In looking at the April 1 SWSI, the Big Wood at Hailey has a value of 1.3, within the high range of 'near normal water supply.' The most recent similar water year is 2011, which has an exceedance of above 50%, and there is a 90% exceedance probability that we will meet 210 KAF. We have estimated 135,000 acre-feet as adequate irrigation supply.

In looking at the streamflow chart, we need a 51% of normal streamflow April – September at Hailey to meet adequate irrigation supplies (average is 263 KAF).

Here are the shutoff dates for 2011:

Water District 37 & 37M 2011 Priority Cuts

BIG W	OOD RIVER ABOVE MAGIC I WATER DISTRICT 7	RESERVOIR
Date Priority	Date of Priority Cut	Remarks
Cut Made	to and including:	
July 26, 2011	June 1, 1901	
August 29, 2011	May 10, 1887	
September 2, 2011	June 15, 1885	
September 7, 2011	July 10, 1884	
September 15, 2011	June 15, 1883	

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) April 1, 2019

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining prerunoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1981 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

			Agricultural Water
		Most Recent Year	Supply Shortage
	SWSI	With Similar SWSI	May Occur When
BASIN or REGION	Value	Value	SWSI is Less Than
Snokono	4.5	1009	NA
Spokalle	- 1.5	1990	NA
Clearwater	- 1.9	2013	NA
Salmon	- 0.2	2010	NA
Weiser	2.1	1996	NA
Payette	1.1	2008	NA
Boise	1.3	1999	- 2.2
Big Wood above Hailey	1.3	2011	- 2.9
Big Wood	1.7	1999	0.1
Little Wood	2.3	1997	- 1.4
Big Lost	1.9	2018	0.5
Little Lost	0.6	2010	1.2
Teton	0.6	2018	- 4.0
Henrys Fork	2.1	2017	- 2.5
Snake (Heise)	1.5	1998	- 1.8
Oakley	1.5	2007	- 0.1
Salmon Falls above Jackpot	1.9	2009	NA
Salmon Falls	1.7	1996	- 1.0
Bruneau	1.7	2016	NA
Owyhee	0.8	2005	- 2.7
Bear River	1.3	2012	- 4.0

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

-4	-3	-2	-1	0	1		2	3	4
							-	-	
99%	87%	75%	63%	50%	37%		25%	13%	1%
Much Below	Below Normal	 .	יג ע ע	Near Norma Nater Supp	1 1 1y		Above Normal		Much Above

NA=Not Available / Not Applicable; Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

Big Wood above Hailey SWSI

Adequate Water Supply Greater than -2.9 SWSI or 135 KAF

Station ID	Station Name			Period	Data Type	Years	# of Years
13139510	Big Wood R at Hailey			Apr-Sep	strm	1981- 20 18	38 Units KAF
	ENSO Classification						
	SE Strong El Nino - EN Mild El Nino - N Ne	utral -	LN Mild La Ni	ina - SL Strong	g La Nina		
					Streamflow +	Non-	
			Stream Flow	Reservoir 31	Reservoir	Exceedance	
Rank	Year	Enso	Apr-Sep	Mar	Sum	Probability	SWSI
1	2017	LN	620	0	620	97%	4.0
2	1983	SE	521	0	521	95%	3.7
3	1995	SE	501	0	501	92%	3.5
4	1997	N	500	0	500	90%	3.3
5	1982	N	485	0	485	8/%	3.1
6	2006	N	480	0	480	85%	2.9
/	1986	N N	406	0	406	82%	2.7
8	1984		381	0	381	79%	2.5
0	2019 10% Chance Exceedance Forcast	EIN	375	0	375	78%	2.4
9	1998	JE ENI	200	0	200	7/7/	2.2
10	2019 30% Chance Exceedance Forcast	EN	225	0	330	74%	1.9
11	1999	SI	335	0	335	72%	1.8
12	1996	N	334	0	334	69%	1.6
13	2011	SI	321	0	321	67%	1.4
10	2019 50% Chance Exceedance Forcast	EN	305	0	305	66%	1.3
	2019 70% Chance Exceedance Forcast	EN	275	0	275	65%	1.2
14	2012	LN	272	0	272	64%	1.2
15	2009	Ν	259	0	259	62%	1.0
16	2018	EN	257	0	257	59%	0.7
17	2005	EN	242	0	242	56%	0.5
18	1981	Ν	237	0	237	54%	0.3
19	2016	SE	236	0	236	51%	0.1
	2019 90% Chance Exceedance Forcast	EN	235	0	235	50%	0.0
20	2010	EN	221	0	221	49%	-0.1
21	2003	EN	221	0	221	46%	-0.3
22	1985	Ν	205	0	205	44%	-0.5
23	2008	N	199	0	199	41%	-0.7
24	1989	SL	198	0	198	38%	-1.0
25	2000	N	190	0	190	36%	-1.2
26	2014	N	162	0	162	33%	-1.4
27	2015	EN	159	0	159	31%	-1.6
20	2013	IN N	154	0	154	20%	-1.8
29	2003	N	152	0	152	20%	-2.0
30	1002	N	1/7	0	1/17	23 <i>/</i> 8 21%	-2.2
31	2004	N	136	0	136	18%	-2.7
32	1987	N	130	0	134	15%	-2.9
34	1988	SE	130	0	130	13%	-3.1
35	2007	EN	117	0	117	10%	-3.3
36	2001	LN	104	0	104	8%	-3.5
37	1992	EN	103	0	103	5%	-3.7
38	1994	SF	91	0	91	3%	-4.0







Wood & Lost River Basin

April 1, 2019



WATER SUPPLY OUTLOOK

After record snowfall during February, March followed with dry weather and little new snow accumulation. Above approximately 6,000 feet in elevation, minimal snowmelt occurred during March leaving end-of-month snowpack conditions similar to the beginning of March. Much above normal snowpack conditions still exist especially in the 5,500 to 6,500 ft elevation range. As the red line in the above snowpack chart illustrates, snow conditions have exceeded the normal (black dashed line) seasonal peak in the Wood & Lost River basins. Generally, April 1 snowpack conditions range from 120 to 160% of normal, except Fish Creek, which is nearly 200% of normal! March precipitation was generally half of normal across these basins, continuing a water-year trend of less than normal monthly precipitation but with February being the clear outlier (see precipitation graph above). Current weather forecasts suggest a return to more active weather during early April, likely adding to snowpack in the higher elevations and aiding snowmelt and runoff everywhere else.

Mackay Reservoir is 74% of capacity (106% of average), Little Wood is 19% full (28% of average), and Magic is 44% full (94% of average). All three reservoirs are expected to easily fill from this year's snow-driven runoff. Streamflow forecasts reflect current snowpack conditions, and generally range from 130 to 180% of average for the runoff season. Water supplies will be more than adequate across the Wood & Lost River basins.

	Forecast Exceedance Probabilities for Risk Assessment							
		<drie< td=""><td>er</td><td>Projecte</td><td>d Volume</td><td>W</td><td>etter></td><td></td></drie<>	er	Projecte	d Volume	W	etter>	
Forecast Point	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Camas Ck at Camas	APR-JUL	30	40	48	171%	56	69	28
Little Lost R bl Wet Ck nr Howe	APR-JUL	19.4	25	28	100%	32	37	28
	APR-SEP	23	30	35	103%	39	46	34
Big Lost R at Howell Ranch	APR-JUL	168	193	210	132%	225	250	159
	APR-SEP	188	215	235	131%	255	285	180
Big Lost R bl Mackay Reservoir	APR-JUL	125	152	170	138%	189	215	123
	APR-SEP	148	180	200	133%	225	255	150
Little Wood R ab High Five Ck	APR-JUL	96	112	123	178%	135	154	69
	APR-SEP	103	120	132	176%	145	165	75
Little Wood R nr Carey 2	APR-JUL	106	123	135	175%	148	168	77
	APR-SEP	113	131	144	173%	158	180	83
Big Wood R at Hailey	APR-JUL	210	250	275	117%	300	335	235
	APR-SEP	235	275	305	115%	335	375	265
Big Wood R ab Magic Reservoir	APR-JUL	122	173	210	124%	255	325	170
	APR-SEP	130	183	225	124%	270	340	182
Camas Ck nr Blaine	APR-JUL	129	155	174	212%	194	225	82
	APR-SEP	129	155	175	211%	195	225	83
Big Wood R bl Magic Dam 2	APR-JUL	270	345	405	162%	465	560	250
	APR-SEP	280	360	415	157%	475	575	265

Wood and Lost Basins Streamflow Forecasts - April 1, 2019

Normals based on 1981-2010 reference period: streamflow, precipitation, & reservoir normals are averages, SWE normals are medians. 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

Reservoir Storaç	Je (KAF): E		Watershed Snowpack Analysis: April 1, 2019					
Reservoir Name	Current (KAF)	Last YR	Average (KAF)	Capacity (KAF)	Basin Name	# of Sites	% of N 2019	1edian 2018
Mackay Reservoir	33.0	37.5	31.2	44.4	Camas-Beaver Creeks	4	125%	94%
Little Wood Reservoir	5.6	26.7	19.8	30.0	Birch-Medicine Lodge Creeks	4	106%	115%
Magic Reservoir	84.0	184.5	89.3	191.5	Little Lost River	4	114%	119%
					Big Lost River ab Mackay	6	134%	99%
					Big Lost Basin Total	7	133%	101%
					Fish Creek	3	193%	73%
					Little Wood River	4	161%	89%
					Big Wood River ab Hailey	7	115%	99%
					Camas Creek	5	175%	67%
					Big Wood Basin Total	12	132%	90%

For complete summary see: Surface Water Supply Index (SWSI) https://www.nrcs.usda.gov/wps/portal/nrcs/detail/id/snow/waterproducts/?cid=stelprdb1240689

Created: November 6, 2018 Updated: February 6, 2019

Fall reservoir carryover storage is used to project spring reservoir storage levels based on current conditions and current flow trends. Then, by knowing the adequate irrigation water supply needed in your basin, the projected spring reservoir volumes are subtracted from the adequate irrigation supply to determine the volume of streamflow to marginally meet adequate surface irrigation supplies in 2019.

	Column 2 - Column 3 = Column 4 Col4/Col6 X 100= Col 5									
Column 1	2	3	4	5	6	7	9			
	Amount needed	Projected end of	2019 streamflow	% of average	1981-2010	Streamflow	201	8		
	for adequate	month reservoir	volume needed	streamflow needed	Apr - Sep	period used	Apr -	Sep		
	irrigation water	storage (Jan, Feb	for adequate	for adequate 2019	average	in analysis	Streamflow	v Runoff		
Basin	supply	or Mar)	water supply	irrigation supply	streamflow					
	KAF	KAF	KAF	KAF	KAF			% o f		
							KAF	average		
Boise	1500	630	870	64%	1360	Apr-Sep	1220	90%		
Big Wood above Hailey	135		135	51%	263	Apr-Sep	257	98%		
Big Wood	275	120	155	58%	265	Apr-Sep	204	77%		
Little Wood	60	23	37	40%	92	Mar-Sep	89	97%		
Big Lost	180	40	140	93%	150	Apr-Sep	204	136%		
Little Lost	40		40	118%	34	Apr-Sep	43	126%		
Teton	85		85	44%	193	Apr-Sep	234	121%		
Snake (Heise)	4,400	1800	2600	69%	3,780	Apr-Sep	4792	127%		
Oakley	50	23	27	87%	31	Mar-Sep	14	44%		
Salmon Falls	110	41	69	81%	85	Mar-Sep	38	45%		
Owyhee	575	280	295	44%	665	Feb-Sep	225	34%		
* Bear River	280	850	35	17%	205	Apr-Sep	90	44%		

* Based on Bear River reservoir allocation: only 245 KAF in storage can be used in 2019, remaining 35 KAF to meet adequate irrigation supply is from runoff.

As of November 6, 2018

Projected change in reservoir storage from Oct 31, 2018 to start of runoff season in Spring 2019.

	Sep 30 storage KAF	Oct 31 storage KAF	Observed Nov 30 storage KAF	Observed Dec 31 storage KAF	Observed / Projected Jan 31 storage KAF	Projected Feb 28 storage KAF	Projected Mar 31 storage KAF
Boise Reservoir System	446.4	437.5	465.4	494.9	529.3		630
Magic Reservoir	61.1	69.0	76.7	79.9	83.8		120
Little Wood Reservoir	11.1	12.9	15.6	18.3	21.1	23	
Mackay Reservoir	24.8	24.8	26.8	29.7	30.9		40
Jackson & Palisades Reservoir System	1476.7	1462.5	1582.4	1684.7	1781.8		1800
Oakley Reservoir	12.1	13.5	14.4	17.3	18.9	23	
Salmon Falls Reservoir	31.9	33.1	34.8	36.0	39.1	41	
Lake Owyhee	220.5	222.7	237.0	254.0	273.8 / 280		
Bear Lake	802.3	798.2	769.8	809.8			850

Other basins, Spokane, Clearwater, Salmon, Weiser, Payette and Bruneau basins, the surface agricultural irrigation demand is not known or relevant.