

Idaho Water Supply Outlook Report April 1, 2010



Photo Credit: Ron Abramovich

This winter's poor snowpack is truly apparent on southern slopes across Idaho. This photo was taken March 11 looking east at about 7,600 feet in Dry Creek, a tributary of the Little Lost River in east central Idaho. Nearly bare south slopes were observed at over 8,500 feet. This illustrates why very few SNOTEL sites are located on south-facing aspects, since they are warmed by the sun resulting in mid-winter melt and sublimation during dry spells. In low winters like this year, bare southern slopes stay warmer and melt snow when it falls. Locating our snow measuring sites on northern slopes allows the snow to accumulate throughout the winter with little melt until spring temperatures warm. Sites that consistently accumulate snow, even in the driest of winters, allow for better correlation between the snowpack and streamflow. This results in more reliable streamflow forecasts. In contrast to the bare southern slopes, a potential new SNOTEL site was located in the Little Lost basin at 8,660 feet along the edge of forested northeast facing slope, this site had 37 inches of snow depth, 9 inches of snow water.

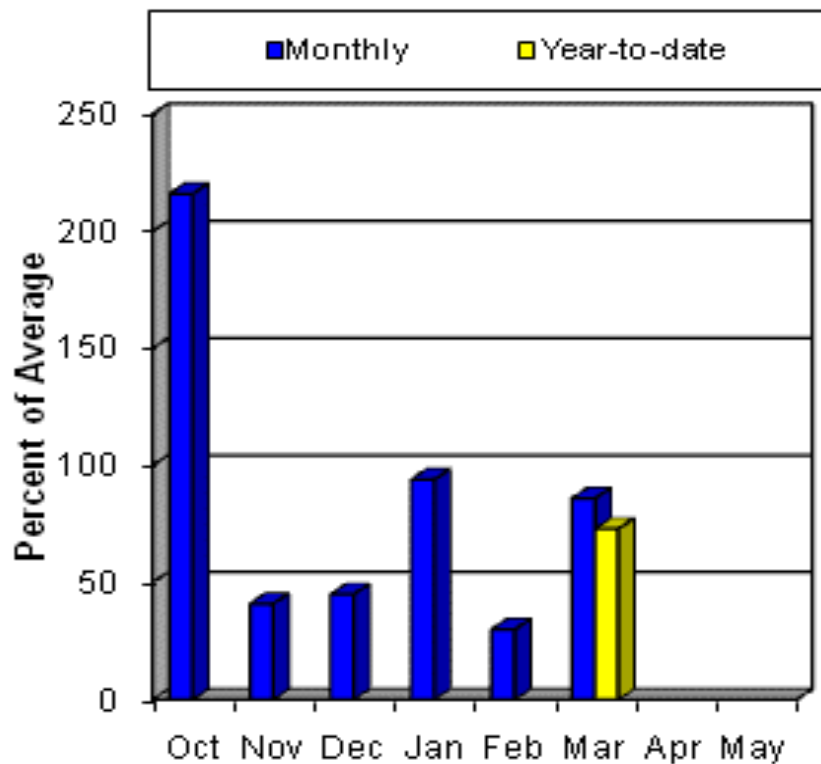
**IDWR
Water Supply
Committee
Meeting**

April 8, 2010



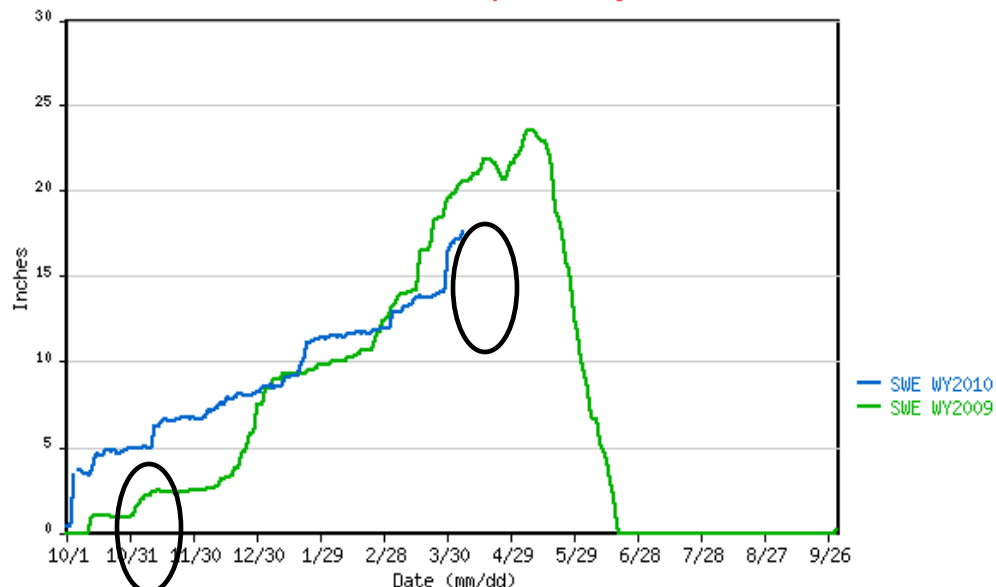
Good News !
October precipitation!
And there may be good
snow above our sites,
above ~8,800 feet

2010 Mountain Precipitation WOOD AND LOST RIVER BASINS



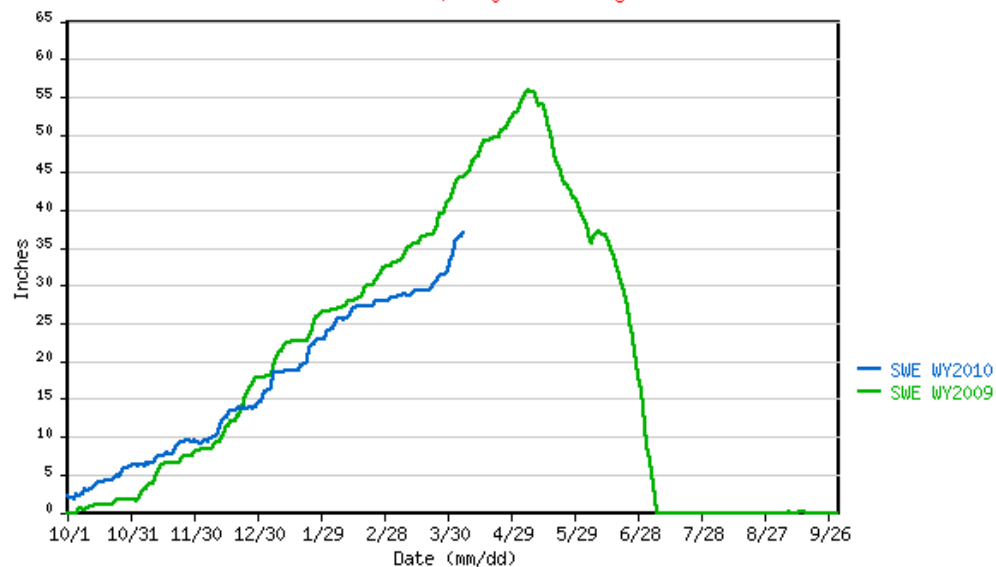
SMILEY MOUNTAIN SNOTEL as of 04/06/2010

*** Provisional Data, Subject to Change ***



GRAND TARGHEE SNOTEL as of 04/06/2010

*** Provisional Data, Subject to Change ***

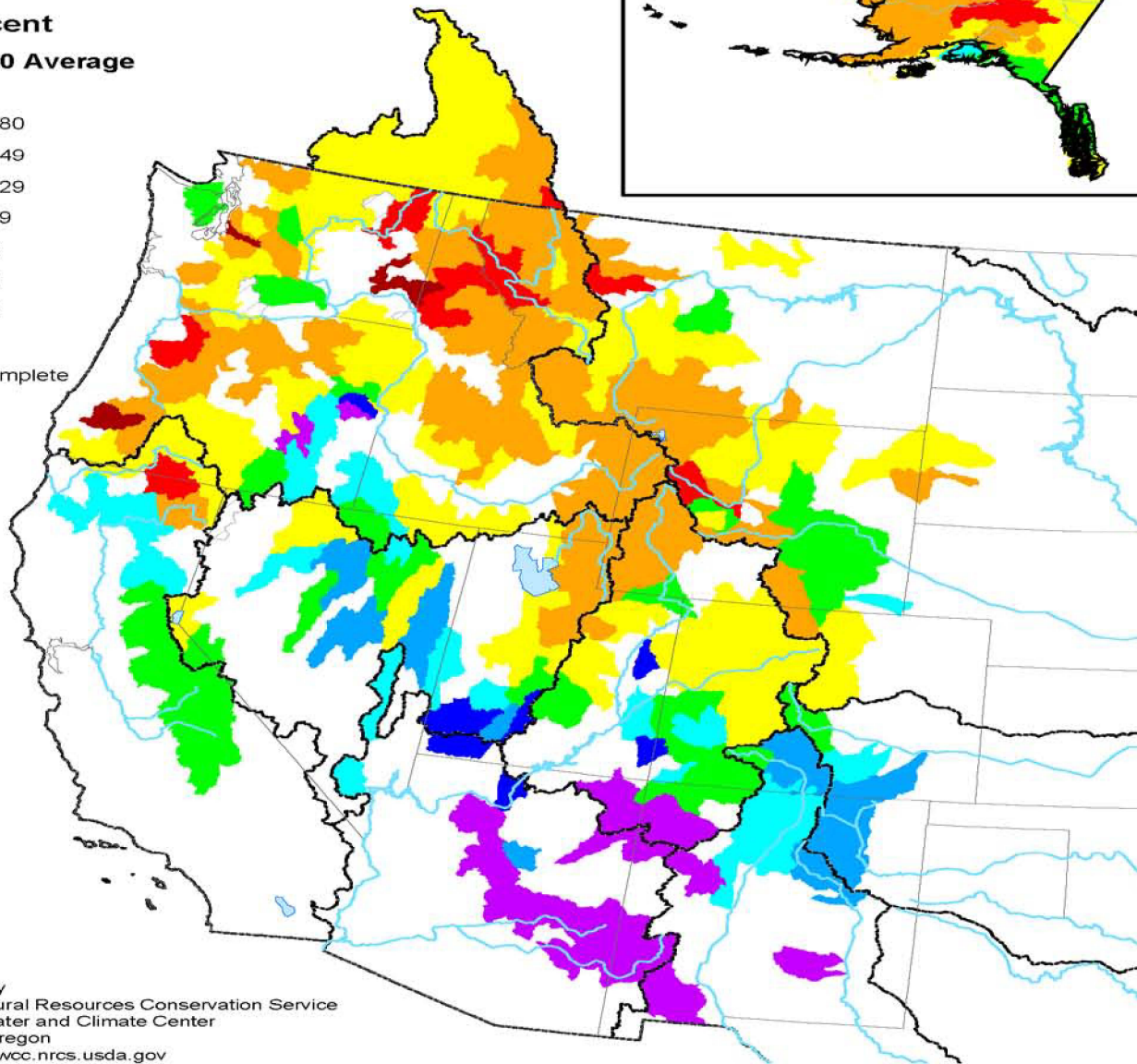


Mountain Snowpack as of April 1, 2010

Percent
1971 to 2000 Average



Not Complete



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

SNOTEL Current Snow Water Equivalent (SWE) Records

Mar 25, 2010

Current Snow Water (SWE) Equivalent Records

- ✦ New High
- ✦ Near High
- Non-Record
- New Low
- Near Low
- snow free

Analysis includes sites with more than 20 years of historical data.
"Near" record means that one other year of the period of record is more extreme.



*Provisional Data
Subject to Revision*

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from [ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/data](http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/data)
Science contact: Tom.Pagano@por.usda.gov 503 414 3010

SNOTEL Current Snow Water Equivalent (SWE) Records

Apr 06, 2010

Current Snow Water (SWE) Equivalent Records

- ✦ New High
- ✦ Near High
- Non-Record
- New Low
- Near Low
- snow free

Analysis includes sites with more than 20 years of historical data.
"Near" record means that one other year of the period of record is more extreme.



*Provisional Data
Subject to Revision*

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from [ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/data](http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/data)
Science contact: Tom.Pagano@por.usda.gov 503 414 3010

SNOTEL Water Year (Oct 1) to Date Precipitation Records

Apr 06, 2010

Water Year (Oct 1) to Date Precipitation Records

- ✚ New High
- ✚ Near High
- Non-Record
- New Low
- Near Low

Analysis includes sites with more than 20 years of historical data.
"Near" record means that one other year of the period of record is more extreme.



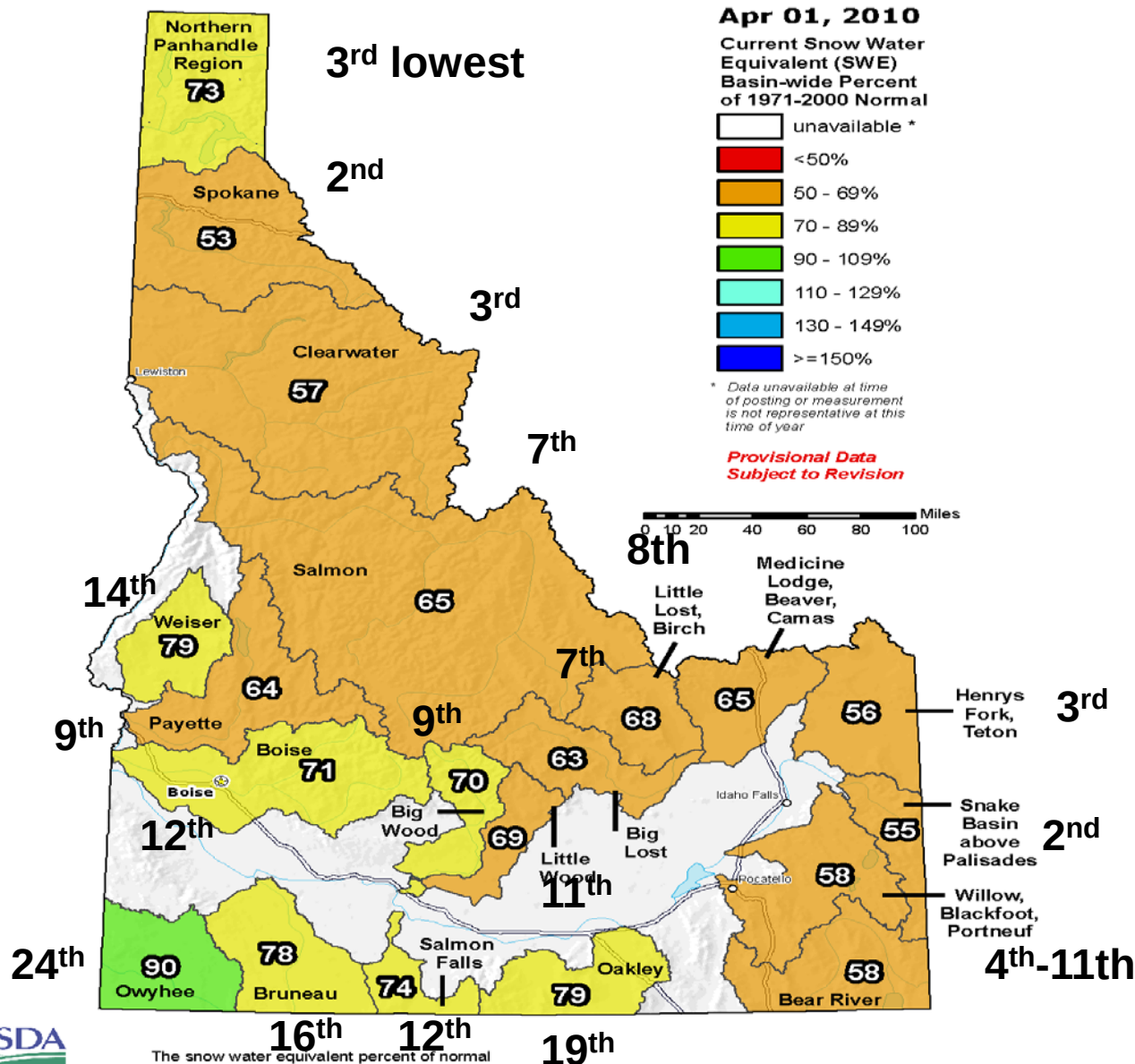
**Provisional Data
Subject to Revision**

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from <http://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/data>
Science contact: Tom.Pagano@por.usda.gov 503 414 3010

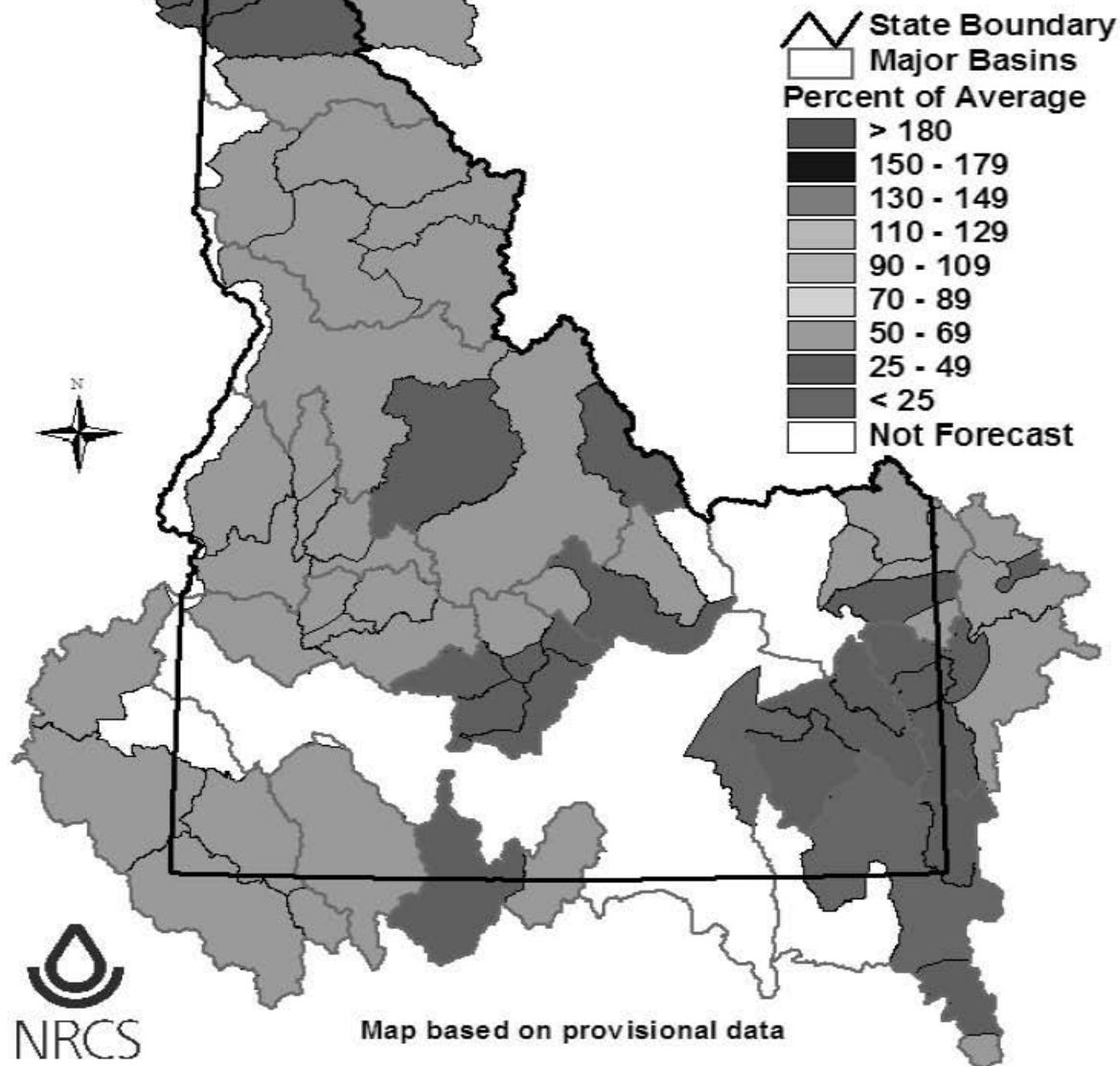
**Water Year-
to-Date
Precipitation
pattern is
similar to the
snow sites
that are at or
near record
low totals**

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

**April 1
Basin Snow
Index
comparison
period
starts in
since 1961
for most
basins**



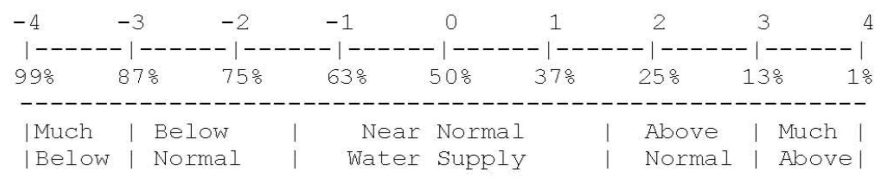
April 1, 2010
50% Exceedance
Summer Streamflow Forecasts
Idaho



April 2010 Idaho Surface Water Supply Index (SWSI)

BASIN or/ REGION	March SWSI Value Based on 50% Exceedance Forecast	March SWSI Value Based on 70% Exceedance Forecast	Agricultural Surface Water Supply Shortage May Occur When SWSI is Less Than
PANHANDLE	-3.5		NA
CLEARWATER	-3.6	-4.0	NA
SALMON	-2.8	-3.2	NA
WEISER	-1.8	-2.4	NA
PAYETTE	-2.2	-2.6	NA
BOISE	-2.0	-2.2	-2.2
BIG WOOD	-1.4	-2.0	-0.3
LITTLE WOOD	-1.6	-1.8	-1.8
BIG LOST	-1.8	-2.4	-0.1
LITTLE LOST	-2.6	-2.6	0.3
HENRYS FORK	-3.6	-4.0	-3.4
TETON	-3.0	-3.2	NA
SNAKE – HEISE	-3.2	-3.9	-1.6
OWYHEE	-3.2	-3.4	-3.4
OAKLEY	-1.6	-2.0	-1.2
SALMON FALLS	-2.2	-2.4	-1.6
BRUNEAU	-1.6	-2.8	NA
BEAR RIVER	-2.4	-2.6	-3.4

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



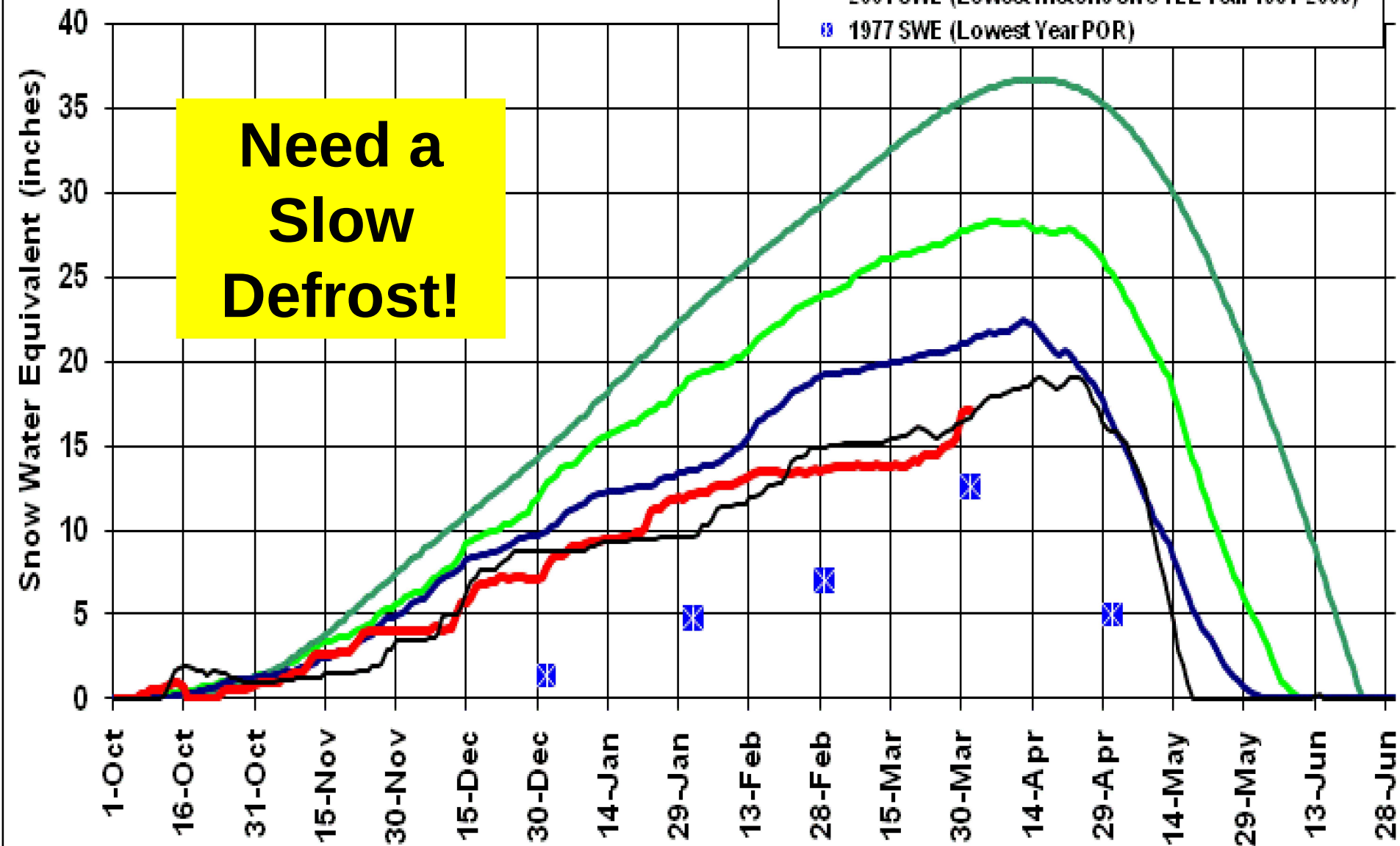
Snow Water Equivalent

Lewis Lake Divide SNOTEL (7850 feet)

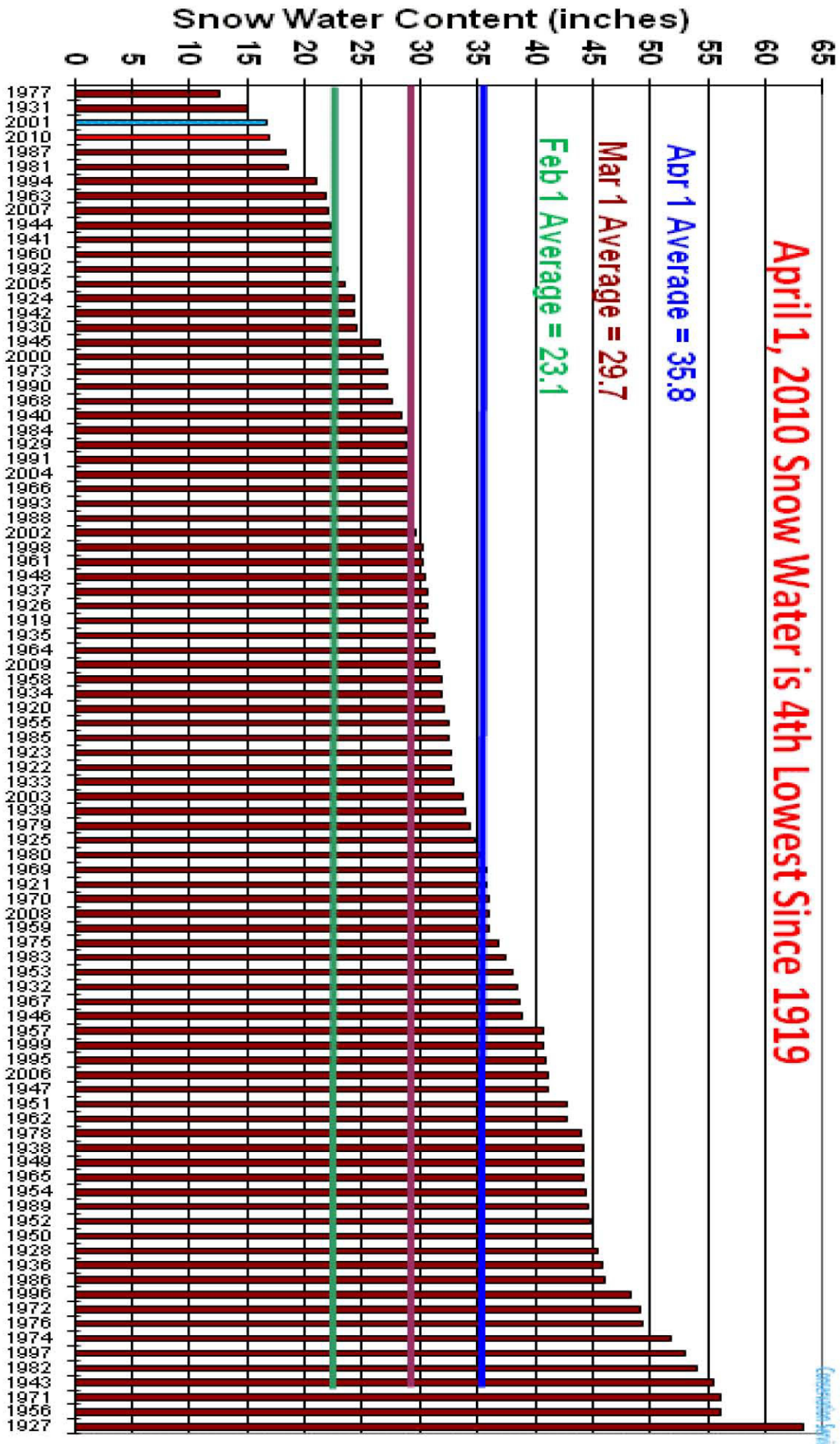
Upper Snake Basin Yellowstone NP

- 2000-2007 Average SWE
- 1971-2000 Average SWE
- 8 Lowest Years Avg (01,87,81,94,07,92,05,00)
- 2010 SWE
- 2001 SWE (Lowest Historic SNOTEL Year 1981-2009)
- 1977 SWE (Lowest Year POR)

**Need a
Slow
Defrost!**



April 1 Snow Water Content compared to Average Monthly Values
Lewis Lake Divide SNOTEL Site, Yellowstone National Park, Wyoming, Years 1919 - 2010*



*Early years for 1919-1929 are estimated from mid-month measurements March and April.

April 1 Surface Water Supply Index (SWSI)

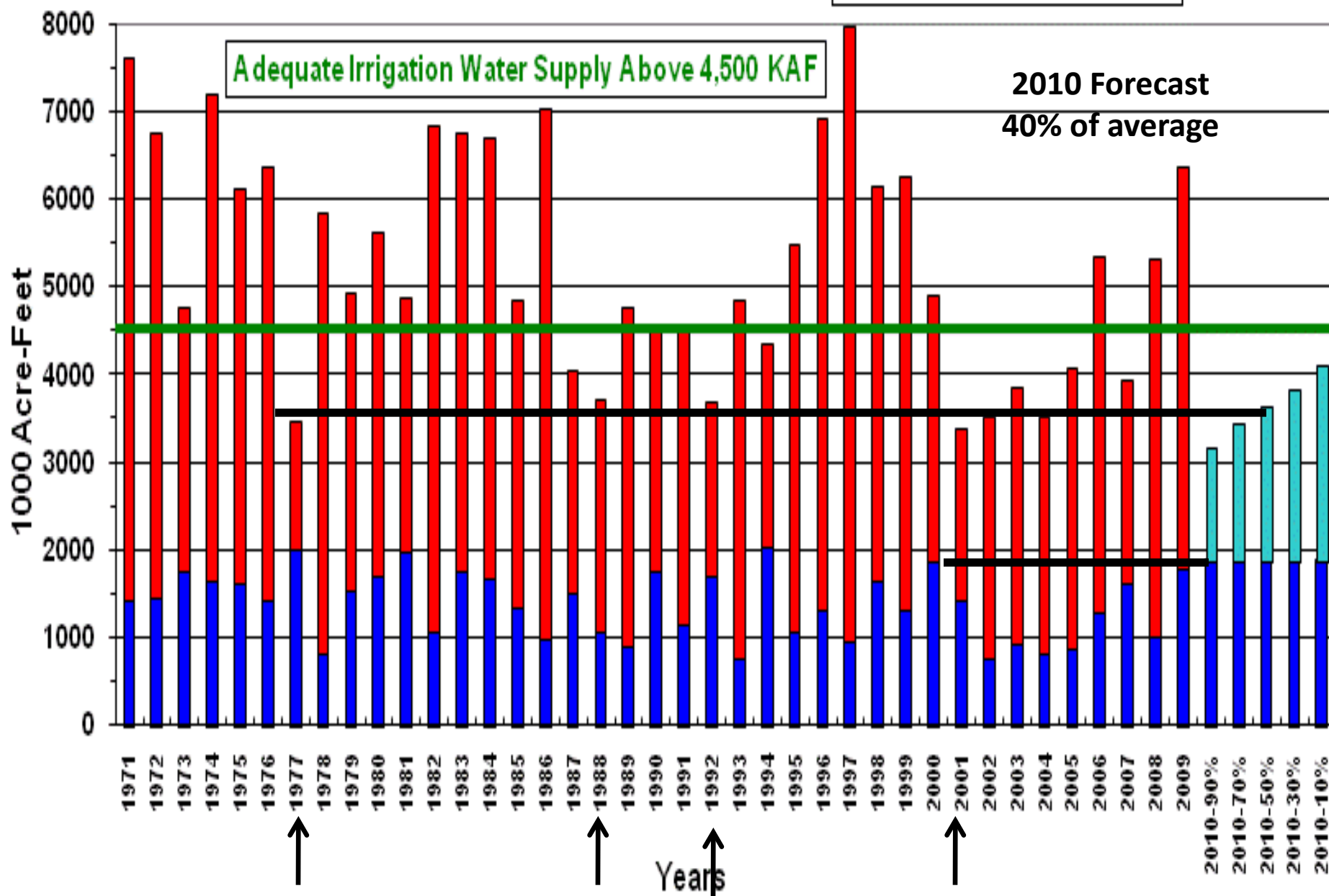
Snake River near Heise & Jackson and Palisades Reservoirs

■ Streamflow Apr-Sep

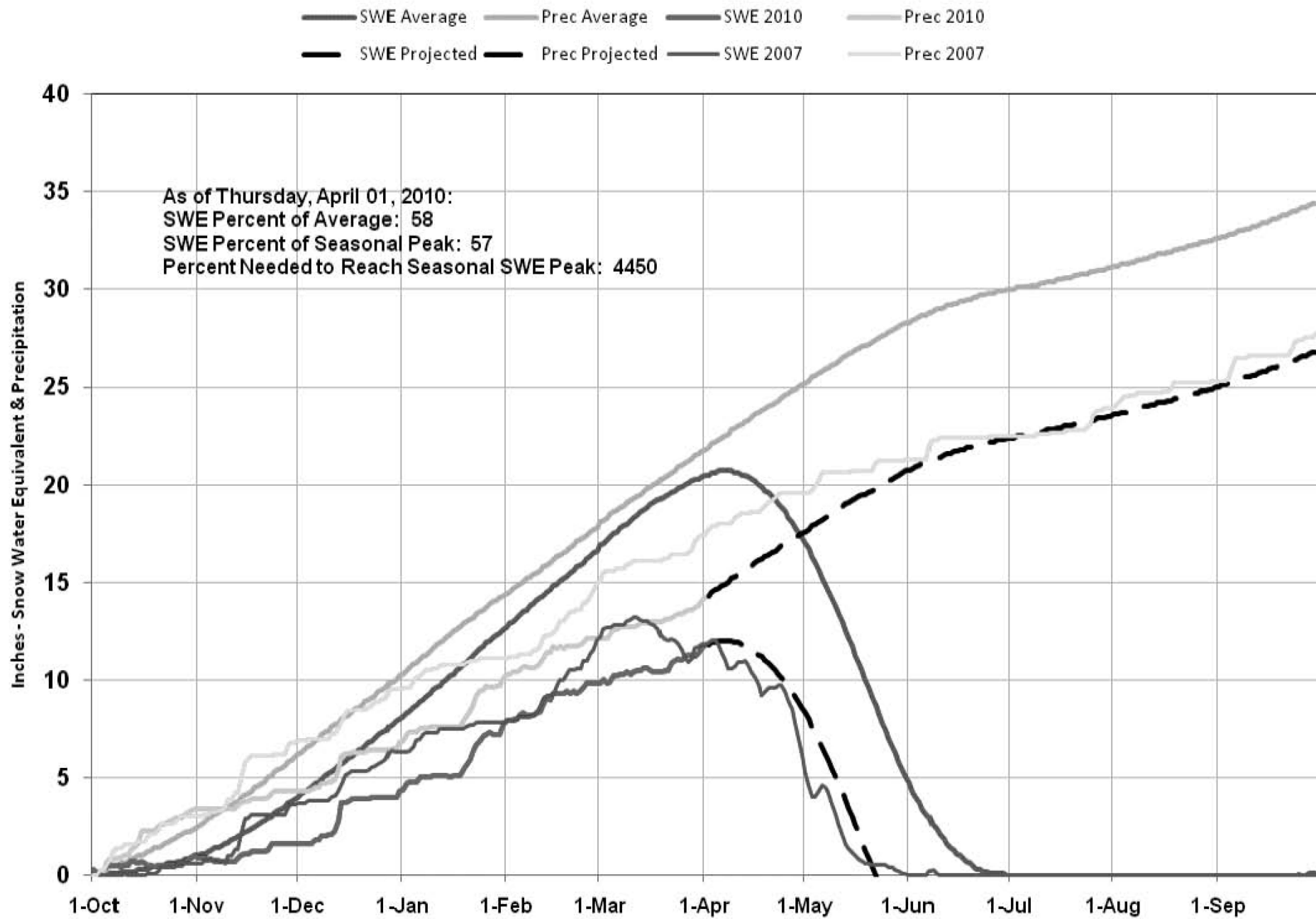
■ Reservoir 31-Mar

Adequate Irrigation Water Supply Above 4,500 KAF

2010 Forecast
40% of average



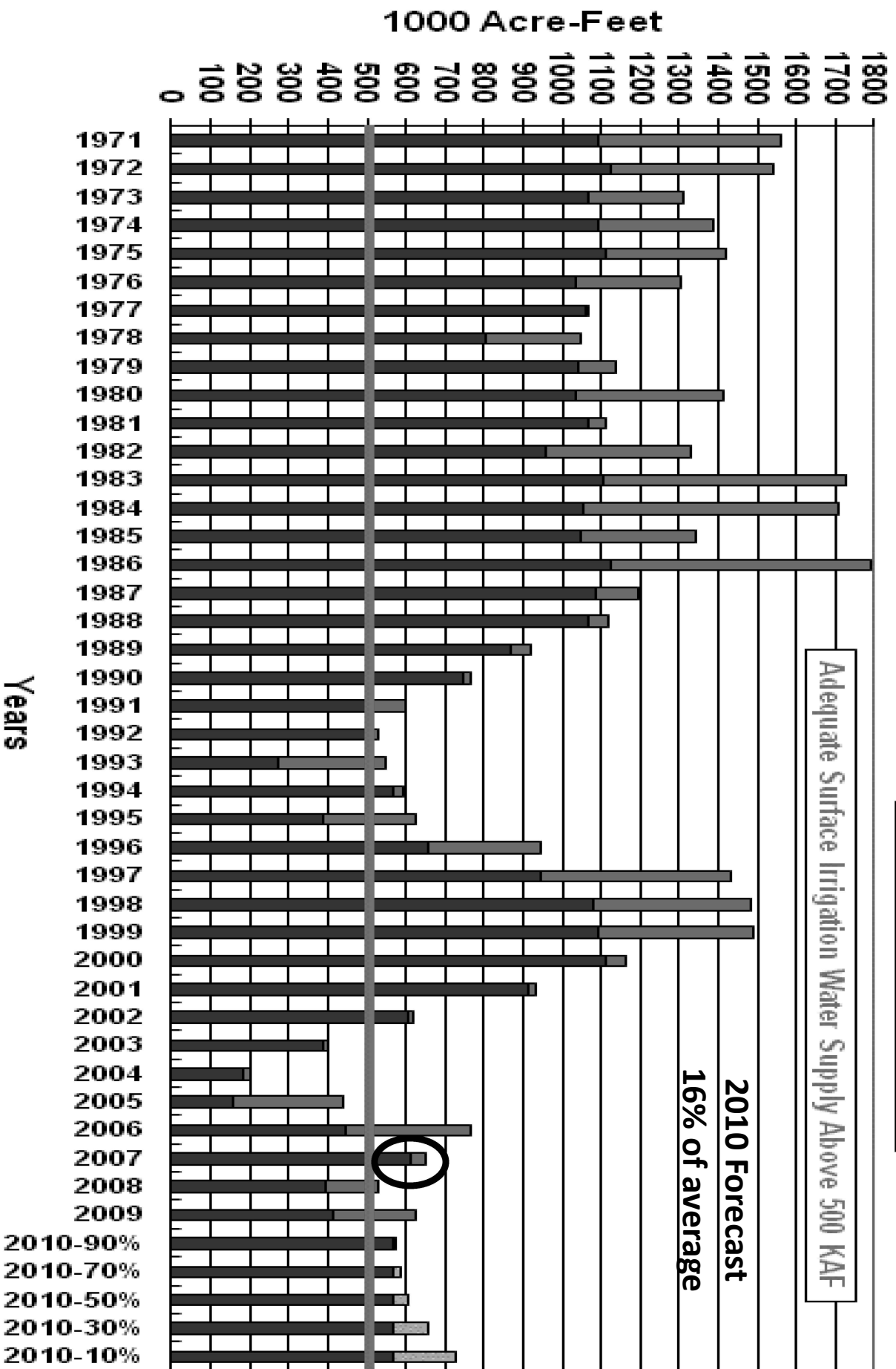
Bear River Basin 2010 Snowpack Graph (15 Sites)



April 1 Bear River Surface Water Supply Index (SWSI) Bear River at Stewart Dam & Bear Lake

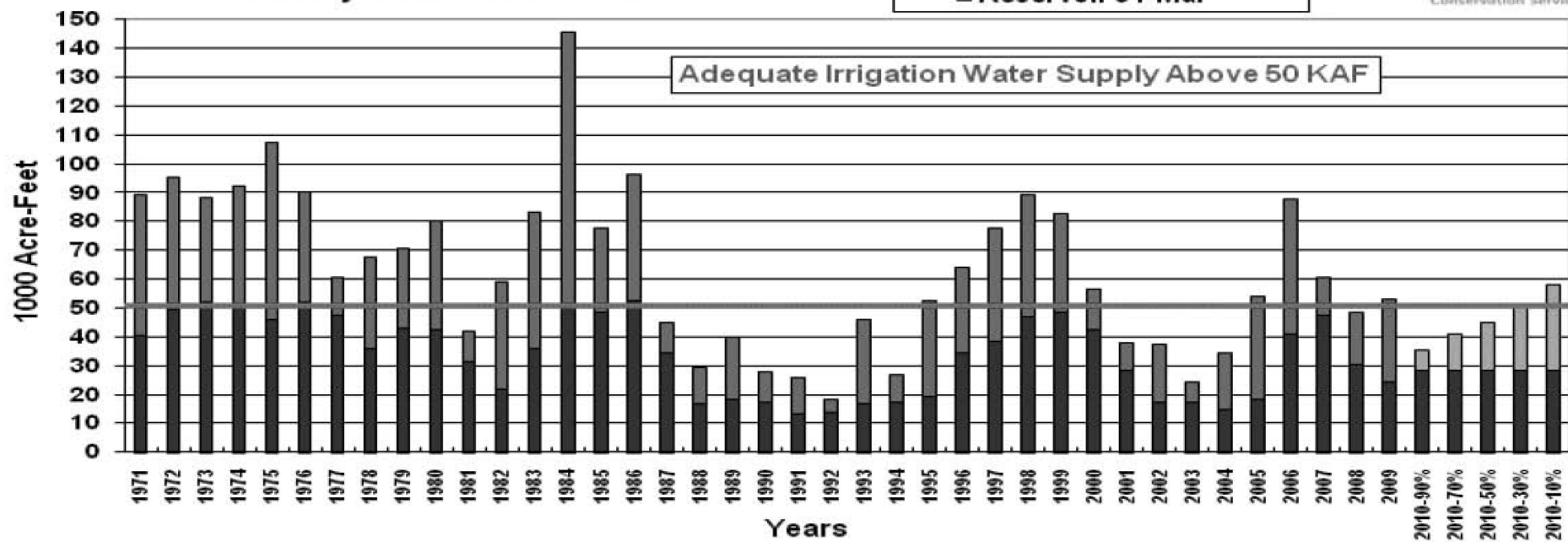
Reservoir 31-Mar
Streamflow Apr-Sep

Reservoir 31-Mar
Streamflow Apr-Sep



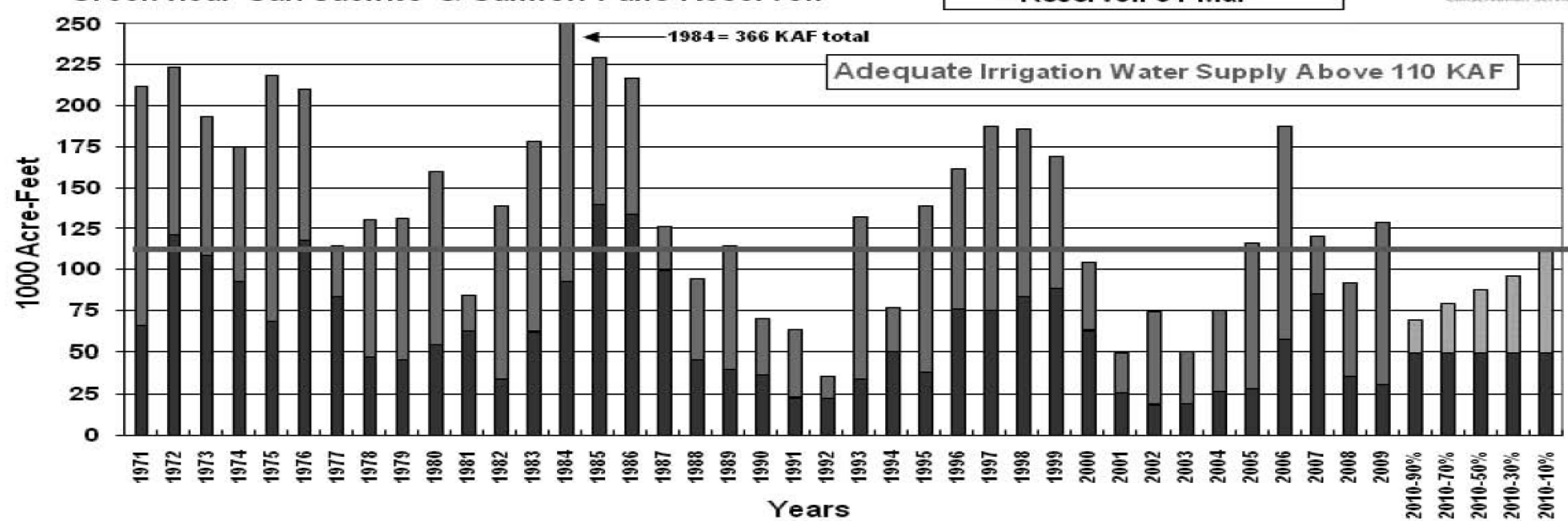
April 1 Oakley Surface Water Supply Index (SWSI) Oakley Inflow & Reservoir

■ Streamflow Apr-Sep
■ Reservoir 31-Mar

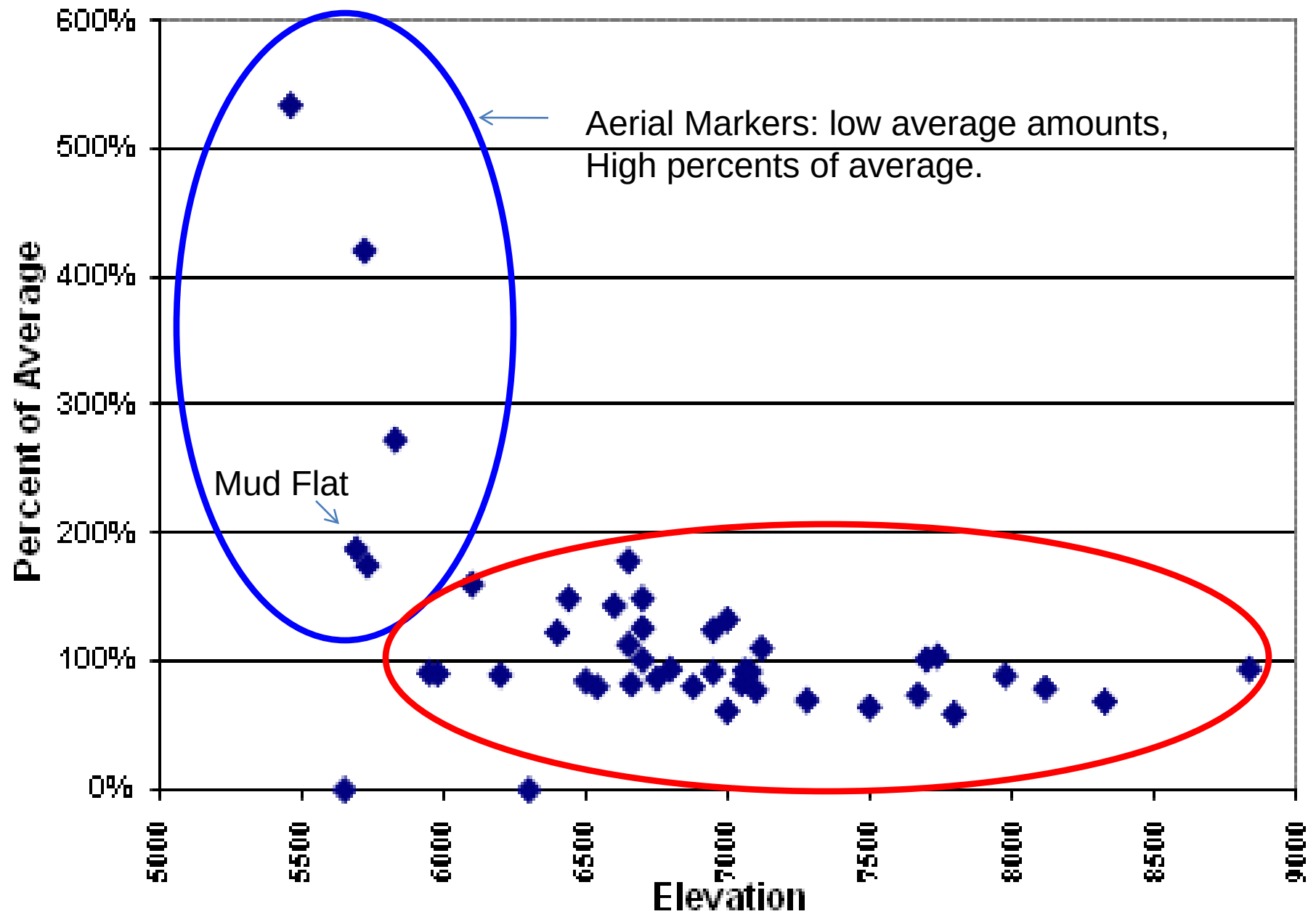


April 1 Surface Water Supply Index (SWSI) Salmon Falls Creek near San Jacinto & Salmon Falls Reservoir

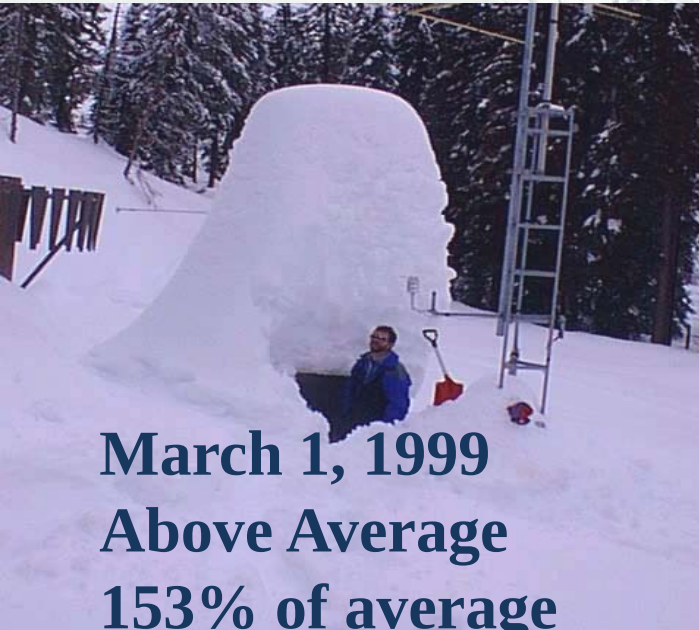
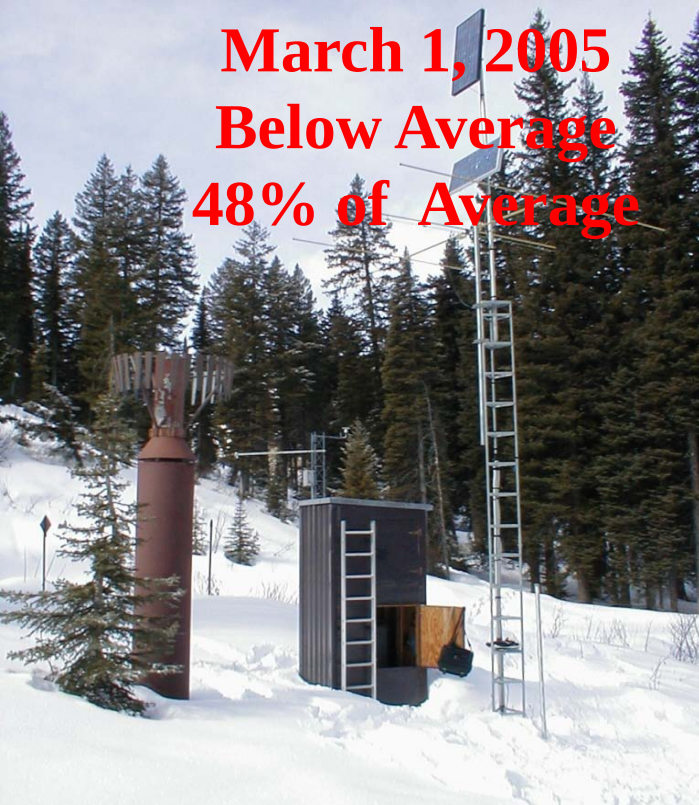
■ Streamflow Apr-Sep
■ Reservoir 31-Mar



Southside Snake Basins Snowpack April 1, 2010



March 1, 2005
Below Average
48% of Average



March 1, 1999
Above Average
153% of average

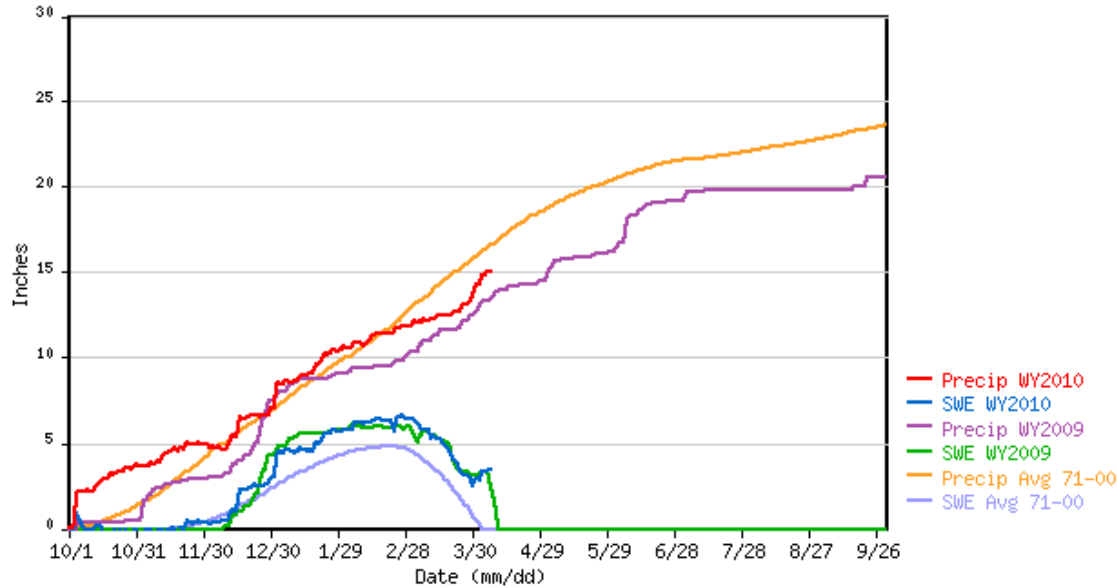
Mores Creek
Boise Basin
Elevation 6,100 Feet



March 31, 2010
70 % of Average

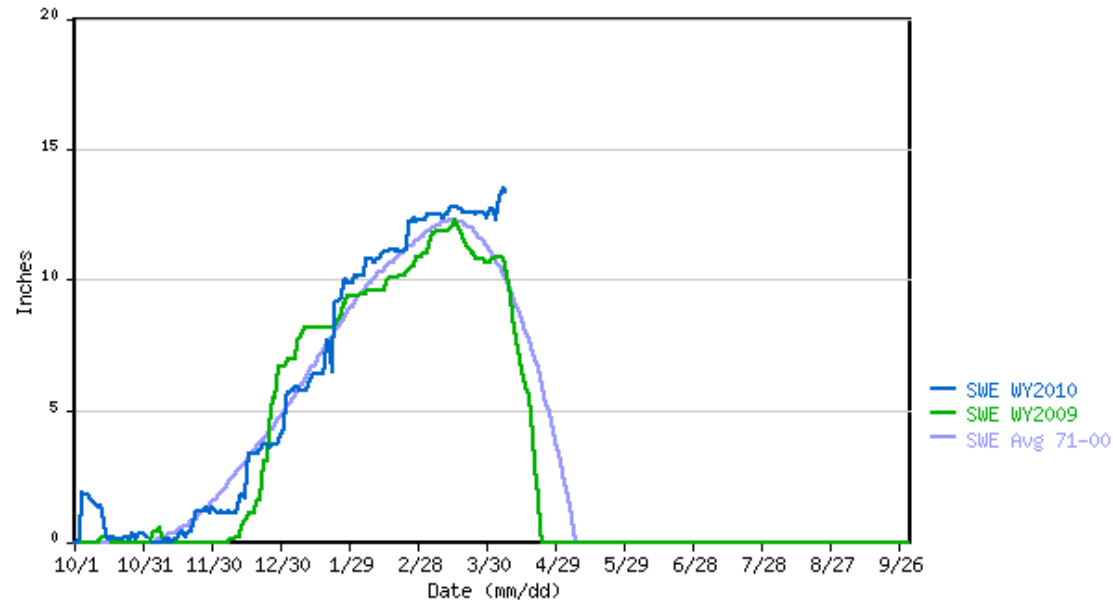
PRAIRIE SNOTEL as of 04/07/2010

*** Provisional Data, Subject to Change ***



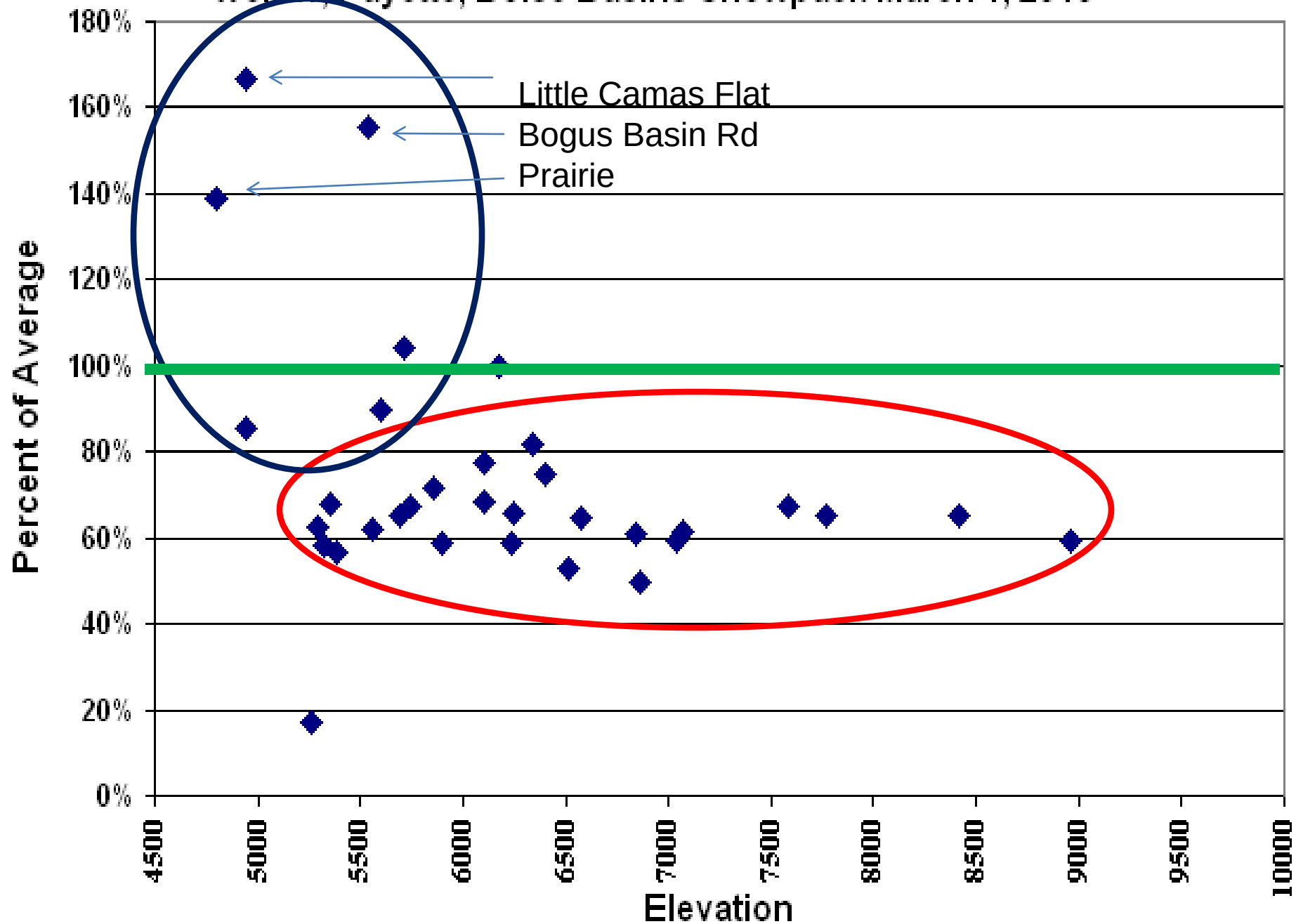
DIVIDE SNOTEL as of 04/07/2010

*** Provisional Data, Subject to Change ***

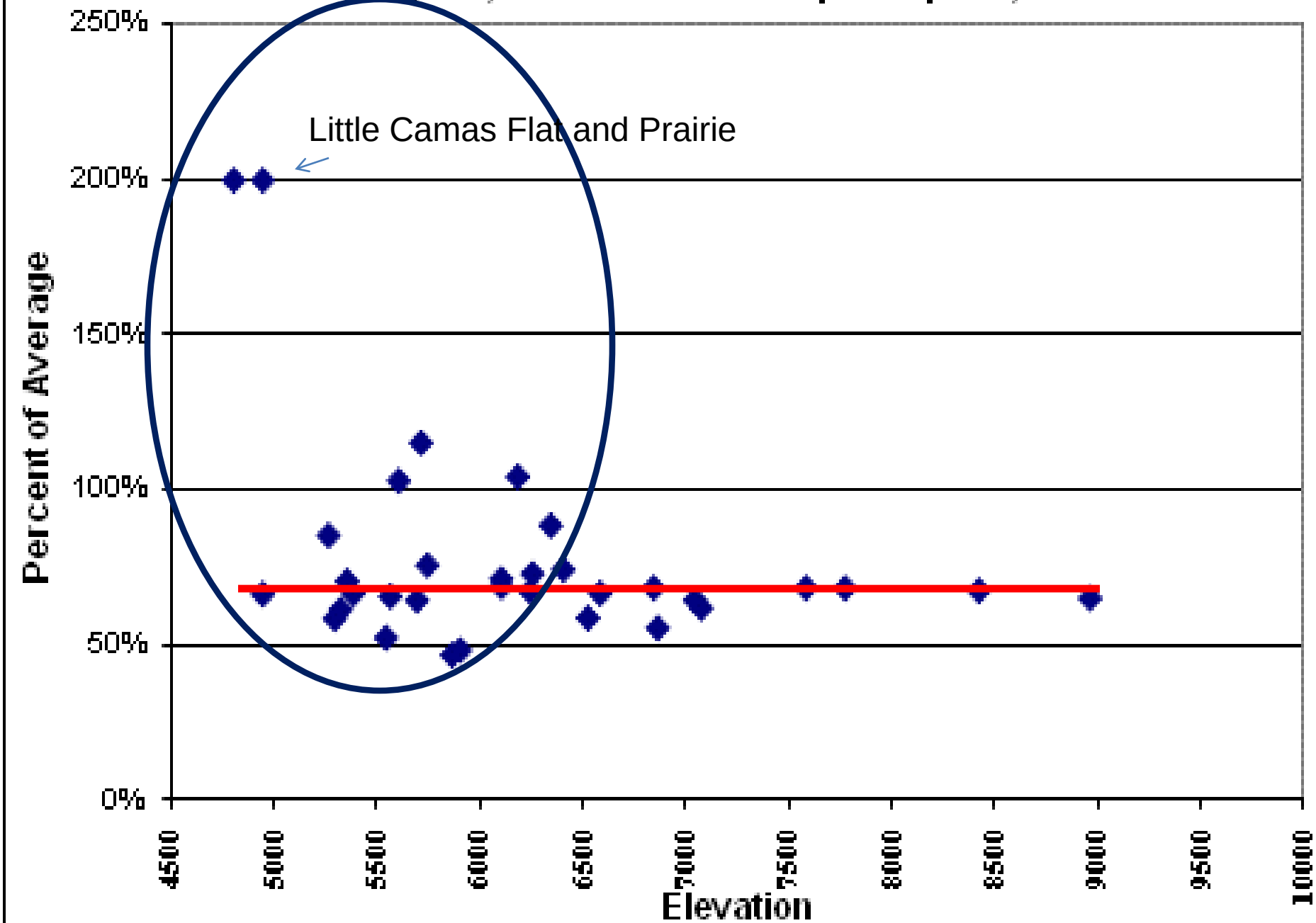


**Camas Creek
peaks when
Camas Creek
Divide SNOTEL
is half melted**

Weiser, Payette, Boise Basins Snowpack March 1, 2010



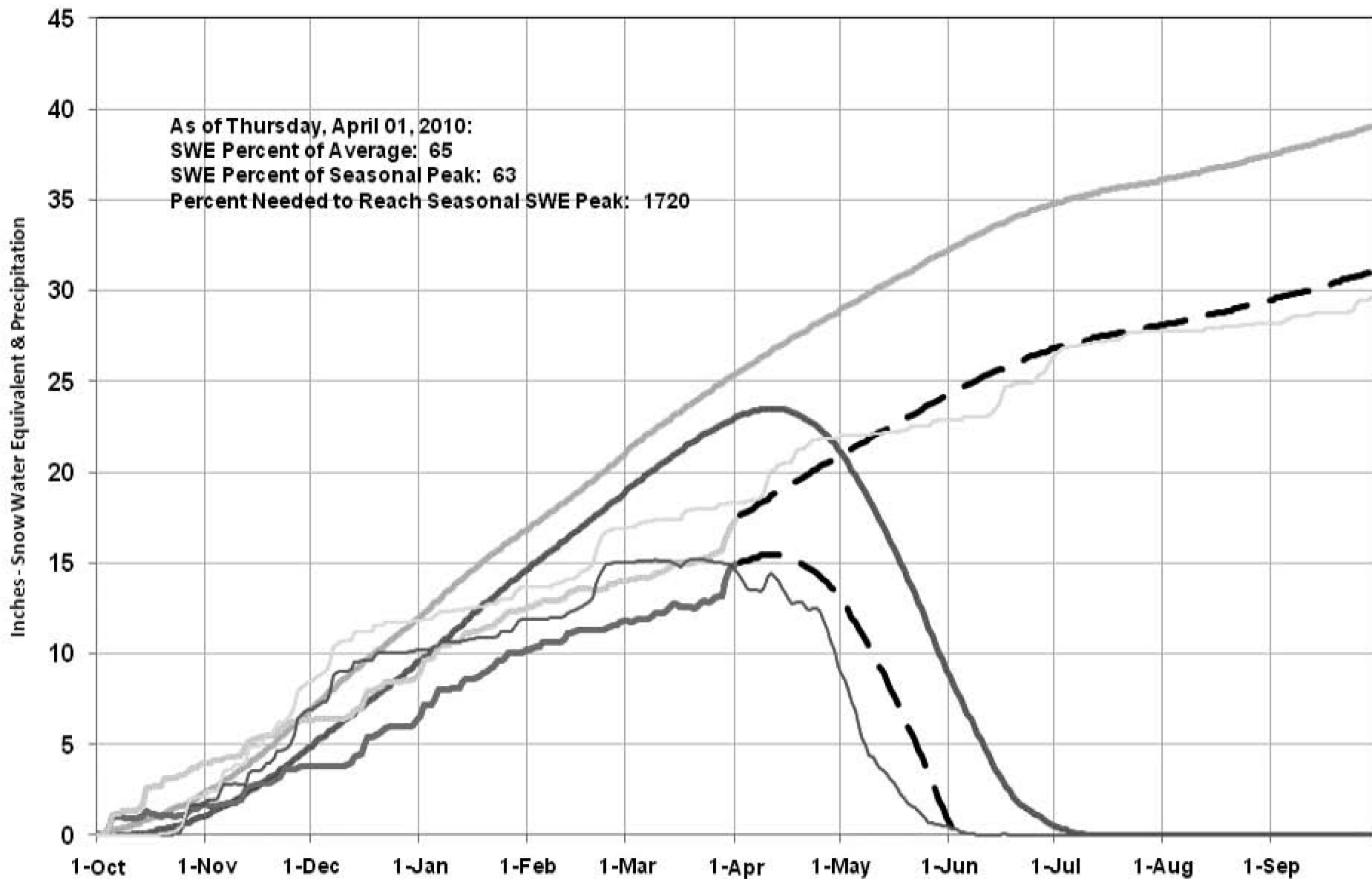
Weiser, Payette, Boise Basins Snowpack April 1, 2010



Salmon Basin 2010 Snowpack Graph (22 Sites)

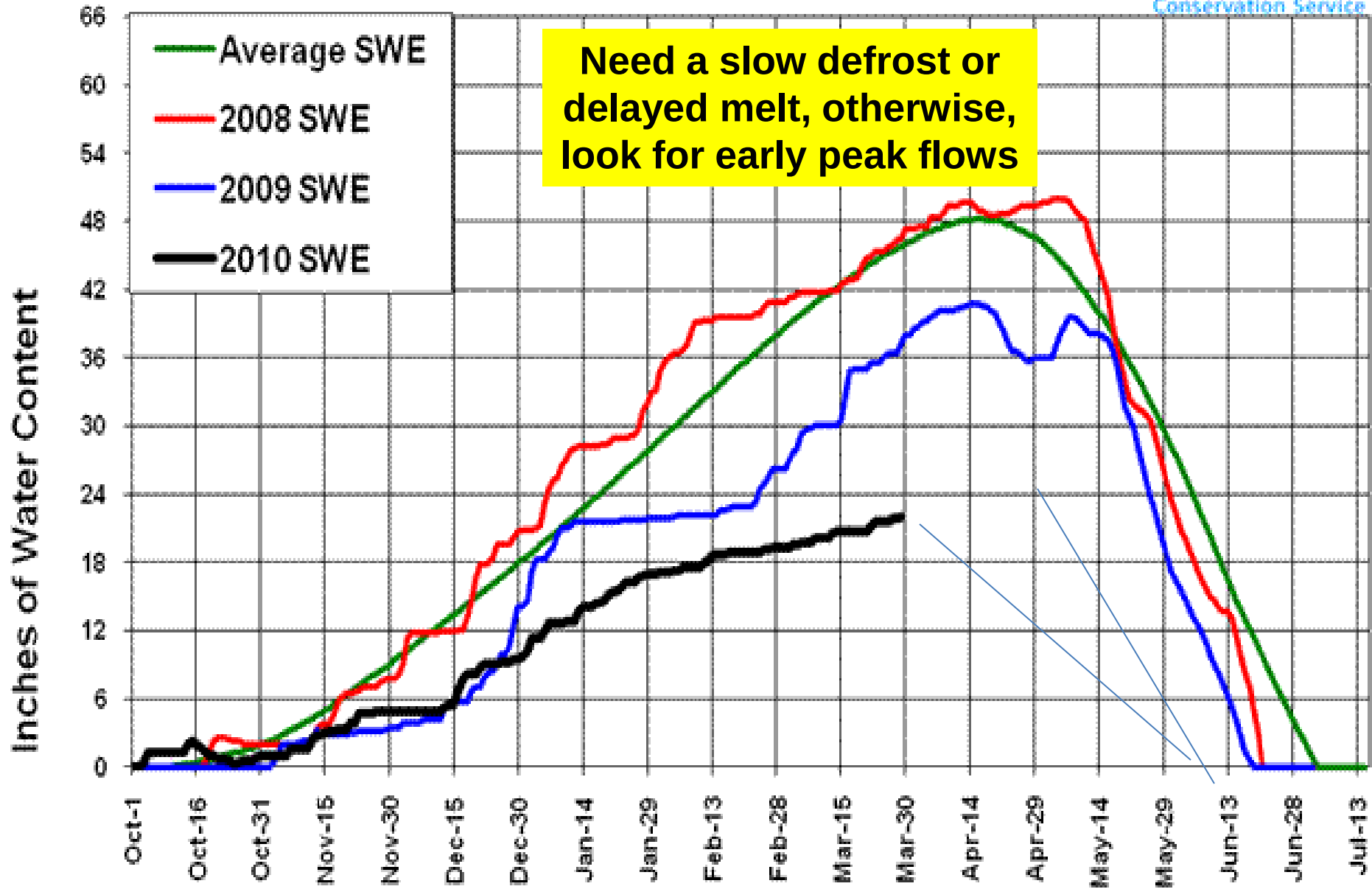
— SWE Average — Prec Average — SWE 2010 — Prec 2010
— SWE Projected — Prec Projected — SWE 1992 — Prec 1992

As of Thursday, April 01, 2010:
SWE Percent of Average: 65
SWE Percent of Seasonal Peak: 63
Percent Needed to Reach Seasonal SWE Peak: 1720

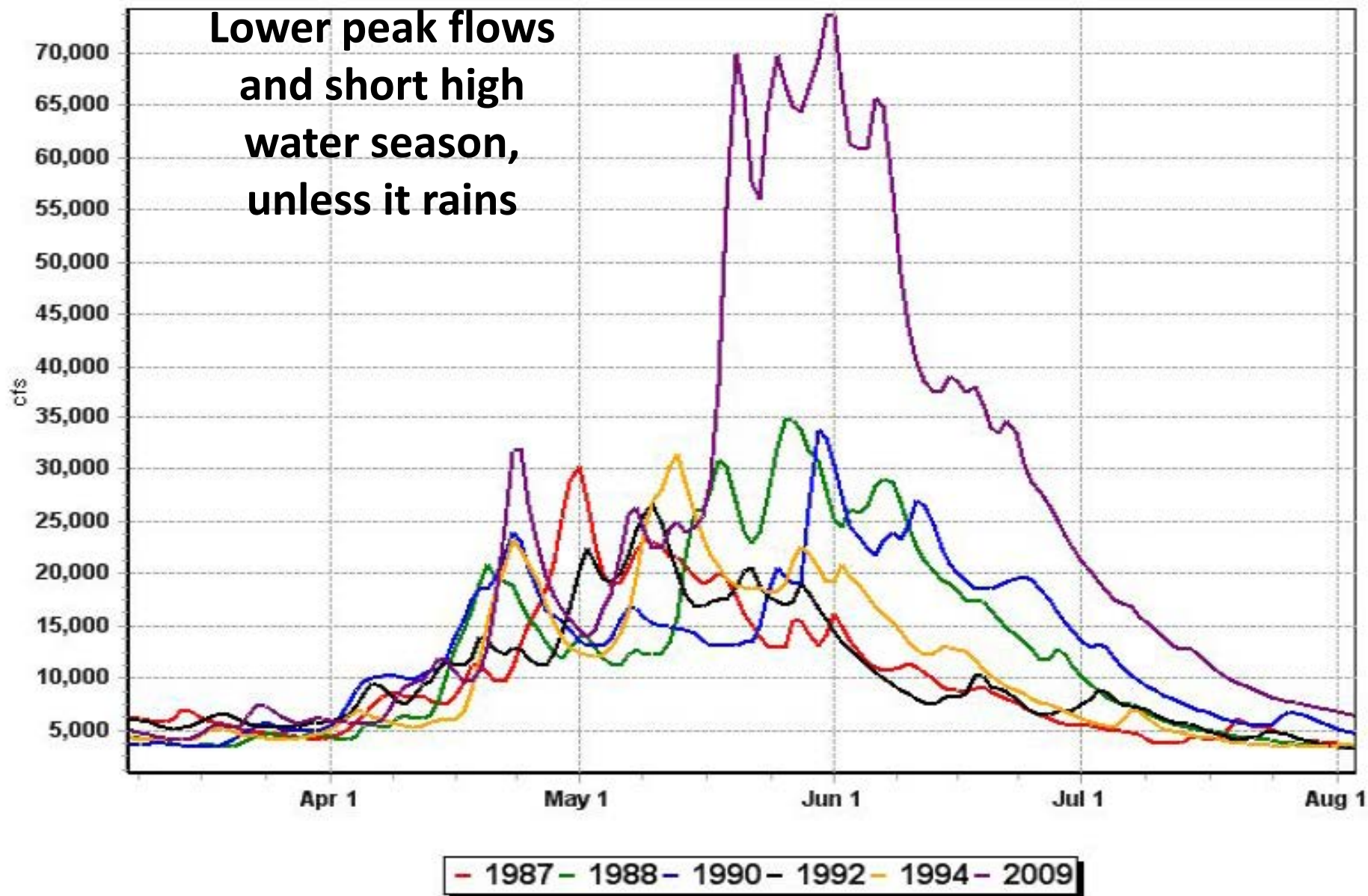


Deadwood Summit SNOTEL EI. 6860

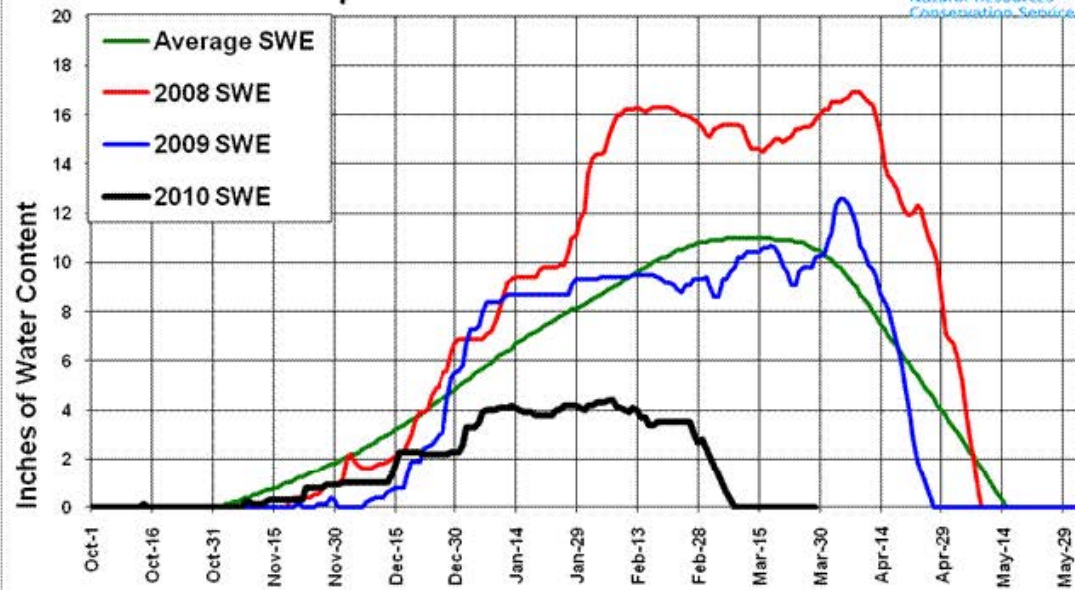
Snow Water Equivalent



Salmon River at Whitebird



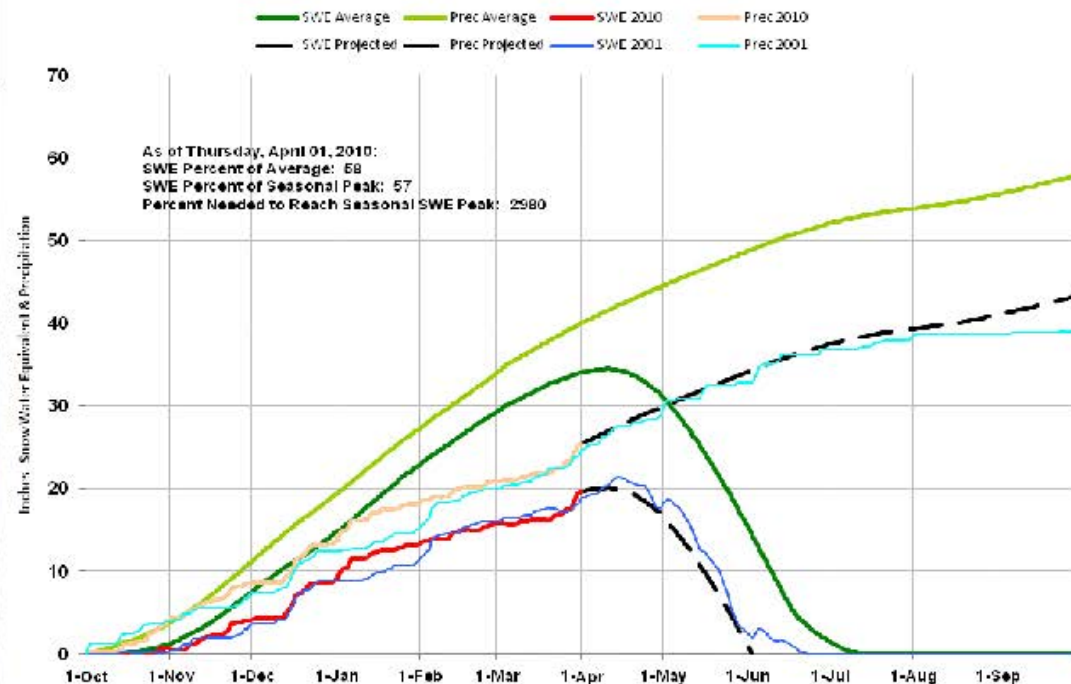
**Sherwin SNOTEL EI. 3200
Snow Water Equivalent**



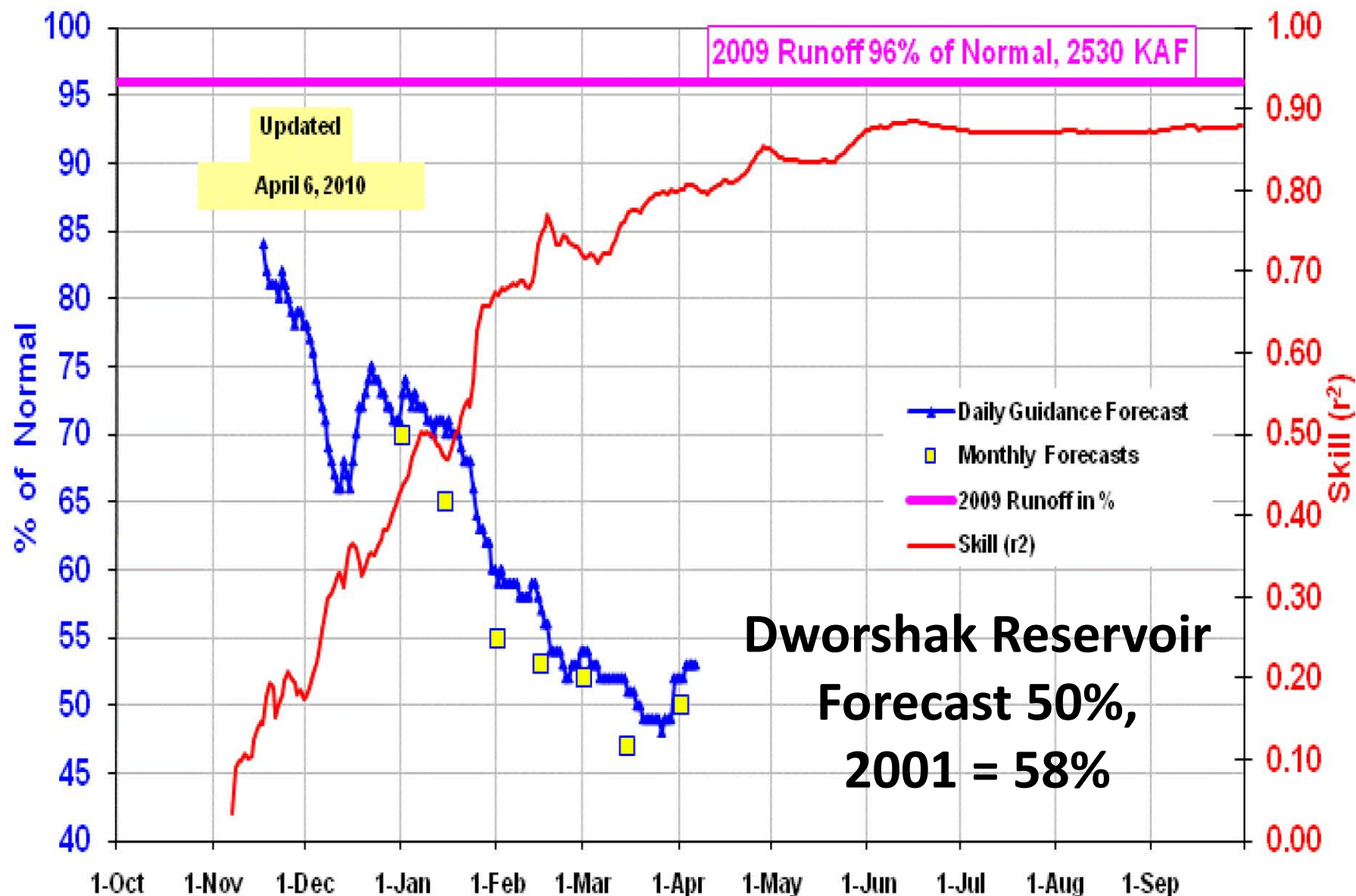
**Clearwater nr Splading
Fcst 56%, 2001 68%**

**Selway Putin - Short
high water runoff
season and early return
to low baseflows**

Clearwater Basin 2010 Snowpack Graph (14 Sites)



2010 Dworshak Reservoir Inflow: Apr - Jul Volume,
NRCS Monthly / mid-Monthly Forecasts are Squares



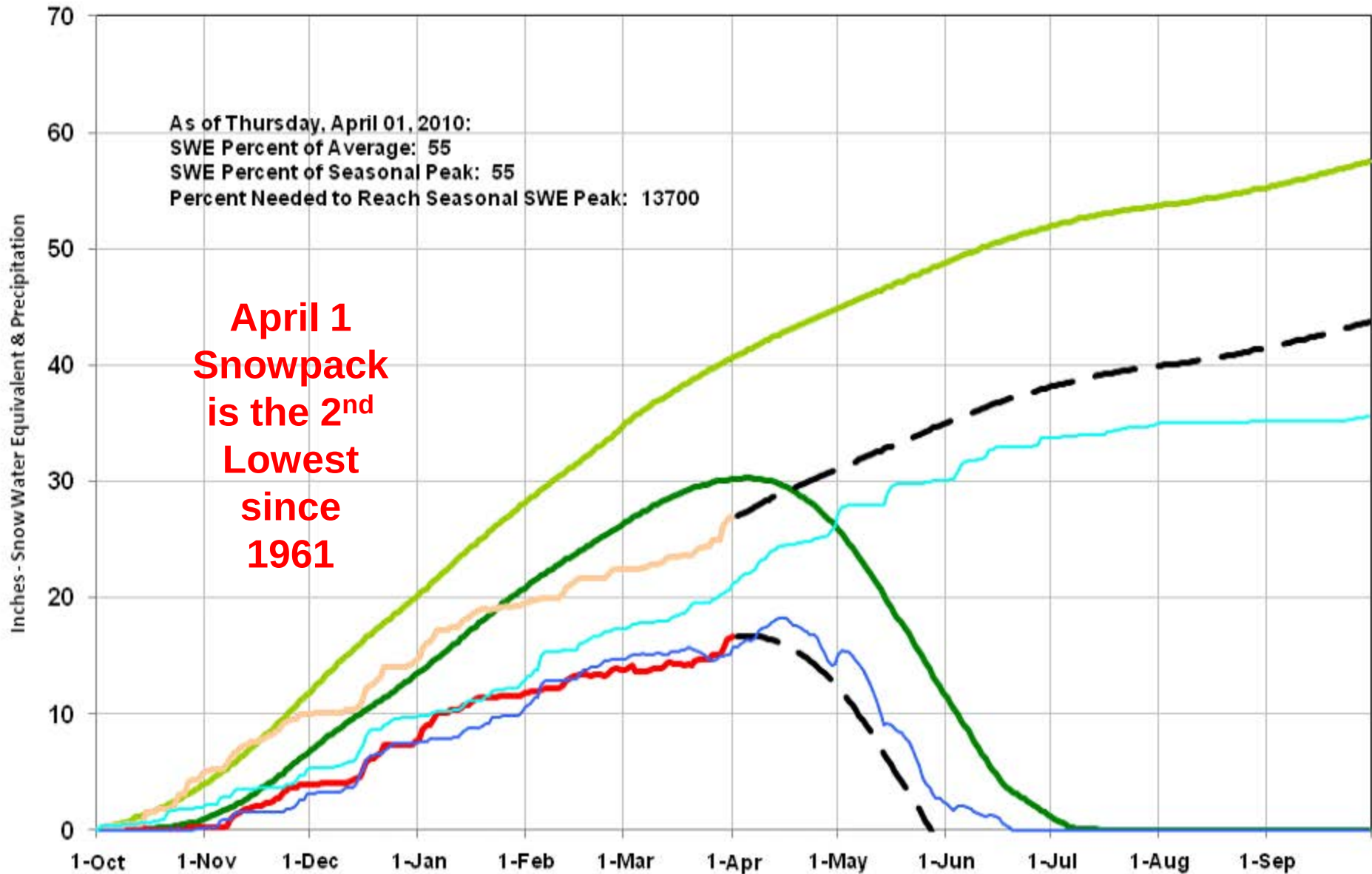
SNOTEL Sites used: Cool Creek, Elk Butte, Hemlock, Lolo Pass, Lost Lake

Spokane Basin 2010 Snowpack Graph (9 Sites)

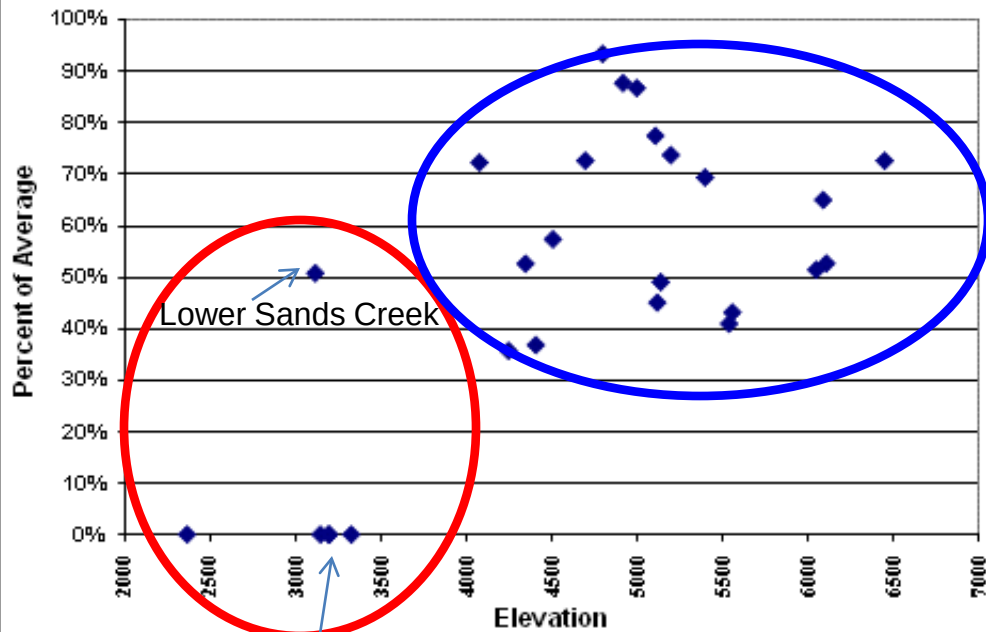
SWE Average Prec Average SWE 2010 Prec 2010
SWE Projected Prec Projected SWE 2001 Prec 2001

As of Thursday, April 01, 2010:
SWE Percent of Average: 55
SWE Percent of Seasonal Peak: 55
Percent Needed to Reach Seasonal SWE Peak: 13700

**April 1
Snowpack
is the 2nd
Lowest
since
1961**



Panhandle Basins Snowpack April 1, 2010

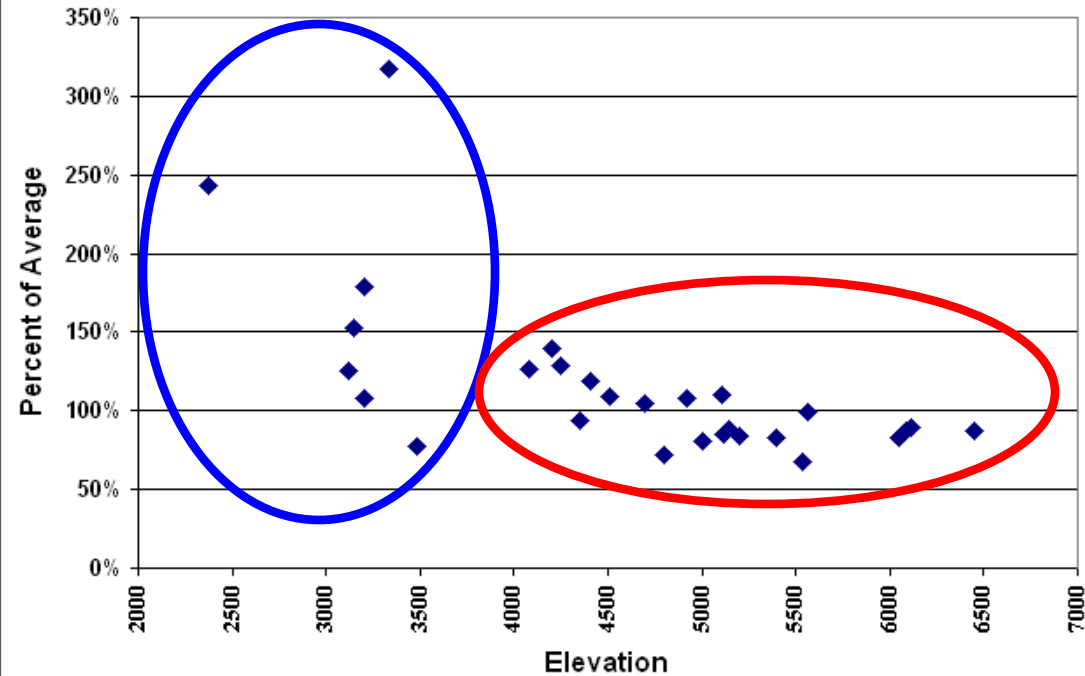


2010

2009

2010 zeros's:
4th of July,
Corner Creek,
Sherwin,
Benton Meadows

Panhandle Basins Snowpack April 1, 2009



Questions/Comments?

