# 2018 Idaho Snowpack and Water Supply Outlook

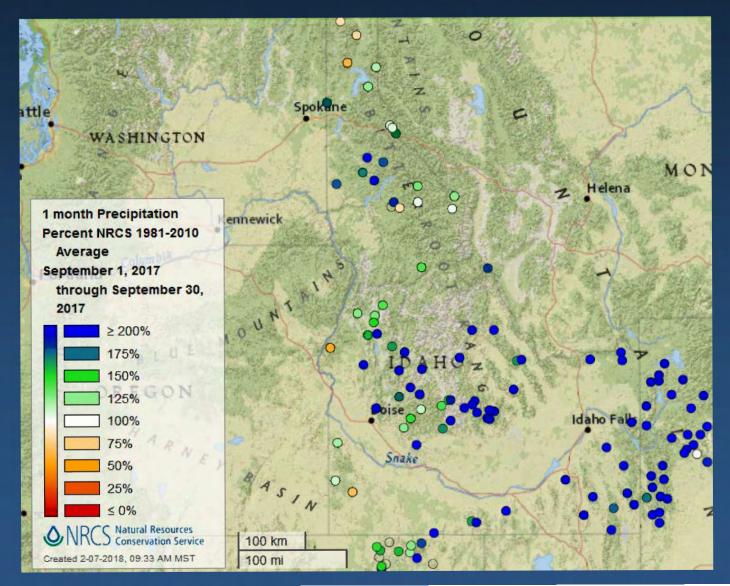
February 9, 2018

NRCS - Idaho Snow Survey

Danny Tappa & Ron Abramovich

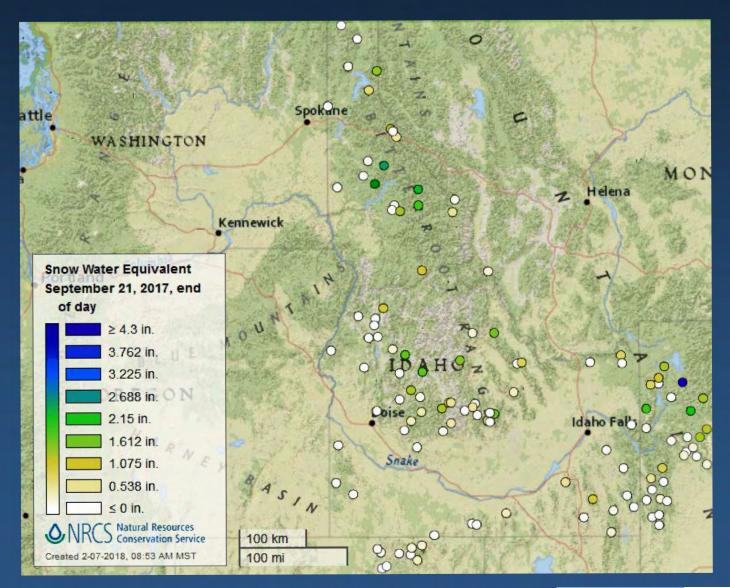


#### September Precipitation



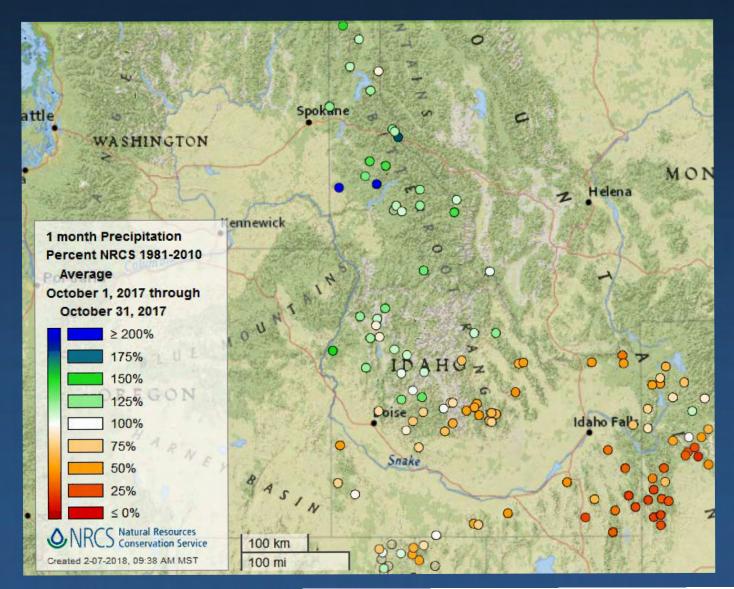


#### Record Mid-Sept Snow



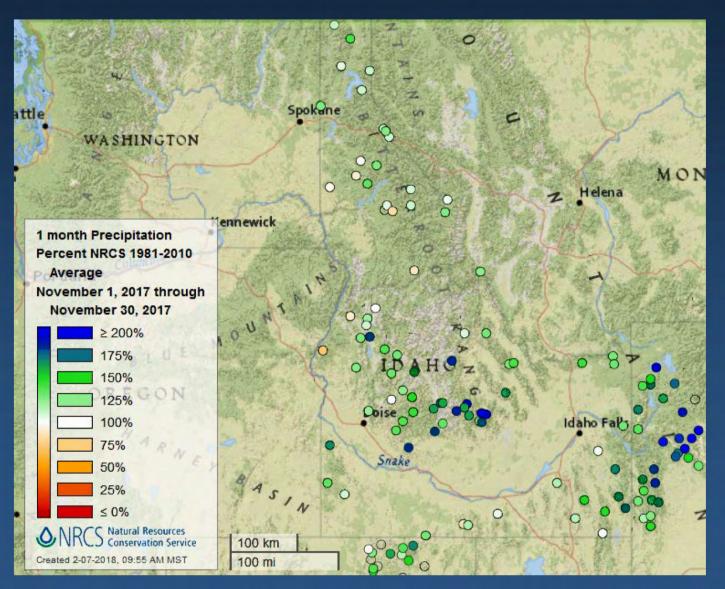


### October Precipitation



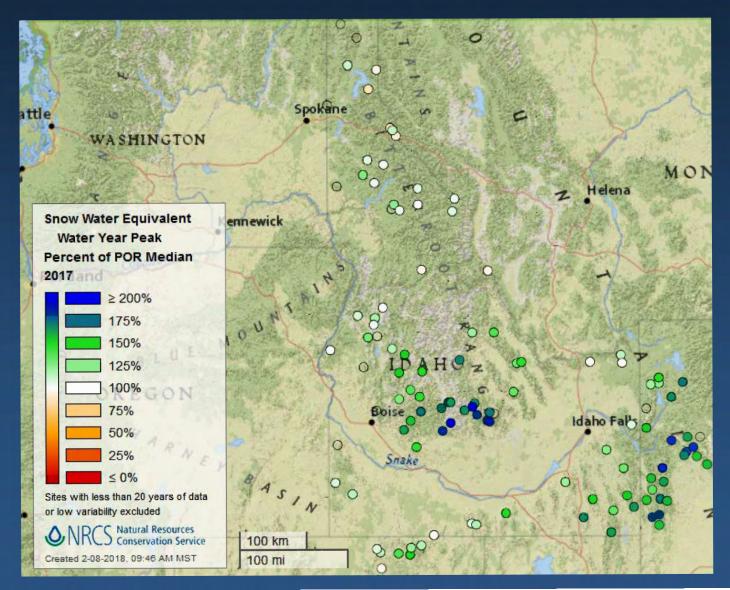


#### November Precipitation



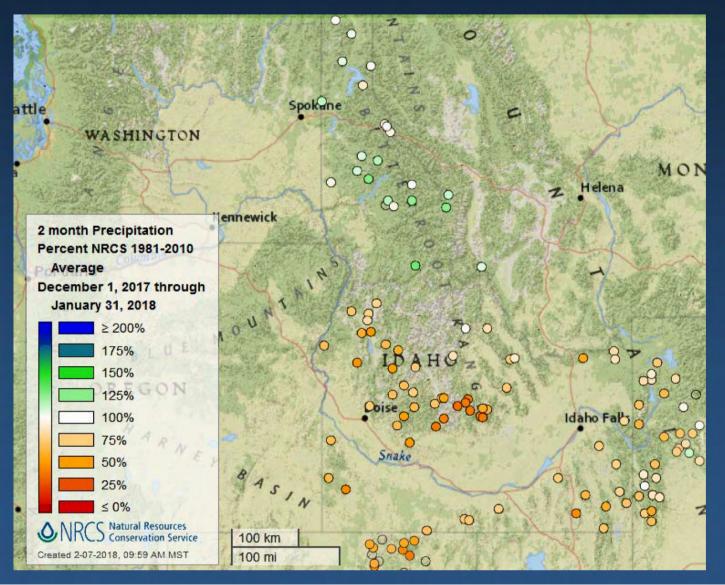


#### Familiar Pattern? 2017 Peak SWE...



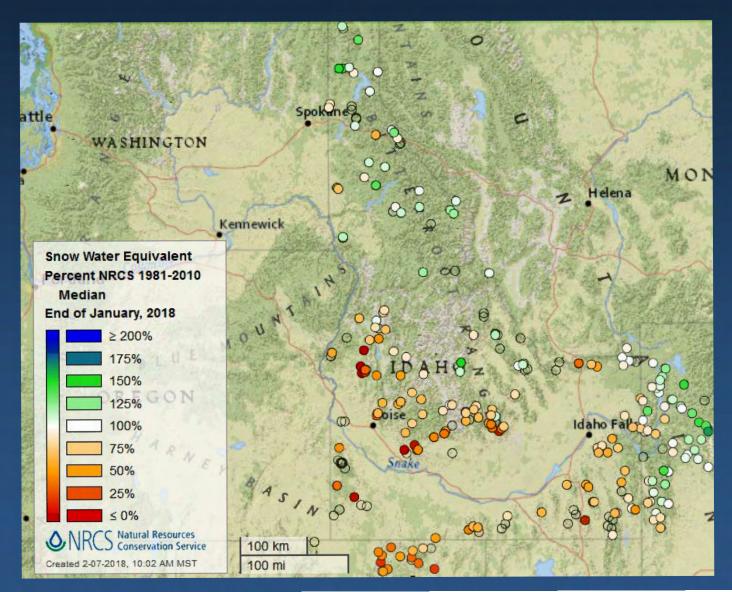


#### Dec & Jan Precipitation



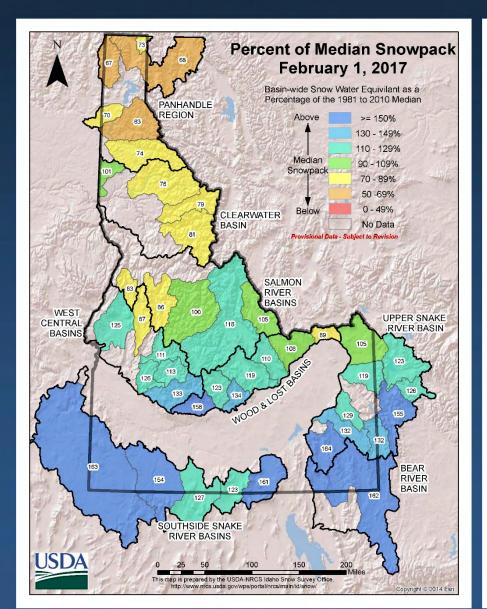


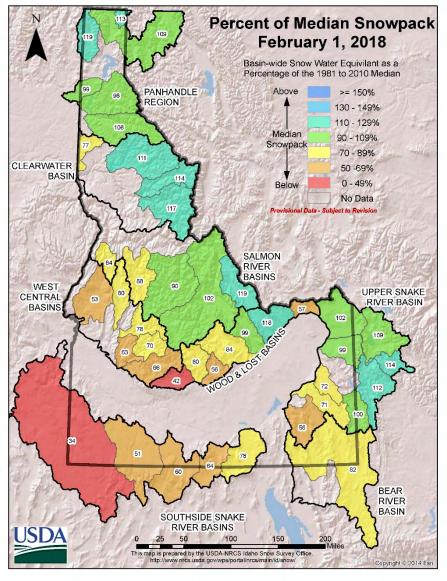
## February 1st SWE



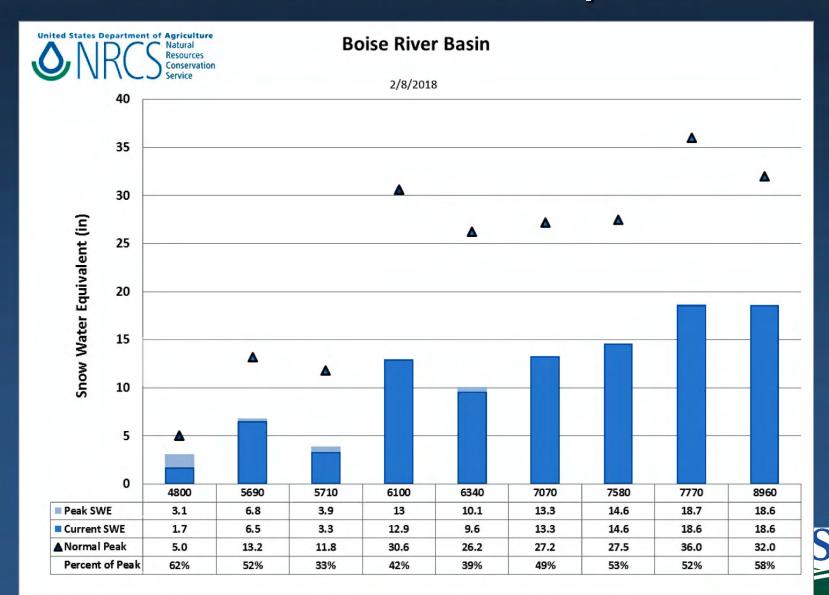


2017 2018

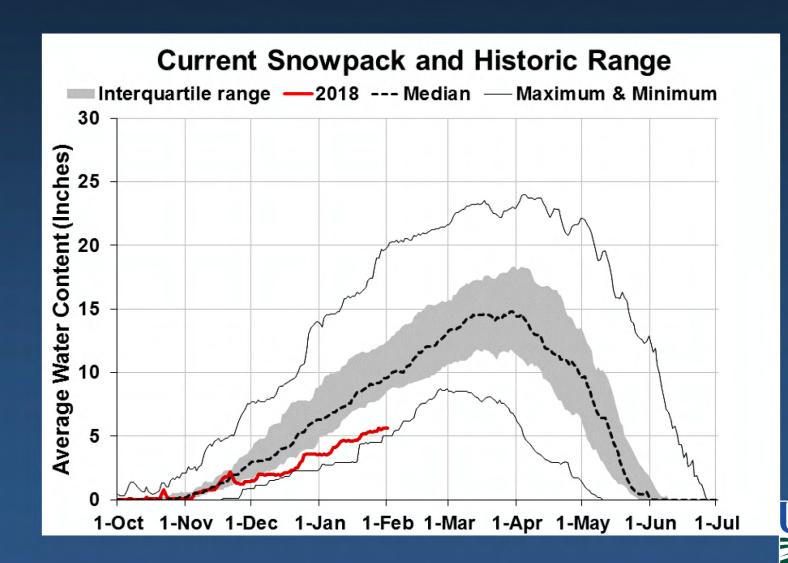




#### Boise Basin Snowpack



#### Southside Snake Snowpack



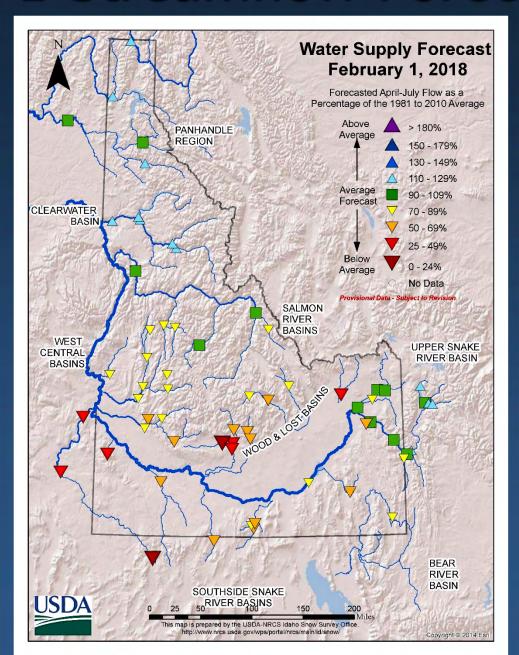
#### **Network Status**

#### Offline:

- 1) Cool Creek (NF Clearwater)
- 2) Elk Butte (NF Clearwater)
- 3) Hidden Lake ? (Priest/Kootenai)



#### Feb 1 Streamflow Forecasts



#### Reservoir Storage

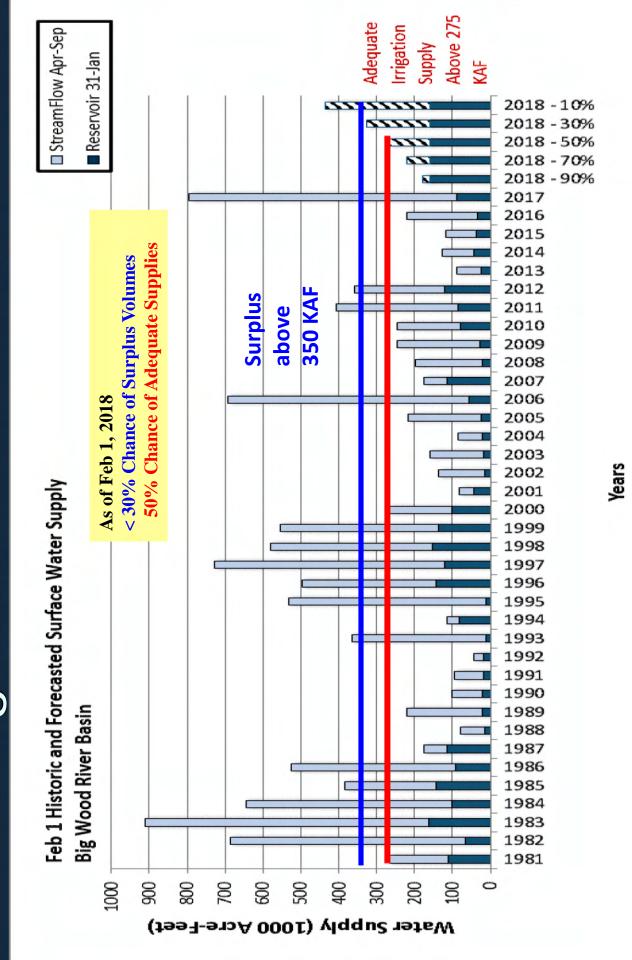
As of October 30, 2017 -- Updated February 8, 2018 with end of month storage levels Projected change in reservoir storage from Fall 2017 to start of runoff season in Spring 2018.

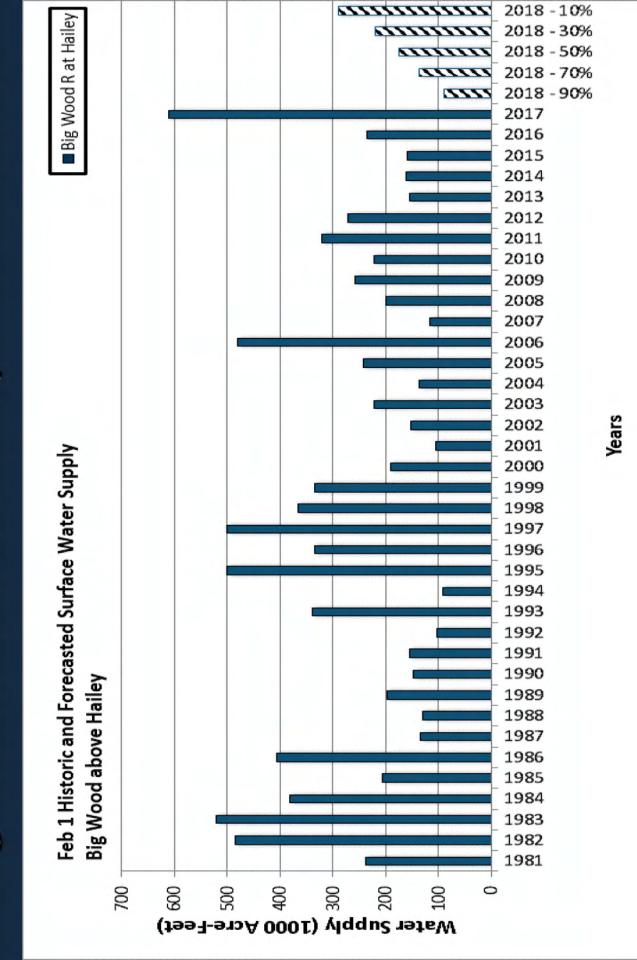
	Sep 30 storage KAF	Observed	Observed	Observed	Projected	Projected	Projected	Estimated
		Oct 31	Nov 30	Dec 31	Jan 31	Feb 28	Mar 31	change in
		storage	storage	storage	Storage	storage	storage	storage
		KAF	KAF	KAF	KAF	KAF	KAF	KAF
Boise Reservoir	603.3	584.9	663.5	719.5	775.7		800	197
Magic Reservoir	107.8	123.8	138.9	150.4	160.0		160	52
Little Wood Reservoir	12.7	12.4	17.5	21.4	25.1	22		9
Mackay Reservoir	38.1	38.1	37.6	33.6	34.0		20	-18
Jackson & Palisades	1909.8	1929.9	2016.0	2009.9	2010.0		1900	-10
Reservoir System								
Oakley Reservoir	28.5	29.7	31.7	33.4	35.3	38		10
Salmon Falls Reservoir	92.8	92.1	92.7	93.1	94.1	97		4
Lake Owyhee	432.2	422.0	441.5	461.4	490 / 480			
Bear Lake	1114.5	1090.7	1058.6	1035.5	1011.7		1000	-115

#### IDAHO SURFACE WATER SUPPLY INDEX (SWSI) February 1, 2018

			Agricultural Water
		Most Recent Year	
	SWSI	With Similar SWSI	May Occur When
BASIN or REGION	Value	Value	SWSI is Less Than
Spokane	-0.1	2017	NA
Clearwater	1.9	2012	NA
Salmon	-0.1	2010	NA
Weiser	-1.6	2014	NA
Payette	-1.2	2016	NA
Boise	-0.3	2016	-1.5
Big Wood	0.7	2000	0.7
Big Wood above Hailey	-1.2	2014	NA
Little Wood	-0.5	2016	-1.3
Big Lost	<mark>-0.3</mark>	<mark>2016</mark>	0.7
Little Lost	<mark>0.1</mark>	<mark>2012</mark>	<mark>1.3</mark>
Teton	-0.8	2015	-3.9
Henrys Fork	1.0	2012	-1.5
Snake (Heise)	1.7	2009	-1.8
Oakley	1.2	2000	0.4
Salmon Falls	1.6	1995	-0.9
Bruneau	-1.2	2003	NA
Owyhee	-0.1	2012	-2.6
Bear River	2.3	2011	-3.7





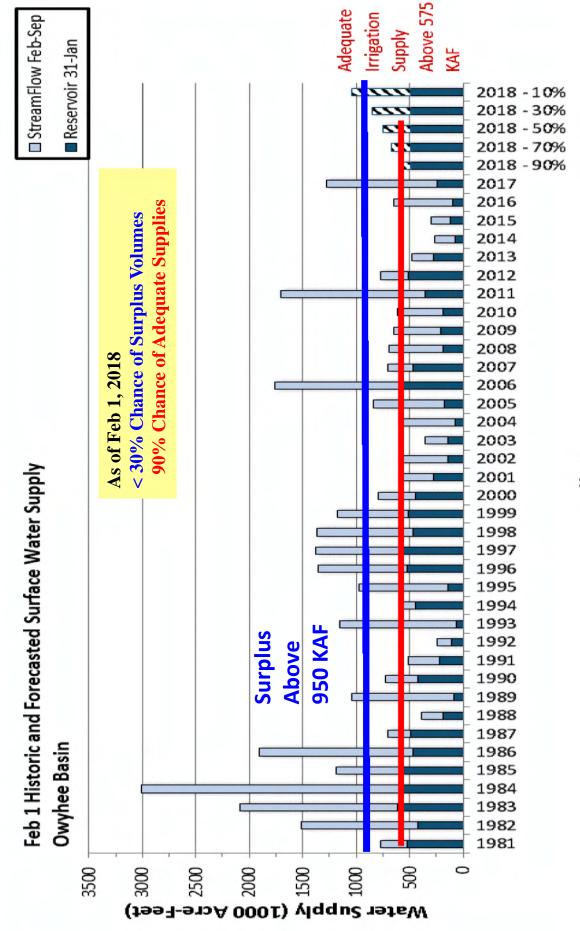


# Big Lost Feb 1 SWSI

As of Feb 1, 2018

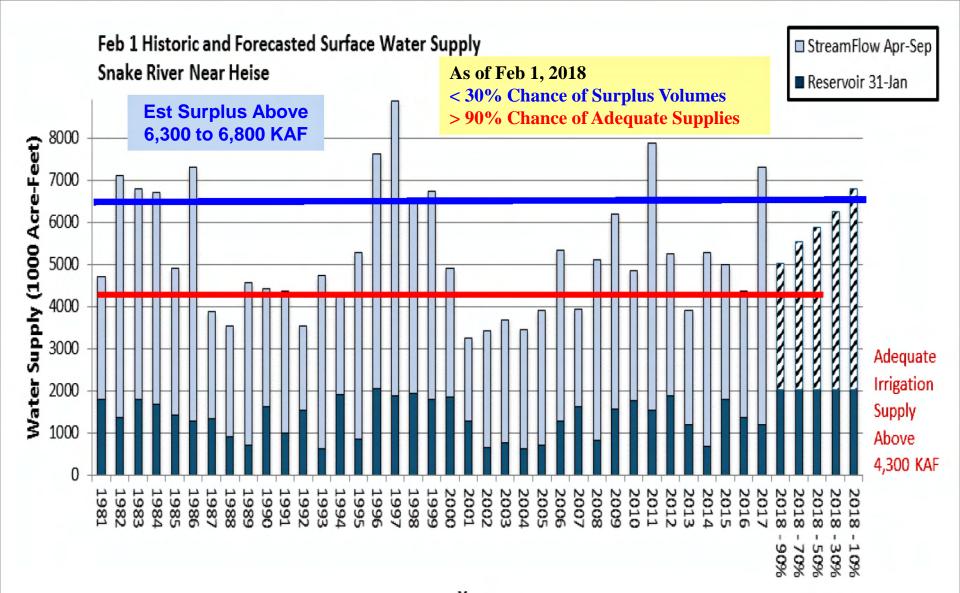
~ 20% Chance of Adequate Supplies

# Owyhee Feb 1 SWSI



Years

#### Snake near Heise Feb 1 SWSI



# From: Natural Resources Conservation Service Nevada Water Supply Outlook Report February 1, 2018

#### **Snow melt scenarios:**

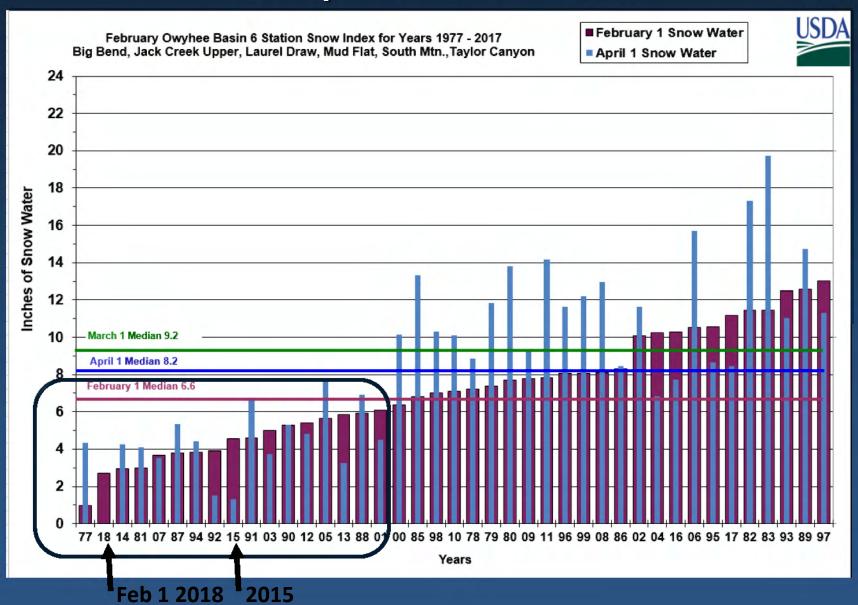
If sunny skies and warm temperatures continue, a repeat of 2015's early snow melt is likely. Research published in 2016 by Dr. Adrian Harpold with the University of Nevada, Reno and others, pointed out that when melt happens earlier in the spring, it is not as efficient at generating streamflow. This is because earlier in the year the sun is lower in the sky and less effective at melting snow.

The resulting daily melt rates are less than when snowmelt occurs later in the season when the sun is higher. A greater portion of the daily melt can be absorbed by soils and used by vegetation.

This means less of the melt generates streamflow, which has a negative consequence for water supply.



# Owyhee Feb 1 Snow Index Sorted Low to High with April 1 SWE Amounts



#### **Idaho Snow Survey Homepage:**

http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/

#### A few links to analysis tools and products:

- Peak Streamflow Information Streamflow graphs reflect these above baseflows
- Historical Snow Indexes and Snow Graphs for Idaho Basins to find similar snow years.
- Soil Moisture & Temperature Graphs Soil moisture appears to be primed from last year's snow and fall moisture.
- Surface Water Supply Index (SWSI) Tables and graphs which include all five streamflow exceedance forecasts and thresholds to illustrate where surface agricultural shortages occur.
- Streamflow Forecasts Daily Water Supply Forecasts (DWSF) keep water users aware of the changing conditions between the 1st of month forecasts.

