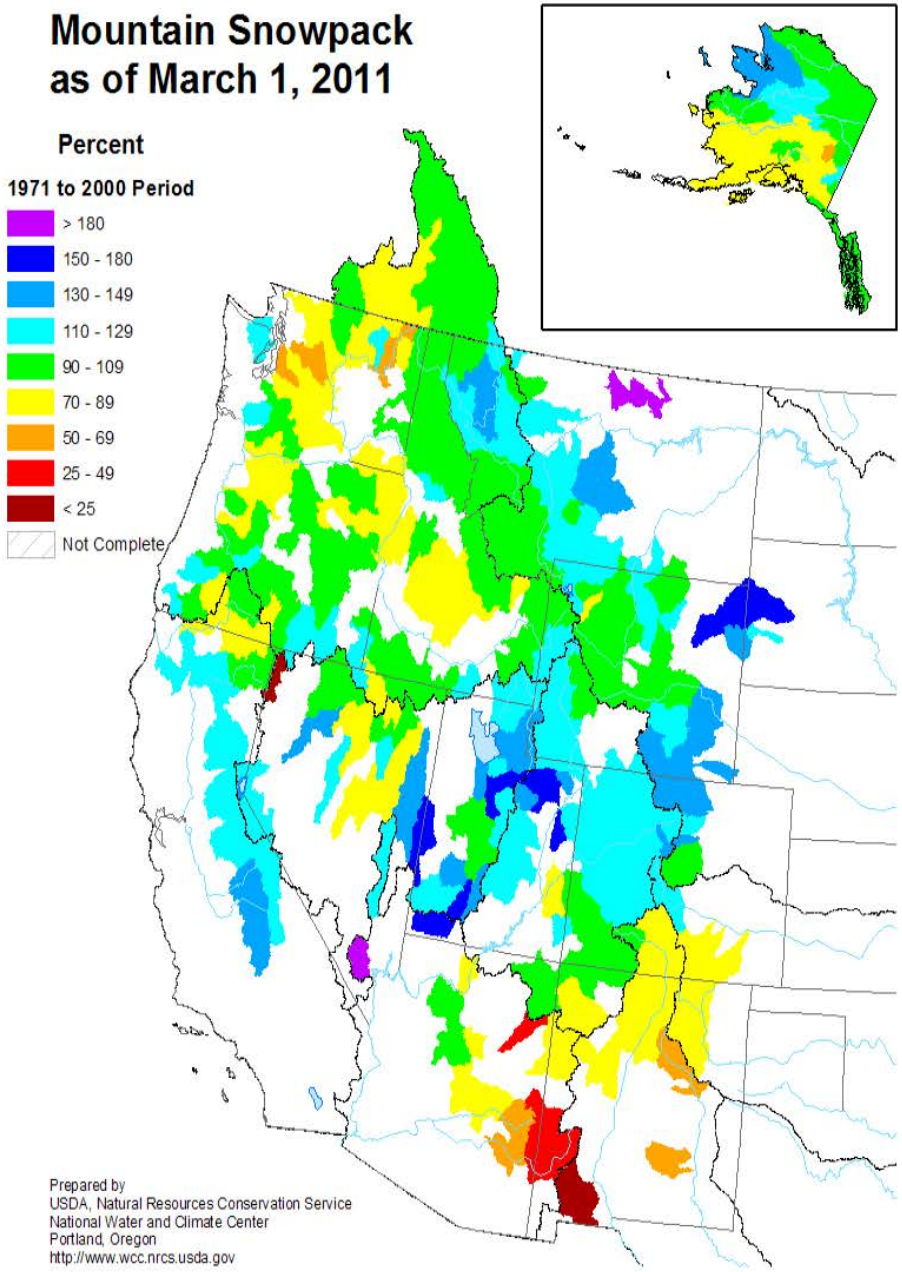
Idaho State Water Supply Meeting March 10, 2011

Snow Surveyors trying to reach Roland Summit Snow Course on March 1, but could not because of three feet of heavy, new snow that would not pack. Photo courtesy of Avista Corp.

SNOTEL Precipitation Summary Report

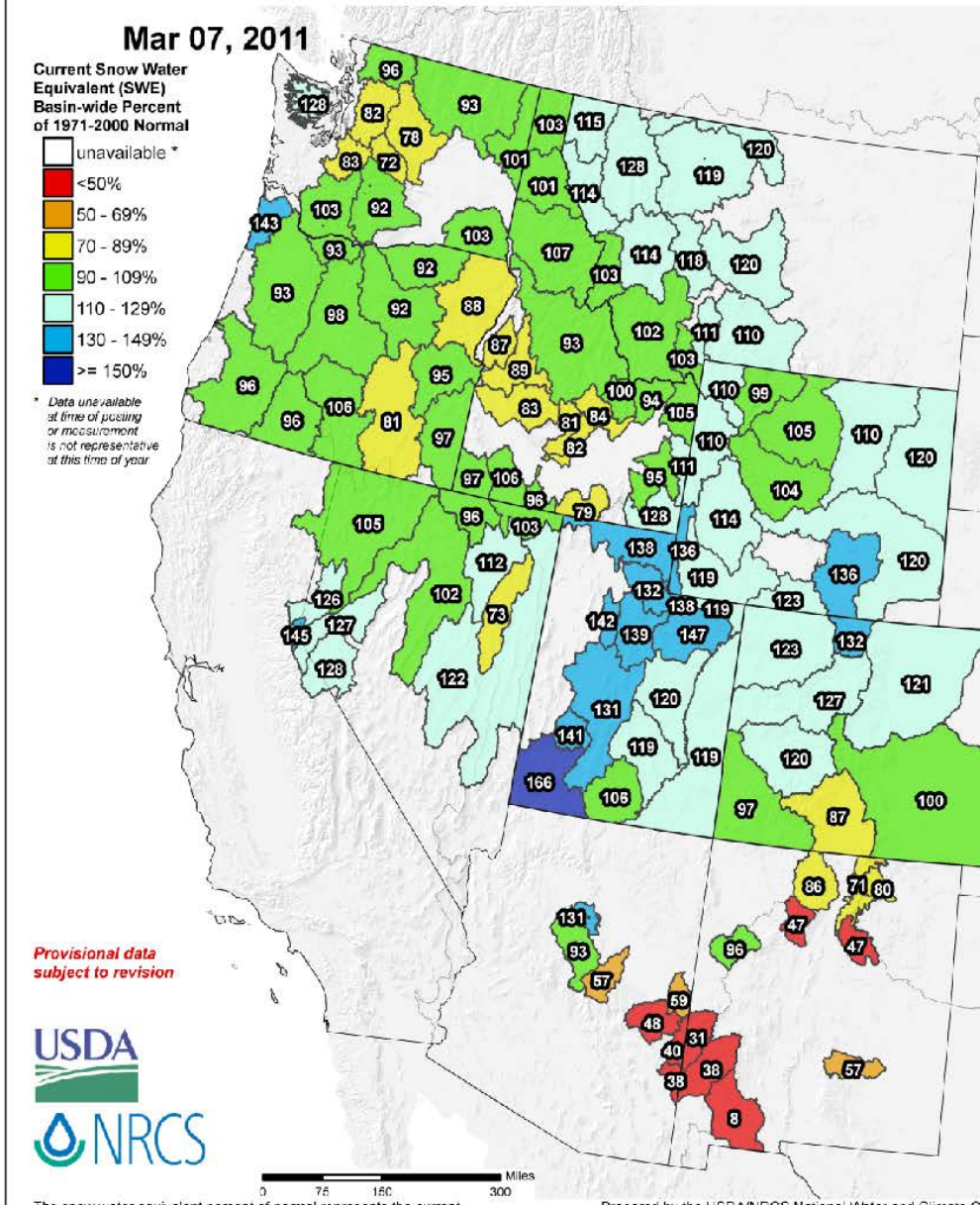
Region or Basin	February Precipitation as % of Average	Water-Year-to-Date Precipitation as % of Monthly Total
SPOKANE	107	113
CLEARWATER BASIN	109	113
SALMON BASIN	66	95
WEISER BASIN	83	104
PAYETTE BASIN	65	94
BOISE BASIN	47	97
BIG WOOD BASIN	49	88
LITTLE WOOD BASIN	64	99
BIG LOST BASIN	65	93
LITTLE LOST, BIRCH BASINS	76	99
MEDICINE LODGE, BEAVER, CAMAS BASINS	69	107
HENRYS FORK, TETON BASINS	72	105
SNAKE BASIN ABOVE PALISADES	78	108
WILLOW, BLACKFOOT, PORTNEUF BASINS	74	122
SNAKE BASIN ABOVE AMERICAN FALLS	76	110
RAFT BASIN	51	127
GOOSE CREEK BASIN	67	119
SALMON FALLS BASIN	81	127
BRUNEAU BASIN	88	129
OWYHEE BASIN	66	120
BEAR RIVER BASIN	97	133

Mountain Snowpack as of March 1, 2011



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

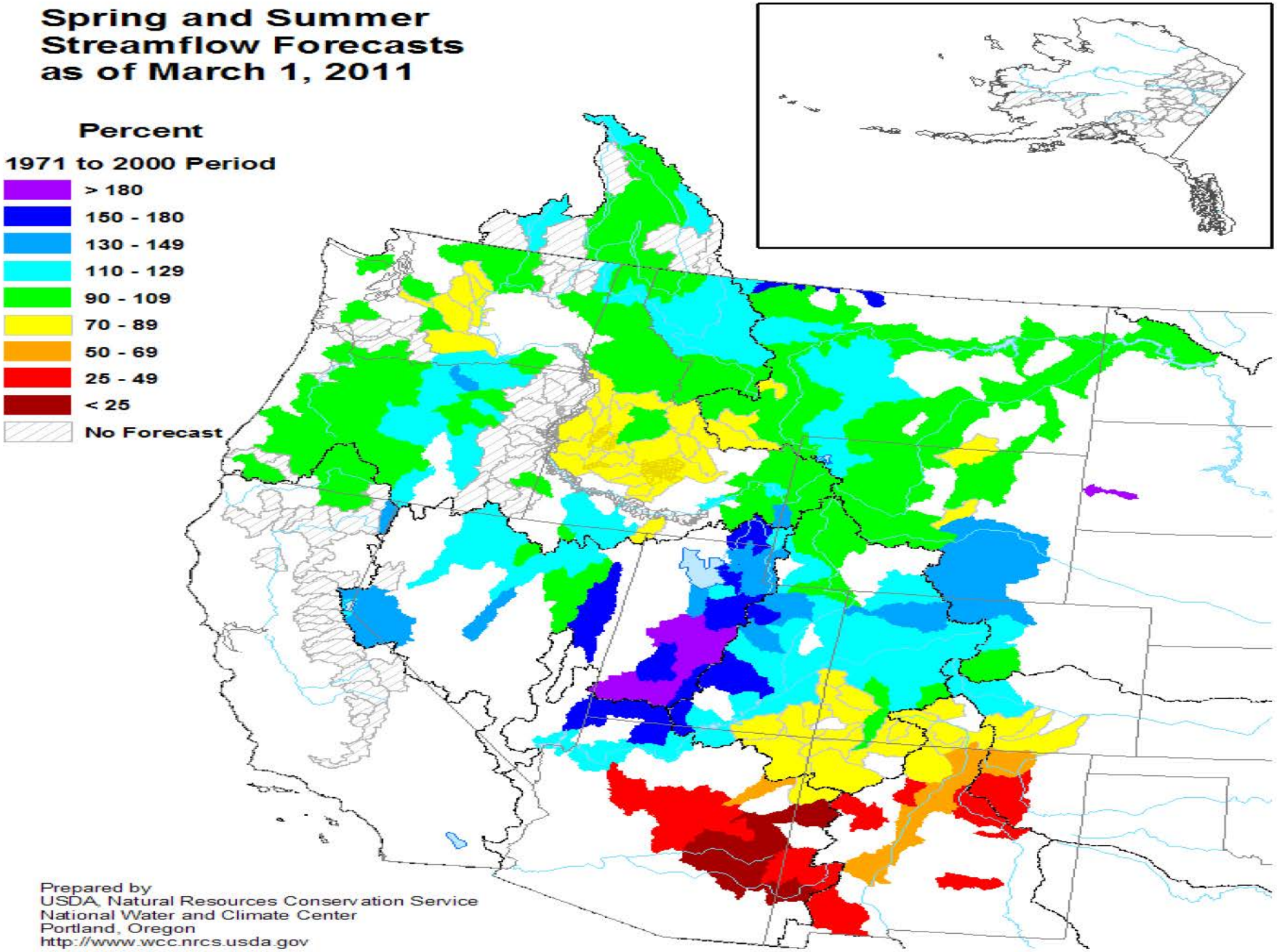
Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal



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 the USDA/NRCS National Water and Climate C
Portland, Oregon http://www.wcc.nrcs.usda.gov/gis/
Based on data from http://www.wcc.nrcs.usda.gov/reports/
Science contact: Tom.Pagano@por.usda.gov 503 414 3010

Spring and Summer Streamflow Forecasts as of March 1, 2011



Prepared by
USDA, Natural Resources Conservation Service
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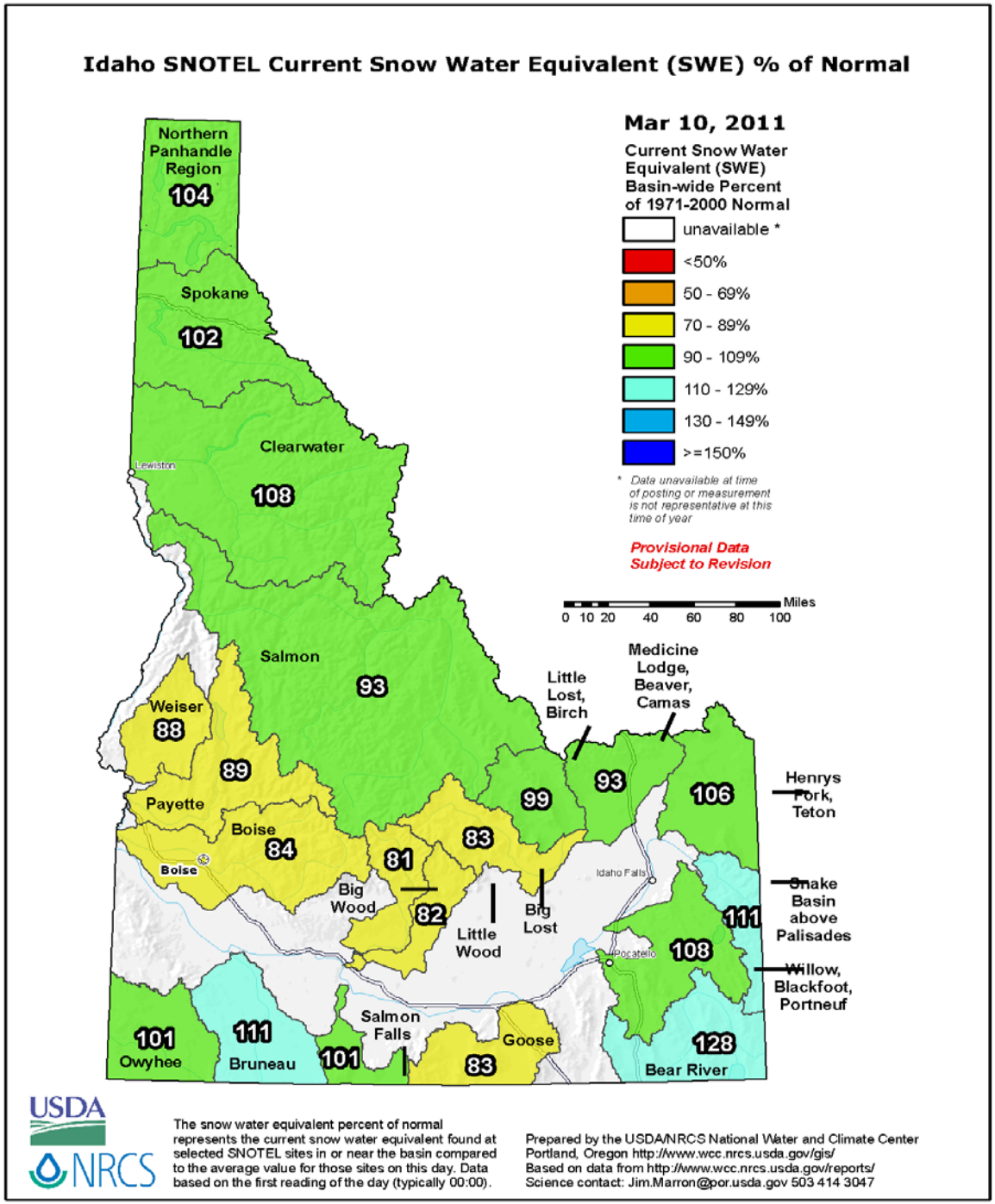
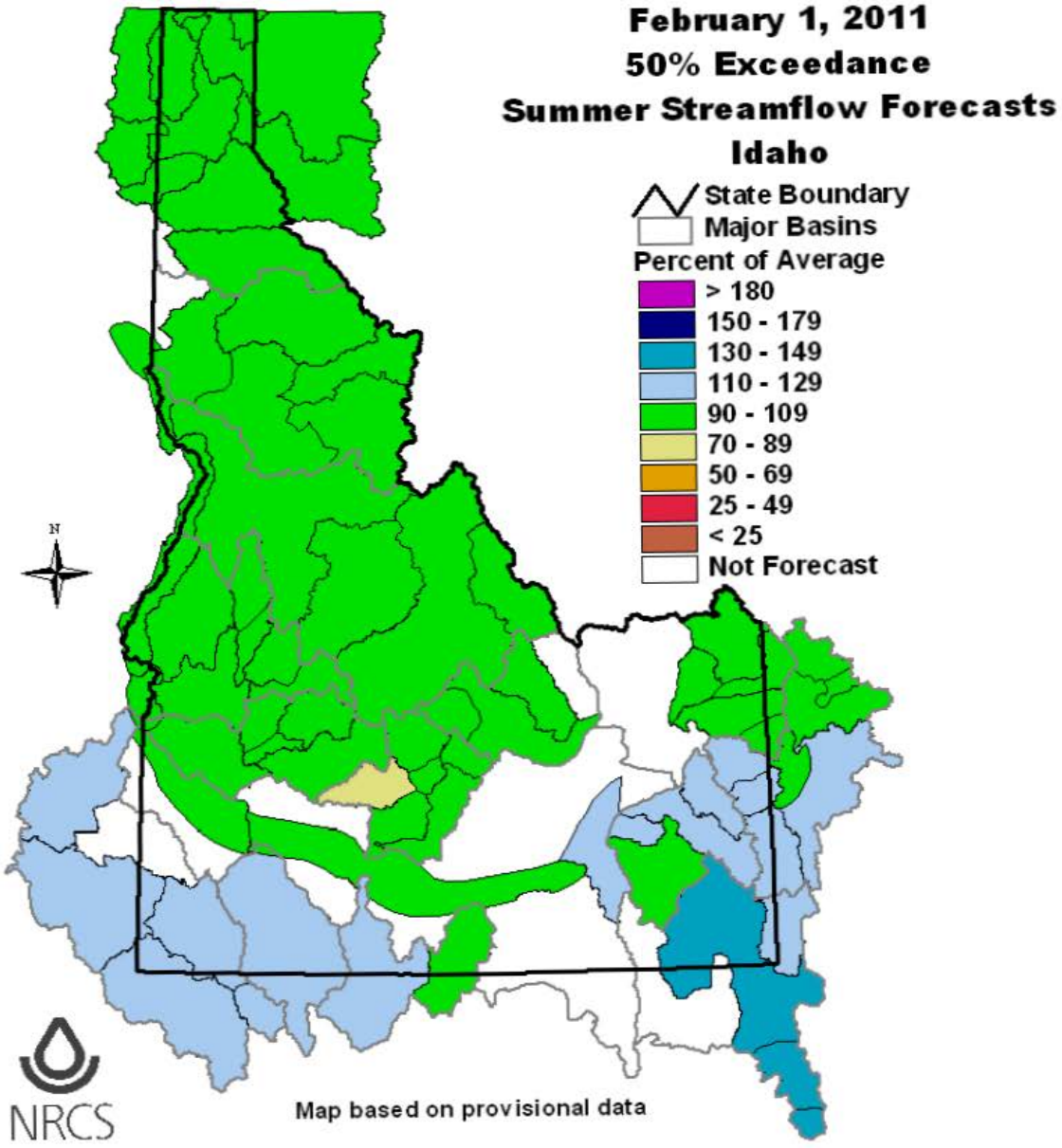


Today's snow water content as % of seasonal peak ranges from:

70% in Big Wood, Little Wood & Big Lost

to

110% in Bear River


February 1, 2011
50% Exceedance
Summer Streamflow Forecasts
Idaho
State Boundary
Major Basins
Percent of Average
> 180
150 - 179
130 - 149
110 - 129
90 - 109
70 - 89
50 - 69
25 - 49
< 25
Not Forecast
N
NRCS
Map based on provisional data

2011 Idaho Surface Water Supply Index (SWSI)

For January, February and March 2011

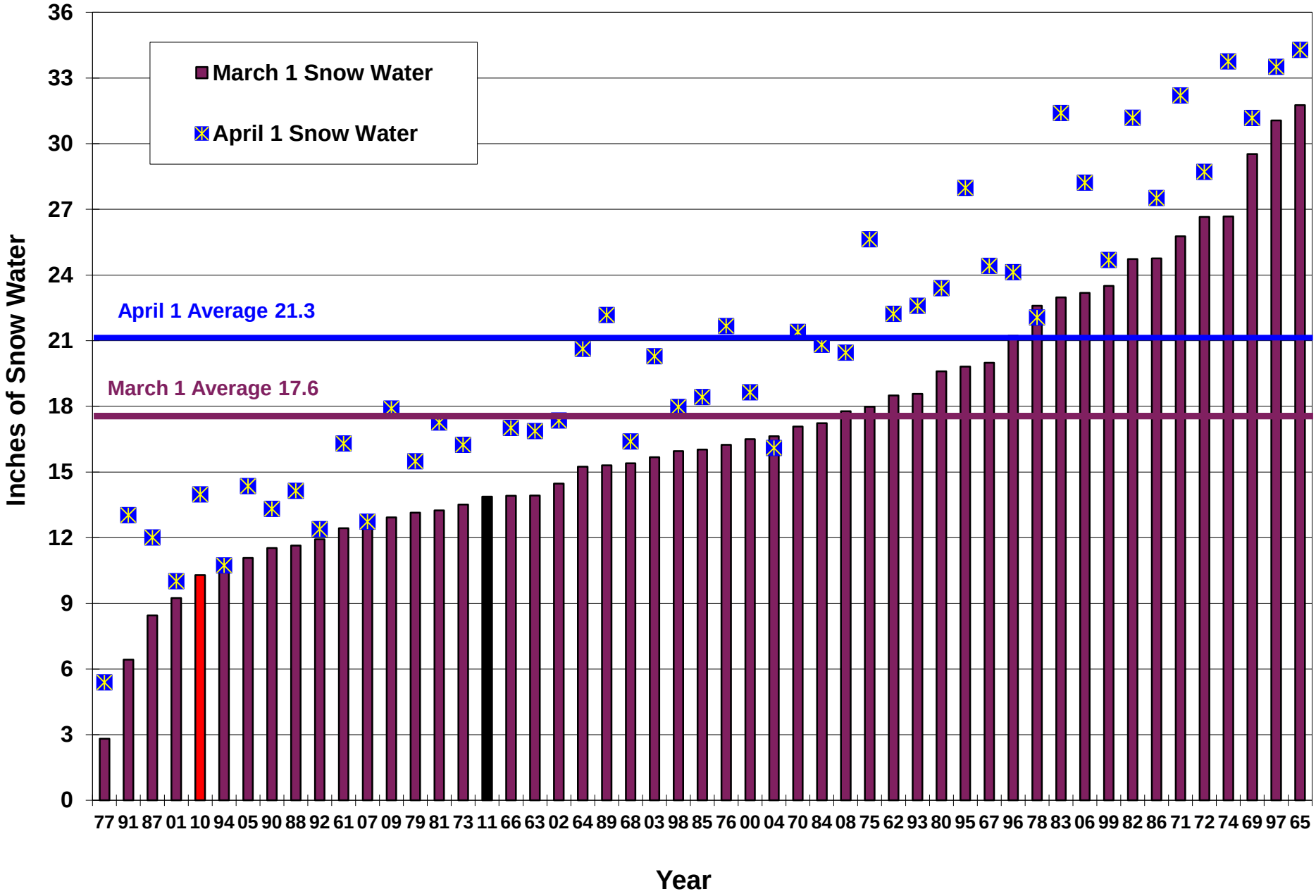
BASIN or/ REGION	January SWSI Value	February SWSI Value	March SWSI Value	Agricultural Surface Water Supply Shortage May Occur When SWSI is Less Than
SPOKANE	0.0	1.2	1.0	NA
CLEARWATER	0.3	1.4	1.6	NA
SALMON	-0.1	0.0	-0.4	NA
WEISER	0.2	-0.4	-0.8	NA
PAYETTE	0.2	0.2	-0.4	NA
BOISE	1.2	0.8	0.6	-1.8
BIG WOOD	1.2	0.2	0.2	-0.2
LITTLE WOOD	1.0	0.4	0.4	-1.9
BIG LOST	0.6	0.0	-0.4	-0.1
LITTLE LOST	0.2	0.2	-0.4	0.4
TETON	1.6	0.6	0.6	NA
HENRYS FORK	0.9	0.7	0.5	-3.3
SNAKE – HEISE	1.4	1.4	1.2	-1.7
OAKLEY	0.4	0.2	-1.0	-1.0
SALMON FALLS	2.4	1.2	0.9	-1.6
BRUNEAU	3.3	1.8	1.6	NA
OWYHEE	2.2	0.6	0.6	-3.5
BEAR RIVER	-0.6	-0.6	-0.5	-2.8

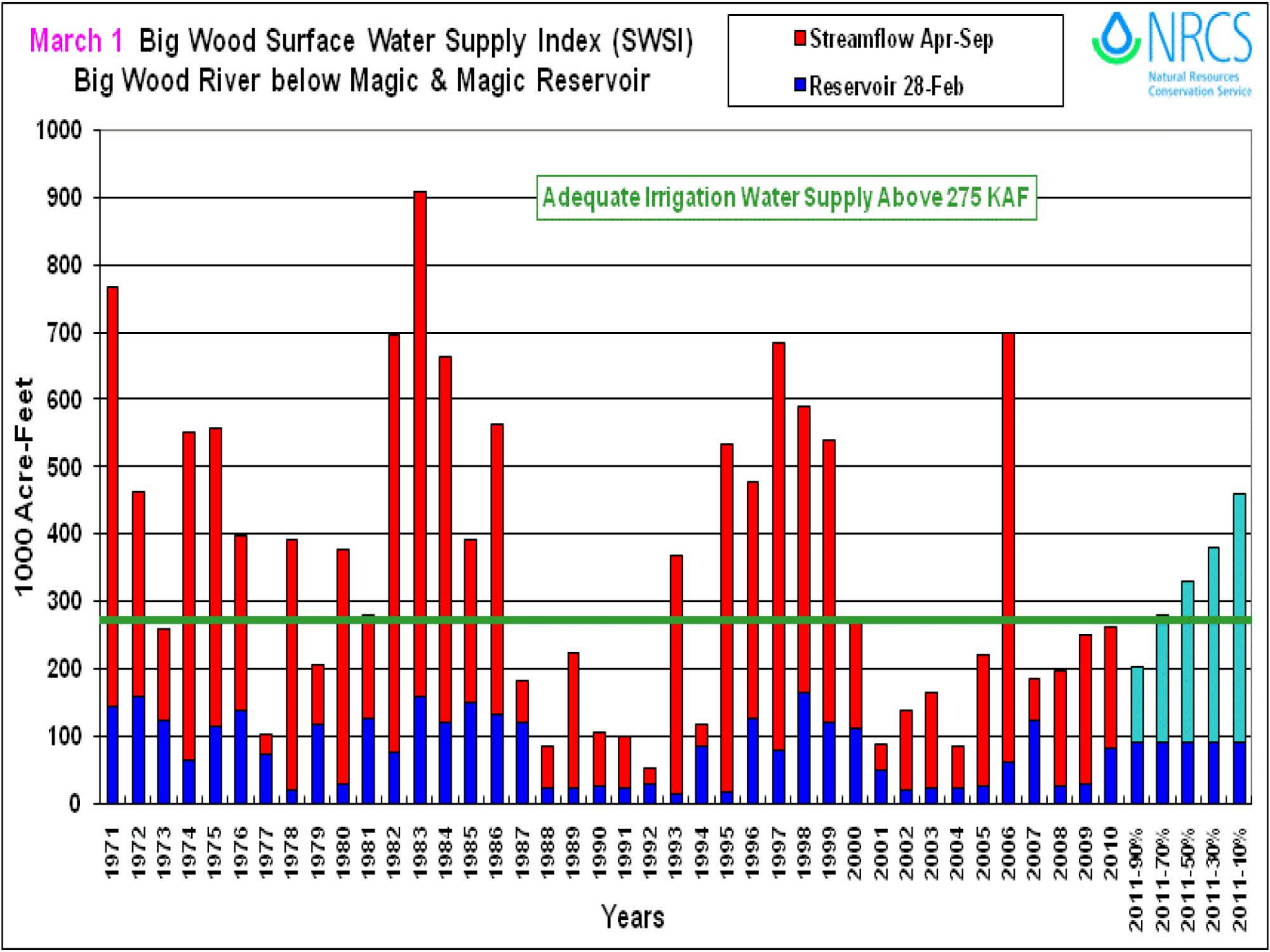
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

```
-4      -3      -2      -1       0       1       2       3       4
 |------|------|------|------|------|------|------|------|
99%     87%     75%     63%     50%     37%     25%     13%     1%
 ------------------------------------------------------------
 |Much   | Below     |     Near Normal      |  Above   | Much |
 |Below  | Normal    |   Water Supply       |  Normal  | Above|
 ------------------------------------------------------------
```

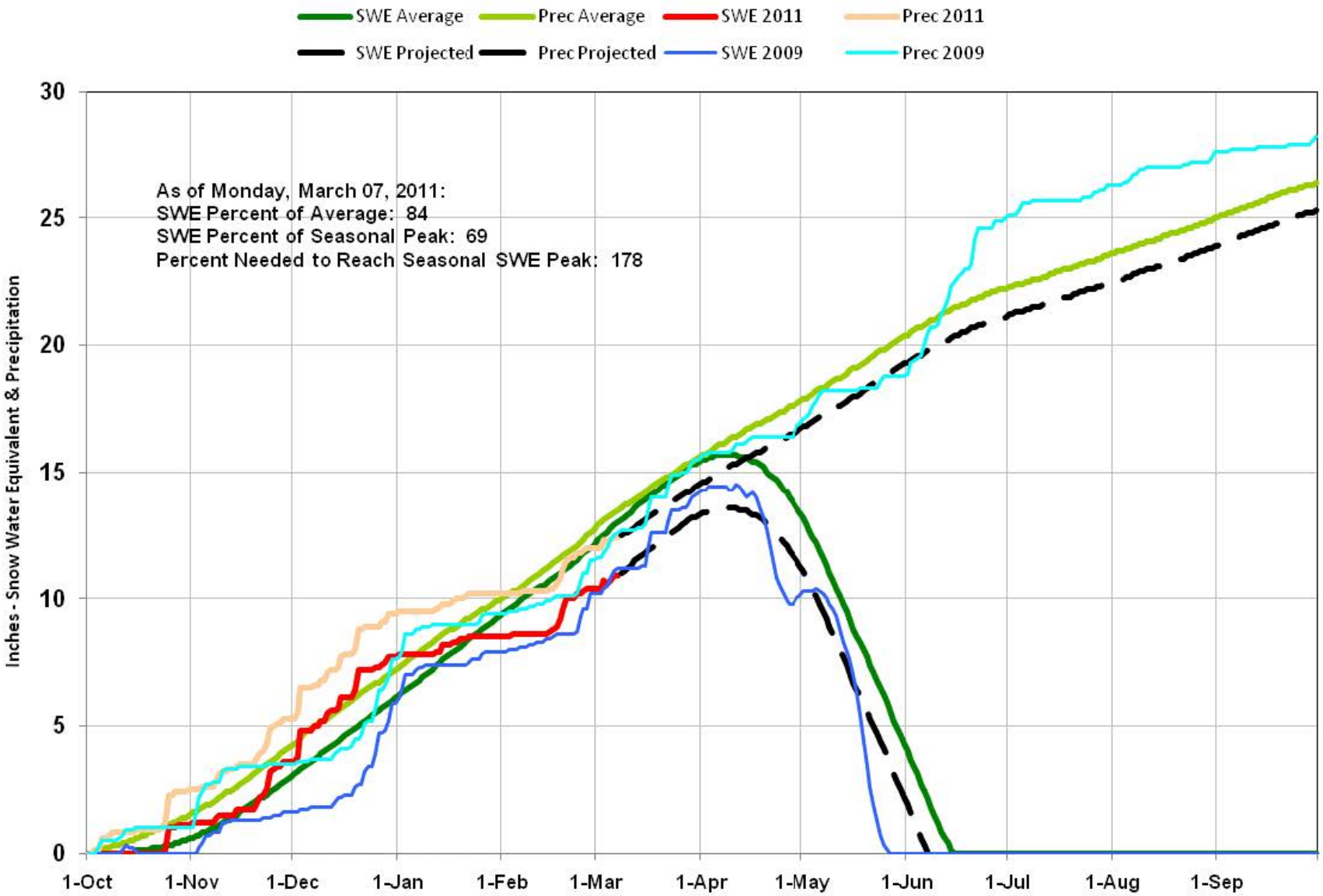
Big Wood River above Hailey 7 Station Snow Index for Years 1961 - 2011

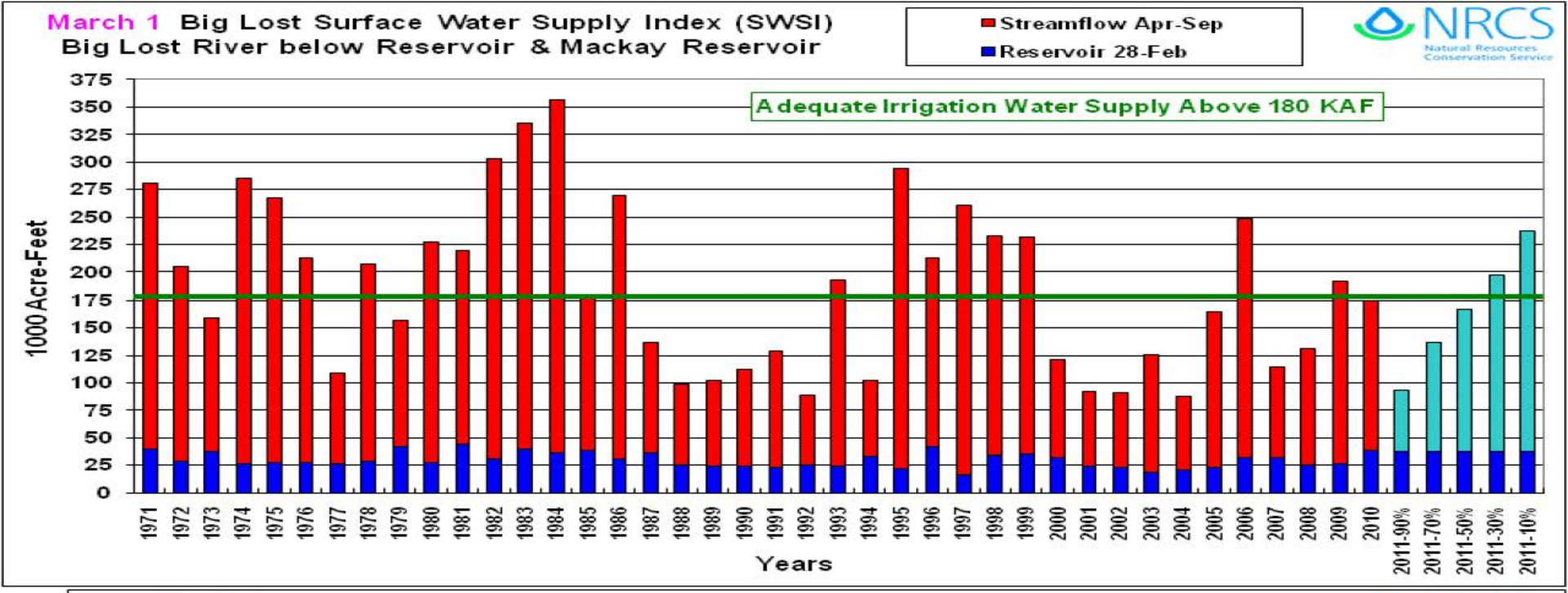
Chocolate Gulch, Dollarhide, Galena, Galena Summit, Hyndman, Lost-Wood Divide, Vienna Mine

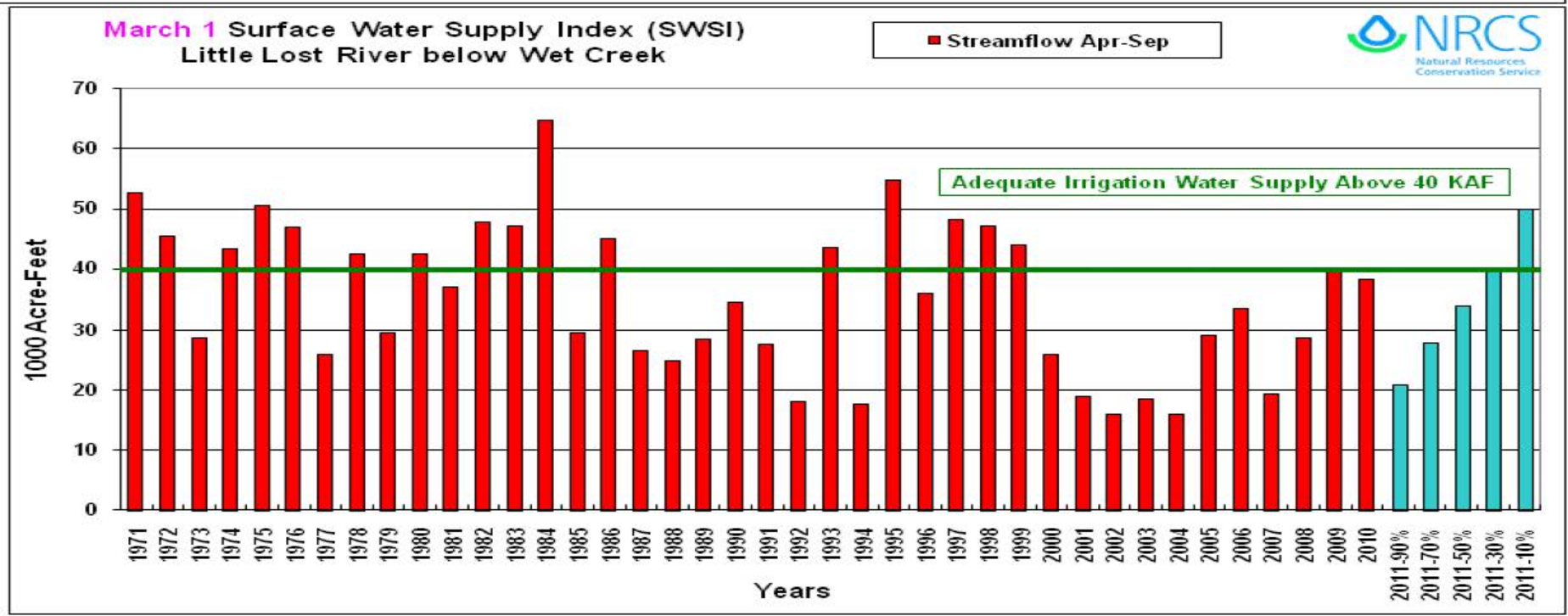



March 1 Big Wood Surface Water Supply Index (SWSI)
Big Wood River below Magic & Magic Reservoir
Streamflow Apr-Sep
Reservoir 28-Feb
NRCS
Natural Resources Conservation Service
Adequate Irrigation Water Supply Above 275 KAF
1000 Acre-Feet
0
100
200
300
400
500
600
700
800
900
1000
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011-90%
2011-70%
2011-50%
2011-30%
2011-10%
Years

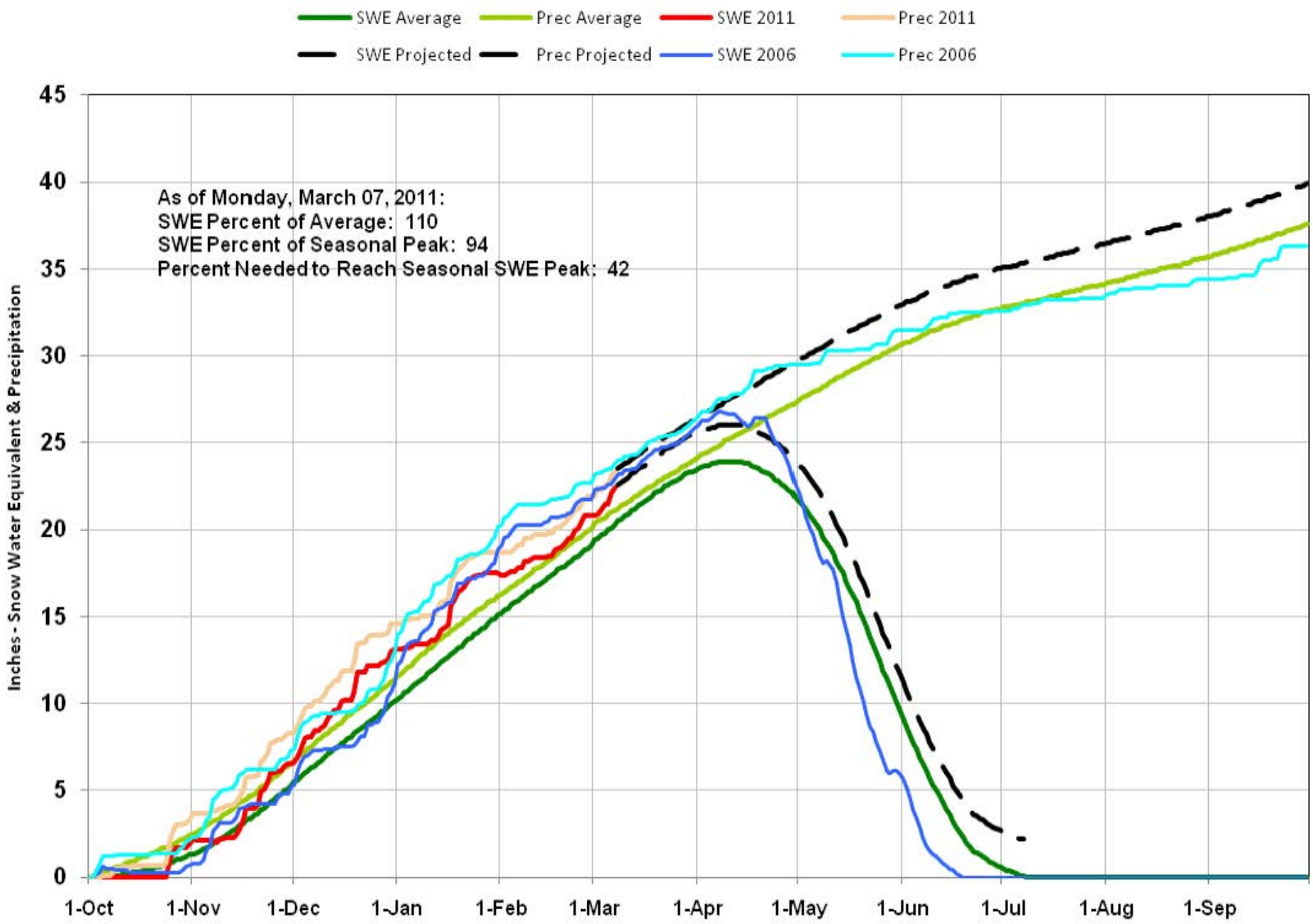
Big Lost Basin 2011 Snowpack Graph (4 Sites)



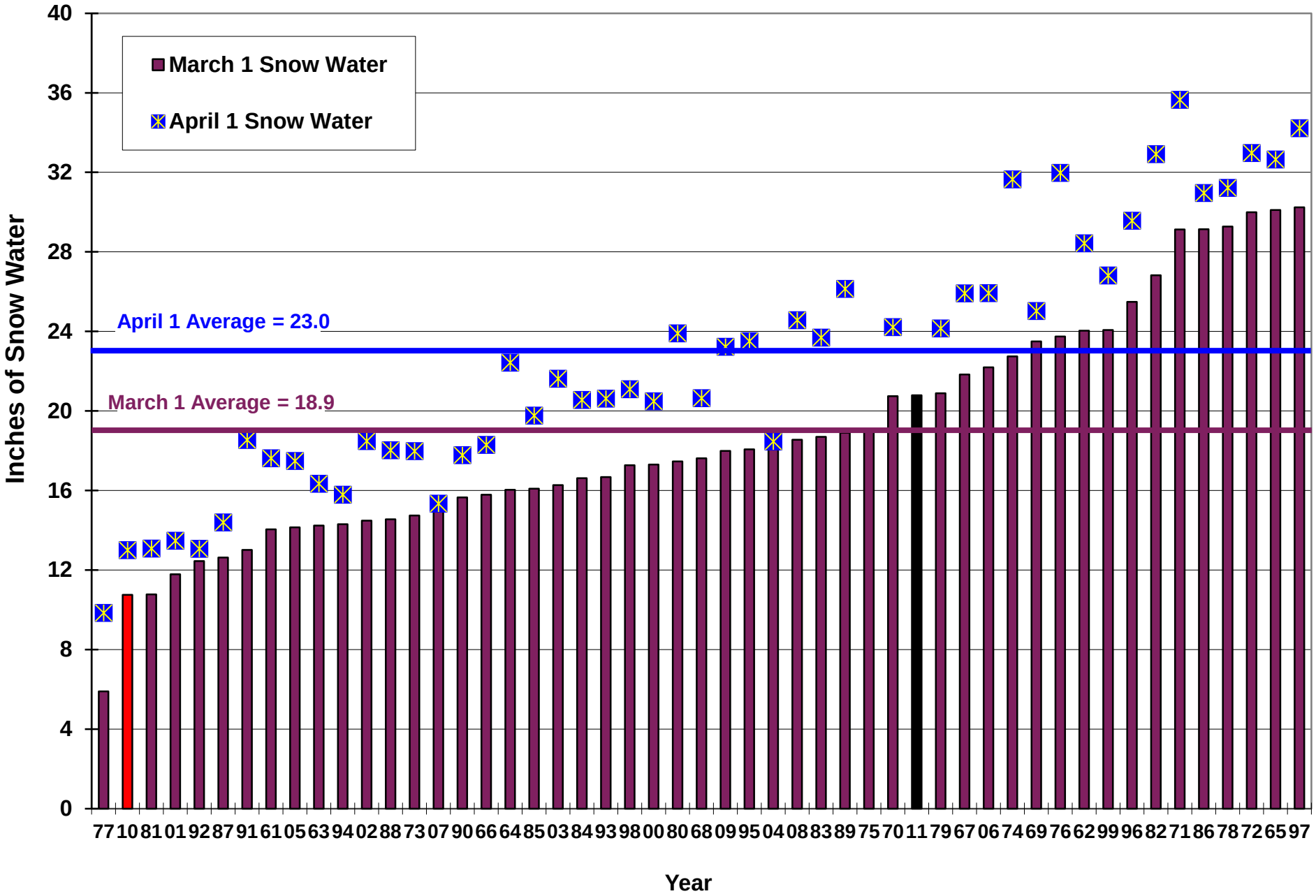

March 1 Big Lost Surface Water Supply Index (SWSI)
Big Lost River below Reservoir & Mackay Reservoir
Streamflow Apr-Sep
Reservoir 28-Feb
NRCS
Natural Resources Conservation Service
Adequate Irrigation Water Supply Above 180 KAF
1000 Acre-Feet
Years

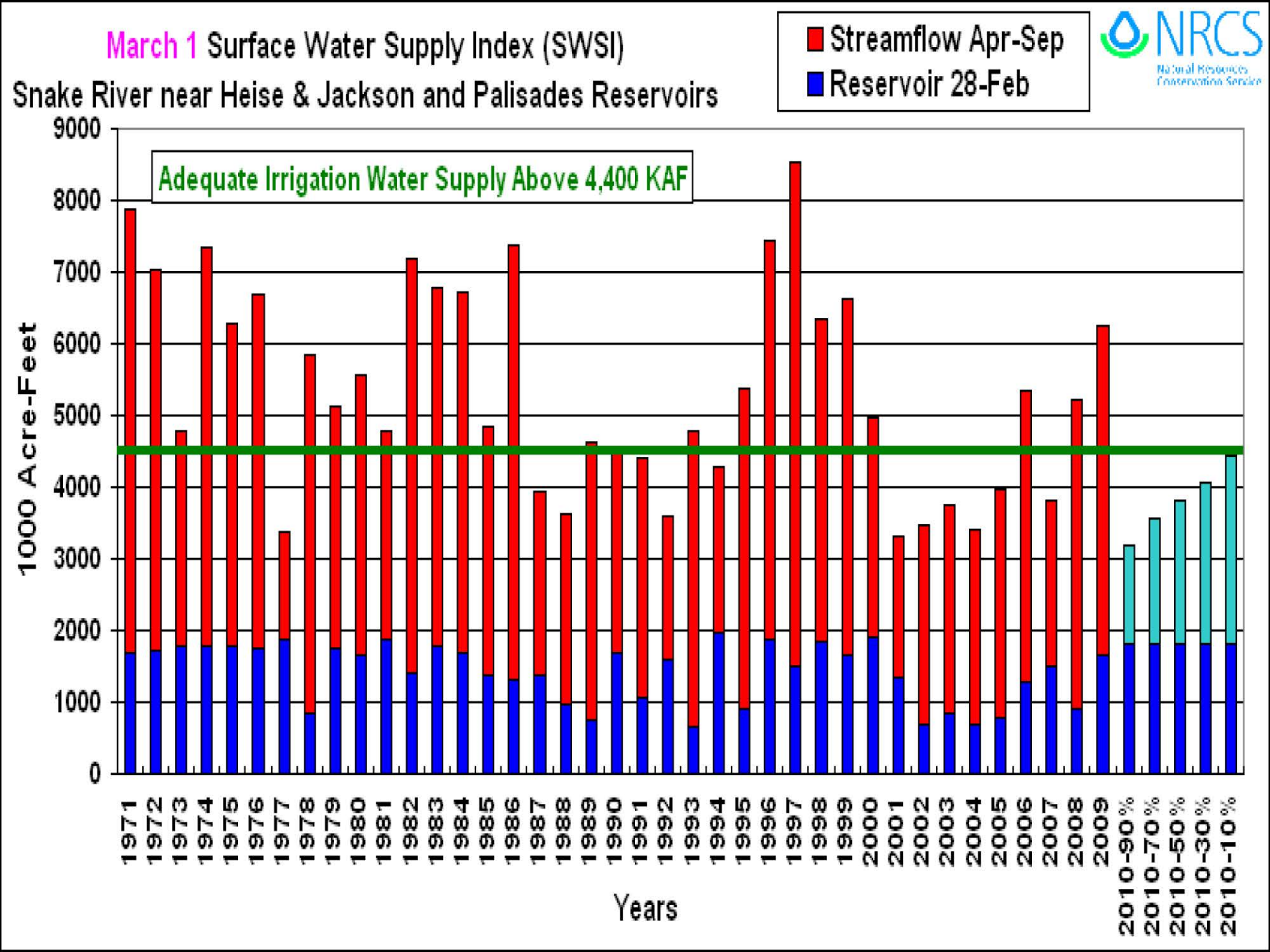

March 1 Surface Water Supply Index (SWSI)
Little Lost River below Wet Creek
Streamflow Apr-Sep
NRCS
Natural Resources Conservation Service
Adequate Irrigation Water Supply Above 40 KAF
1000 Acre-Feet
Years

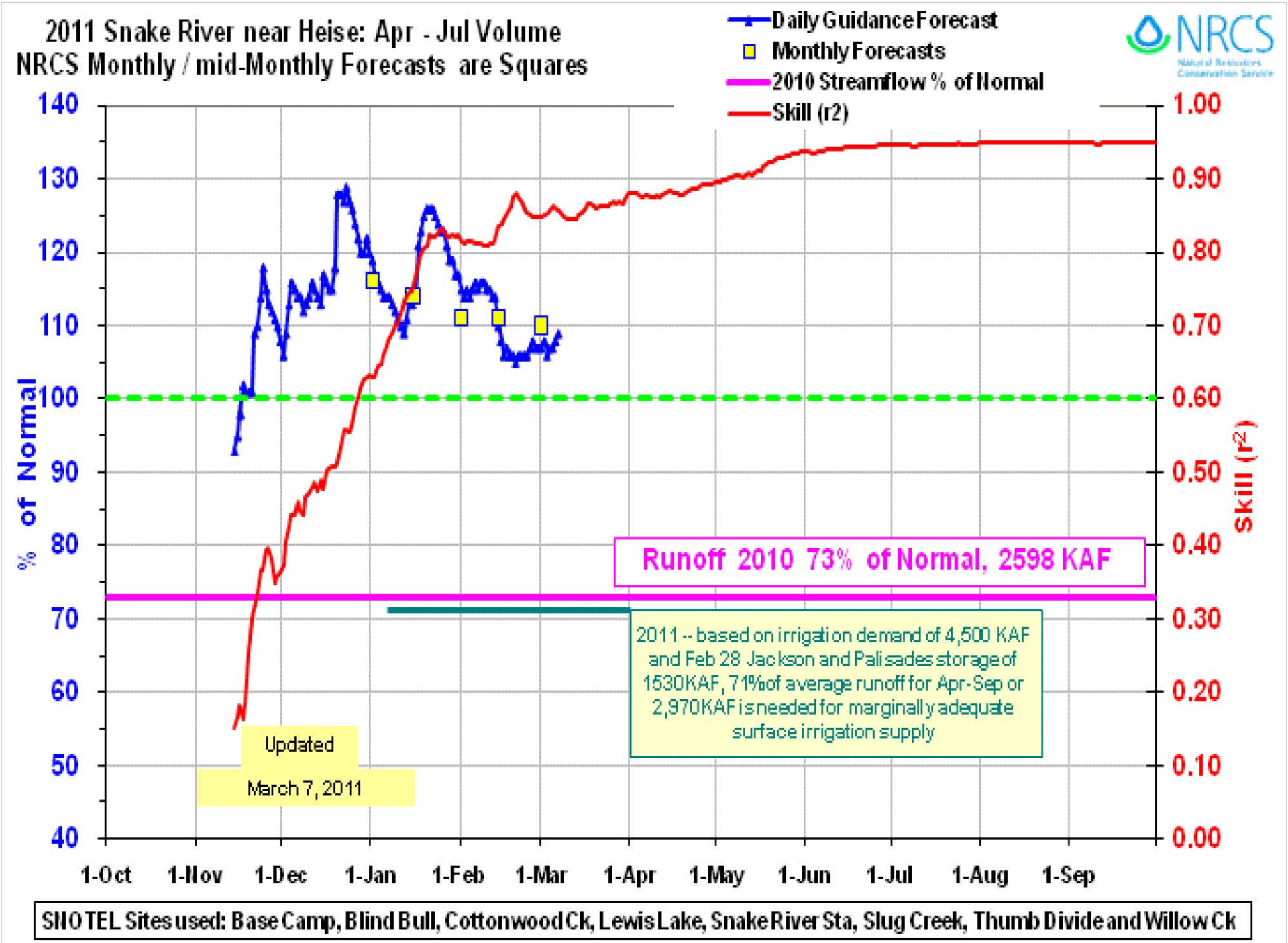
Snake Basin above Palisades 2011 Snowpack Graph (17 Sites)



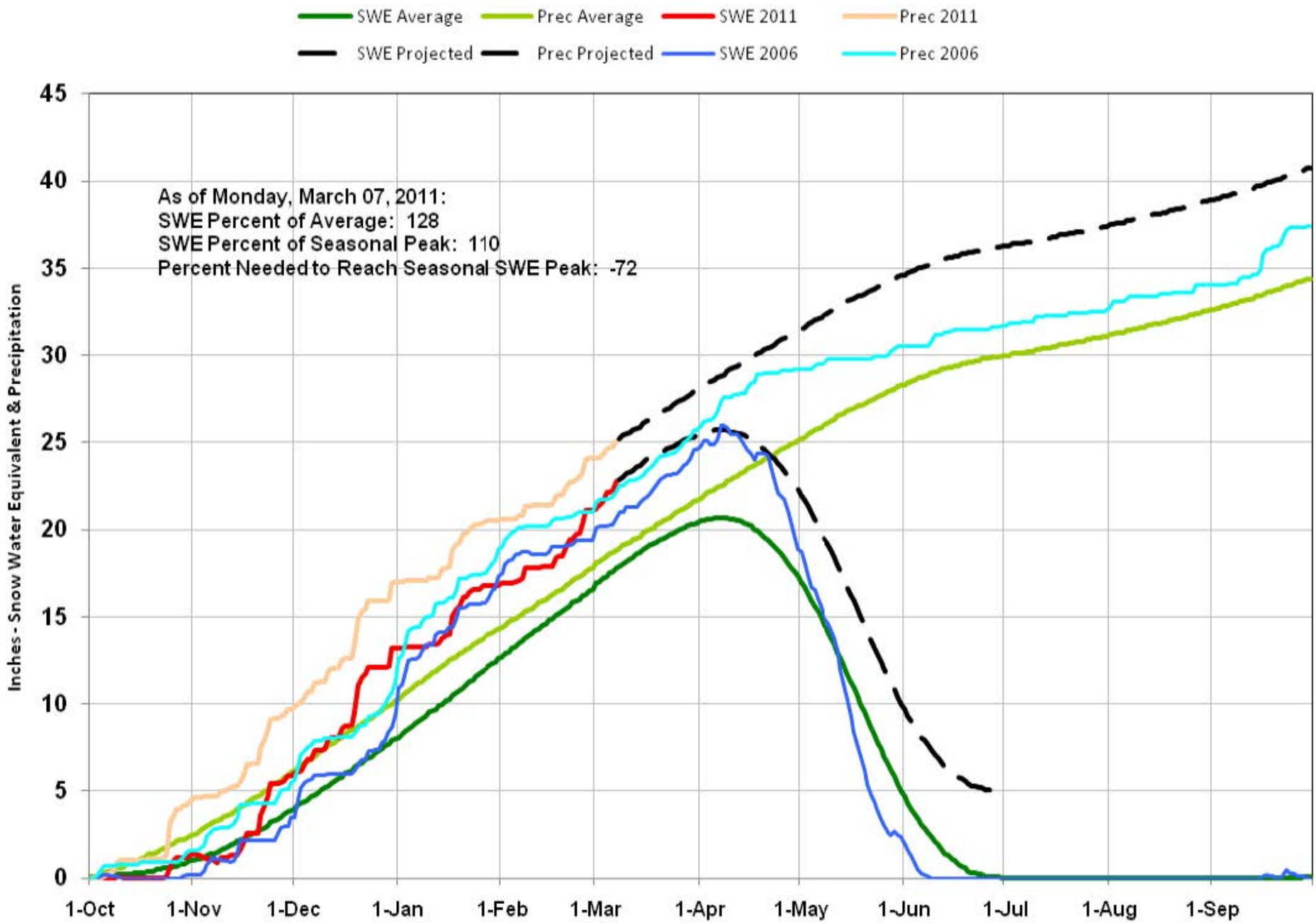
17 Station March Snow Index for Snake River Basin above Heise, ID 1961 - 2010

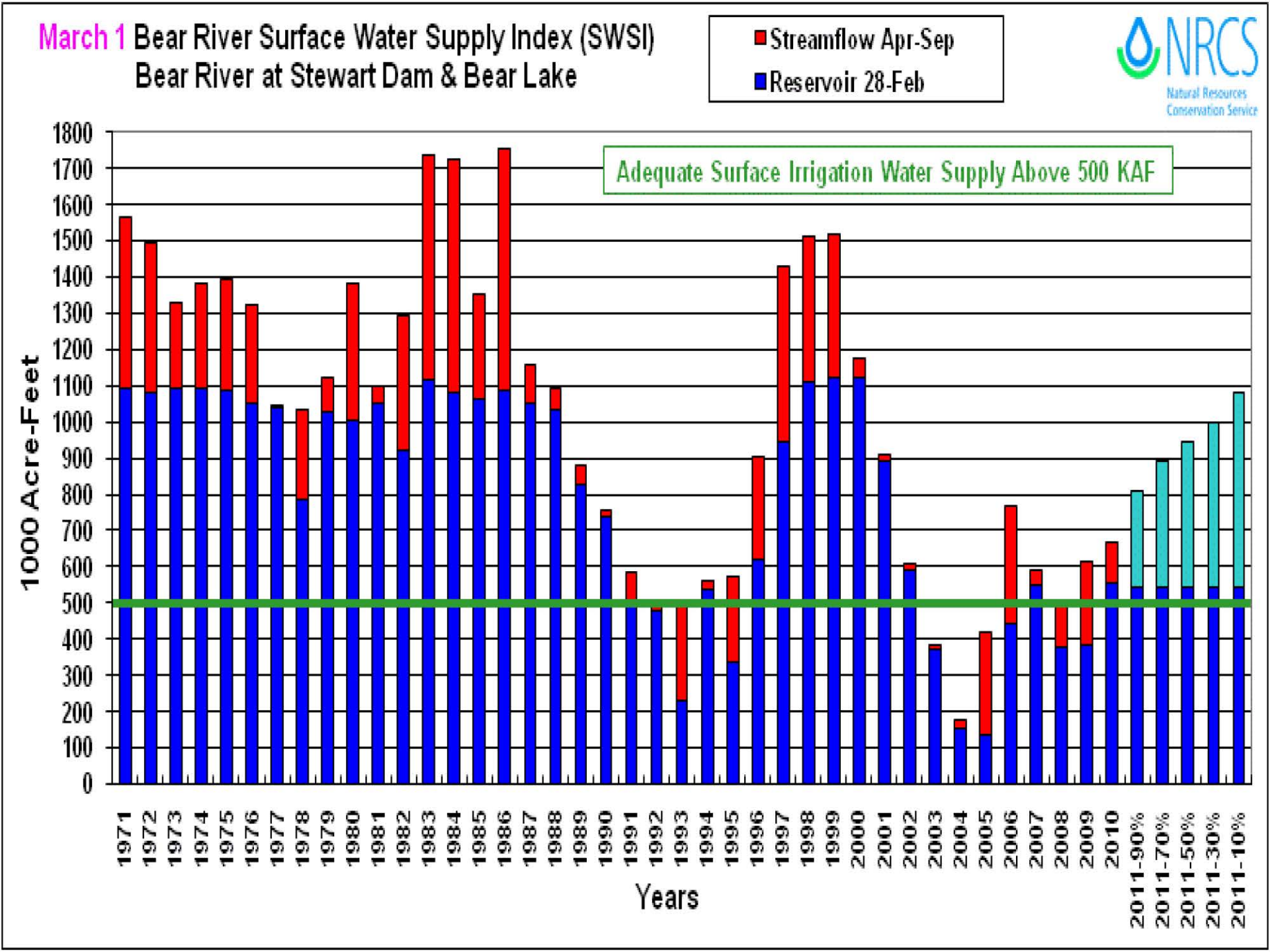



March 1 Surface Water Supply Index (SWSI)
Snake River near Heise & Jackson and Palisades Reservoirs
Streamflow Apr-Sep
Reservoir 28-Feb
NRCS
Adequate Irrigation Water Supply Above 4,400 KAF
1000 Acre-Feet
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010-90%
2010-70%
2010-50%
2010-30%
2010-10%
Years

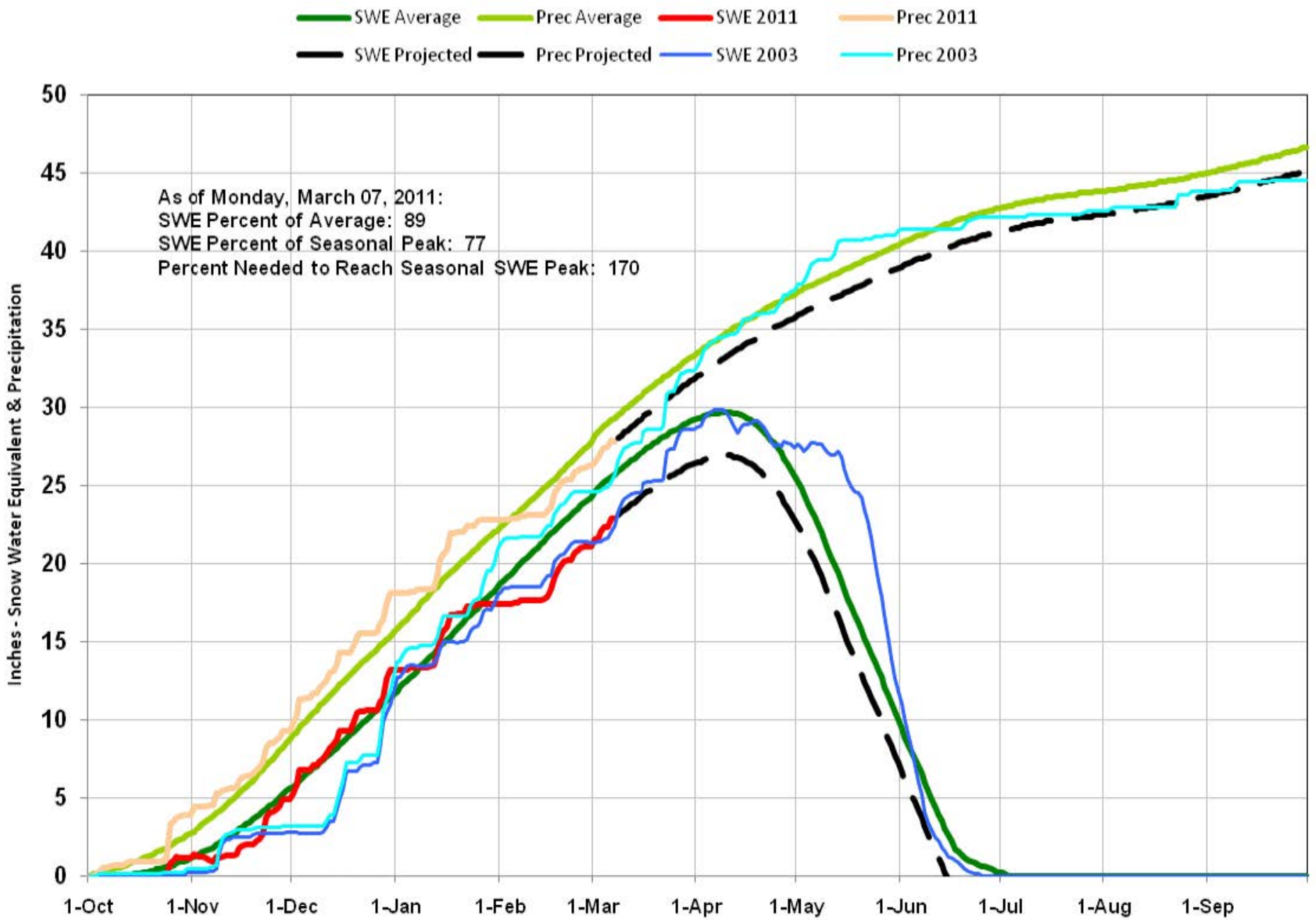

2011 Snake River near Heise: Apr - Jul Volume
NRCS Monthly / mid-Monthly Forecasts are Squares
Daily Guidance Forecast
Monthly Forecasts
2010 Streamflow % of Normal
Skill (r2)
NRCS
% of Normal
Skill (r²)
140
130
120
110
100
90
80
70
60
50
40
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Runoff 2010 73% of Normal, 2598 KAF
2011 -- based on irrigation demand of 4,500 KAF and Feb 28 Jackson and Palisades storage of 1530 KAF, 71% of average runoff for Apr-Sep or 2,970 KAF is needed for marginally adequate surface irrigation supply
Updated
March 7, 2011
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
SNOTEL Sites used: Base Camp, Blind Bull, Cottonwood Ck, Lewis Lake, Snake River Sta, Slug Creek, Thumb Divide and Willow Ck

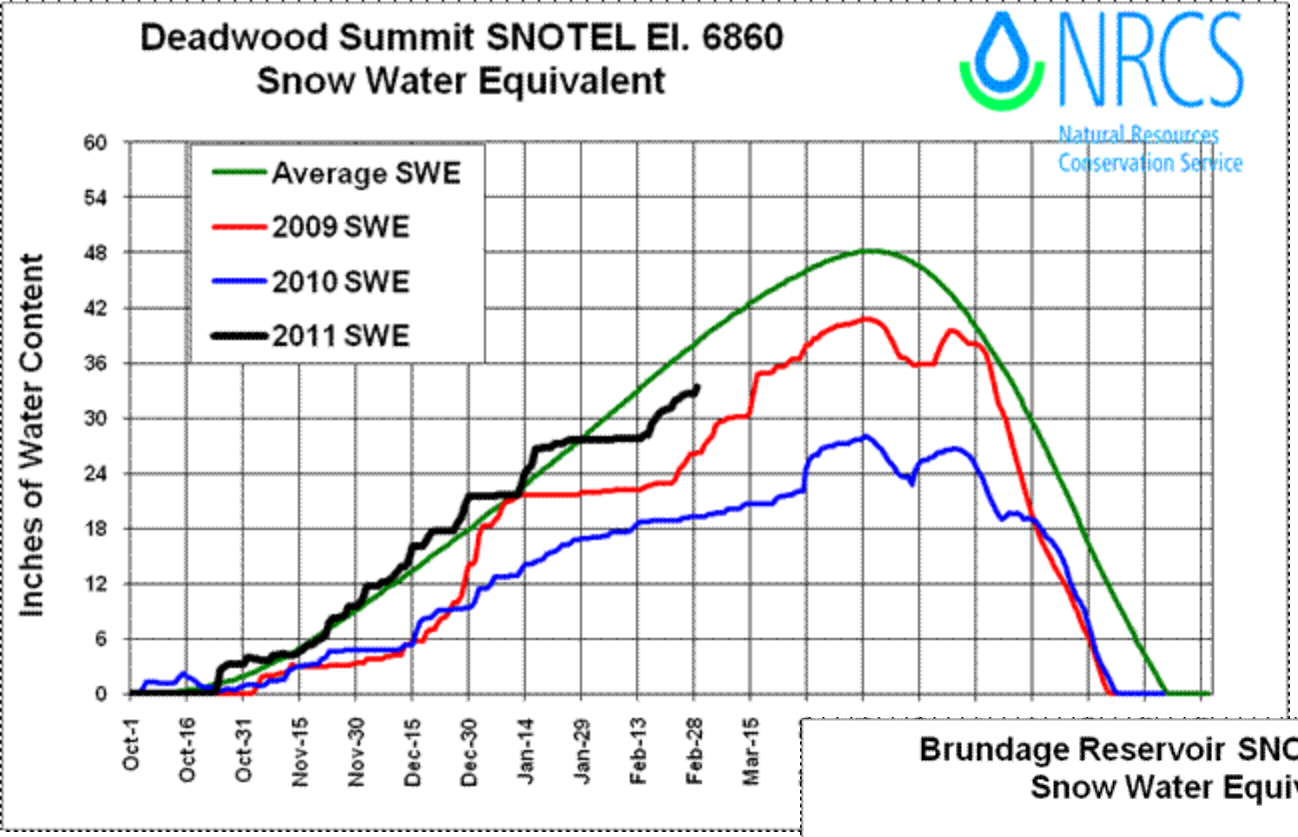
Bear River Basin 2011 Snowpack Graph (15 Sites)



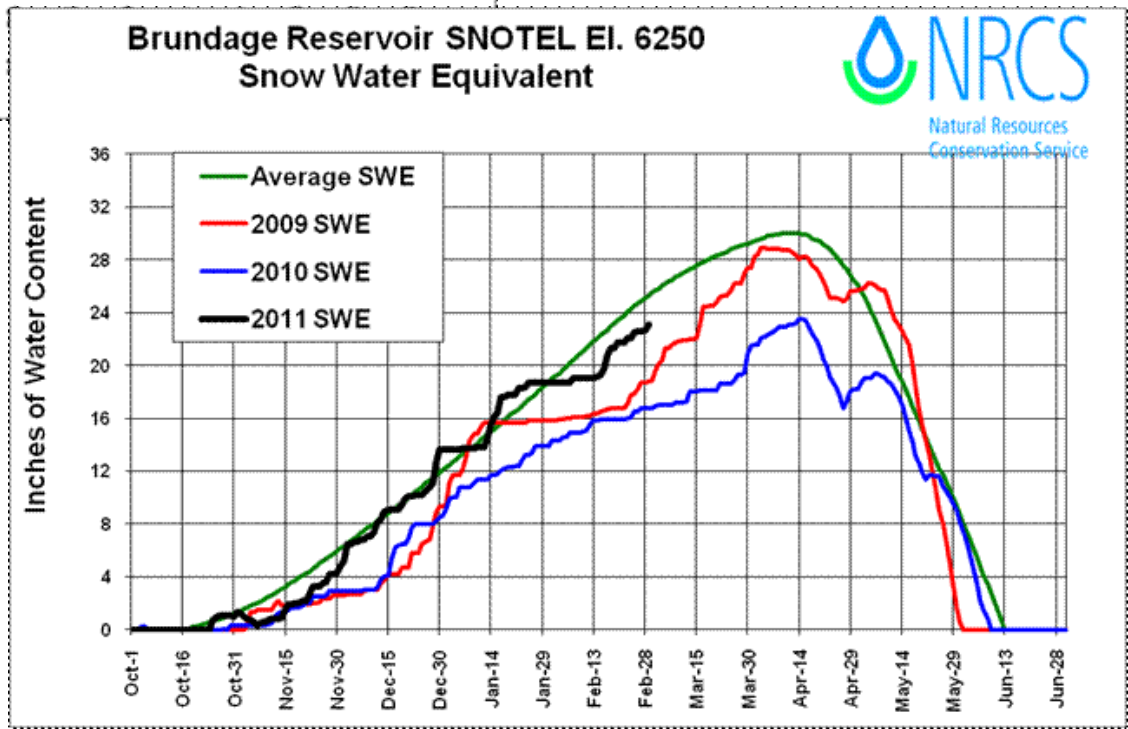

March 1 Bear River Surface Water Supply Index (SWSI)
Bear River at Stewart Dam & Bear Lake
Streamflow Apr-Sep
Reservoir 28-Feb
NRCS
Natural Resources Conservation Service
Adequate Surface Irrigation Water Supply Above 500 KAF
1000 Acre-Feet
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011-90%
2011-70%
2011-50%
2011-30%
2011-10%
Years

Payette Basin 2011 Snowpack Graph (9 Sites)

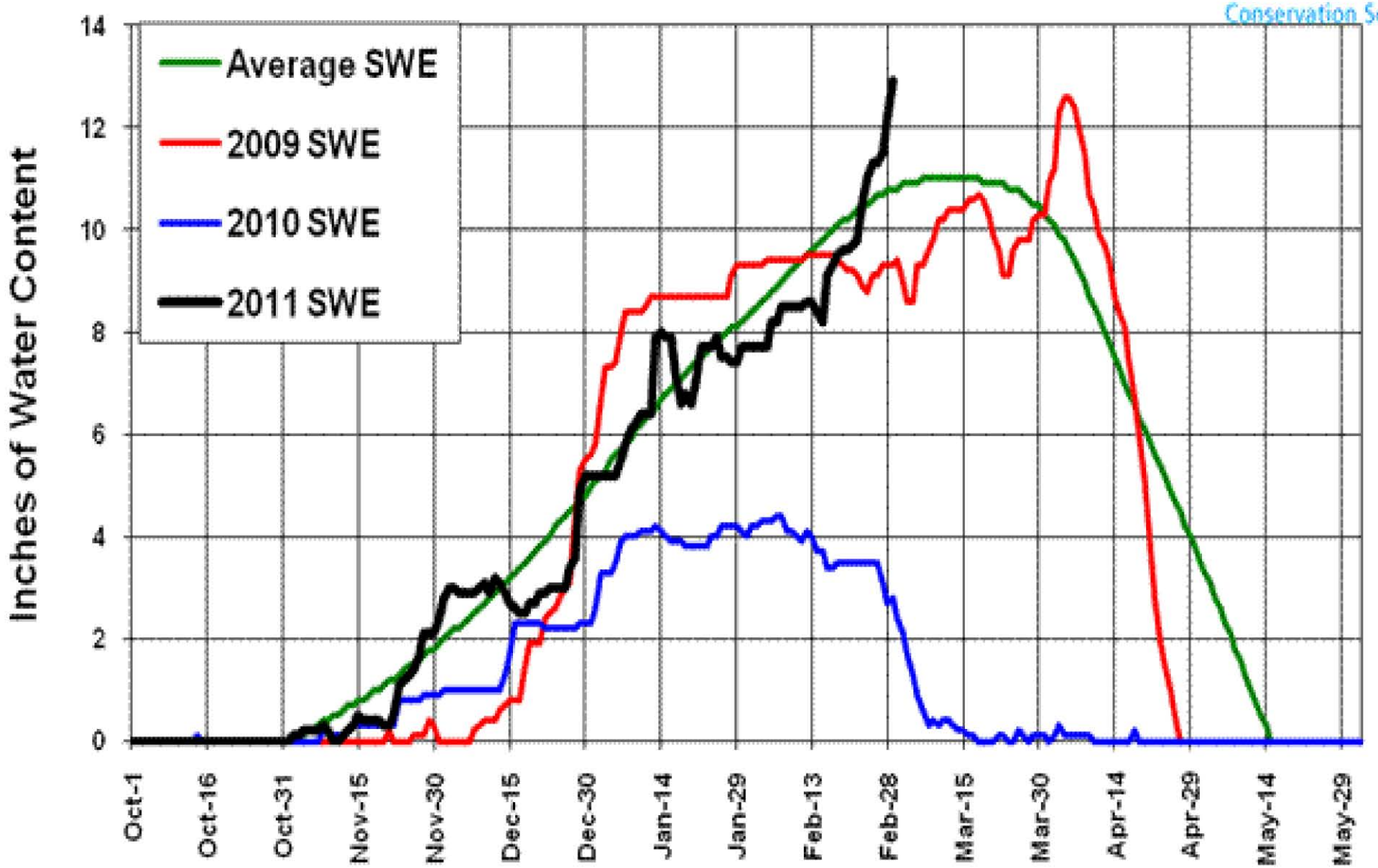




Update with current plot

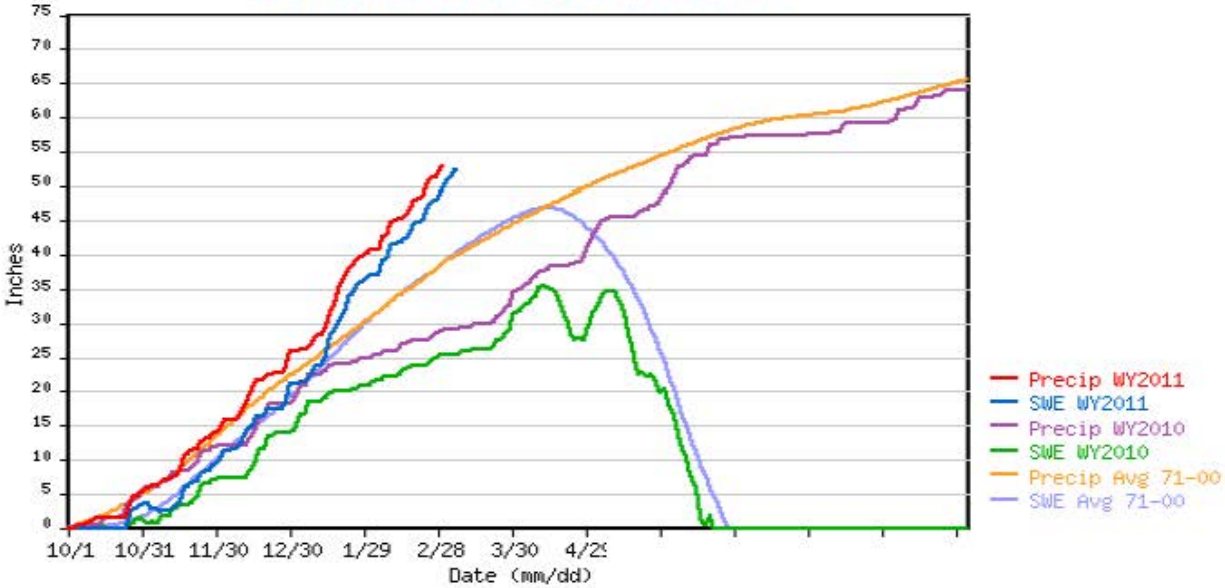


Sherwin SNOTEL El. 3200
Snow Water Equivalent



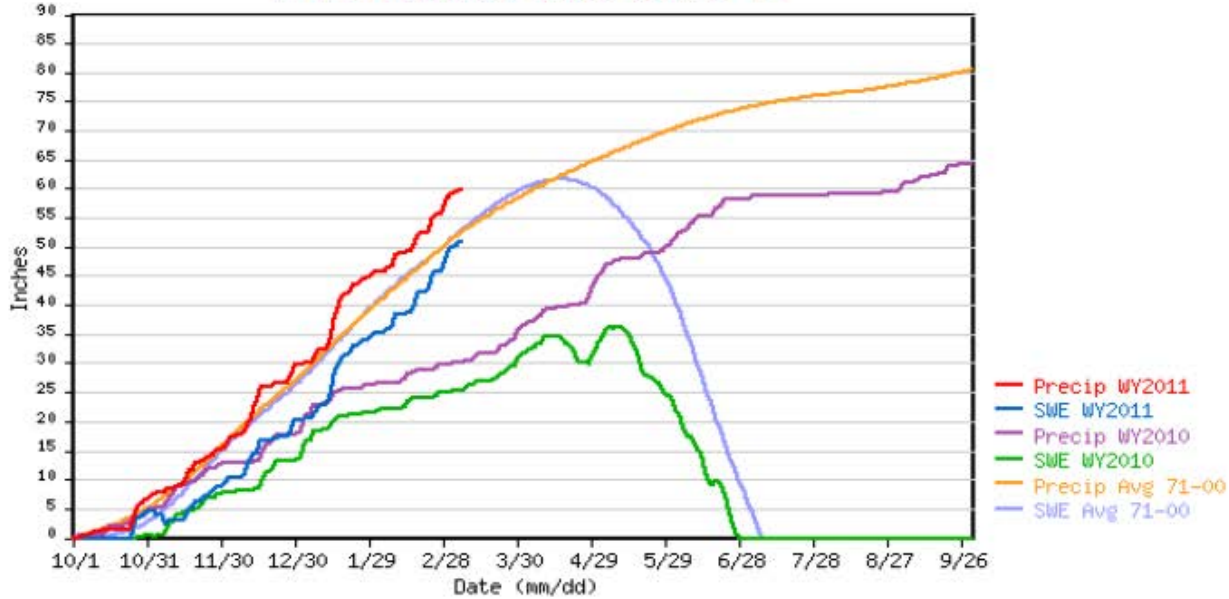
CRATER MEADOWS SNOTEL as of 03/07/2011

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

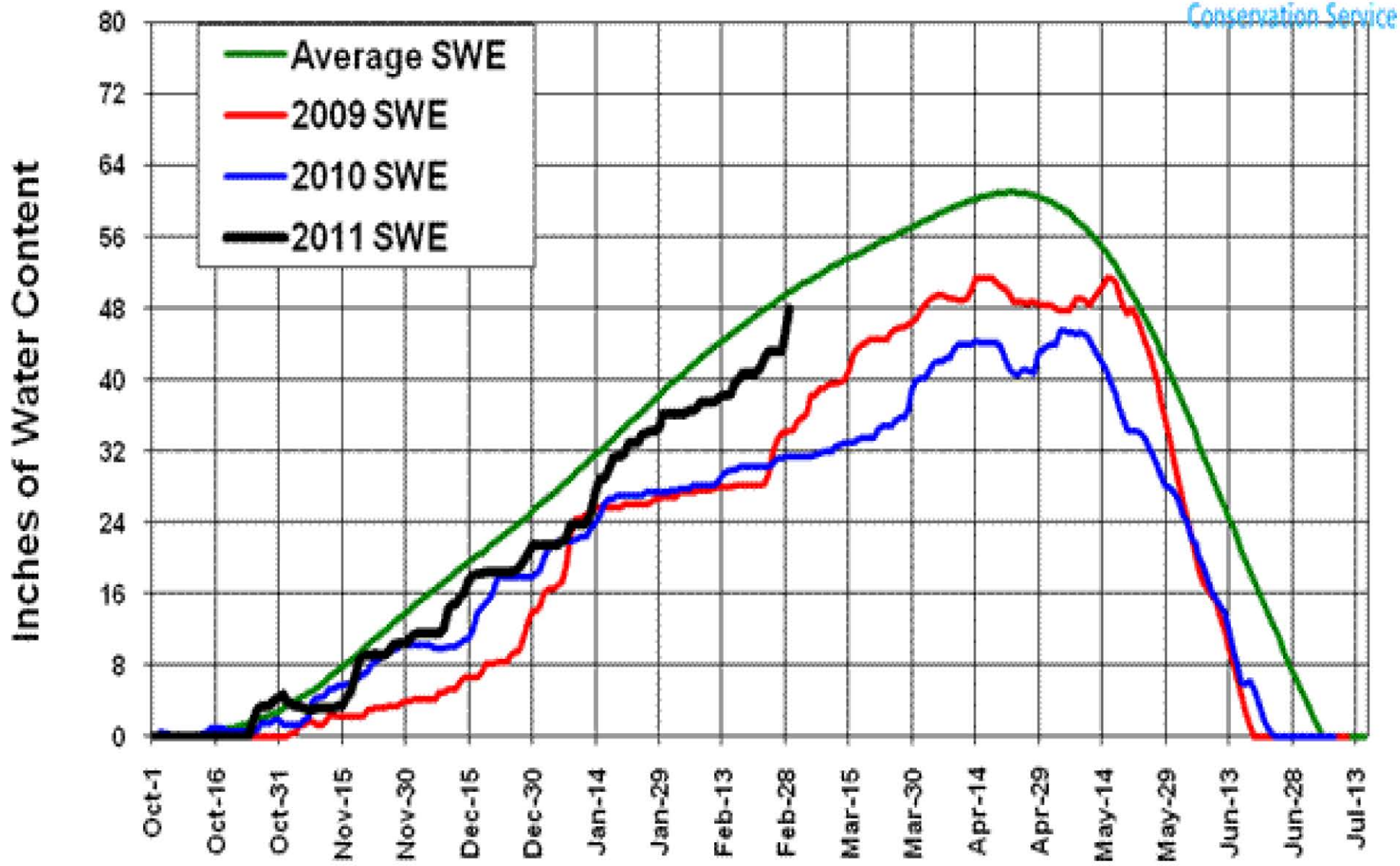


LOST LAKE SNOTEL as of 03/07/2011

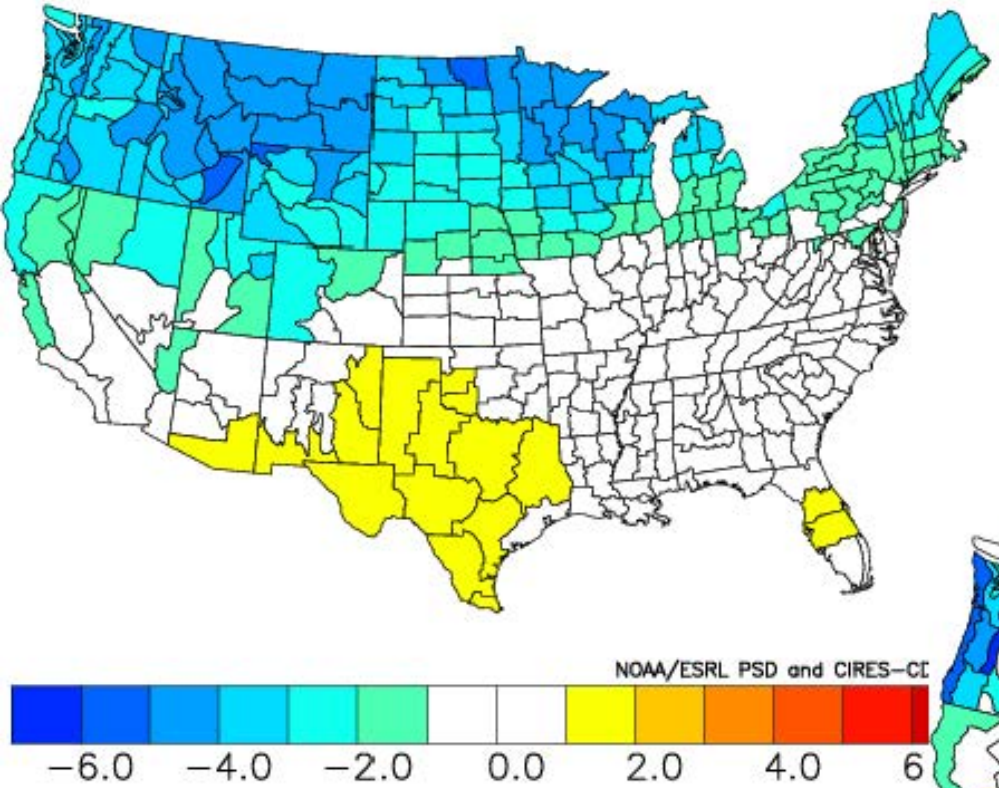
*** Provisional Data, Subject to Change ***



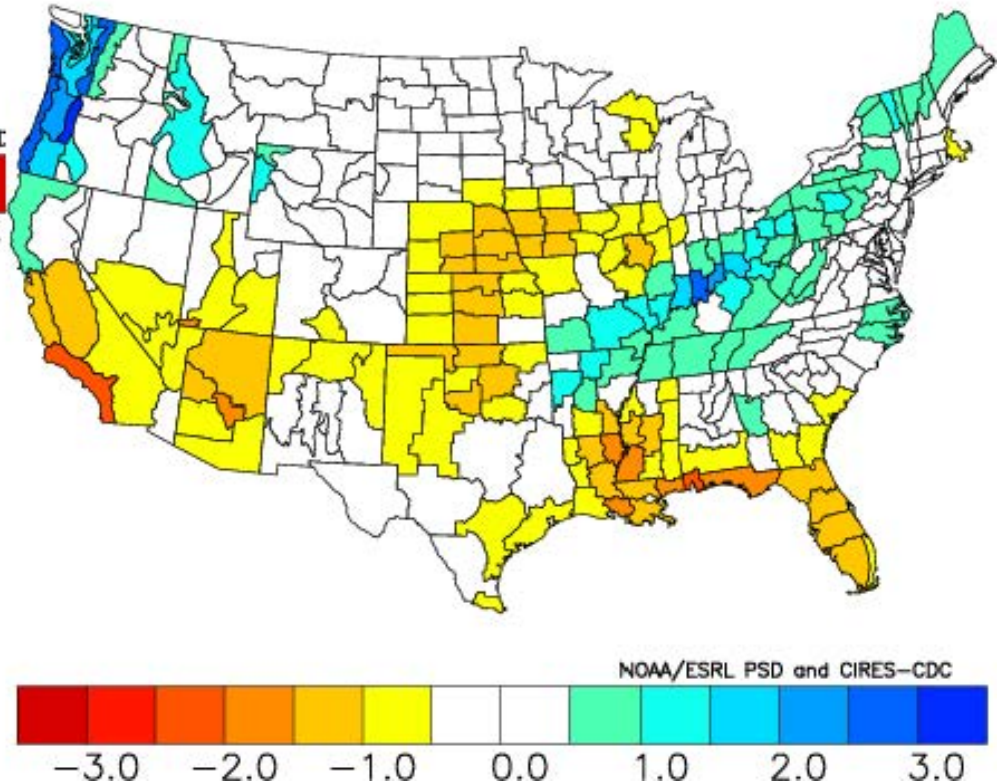
Bear Mountain SNOTEL El. 5400
Snow Water Equivalent



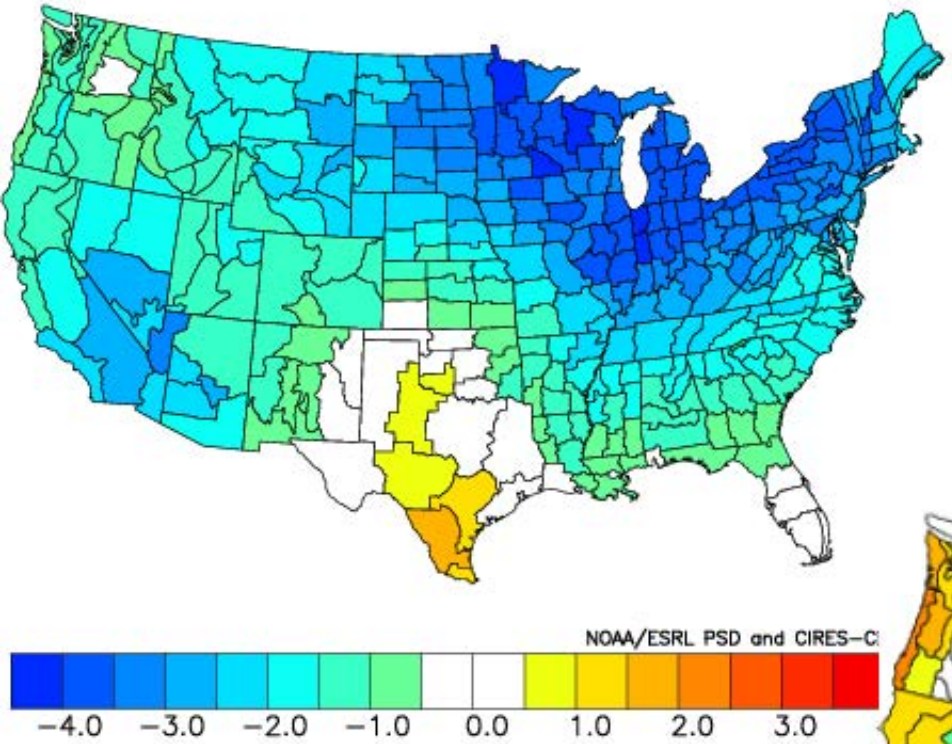
Composite Temperature Anomalies (F)
Mar 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



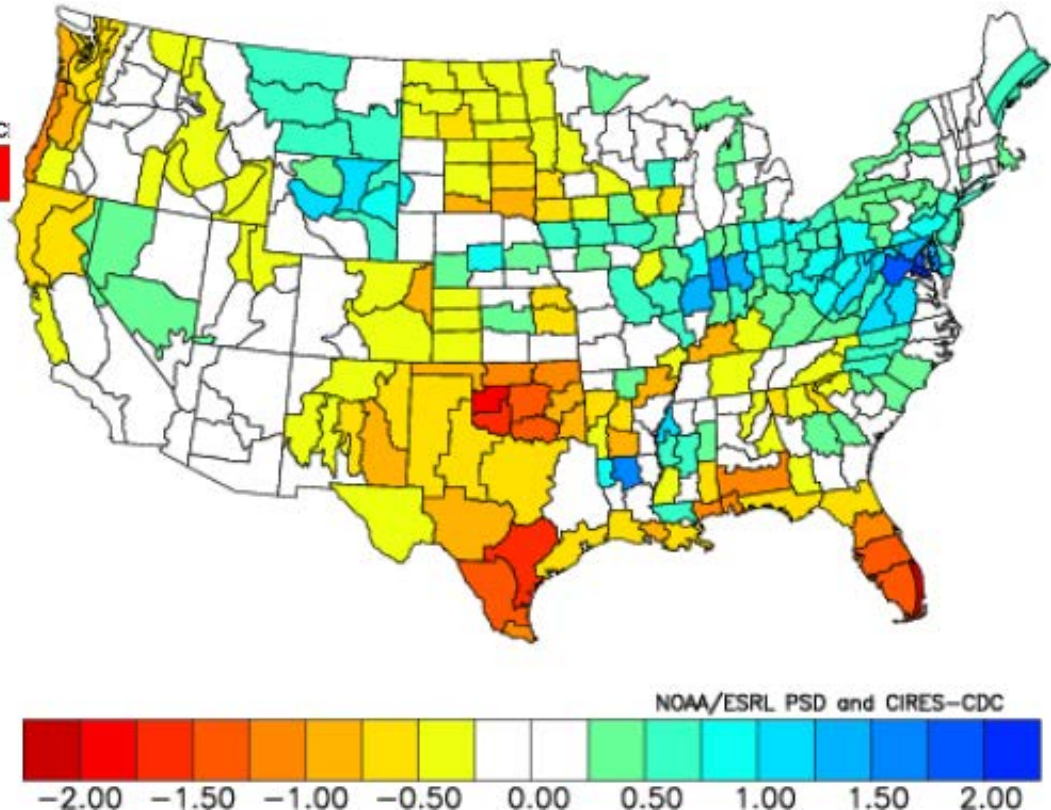
Composite Precipitation Anomalies (inches)
Mar 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



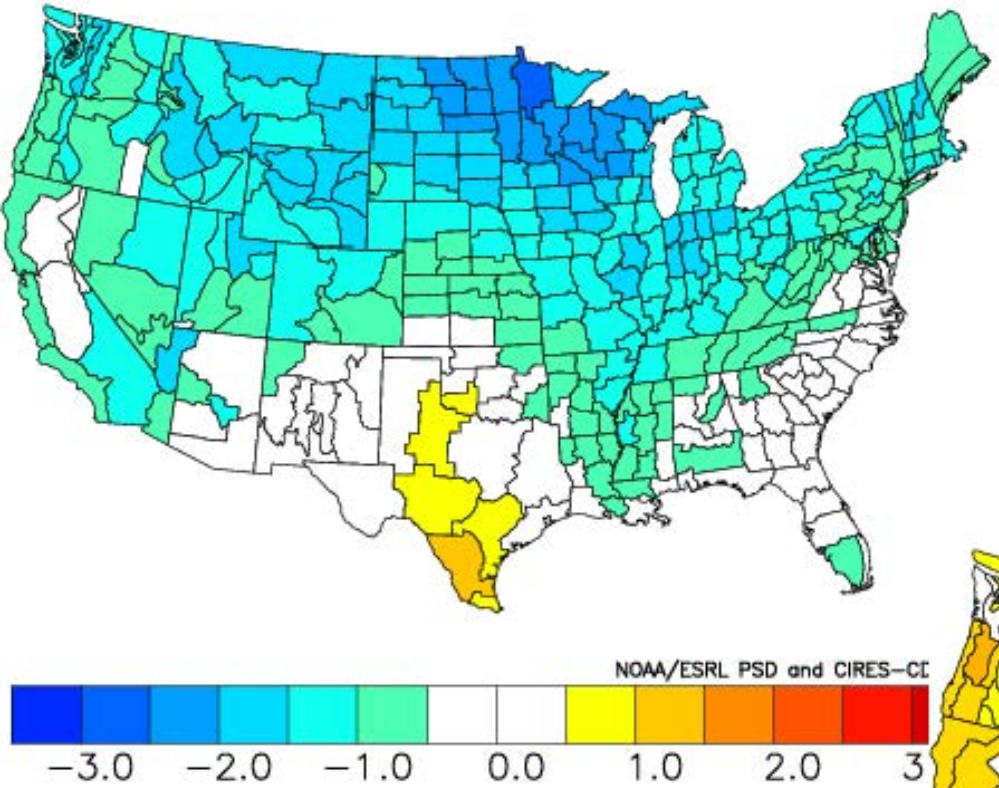
Composite Temperature Anomalies (F)
May 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



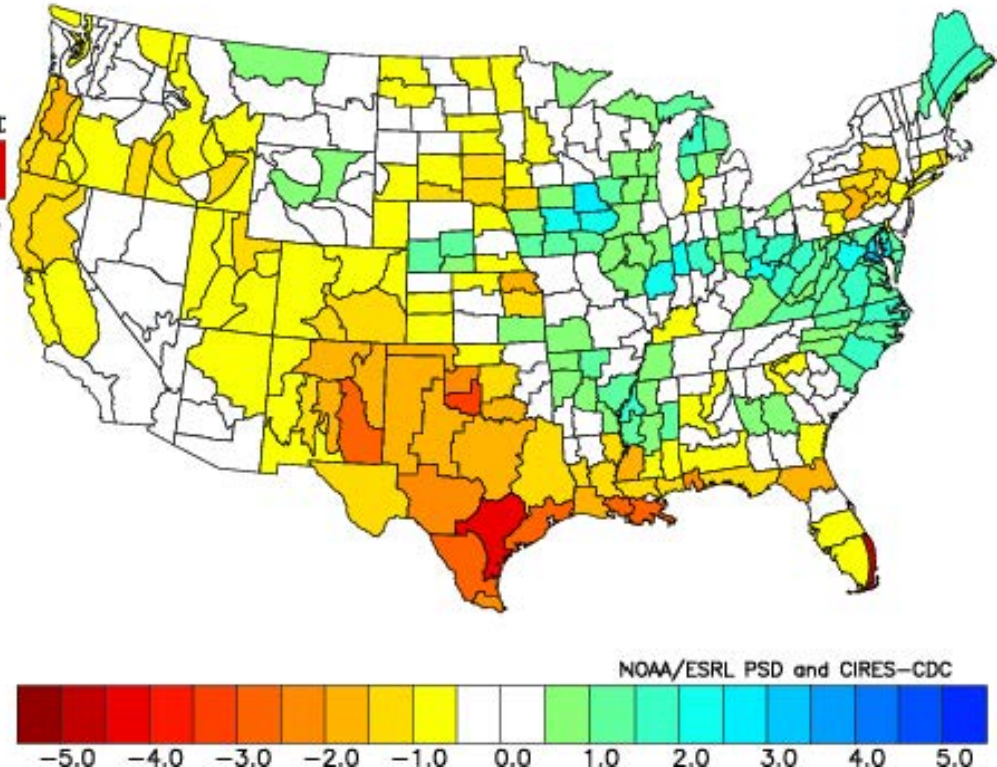
Composite Precipitation Anomalies (inches)
May 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



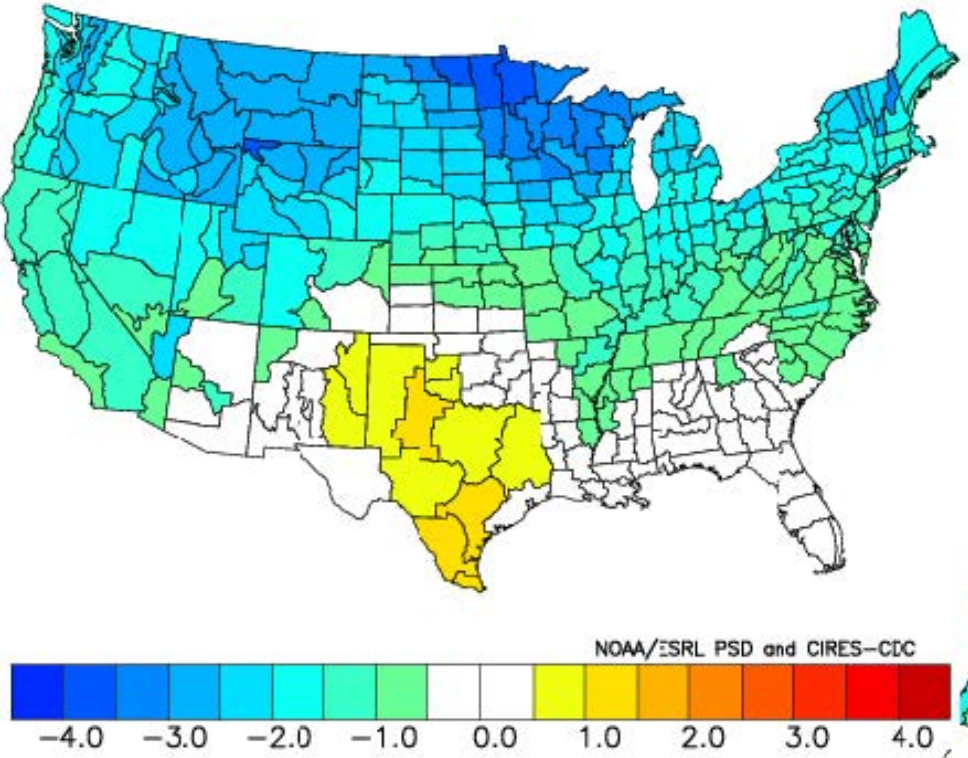
Composite Temperature Anomalies (F)
Apr to Jun 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



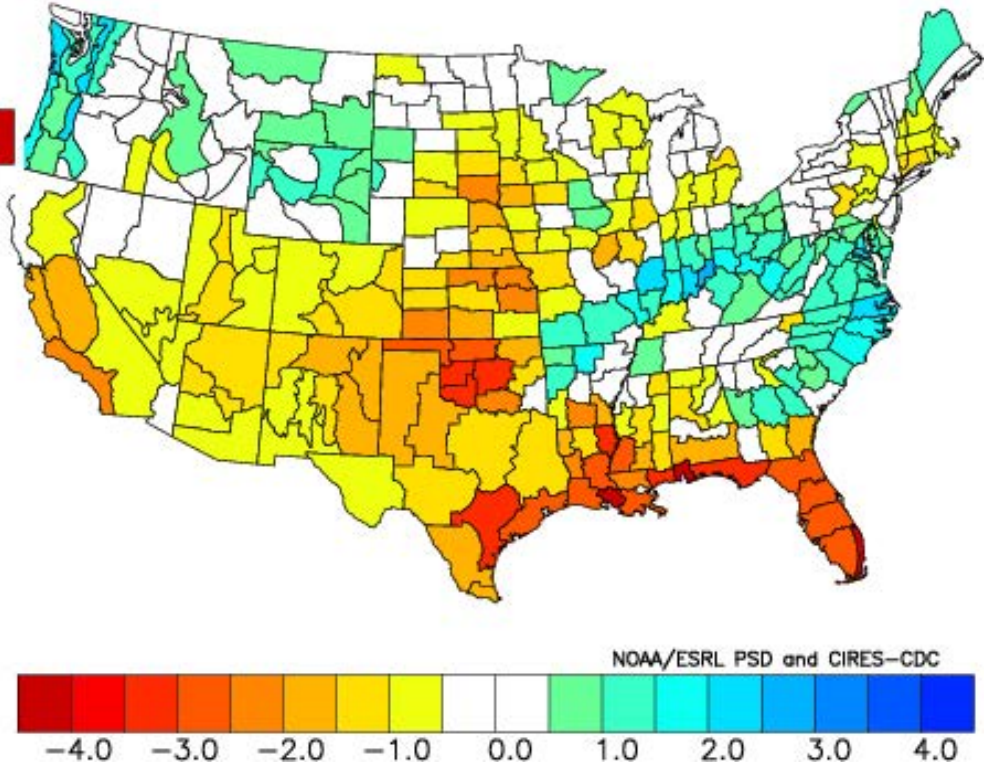
Composite Precipitation Anomalies (inches)
Apr to Jun 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



Composite Temperature Anomalies (F)
Mar to May 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



Composite Precipitation Anomalies (inches)
Mar to May 1917,1971,1974,1989,2008
Versus 1971–2000 Longterm Average



Snake River Station SNOTEL Site

Snake River Station SNOTEL Site
with a flat pillow
03/01/2011