Natural Resources Conservation Service

Idaho Water Supply Outlook Report
February 1, 2016

IDWR
State Water Supply Meeting

February 12, 2016

Ron Abramovich
Water Supply Specialist
Snow Survey
Boise, Idaho

USDA

NRCS Natural Resources Conservation Service

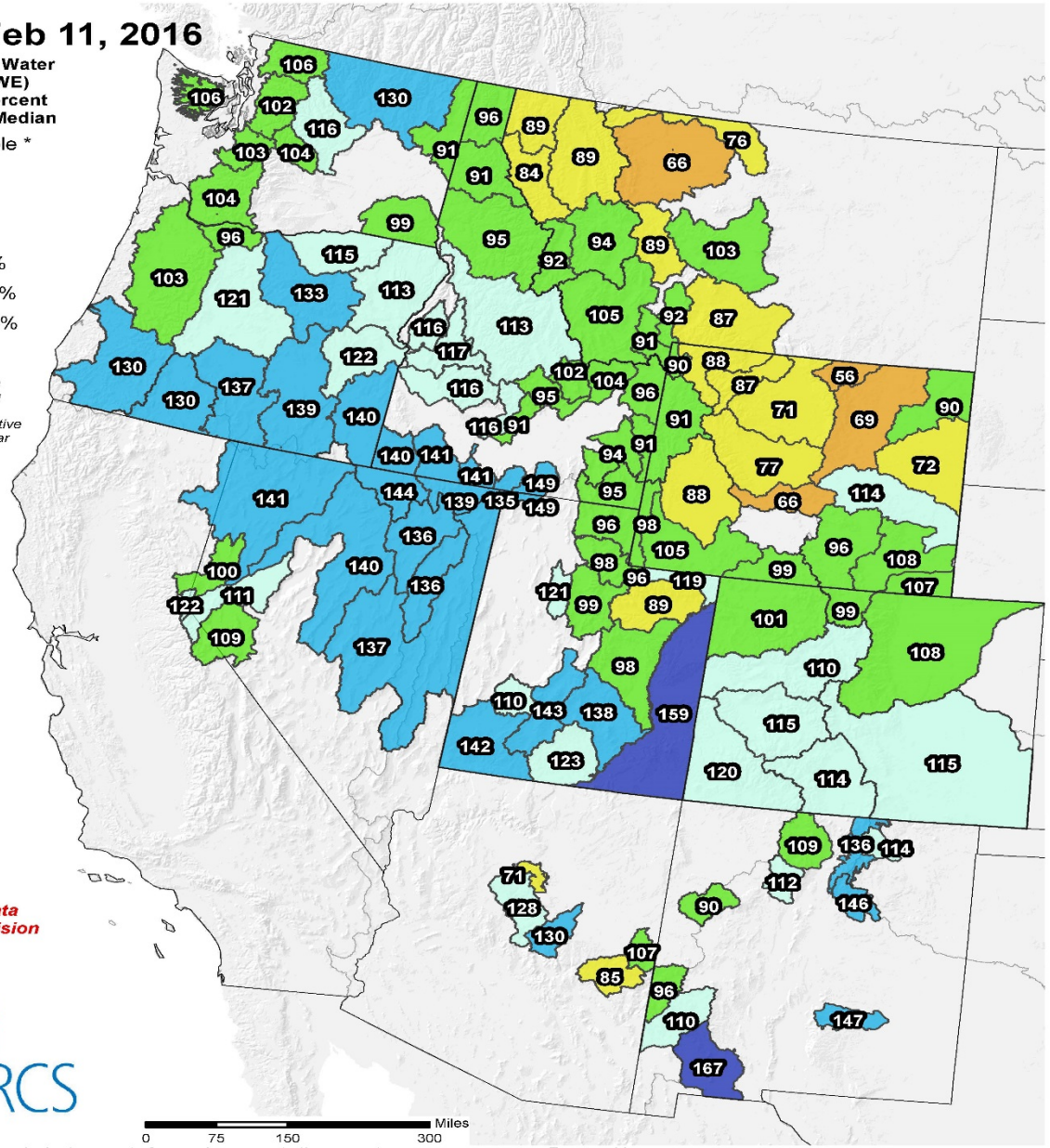
Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Feb 11, 2016

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

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >= 150%

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



Provisional data subject to revision

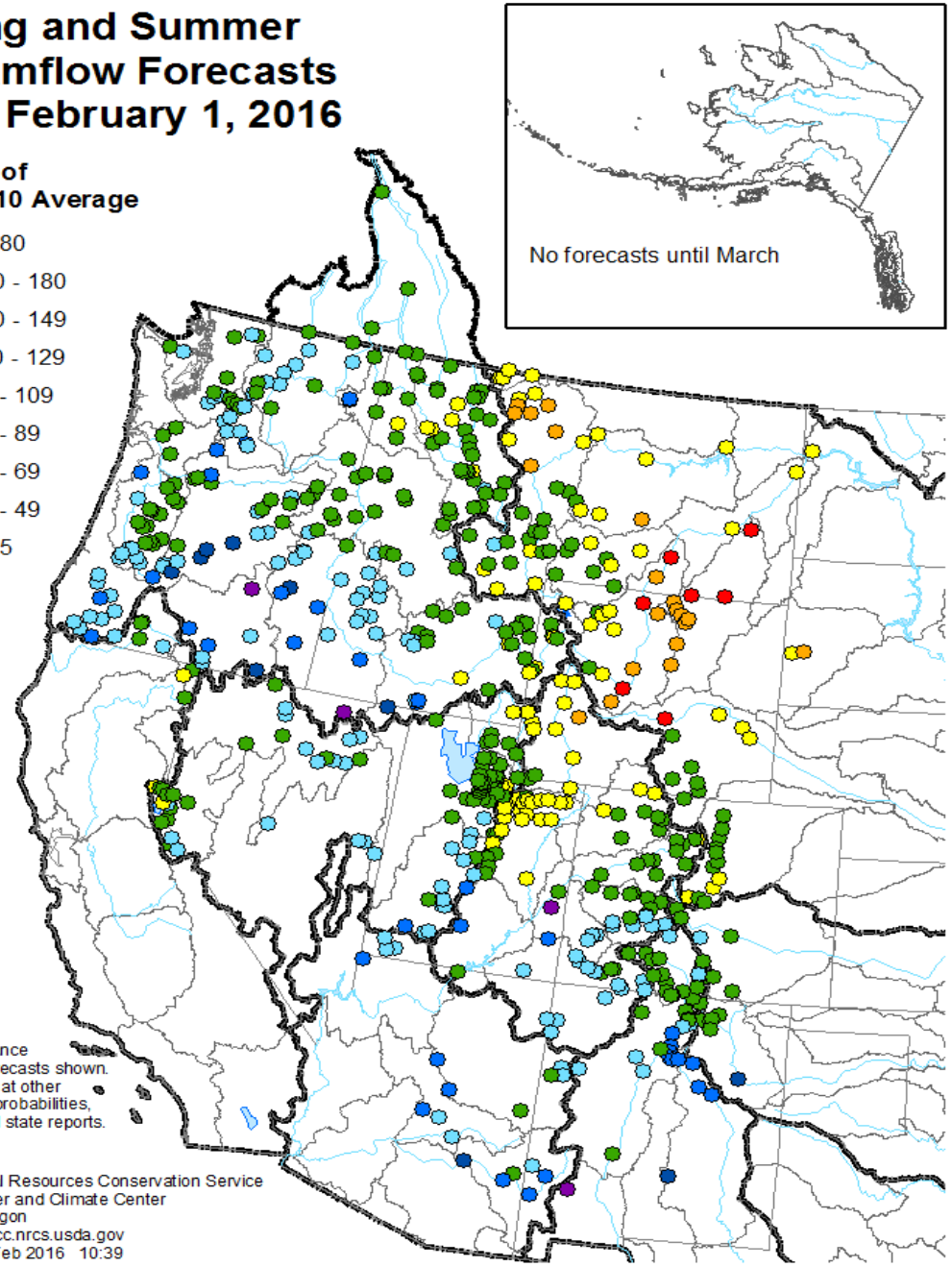
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

Spring and Summer Streamflow Forecasts as of February 1, 2016

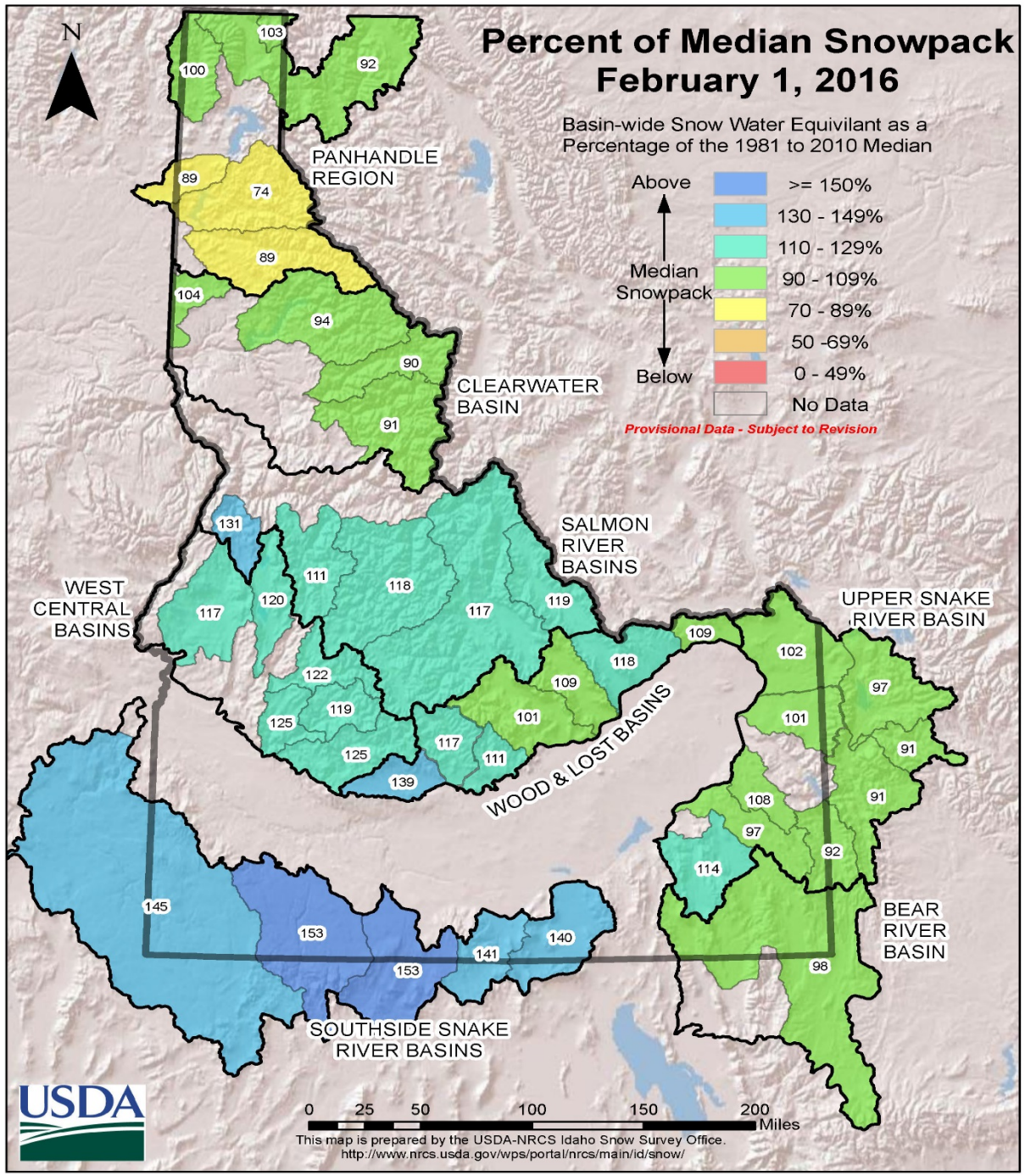
Percent of 1981-2010 Average

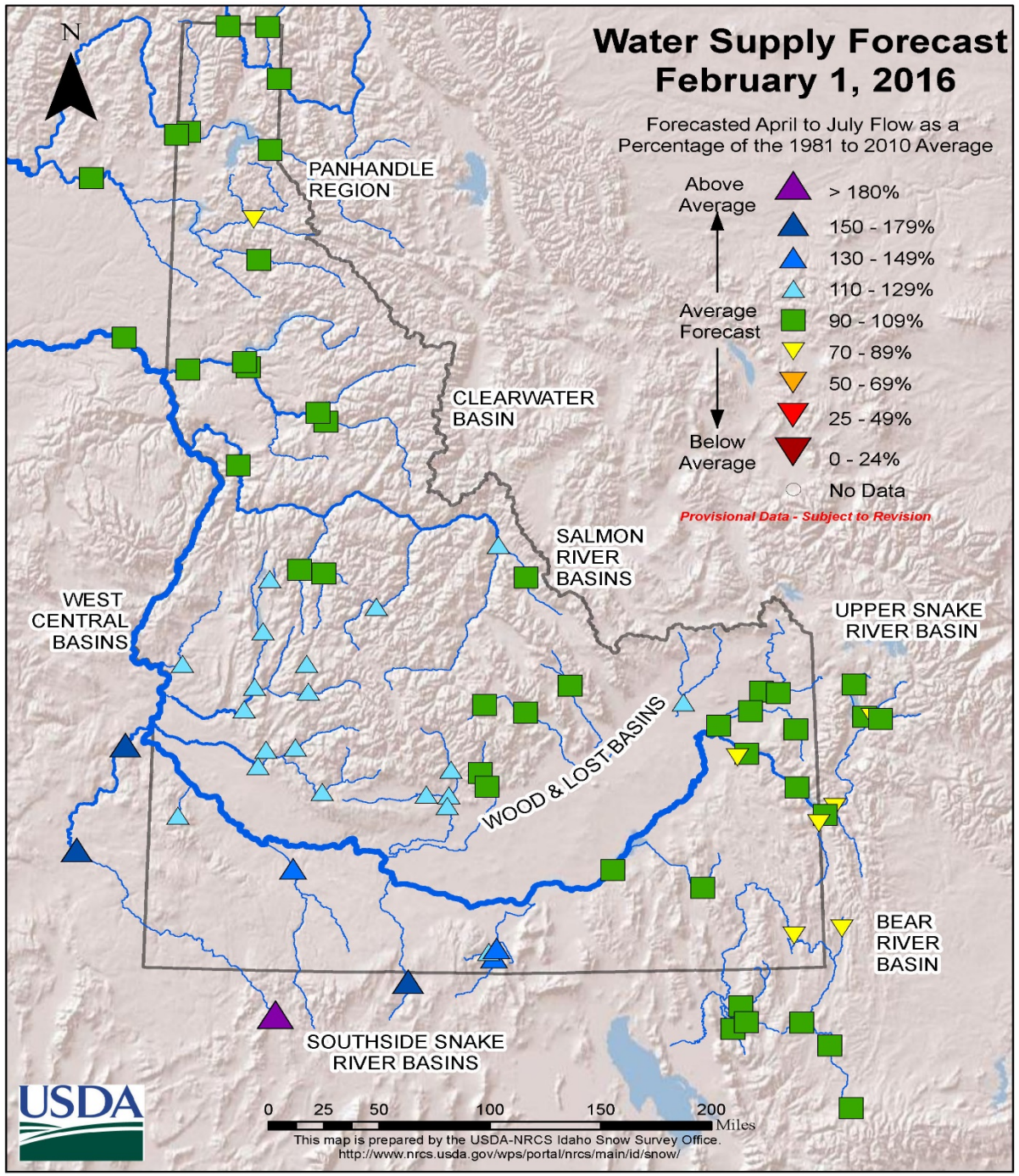
- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25



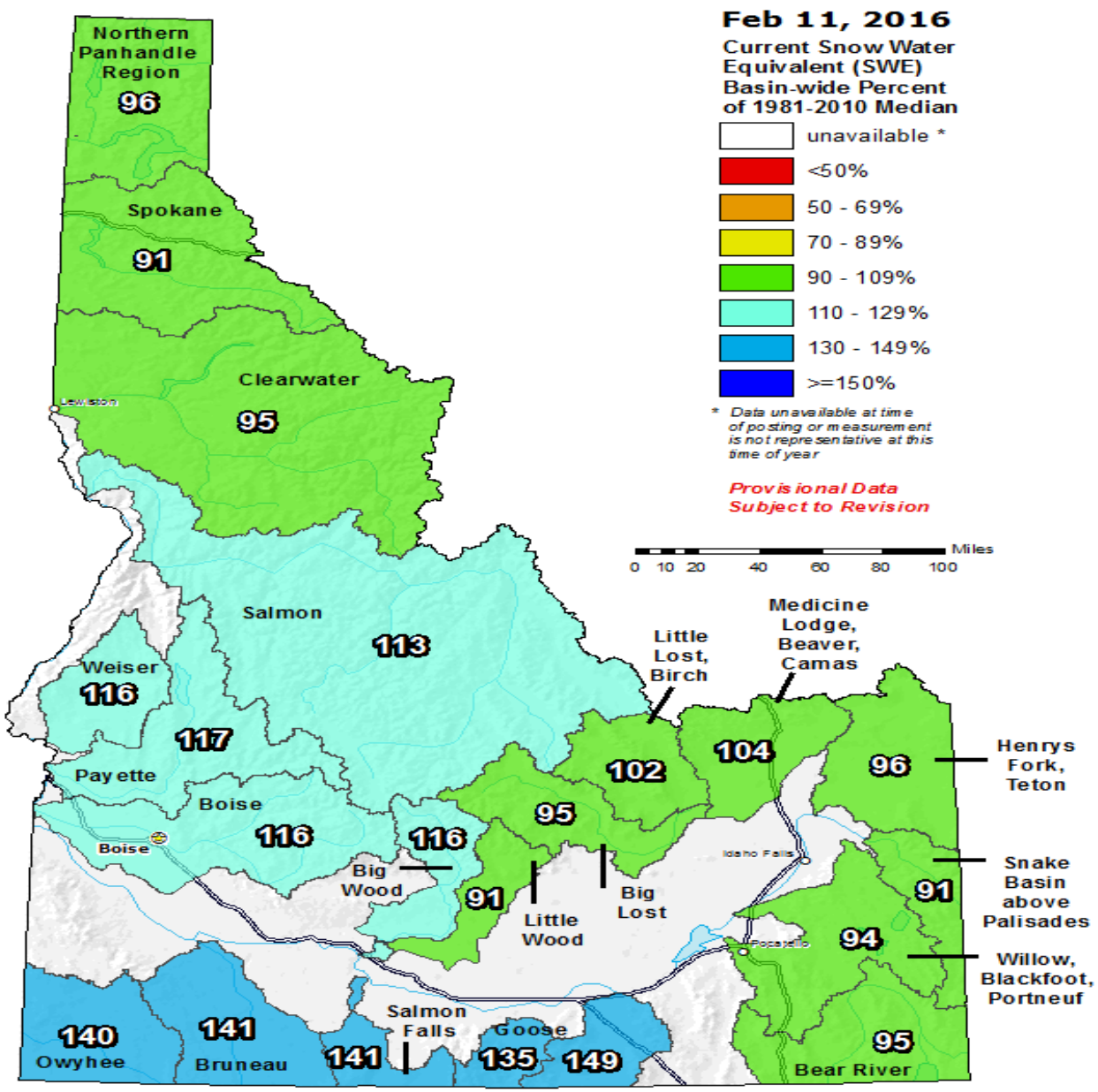
50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

Prepared by:
USDA Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov
Created: 4 Feb 2016 10:39


Percent of Median Snowpack
February 1, 2016
Basin-wide Snow Water Equivilant as a Percentage of the 1981 to 2010 Median
Above
Median Snowpack
Below
>= 150%
130 - 149%
110 - 129%
90 - 109%
70 - 89%
50 -69%
0 - 49%
No Data
Provisional Data - Subject to Revision
N
PANHANDLE REGION
CLEARWATER BASIN
SALMON RIVER BASINS
WEST CENTRAL BASINS
UPPER SNAKE RIVER BASIN
WOOD & LOST BASINS
BEAR RIVER BASIN
SOUTHSIDE SNAKE RIVER BASINS
103
100
92
89
74
89
104
94
90
91
131
111
118
117
120
117
119
109
118
122
109
101
119
125
125
117
111
139
102
97
101
91
108
91
97
92
114
145
153
153
141
140
98
USDA
0 25 50 100 150 200 Miles
This map is prepared by the USDA-NRCS Idaho Snow Survey Office.
http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/


Water Supply Forecast
February 1, 2016
Forecasted April to July Flow as a Percentage of the 1981 to 2010 Average
Above Average
Average Forecast
Below Average
> 180%
150 - 179%
130 - 149%
110 - 129%
90 - 109%
70 - 89%
50 - 69%
25 - 49%
0 - 24%
No Data
Provisional Data - Subject to Revision
N
PANHANDLE REGION
CLEARWATER BASIN
SALMON RIVER BASINS
WEST CENTRAL BASINS
UPPER SNAKE RIVER BASIN
WOOD & LOST BASINS
BEAR RIVER BASIN
SOUTHSIDE SNAKE RIVER BASINS
USDA
0 25 50 100 150 200 Miles
This map is prepared by the USDA-NRCS Idaho Snow Survey Office.
http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/

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



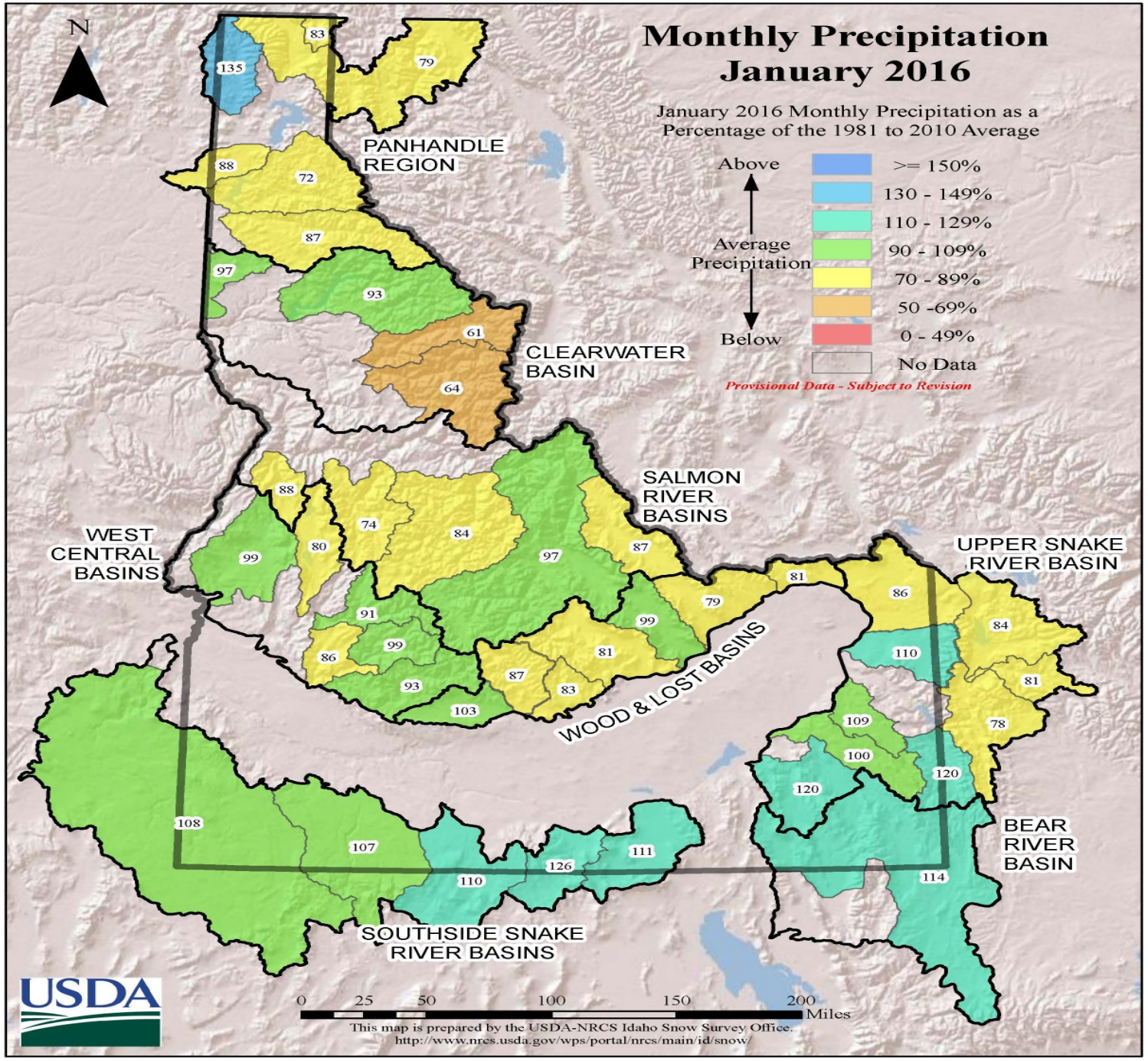
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon

Today's snowpacks are only 61-65 % of seasonal peaks in Little Wood, Henrys Fork, Upper Snake & Bear River

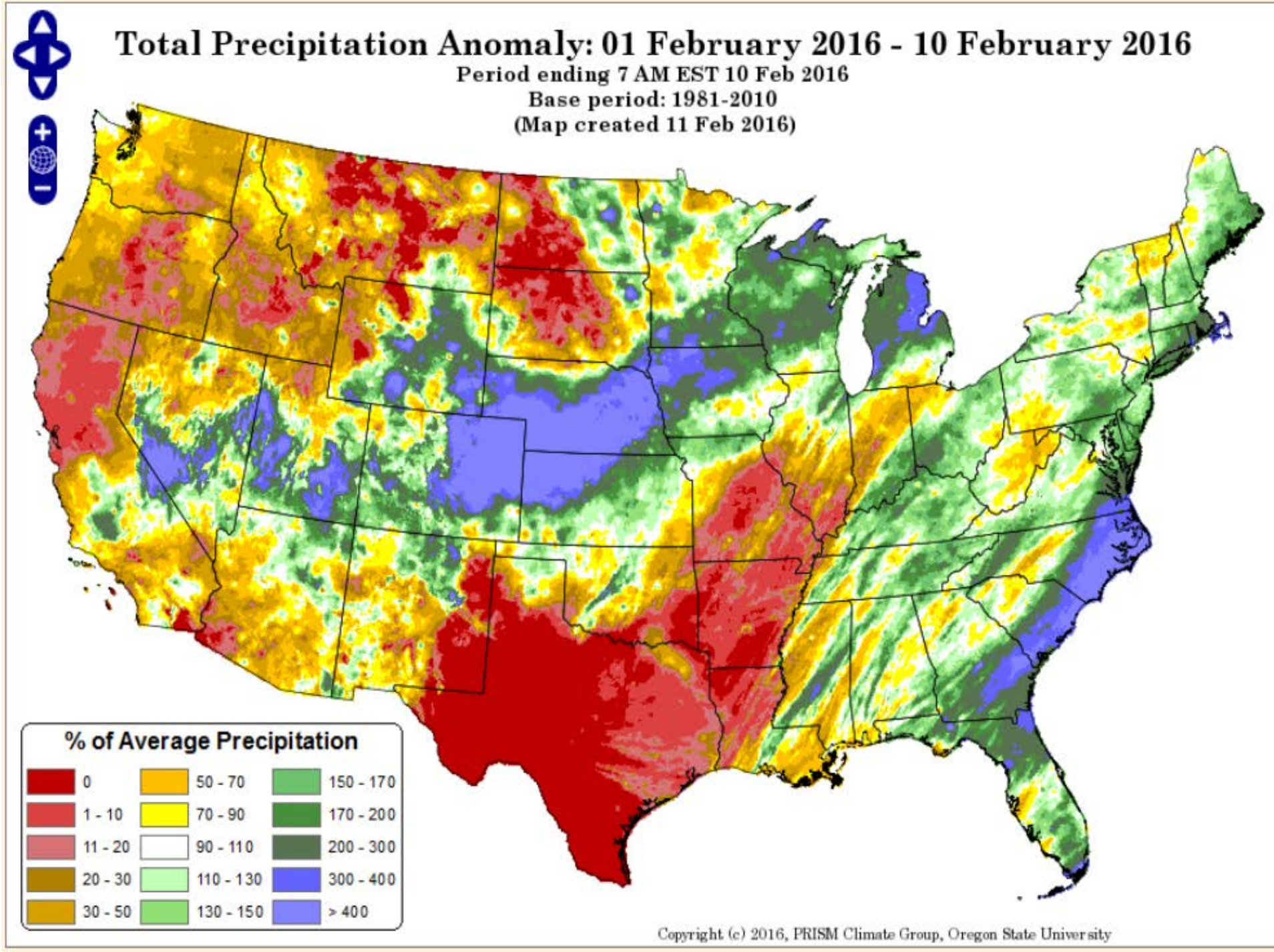
But are 96-102% of seasonal peaks across southern Idaho.

Pockets of below and above normal precipitation fell in January.



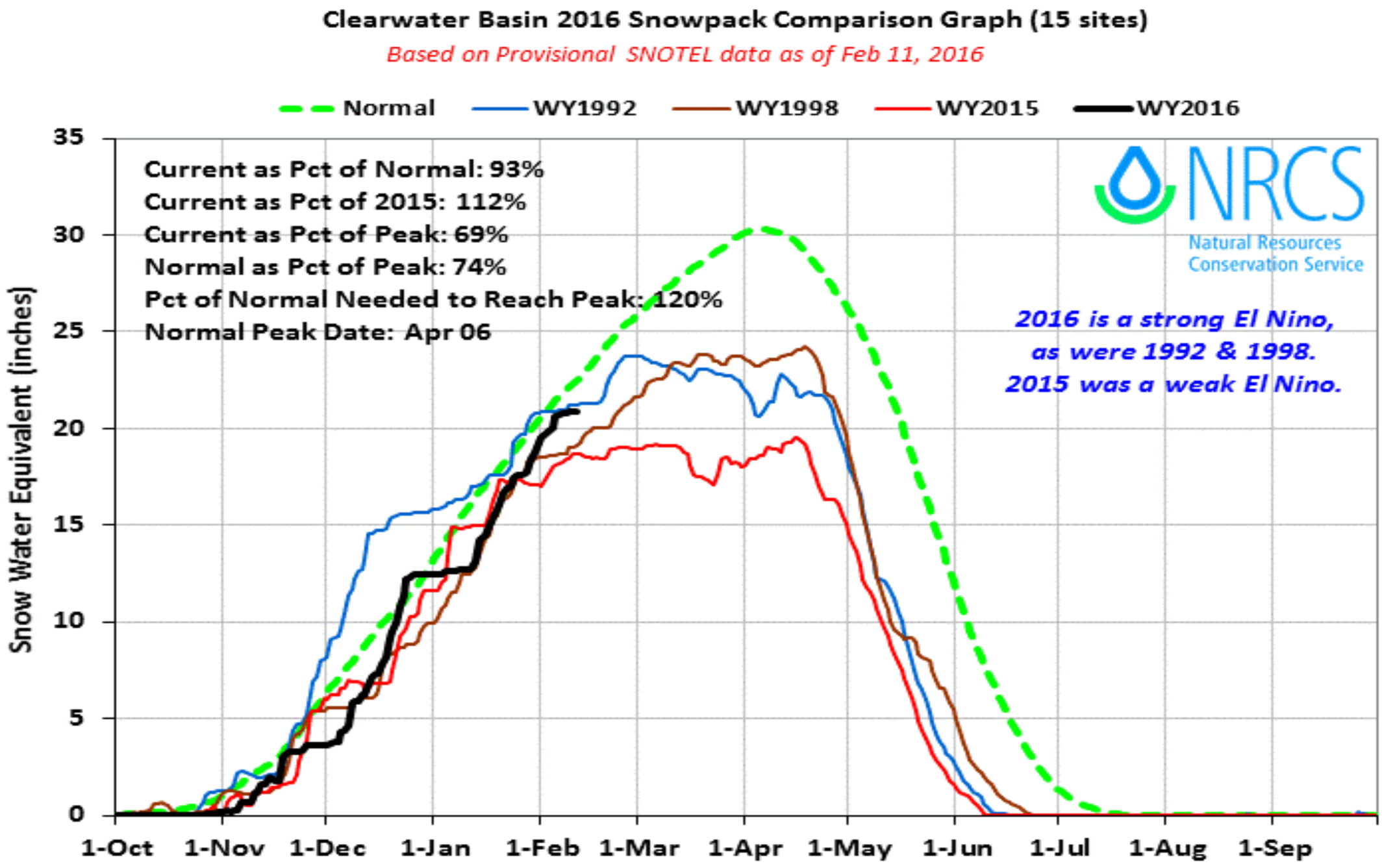
With minimal SNOTEL precipitation falling February 1 - 11

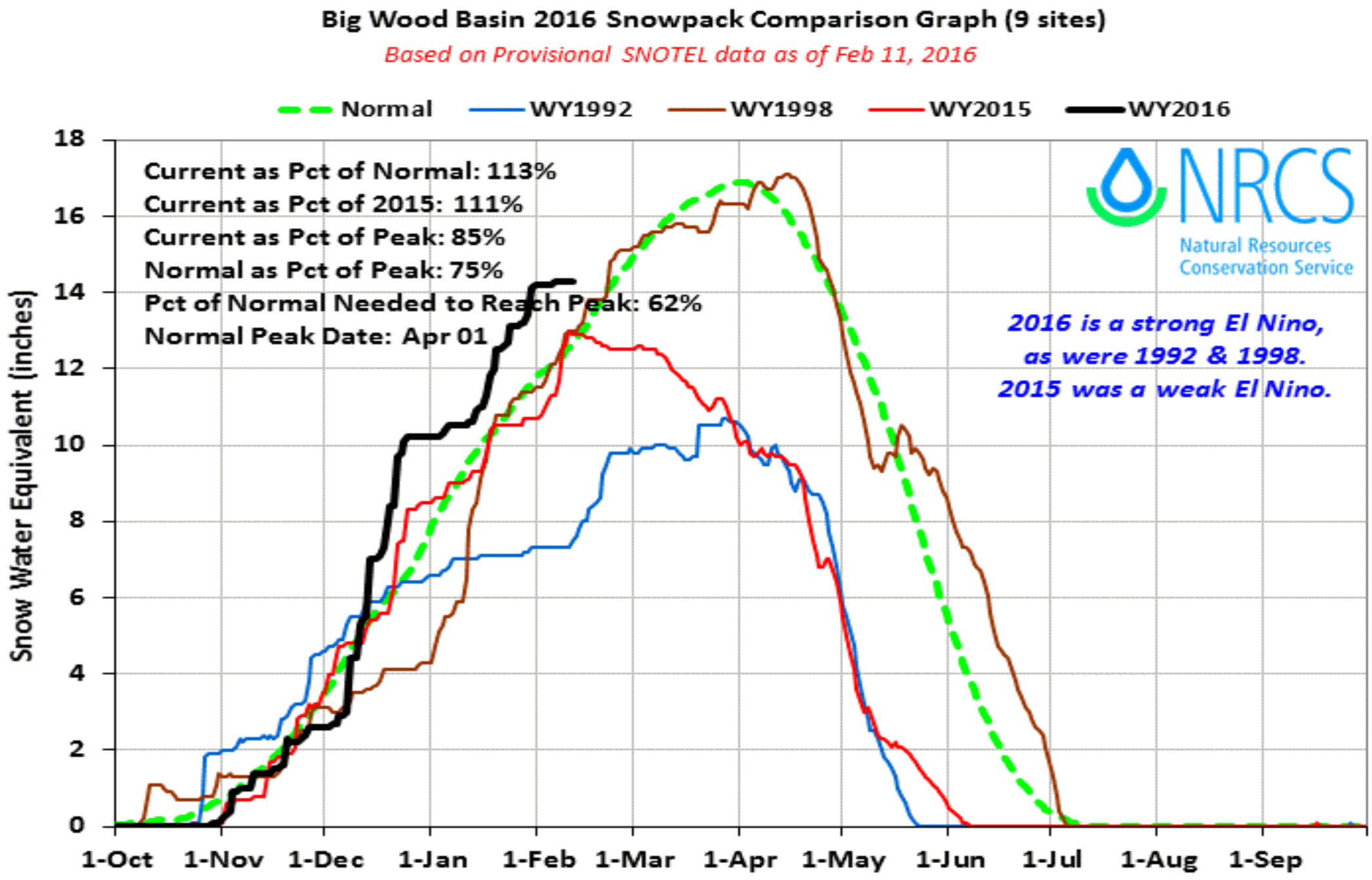
February precipitation is only 2 - 27% of the normal month total so far

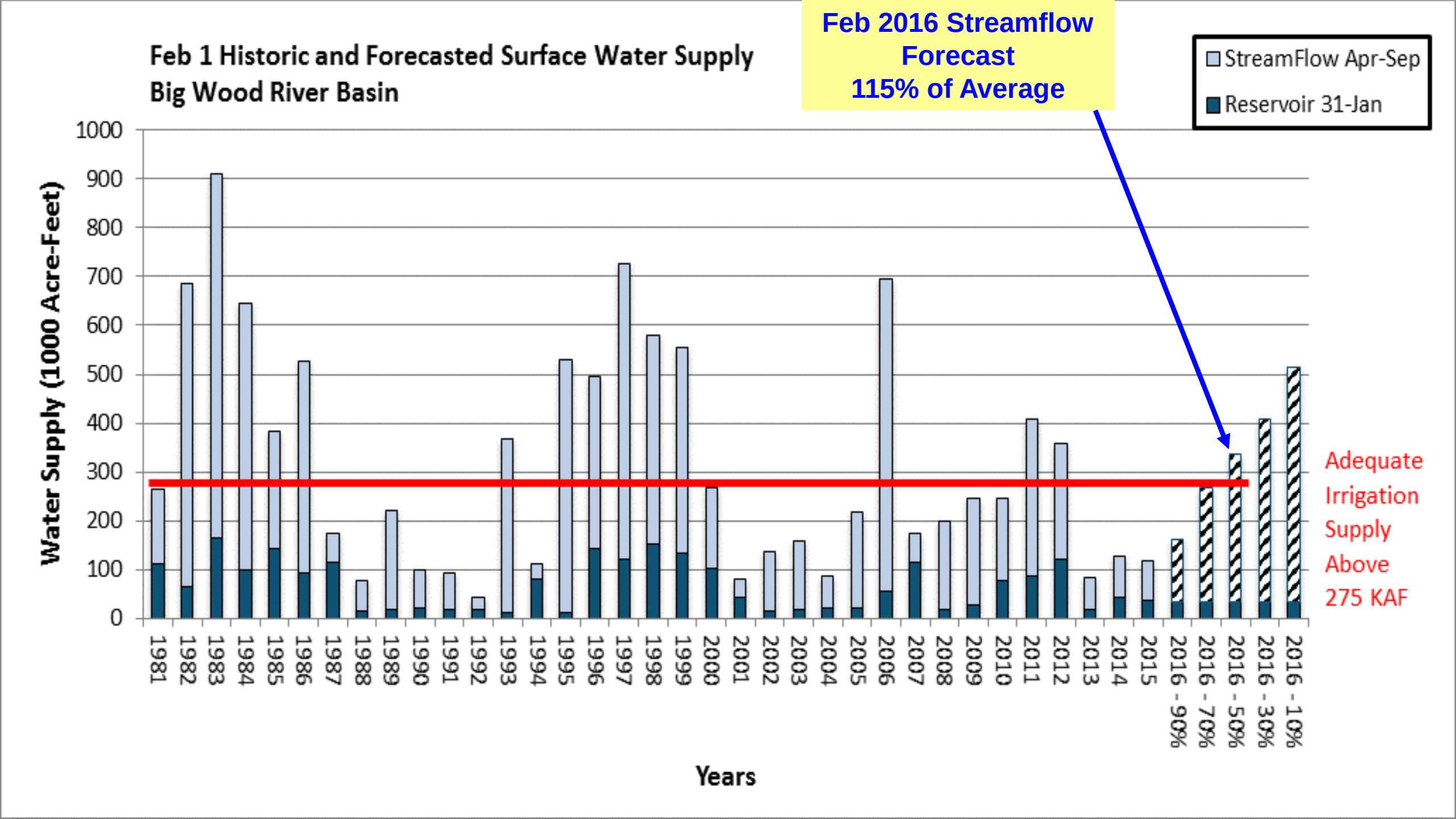


IDAHO SURFACE WATER SUPPLY INDEX (SWSI) February 1, 2016

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
Spokane	-0.6	2013	NA
Clearwater	0.3	2000	NA
Salmon	0.3	2010	NA
Weiser	1.5	2008	NA
Payette	0.8	2008	NA
Boise	1.3	1995	-1.4
Big Wood	0.8	2012	0.7
Little Wood	1.0	2012	-1.2
Big Lost	0.8	2010	0.7
Little Lost	0.8	2006	1.4
Teton	0.3	2010	-3.9
Henrys Fork	-0.3	2012	-3.6
Snake (Heise)	-0.3	2010	-1.6
Oakley	1.5	2007	0.5
Salmon Falls	1.7	1996	-0.7
Bruneau	2.2	2005	NA
Owyhee	1.3	1993	-3.0
Bear River	-0.8	2010	-3.7

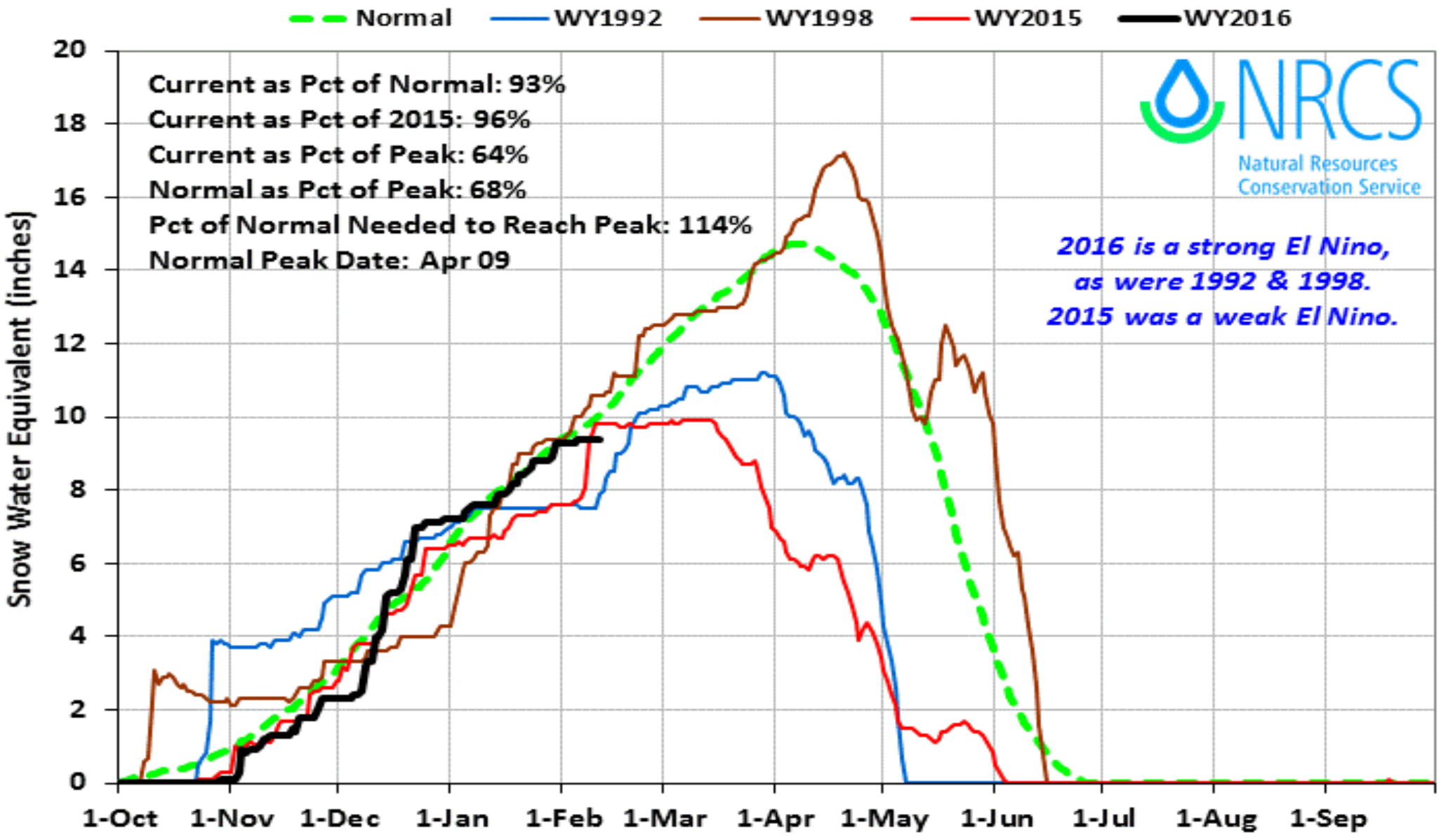

Clearwater Basin 2016 Snowpack Comparison Graph (15 sites)
Based on Provisional SNOTEL data as of Feb 11, 2016
Normal
WY1992
WY1998
WY2015
WY2016
Current as Pct of Normal: 93%
Current as Pct of 2015: 112%
Current as Pct of Peak: 69%
Normal as Pct of Peak: 74%
Pct of Normal Needed to Reach Peak: 120%
Normal Peak Date: Apr 06
2016 is a strong El Nino,
as were 1992 & 1998.
2015 was a weak El Nino.
NRCS
Natural Resources
Conservation Service
Snow Water Equivalent (inches)
35
30
25
20
15
10
5
0
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep

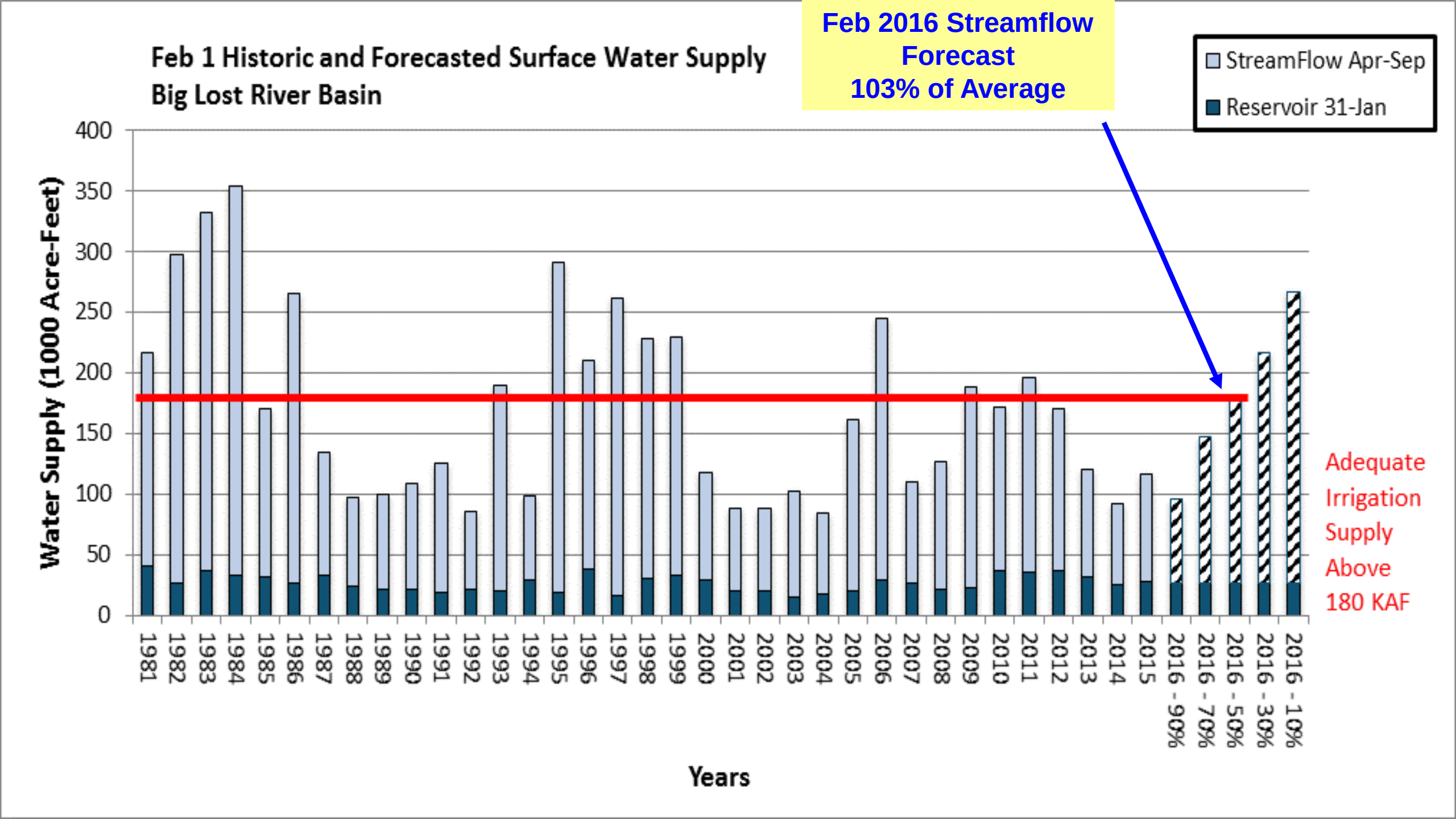

Big Wood Basin 2016 Snowpack Comparison Graph (9 sites)
Based on Provisional SNOTEL data as of Feb 11, 2016
Normal
WY1992
WY1998
WY2015
WY2016
Current as Pct of Normal: 113%
Current as Pct of 2015: 111%
Current as Pct of Peak: 85%
Normal as Pct of Peak: 75%
Pct of Normal Needed to Reach Peak: 62%
Normal Peak Date: Apr 01
NRCS
Natural Resources Conservation Service
2016 is a strong El Nino, as were 1992 & 1998. 2015 was a weak El Nino.
Snow Water Equivalent (inches)
0
2
4
6
8
10
12
14
16
18
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep

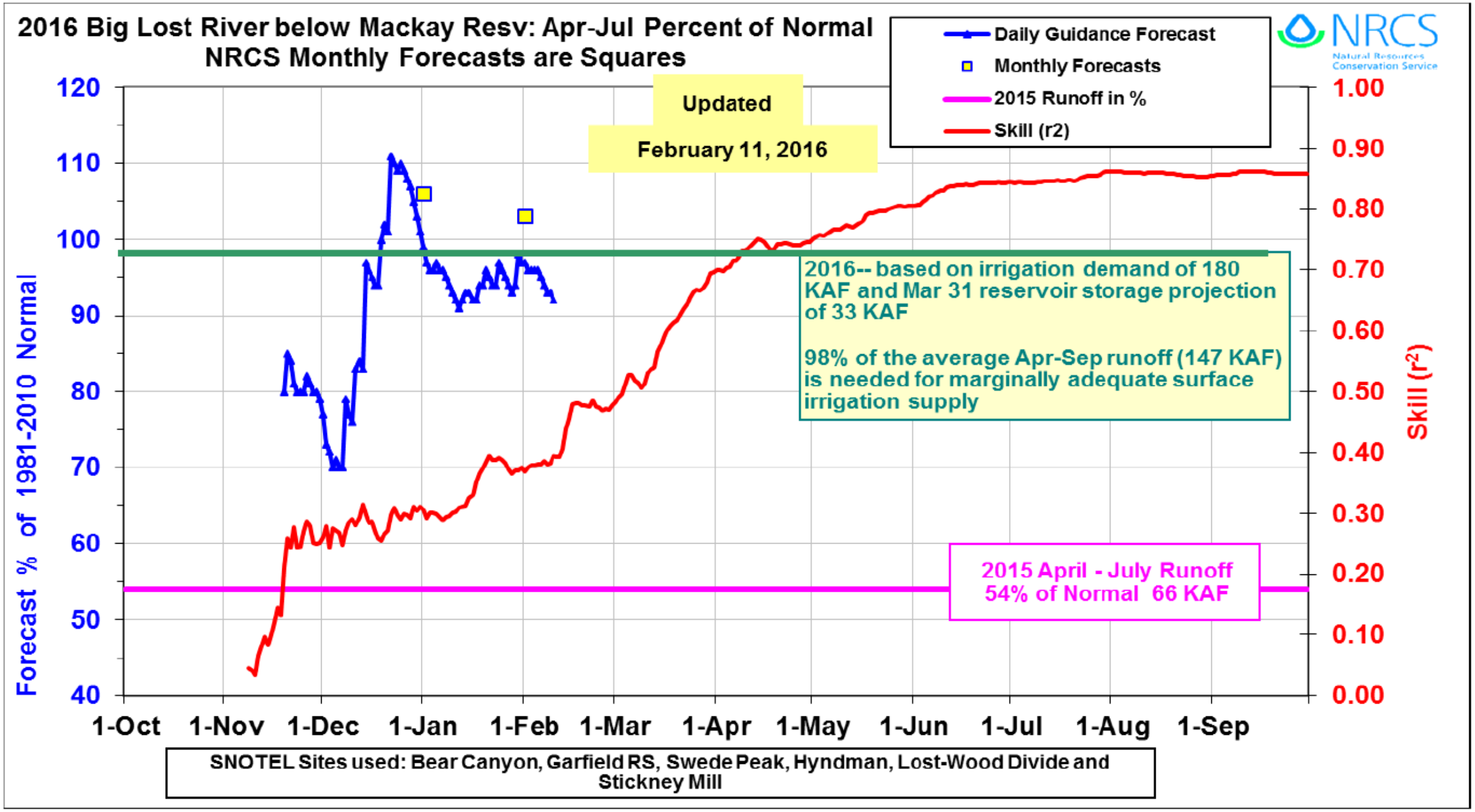

Feb 1 Historic and Forecasted Surface Water Supply
Big Wood River Basin
Feb 2016 Streamflow Forecast 115% of Average
StreamFlow Apr-Sep
Reservoir 31-Jan
Water Supply (1000 Acre-Feet)
1000
900
800
700
600
500
400
300
200
100
0
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016 - 90%
2016 - 70%
2016 - 50%
2016 - 30%
2016 - 10%
Years
Adequate Irrigation Supply Above 275 KAF

Big Lost Basin 2016 Snowpack Comparison Graph (5 sites)

Based on Provisional SNOTEL data as of Feb 11, 2016

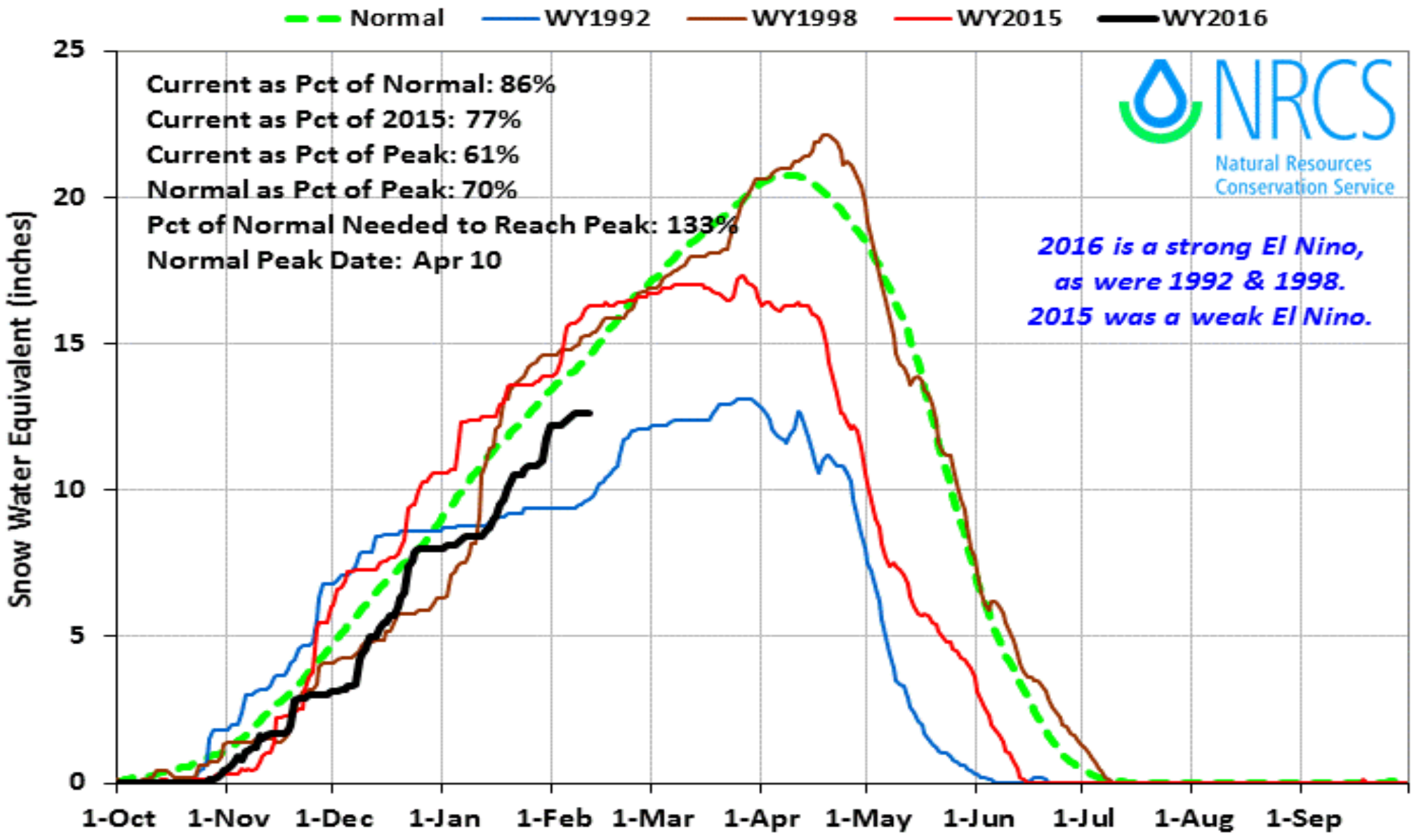


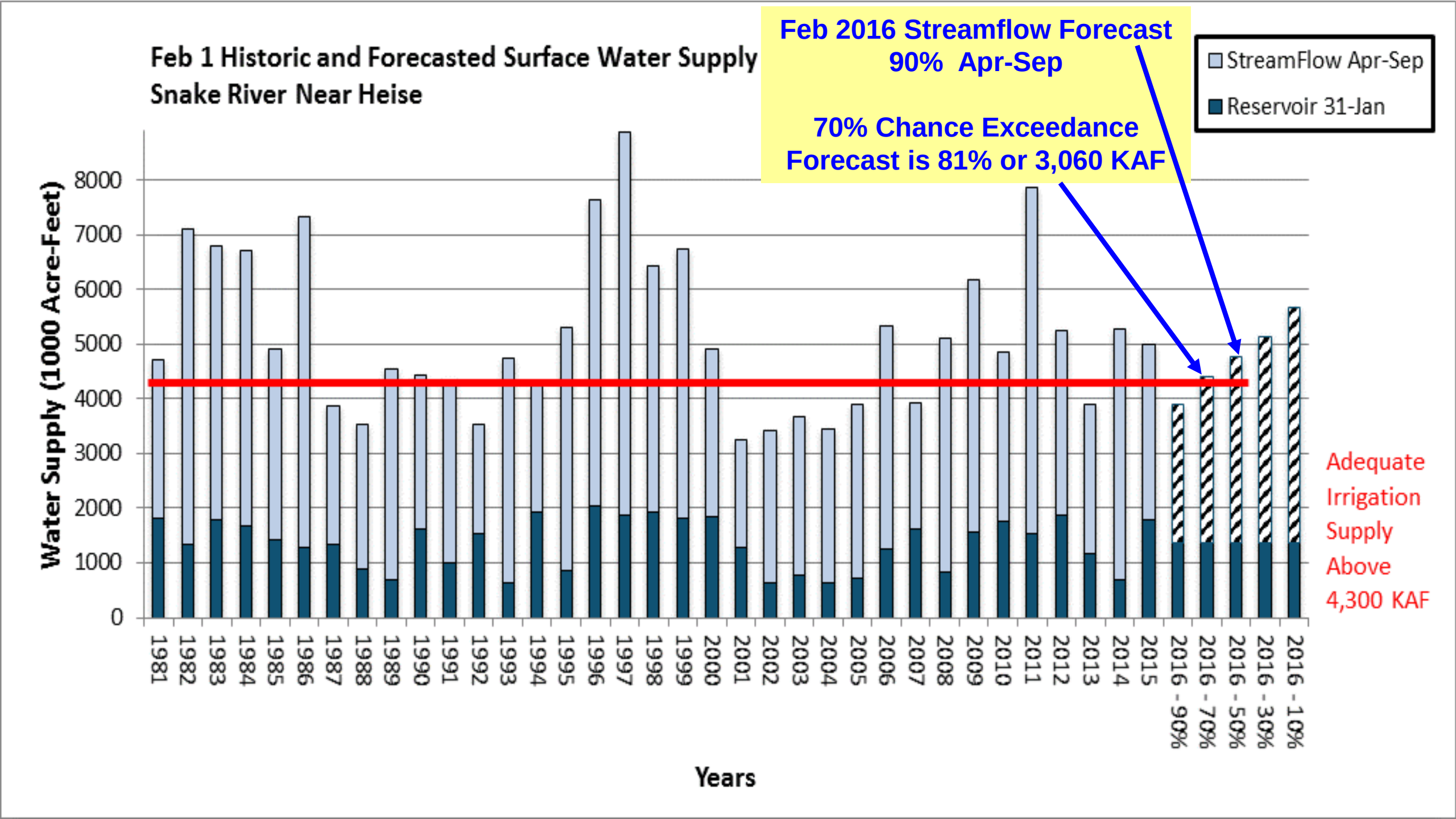

Feb 2016 Streamflow Forecast 103% of Average
Feb 1 Historic and Forecasted Surface Water Supply
Big Lost River Basin
StreamFlow Apr-Sep
Reservoir 31-Jan
Water Supply (1000 Acre-Feet)
400
350
300
250
200
150
100
50
0
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016 - 90%
2016 - 70%
2016 - 50%
2016 - 30%
2016 - 10%
Years
Adequate Irrigation Supply Above 180 KAF

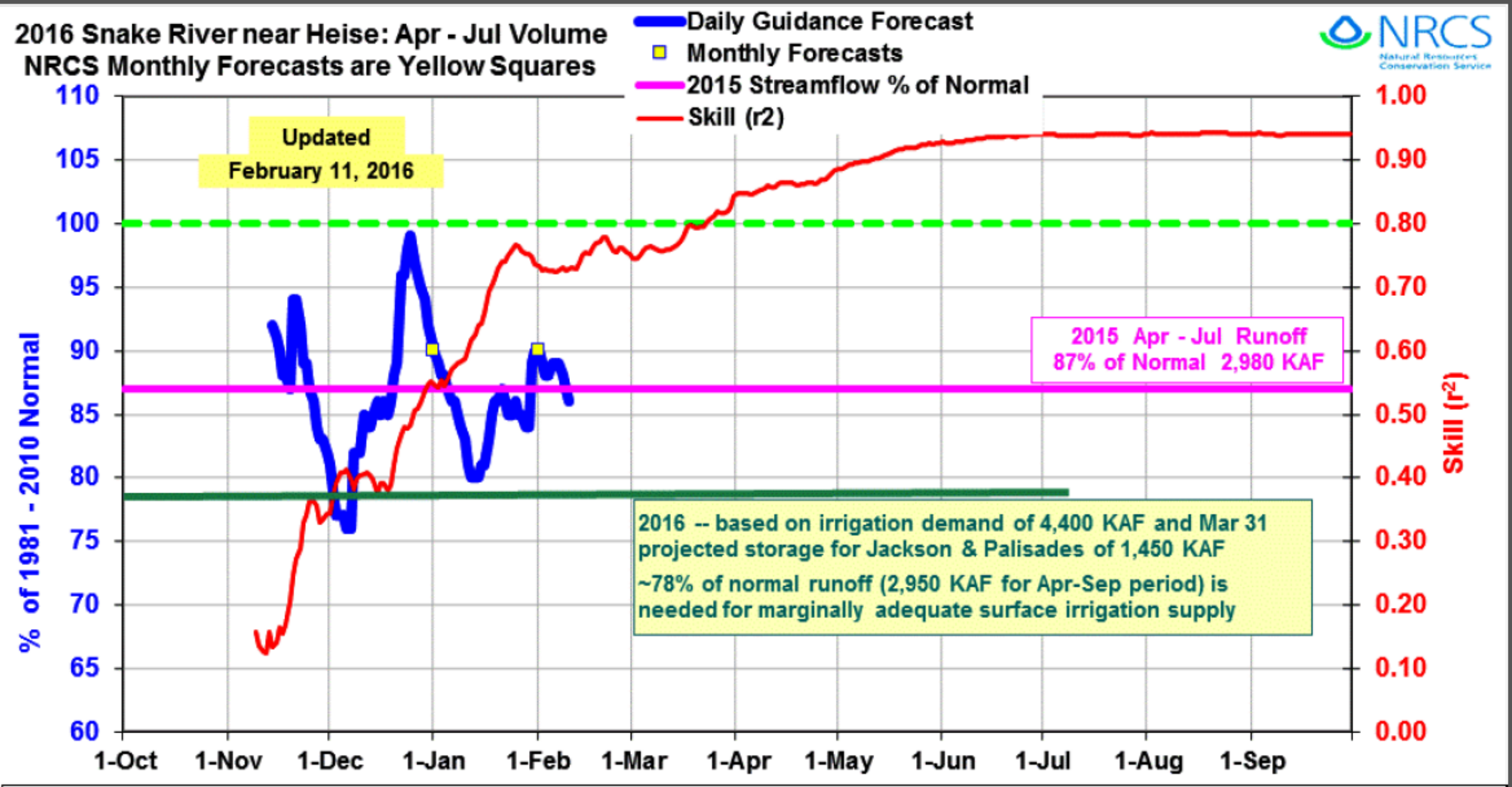

2016 Big Lost River below Mackay Resv: Apr-Jul Percent of Normal
NRCS Monthly Forecasts are Squares
Daily Guidance Forecast
Monthly Forecasts
2015 Runoff in %
Skill (r2)
NRCS
Natural Resources Conservation Service
Updated
February 11, 2016
2016-- based on irrigation demand of 180 KAF and Mar 31 reservoir storage projection of 33 KAF
98% of the average Apr-Sep runoff (147 KAF) is needed for marginally adequate surface irrigation supply
2015 April - July Runoff
54% of Normal 66 KAF
Forecast % of 1981-2010 Normal
Skill (r²)
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
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: Bear Canyon, Garfield RS, Swede Peak, Hyndman, Lost-Wood Divide and Stickney Mill

Snake Basin above Palisades 2016 Snowpack Comparison Graph (18 sites)

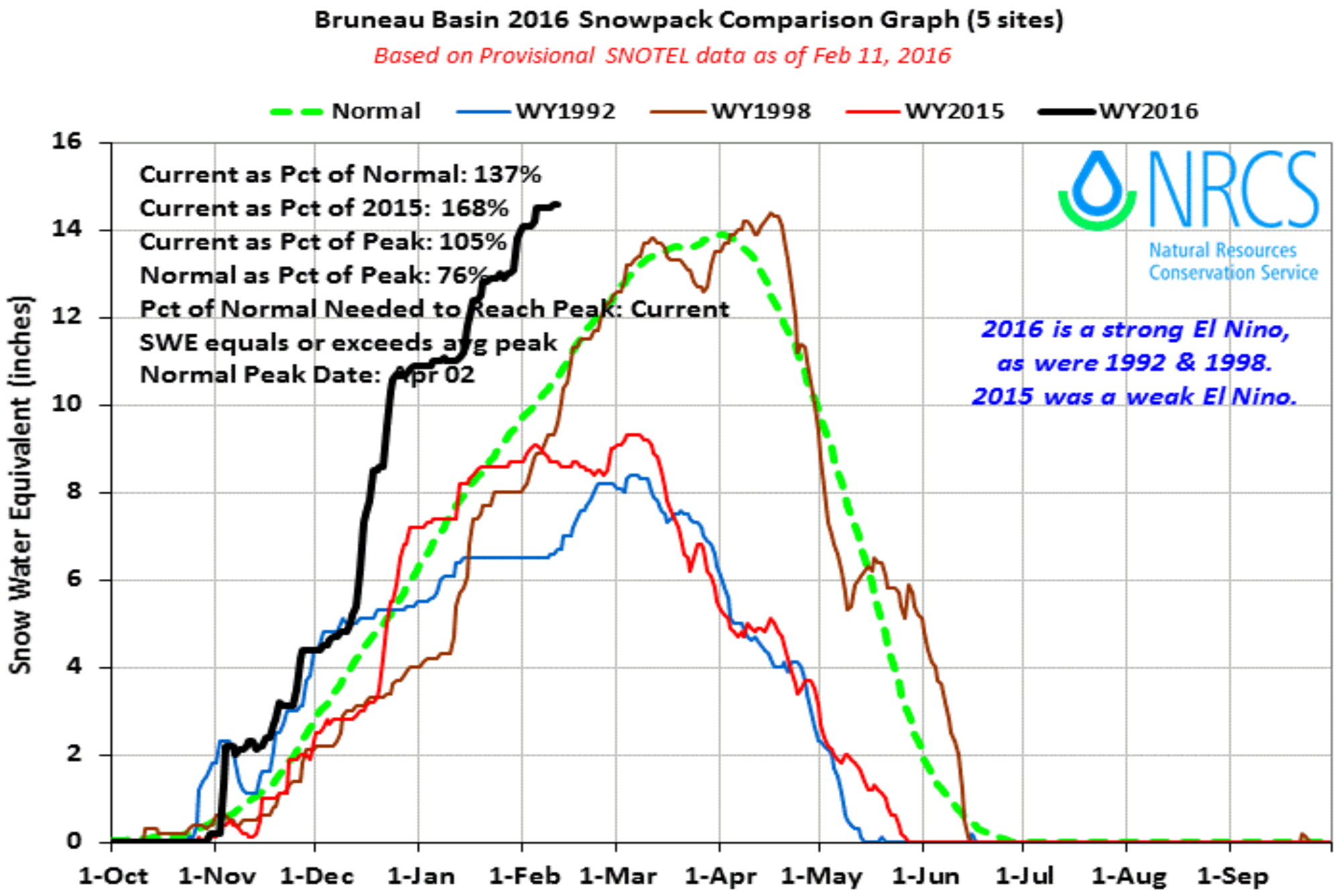
Based on Provisional SNOTEL data as of Feb 11, 2016

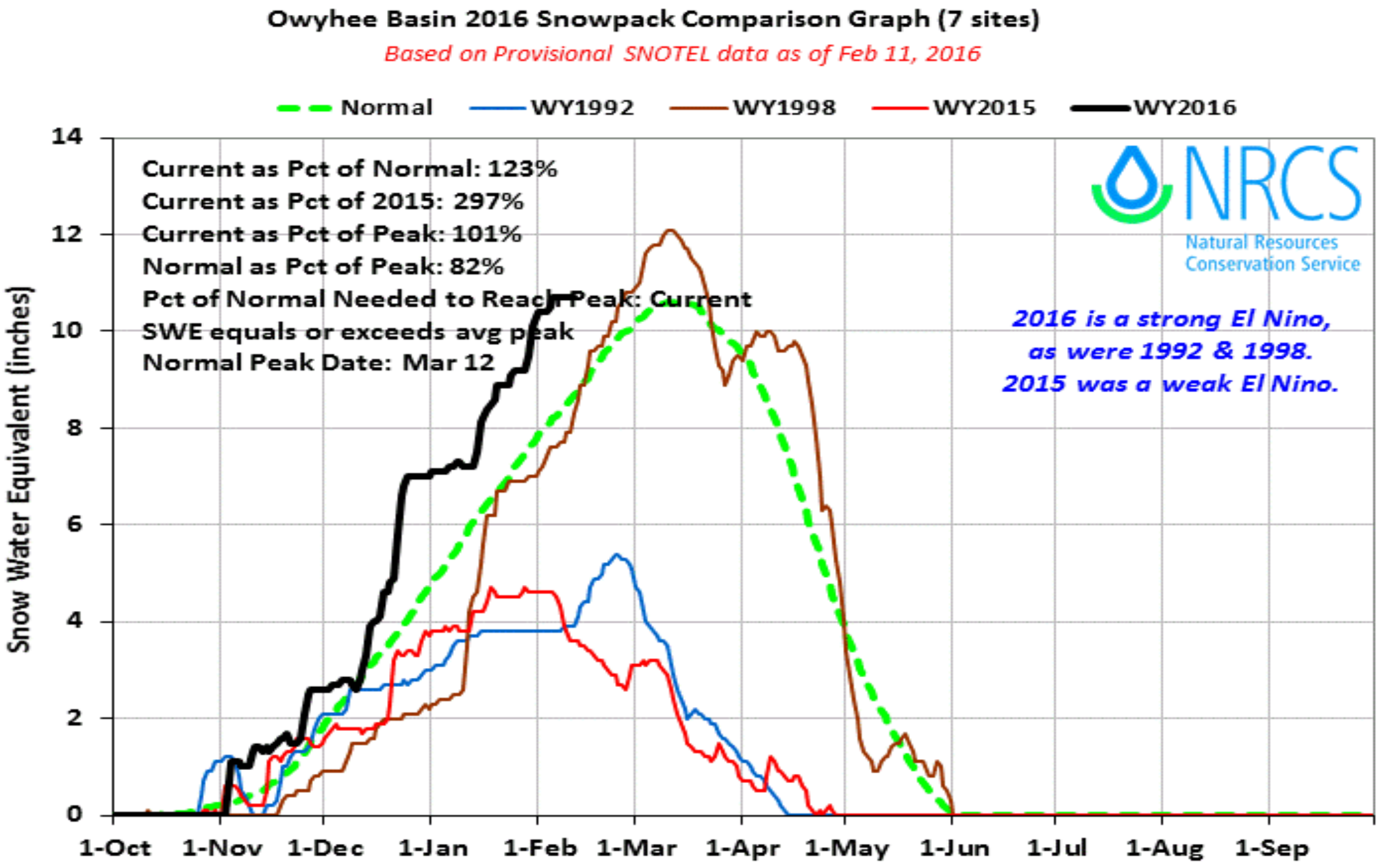


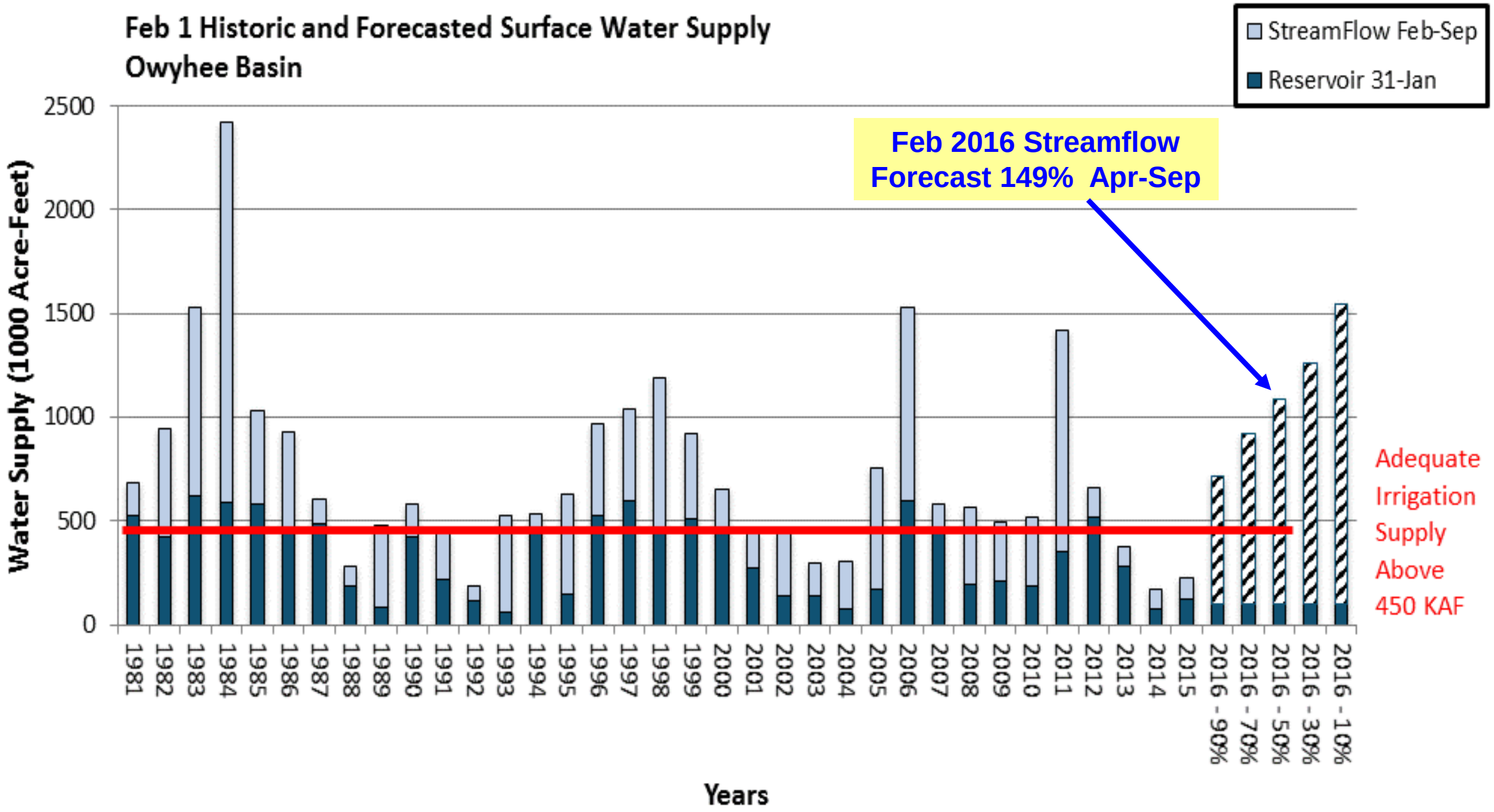

Feb 1 Historic and Forecasted Surface Water Supply
Snake River Near Heise
Feb 2016 Streamflow Forecast
90% Apr-Sep
70% Chance Exceedance
Forecast is 81% or 3,060 KAF
StreamFlow Apr-Sep
Reservoir 31-Jan
Water Supply (1000 Acre-Feet)
0
1000
2000
3000
4000
5000
6000
7000
8000
1981
1982
1983
1984
1985
1986
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
2012
2013
2014
2015
2016 - 90%
2016 - 70%
2016 - 50%
2016 - 30%
2016 - 10%
Years
Adequate Irrigation Supply Above 4,300 KAF



SNOTELs used: Base Camp, Blind Bull, Cottonwood Ck, Lewis Lake, Snake River Station, Slug Ck, Thumb Div, Willow Ck


Bruneau Basin 2016 Snowpack Comparison Graph (5 sites)
Based on Provisional SNOTEL data as of Feb 11, 2016
Normal
WY1992
WY1998
WY2015
WY2016
Current as Pct of Normal: 137%
Current as Pct of 2015: 168%
Current as Pct of Peak: 105%
Normal as Pct of Peak: 76%
Pct of Normal Needed to Reach Peak: Current
SWE equals or exceeds avg peak
Normal Peak Date: Apr 02
NRCS
Natural Resources Conservation Service
2016 is a strong El Nino,
as were 1992 & 1998.
2015 was a weak El Nino.
Snow Water Equivalent (inches)
0
2
4
6
8
10
12
14
16
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep


Owyhee Basin 2016 Snowpack Comparison Graph (7 sites)
Based on Provisional SNOTEL data as of Feb 11, 2016
Normal
WY1992
WY1998
WY2015
WY2016
Current as Pct of Normal: 123%
Current as Pct of 2015: 297%
Current as Pct of Peak: 101%
Normal as Pct of Peak: 82%
Pct of Normal Needed to Reach Peak: Current
SWE equals or exceeds avg peak
Normal Peak Date: Mar 12
NRCS
Natural Resources
Conservation Service
2016 is a strong El Nino,
as were 1992 & 1998.
2015 was a weak El Nino.
Snow Water Equivalent (inches)
0
2
4
6
8
10
12
14
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep


Feb 1 Historic and Forecasted Surface Water Supply
Owyhee Basin
StreamFlow Feb-Sep
Reservoir 31-Jan
Feb 2016 Streamflow
Forecast 149% Apr-Sep
Adequate
Irrigation
Supply
Above
450 KAF
Water Supply (1000 Acre-Feet)
2500
2000
1500
1000
500
0
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
2012
2013
2014
2015
2016 - 90%
2016 - 70%
2016 - 50%
2016 - 30%
2016 - 10%
Years

Think
Snow!!