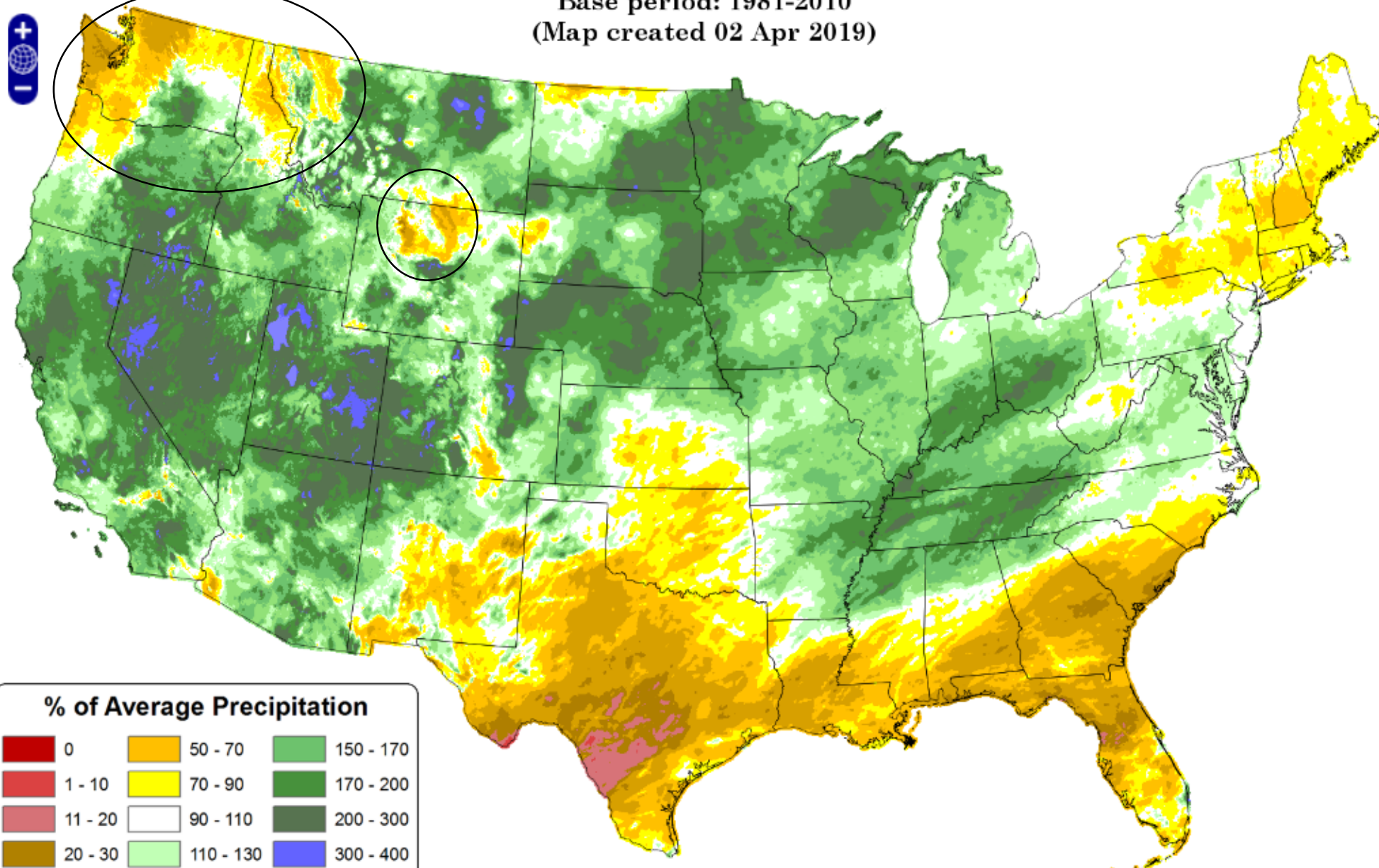


Total Precipitation Anomaly: Feb 2019 - Mar 2019

Period ending 7 AM EST 31 Mar 2019

Base period: 1981-2010

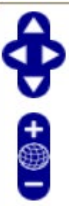
(Map created 02 Apr 2019)



**Combined
February &
March
Precipitation
as % of
Average**

% of Average Precipitation

0	50 - 70	150 - 170
1 - 10	70 - 90	170 - 200
11 - 20	90 - 110	200 - 300
20 - 30	110 - 130	300 - 400
30 - 50	130 - 150	> 400

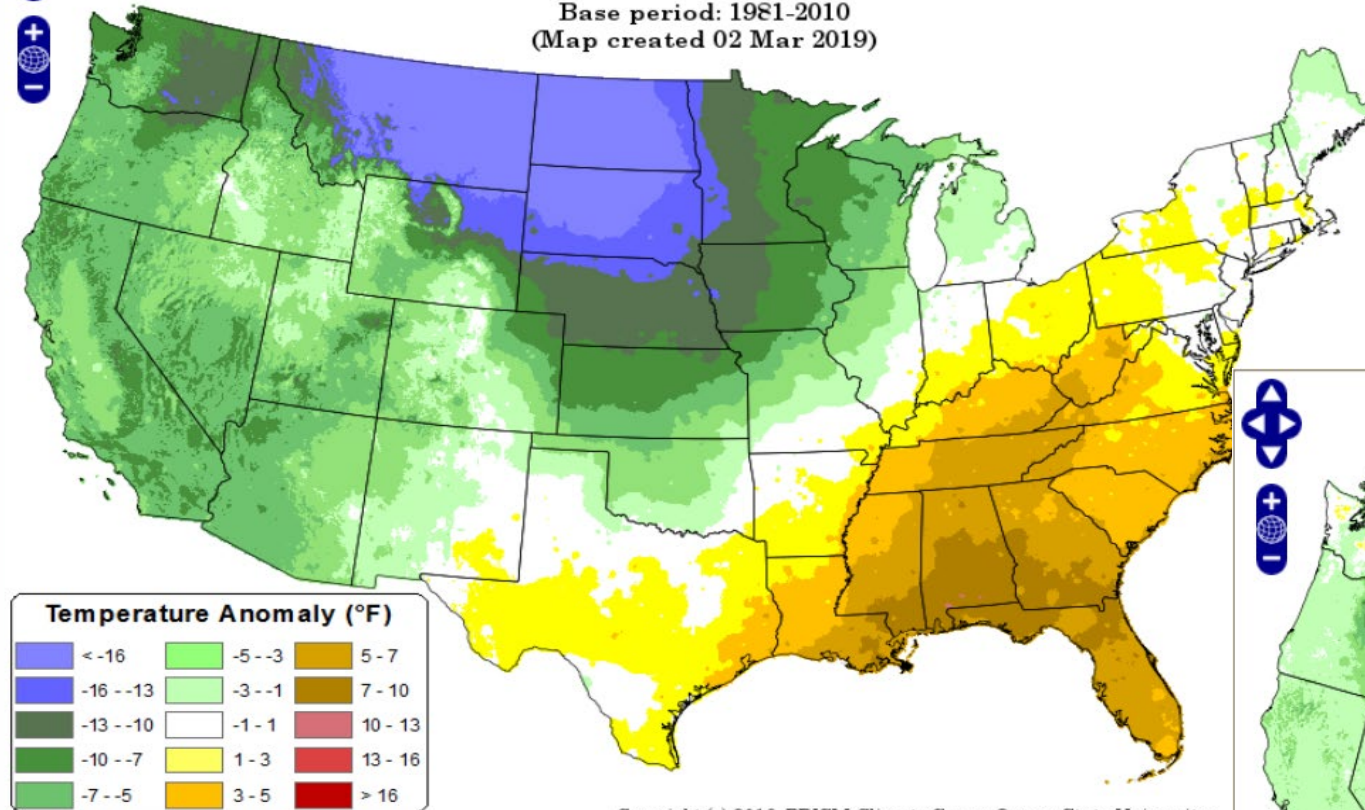


Daily Mean Temperature Anomaly: Feb 2019

Period ending 7 AM EST 28 Feb 2019

Base period: 1981-2010

(Map created 02 Mar 2019)



February & March
Temperature
Feeling the impacts now
because of lack of melt

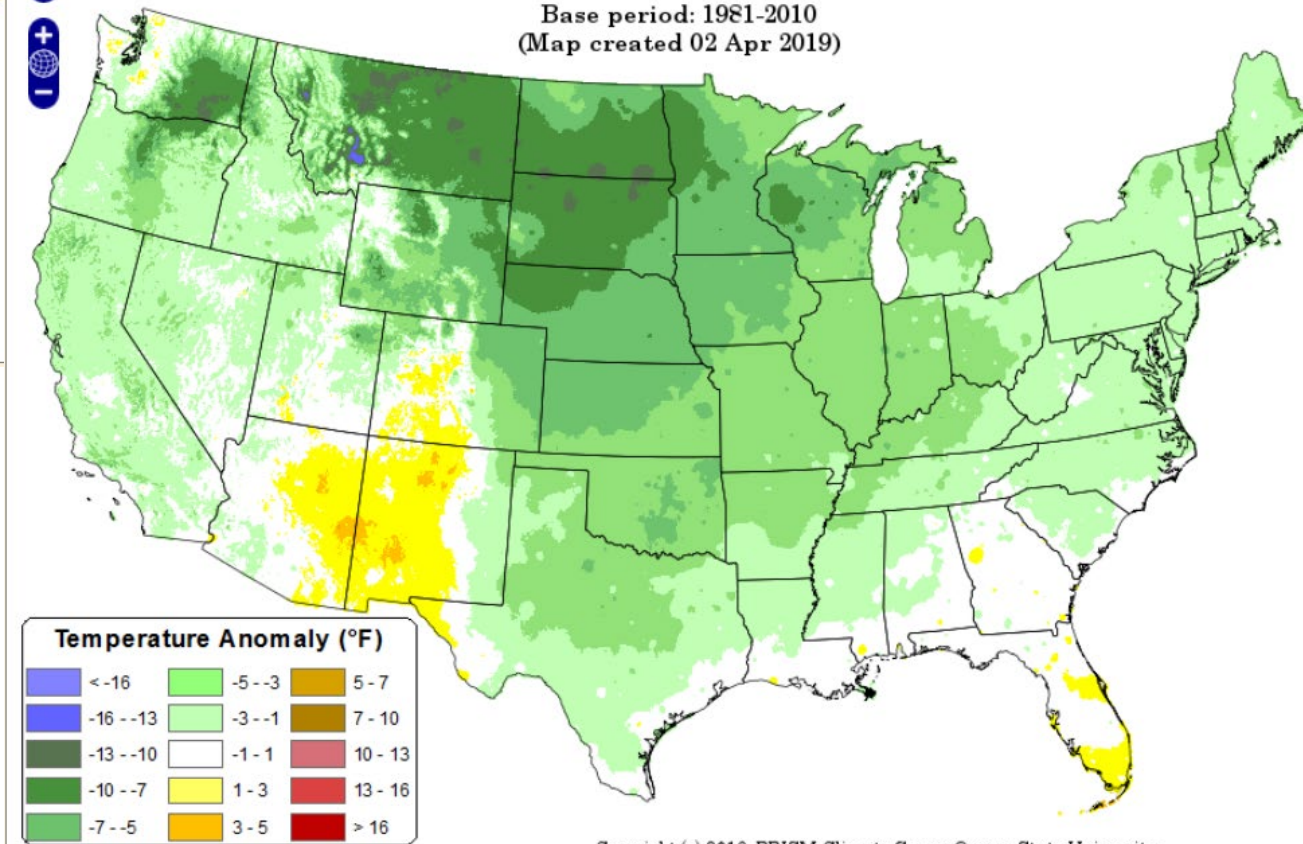


Daily Mean Temperature Anomaly: Mar 2019

Period ending 7 AM EST 31 Mar 2019

Base period: 1981-2010

(Map created 02 Apr 2019)



Snow Water Equivalent in Spokane River

Jan Apr July WY

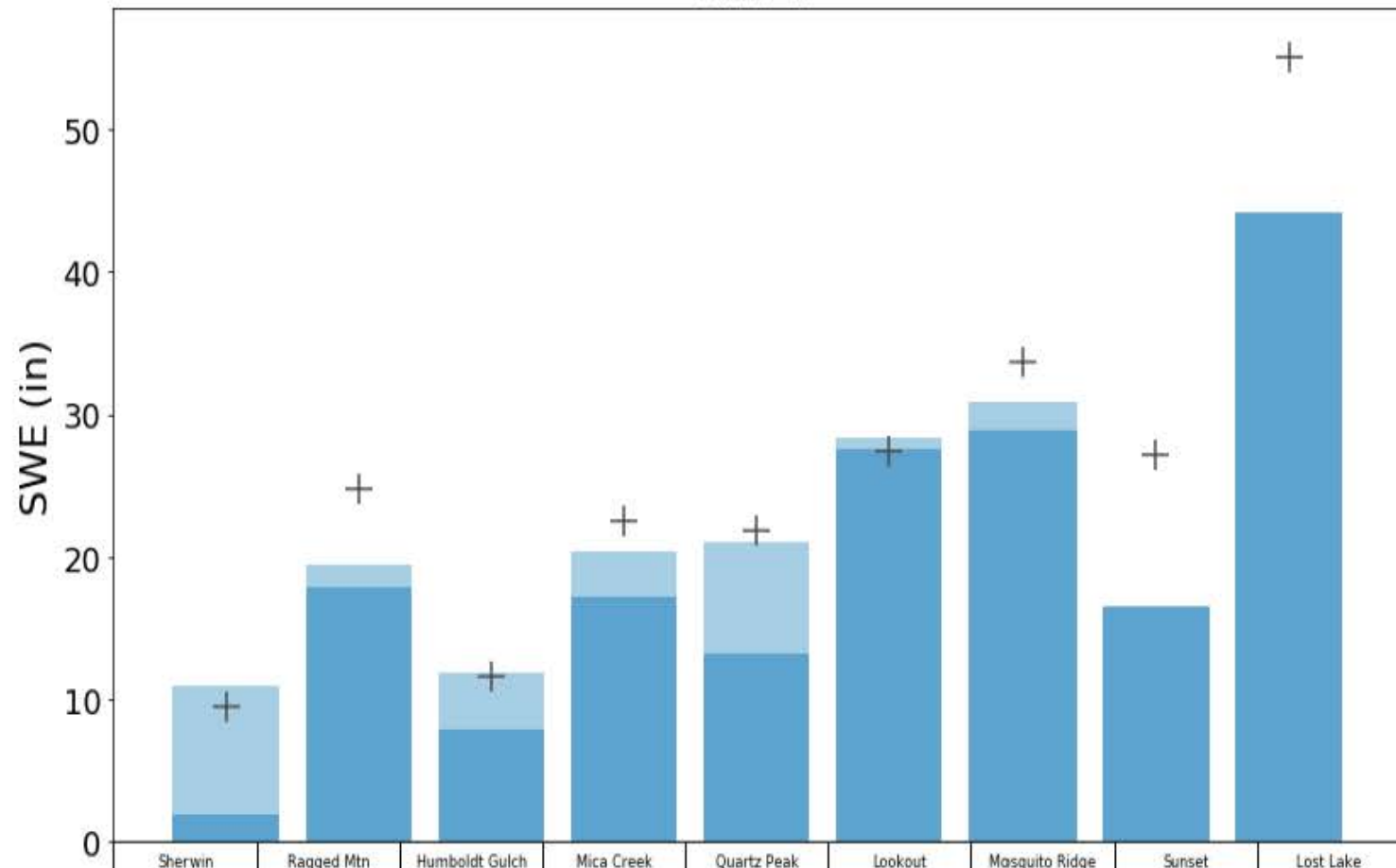


Current as of 04/11/2019:
% of Median 89%
% Median Peak - 65%
Days Since Median Peak - 9
Percentile 33

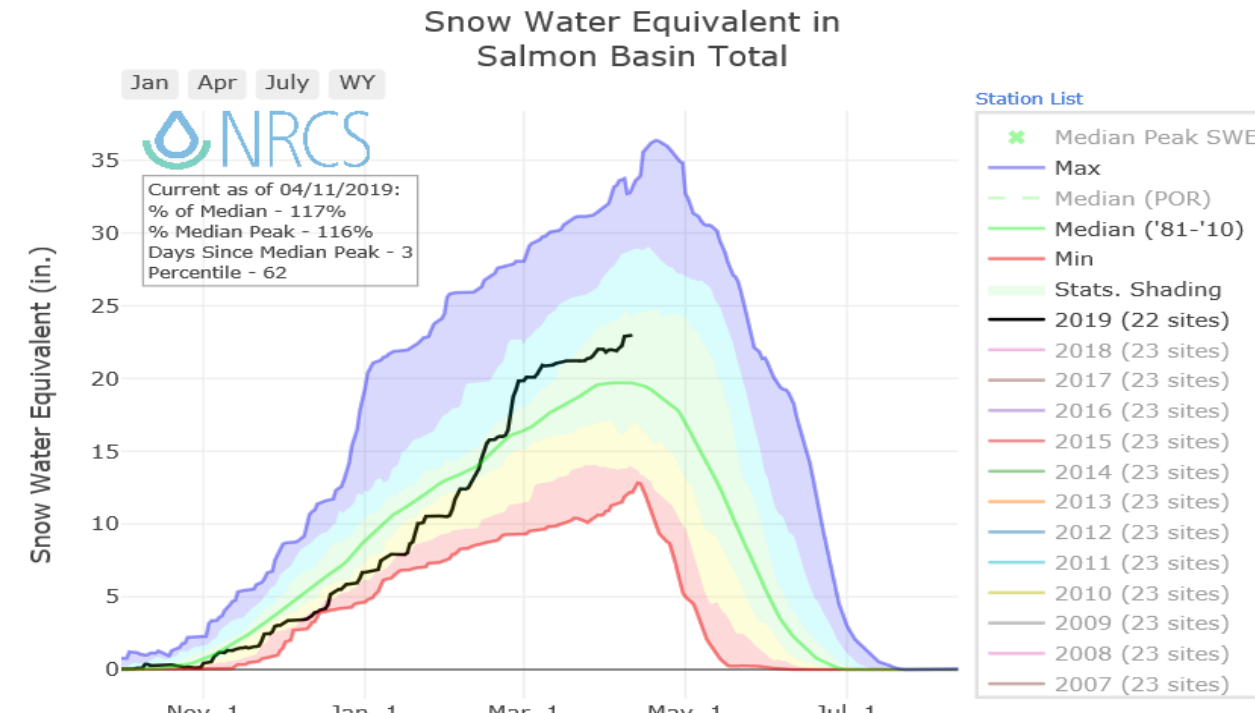
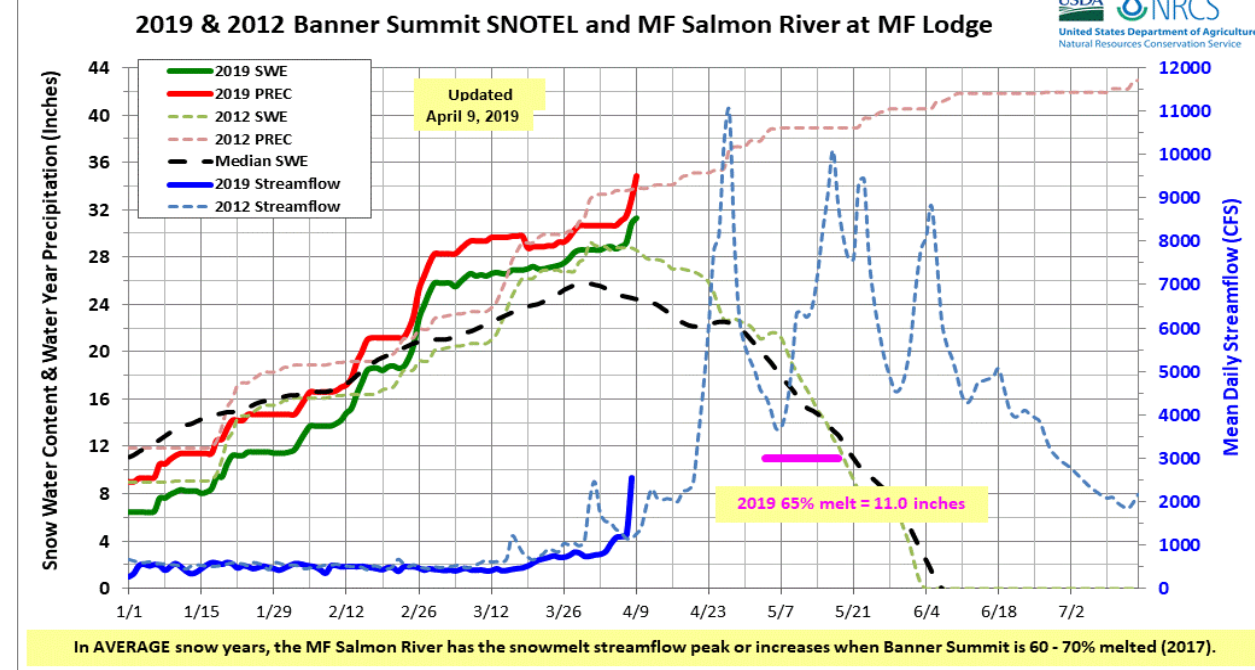
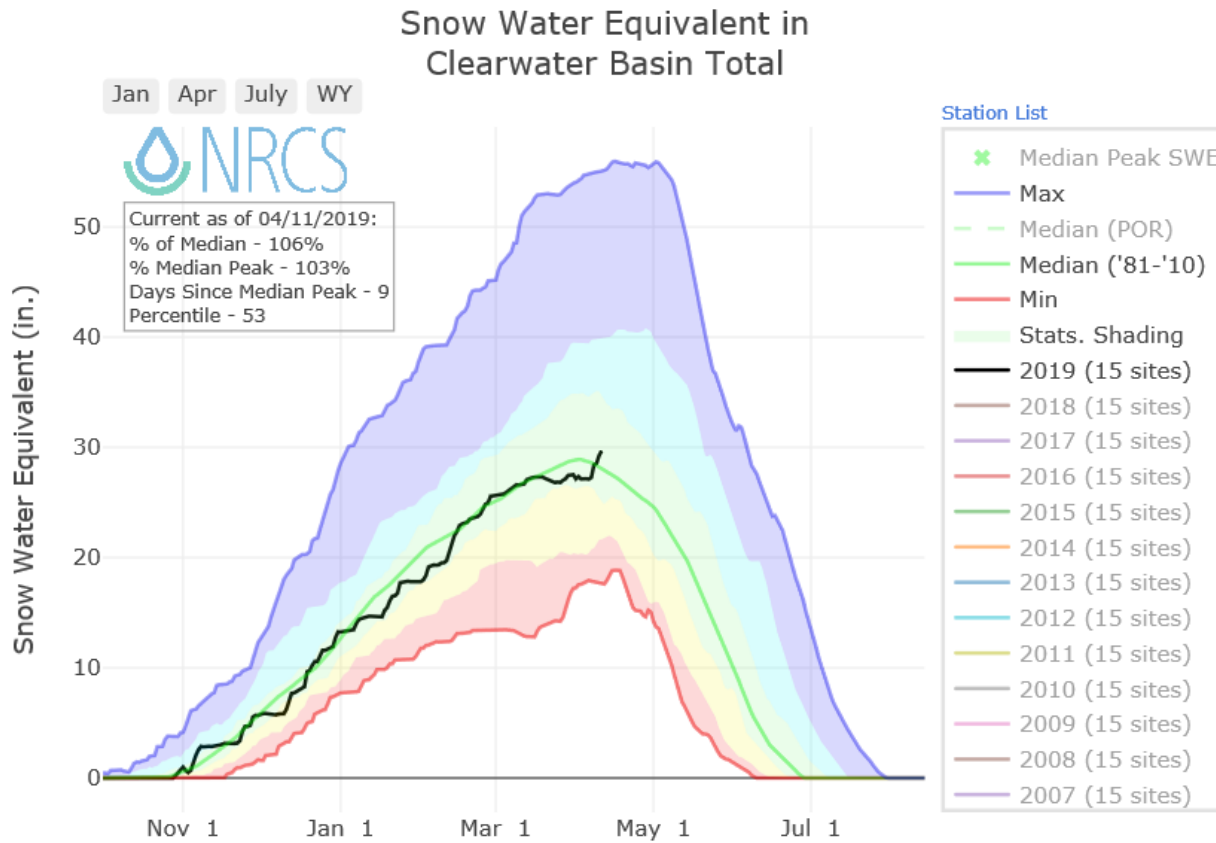
Station List

- ★ Median Peak SWE
- Max
- Median (POR)
- Median ('81-'10)
- Min
- Stats. Shading
- 2019 (10 sites)
- 2018 (10 sites)
- 2017 (10 sites)
- 2016 (10 sites)
- 2015 (10 sites)
- 2014 (10 sites)
- 2013 (10 sites)
- 2012 (10 sites)
- 2011 (10 sites)
- 2010 (10 sites)
- 2009 (10 sites)
- 2008 (10 sites)
- 2007 (10 sites)

Spokane River Percent Remaining Snowpack 04-10-19



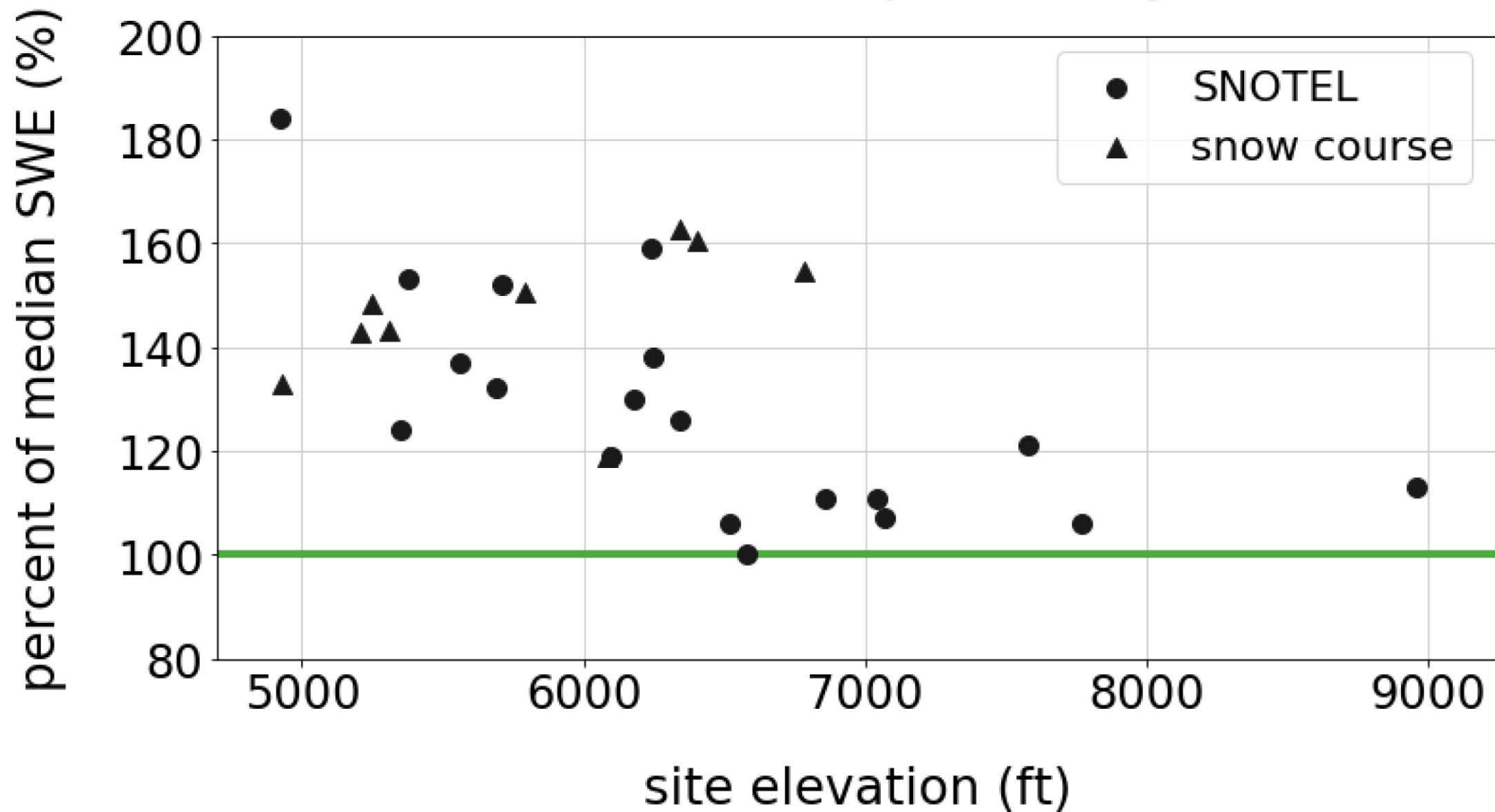
	Sherwin	Ragged Mtn	Humboldt Gulch	Mica Creek	Quartz Peak	Lookout	Masquito Ridge	Sunset	Lost Lake
Elevation (ft)	3200	4210	4250	4510	4700	5140	5200	5540	6110
Peak SWE (in)	11.0	19.4	11.9	20.4	21.1	28.4	30.9	16.6	44.2
Current SWE (in)	1.9	17.9	7.9	17.2	13.2	27.5	28.9	16.6	44.2
Percent melted	82	7	33	15	37	3	6	0	0
+ Normal peak SWE (in)	9.5	24.8	11.6	22.5	21.9	27.4	33.7	27.2	55.0
Peak percent of normal	101	74	95	81	95	94	86	60	77



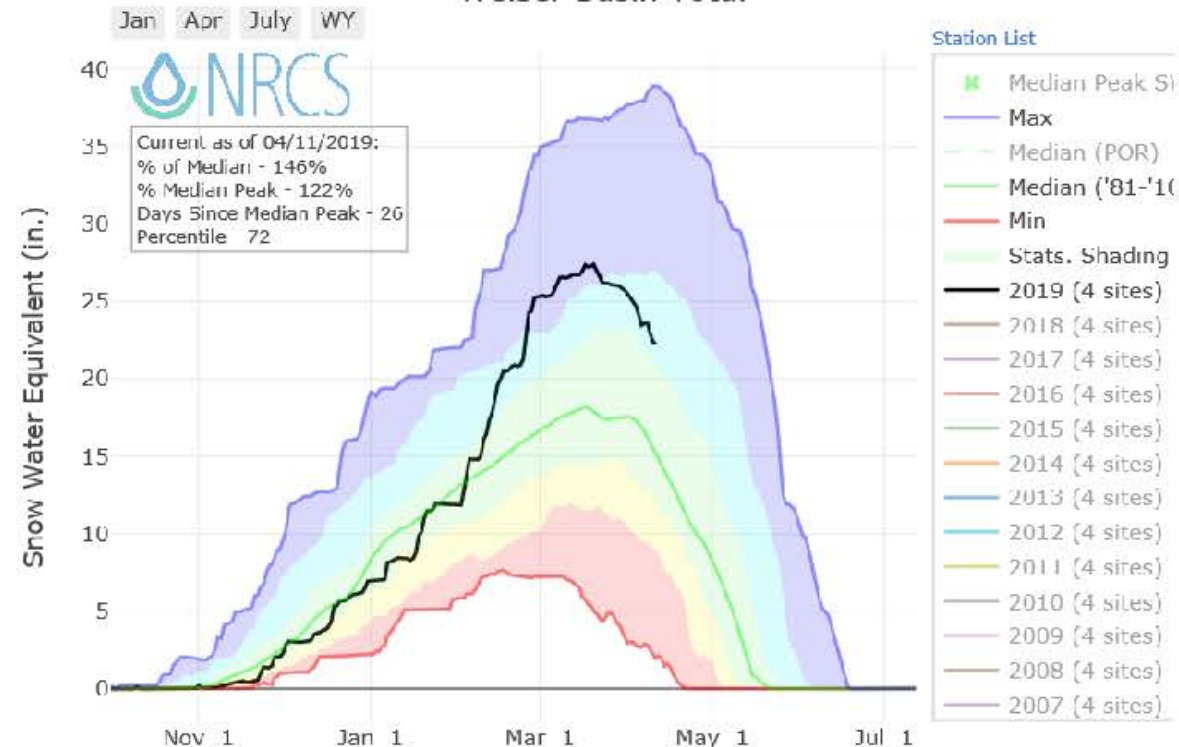
**Need to understand
where you are in terms of
snowmelt & peak flow
relationship**

West Central Basins

04/01/19 snow water equivalent by elevation

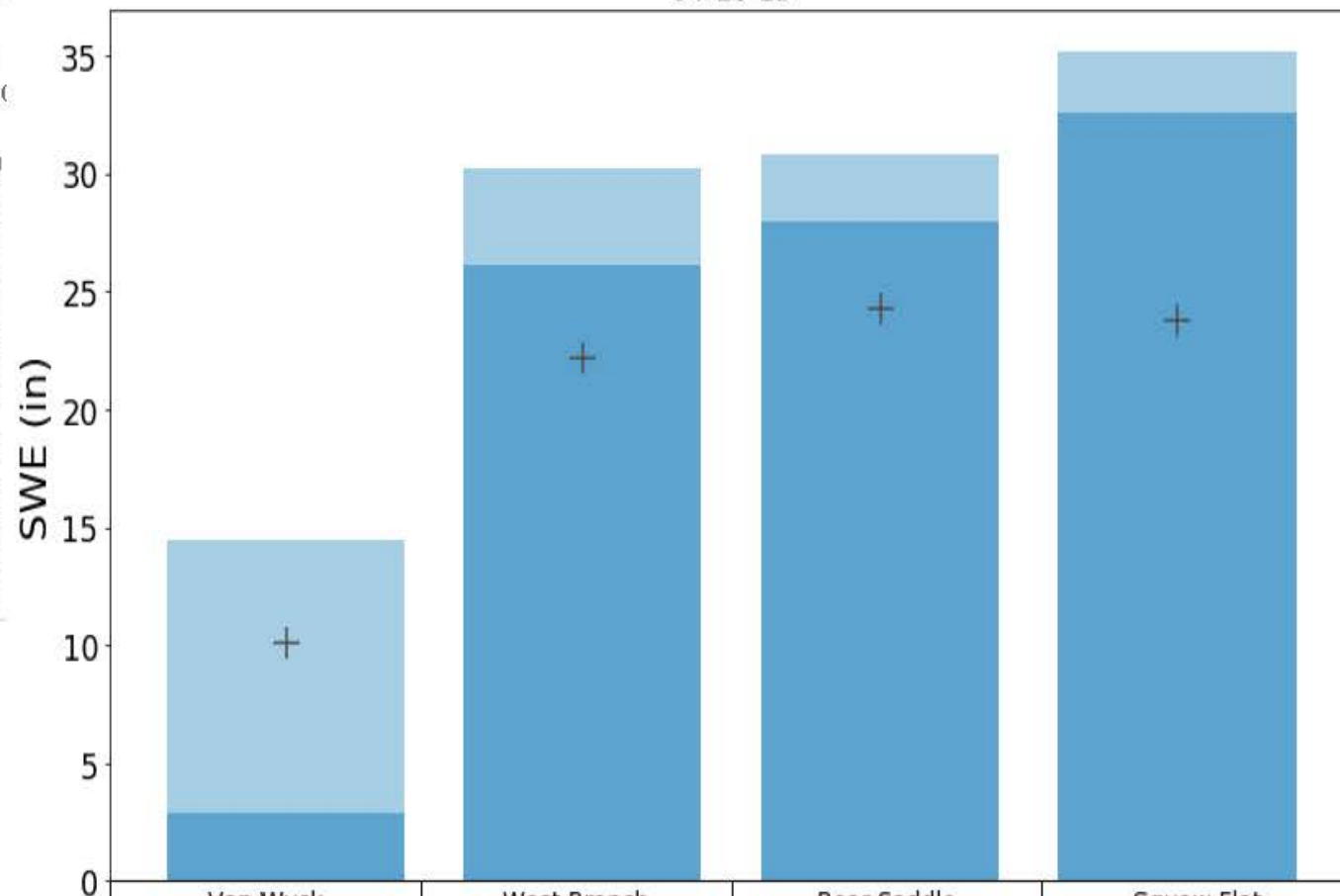


Snow Water Equivalent in Weiser Basin Total



Weiser Basin Total

Percent Remaining Snowpack
04-10-19



	Van Wyck	West Branch	Bear Saddle	Squaw Flat
Elevation (ft)	4920	5560	6180	6240
Peak SWE (in)	14.5	30.2	30.8	35.2
Current SWE (in)	2.9	26.1	28.0	32.6
Percent melted	80	13	9	7
+ Normal peak SWE (in)	10.1	22.2	24.3	23.8
Peak percent of normal	143	134	133	153

Snow Water Equivalent in Payette Basin Total

Jan Apr July WY

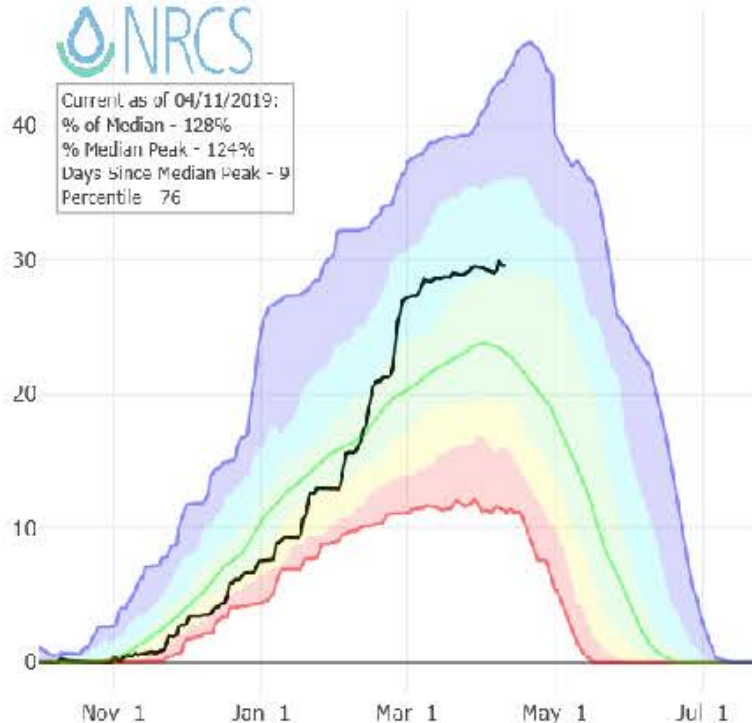


Current as of 04/11/2019:
% of Median - 128%
% Median Peak - 124%
Days Since Median Peak - 9
Percentile 76

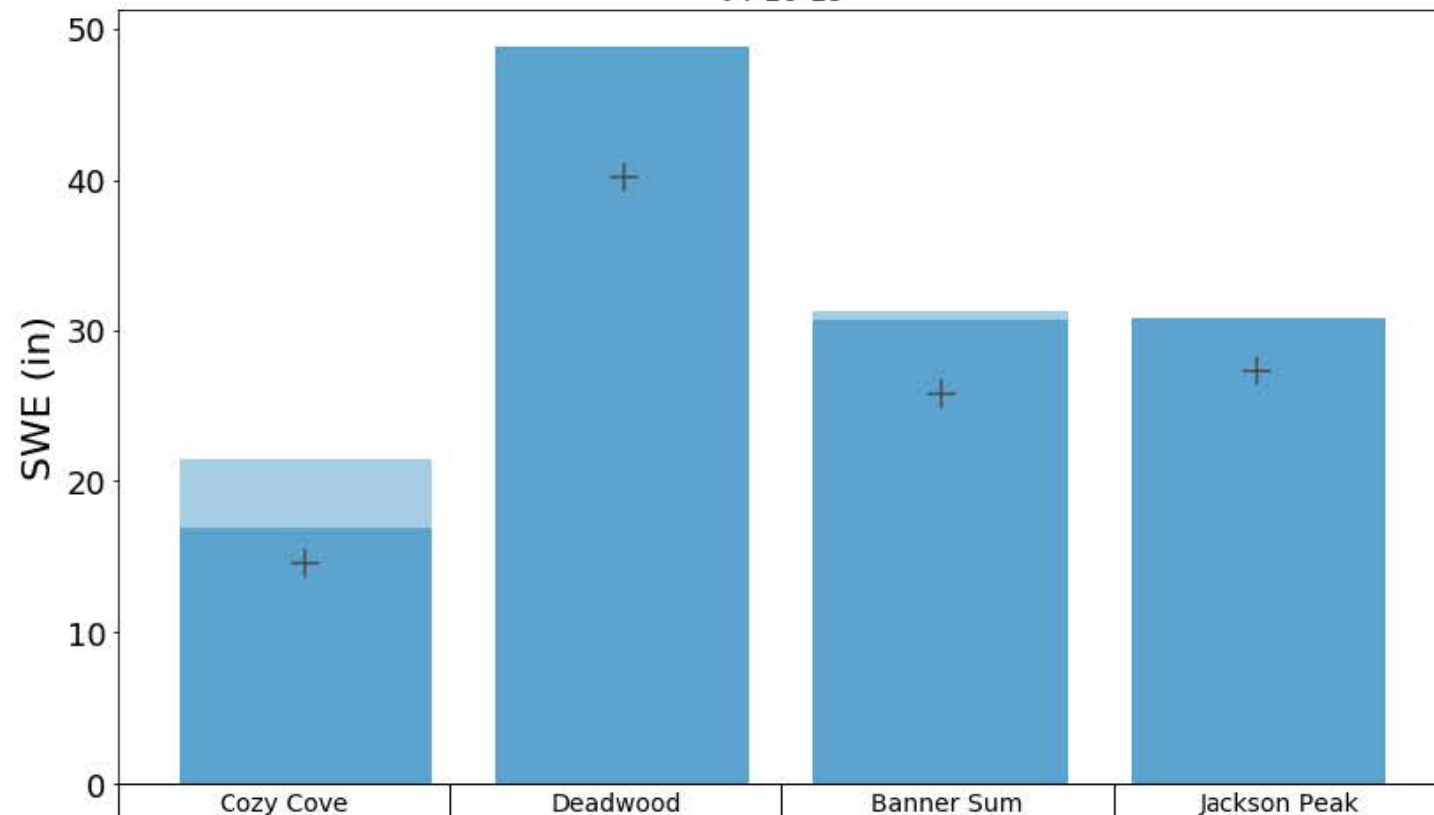
Snow Water Equivalent (in.)

Station List

- ★ Median Peak SWE
- Max
- Median (POR)
- Median ('81-'10)
- Min
- Stats. Shading
- 2019 (11 sites)
- 2018 (11 sites)
- 2017 (11 sites)
- 2016 (11 sites)
- 2015 (11 sites)
- 2014 (11 sites)
- 2013 (11 sites)
- 2012 (11 sites)
- 2011 (11 sites)
- 2010 (11 sites)
- 2009 (11 sites)
- 2008 (11 sites)
- 2007 (11 sites)

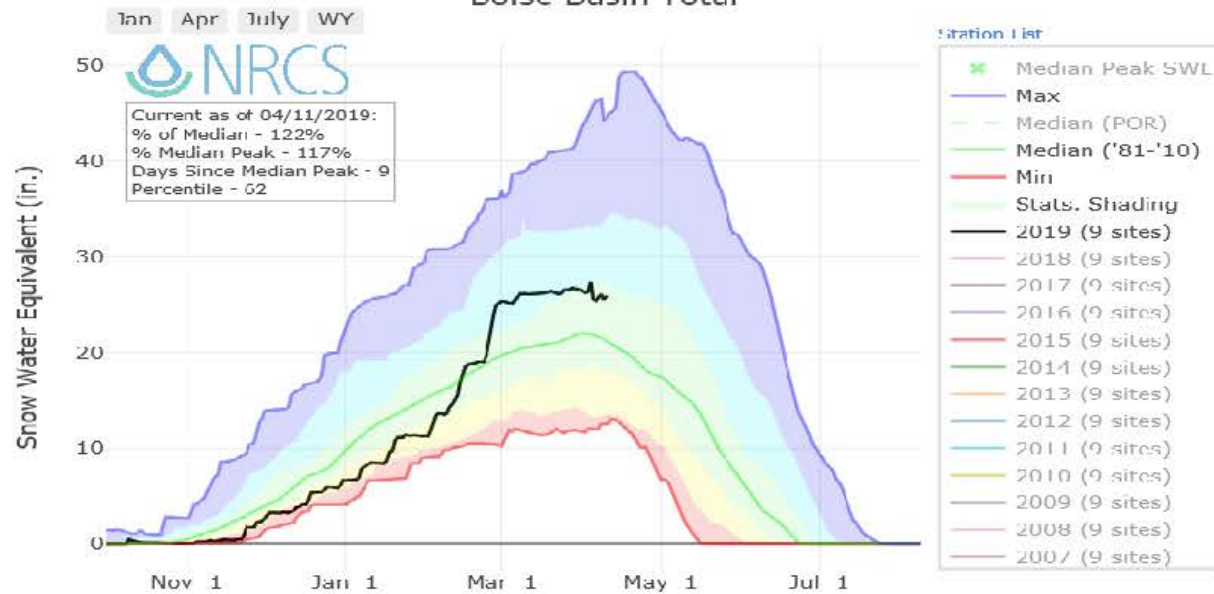


SF Payette River Percent Remaining Snowpack 04-10-19

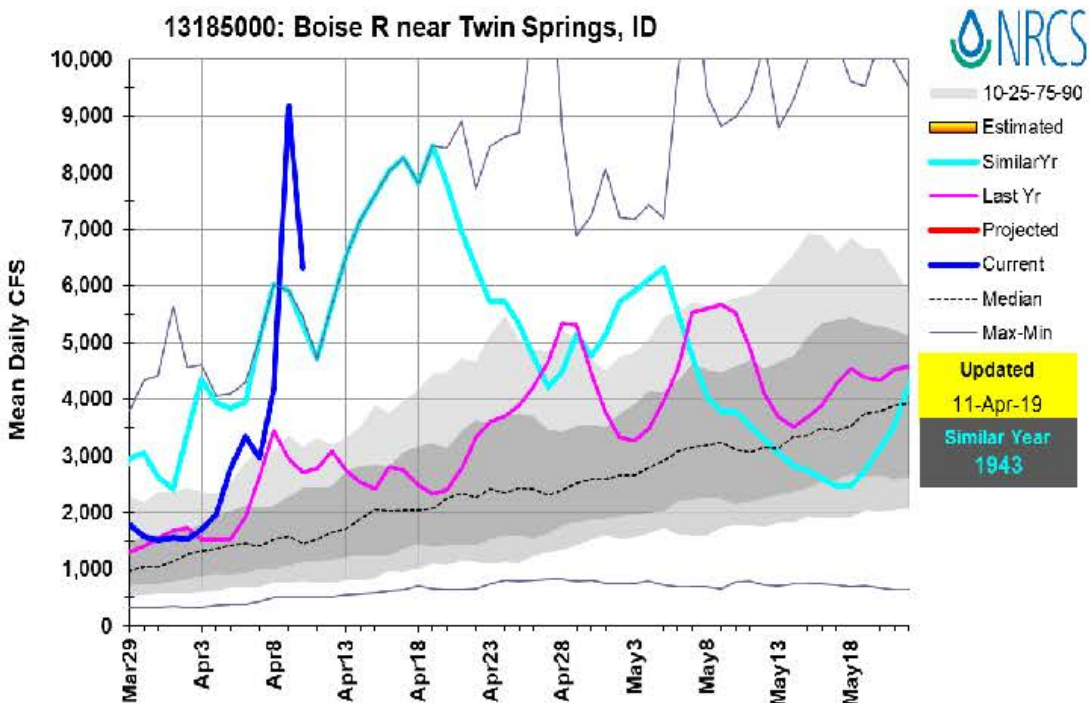
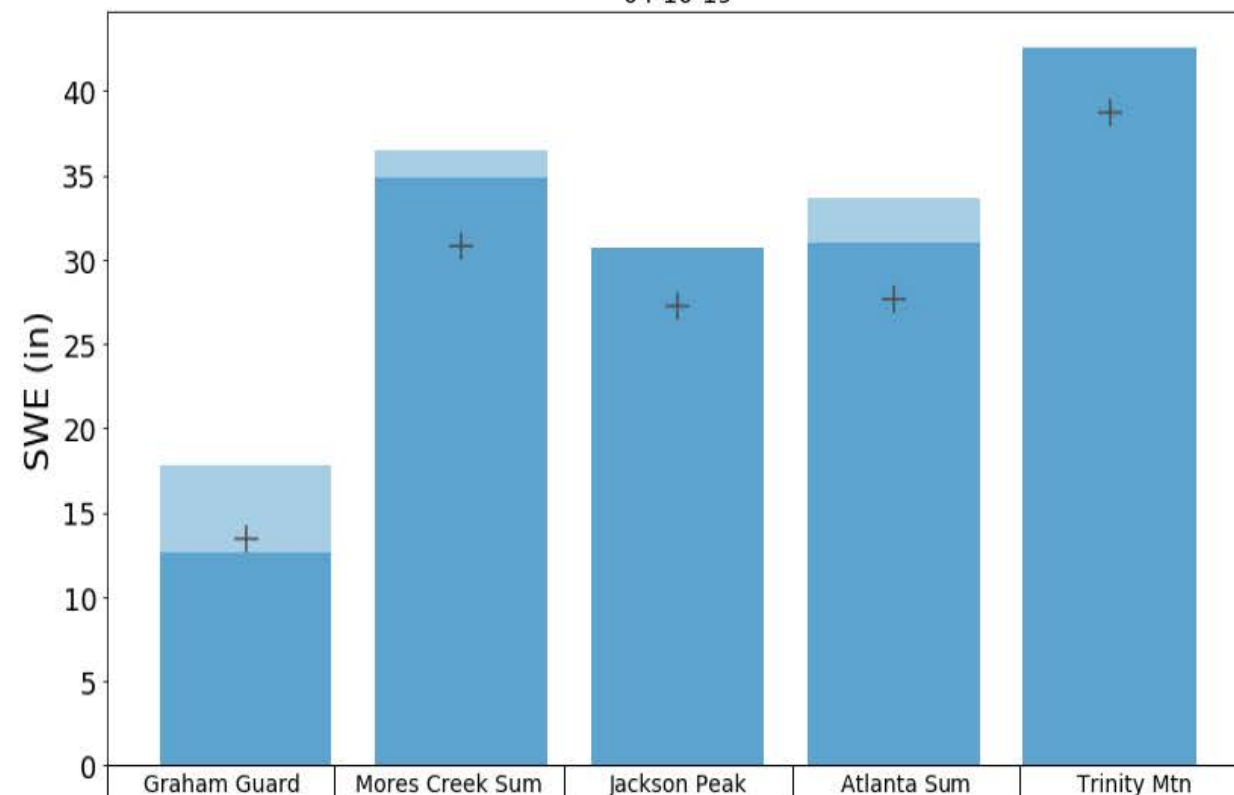


	Cozy Cove	Deadwood	Banner Sum	Jackson Peak
Elevation (ft)	5380	6860	7040	7070
Peak SWE (in)	21.5	48.8	31.3	30.7
Current SWE (in)	16.9	48.8	30.6	30.7
Percent melted	21	0	2	0
+ Normal peak SWE (in)	14.6	40.2	25.8	27.3
Peak percent of normal	140	110	122	106

Snow Water Equivalent in Boise Basin Total



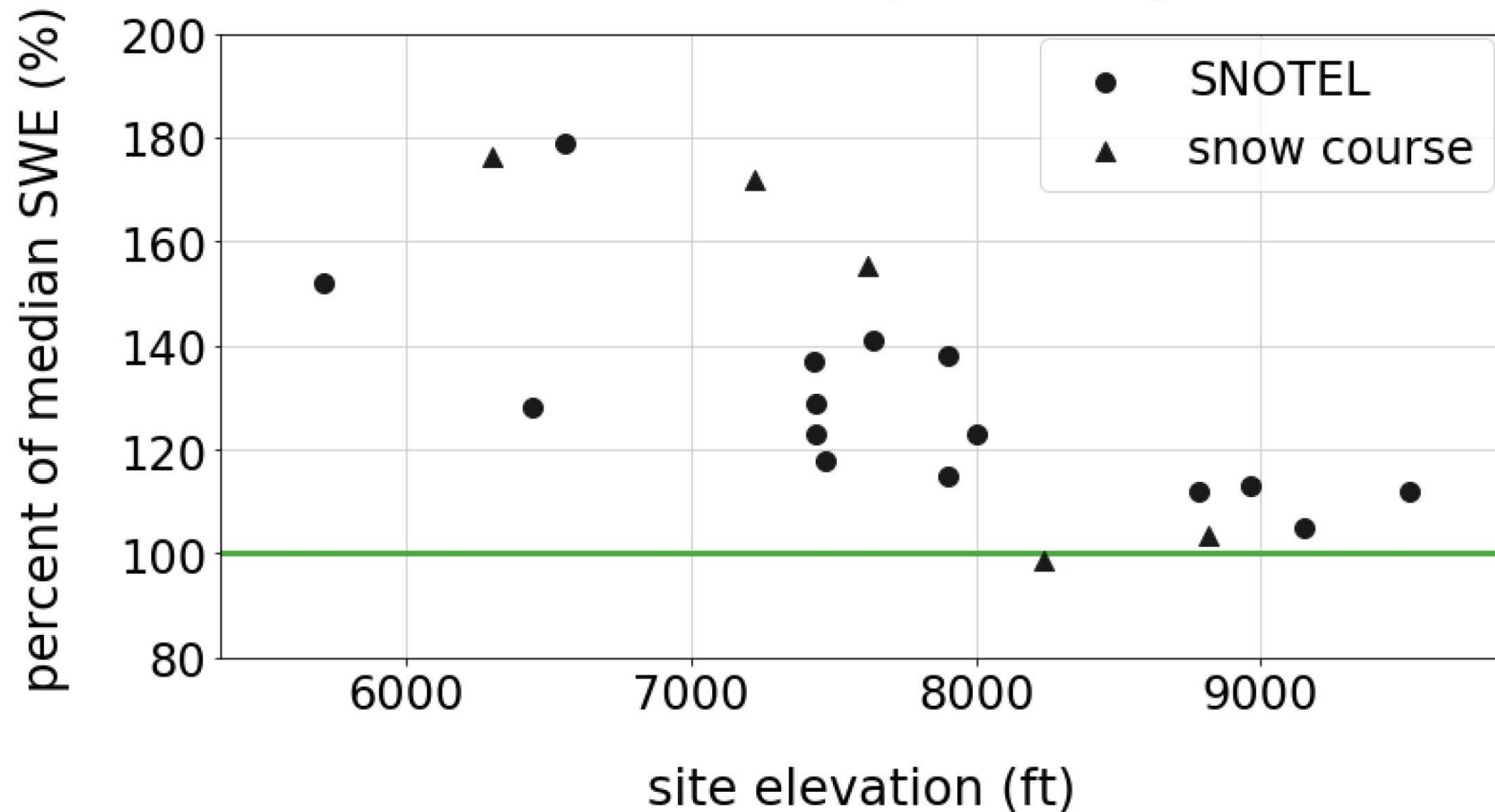
MF & NF Boise Rivers Percent Remaining Snowpack 04-10-19



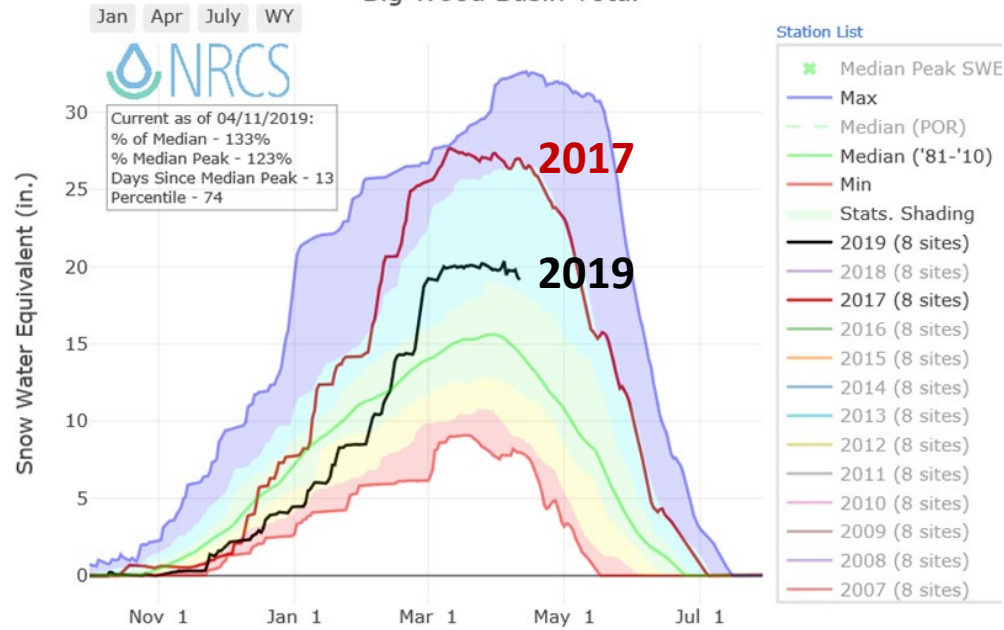
Elevation (ft)	5690	6100	7070	7580	7770
Peak SWE (in)	17.8	36.5	30.7	33.7	42.6
Current SWE (in)	12.6	34.9	30.7	31.0	42.6
Percent melted	29	4	0	8	0
+ Normal peak SWE (in)	13.4	30.8	27.3	27.7	38.7
Peak percent of normal	130	117	106	114	106

Lost and Wood River Basins

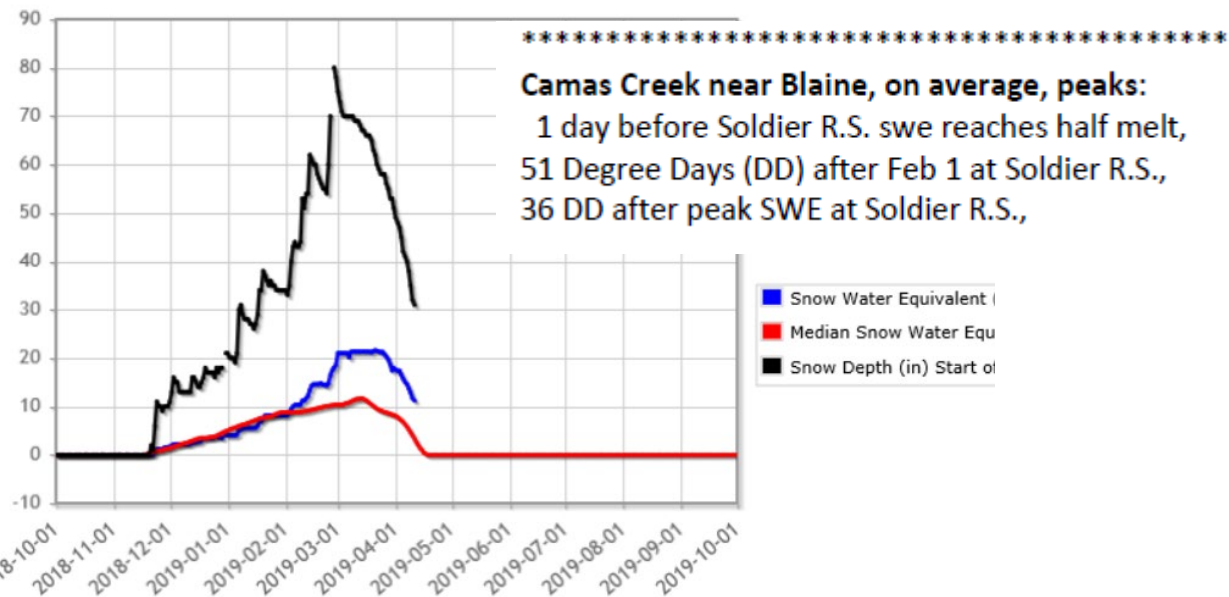
04/01/19 snow water equivalent by elevation



Snow Water Equivalent in Big Wood Basin Total

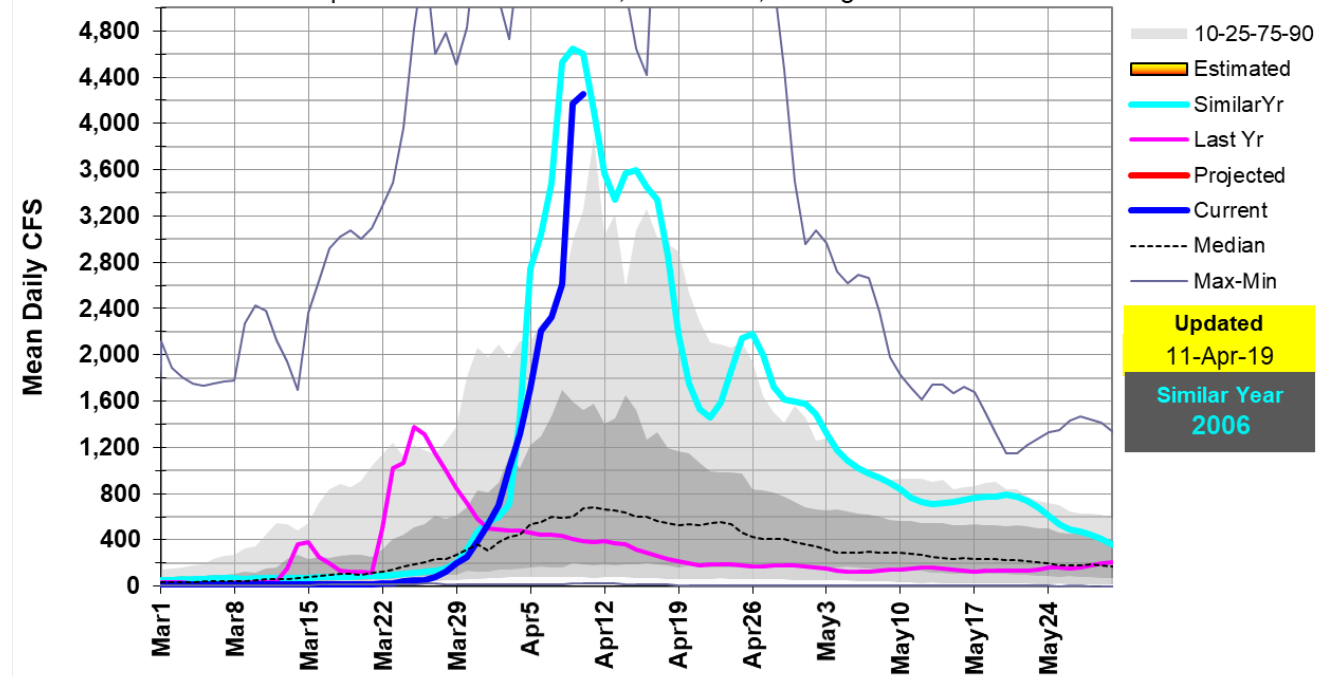


Soldier R.s. (769) Idaho SNOTEL Site - 5740 ft Reporting Frequency: Daily; Date Rang

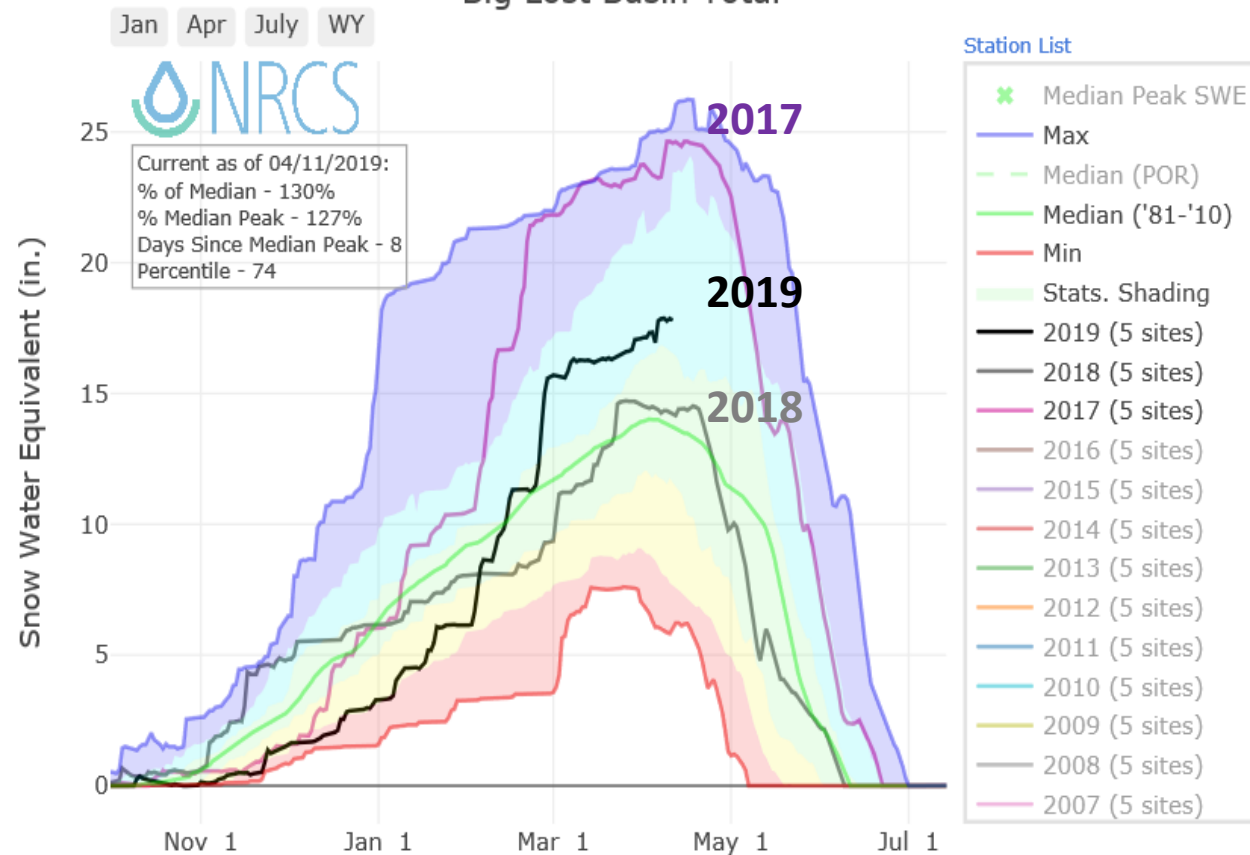


13141500: Camas Ck near Blaine, ID

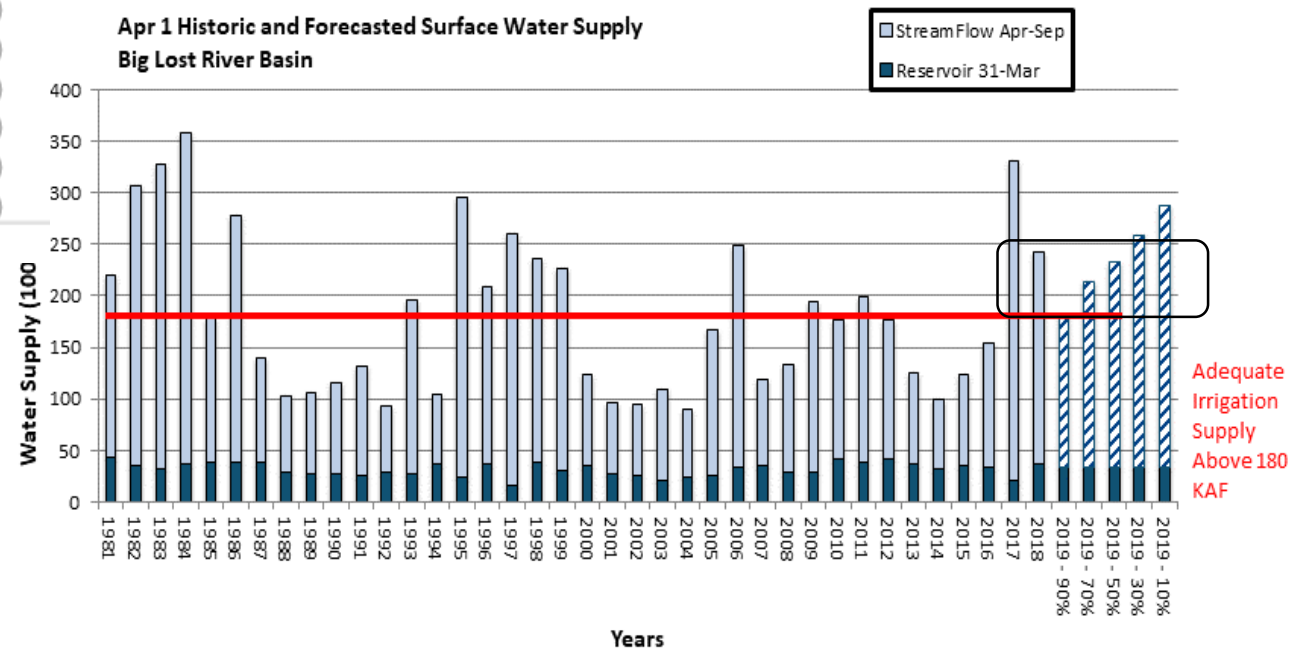
2006 Apr-Jul volume was 244%, 211.2 KAF, Average is 86.7 KAF



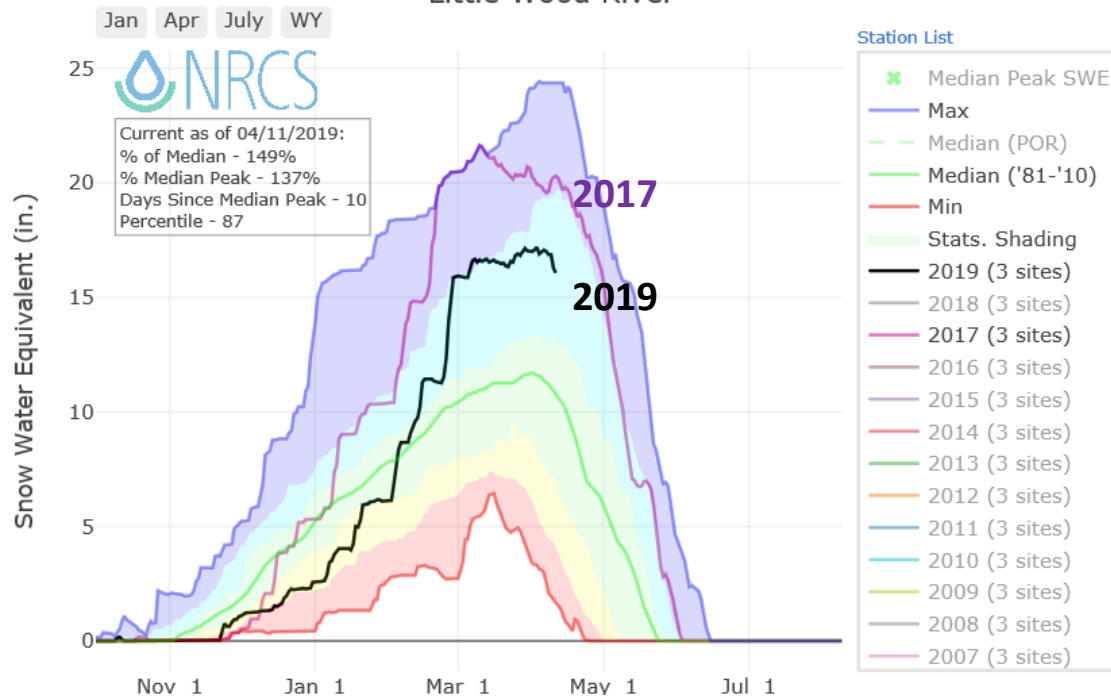
Snow Water Equivalent in Big Lost Basin Total



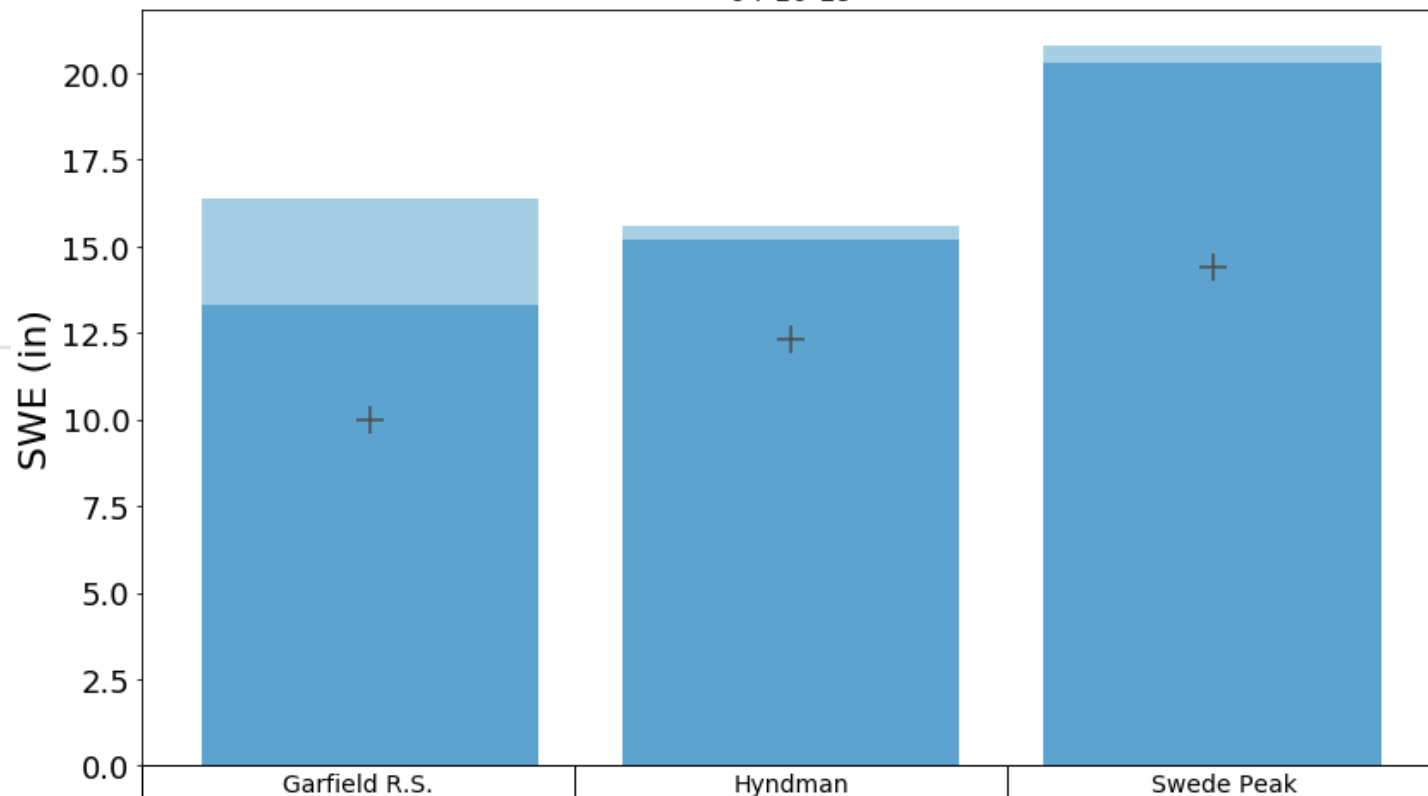
Apr 1 Historic and Forecasted Surface Water Supply Big Lost River Basin



Snow Water Equivalent in Little Wood River



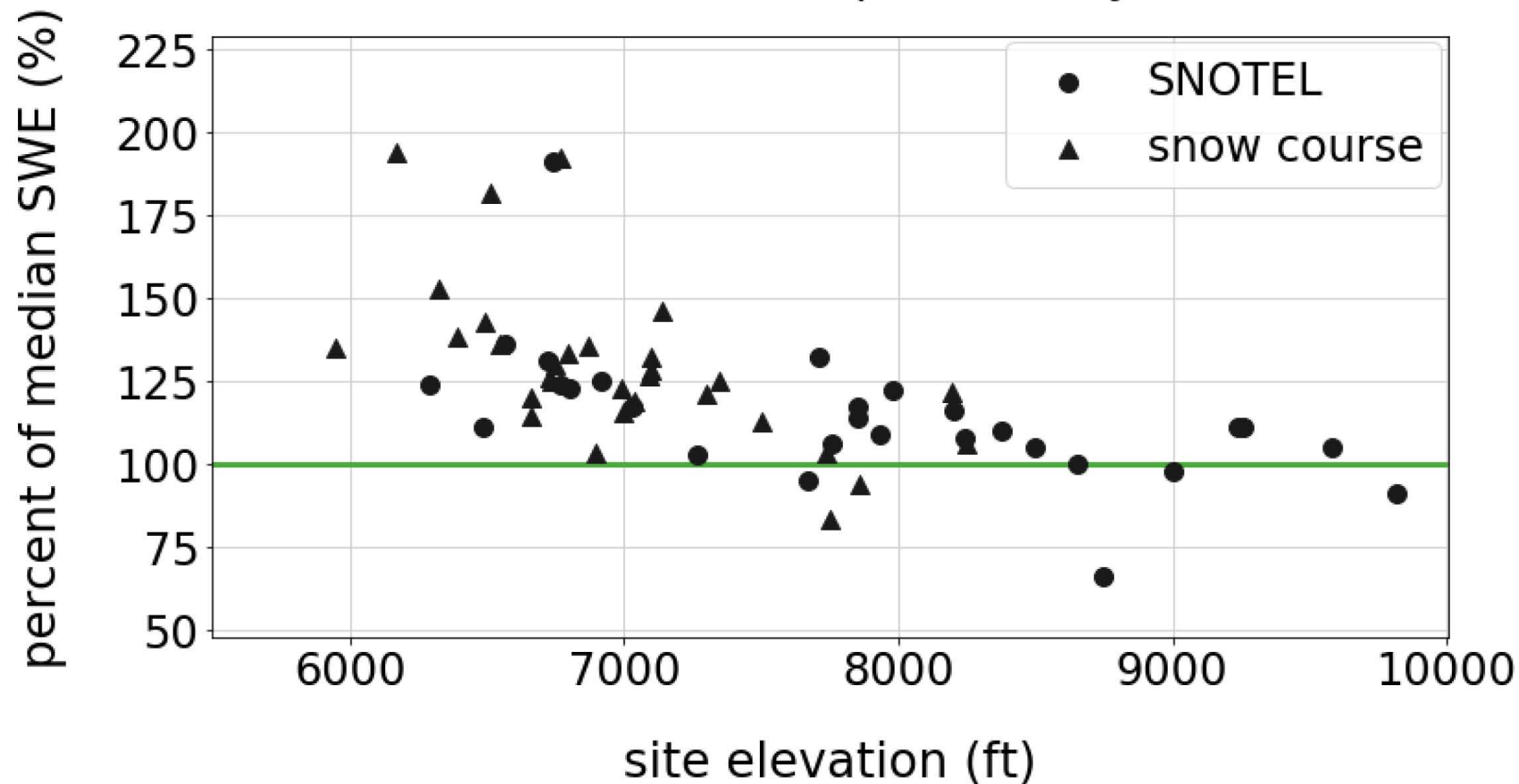
Little Wood River Percent Remaining Snowpack 04-10-19



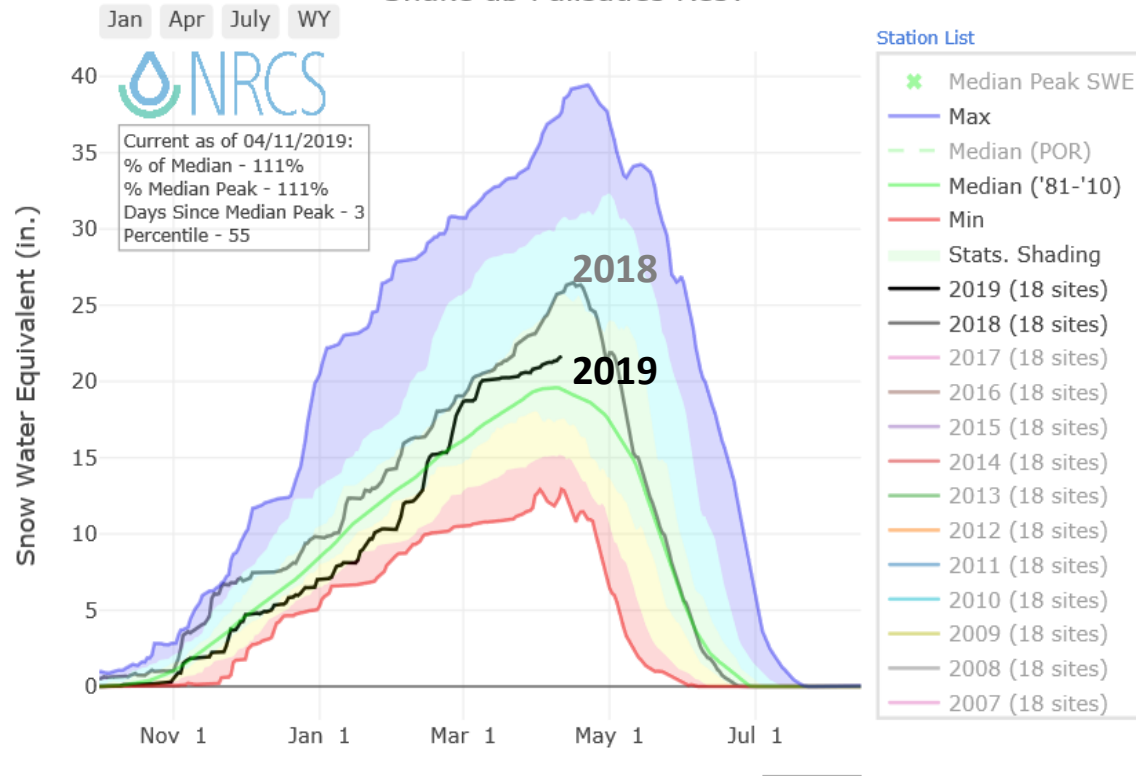
	Garfield R.S.	Hyndman	Swede Peak
Elevation (ft)	6560	7440	7640
Peak SWE (in)	16.4	15.6	20.8
Current SWE (in)	13.3	15.2	20.3
Percent melted	18	2	2
+ Normal peak SWE (in)	10.0	12.3	14.4
Peak percent of normal	159	118	130

Upper Snake

04/01/19 snow water equivalent by elevation



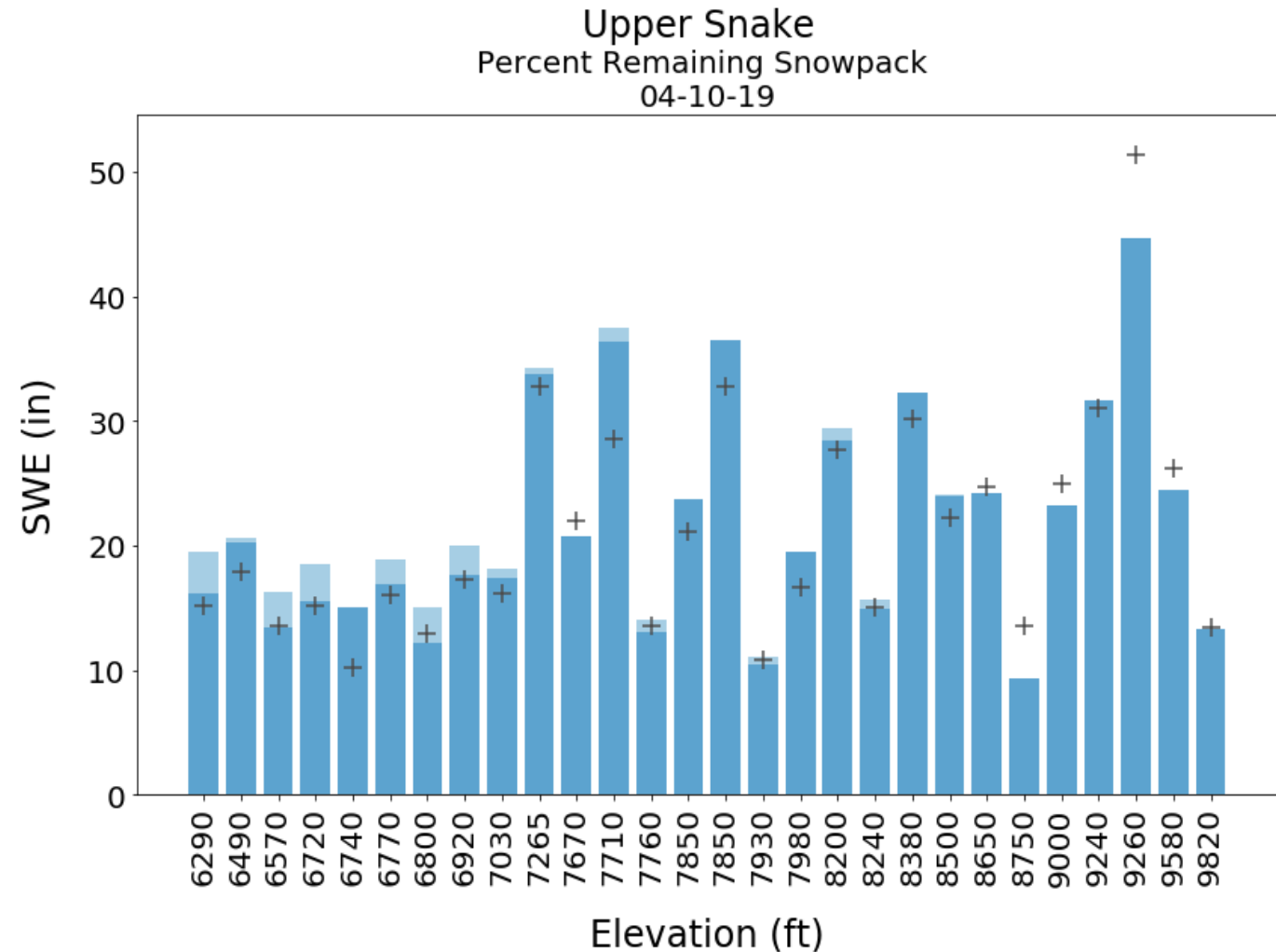
Snow Water Equivalent in Snake ab Palisades Resv



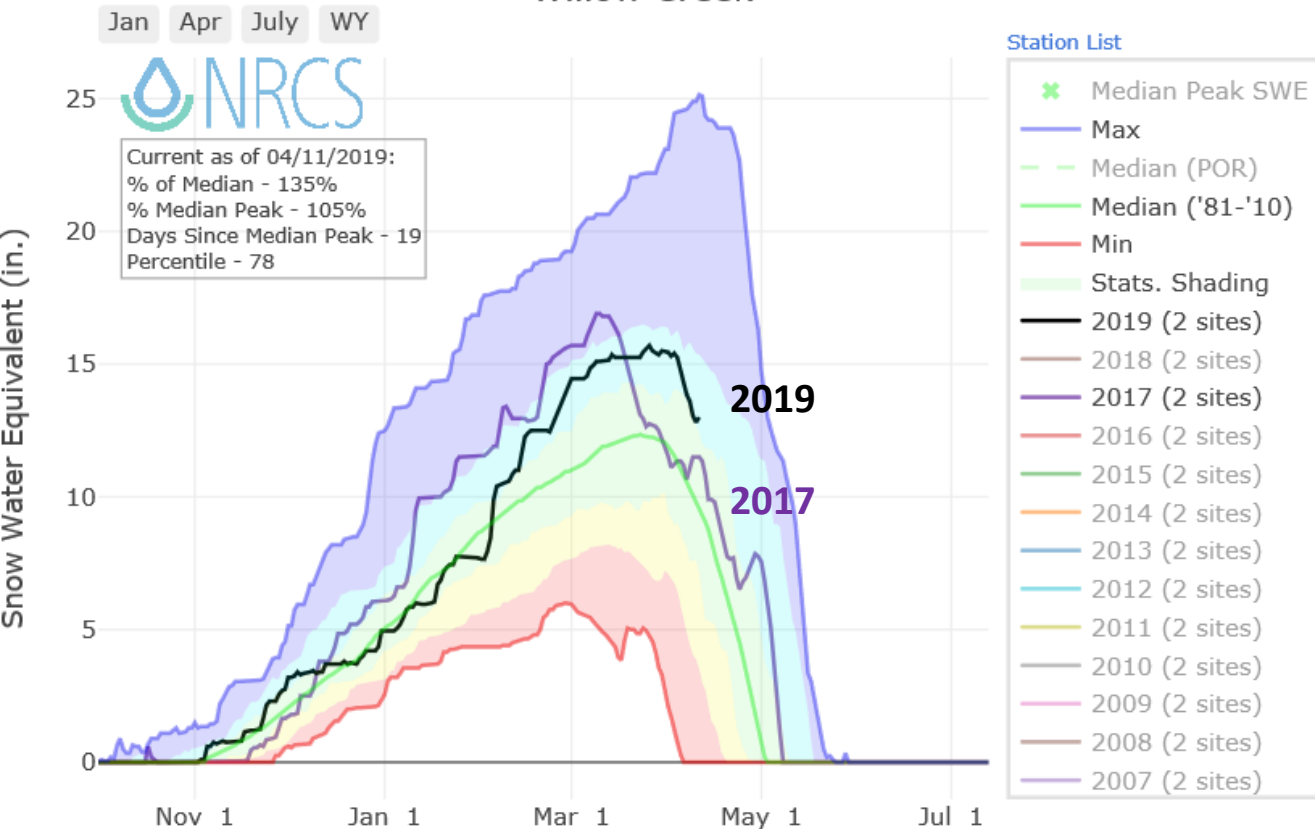
Upper Snake ----

- Significant melt has only begun below 7000 feet (these sites are 10-20% melted).
- Above 7000 feet, melt is <10%.
- Above 8300 feet, melt has not started.

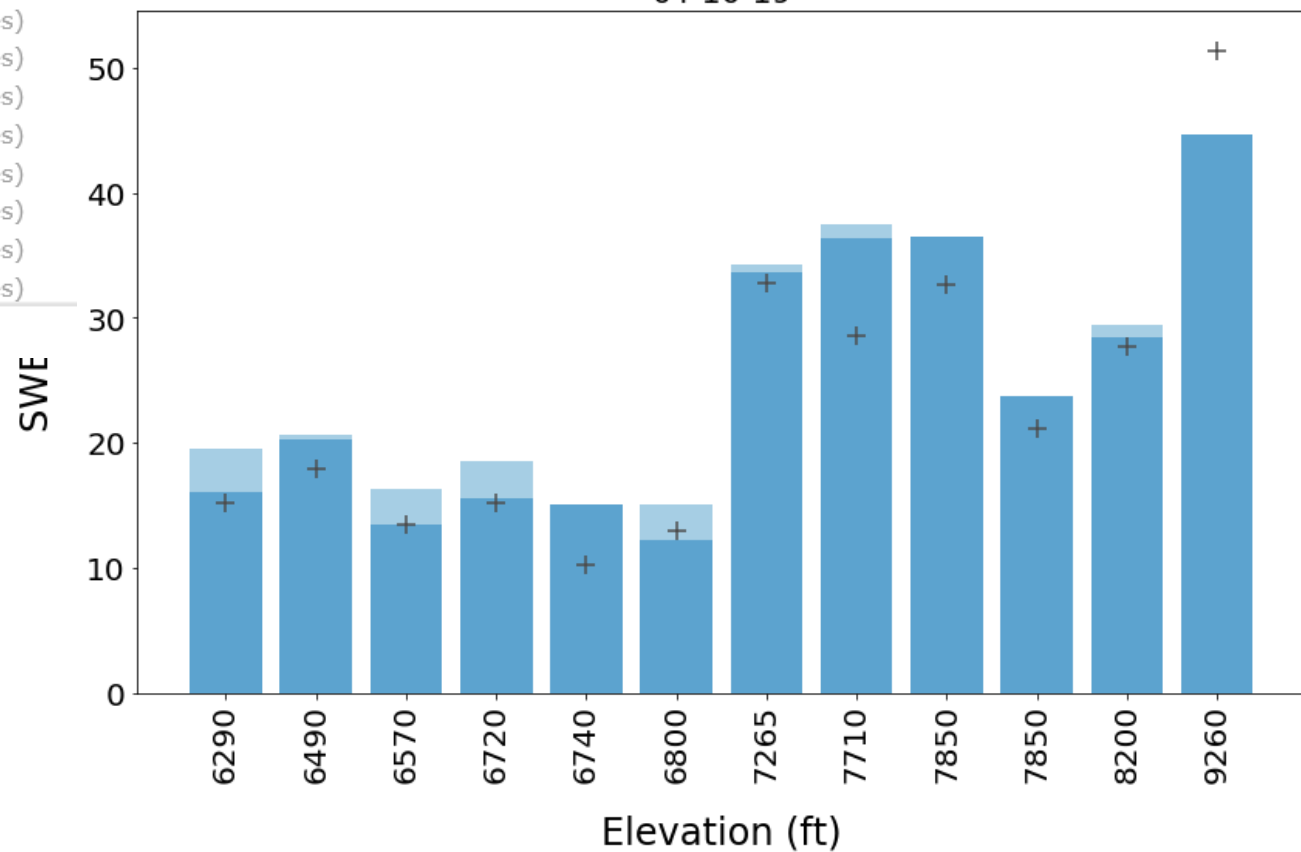
From Tina Andry



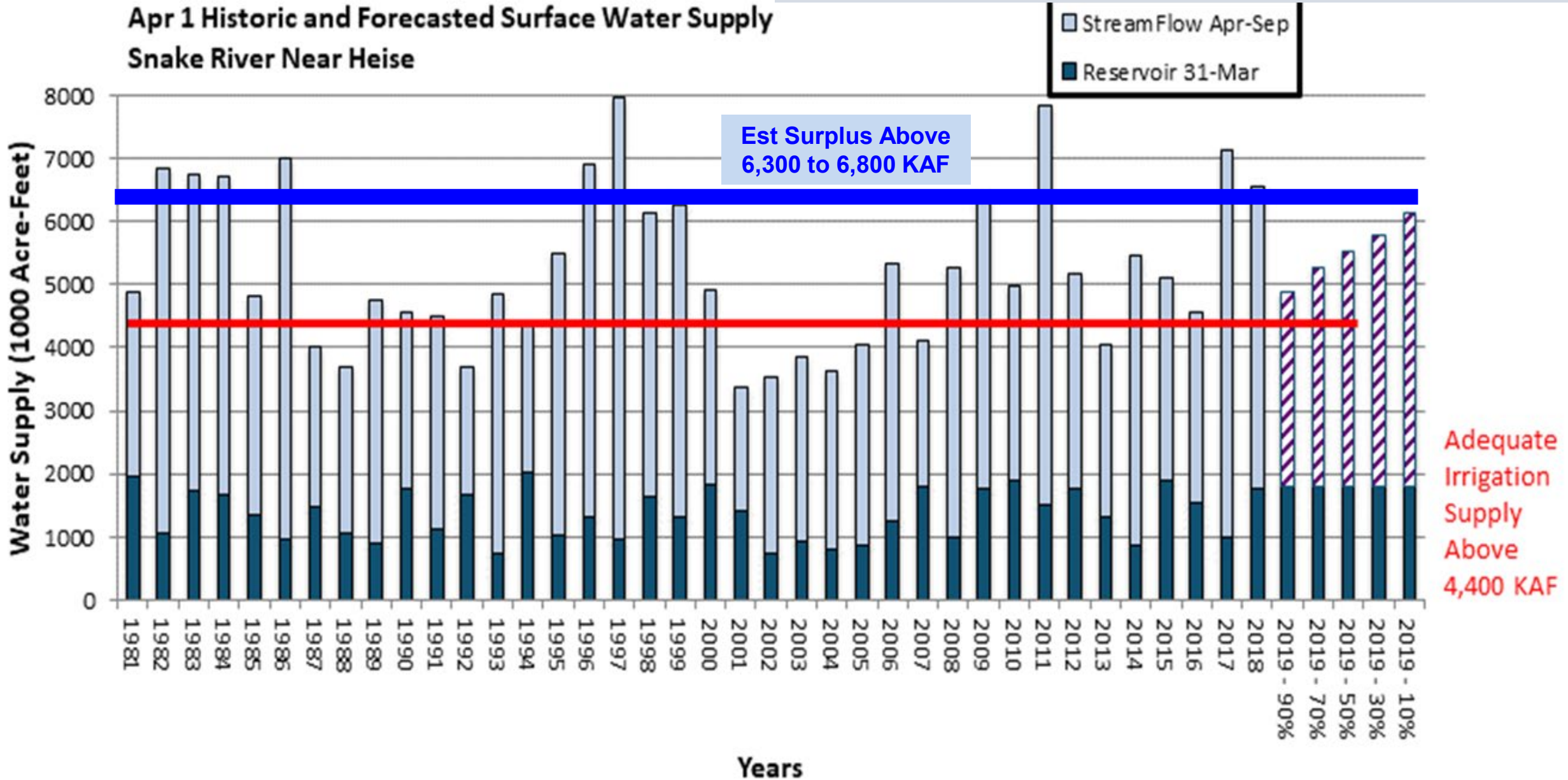
Snow Water Equivalent in Willow Creek



Henrys Fork, Teton, Willow, and Portneuf Basins Percent Remaining Snowpack 04-10-19

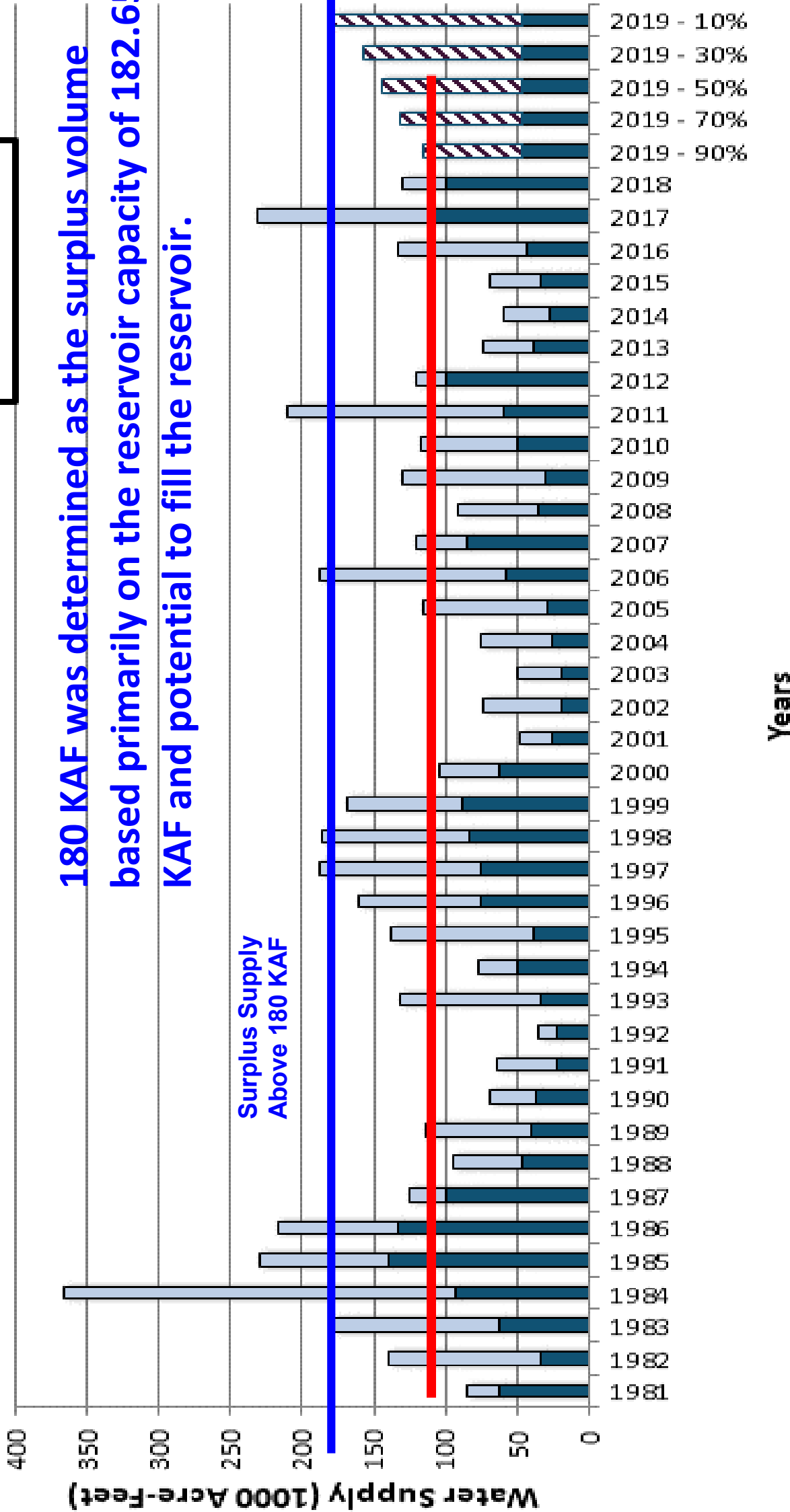
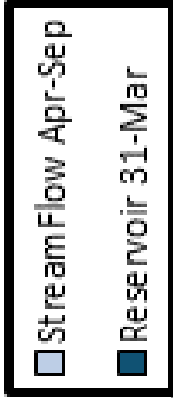


Surplus Estimate based upon CFS flow >25,000 @
Blackfoot and volume > 6,300-6,800 KAF



Station ID	Station Name	Period	Data Type	Years	# of Years			
13037500	Snake River at Neeley	Apr-Sep	strm	1981-2018	39 Units KAF			
13010500	Jackson Lake	31-Mar	resv	1981-2018	39 Units KAF			
13032450	Palisades Reservoir	31-Mar	resv	1981-2018	39 Units KAF			
	American Falls	31-Mar	resv	1981-2018	39 Units KAF			
ENSO Classification								
SE Strong El Nino - EN Mild El Nino - N Neutral - LN Mild La Nina - SL Strong La Nina								
Rank	Year	Enso	Stream Flow Apr- Sep	Reservoir 31-Mar	Streamflow + Reservoir Sum	Non- Exceedance Probability	SWSI	Milner Spill Ceases
1	1997	N	7453	2104	9557	98%	4.0	5-Jul
2	1984	N	6021	3139	9160	95%	3.8	14-Jul
3	2011	SL	6009	2823	8832	93%	3.5	28-Jul
4	1983	SE	5243	3345	8587	90%	3.3	26-Jul
5	1986	N	6071	2386	8457	88%	3.1	9-Jul
6	1982	N	5521	2612	8133	85%	2.9	21-Jul
7	2017	LN	5523	2461	7985	83%	2.7	6-Jul
8	1999	SL	4901	2813	7714	80%	2.5	1-Jul
9	1998	SE	4390	3205	7596	78%	2.3	7-Jul
10	1996	N	4737	2738	7475	75%	2.1	3-Jul
2019 10% Chance Exceedance Forecast		N	4090	3306	7396	74%	2.0	
11	2018	N	3802	3340	7142	73%	1.9	27-Jun
12	2009	N	3497	3375	6871	70%	1.7	4-Jul
2019 30% Chance Exceedance Forecast		N	3440	3306	6746	71%	1.8	
13	1995	SE	3763	2589	6352	68%	1.5	3-Jul
2019 50% Chance Exceedance Forecast		N	3000	3306	6306	69%	1.6	
14	1993	EN	3720	2164	5884	65%	1.3	28-Jun
15	1985	N	3150	2734	5884	63%	1.0	14-Jun
2019 70% Chance Exceedance Forecast		N	2550	3306	5856	66%	1.4	
16	2006	N	2985	2758	5743	60%	0.8	16-May
2019 90% Chance Exceedance Forecast		N	1900	3306	5206	56%	0.5	
17	1981	N	1526	3624	5150	58%	0.6	19-Jun
18	2014	N	2915	2217	5132	55%	0.4	No Spill

Apr 1 Historic and Forecasted Surface Water Supply
Salmon Falls Creek Basin



Twin Falls Soil & Water Conservation District Salmon Falls Reservoir Storage Allotment		Updated: April 10, 2019				
reservoir storage and April 1 - September 30 forecasts.		Based on NRCS April 1 Streamflow Forecasts				
		Chance of Exceedance Streamflow Forecasts				
April 1 Streamflow Forecasts		90%	70%	50%	30%	10%
Inflow Forecast, April 1-September 30, acre-feet		69000	85000	98000	111000	132000
Storage in Dam, March 31, acre-feet	46800	46800	46800	46800	46800	46800
Total Storage (Inflow Forecast + Storage)		115800	131800	144800	157800	178800
Less Dead Storage in Reservoir (5000 A-F)	5000	110800	126800	139800	152800	173800
Projected Reservoir Loss of 20%	0.20	22160	25360	27960	30560	34760
In Dam, Available for Delivery		88640	101440	111840	122240	139040
Projected Delivery Efficiency: 2019 60% Past Delivery Efficiency: 2018 / 66.22% 2017 / 64.2% 2016 / 59.8% 2015 / 47.0% 2014 / 48.0% 2013 / 53.0% 2012 / 58.8% 2011 / 63.9%	0.600	53184	60864	67104	73344	83424
Less Water for Callen	485	485	485	485	485	485
Less Individual Storage Carryover	11126	11126	11126	11126	11126	11126
Water to be Delivered Over the Weir		41573	49253	55493	61733	71813
Divided by Total Shares	60050.65	0.692	0.820	0.924	1.028	1.196
Allotment if 'Individual Storage Carryover' is not subtracted from 'In Dam, Available for Delivery'		0.878	1.005	1.109	1.213	1.381

Timeline of Personnel for the Salmon Falls Canal Company Annual Water Supply Meeting Hosted by the Twin Falls Soil and Water Conservation District										
Meeting	Year	SCS / NRCS Snow Survey Office	Avg Allot	SCS / NRCS District Conservationist	Avg Allot	Streamflow Forecast Hydrologist	Avg Allot	Apr-Sep Flow (KAF)	Apr-Sep as % of Average	Allot ment
1	1955	Morley Nelson	0.72	Clarence Hedrick	0.82	Morley Nelson	0.72	38.9	46	0.340
2	1956	Morley Nelson		Clarence Hedrick		Morley Nelson		76.7	91	0.800
3	1957	Morley Nelson		Clarence Hedrick		Morley Nelson		95.6	114	0.950
4	1958	Morley Nelson		Clarence Hedrick		Morley Nelson		79.3	94	0.800
5	1959	Morley Nelson		Clarence Hedrick		Morley Nelson		29.6	35	0.335
6	1960	Morley Nelson		Clarence Hedrick		Morley Nelson		54.8	65	0.555
7	1961	Morley Nelson		Clarence Hedrick		Morley Nelson		20.5	24	0.210
8	1962	Morley Nelson		Clarence Hedrick		Morley Nelson		102.3	122	1.025
9	1963	Morley Nelson		Clarence Hedrick		Morley Nelson		66.6	79	0.650
10	1964	Morley Nelson		Clarence Hedrick		Morley Nelson		97.5	116	0.890
11	1965	Morley Nelson		Clarence Hedrick		Morley Nelson		96.4	115	1.167
12	1966	Morley Nelson		Clarence Hedrick		Morley Nelson		29.2	35	0.420
13	1967	Morley Nelson		Clarence Hedrick		Morley Nelson		64.8	77	0.640
14	1968	Morley Nelson		Clarence Hedrick		Morley Nelson		30.0	36	0.320
15	1969	Morley Nelson		Clarence Hedrick		Morley Nelson		91.6	109	1.000
16	1970	Morley Nelson		Clarence Hedrick		Morley Nelson		92.9	111	1.010
17	1971	Morley Nelson		Clarence Hedrick		Morley Nelson		145.9	174	1.167
18	1972	Jack Wilson	1.09	Clarence Hedrick		Jack Wilson	1.03	102.7	122	1.167
19	1973	Jack Wilson		Clarence Hedrick		Jack Wilson		84.1	100	1.167
20	1974	Jack Wilson		Clarence Hedrick		Jack Wilson		82.4	98	1.167
21	1975	Jack Wilson		Clarence Hedrick		Jack Wilson		150.2	179	1.167
22	1976	Jack Wilson		Clarence Hedrick		Jack Wilson		91.8	109	1.167
23	1977	Jack Wilson		Rich Yankey		Jack Wilson		30.8	37	0.820
24	1978	Jerry / Jack		Rich Yankey		Jack Wilson		82.6	98	0.940
25	1979	Jerry Beard		Rich Yankey		Jack Wilson		85.8	102	1.050
26	1980	Jerry Beard		Rich Yankey		Jack Wilson		105.7	126	1.167

Timeline of Personnel for the Salmon Falls Canal Company Annual Water Supply Meeting Hosted by the Twin Falls Soil and Water Conservation District										
Meeting Year	SCS / NRCS Snow Survey Office	Avg Allot	SCS / NRCS District Conservationist	Avg Allot	Streamflow Forecast Hydrologist	Avg Allot	Apr-Sep Flow (KAF)	Apr-Sep as % of Average	Allot ment	
22 1976	Jack Wilson		Clarence Hedrick		Jack Wilson		91.8	109	1.167	
23 1977	Jack Wilson		Rich Yankey		Jack Wilson	1.03	30.8	37	0.820	
24 1978	Jerry / Jack		Rich Yankey		Jack Wilson		82.6	98	0.940	
25 1979	Jerry Beard		Rich Yankey		Jack Wilson		85.8	102	1.050	
26 1980	Jerry Beard		Rich Yankey		Jack Wilson		105.7	126	1.167	
27 1981	Jerry Beard		Rich Yankey		Jack Wilson		22.0	26	0.520	
28 1982	Jerry Beard		Rich Yankey		Jerry Beard	1.17	105.2	125	1.167	
29 1983	Jerry Beard	1.00	Rich Yankey		Jerry Beard		116.2	138	1.167	
30 1984	Jerry Beard		Rich Yankey		Jim Marron/Jon		273.7	326	1.167	
31 1985	Jerry Beard		Rich Yankey		Jon Lea	1.17	90.3	107	1.167	
32 1986	Jerry Beard		Rich Yankey		Jon Lea		83.0	99	1.167	
33 1987	Jerry Beard		Rich Yankey		Barb Sarentitas	0.76	25.9	31	0.940	
34 1988	Peter / Jerry		Rich Yankey		Barb Sarentitas		48.2	57	0.570	
35 1989	Peter Palmer		Rich Yankey	0.81	Dave Garen		74.1	88	0.890	
36 1990	Peter Palmer		Rich Yankey		Dave Garen	0.55	32.8	39	0.405	
37 1991	Peter Palmer		Rich Yankey		Dave Garen		40.8	49	0.360	
38 1992	Peter Palmer	0.71	Rich Yankey		Dan Moore		13.7	16	0.150	
39 1993	Peter Palmer		Rich Yankey		Dan Moore		97.7	116	1.050	
40 1994	Peter Palmer		Rich Yankey		Dan Moore		26.7	32	0.330	
41 1995	Peter Palmer		Rich Yankey		Dan Moore		99.9	119	1.000	
42 1996	Peter Palmer		Rich Yankey		Dan Moore	0.78	85.3	102	1.167	
43 1997	Ron / Peter		Rich Yankey		Dan Moore		112.4	134	1.167	
44 1998	Ron Abramovich		Rich Yankey		Dan Moore		102.1	122	1.167	
45 1999	Ron Abramovich		Rich Yankey		Dan Moore		80.3	96	1.020	
46 2000	Ron Abramovich		Rich Yankey		Dan Moore		41.3	49	0.481	
47 2001	Ron Abramovich		Rich Yankey		Dan Moore		23.3	28	0.227	
48 2002	Ron Abramovich		Rich Yankey		Phil Pasteris	0.44	56.0	67	0.436	

Timeline of Personnel for the Salmon Falls Canal Company Annual Water Supply Meeting Hosted by the Twin Falls Soil and Water Conservation District											
Meeting	Year	SCS / NRCS Snow Survey Office	Avg Allot	SCS / NRCS District Conservationist	Avg Allot	Streamflow Forecast Hydrologist	Avg Allot	Apr-Sep Flow (KAF)	Apr-Sep as % of Average	Allotment	Apr-Sep Avg Flow KAF
43	1997	Ron / Peter		Rich Yankey		Dan Moore		112.4	134	1.167	84
44	1998	Ron Abramovich		Rich Yankey		Dan Moore		102.1	122	1.167	84
45	1999	Ron Abramovich		Rich Yankey		Dan Moore		80.3	96	1.020	84
46	2000	Ron Abramovich		Rich Yankey		Dan Moore		41.3	49	0.481	84
47	2001	Ron Abramovich		Rich Yankey		Dan Moore		23.3	28	0.227	84
48	2002	Ron Abramovich		Rich Yankey		Phil Pasteris	0.44	56.0	67	0.436	84
49	2003	Ron Abramovich		Rich Yankey		Tom Perkins		31.0	37	0.214	84
50	2004	Ron Abramovich		Steve Schuyler		Tom Perkins	0.66	48.7	58	0.425	84
51	2005	Ron Abramovich		Steve Schuyler		Tom Perkins		87.7	104	0.840	84
52	2006	Ron Abramovich		Steve Schuyler		Tom Perkins		129.8	155	1.167	84
53	2007	Ron Abramovich		Steve Schuyler		Jolyne Lee		35.6	42	0.655	84
54	2008	Ron Abramovich		Steve Schuyler	0.78	Jolyne Lee	0.73	55.6	66	0.579	84
55	2009	Ron Abramovich	0.74	Steve Schuyler		Jolyne Lee		98.4	117	1.000	84
56	2010	Ron Abramovich		Steve Schuyler		Jolyne Lee		68.0	81	0.680	84
57	2011	Ron Abramovich		Steve Schuyler		Rashawn Tama		150.2	179	1.167	84
58	2012	Ron Abramovich		Steve Schuyler		Rashawn Tama		21.9	26	0.685	84
59	2013	Ron Abramovich		Steve Schuyler		Rashawn Tama	0.75	35.6	48	0.380	74
60	2014	Ron Abramovich		Steve Schuyler		Rashawn Tama		32.9	44	0.332	74
61	2015	Ron Abramovich		Steve Schuyler		Rashawn Tama		34.5	47	0.385	74
62	2016	Ron Abramovich		Steve Schuyler		Rashawn Tama		90.0	122	1.000	74
63	2017	Ron Abramovich		Steve Schuyler		Rashawn Tama		120.0	162	1.167	74
64	2018	Ron Abramovich		Steve Schuyler		Rashawn Tama		31.0	42	0.860	74
65	2019	Ron Abramovich		Steve Schuyler		Chris Brown	1.10	100.0	135	1.100	74
								est		est	
Meeting	Year	SCS / NRCS Snow Survey Office	Avg Allot	SCS / NRCS District Conservationist	Avg Allot	Streamflow Forecast Hydrologist	Avg Allot	Apr-Sep Flow (KAF)	Apr-Sep as % of Average	Allotment	Apr-Sep Avg Flow KAF

