Idaho NRCS Snow Survey and Water Supply Information

Idaho Department of Water Resources
State Water Supply Committee Meeting
Boise, Idaho
April 11, 2008

Bear Basin SNOTEL Site
Capped Precipitation Gage
March 2008

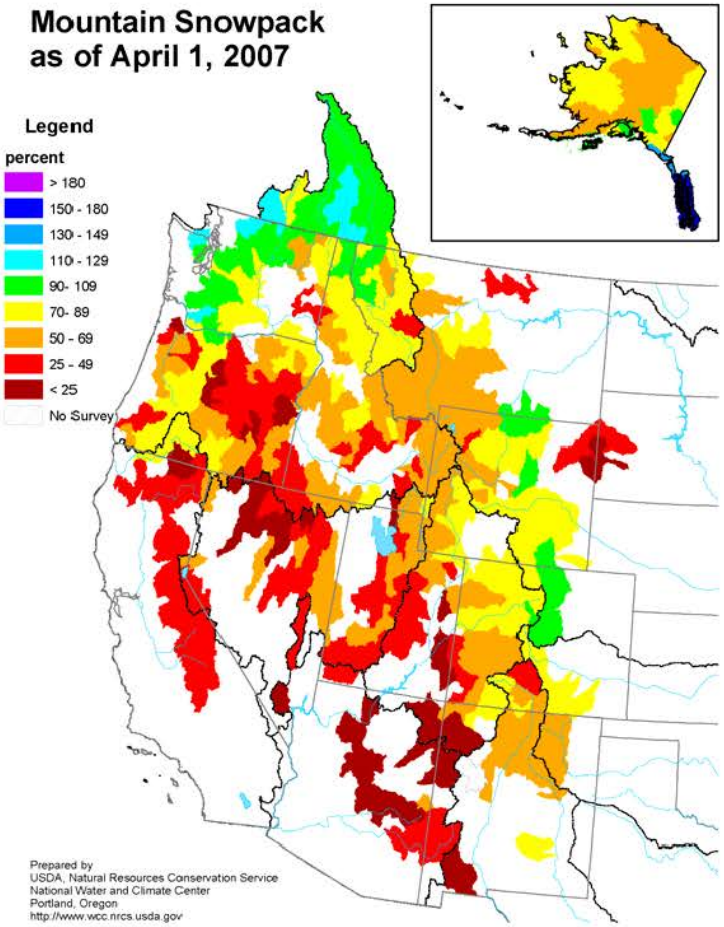
Ron Abramovich
Water Supply Specialist
United States Department of Agriculture
Natural Resources Conservation Service
Snow Survey

Presentation available at

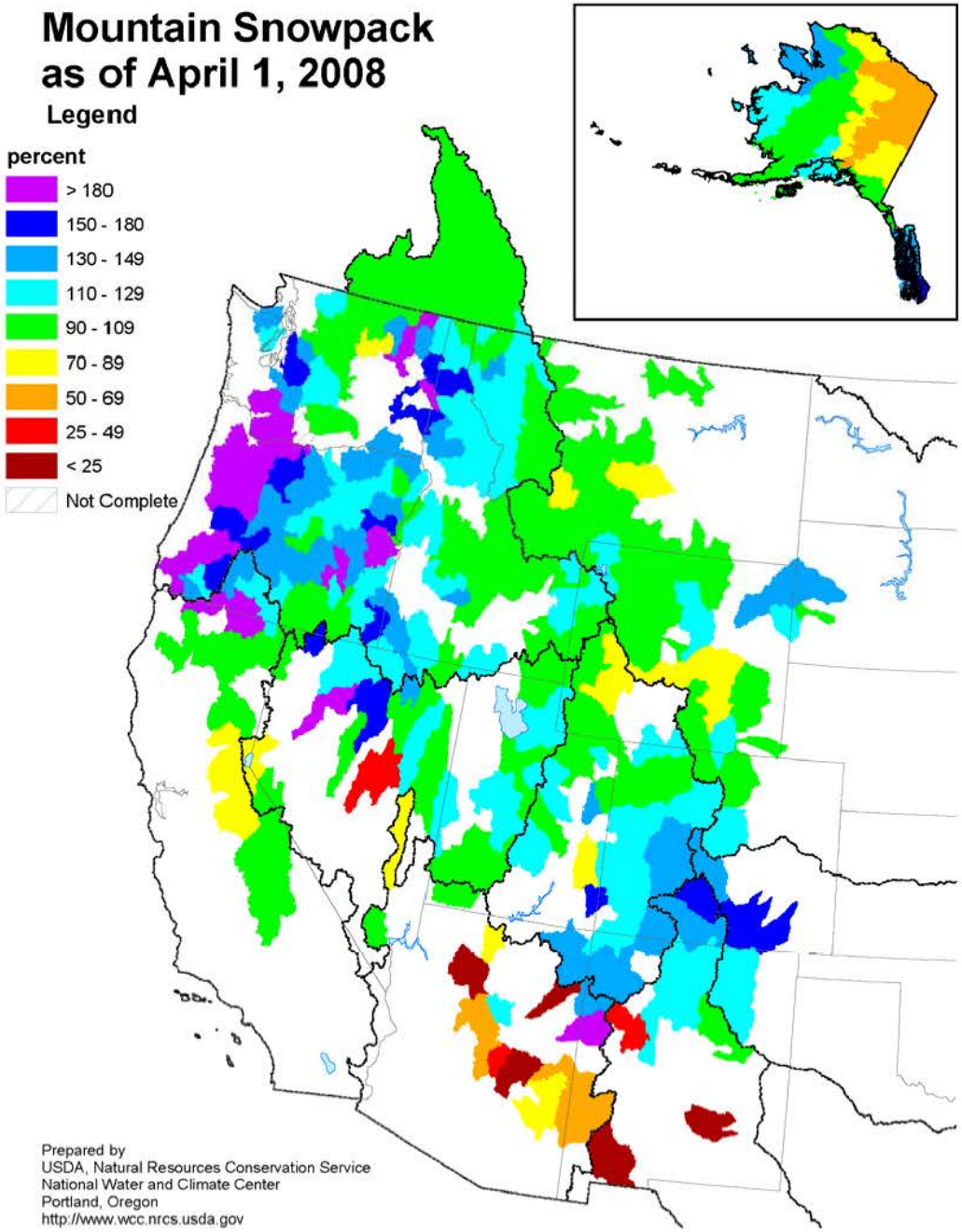
http://www.id.nrcs.usda.gov/snow/watersupply/

NRCS Natural Resources Conservation Service

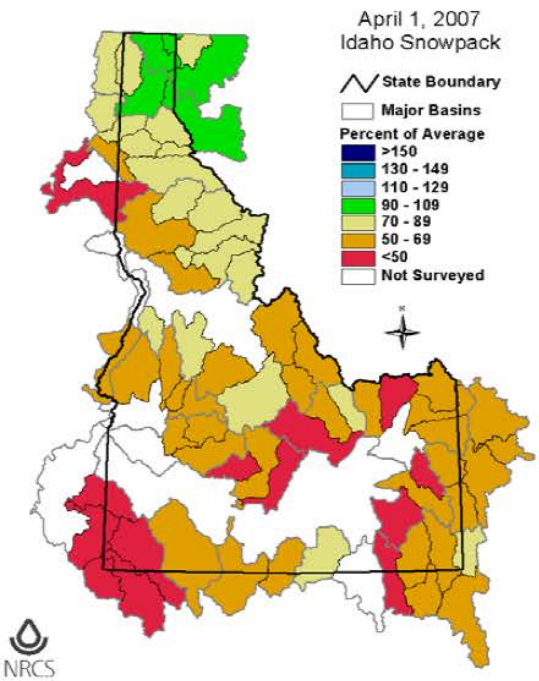
Mountain Snowpack as of April 1, 2007

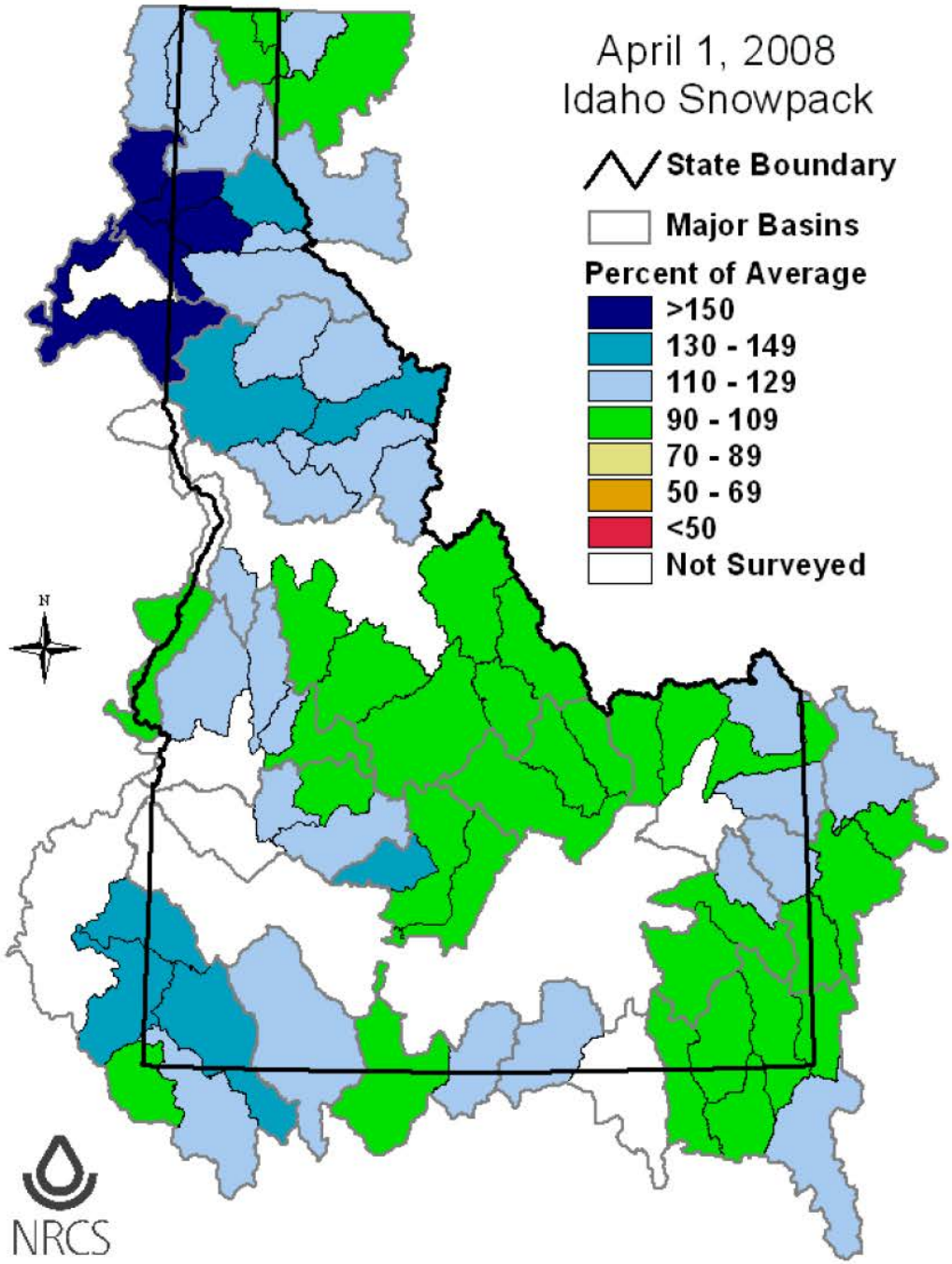


Mountain Snowpack as of April 1, 2008

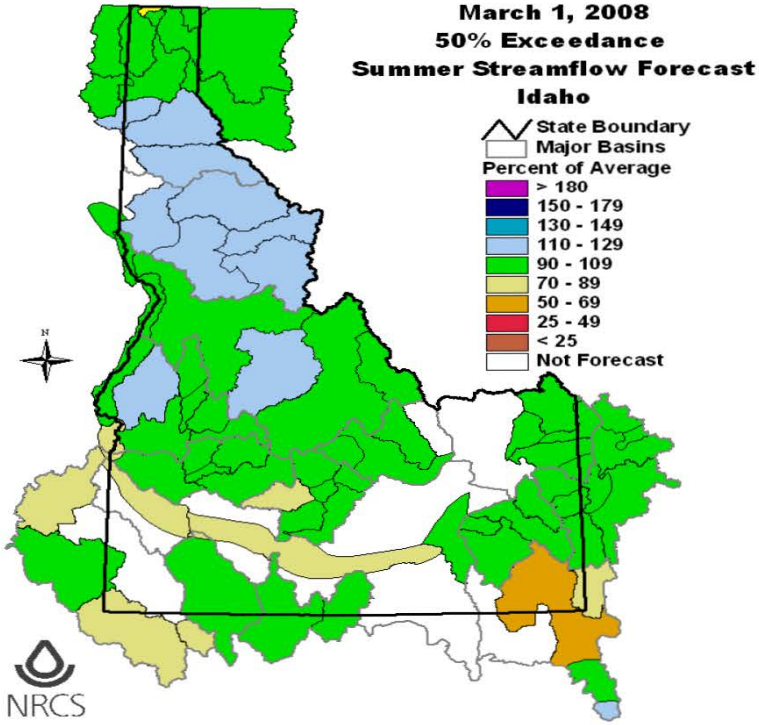


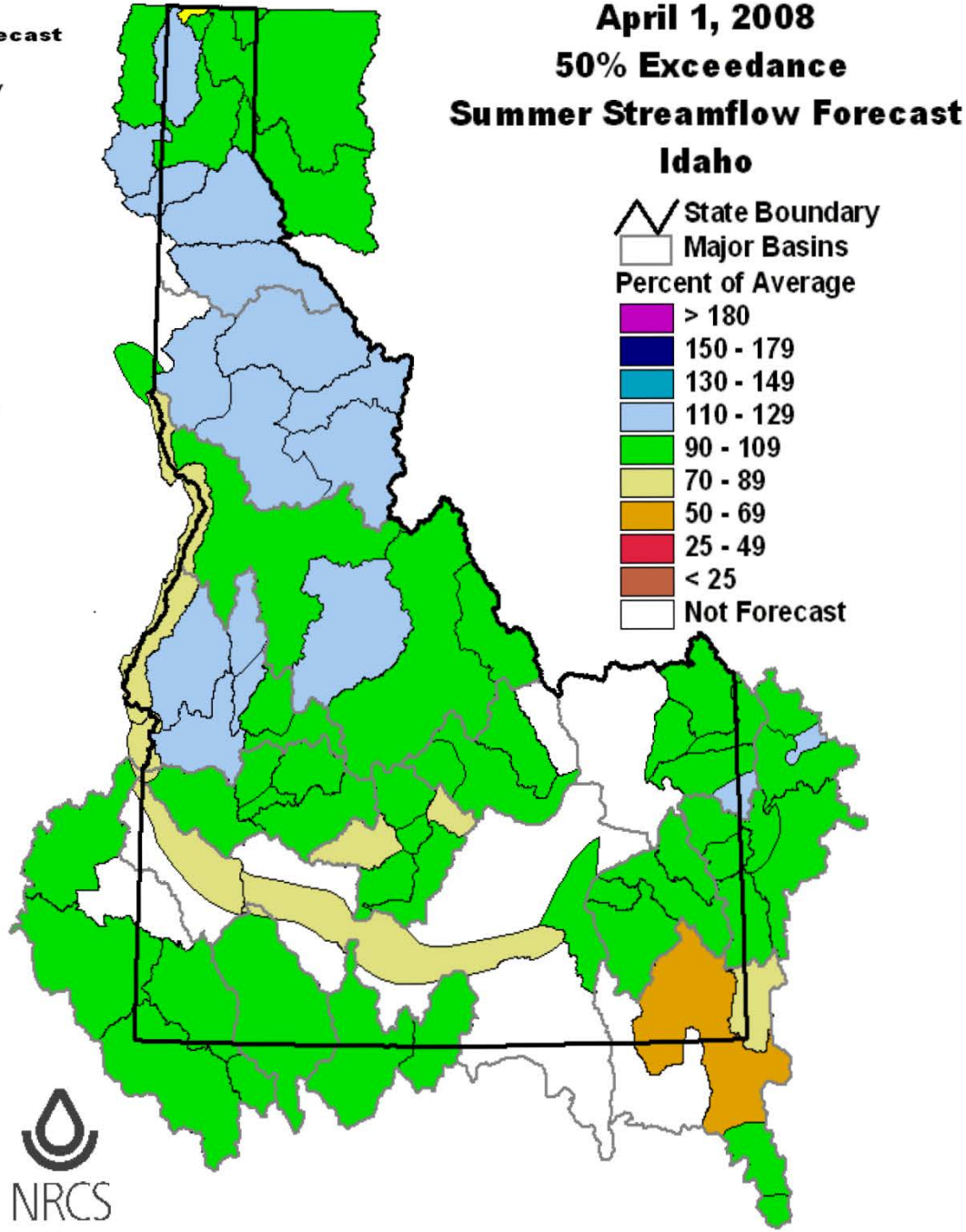
NRCS Natural Resources Conservation Service



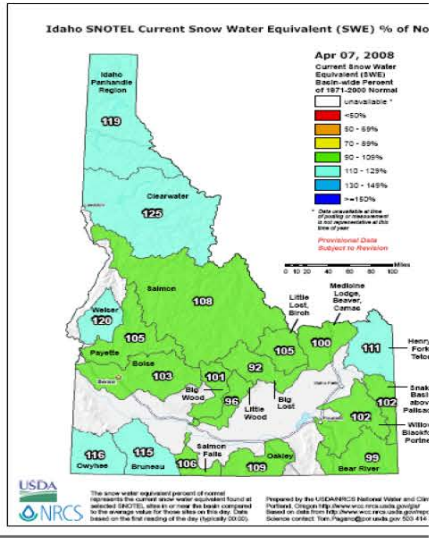


NRCS Natural Resources Conservation Service





NRCS Natural Resources Conservation Service

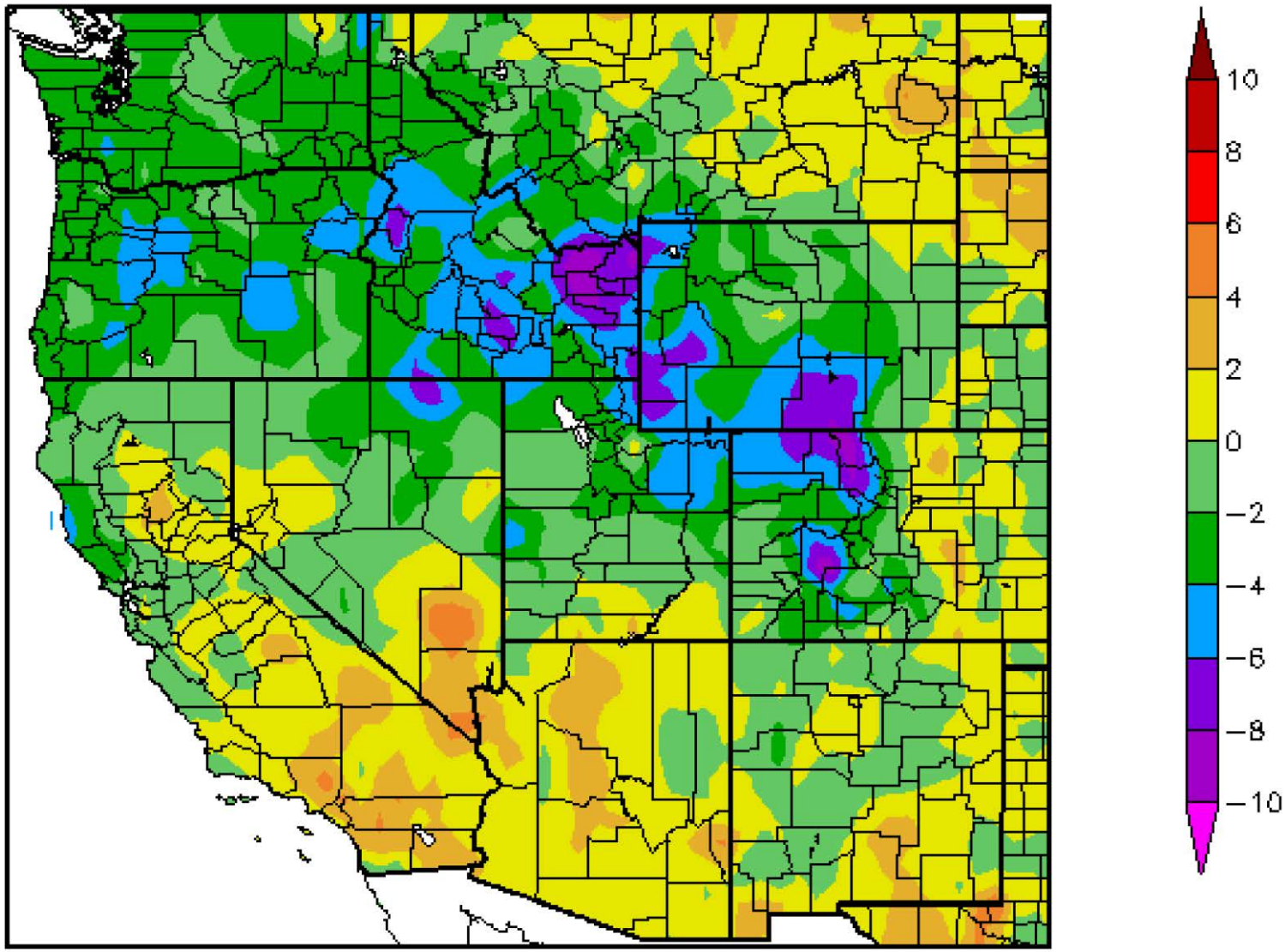


SNOTEL Snowpack Summary Report		
for April 10, 2008		
Region or Basin	April 10 SWE as % of Average	April 10 SWE as % of Seasonal Peak
IDAHO PANHANDLE REGION	121	117
CLEARWATER BASIN	126	124
SALMON BASIN	109	107
WEISER BASIN	124	117
PAYETTE BASIN	105	104
BOISE BASIN	104	97
BIG WOOD BASIN	102	96
LITTLE WOOD BASIN	99	95
BIG LOST BASIN	92	91
LITTLE LOST, BIRCH BASINS	105	103
MEDICINE LODGE, BEAVER, CAMAS BASINS	101	99
HENRYS FORK, TETON BASINS	112	110
SNAKE BASIN ABOVE PALISADES	103	101
WILLOW, BLACKFOOT, PORTNEUF BASINS	107	100
OAKLEY BASIN	113	109
SALMON FALLS BASIN	111	107
BRUNEAU BASIN	123	113
OWYHEE BASIN	126	104
BEAR RIVER BASIN	101	98

SWE = Snow Water Equivalent

NRCS Natural Resources Conservation Service

Departure from Normal Temperature (F)
3/1/2008 - 3/31/2008

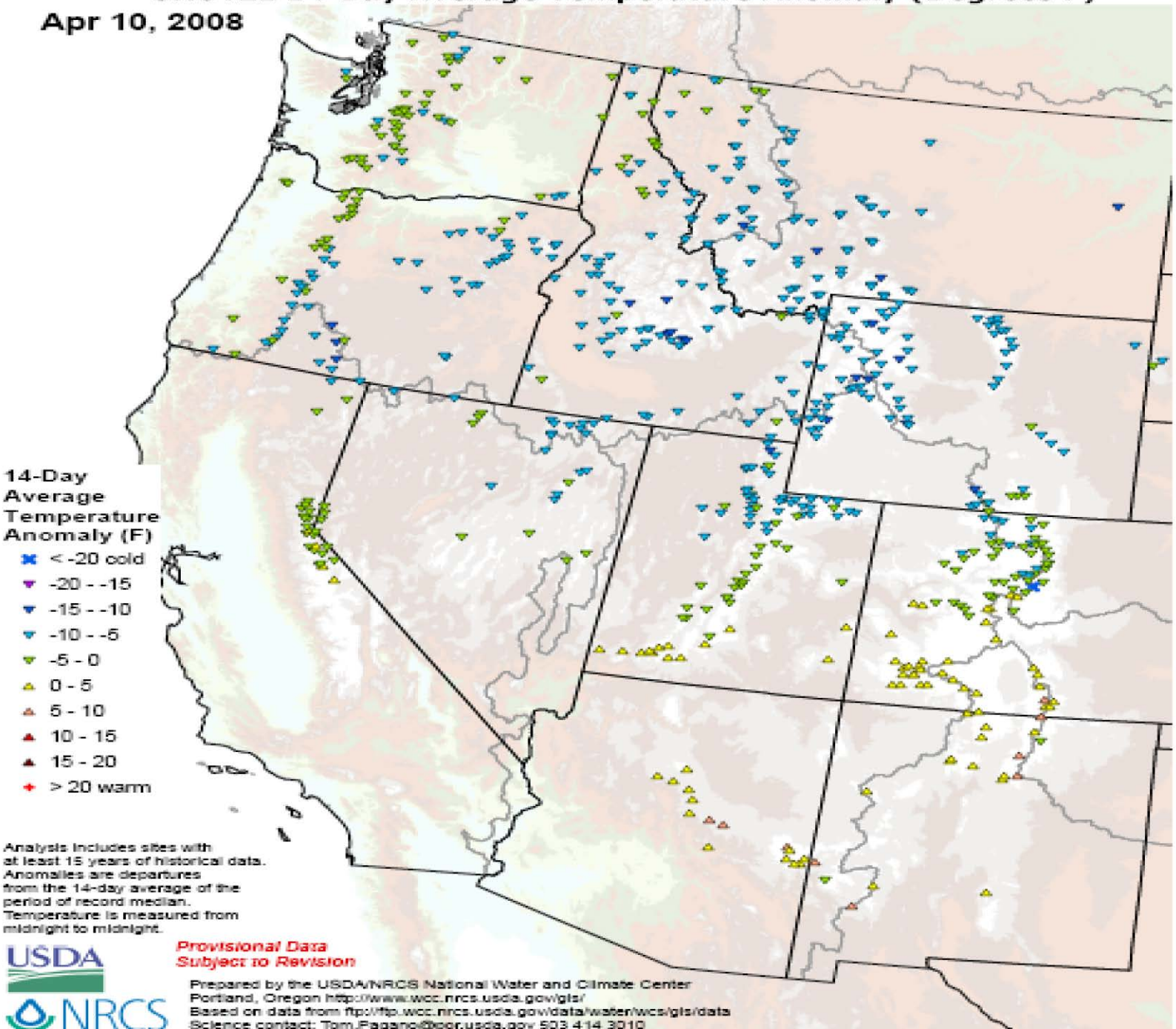


Generated 4/5/2008 at HPRCC using provisional data.

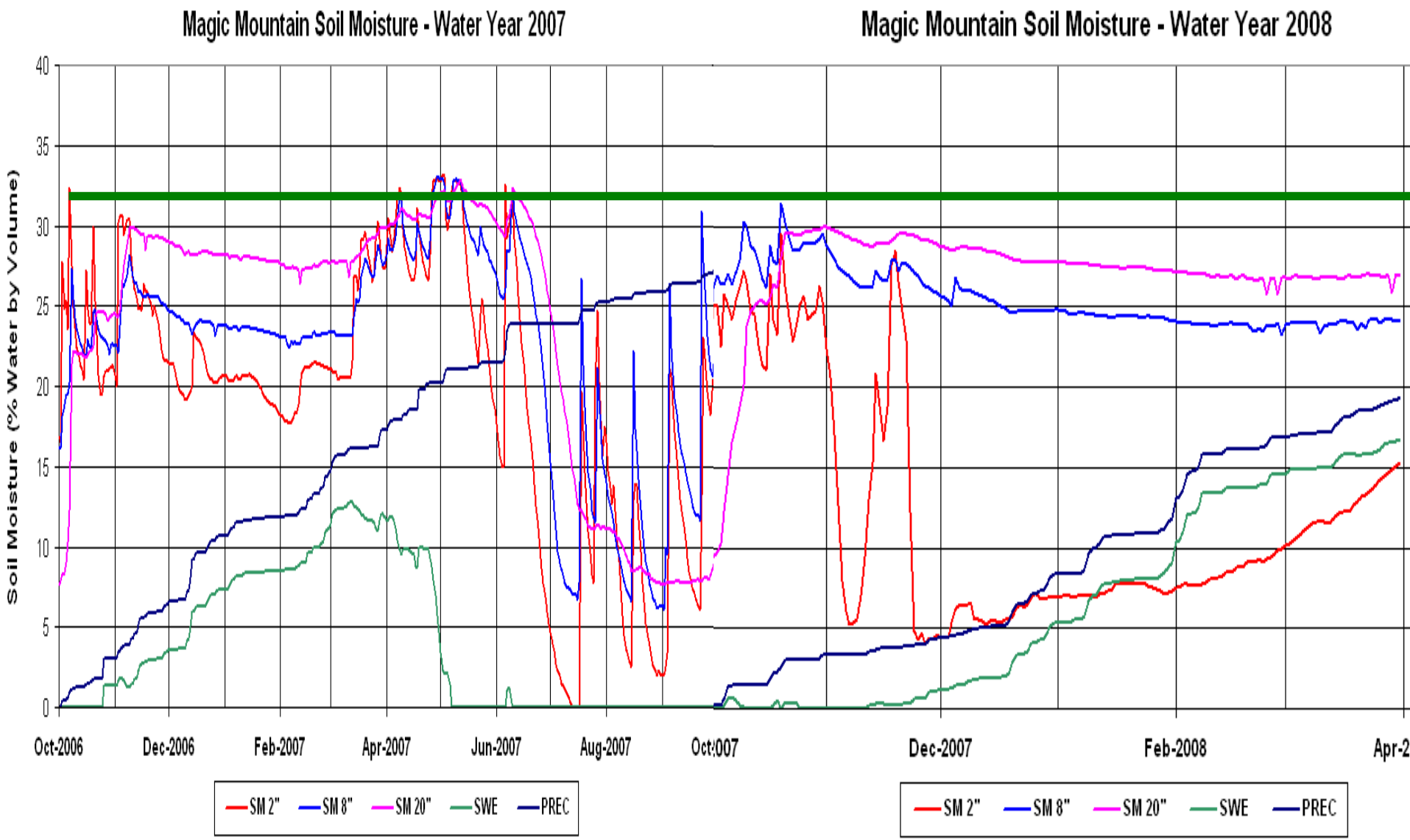
NOAA Regional Climate Centers

SNOTEL 14-Day Average Temperature Anomaly (Degrees F)

Apr 10, 2008



2008 Soil Moisture Near Field Capacity



NRCS Natural Resources Conservation Service

NRCS
Natural
Resources
Conservation
Service

NRCS Natural Resources Conservation Service

IDAHO RESERVOIR STORAGE Usable Contents			
Reservoir (s)	Percent of Capacity December 31, 2007	Percent of Capacity March 31, 2008	Percent of Average March 31, 2008
Magic	9	15	27
Blackfoot	23	27	42
Bear Lake	24	28	43
Owyhee	24	24	44
Salmon Falls	15	20	51
Little Wood	31	36	56
Palisades & Jackson (2)	33	44	69
Coeur d' Alene	30	91	75
Oakley	30	40	84
Mackay	39	62	85
Boise (3)	41	57	92
American Falls	42	79	92
Dworshak	65	62	97
Payette (2)	61	63	104

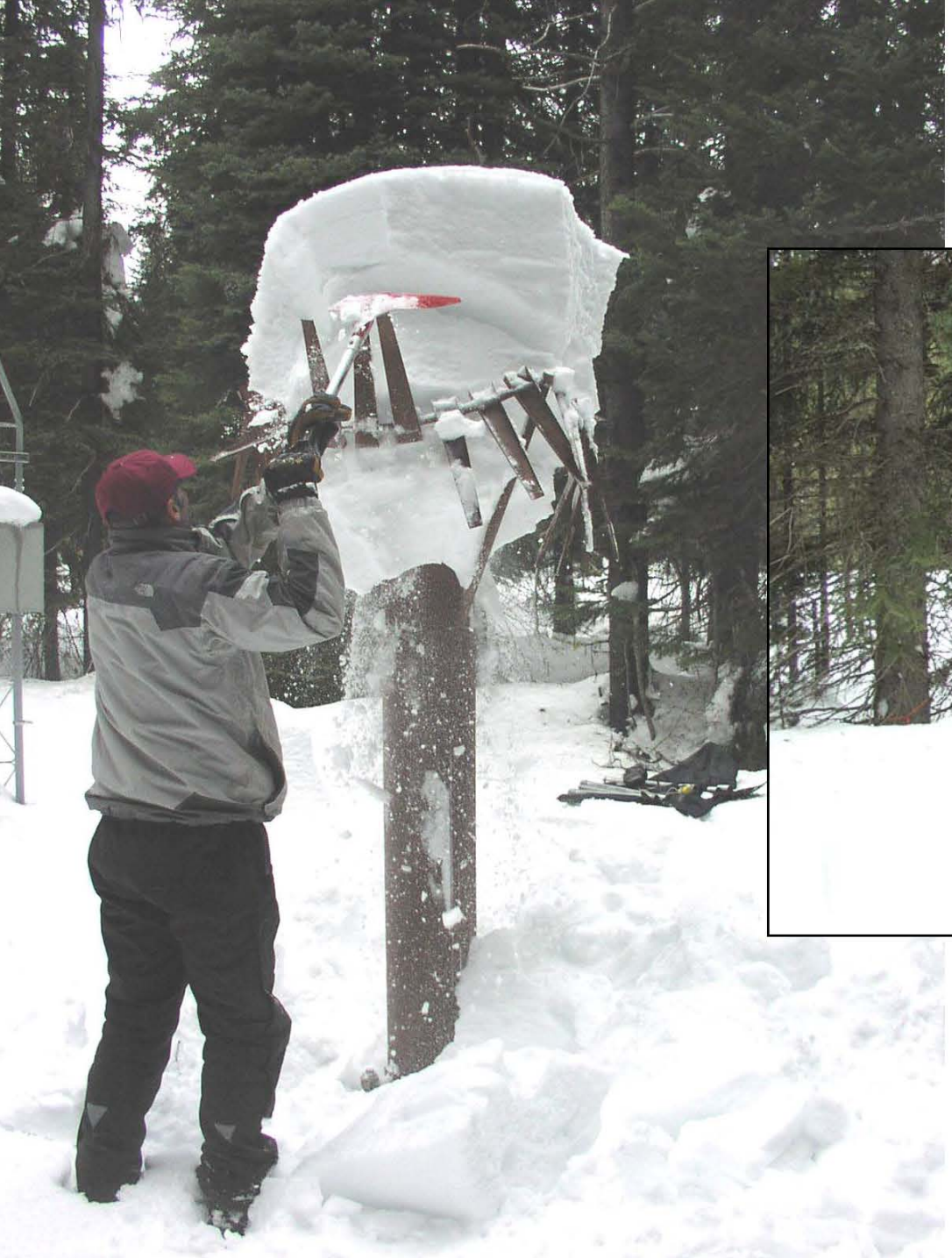
2008 Idaho Surface Water Supply Index (SWSI)
For February, March and April 2008

BASIN or/ REGION	February SWSI Value	March SWSI Value	April SWSI Value	Agricultural Surface Water Supply Shortage May Occur When SWSI is Less Than
PANHANDLE	-0.3	1.1	1.6	NA
CLEARWATER	1.8	2.3	2.3	NA
SALMON	1.2	1.2	0.8	NA
WEISER	1.0	1.0	0.8	NA
PAYETTE	0.3	1.2	0.8	NA
BOISE	0.3	0.3	0.3	-2.1
BIG WOOD	-0.1	-0.1	-1.4	-0.7
LITTLE WOOD	0.8	0.3	0.3	-2.0
BIG LOST	1.0	-0.1	-0.1	-0.2
LITTLE LOST	0.1	-0.1	-1.0	0.3
HENRYS FORK	0.2	0.5	-0.8	-3.5
SNAKE –Heise	-0.8	0.3	0.3	-1.4
OAKLEY	-0.3	-0.3	-0.3	-1.2
SALMON FALLS	-1.4	-1.0	-1.0	-1.6
BRUNEAU	-0.8	-0.8	-0.5	NA
BEAR RIVER	-3.0	-2.9	-2.9	-3.4

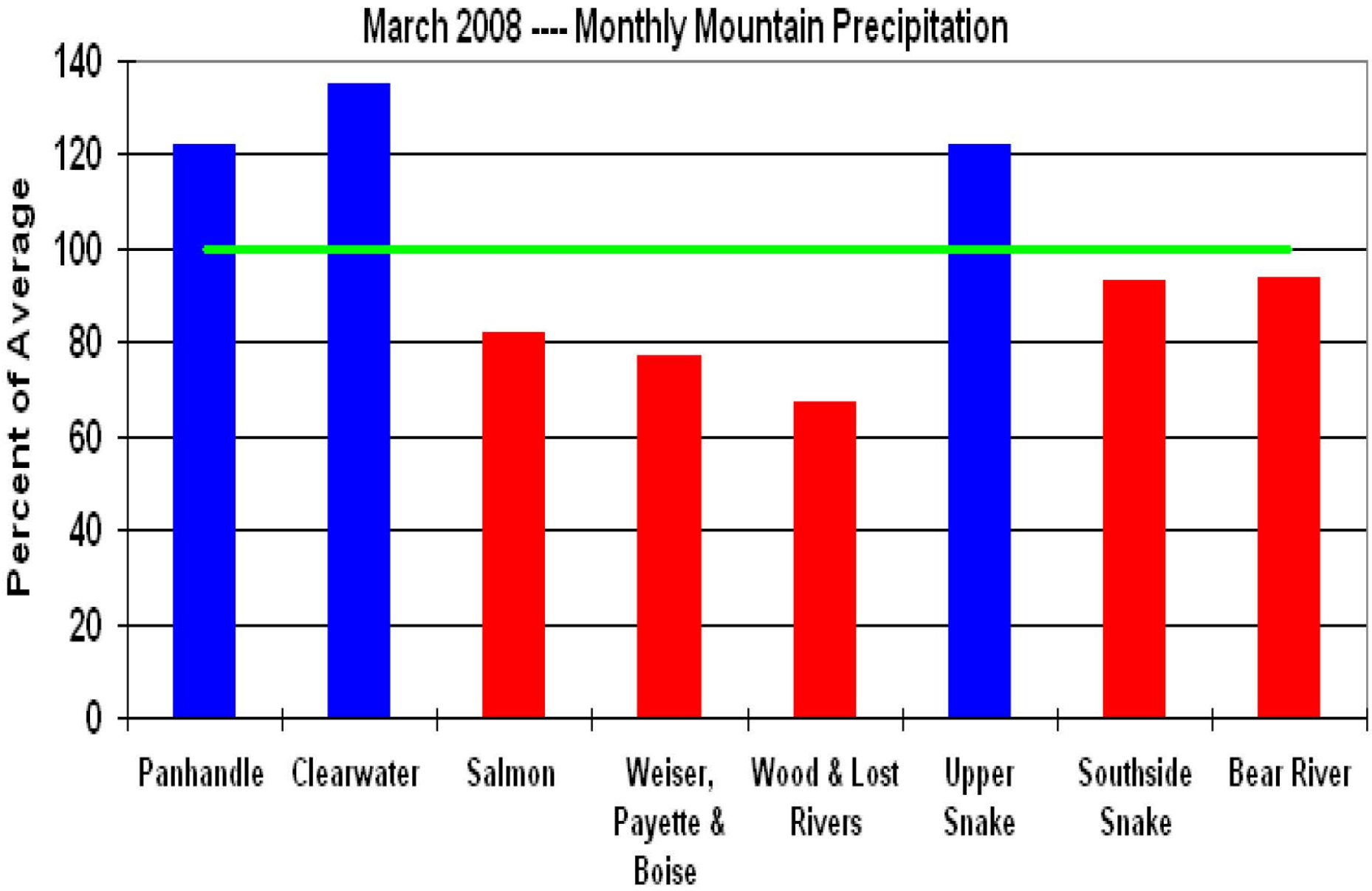
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

```
-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|
 ------------------------------------------------------------
```

NRCS Natural Resources Conservation Service



Bear Basin
SNOTEL
near McCall
March 2008

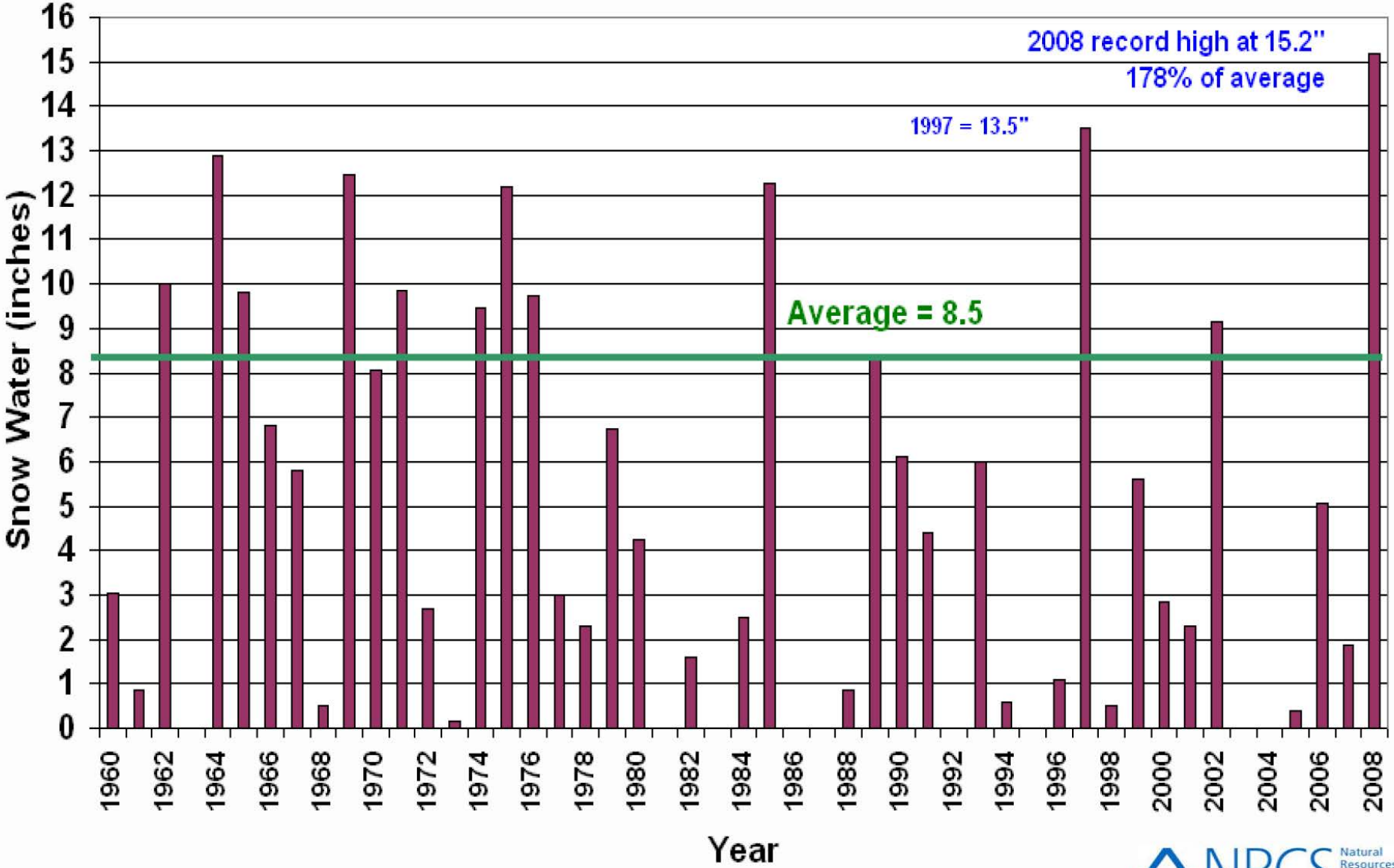


NRCS Natural Resources Conservation Service

April 1 Snow Water Index for Two Low Elevation Snow Courses in Panhandle

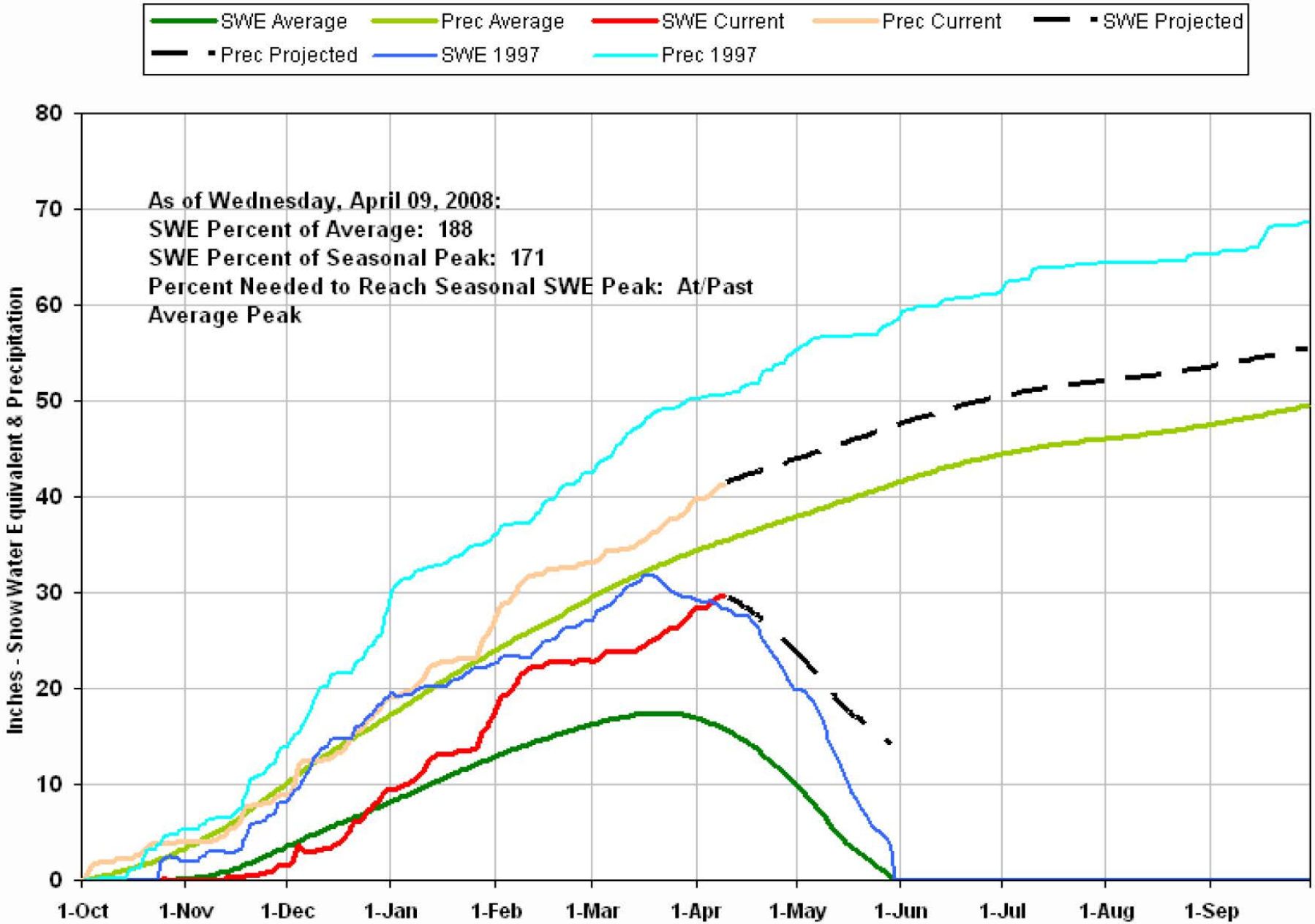
Benton Meadow Snow Course, 2370 ft, Priest River

Fourth of July Summit Snow Course, 3200 ft, Coeur d'Alene River

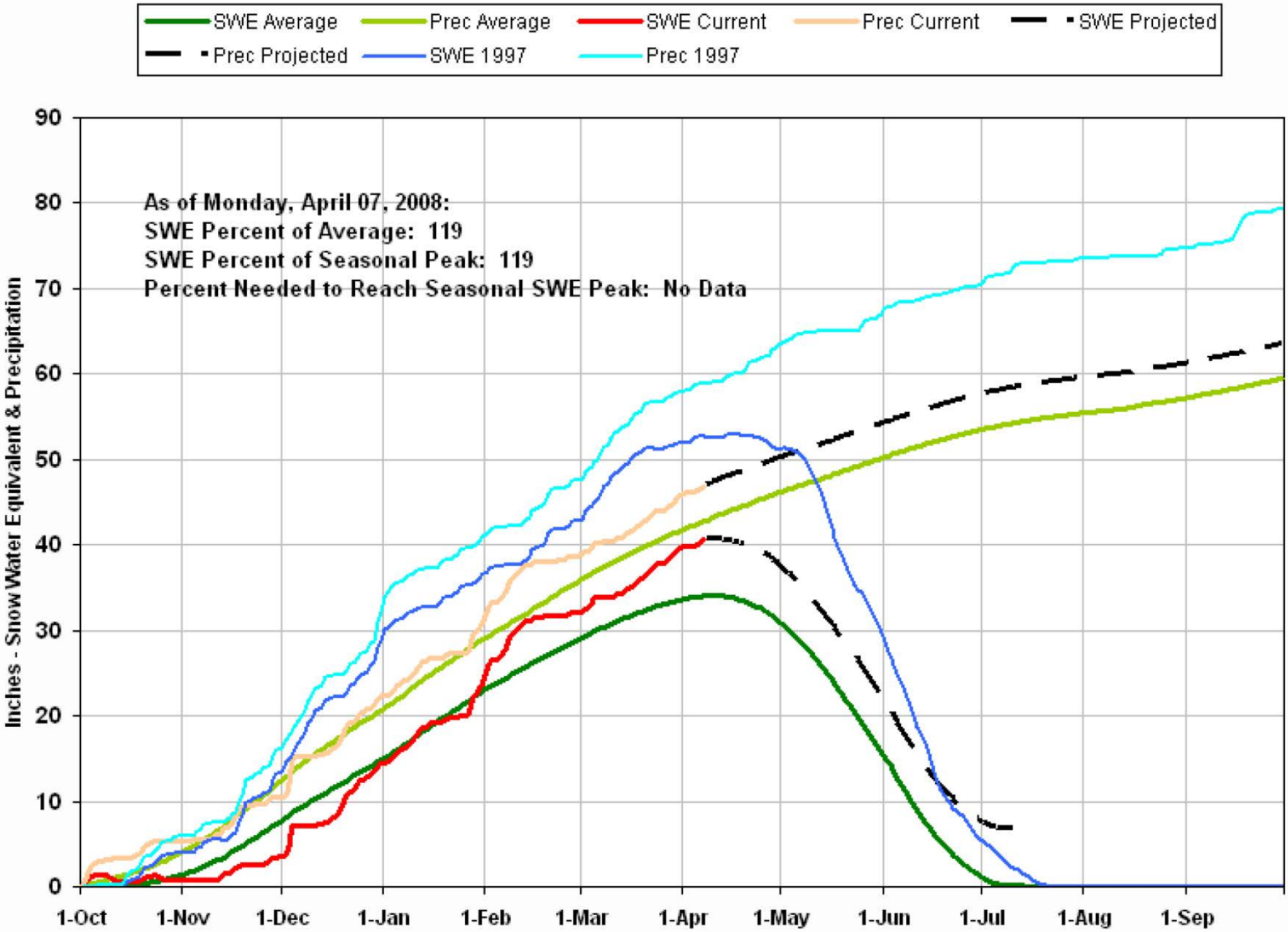


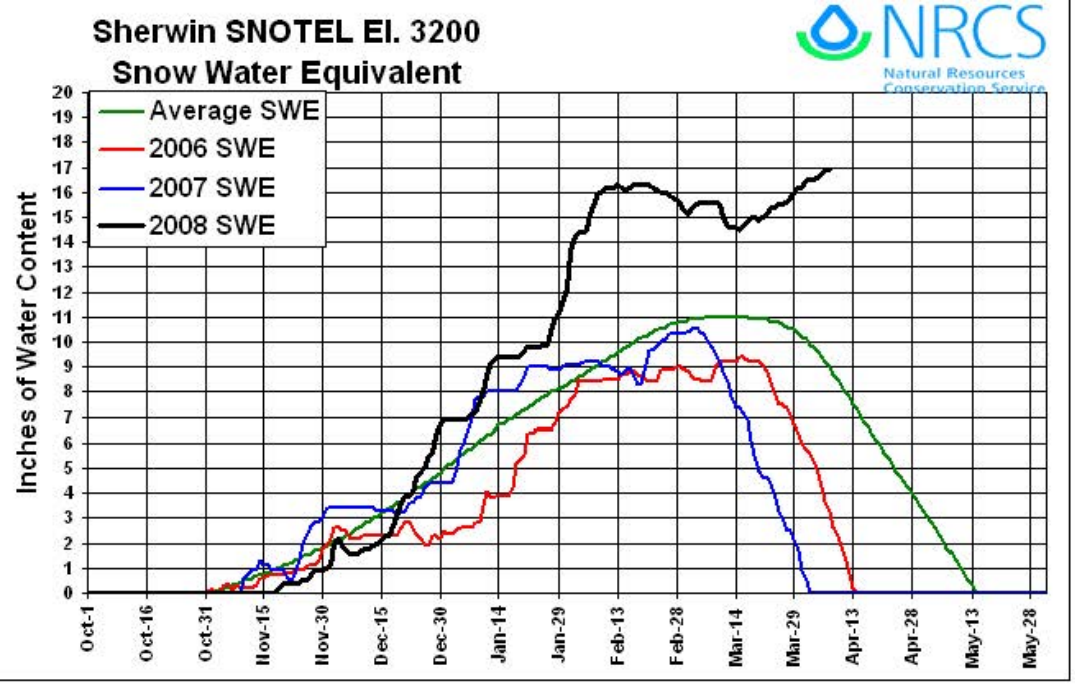
NRCS Natural Resources Conservation Service

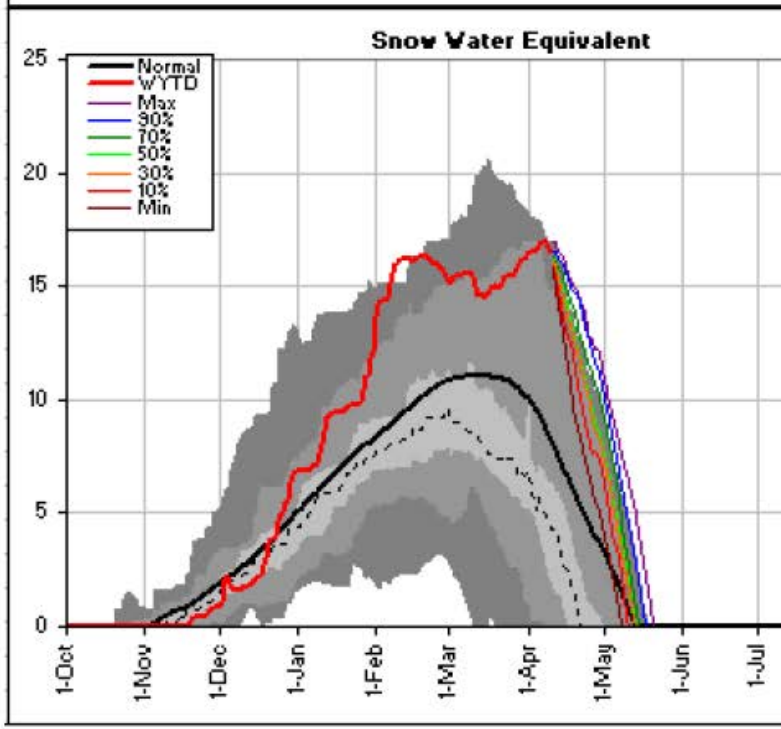
Panhandle Region 2008 Snowpack Graph (4 low elevation sites)

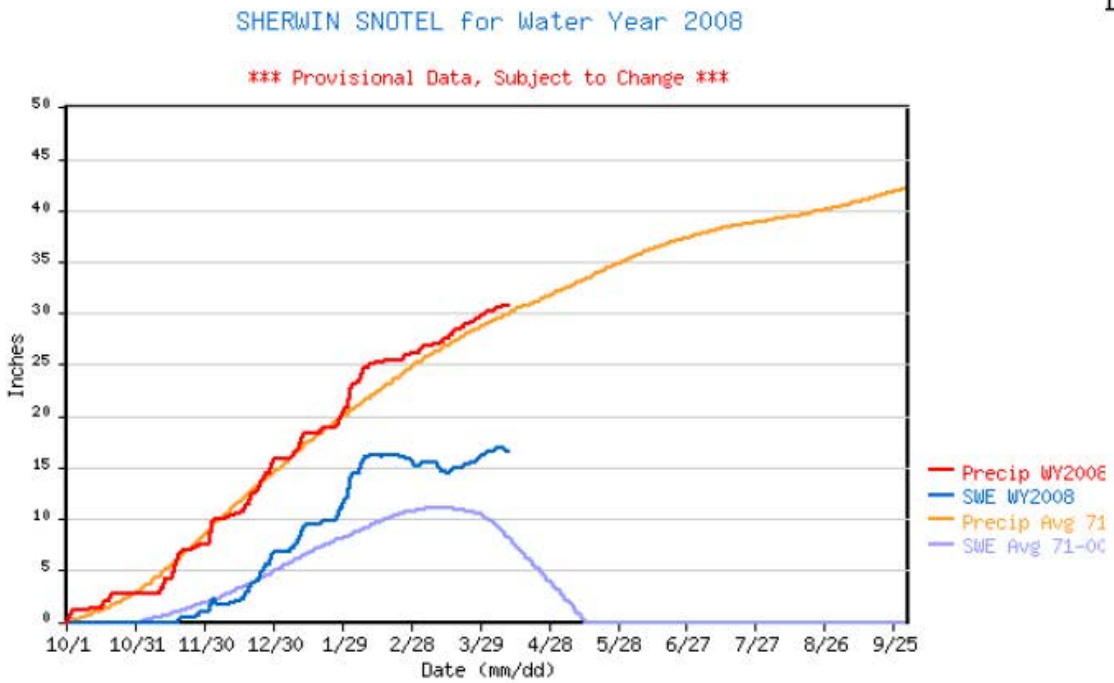


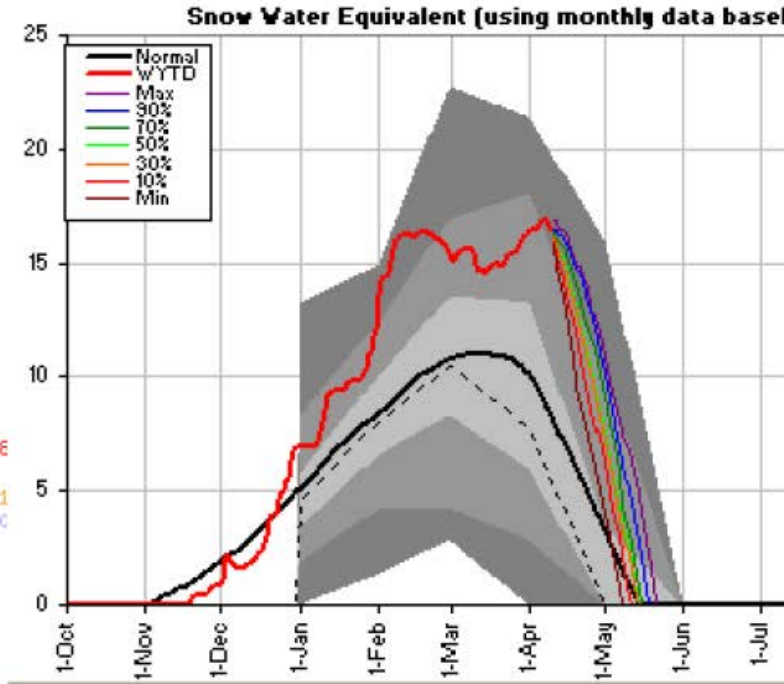
Panhandle Region 2008 Snowpack Graph (13 Sites)

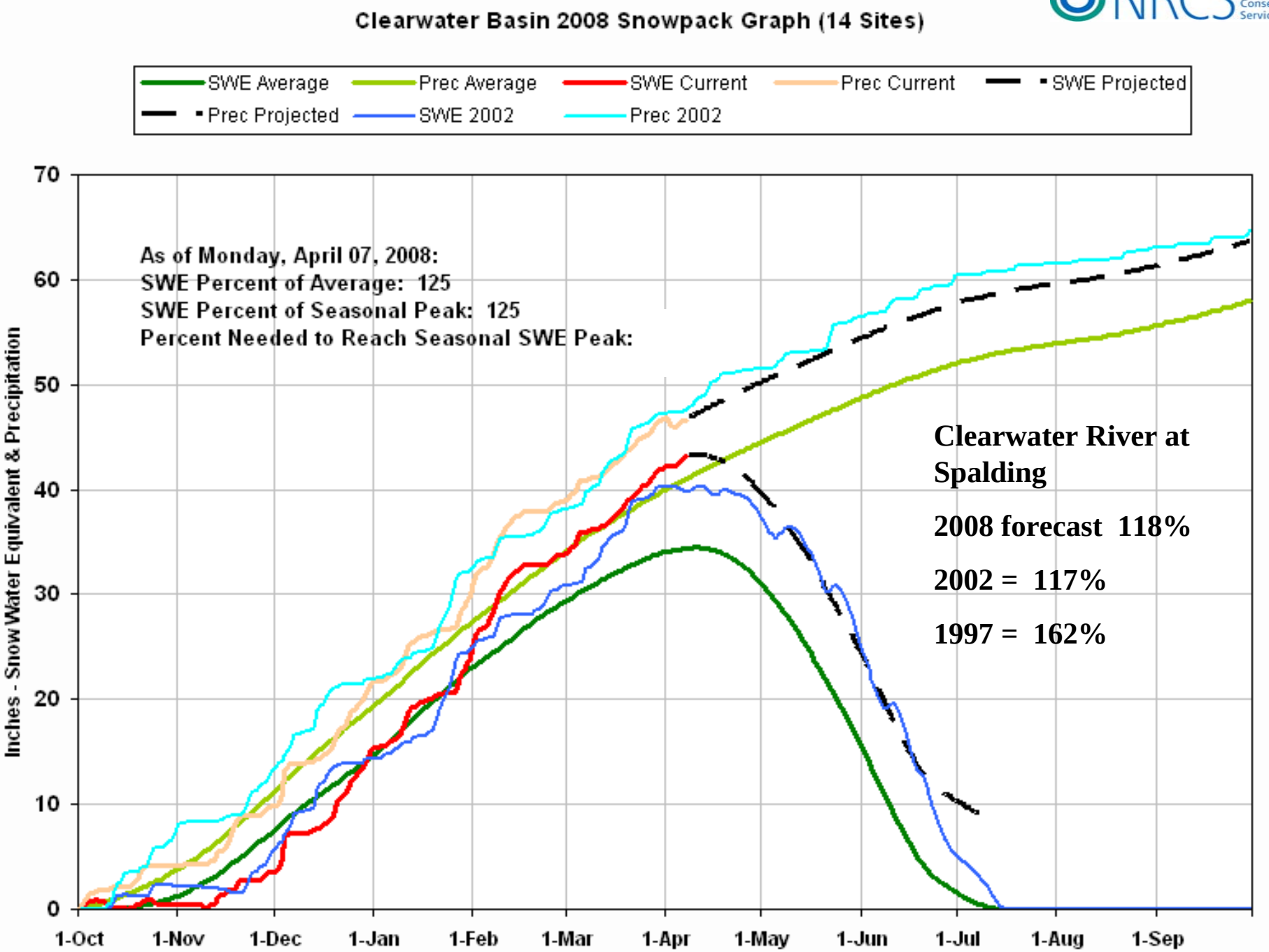


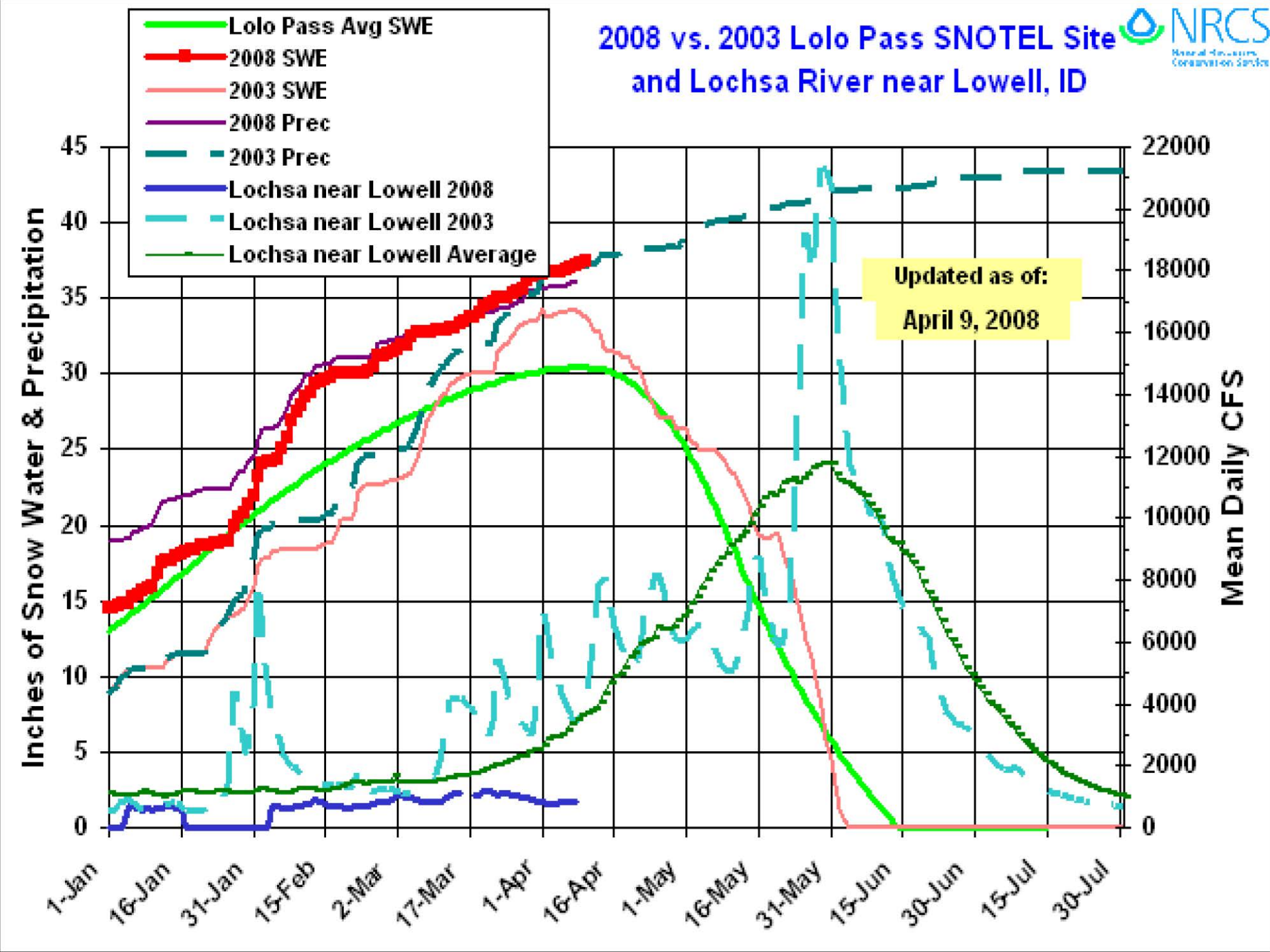

Sherwin SNOTEL El. 3200
Snow Water Equivalent
NRCS
Natural Resources Conservation Service
Average SWE
2006 SWE
2007 SWE
2008 SWE
Inches of Water Content
Oct-1
Oct-16
Oct-31
Nov-15
Nov-30
Dec-15
Dec-30
Jan-14
Jan-29
Feb-13
Feb-28
Mar-14
Mar-29
Apr-13
Apr-28
May-13
May-28

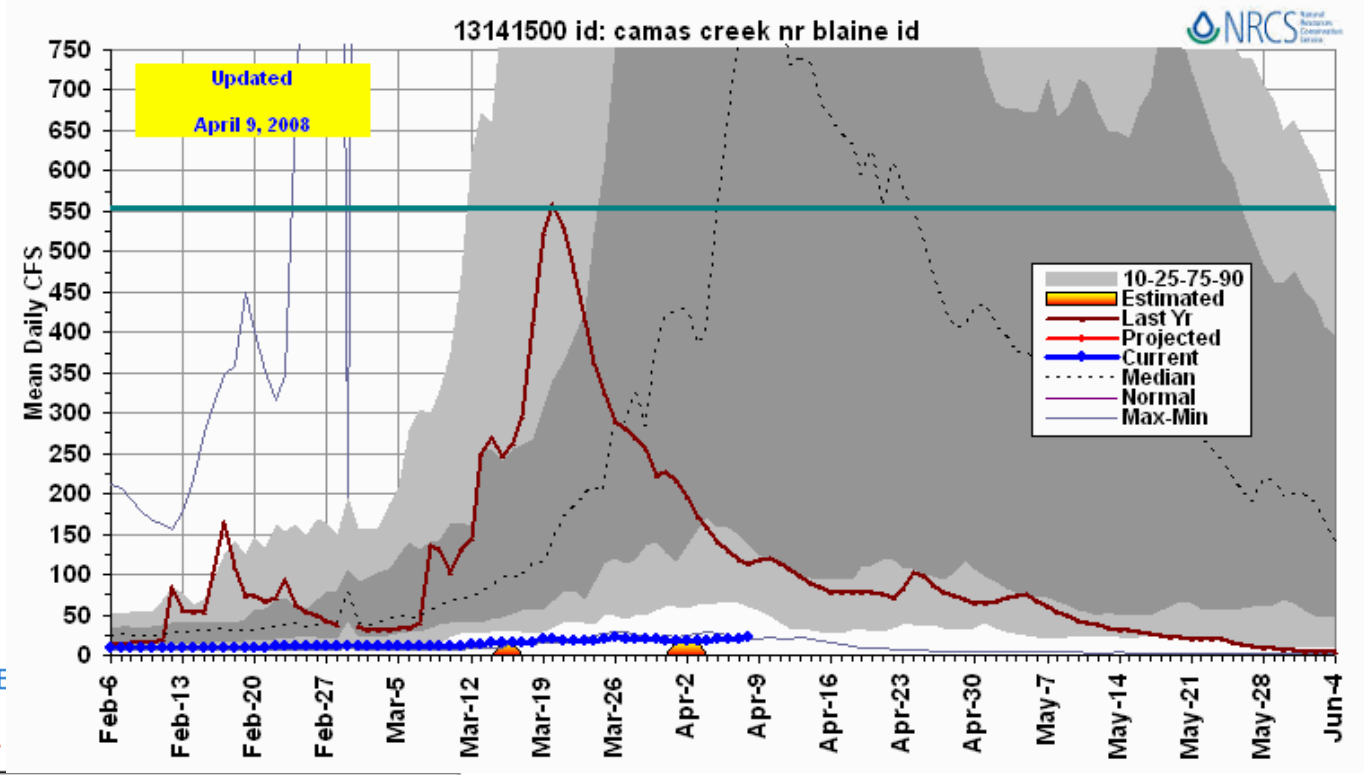

Snow Water Equivalent
Normal
WYTD
Max
90%
70%
50%
30%
10%
Min
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul


SHERWIN SNOTEL for Water Year 2008
*** Provisional Data, Subject to Change ***
Inches
Date (mm/dd)
10/1
10/31
11/30
12/30
1/29
2/28
3/29
4/28
5/28
6/27
7/27
8/26
9/25
Precip WY2008
SWE WY2008
Precip Avg 71
SWE Avg 71-00


Snow Water Equivalent (using monthly data basel
Normal
WYTD
Max
90%
70%
50%
30%
10%
Min
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul

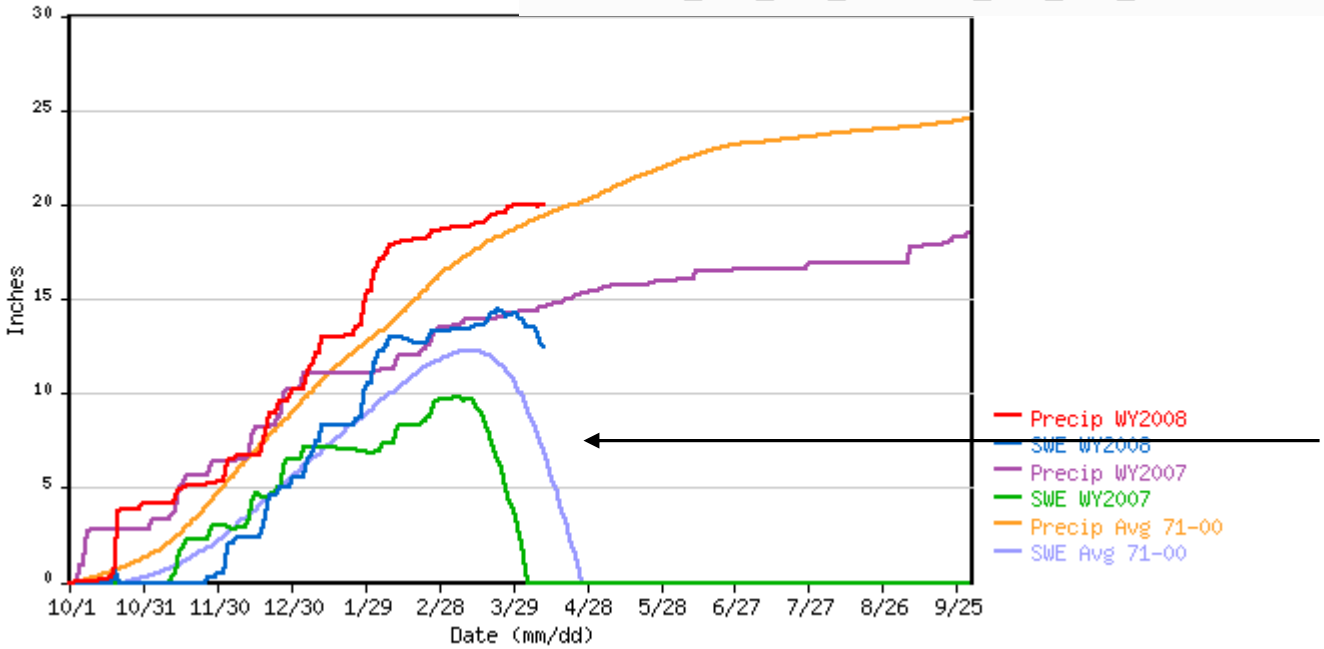

Clearwater Basin 2008 Snowpack Graph (14 Sites)
SWE Average
Prec Average
SWE Current
Prec Current
SWE Projected
Prec Projected
SWE 2002
Prec 2002
As of Monday, April 07, 2008:
SWE Percent of Average: 125
SWE Percent of Seasonal Peak: 125
Percent Needed to Reach Seasonal SWE Peak:
Clearwater River at Spalding
2008 forecast 118%
2002 = 117%
1997 = 162%
Inches - Snow Water Equivalent & Precipitation
0
10
20
30
40
50
60
70
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep


2008 vs. 2003 Lolo Pass SNOTEL Site
and Lochsa River near Lowell, ID
NRCS
Lolo Pass Avg SWE
2008 SWE
2003 SWE
2008 Prec
2003 Prec
Lochsa near Lowell 2008
Lochsa near Lowell 2003
Lochsa near Lowell Average
Updated as of:
April 9, 2008
Inches of Snow Water & Precipitation
Mean Daily CFS
0
5
10
15
20
25
30
35
40
45
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
22000
1-Jan
16-Jan
31-Jan
15-Feb
2-Mar
17-Mar
1-Apr
16-Apr
1-May
16-May
31-May
15-Jun
30-Jun
15-Jul
30-Jul



SOLDIER R.S. SNOTE

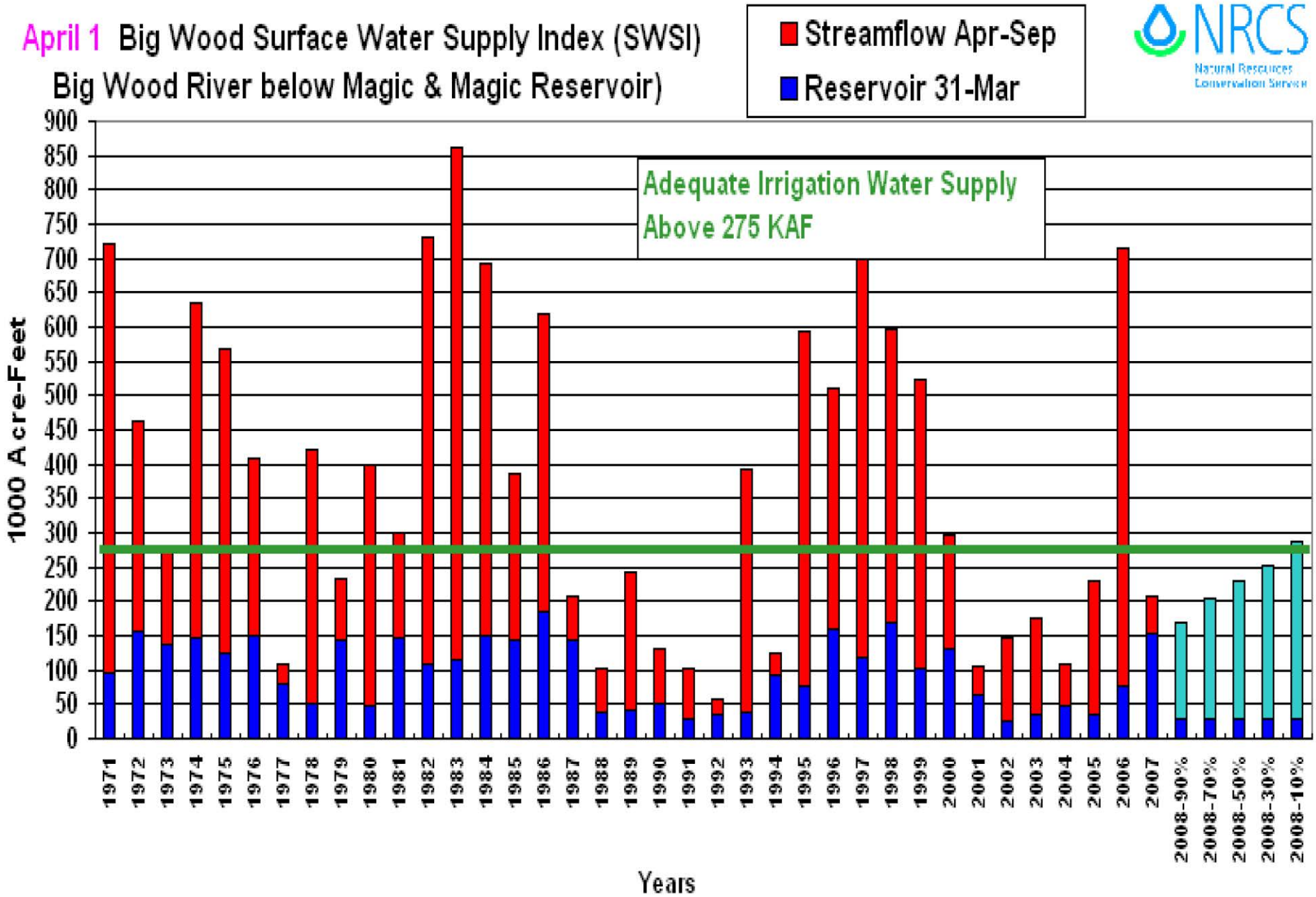
*** Provisional Data,

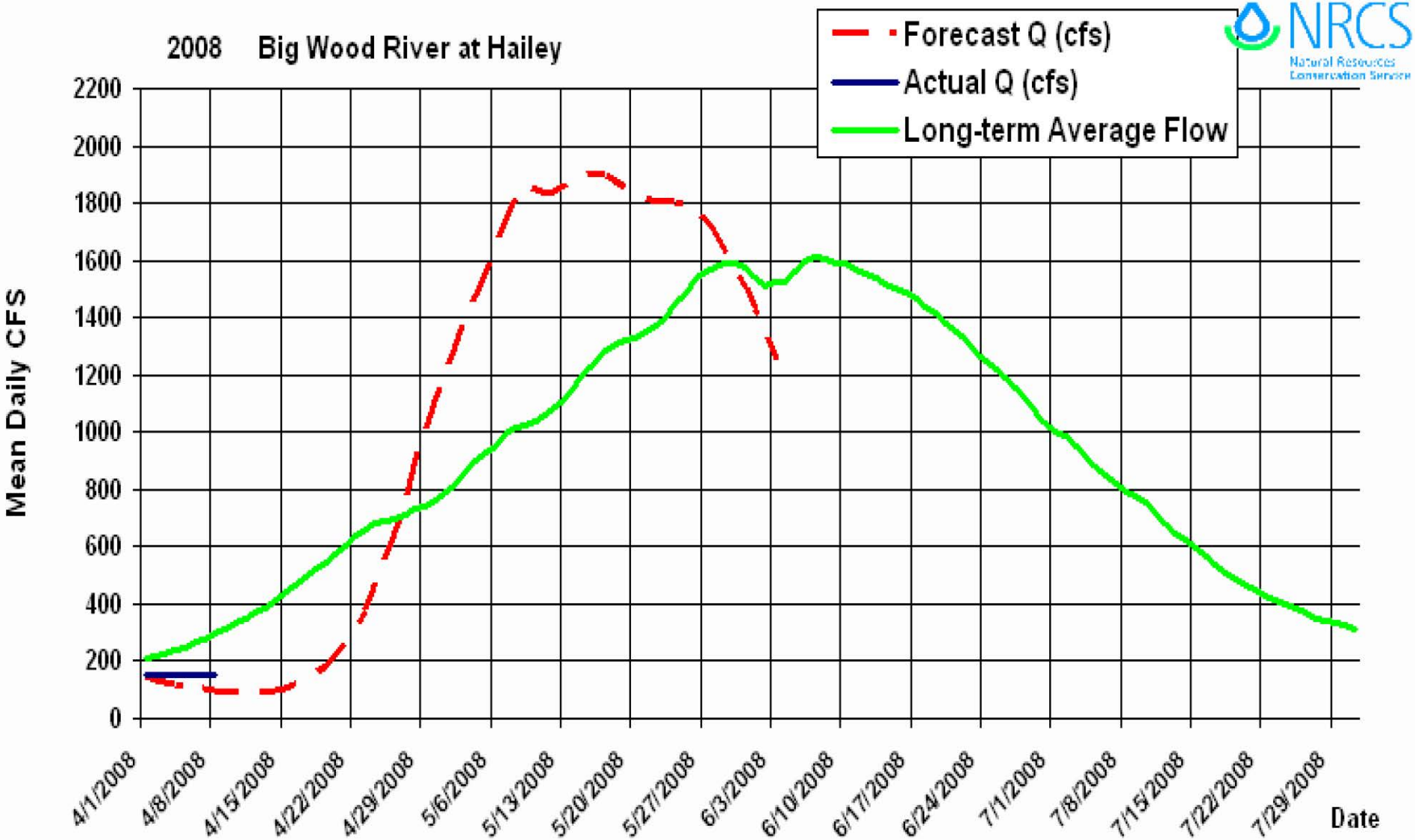


On Average, Camas Creek peaks 1 day before half-melt at Soldier RS

NRCS Natural Resources Conservation Service

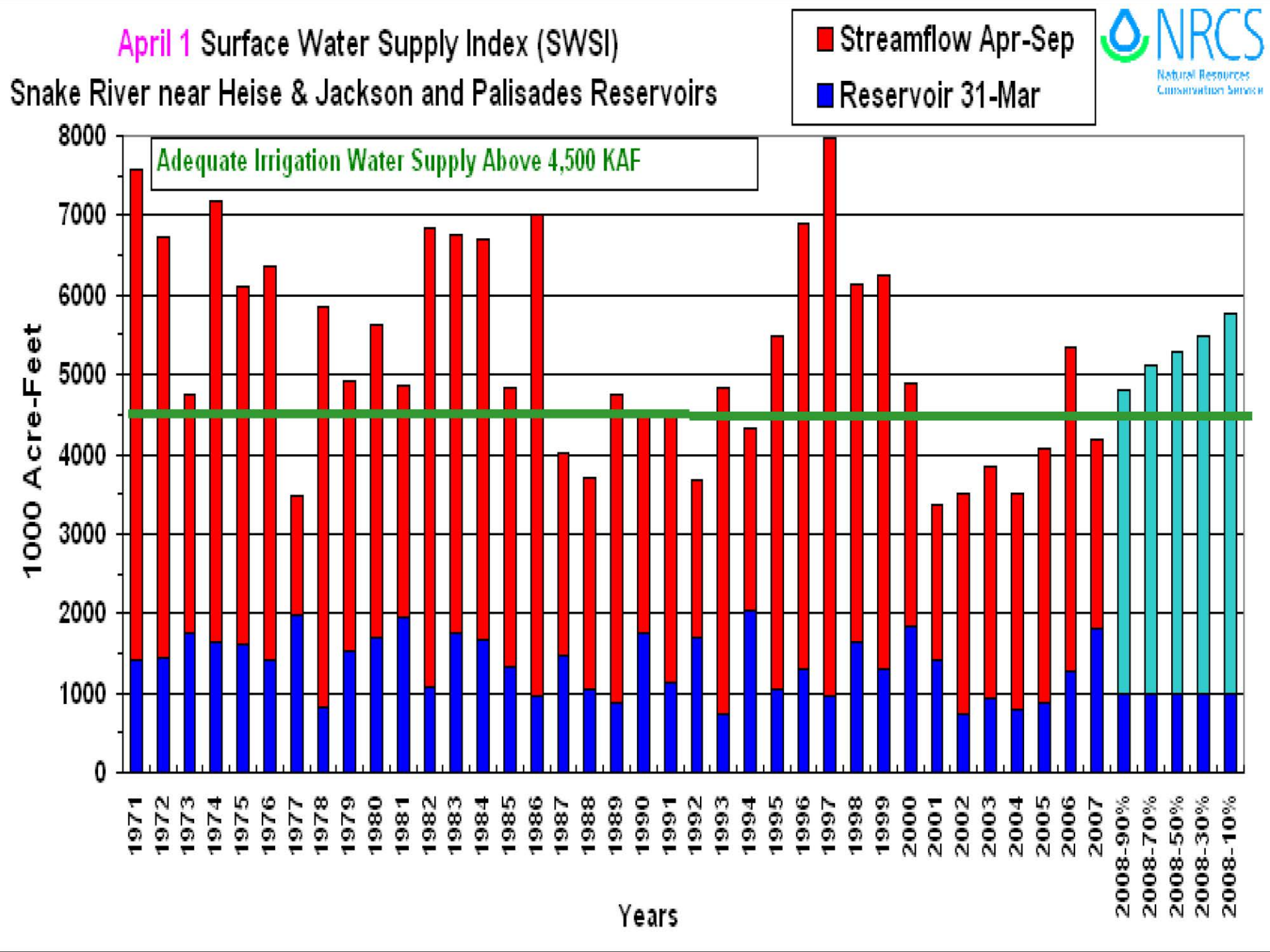
Water supplies will be tight in Big Wood and Little Lost Basins

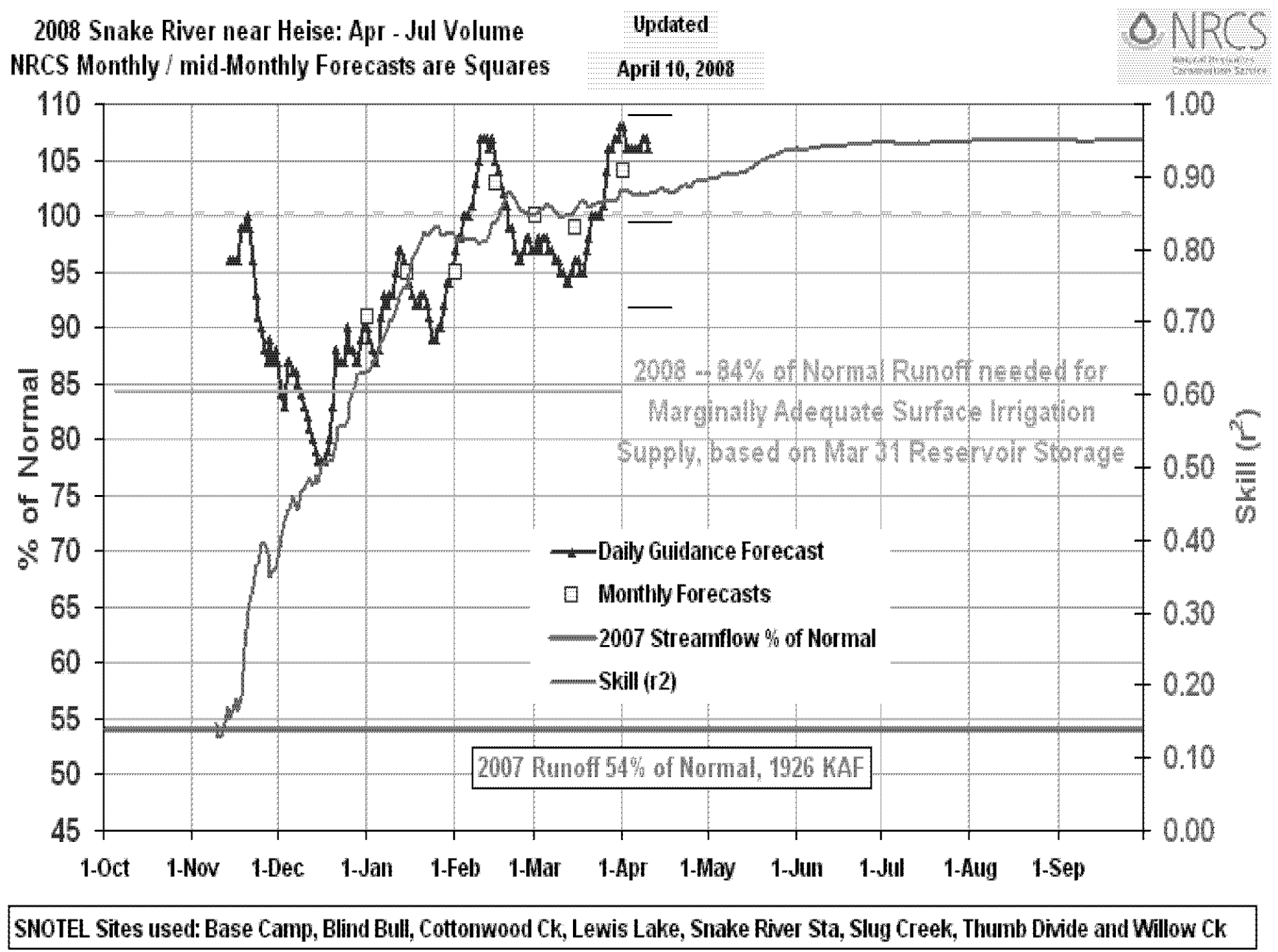


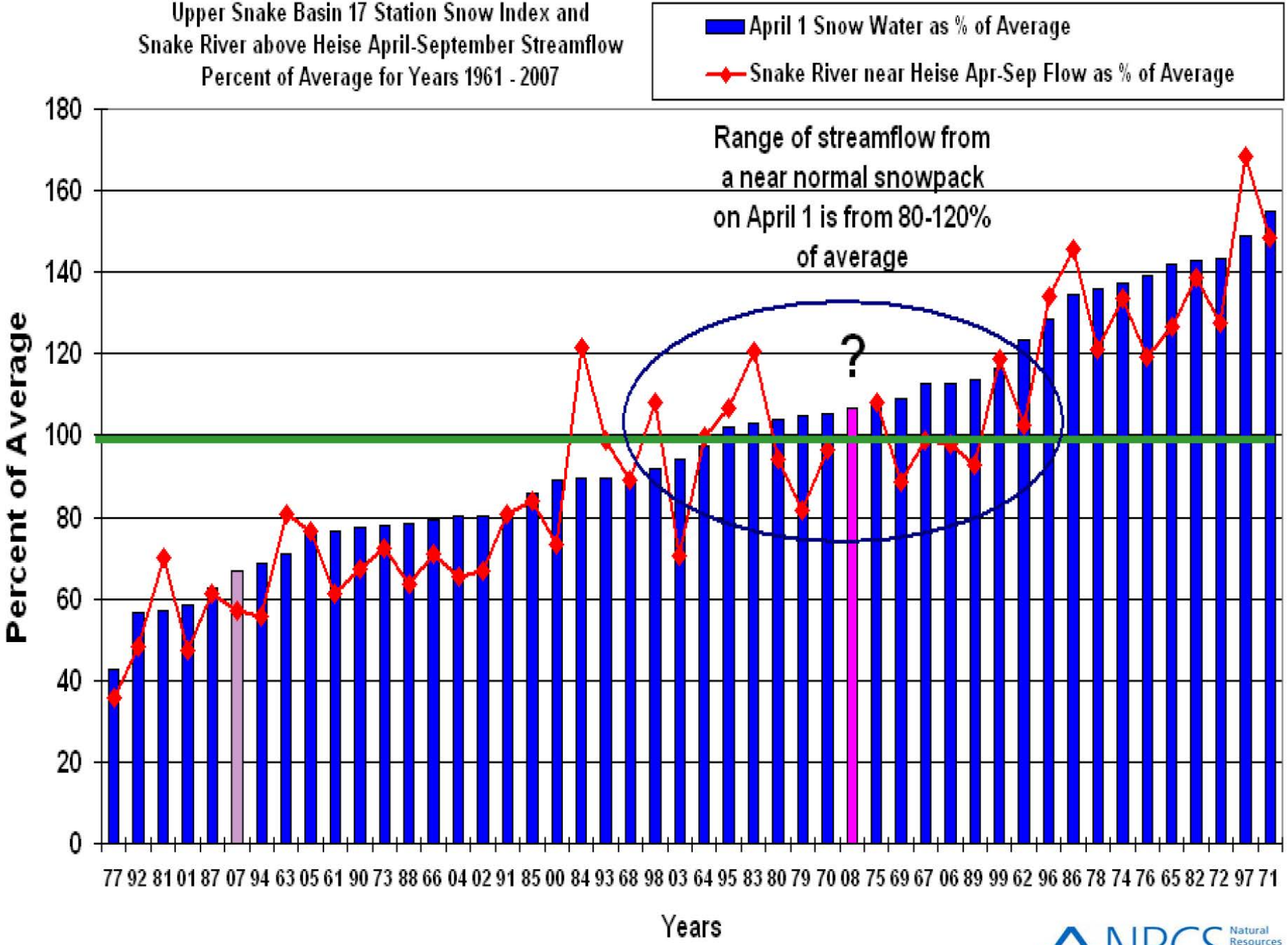


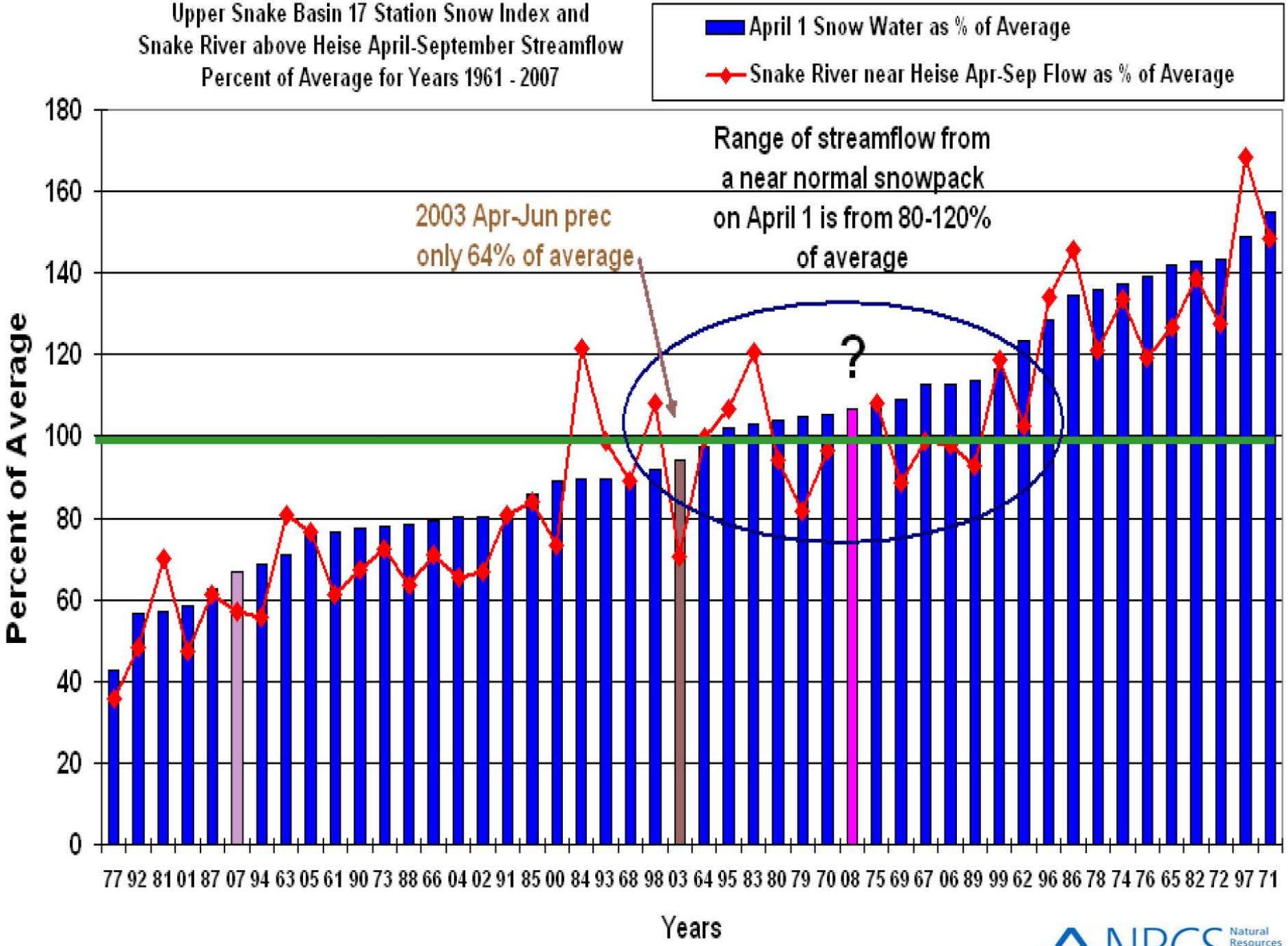
Snowmelt Operational Spreadsheet Hydrograph Using SNOTEL (SNOSHUS)

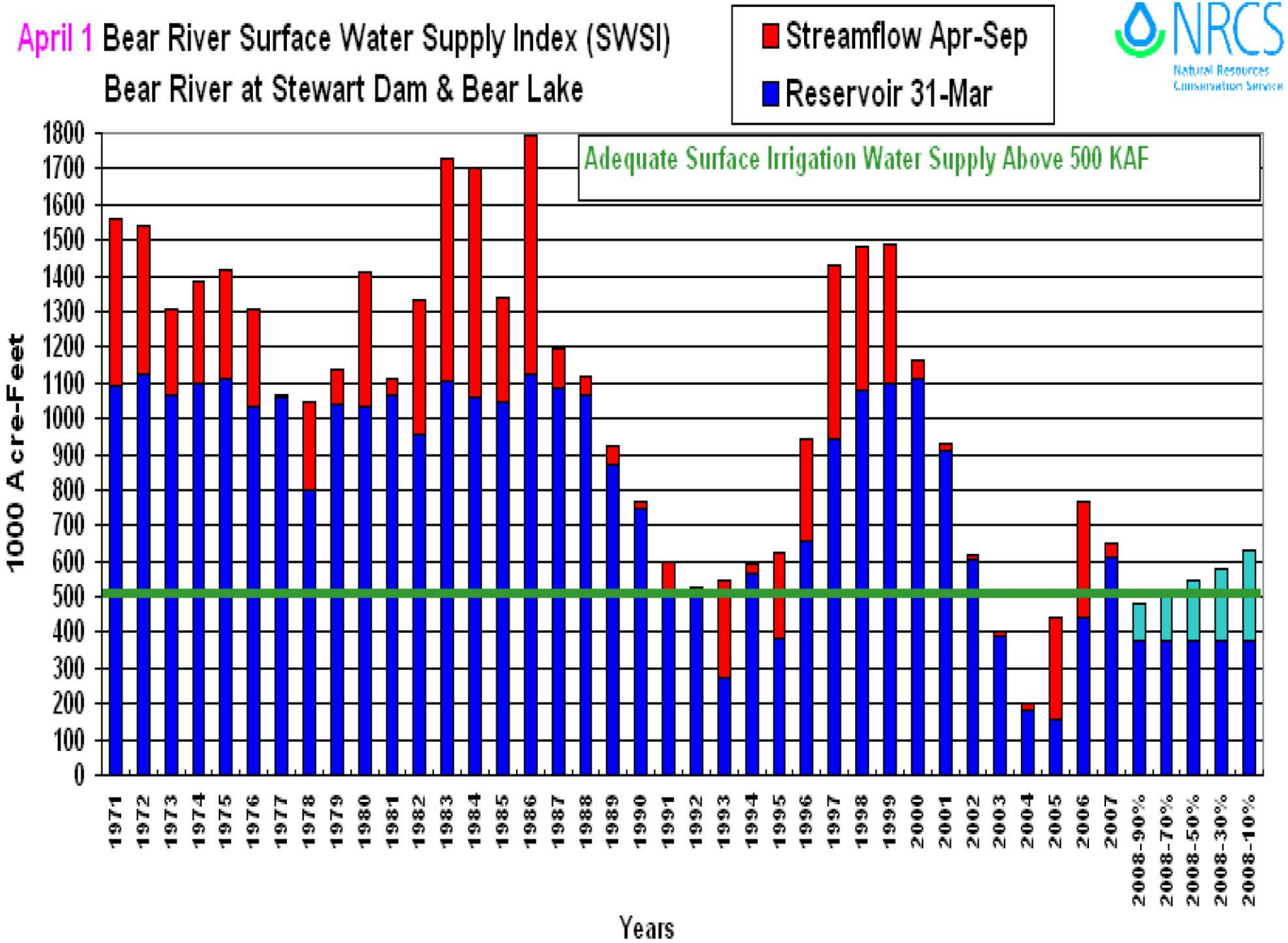
April 9, 2008 Model is initialized on April 1 based on current Mean Daily Flow of 152 cfs. The SNOTEL sites are just now reaching their seasonal peak for the year. With melt rates currently at zero, they are blended into average melt rates seven days from now. No future precipitation is used and is added as it fall.

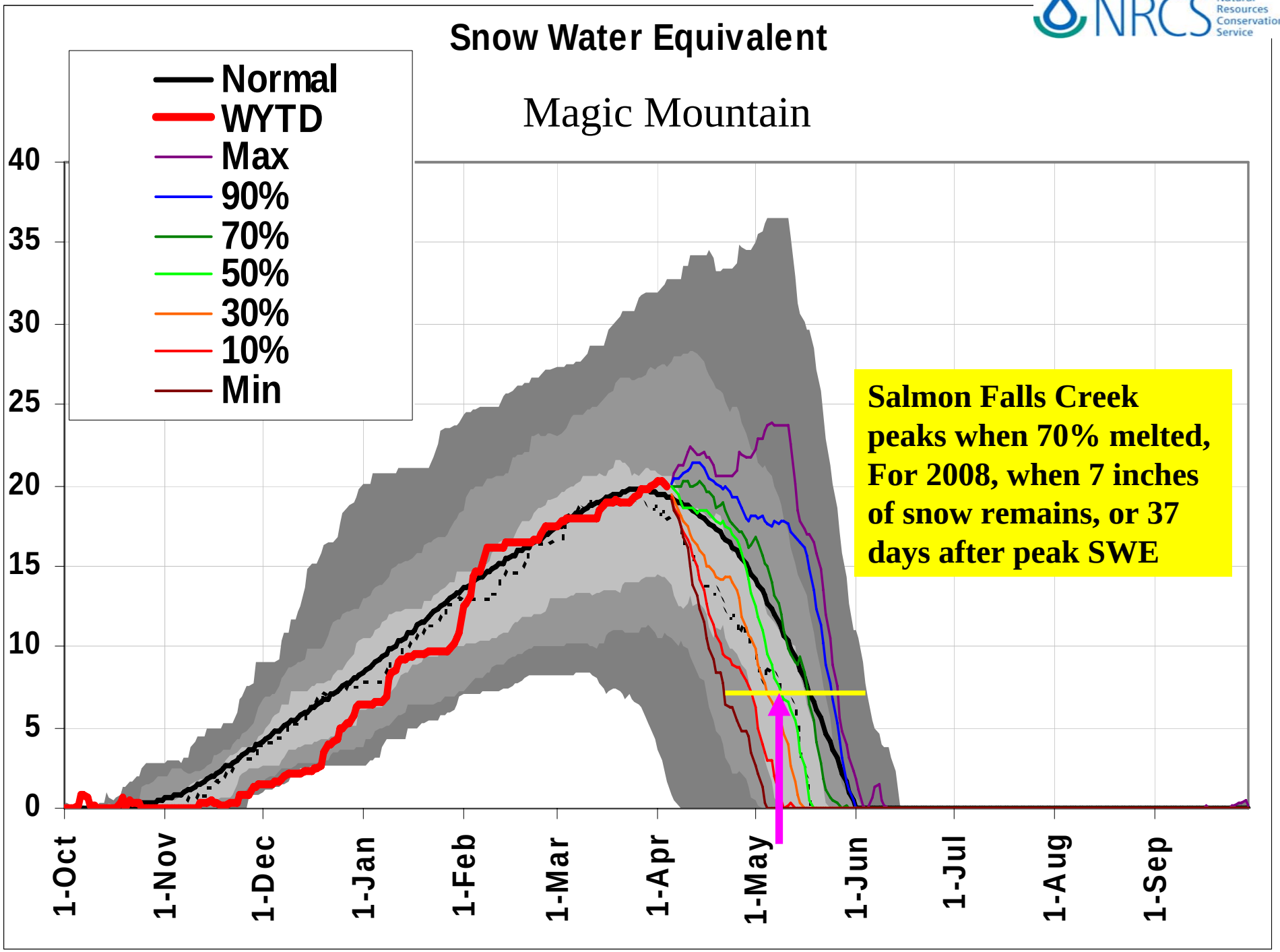

April 1 Surface Water Supply Index (SWSI)
Snake River near Heise & Jackson and Palisades Reservoirs
Streamflow Apr-Sep
Reservoir 31-Mar
NRCS
Natural Resources Conservation Service
Adequate Irrigation Water Supply Above 4,500 KAF
1000 Acre-Feet
0
1000
2000
3000
4000
5000
6000
7000
8000
1971
1972
1973
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
2008-90%
2008-70%
2008-50%
2008-30%
2008-10%
Years

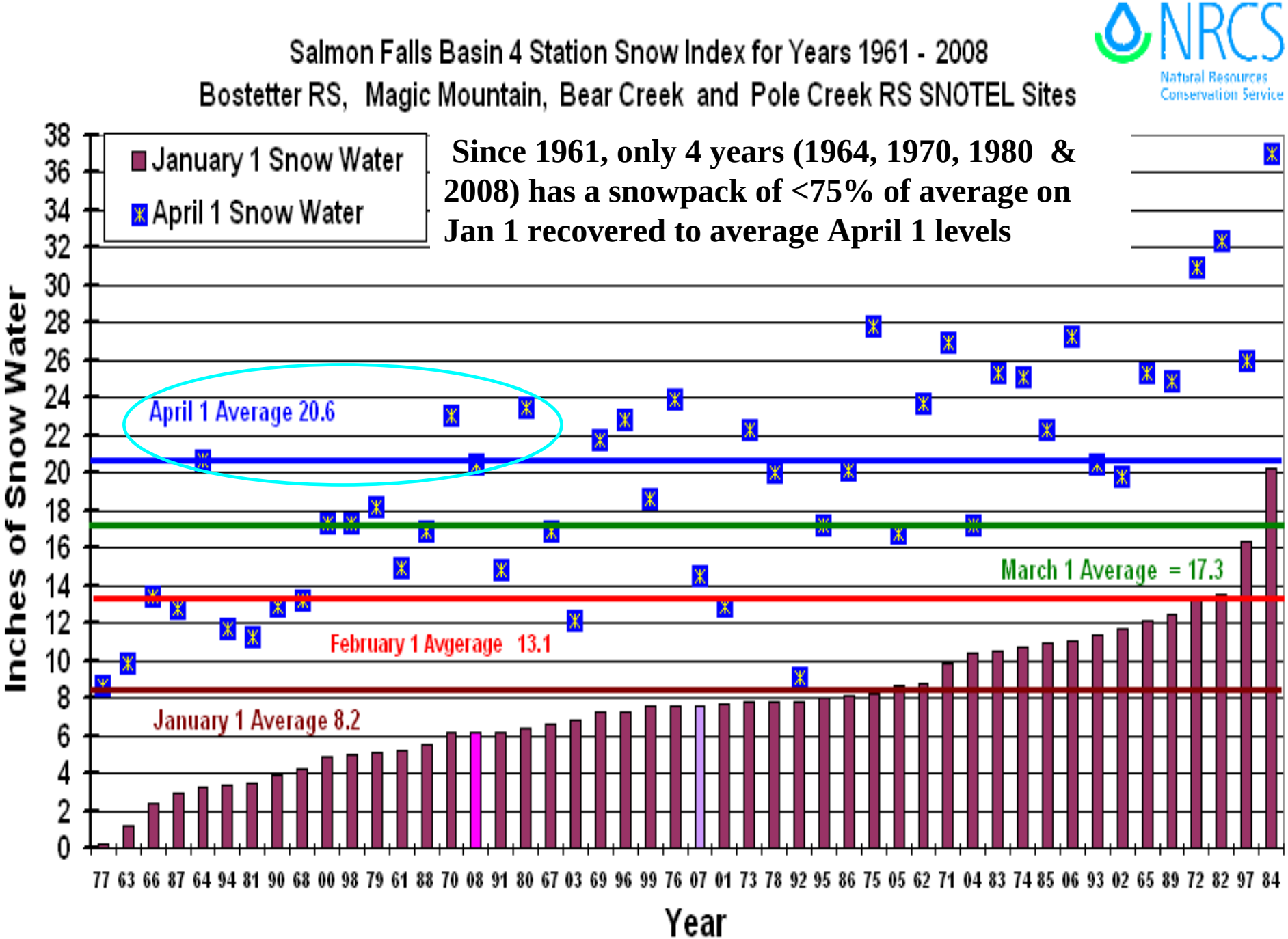

2008 Snake River near Heise: Apr - Jul Volume
NRCS Monthly / mid-Monthly Forecasts are Squares
Updated
April 10, 2008
NRCS
% of Normal
Skill (r^2)
110
105
100
95
90
85
80
75
70
65
60
55
50
45
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
2008 - 84% of Normal Runoff needed for
Marginally Adequate Surface Irrigation
Supply, based on Mar 31 Reservoir Storage
Daily Guidance Forecast
Monthly Forecasts
2007 Streamflow % of Normal
Skill (r2)
2007 Runoff 54% of Normal, 1926 KAF
SNOTEL Sites used: Base Camp, Blind Bull, Cottonwood Ck, Lewis Lake, Snake River Sta, Slug Creek, Thumb Divide and Willow Ck

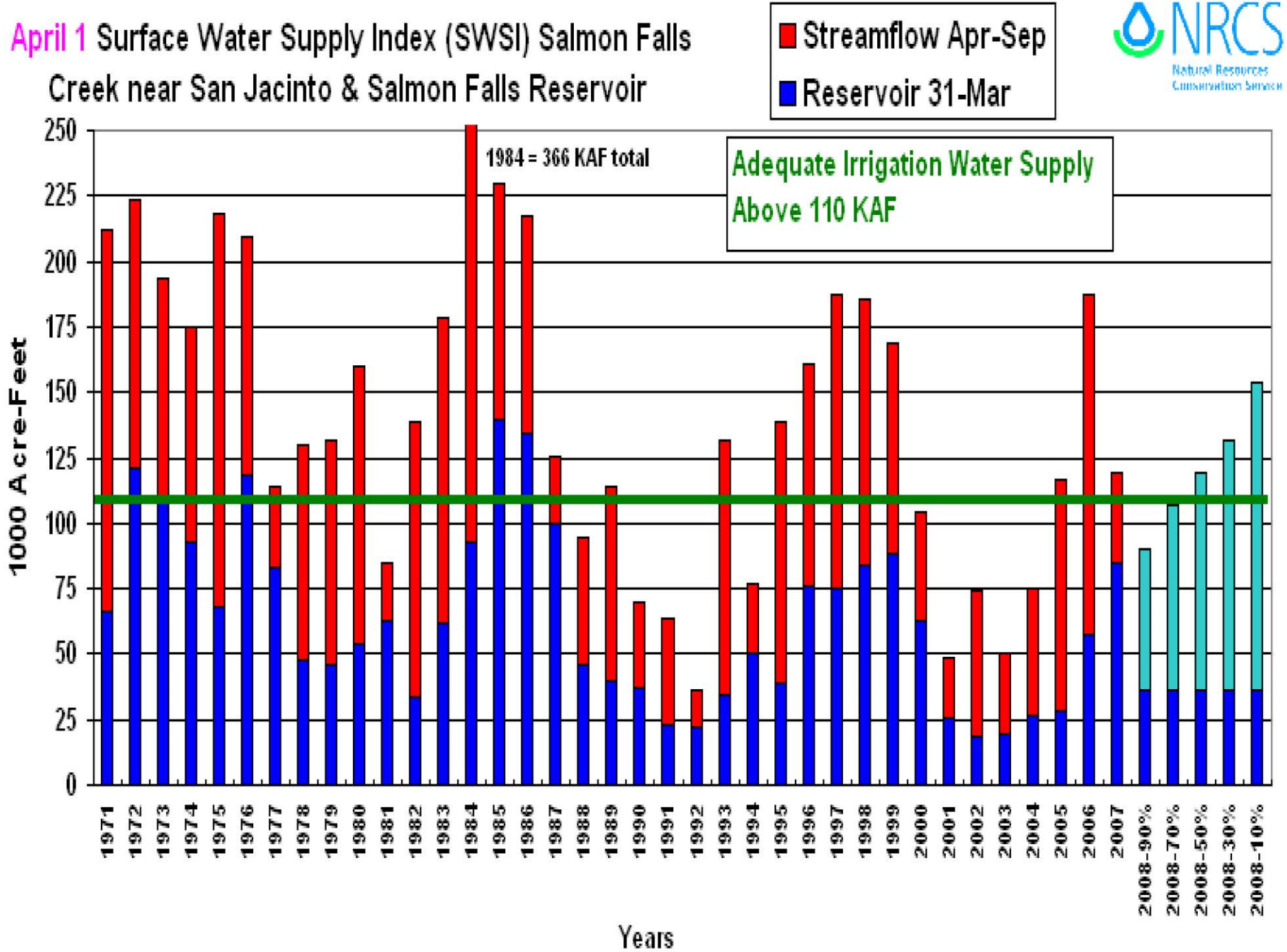

Upper Snake Basin 17 Station Snow Index and
Snake River above Heise April-September Streamflow
Percent of Average for Years 1961 - 2007
April 1 Snow Water as % of Average
Snake River near Heise Apr-Sep Flow as % of Average
Range of streamflow from
a near normal snowpack
on April 1 is from 80-120%
of average
?
Percent of Average
0
20
40
60
80
100
120
140
160
180
77 92 81 01 87 07 94 63 05 61 90 73 88 66 04 02 91 85 00 84 93 68 98 03 64 95 83 80 79 70 08 75 69 67 06 89 99 62 96 86 78 74 76 65 82 72 97 71
Years
NRCS
Natural Resources Conservation Service


Upper Snake Basin 17 Station Snow Index and
Snake River above Heise April-September Streamflow
Percent of Average for Years 1961 - 2007
April 1 Snow Water as % of Average
Snake River near Heise Apr-Sep Flow as % of Average
Range of streamflow from
a near normal snowpack
on April 1 is from 80-120%
of average
2003 Apr-Jun prec
only 64% of average
?
Percent of Average
180
160
140
120
100
80
60
40
20
0
77 92 81 01 87 07 94 63 05 61 90 73 88 66 04 02 91 85 00 84 93 68 98 03 64 95 83 80 79 70 08 75 69 67 06 89 99 62 96 86 78 74 76 65 82 72 97 71
Years
NRCS
Natural
Resources
Conservation
Service


April 1 Bear River Surface Water Supply Index (SWSI)
Bear River at Stewart Dam & Bear Lake
Streamflow Apr-Sep
Reservoir 31-Mar
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
2008-90%
2008-70%
2008-50%
2008-30%
2008-10%
Years


Snow Water Equivalent
Magic Mountain
Normal
WYTD
Max
90%
70%
50%
30%
10%
Min
40
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
Salmon Falls Creek peaks when 70% melted, For 2008, when 7 inches of snow remains, or 37 days after peak SWE


Salmon Falls Basin 4 Station Snow Index for Years 1961 - 2008
Bostetter RS, Magic Mountain, Bear Creek and Pole Creek RS SNOTEL Sites
NRCS
Natural Resources Conservation Service
January 1 Snow Water
April 1 Snow Water
Since 1961, only 4 years (1964, 1970, 1980 & 2008) has a snowpack of <75% of average on Jan 1 recovered to average April 1 levels
April 1 Average 20.6
March 1 Average = 17.3
February 1 Avgerage 13.1
January 1 Average 8.2
Inches of Snow Water
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
77 63 66 87 64 94 81 90 68 00 98 79 61 88 70 08 91 80 67 03 69 96 99 76 07 01 73 78 92 95 86 75 05 62 71 04 83 74 85 06 93 02 65 89 72 82 97 84
Year


April 1 Surface Water Supply Index (SWSI) Salmon Falls Creek near San Jacinto & Salmon Falls Reservoir
Streamflow Apr-Sep
Reservoir 31-Mar
NRCS
Natural Resources Conservation Service
1984 = 366 KAF total
Adequate Irrigation Water Supply Above 110 KAF
1000 Acre-Feet
0
25
50
75
100
125
150
175
200
225
250
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
2008-90%
2008-70%
2008-50%
2008-30%
2008-10%
Years

Twin Falls Soil & Water Conservation District
Salmon Falls Reservoir Storage Allotment

Updated April 7, 2008

Based on NRCS April 1 Streamflow Forecasts

Note: Allotment formula is based on March 31 reservoir storage and April 1 - September 30 forecasts.

		Chance of Exceedance Streamflow Forecasts				
March 31 reservoir storage in Acre-feet =	36000	90%	70%	50%	30%	10%
Inflow Forecast, April 1-September 30, acre-feet		54000	71000	83000	96000	118000
Storage in Dam, March 31, acre-feet	36000	36000	36000	36000	36000	36000
Total Storage (Inflow Forecast + Storage)		90000	107000	119000	132000	154000
Less Dead Storage in Reservoir (5000 A-F)	5000	85000	102000	114000	127000	149000
Projected Reservoir Loss of 20%	0.20	17000	20400	22800	25400	29800
In Dam, Available for Delivery		68000	81600	91200	101600	119200
Projected Delivery Efficiency: 2007 59.4% 2006 65.3% 2005 59.4%	0.55	37400	44880	50160	55880	65560
Less Water for Callen	485	485	485	485	485	485
Less Individual Storage Carryover	5607	5607	5607	5607	5607	5607
Water to be Delivered Over the Weir		31308	38788	44068	49788	59468
Divided by Total Shares	60050.65	0.521	0.646	0.734	0.829	0.990
Allotment if 'Individual Storage Carryover' is not subtracted from 'In Dam, Available for Delivery'		0.615	0.739	0.827	0.922	1.084

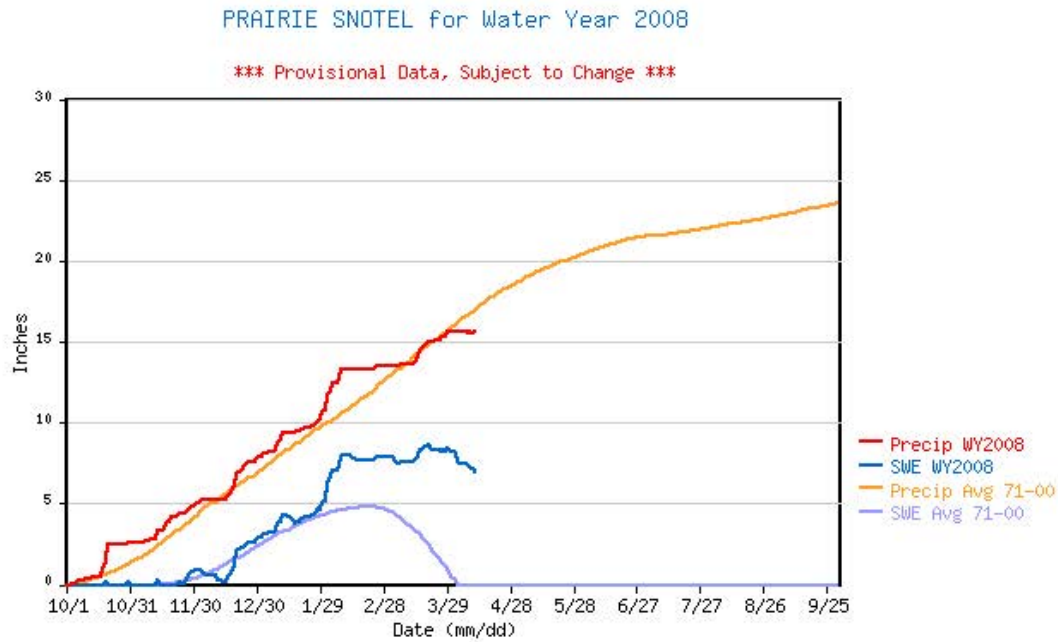
Average Allotment	
1924-2006	0.761
1971-2000	0.934
2002-2006	0.616
Full Allotment	1.167

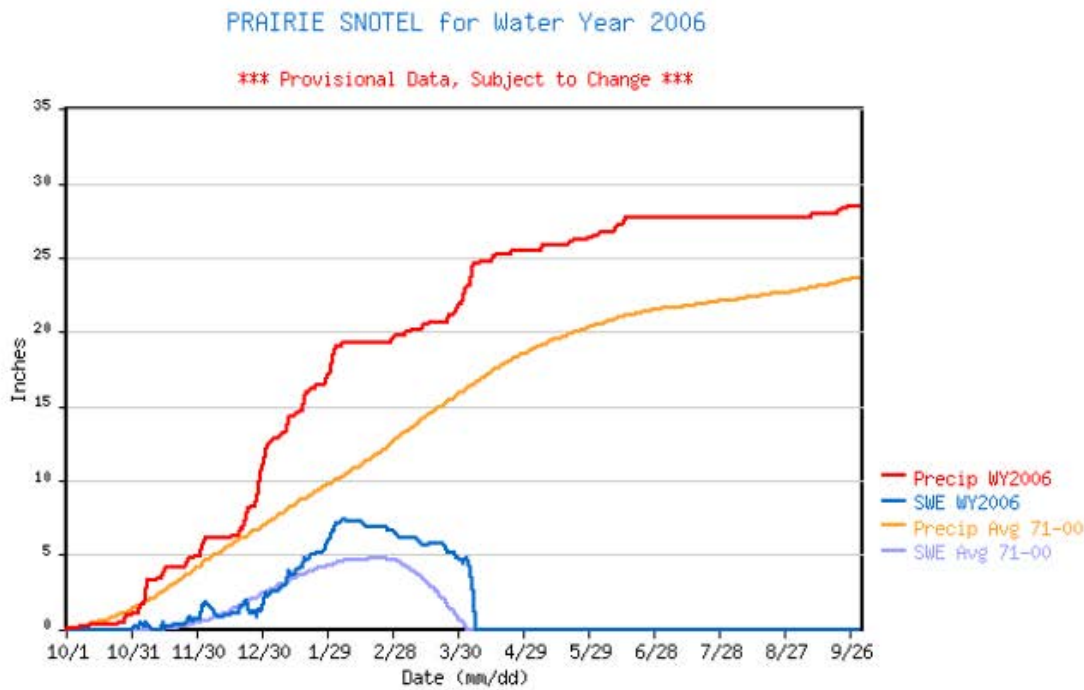
NRCS Natural Resources Conservation Service

Images from UT fire, 9500 feet: multiple ice layers in fire area, outside of fire area not affected 35% density, carbon in pack;

Impacts: fire will impact runoff this year and possibly for several year in future, accelerated melt, shift in hydrograph, possible higher flows

NRCS Natural Resources Conservation Service


PRAIRIE SNOTEL for Water Year 2008
*** Provisional Data, Subject to Change ***
Inches
0
5
10
15
20
25
30
10/1
10/31
11/30
12/30
1/29
2/28
3/29
4/28
5/28
6/27
7/27
8/26
9/25
Date (mm/dd)
Precip WY2008
SWE WY2008
Precip Avg 71-00
SWE Avg 71-00


PRAIRIE SNOTEL for Water Year 2006
*** Provisional Data, Subject to Change ***
Inches
0
5
10
15
20
25
30
35
10/1
10/31
11/30
12/30
1/29
2/28
3/30
4/29
5/29
6/28
7/28
8/27
9/26
Date (mm/dd)
Precip WY2006
SWE WY2006
Precip Avg 71-00
SWE Avg 71-00

Weather and Climate Outlook

Idaho Water Supply Committee Meeting 4/11/2008

Jay Breidenbach, NOAA National Weather Service

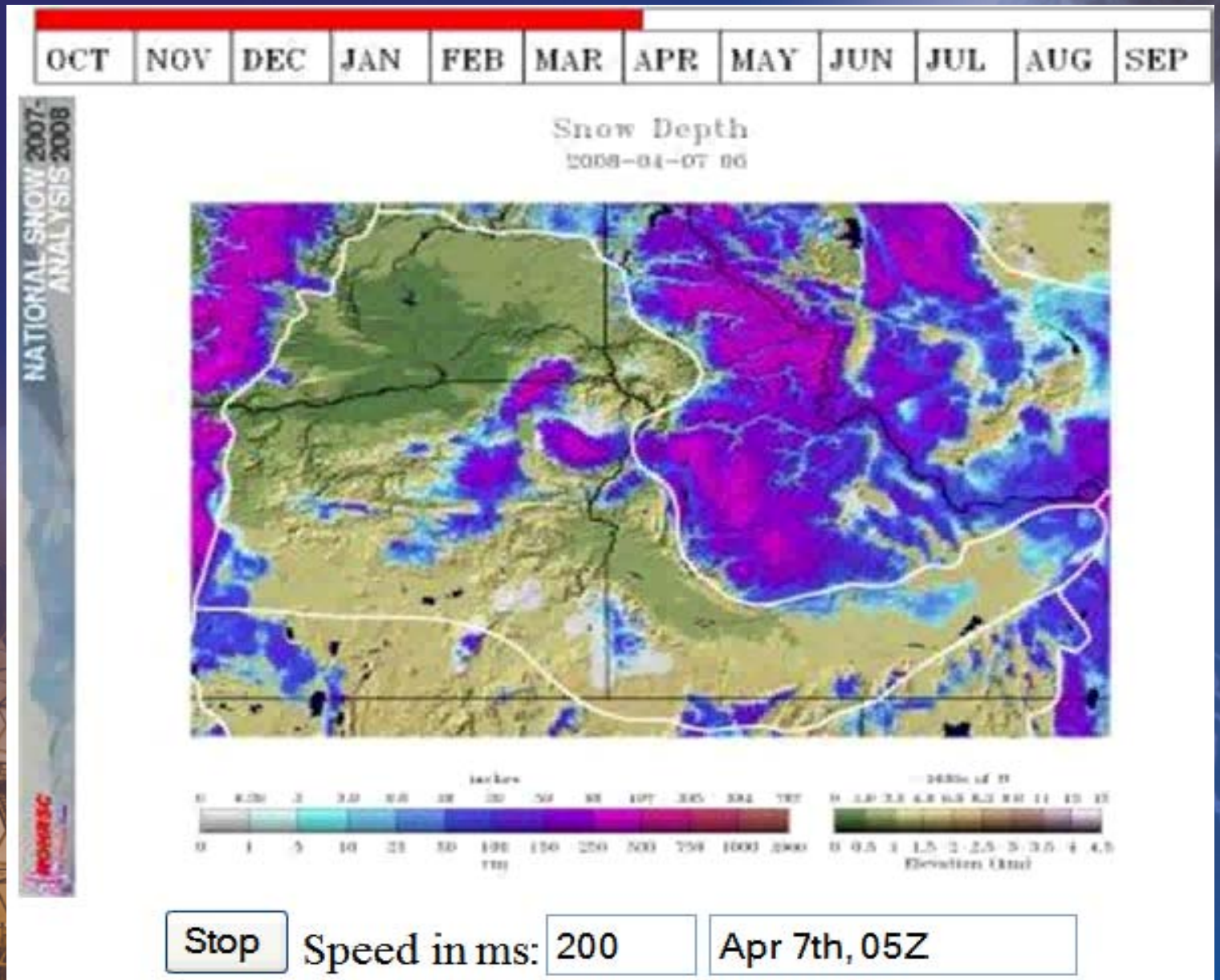
Snow Accumulation and Melt

Three Month Climate Outlook

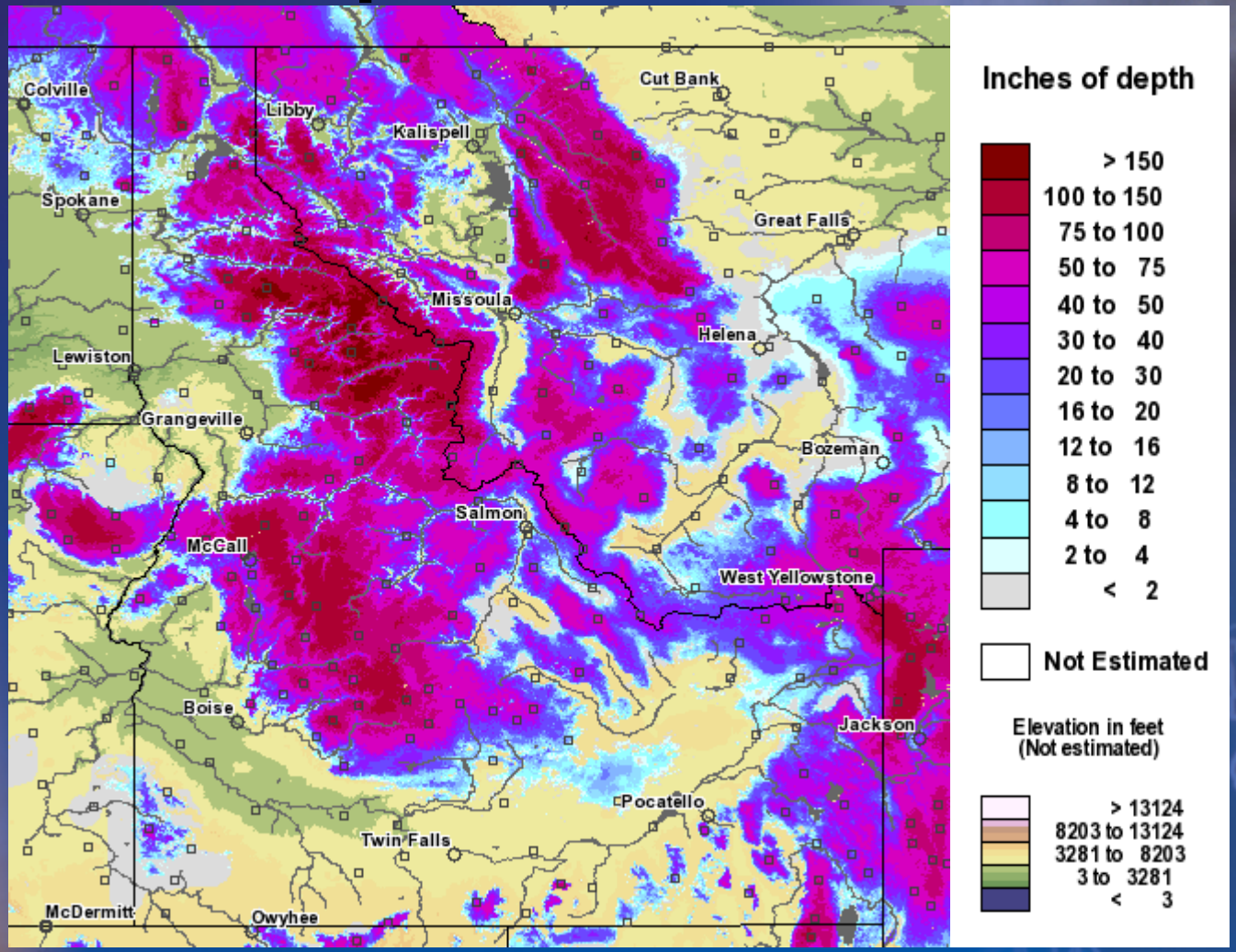
Forecast for next 10 days

Spring Flood Potential

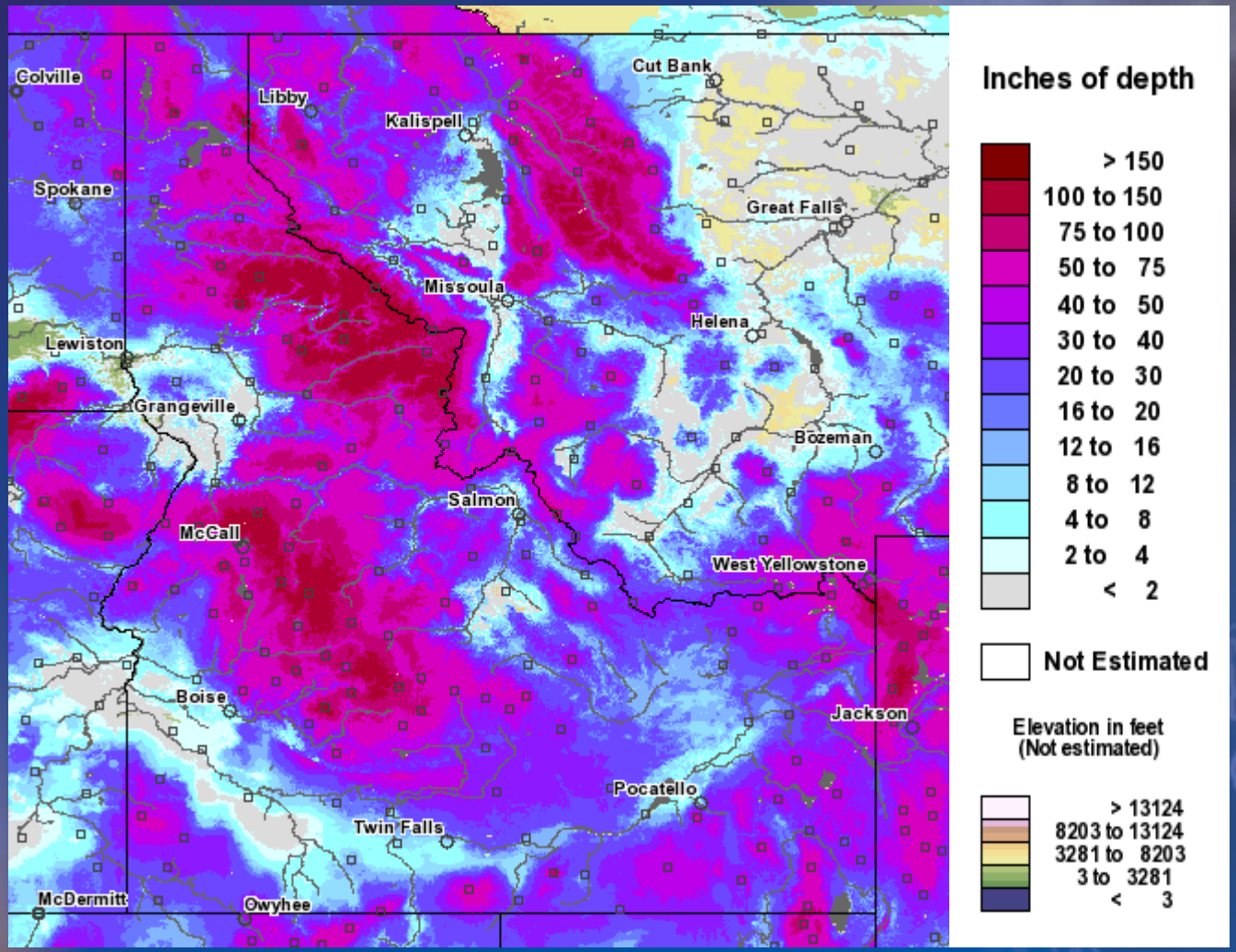
2008 Water Year Snow Movie



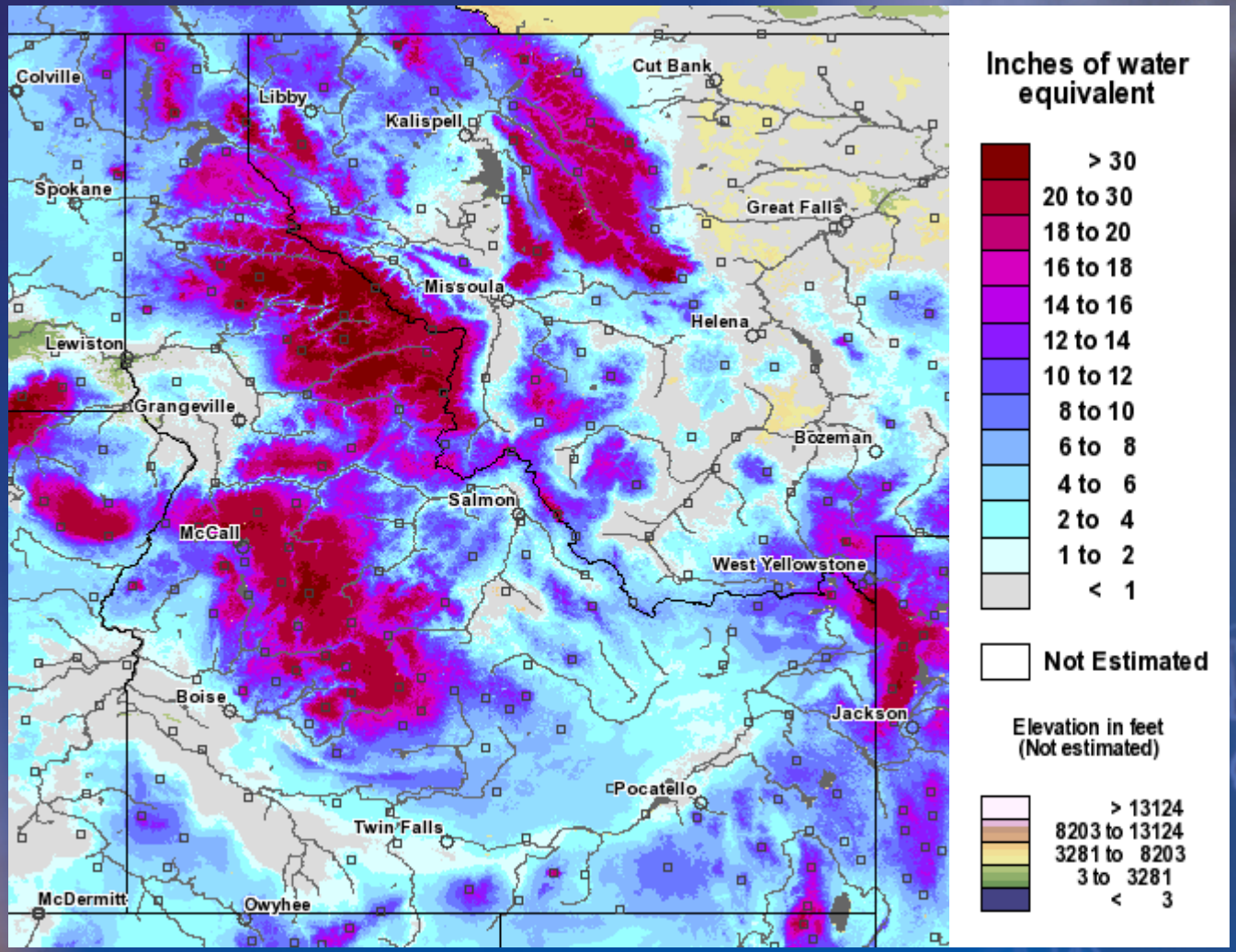
Snow Depth
April 7th, 2008



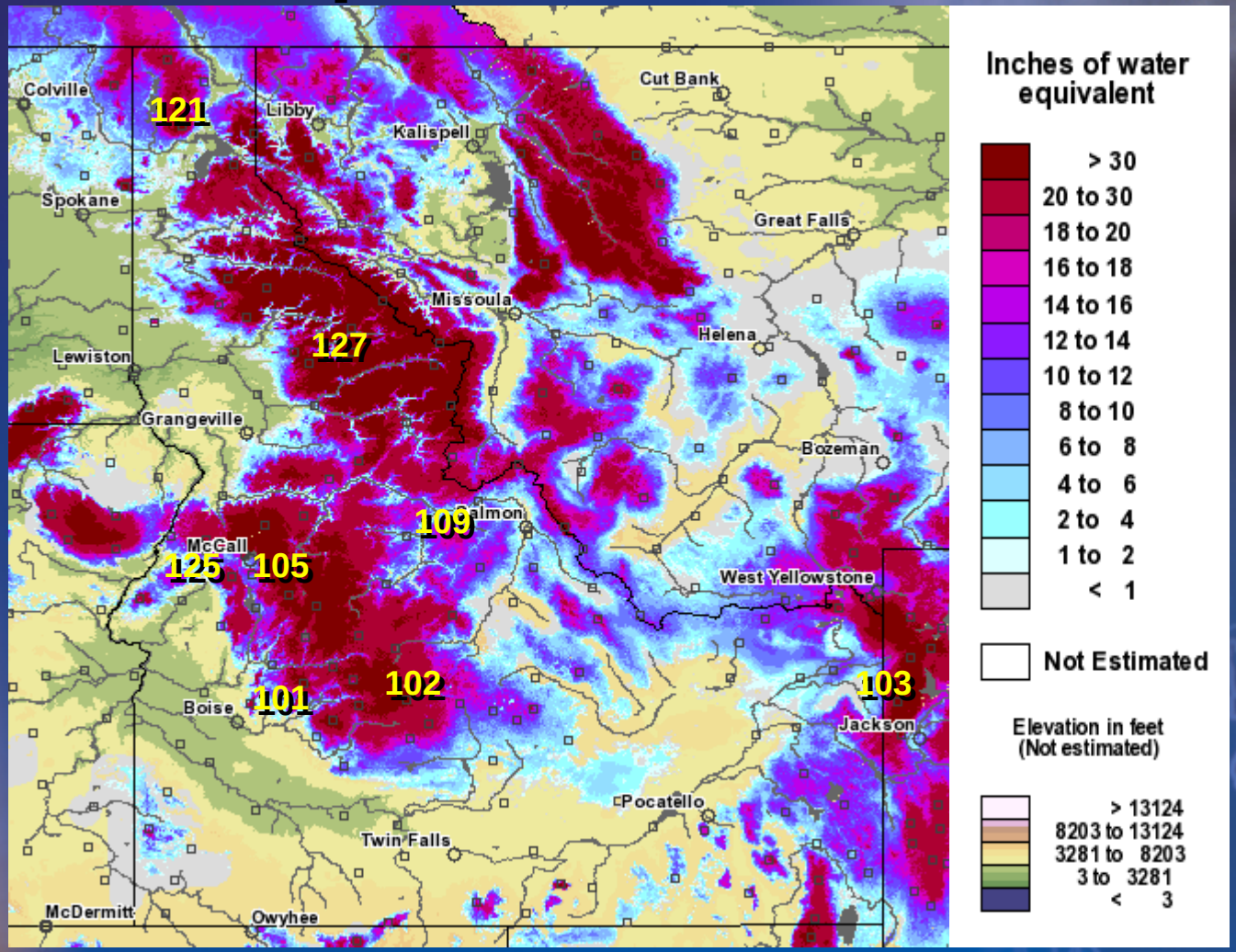
Snow Depth
Feb 6th, 2008



Snow Water Equivalent
Feb 6th, 2008



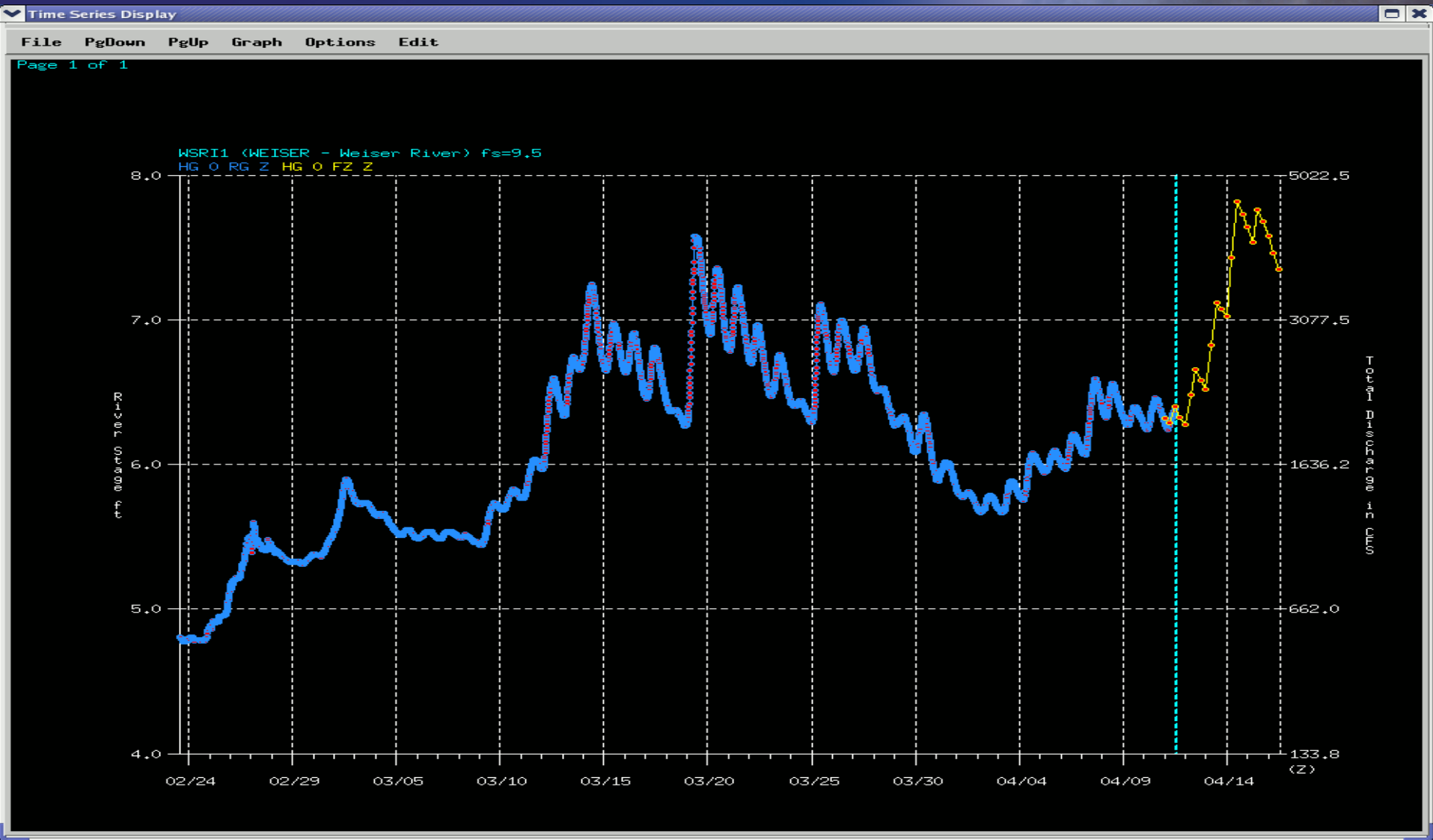
Snow Water Equivalent
April 11th, 2008



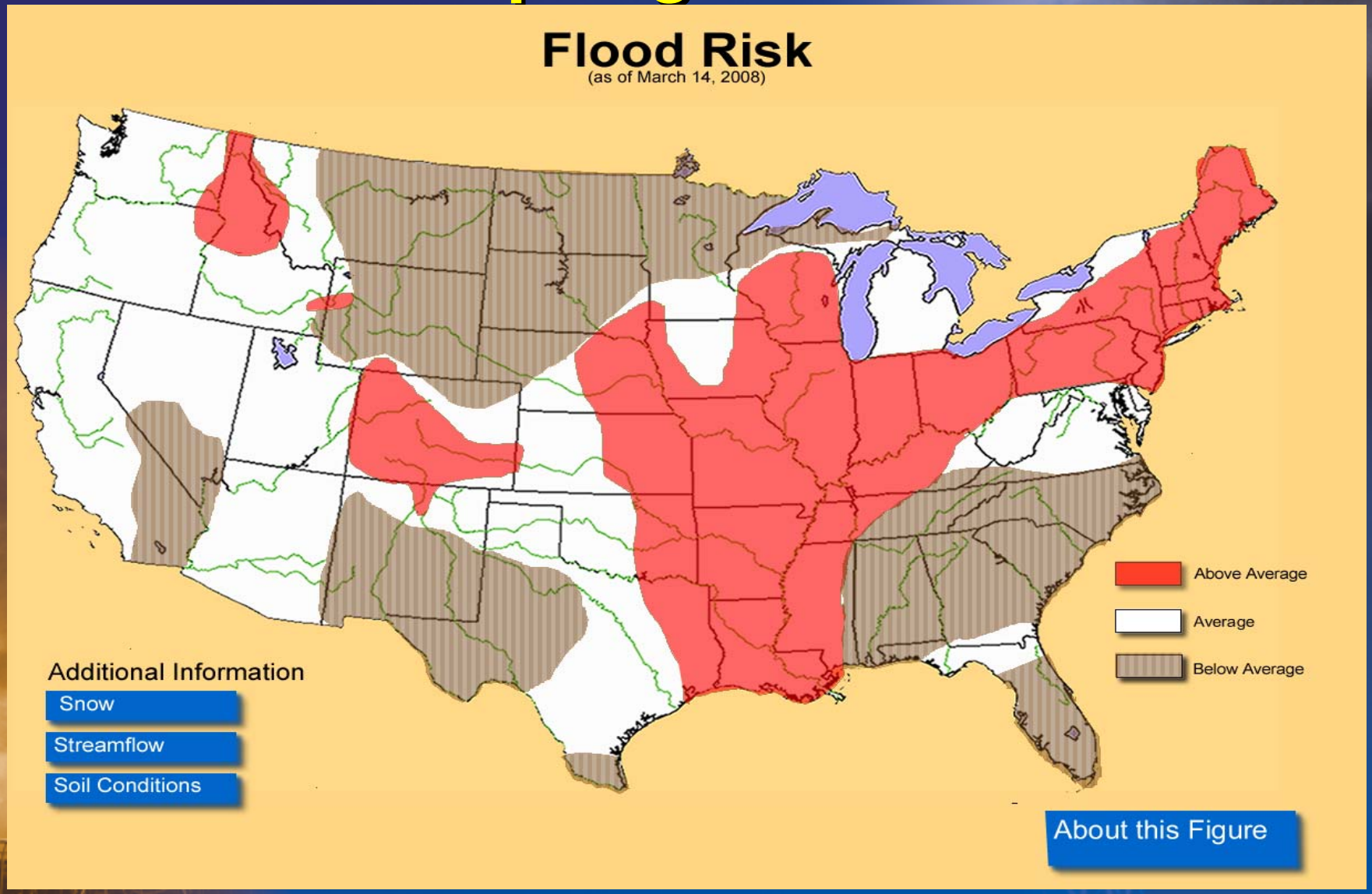
130 125 101

Evidence of Heavy Snow in Cambridge Idaho

Where did it go?



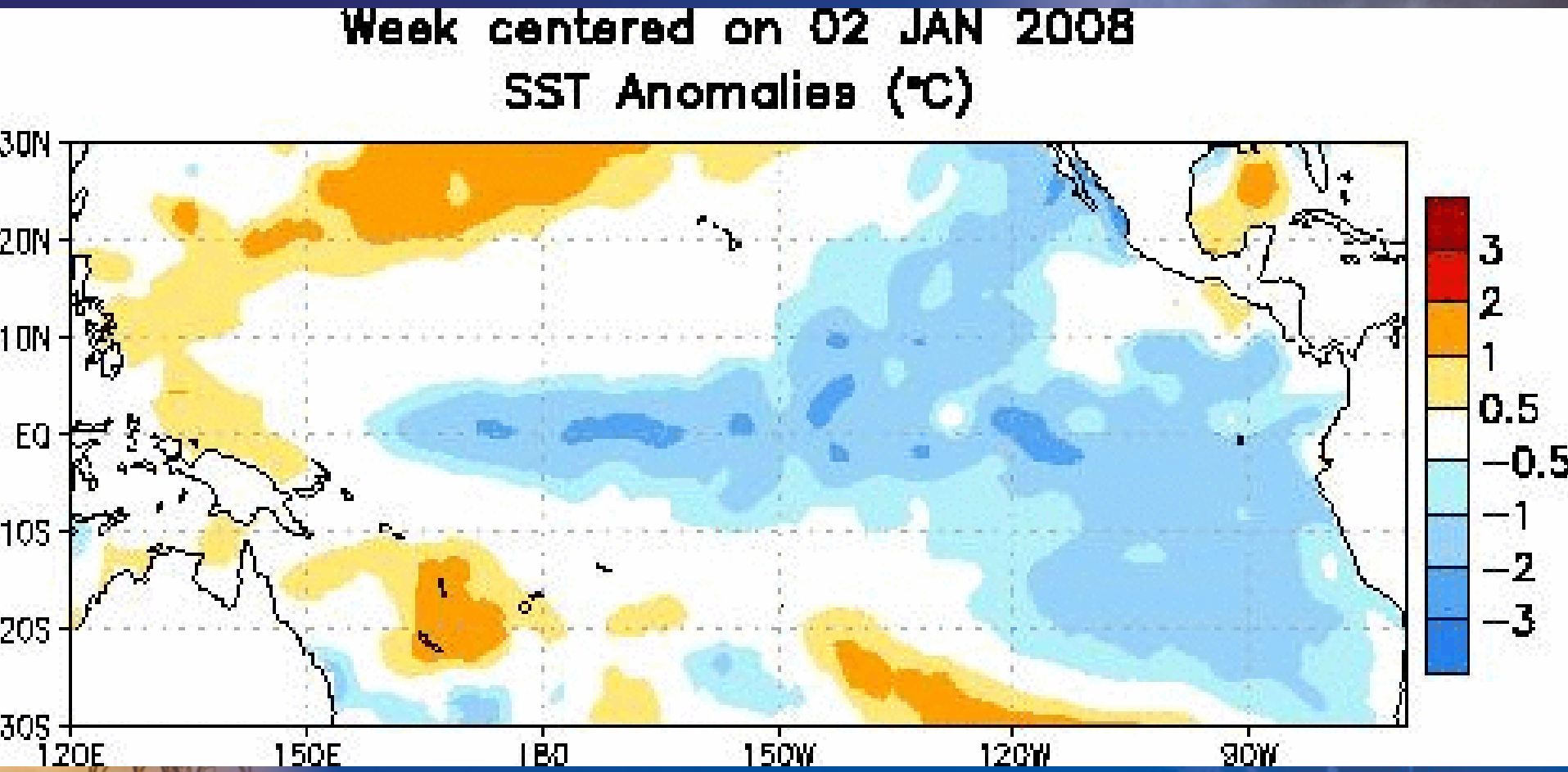
National Spring Flood Potential



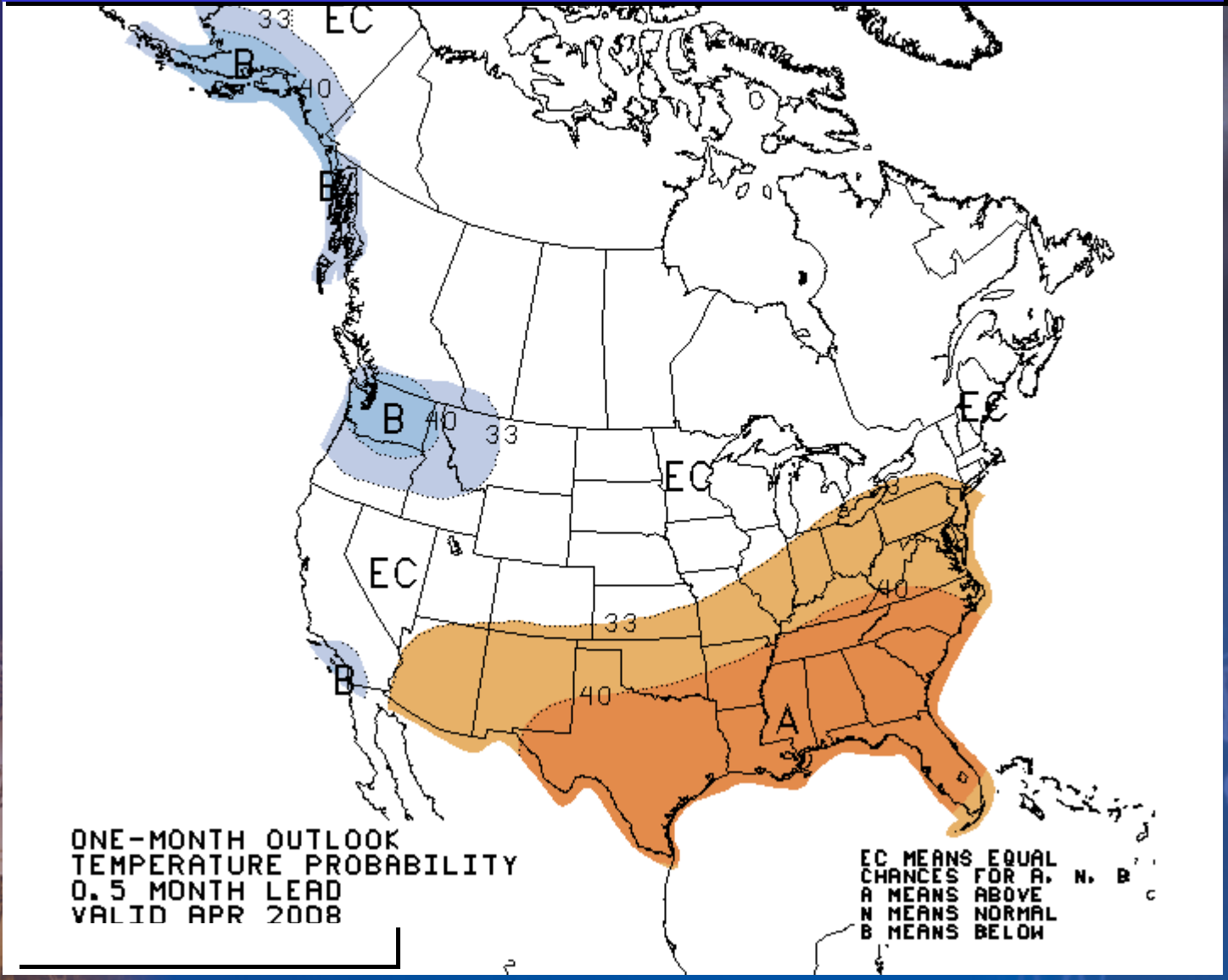
Idaho Flood Potential

Area of Concern	Dates of Greatest Concern
Small Streams in Valley County	Late April through Early May
Streams in Clear Water River Basin	Late April through Late May
Streams in Idaho Panhandle Region	Late April through Late May
- Including St Joe, St Maries, Coeur D Alene	

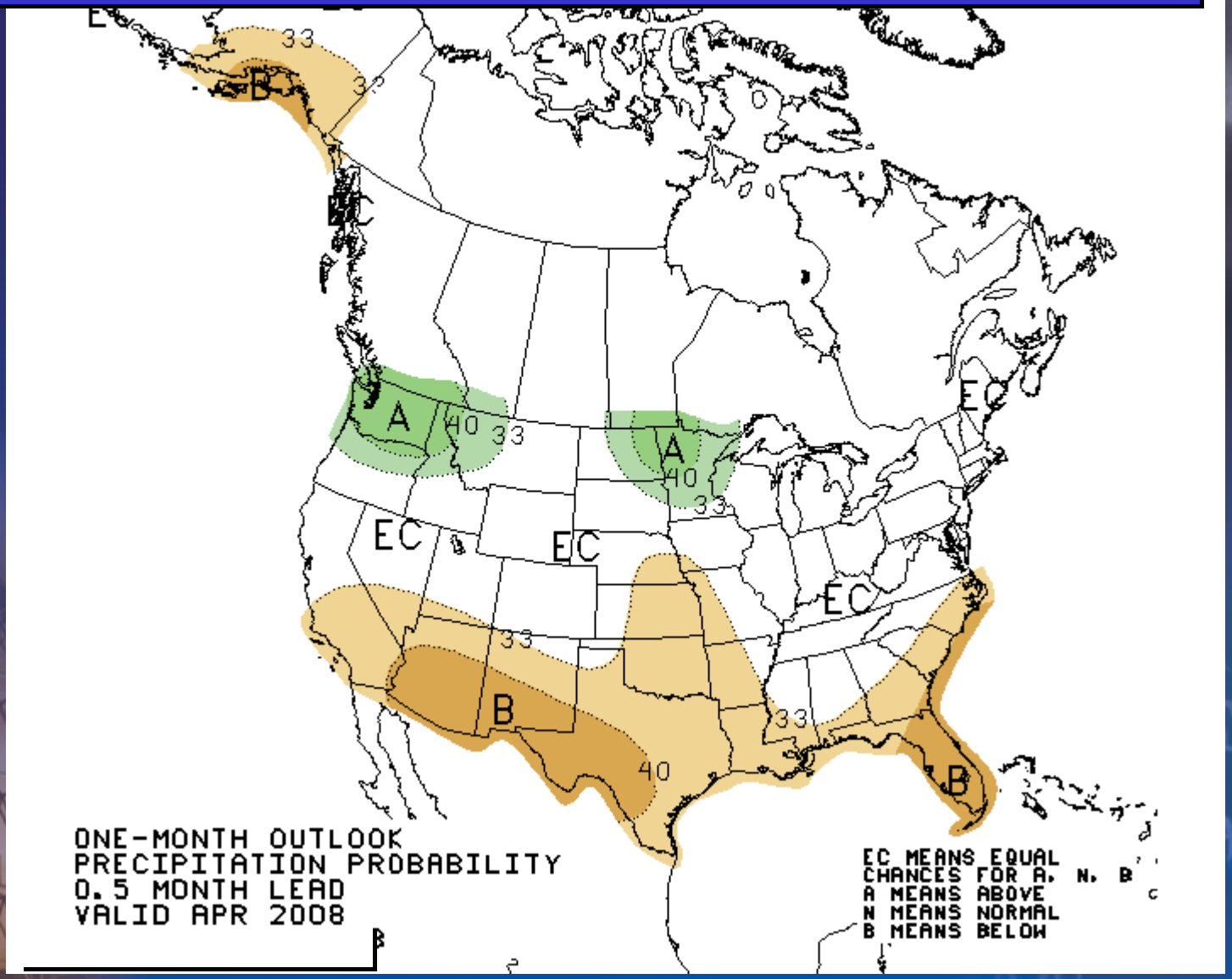
Evolution of Current La-Nina Jan – Mar 2008



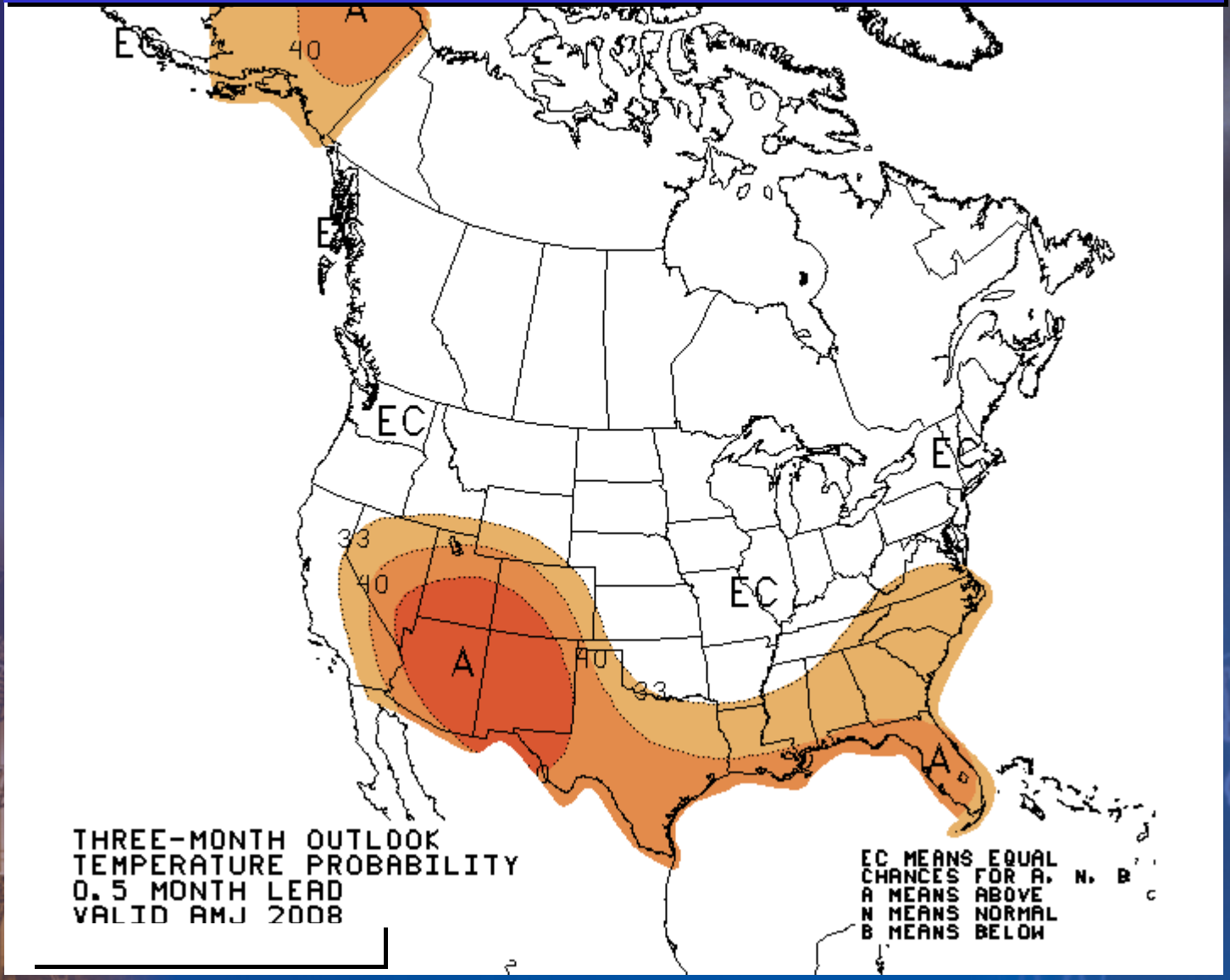
April Temperatures



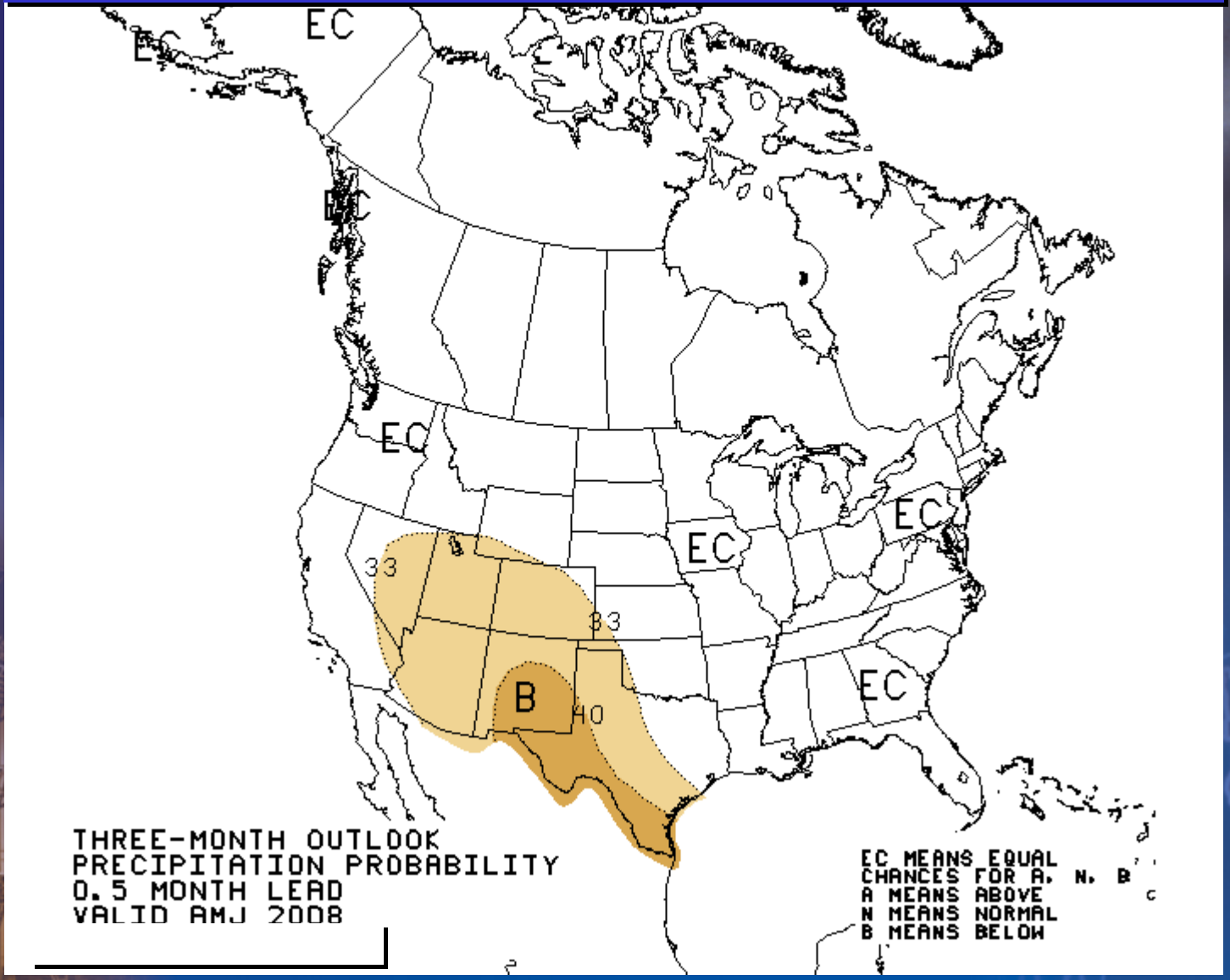
April Precipitation



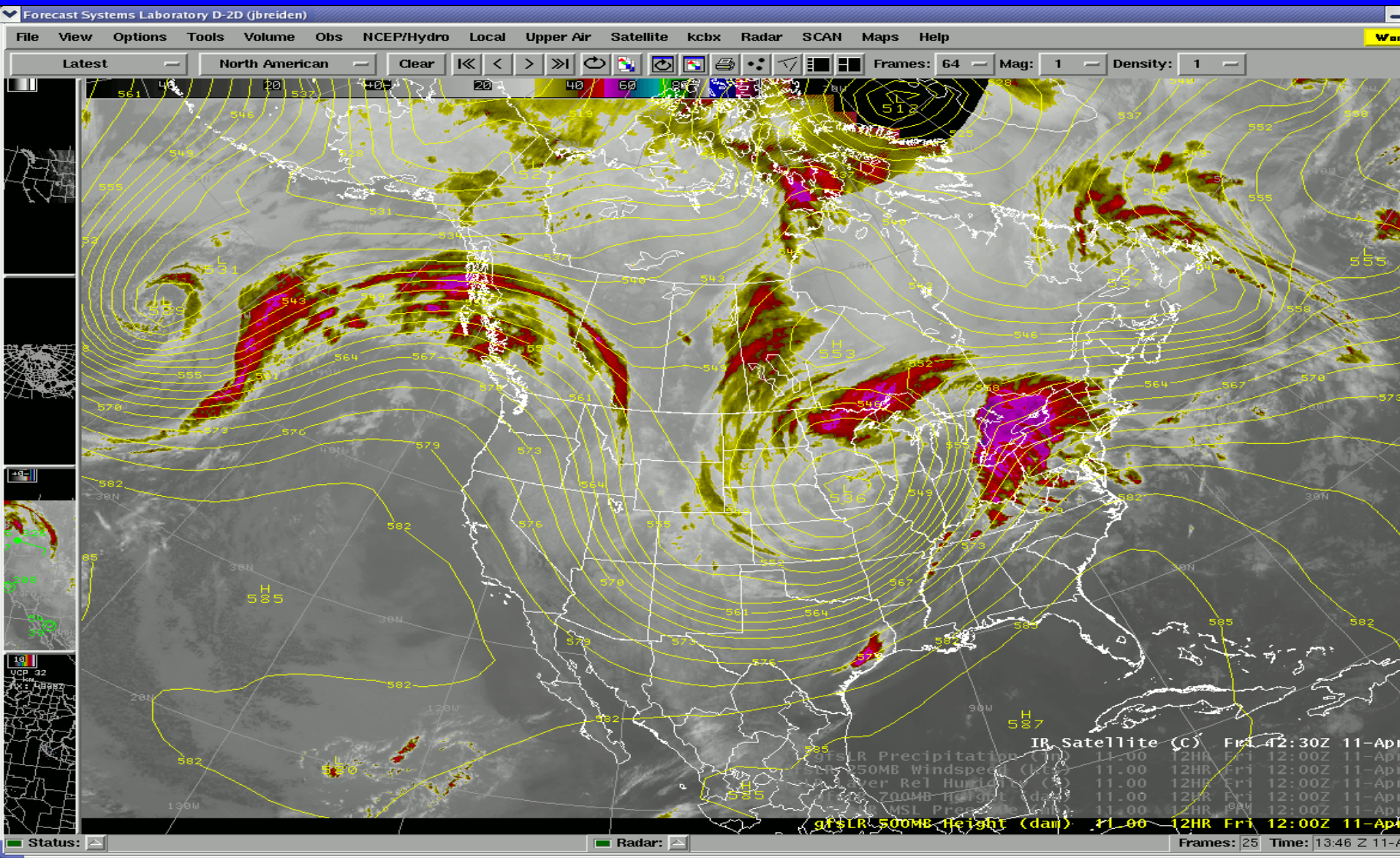
Three Month Outlook Temperatures



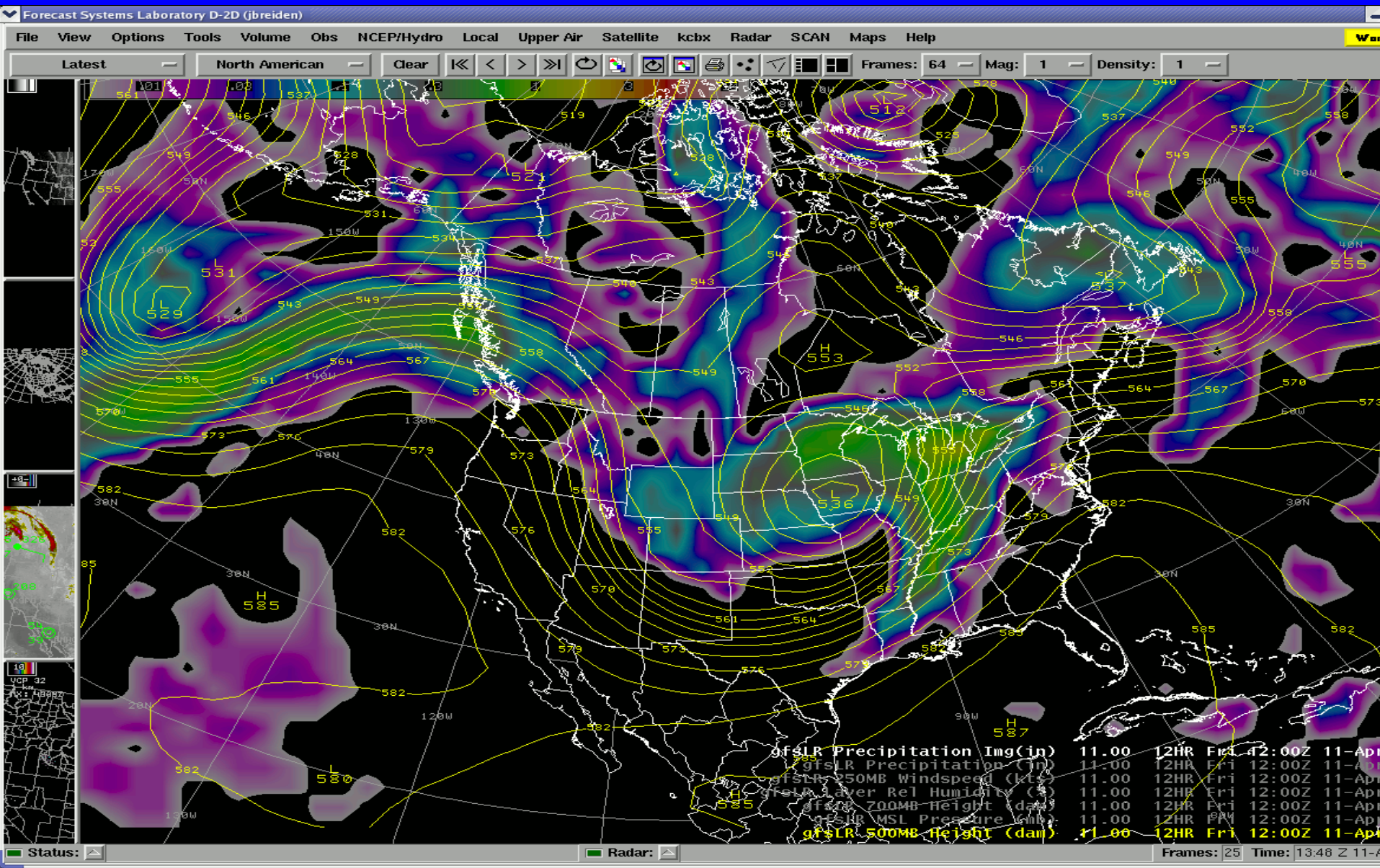
Three Month Outlook Precipitation



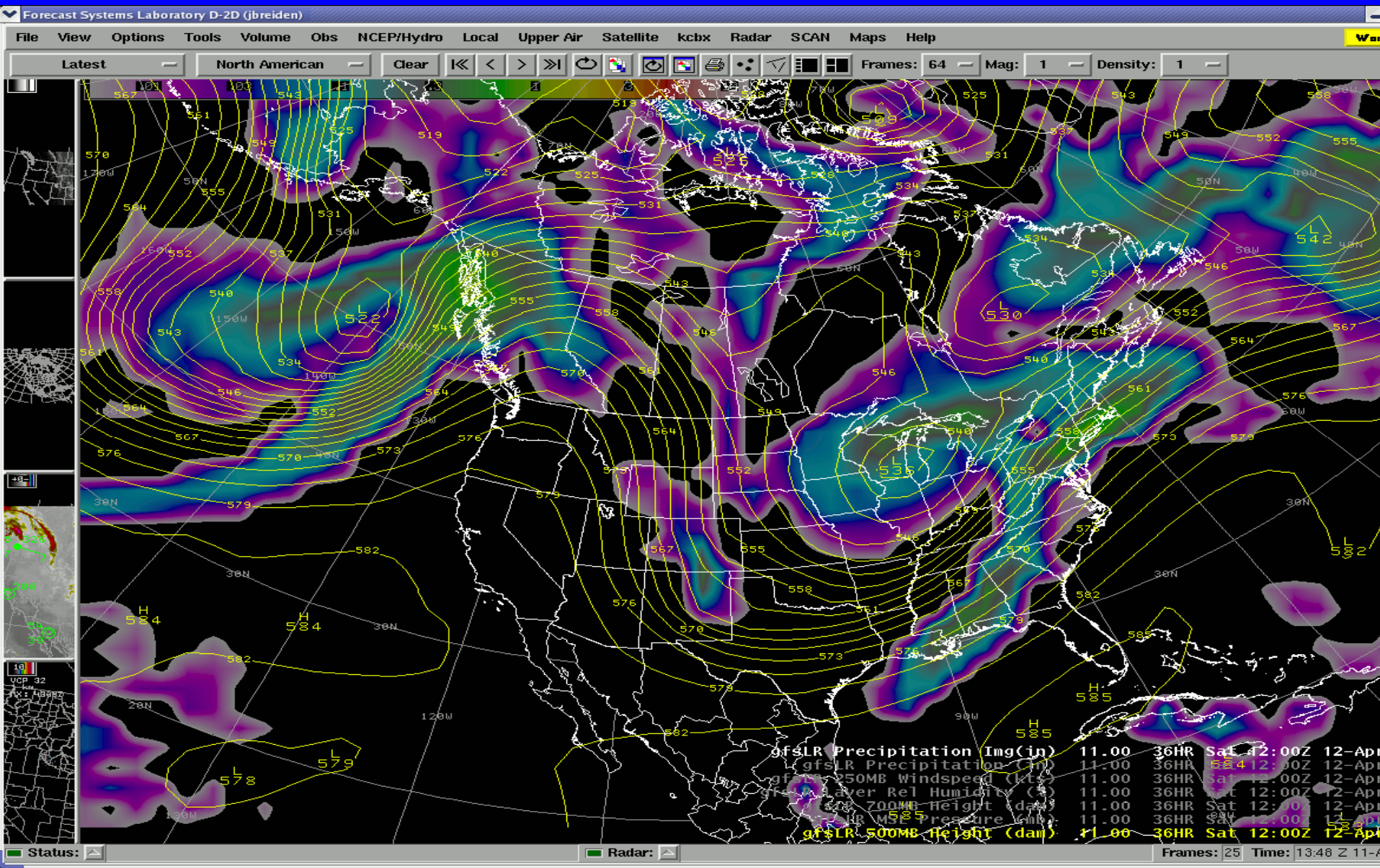
Friday- Apr 8th
IR Satellite Imagery / 500 mb heights



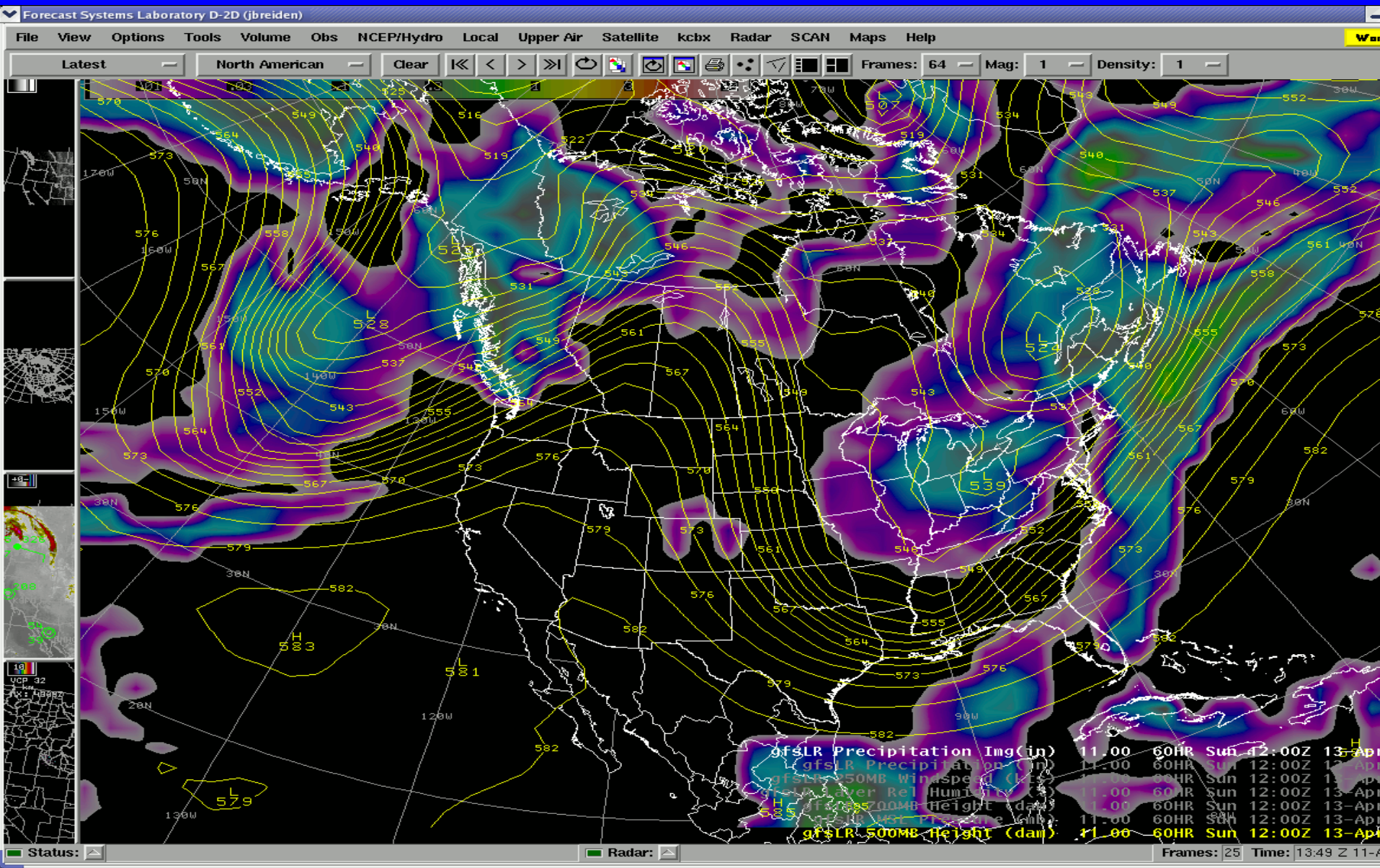
Friday, Apr 11th



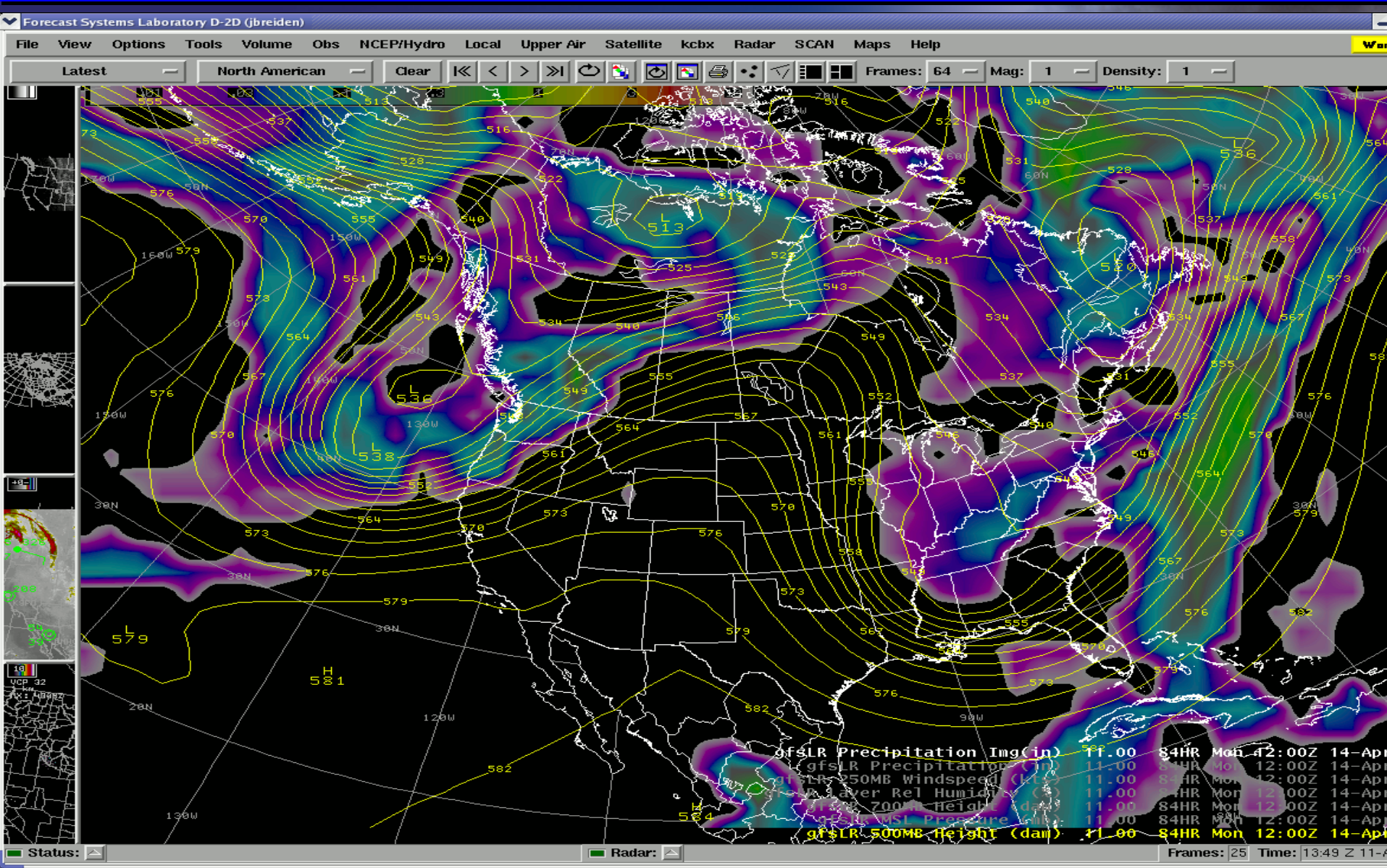
Saturday, Apr 12th, Warm / Dry



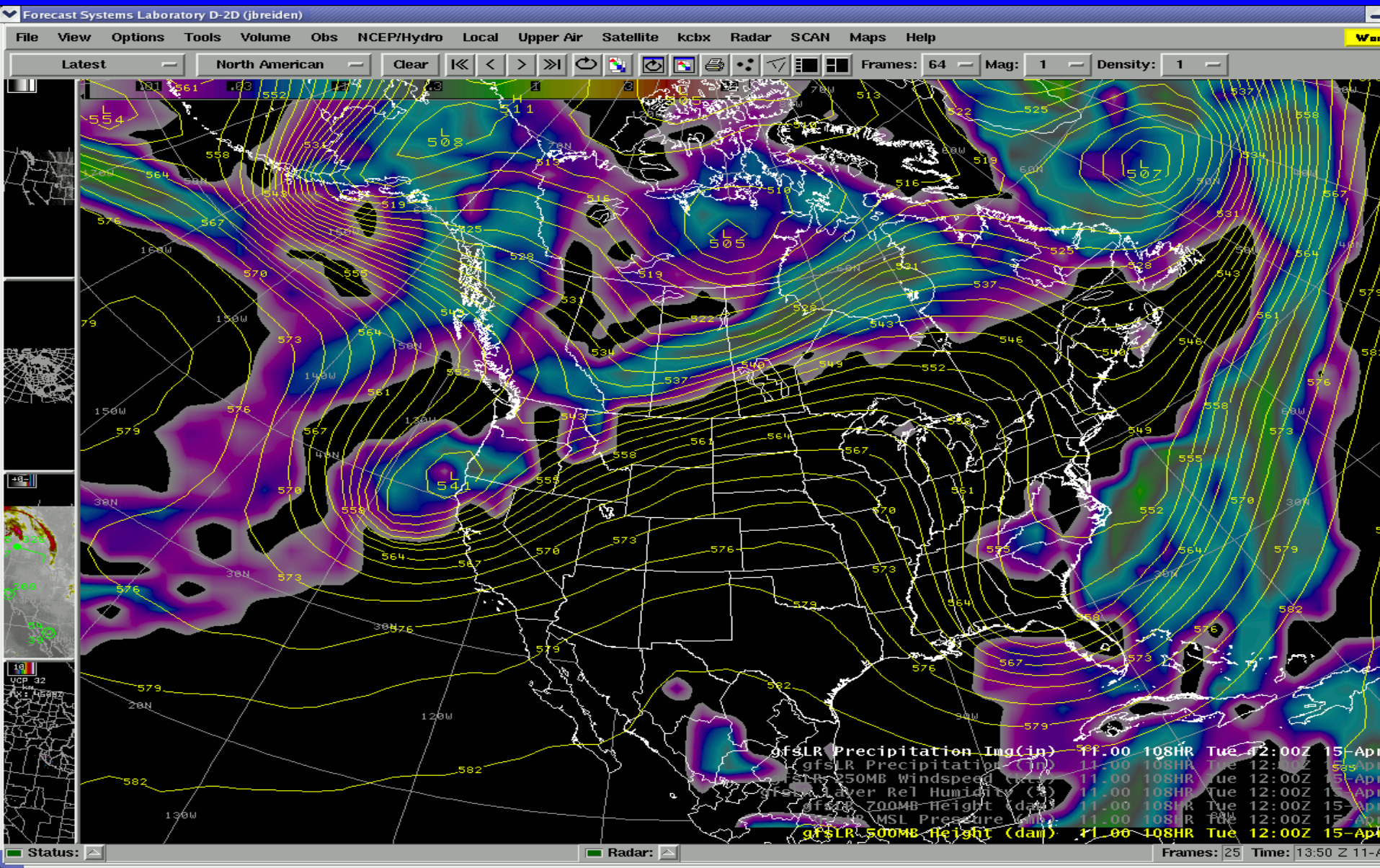
Sunday, Apr 13th Warm/Dry



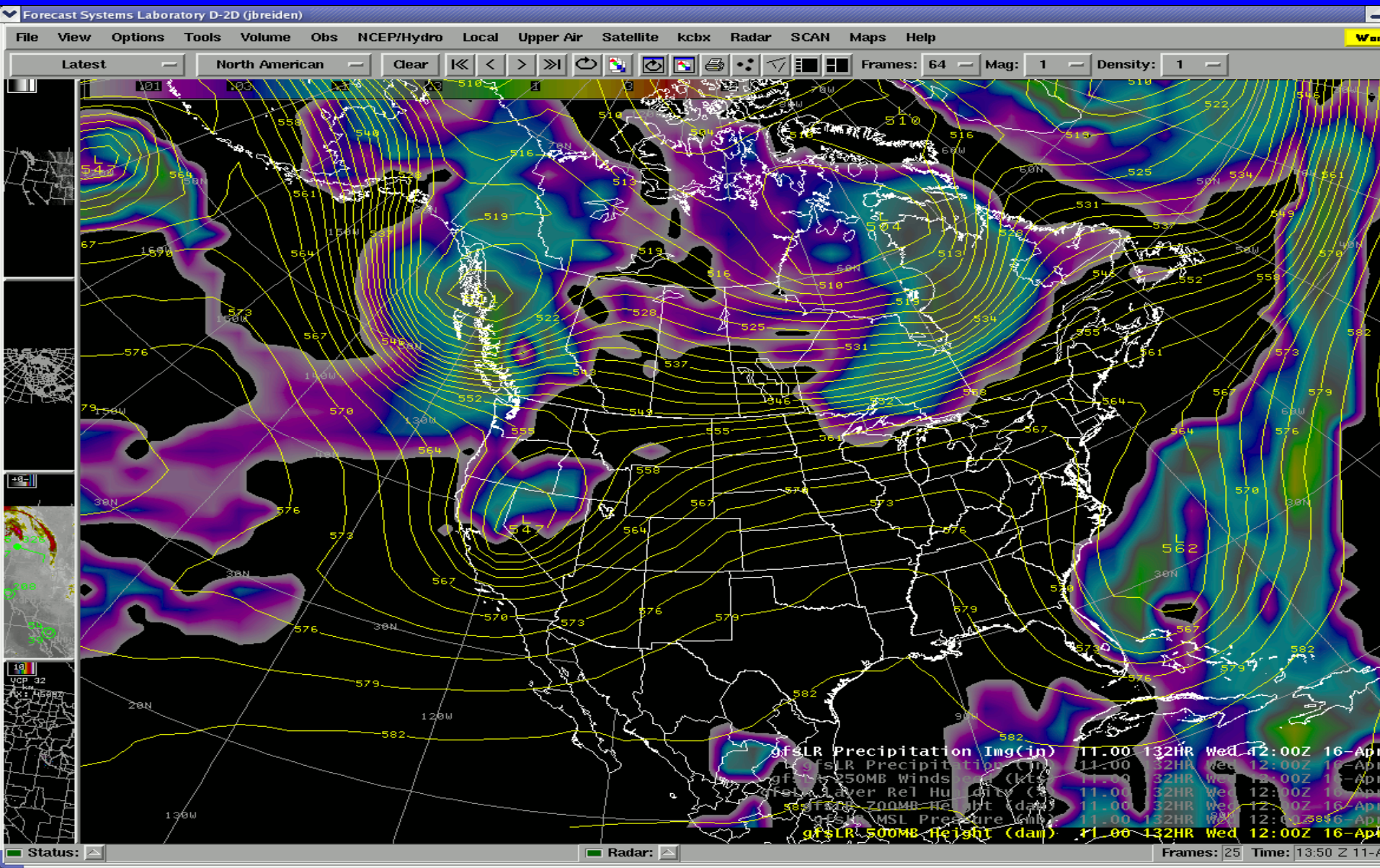
Monday, Apr 14th -Storm Approaches West Coast



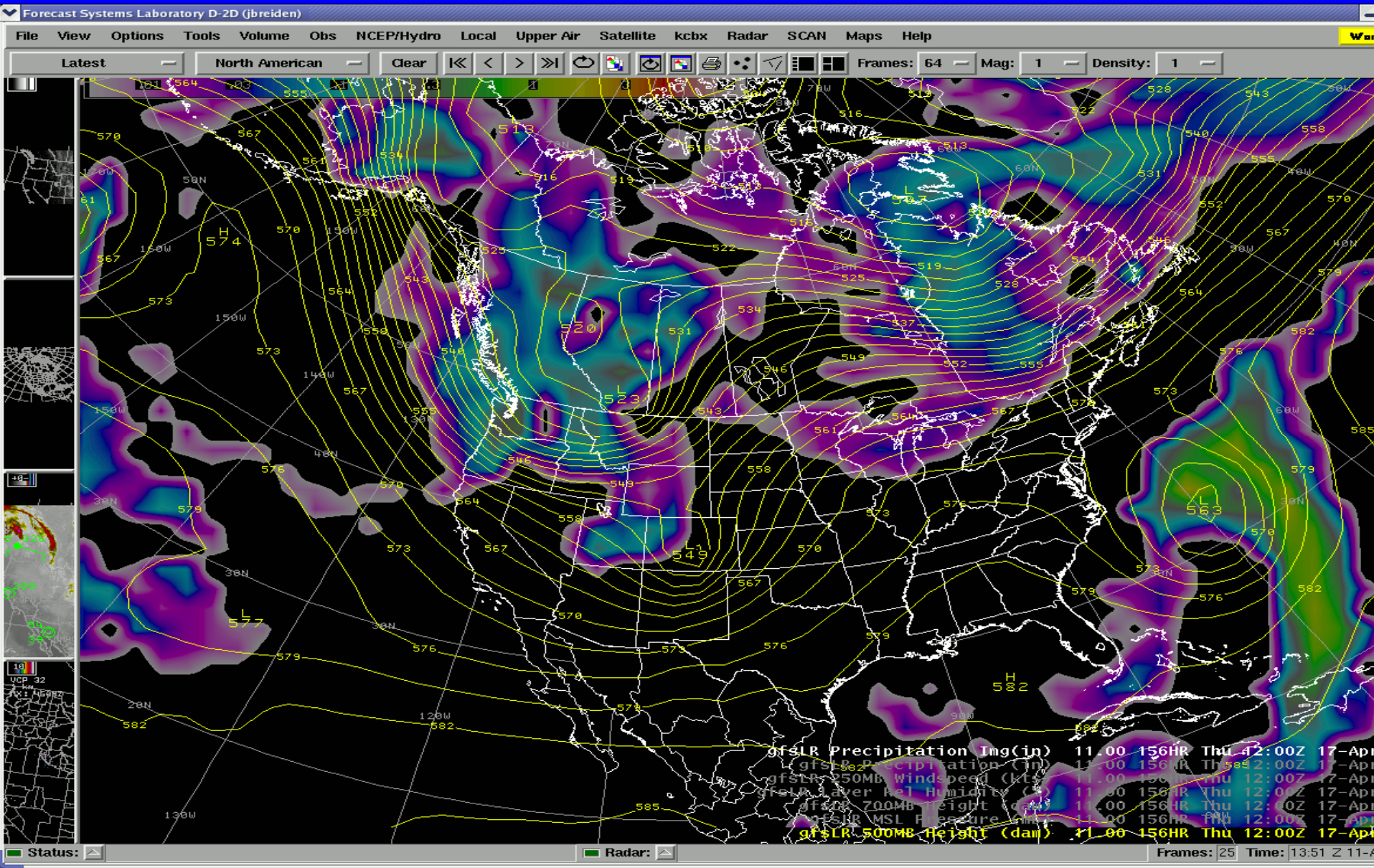
Tuesday, Apr 15th, Cooling Trend as next storm approaches from the Pacific



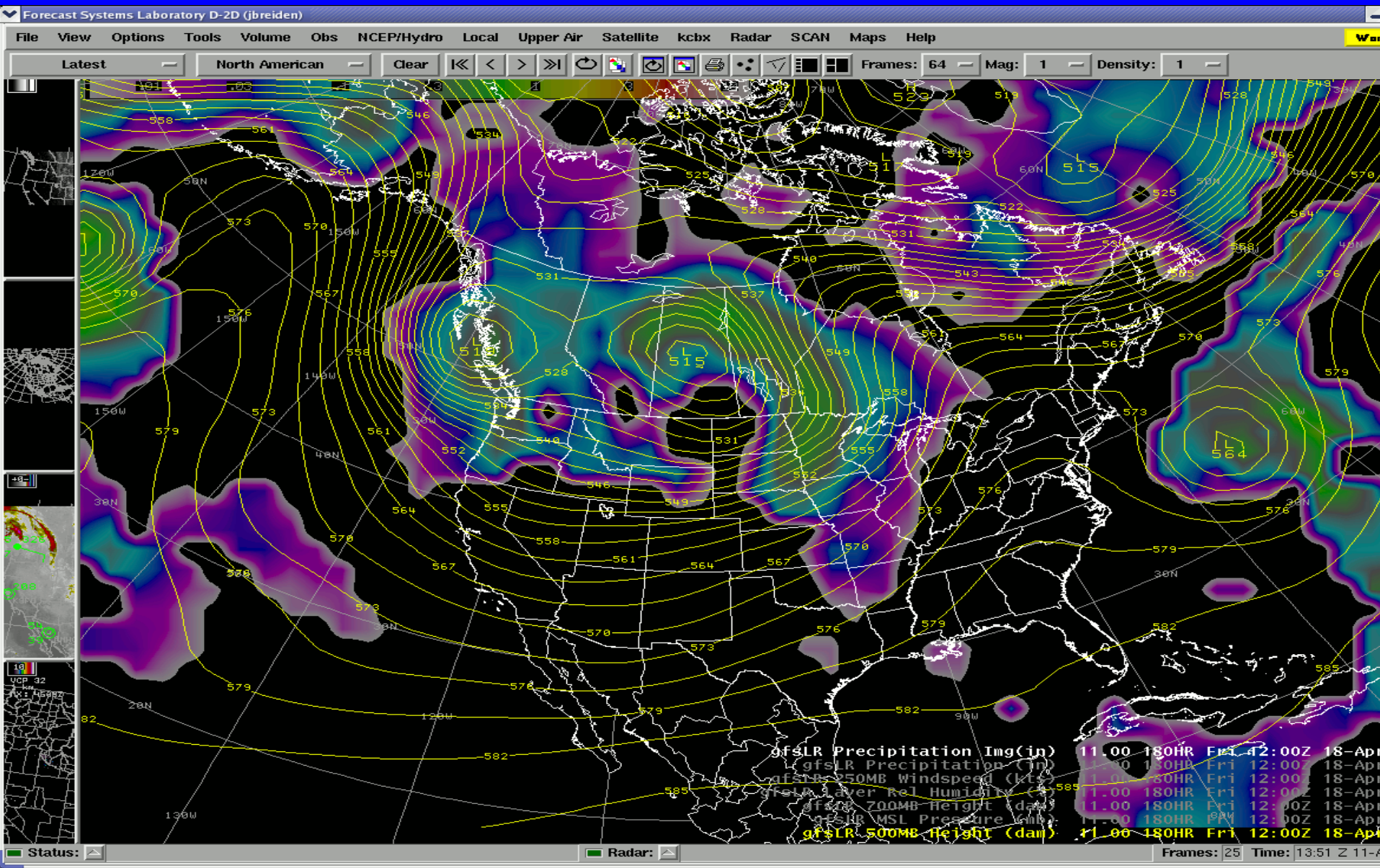
Wed, April 16th – Cool /Showery



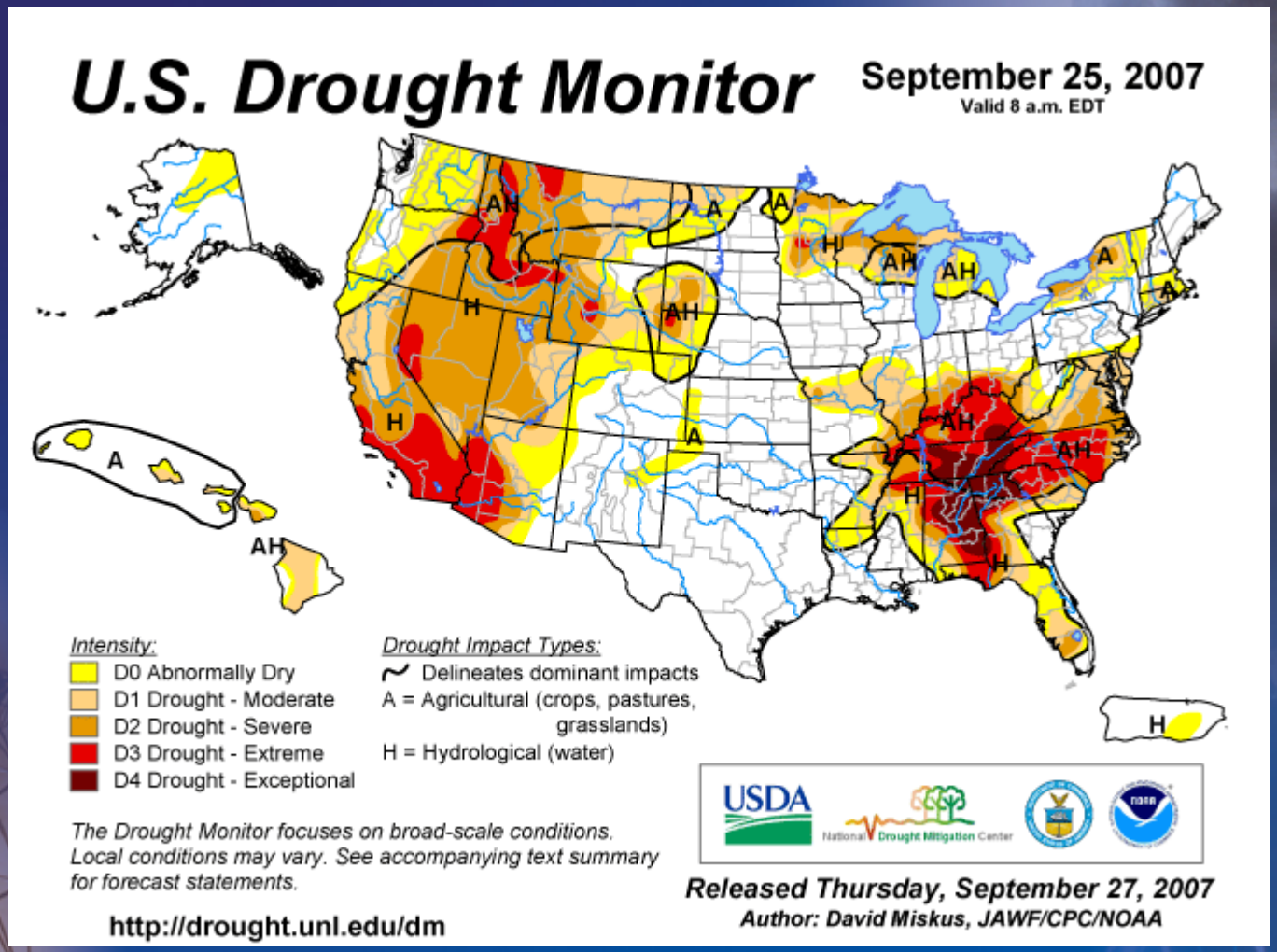
Thursday, Apr 17th – Below Normal Temperatures / Showery



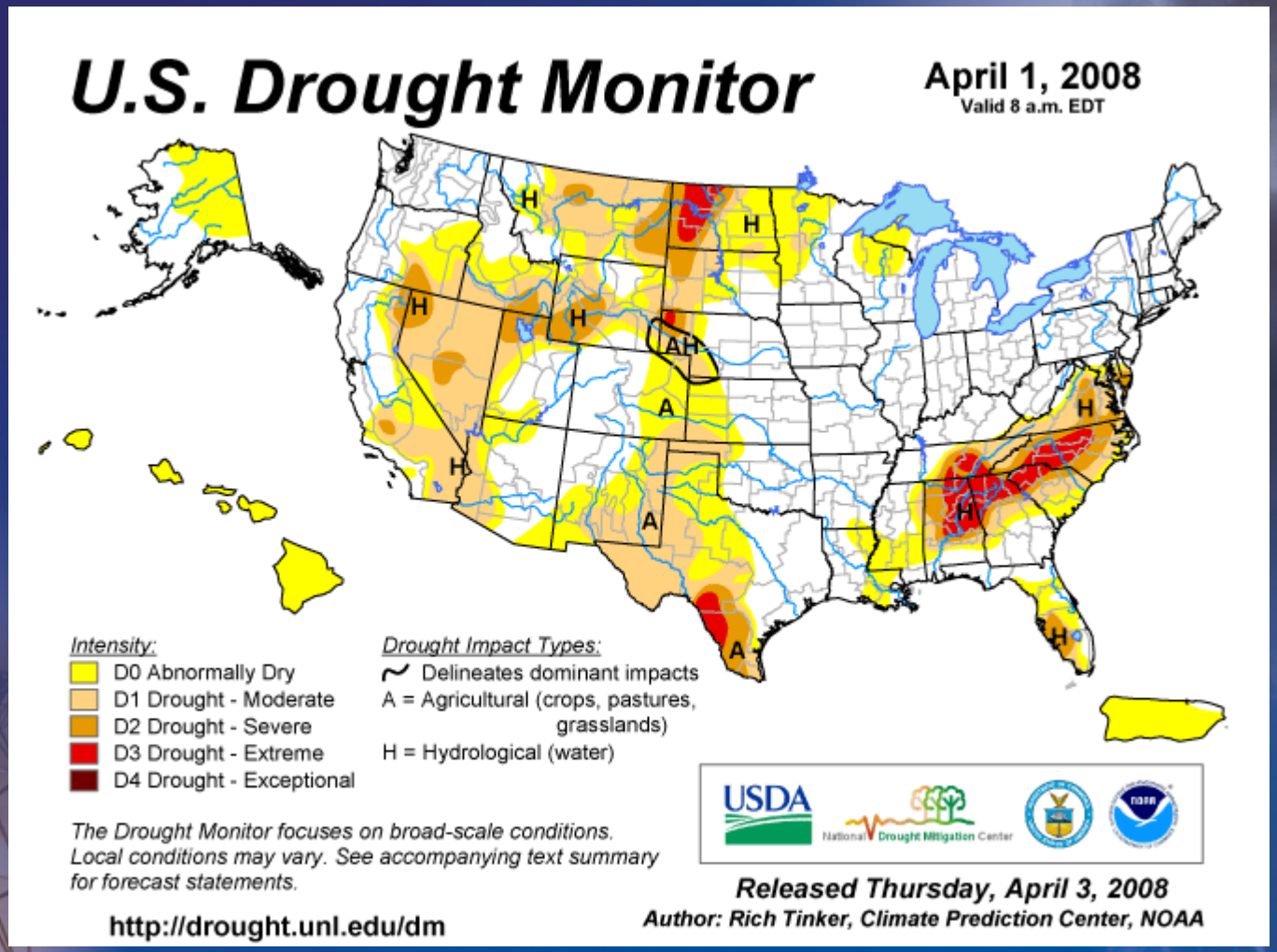
Friday, Apr 18th – Cool Showery Pattern Continues



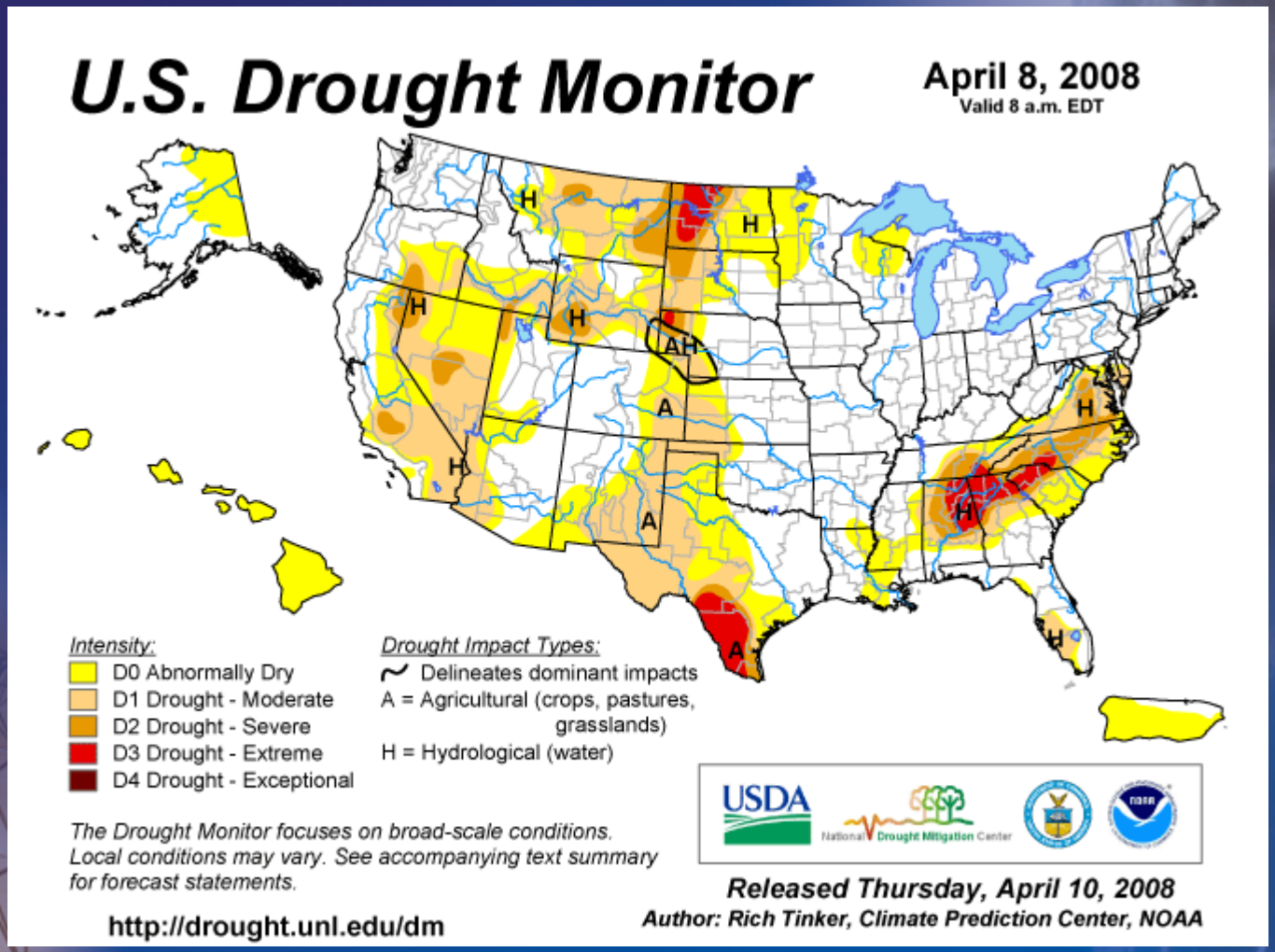
Drought


U.S. Drought Monitor
September 25, 2007
Valid 8 a.m. EDT
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
http://drought.unl.edu/dm
USDA
National Drought Mitigation Center
Released Thursday, September 27, 2007
Author: David Miskus, JAWF/CPC/NOAA

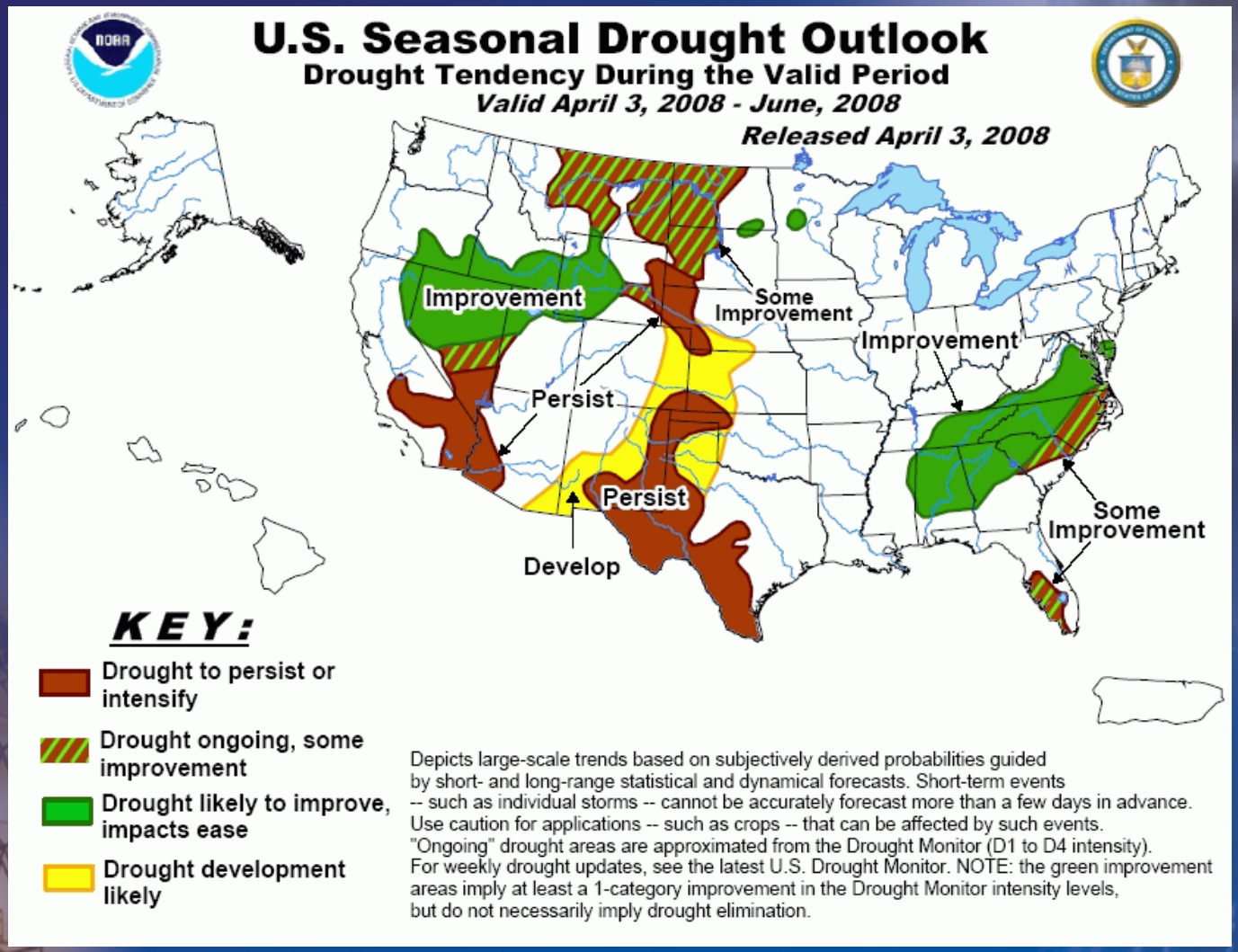
Drought


U.S. Drought Monitor
April 1, 2008
Valid 8 a.m. EDT
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
http://drought.unl.edu/dm
USDA
National Drought Mitigation Center
Released Thursday, April 3, 2008
Author: Rich Tinker, Climate Prediction Center, NOAA

Drought


U.S. Drought Monitor
April 8, 2008
Valid 8 a.m. EDT
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
http://drought.unl.edu/dm
USDA
National Drought Mitigation Center
Released Thursday, April 10, 2008
Author: Rich Tinker, Climate Prediction Center, NOAA

Drought Outlook



RECLAMATION

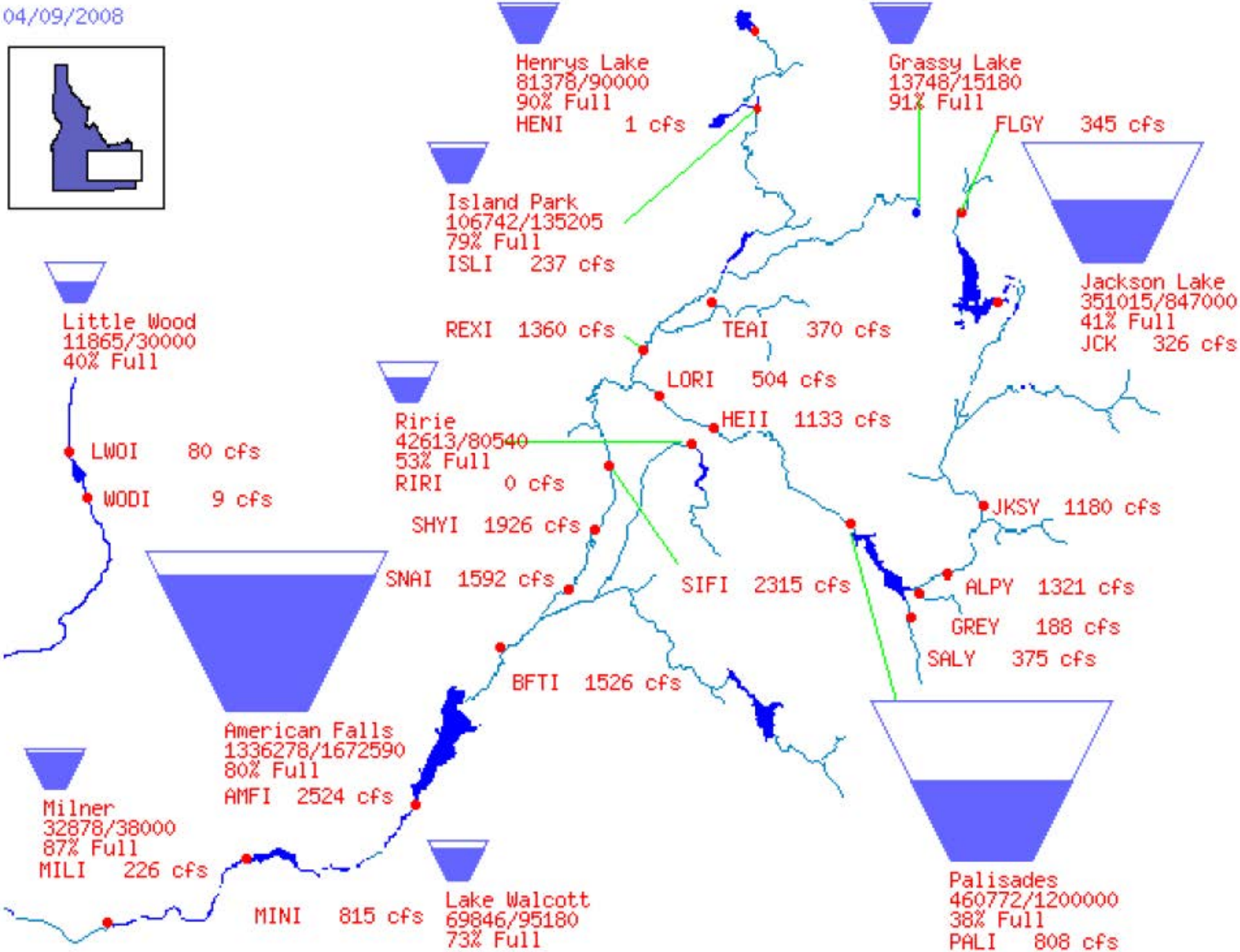
Managing Water in the West

Water Supply Outlook
Upper Snake River
April 11, 2008

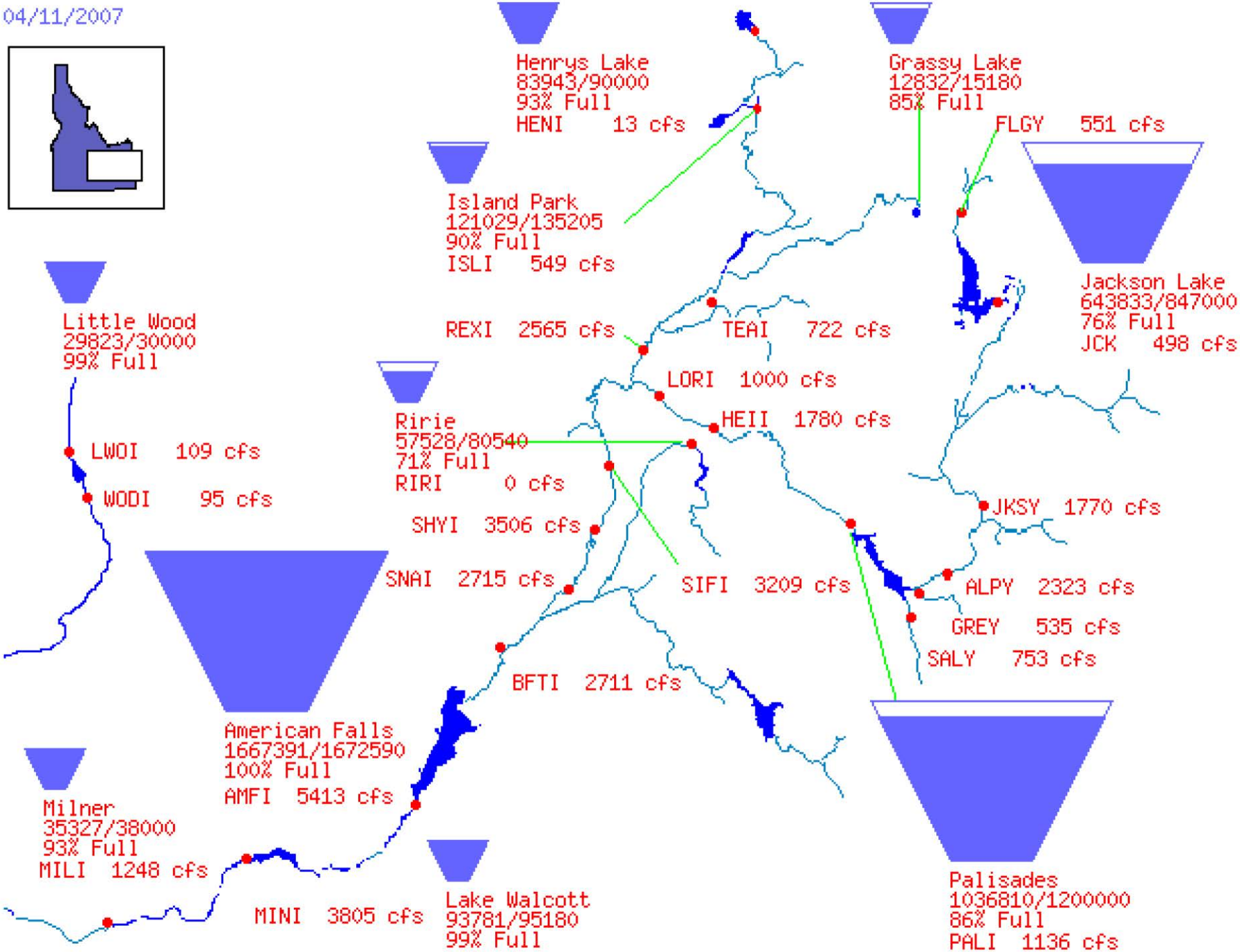
Mike Beus
Water Operations Manager
Snake River Area Office - Burley

U.S. Department of the Interior
Bureau of Reclamation

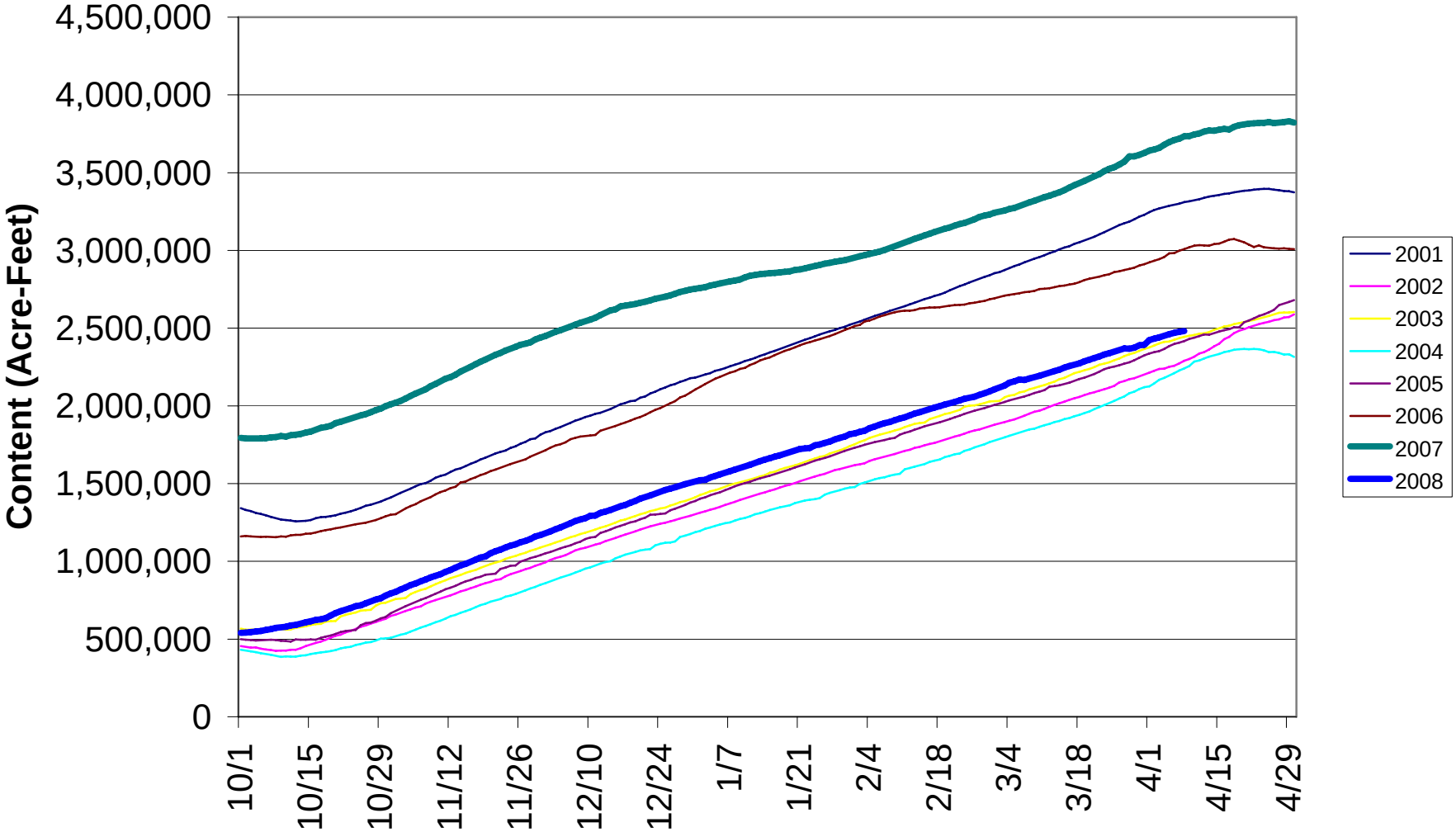
04/09/2008

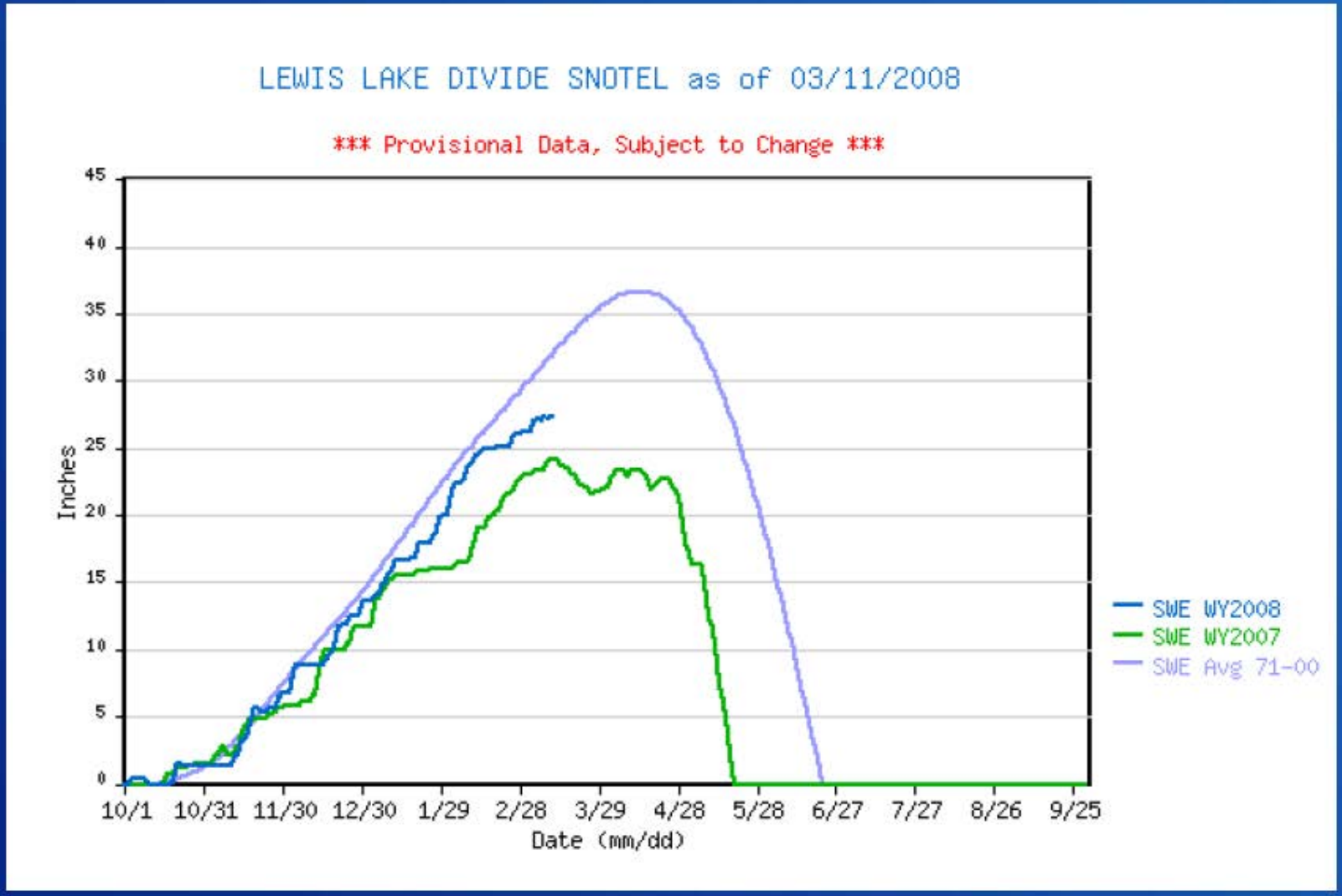

Henrys Lake
81378/90000
90% Full
HENI 1 cfs
Grassy Lake
13748/15180
91% Full
FLGY 345 cfs
Island Park
106742/135205
79% Full
ISLI 237 cfs
Jackson Lake
351015/847000
41% Full
JCK 326 cfs
Little Wood
11865/30000
40% Full
REXI 1360 cfs
TEAI 370 cfs
LORI 504 cfs
HEII 1133 cfs
Ririe
42613/80540
53% Full
RIRI 0 cfs
LWOI 80 cfs
WODI 9 cfs
SHYI 1926 cfs
JKSY 1180 cfs
SNAI 1592 cfs
SIFI 2315 cfs
ALPY 1321 cfs
GREY 188 cfs
SALY 375 cfs
BFTI 1526 cfs
American Falls
1336278/1672590
80% Full
AMFI 2524 cfs
Milner
32878/38000
87% Full
MILI 226 cfs
MINI 815 cfs
Lake Walcott
69846/95180
73% Full
Palisades
460772/1200000
38% Full
PALI 808 cfs

04/11/2007

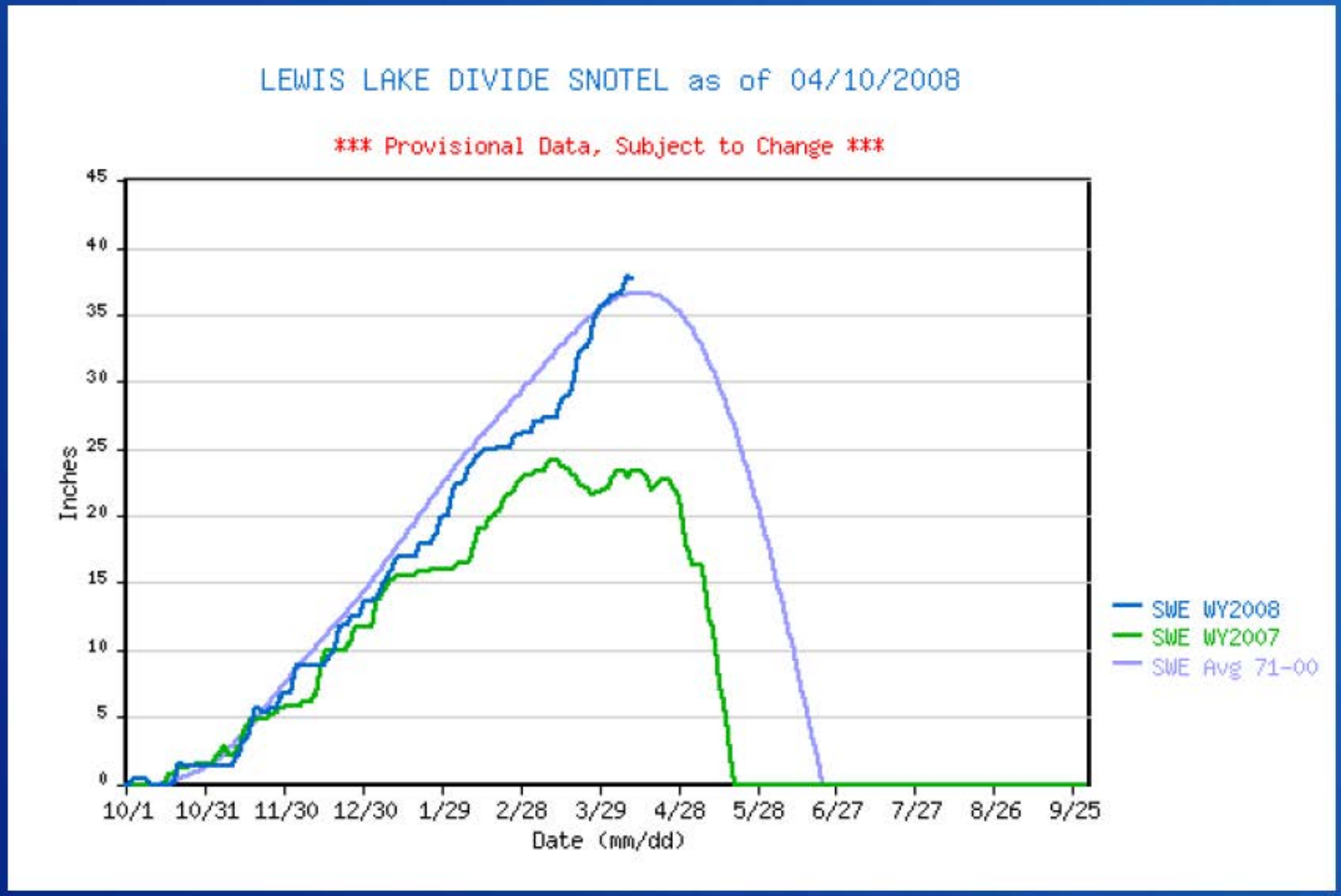

Henrys Lake
83943/90000
93% Full
HENI 13 cfs
Grassy Lake
12832/15180
85% Full
FLGY 551 cfs
Island Park
121029/135205
90% Full
ISLI 549 cfs
Jackson Lake
643833/847000
76% Full
JCK 498 cfs
Little Wood
29823/30000
99% Full
REXI 2565 cfs
TEAI 722 cfs
LORI 1000 cfs
HEII 1780 cfs
Ririe
57528/80540
71% Full
RIRI 0 cfs
LWOI 109 cfs
WODI 95 cfs
JKSY 1770 cfs
SHYI 3506 cfs
SNAI 2715 cfs
SIFI 3209 cfs
ALPY 2323 cfs
GREY 535 cfs
SALY 753 cfs
BFTI 2711 cfs
American Falls
1667391/1672590
100% Full
AMFI 5413 cfs
Milner
35327/38000
93% Full
MILI 1248 cfs
MINI 3805 cfs
Lake Walcott
93781/95180
99% Full
Palisades
1036810/1200000
86% Full
PALI 1136 cfs

Reservoir System above Milner





RECLAMATION



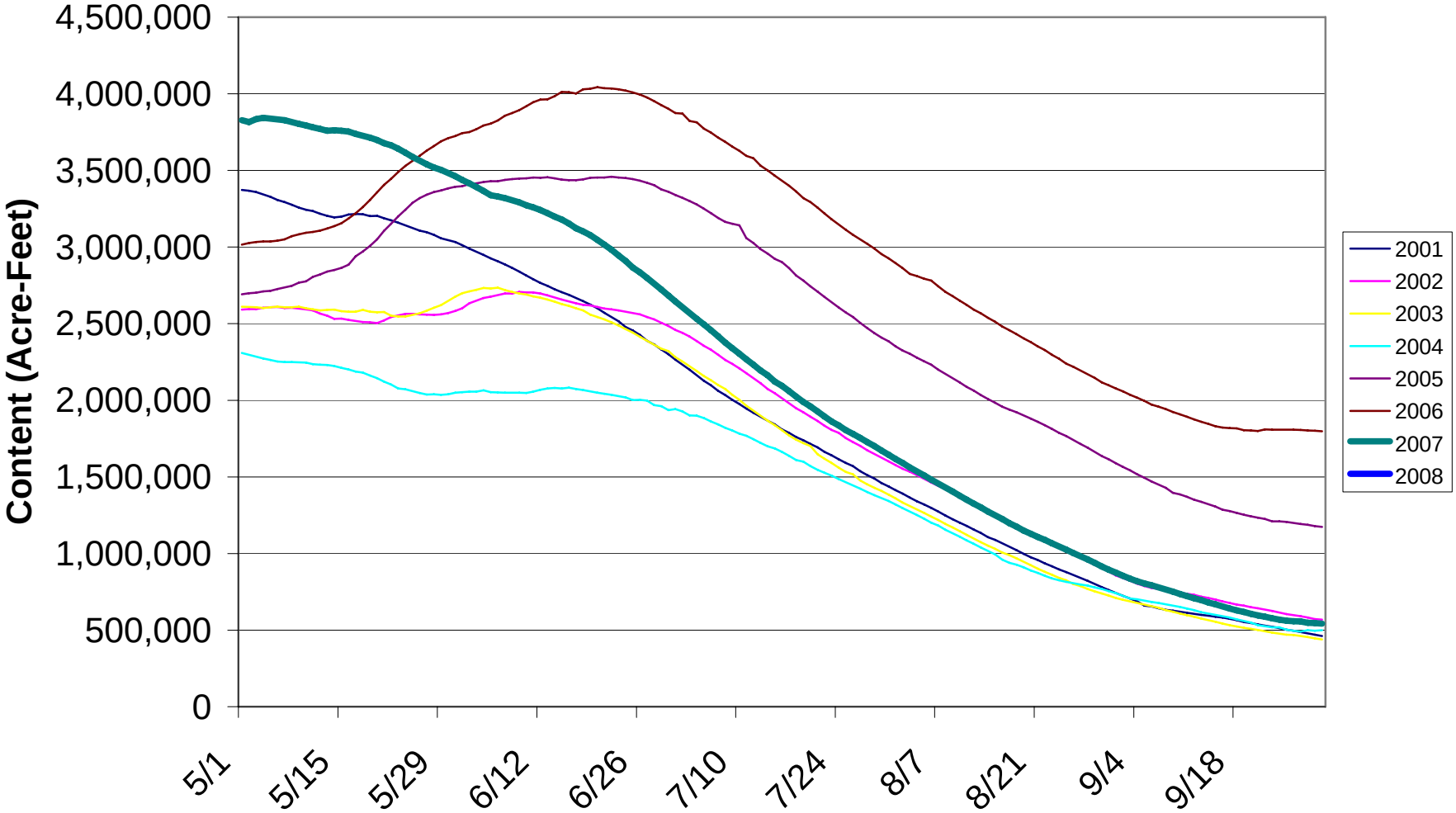
RECLAMATION

CURRENT
MONTHLY FORECAST SUMMARY
APRIL 1 2008

FORECAST	FORECAST PERIOD	1971-2000 AVERAGE (1000AF)	NORMAL SUBSEQUENT CONDITIONS FORECAST (1000AF)		PERCENT NORMAL
		AVE	NORM		%
HEISE	APR-JUL	3561.0	3650.0	***	102
ISLAND PARK	APR-JUL	234.6	219.3		93
JACKSON LAKE	APR-JUL	814.7	870.0		107
LITTLE WOOD	APR-JUL	86.9	86.0	***	99
RIRIE_NEW	APR-JUN	81.5	79.0	***	97
TETON	APR-JUL	410.7	418.6		102

RECLAMATION

Reservoir System above Milner



RECLAMATION

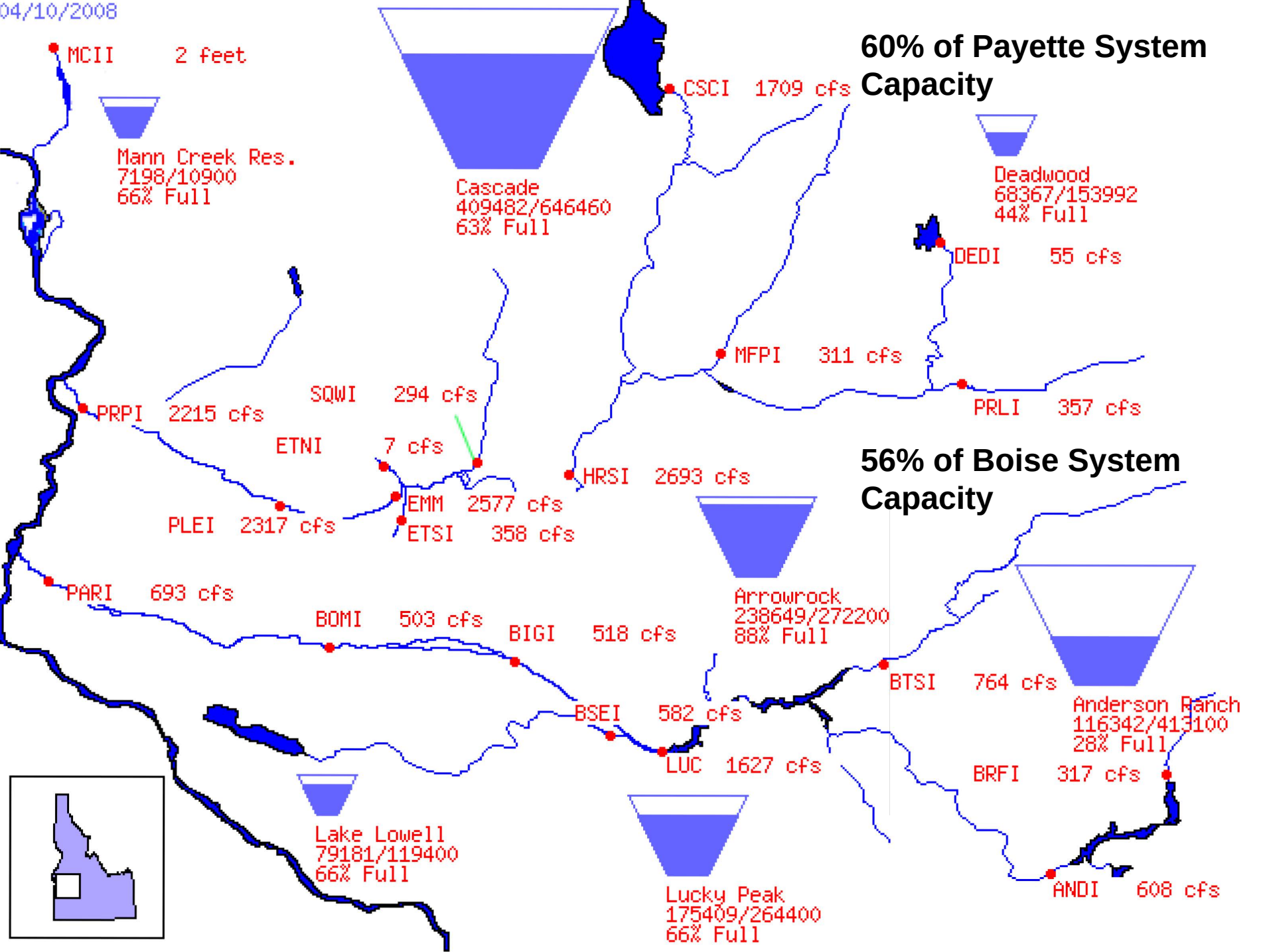
Managing Water in the West

Idaho Water Supply Committee Meeting

Southwest Idaho Report

April 11, 2008

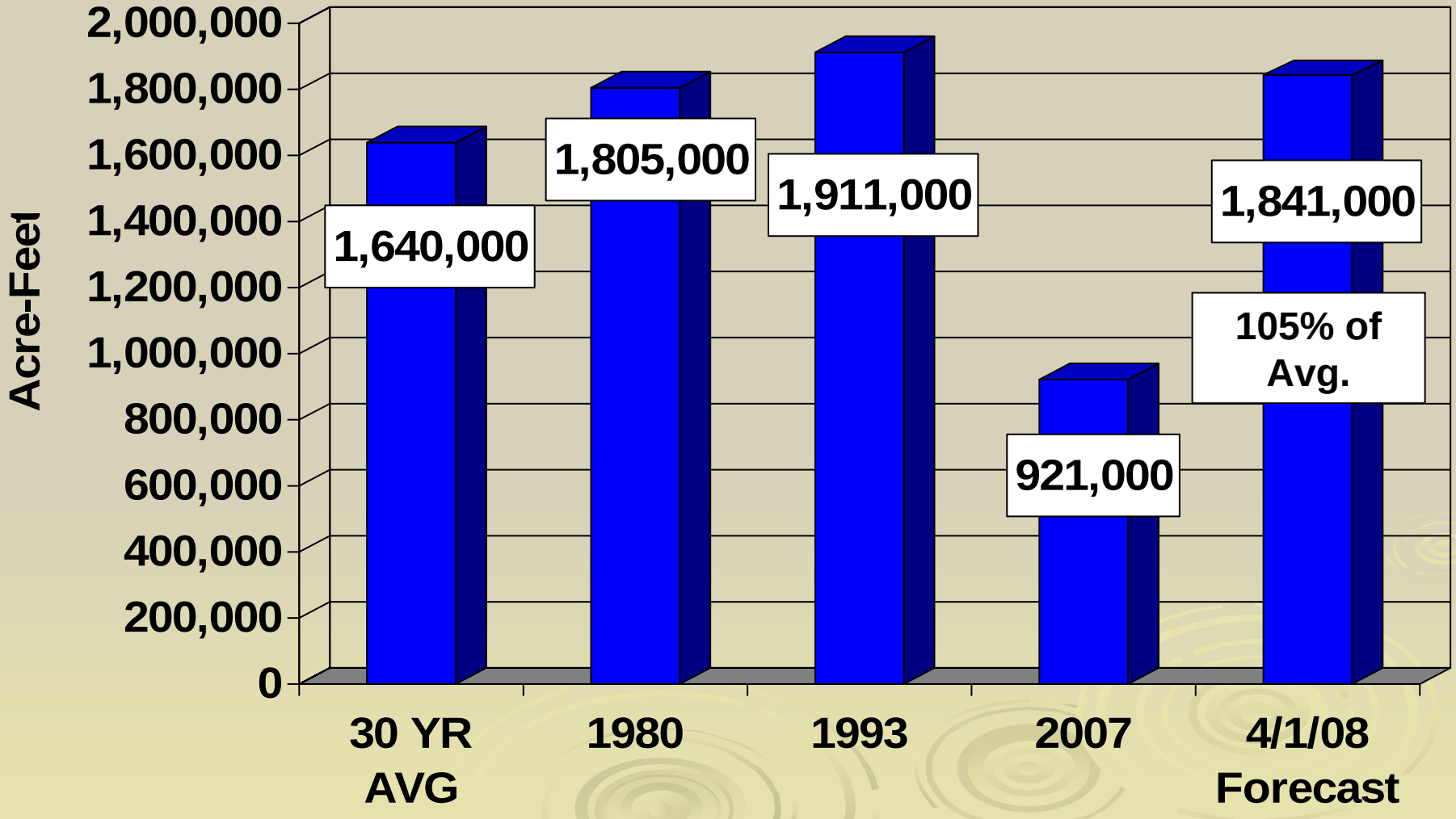
U.S. Department of the Interior
Bureau of Reclamation


04/10/2008
60% of Payette System Capacity
56% of Boise System Capacity
MCII 2 feet
Mann Creek Res.
7198/10900
66% Full
Cascade
409482/646460
63% Full
CSCI 1709 cfs
Deadwood
68367/153992
44% Full
DEDI 55 cfs
MFPI 311 cfs
PRLI 357 cfs
SQWI 294 cfs
PRPI 2215 cfs
ETNI 7 cfs
HRSI 2693 cfs
EMM 2577 cfs
ETSI 358 cfs
PLEI 2317 cfs
PARI 693 cfs
BOMI 503 cfs
BIGI 518 cfs
Arrowrock
238649/272200
88% Full
BTSI 764 cfs
Anderson Ranch
116342/413100
28% Full
BSEI 582 cfs
LUC 1627 cfs
BRFI 317 cfs
Lake Lowell
79181/119400
66% Full
Lucky Peak
175409/264400
66% Full
ANDI 608 cfs

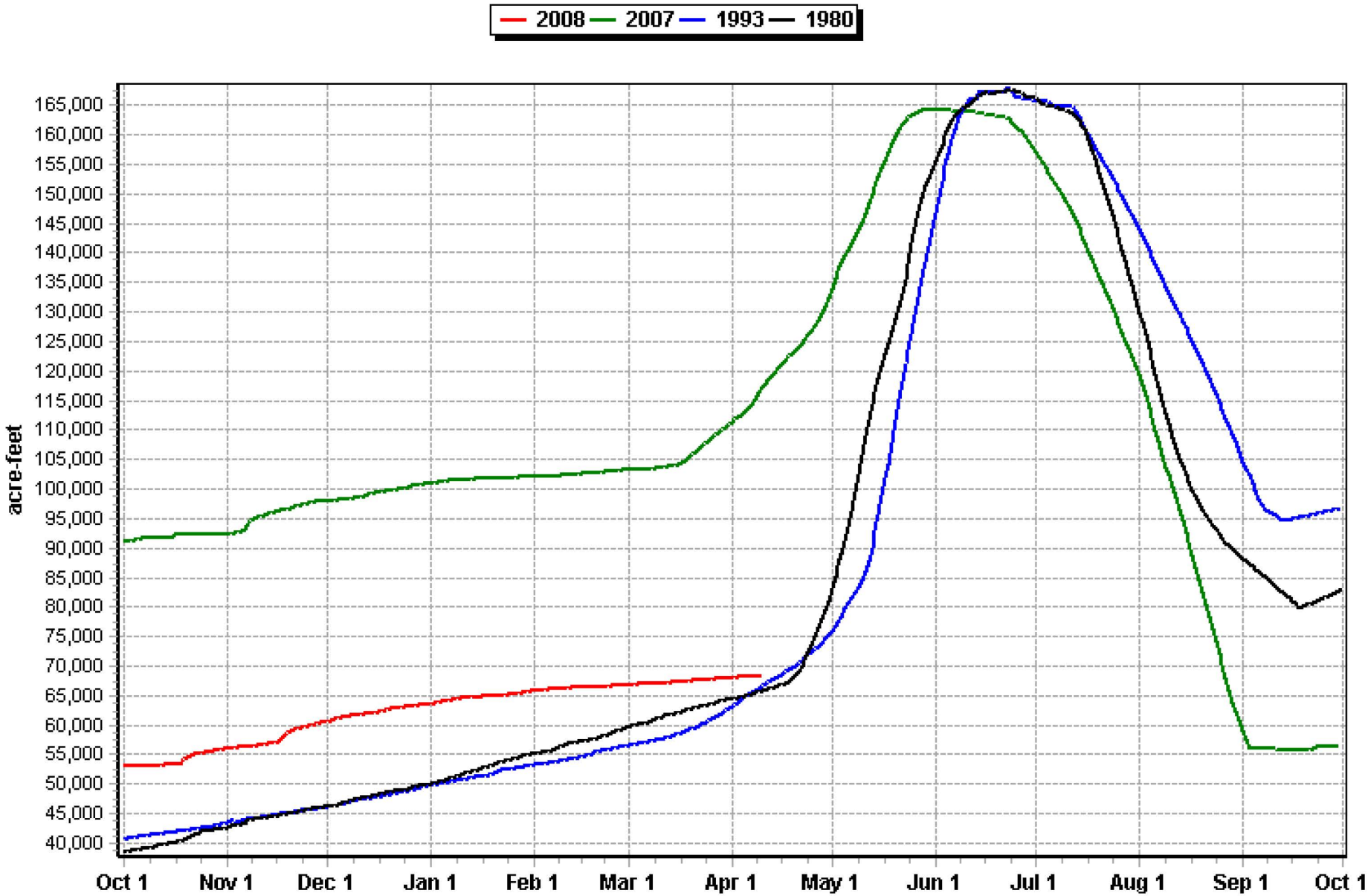
Payette Basin

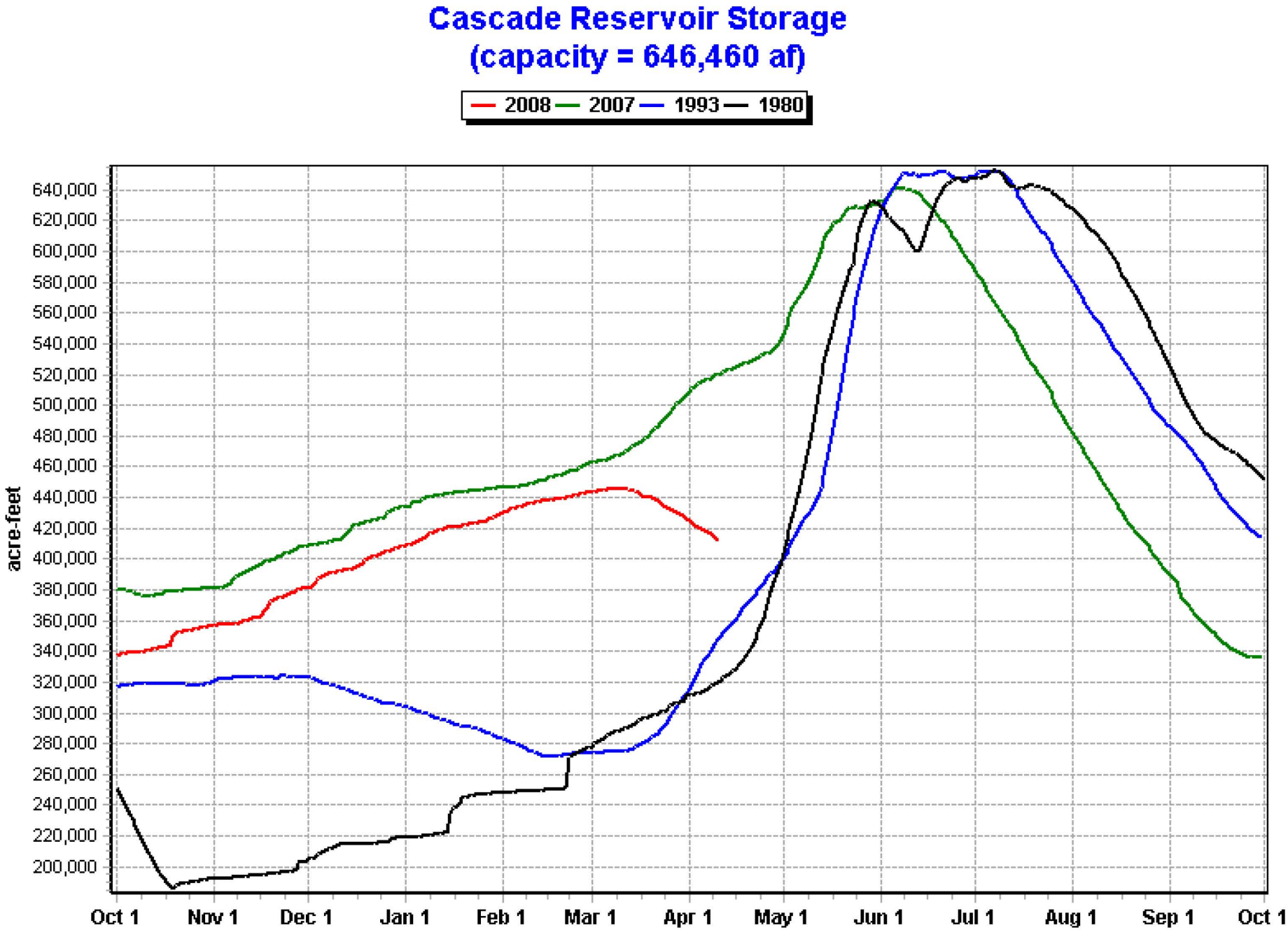
Payette River Runoff at Horseshoe Bend

April 1 – July 31

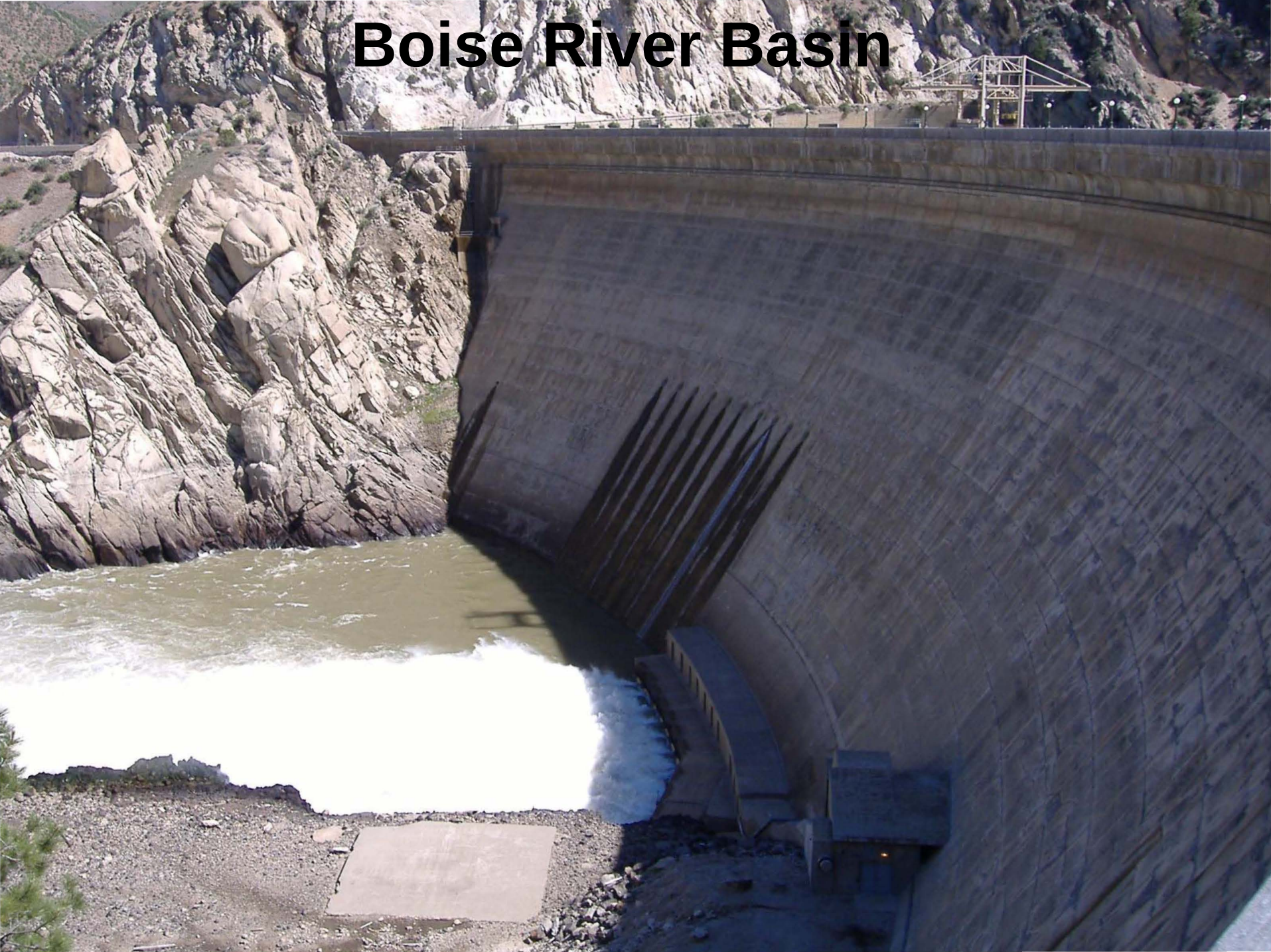


Deadwood Reservoir Storage
(capacity = 154,000 af)



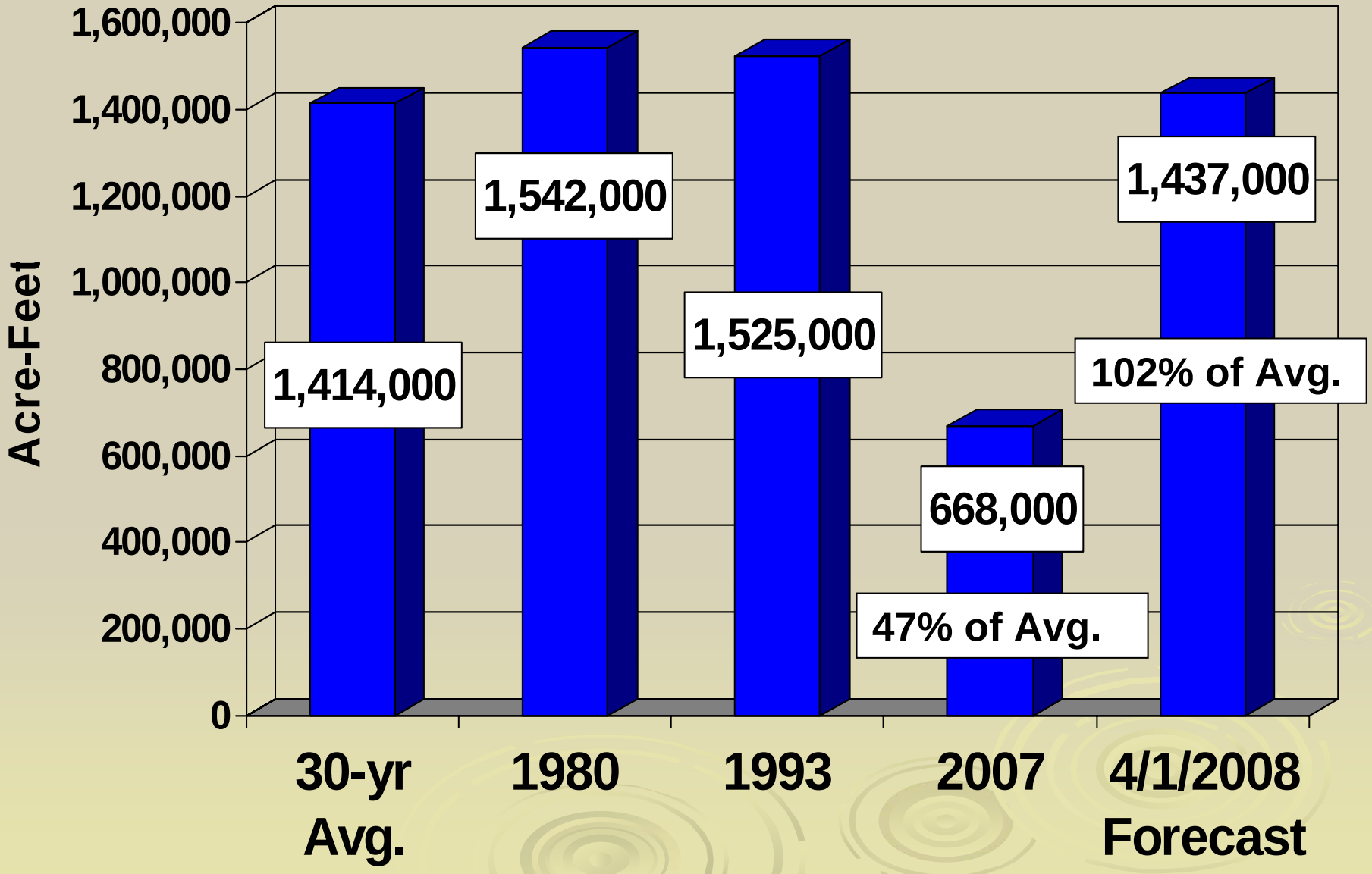

Cascade Reservoir Storage
(capacity = 646,460 af)
2008
2007
1993
1980
acre-feet
640,000
620,000
600,000
580,000
560,000
540,000
520,000
500,000
480,000
460,000
440,000
420,000
400,000
380,000
360,000
340,000
320,000
300,000
280,000
260,000
240,000
220,000
200,000
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1

Boise River Basin

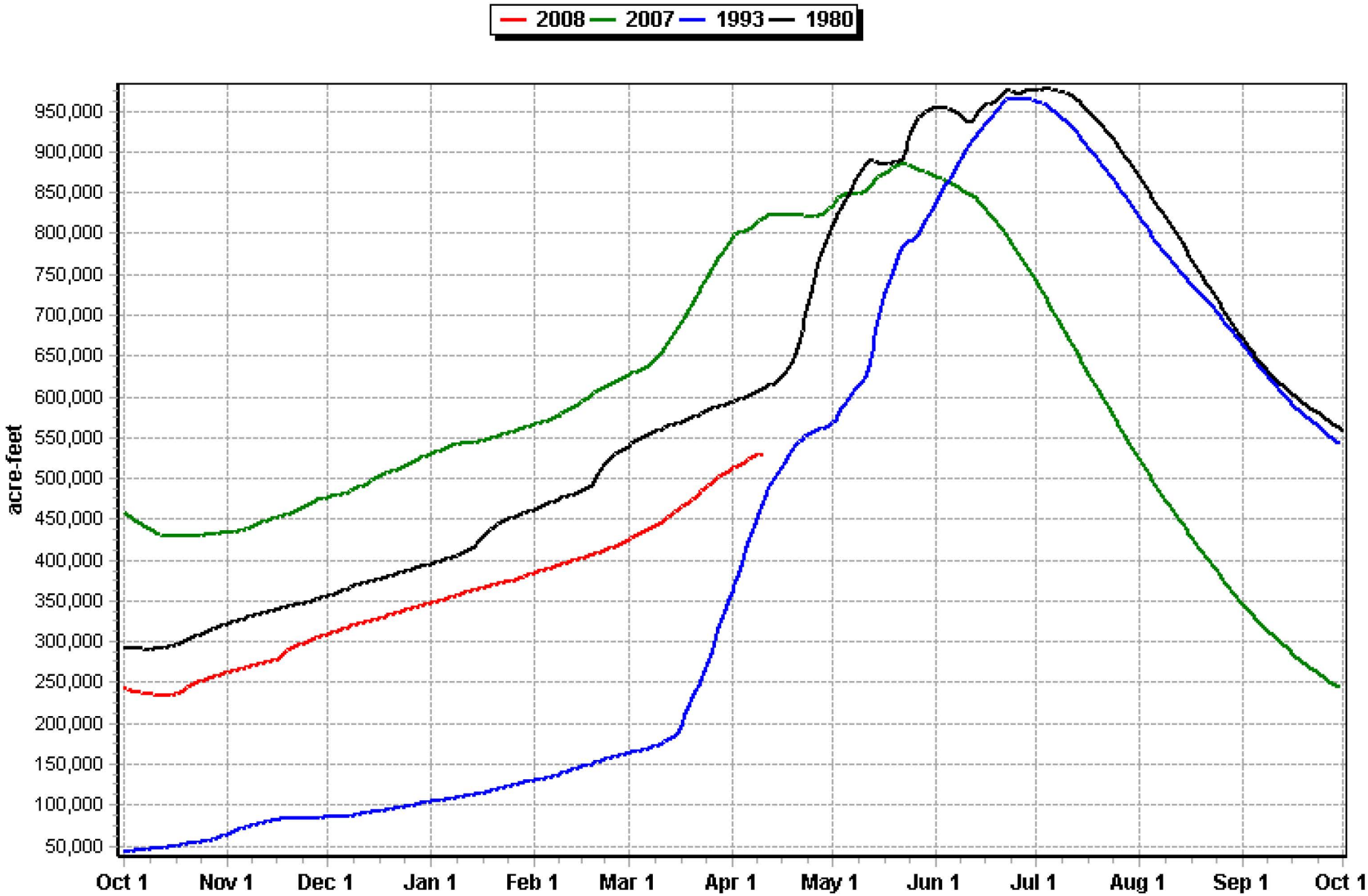


Boise Basin Runoff

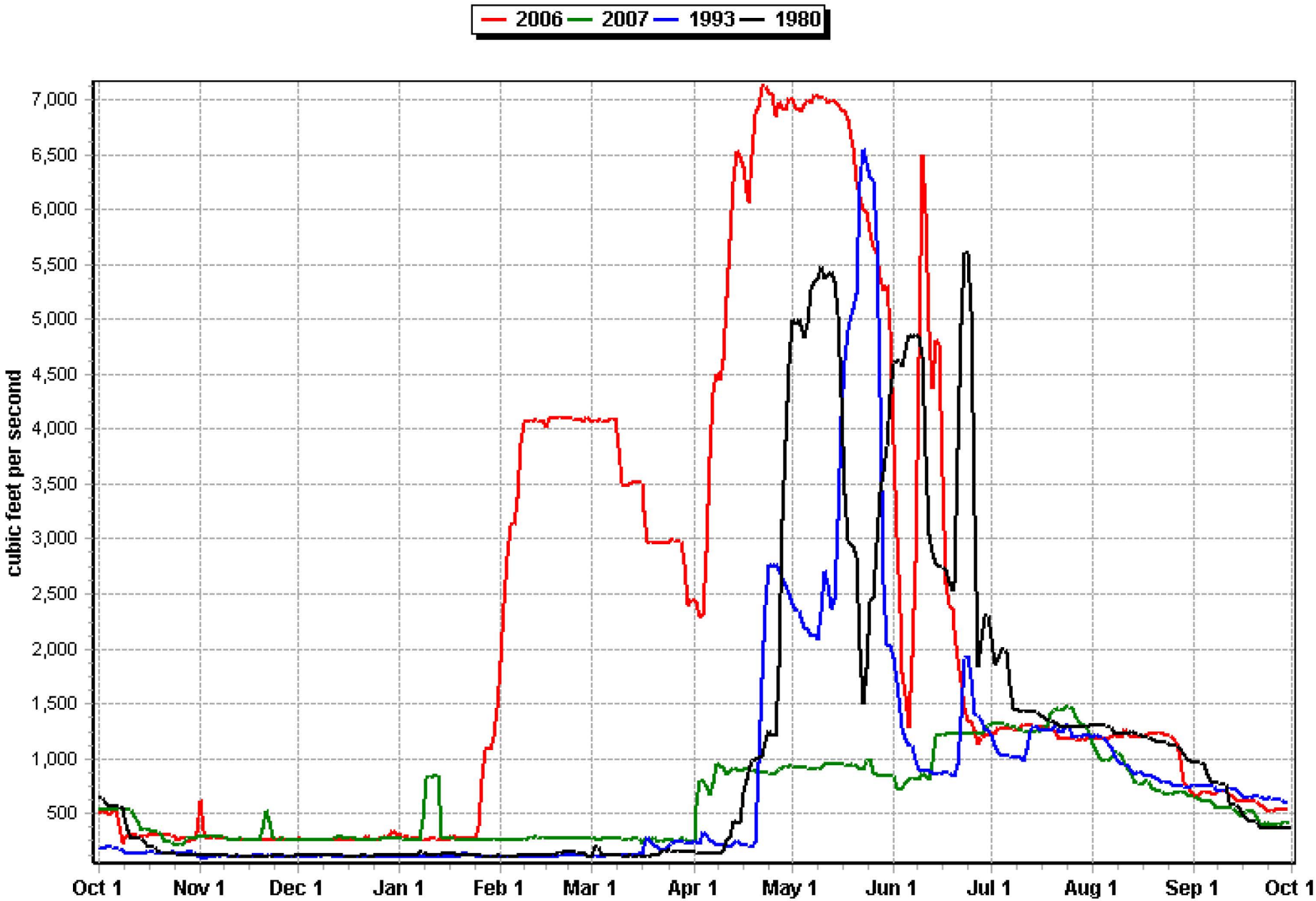
April 1 – July 31



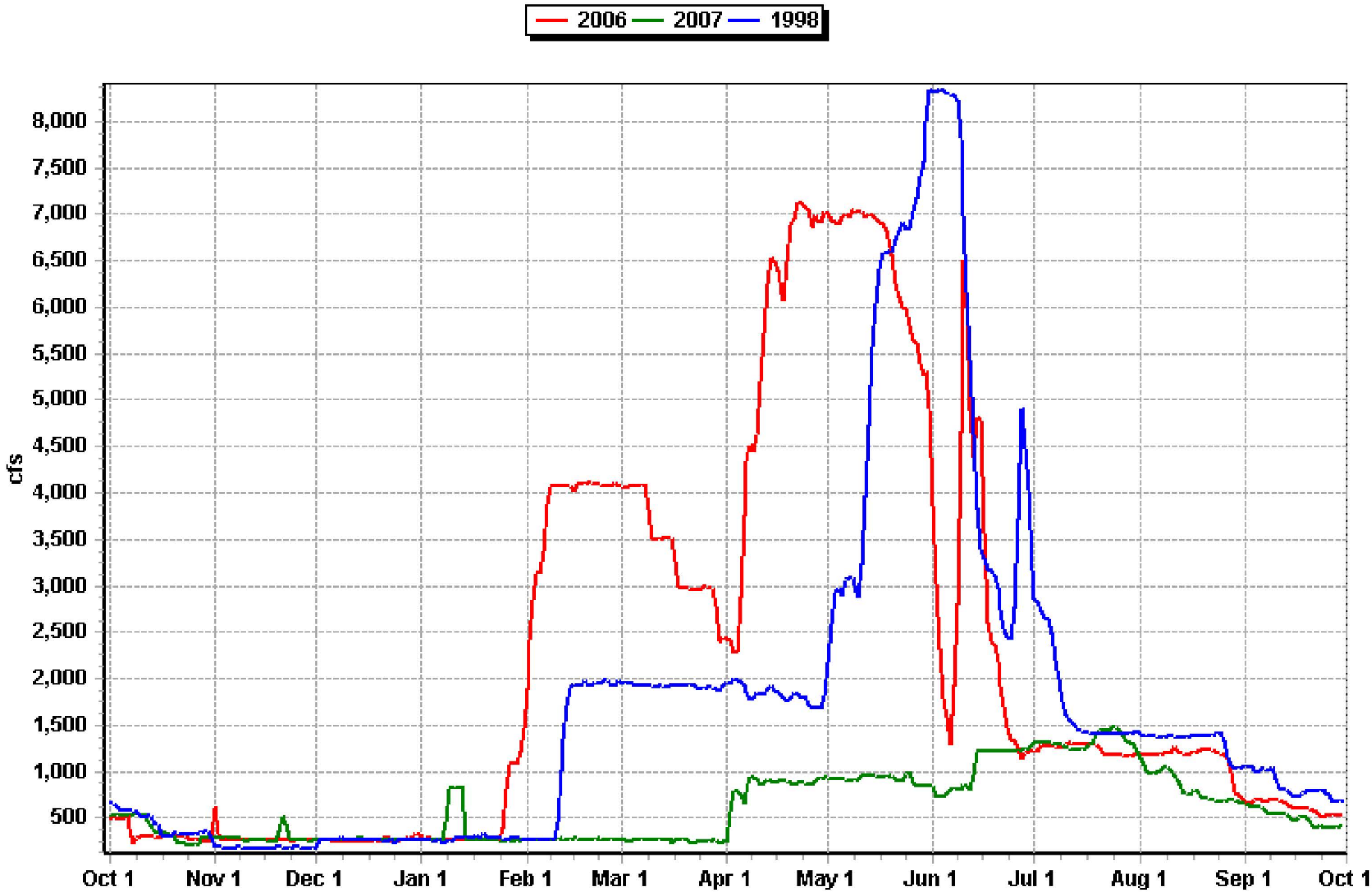
Boise Reservoir System Storage
(capacity = 949,700 af)



Boise River Flows at Boise

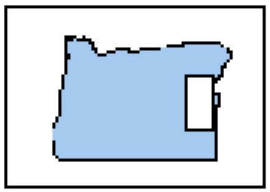


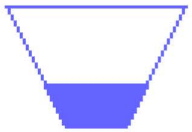
Boise River at Glenwood Bridge
(The best laid plans can go awry...)



Owyhee Basin

04/10/2008

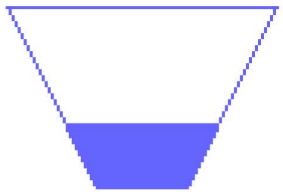




Phillips
18648/73000
26% Full

Unity
17488/25200
69% Full

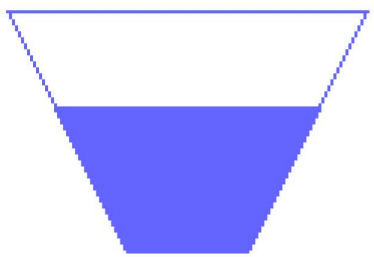
Beulah
30265/59900
51% Full



Warm Springs
41667/169639
25% Full

Thief Valley
13603/13307
102% Full

Bully Creek
18201/23676
77% Full



Owyhee
351382/715000
49% Full

NPDO 152 cfs

THF 148 cfs

HCDI 16439 cfs

PRHO 81 cfs

DRCO 27 cfs

PWDO 51 cfs

PRRO 185 cfs

PHL 6 cfs

UNY 55 cfs

Snake River

WEII 12040 cfs

MABO 97 cfs

MALO 102 cfs

VALO 29 cfs

BEUO 0 cfs

SNYI 7227 cfs

MADO 243 cfs

OWY 189 cfs

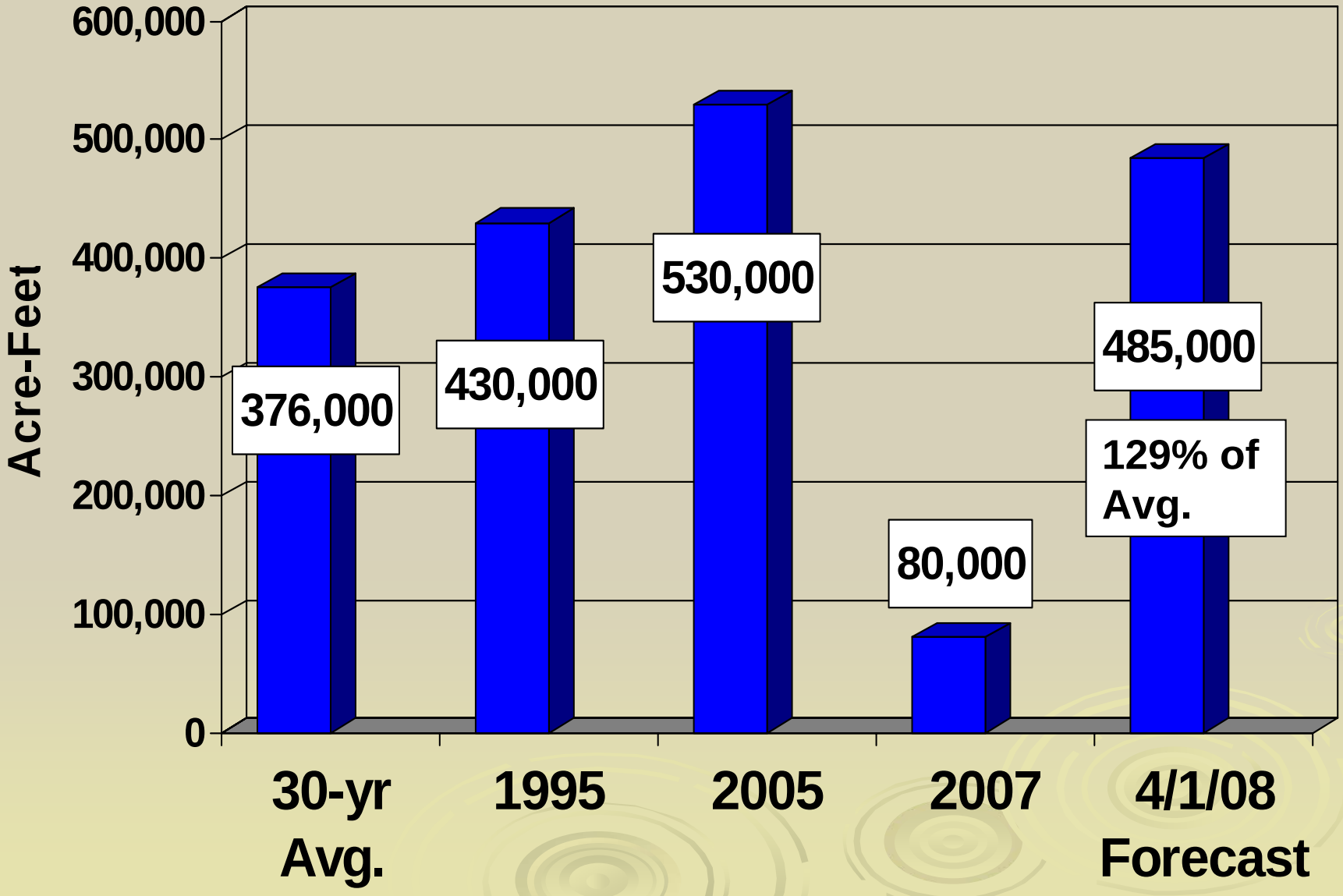
SWAI 6876 cfs

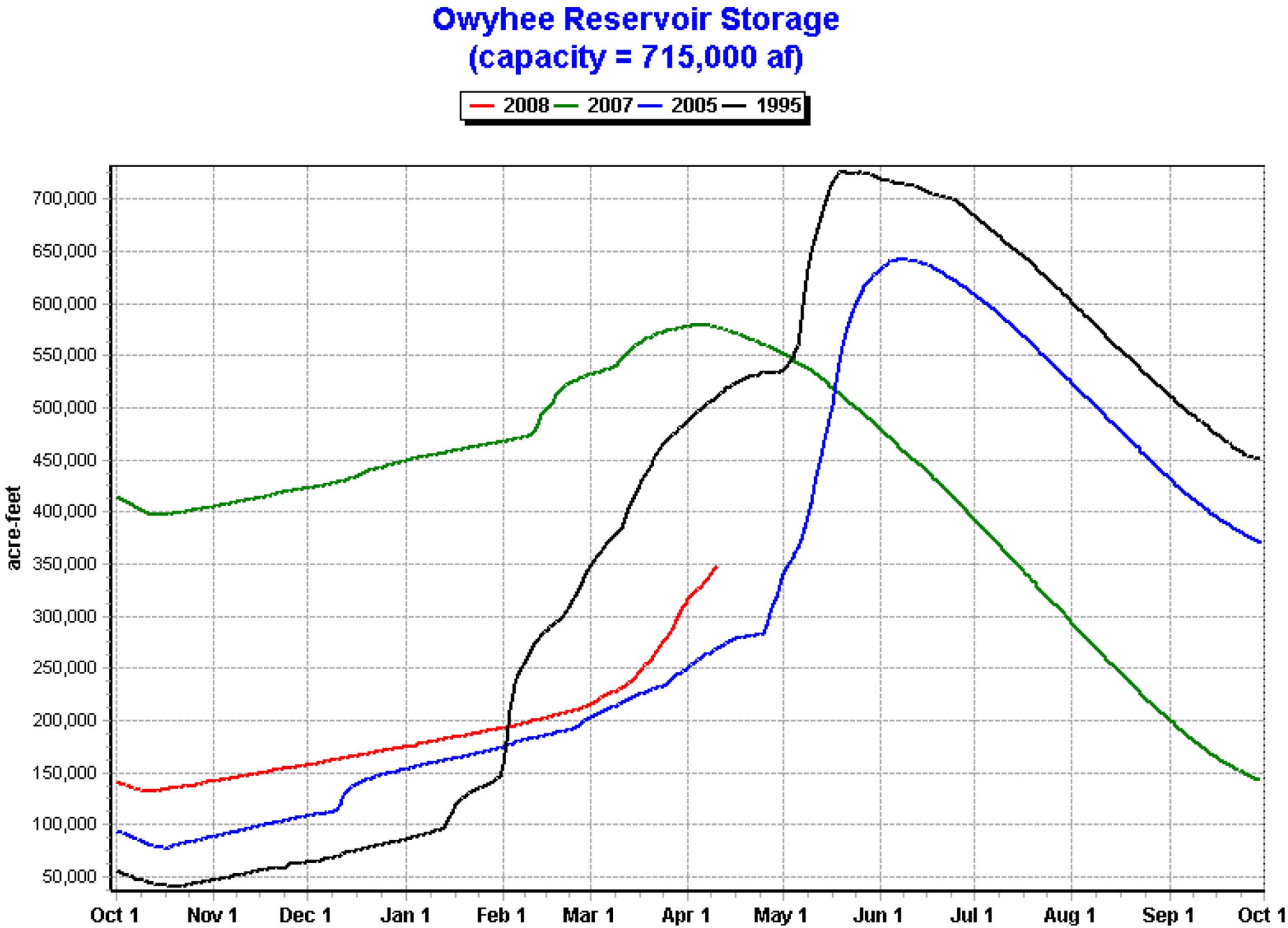
WARO 0 cfs

ROMO 1740 cfs

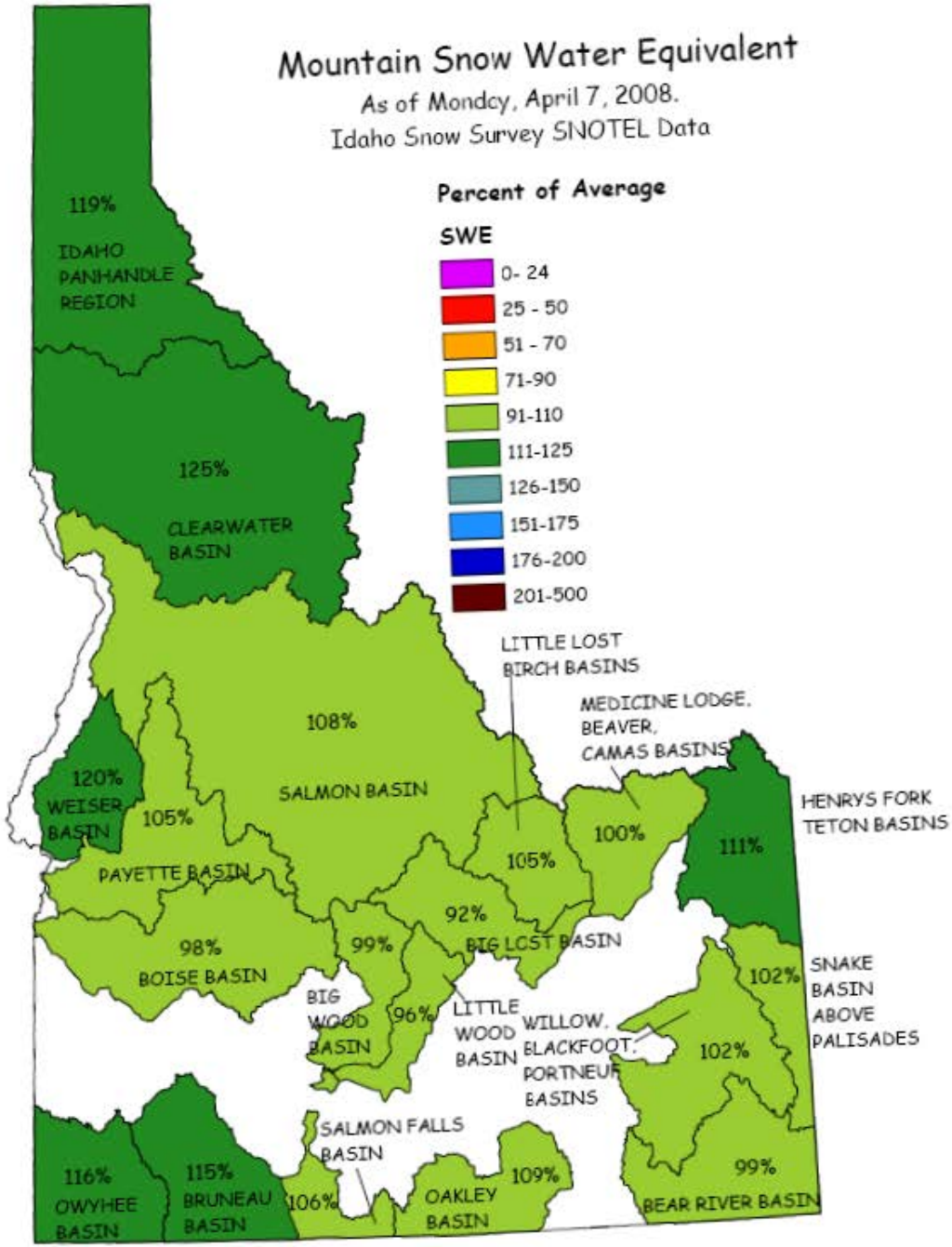
Owyhee Basin Runoff

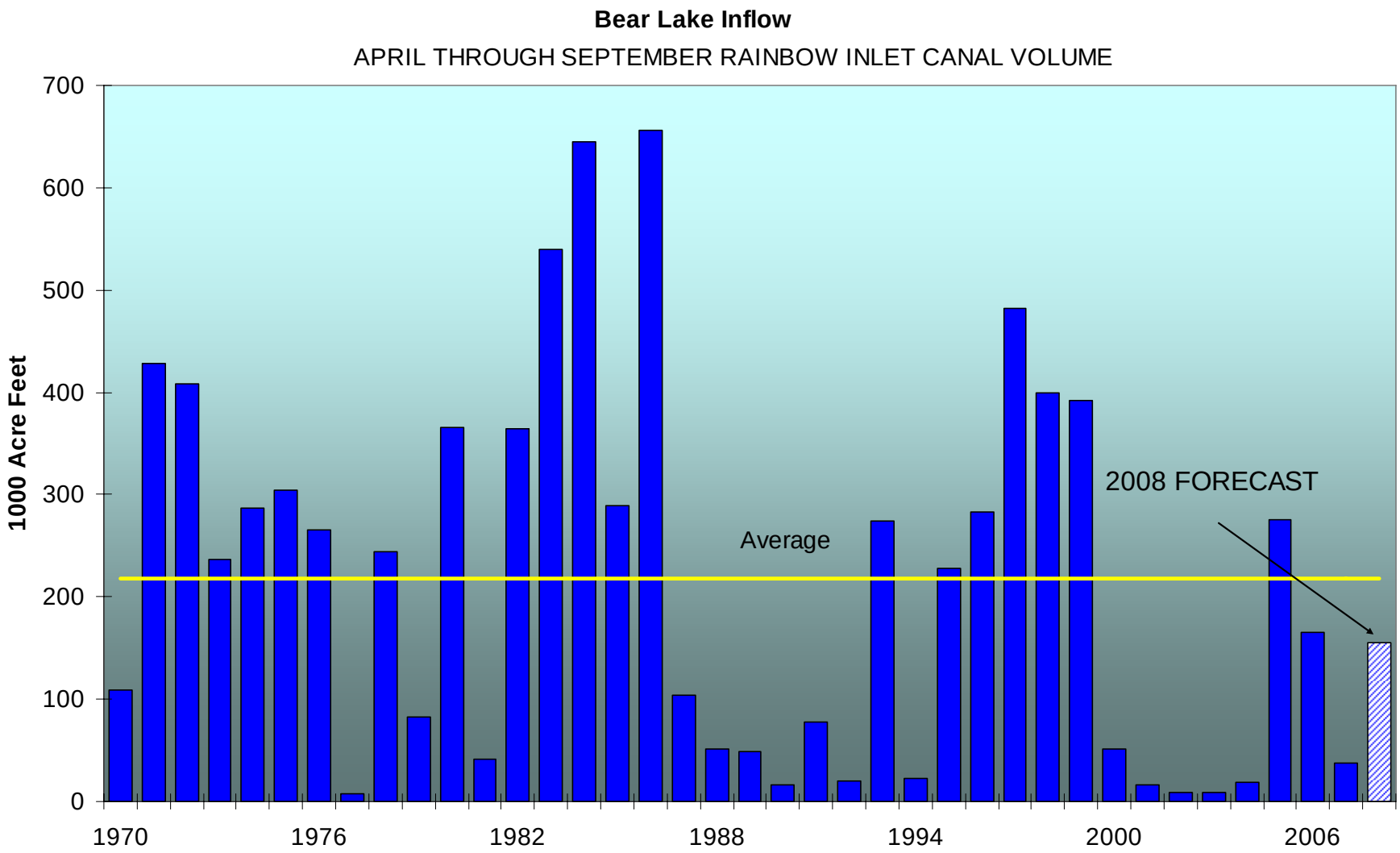
April 1 – June 30

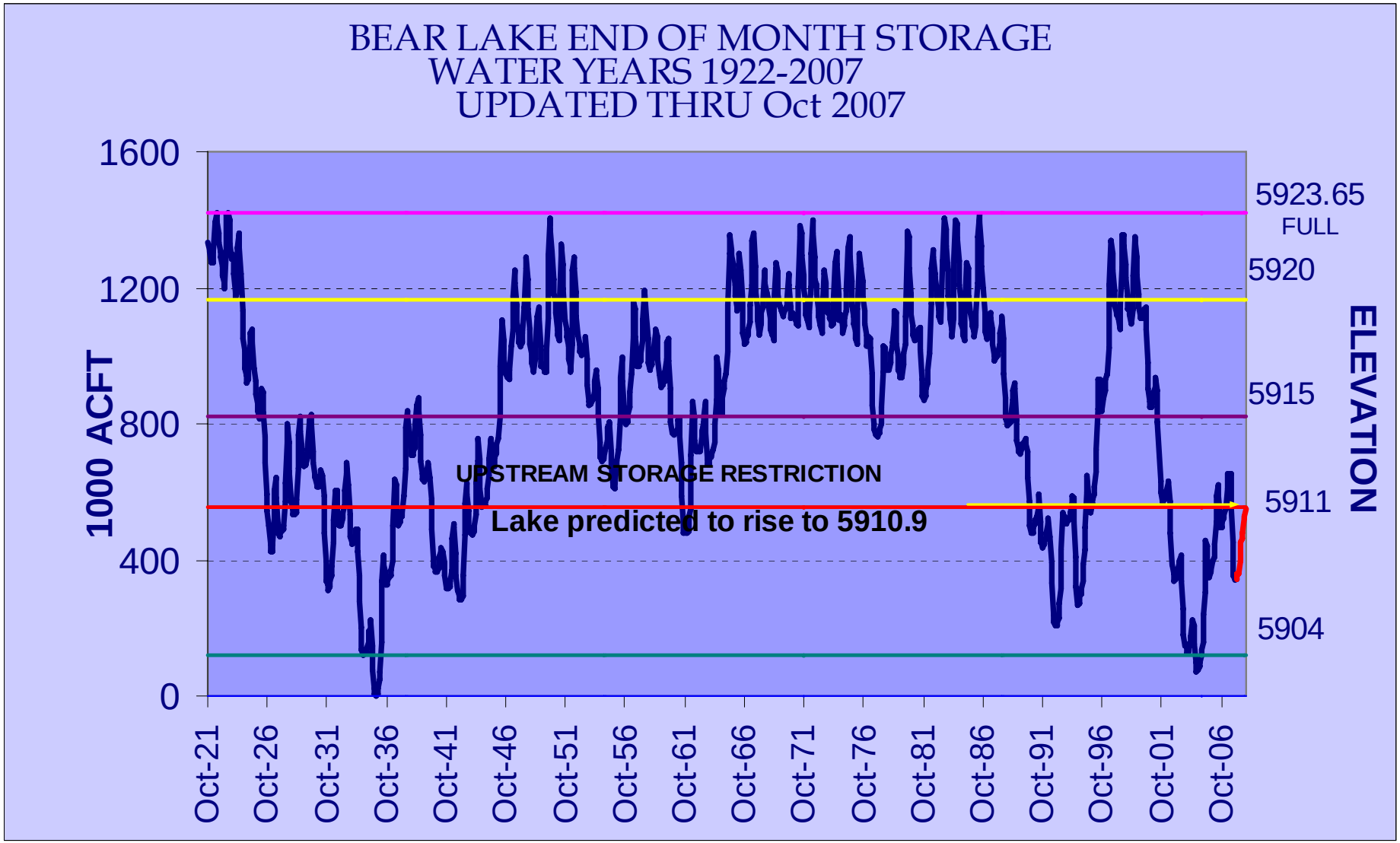


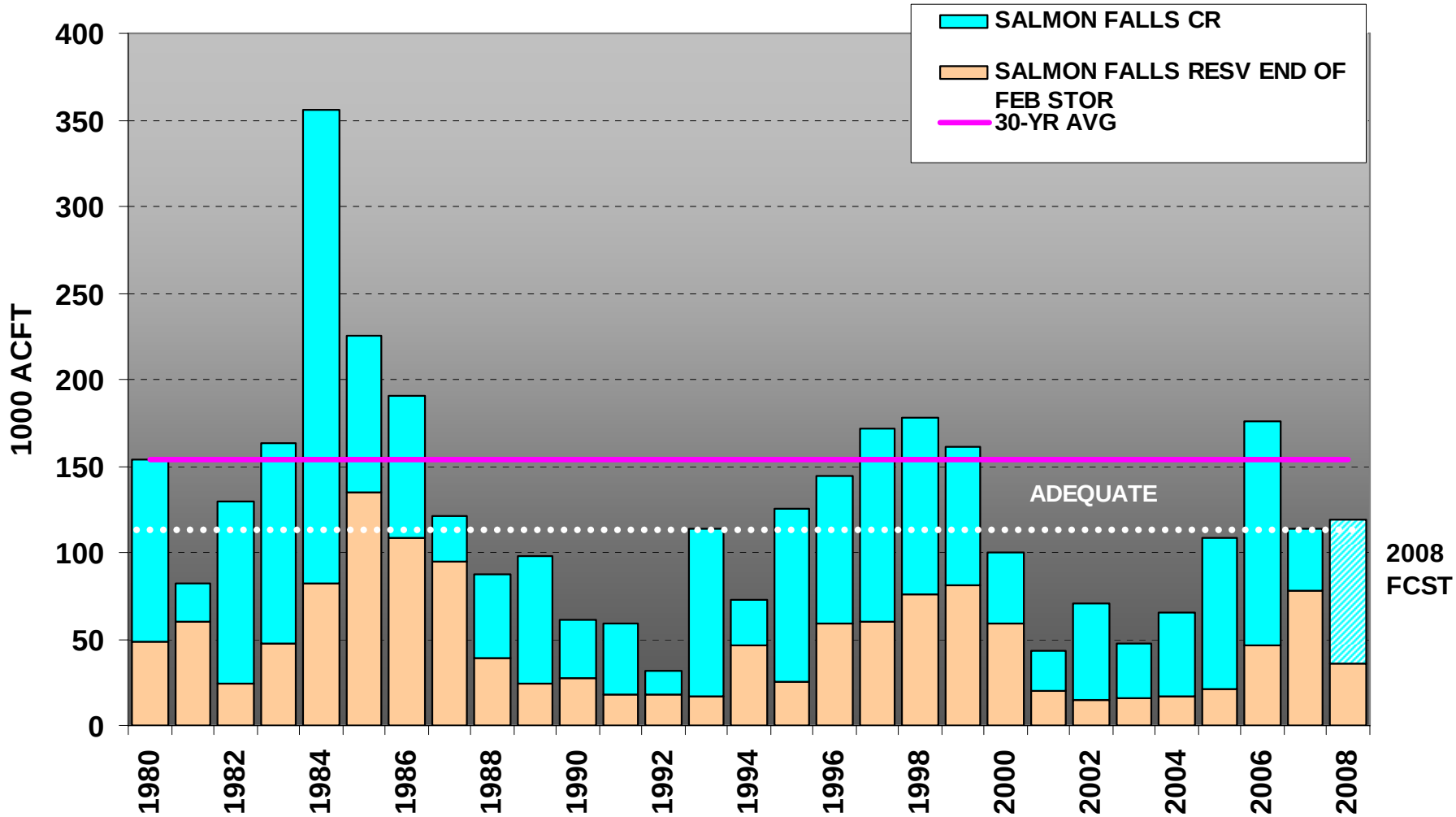

Owyhee Reservoir Storage
(capacity = 715,000 af)
2008
2007
2005
1995
acre-feet
700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1

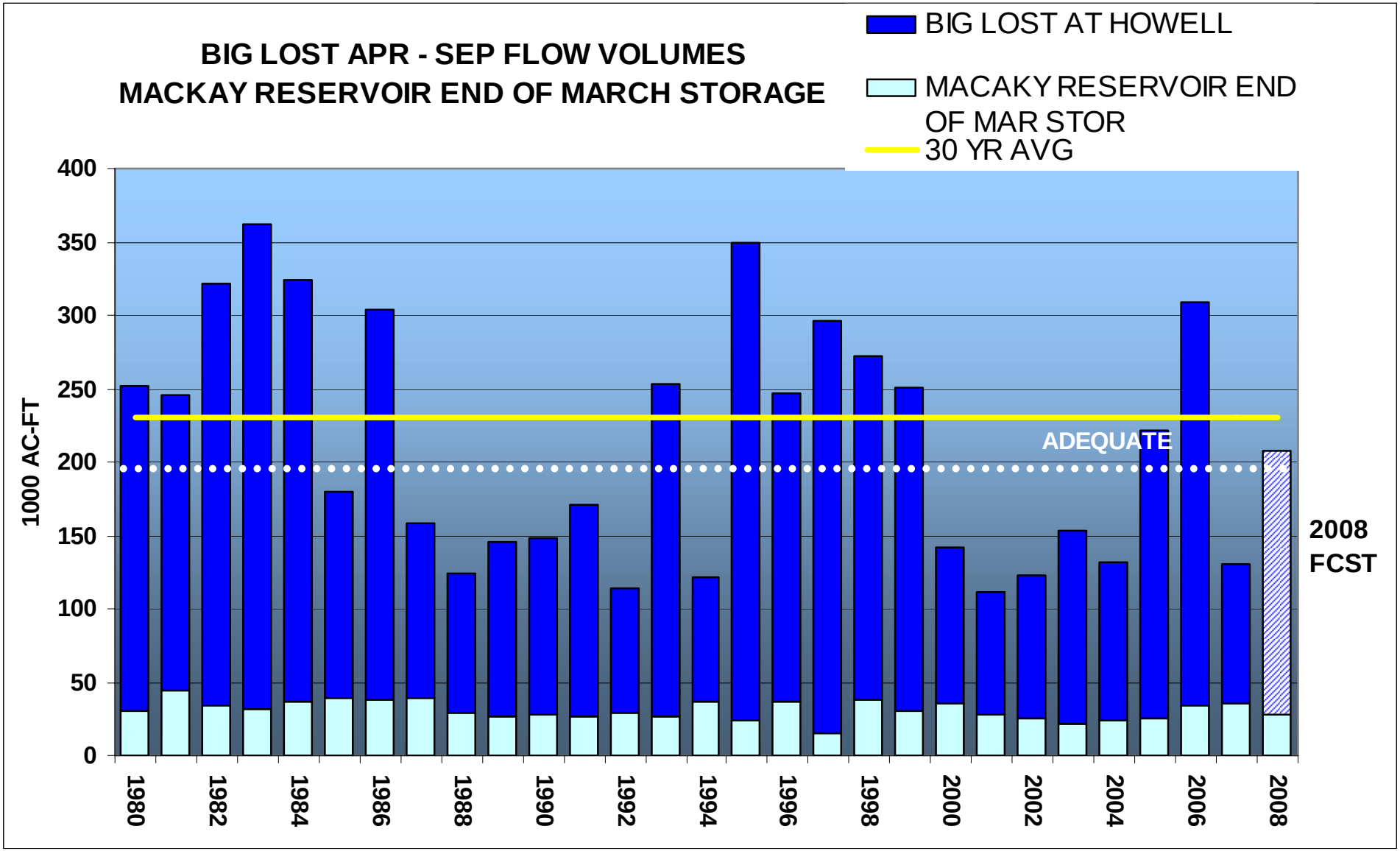
April 2008
Water Supply Committee

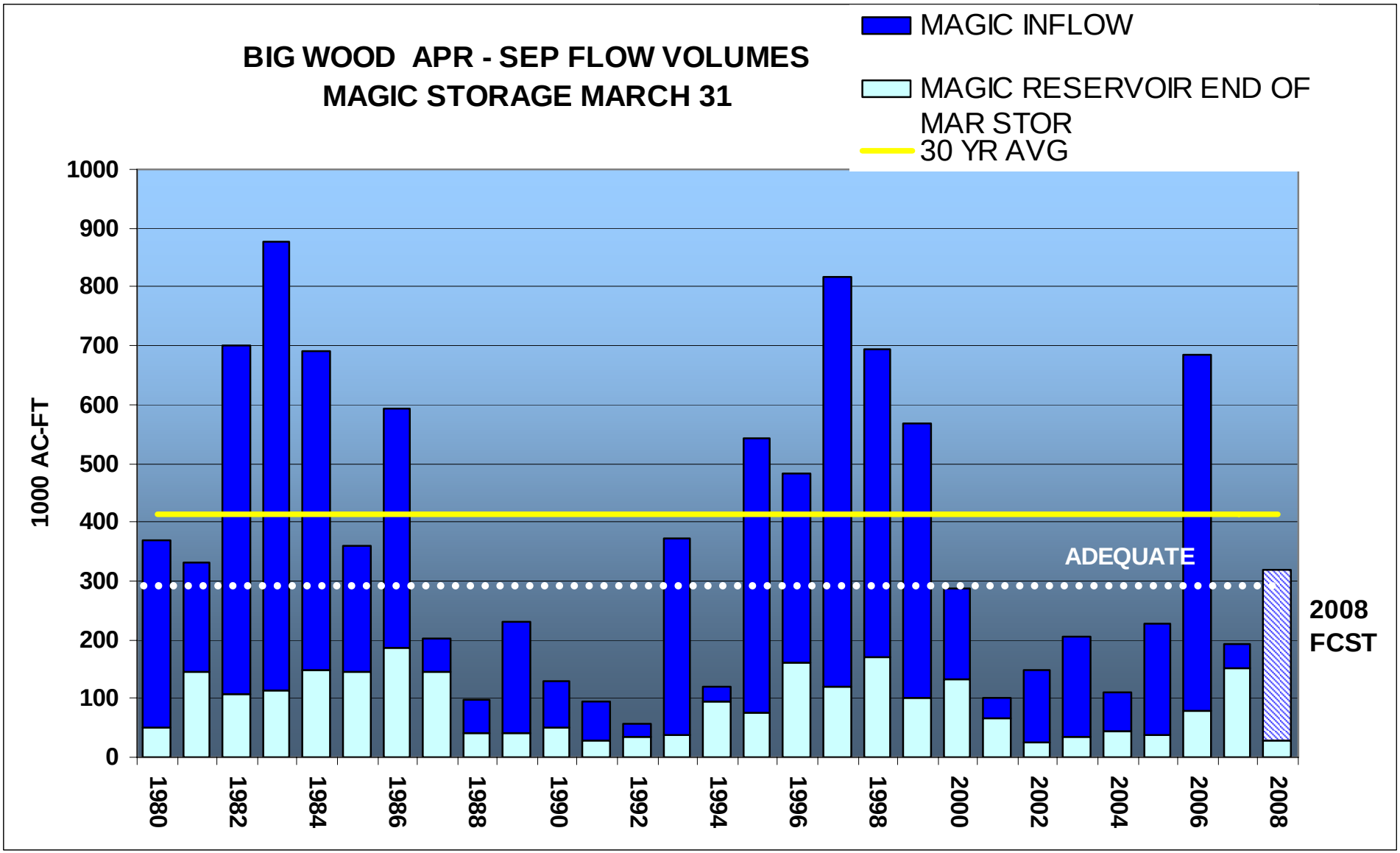

Mountain Snow Water Equivalent
As of Monday, April 7, 2008.
Idaho Snow Survey SNOTEL Data
Percent of Average
SWE
0- 24
25 - 50
51 - 70
71-90
91-110
111-125
126-150
151-175
176-200
201-500
119%
IDAHO PANHANDLE REGION
125%
CLEARWATER BASIN
108%
SALMON BASIN
120%
WEISER BASIN
105%
PAYETTE BASIN
98%
BOISE BASIN
99%
BIG WOOD BASIN
96%
LITTLE WOOD BASIN
92%
BIG LOST BASIN
105%
LITTLE LOST BIRCH BASINS
100%
MEDICINE LODGE, BEAVER, CAMAS BASINS
111%
HENRYS FORK TETON BASINS
102%
SNAKE BASIN ABOVE PALISADES
102%
WILLOW, BLACKFOOT, PORTNEUF BASINS
99%
BEAR RIVER BASIN
109%
OAKLEY BASIN
106%
SALMON FALLS BASIN
115%
BRUNEAU BASIN
116%
OWYHEE BASIN

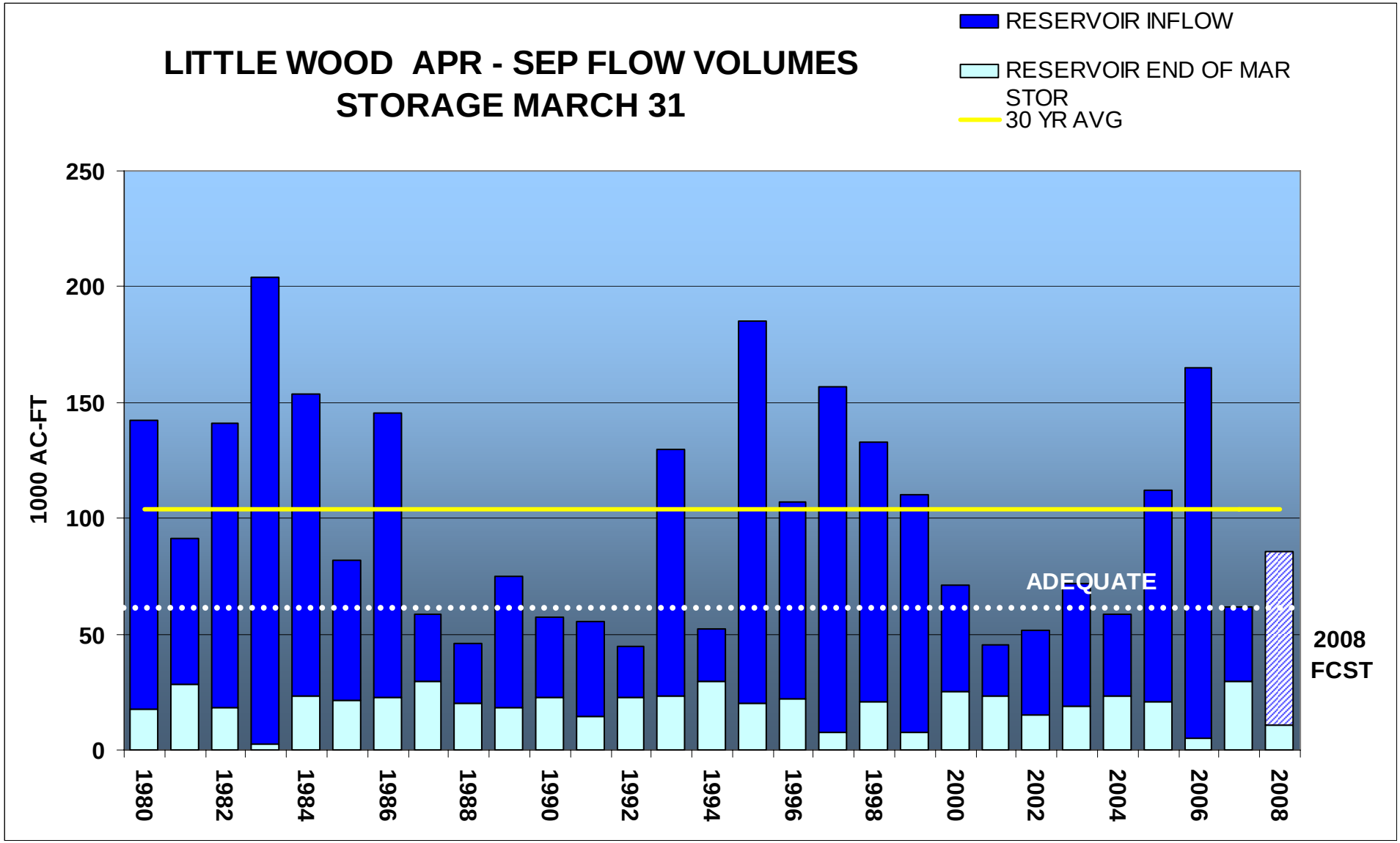

Bear Lake Inflow
APRIL THROUGH SEPTEMBER RAINBOW INLET CANAL VOLUME
1000 Acre Feet
700
600
500
400
300
200
100
0
1970
1976
1982
1988
1994
2000
2006
Average
2008 FORECAST


BEAR LAKE END OF MONTH STORAGE
WATER YEARS 1922-2007
UPDATED THRU Oct 2007
1000 ACFT
1600
1200
800
400
0
ELEVATION
5923.65
FULL
5920
5915
5911
5904
UPSTREAM STORAGE RESTRICTION
Lake predicted to rise to 5910.9
Oct-21
Oct-26
Oct-31
Oct-36
Oct-41
Oct-46
Oct-51
Oct-56
Oct-61
Oct-66
Oct-71
Oct-76
Oct-81
Oct-86
Oct-91
Oct-96
Oct-01
Oct-06


SALMON FALLS CREEK NR SAN JACINTO, NV
MARCH THROUGH SEPTEMBER VOLUME
+ SALMON FALLS RESERVOIR
SALMON FALLS CR
SALMON FALLS RESV END OF FEB STOR
30-YR AVG
ADEQUATE
2008 FCST
1000 ACFT
400
350
300
250
200
150
100
50
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008


BIG LOST APR - SEP FLOW VOLUMES
MACKAY RESERVOIR END OF MARCH STORAGE
BIG LOST AT HOWELL
MACAKY RESERVOIR END OF MAR STOR
30 YR AVG
1000 AC-FT
400
350
300
250
200
150
100
50
0
ADEQUATE
2008 FCST
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

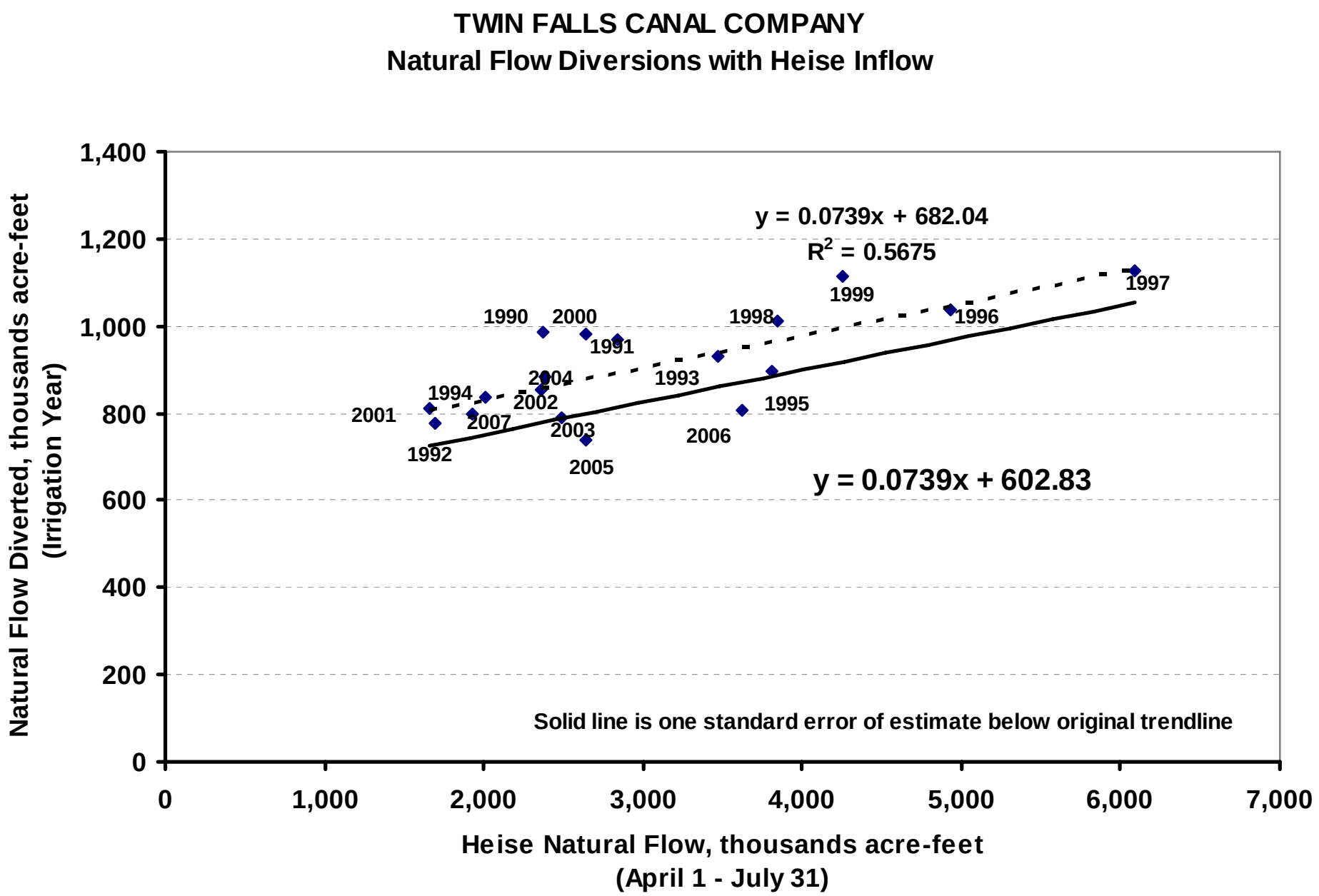

BIG WOOD APR - SEP FLOW VOLUMES
MAGIC STORAGE MARCH 31
MAGIC INFLOW
MAGIC RESERVOIR END OF MAR STOR
30 YR AVG
1000 AC-FT
1000
900
800
700
600
500
400
300
200
100
0
ADEQUATE
2008 FCST
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

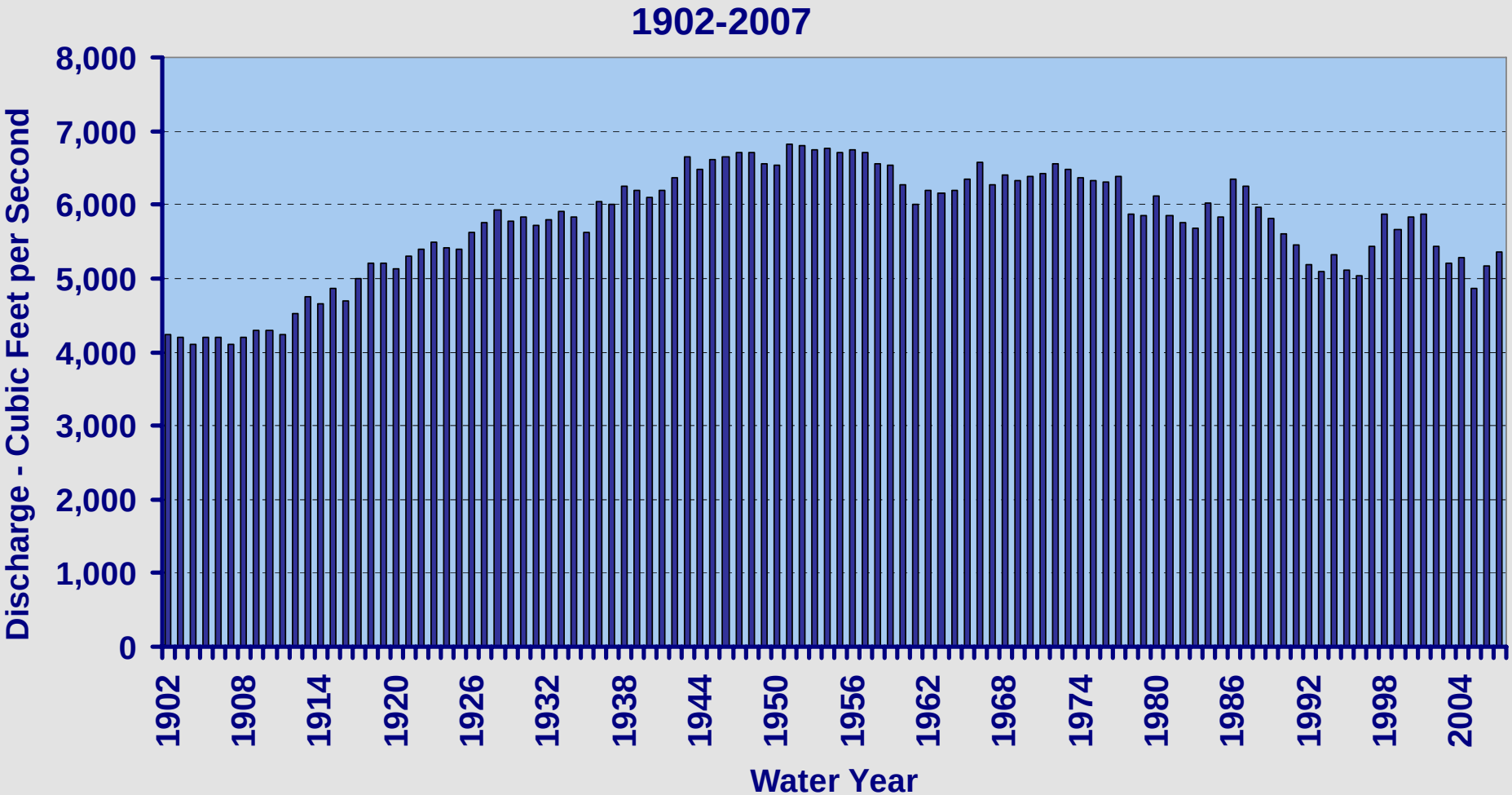

LITTLE WOOD APR - SEP FLOW VOLUMES
STORAGE MARCH 31
RESERVOIR INFLOW
RESERVOIR END OF MAR STOR
30 YR AVG
1000 AC-FT
250
200
150
100
50
0
ADEQUATE
2008 FCST
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

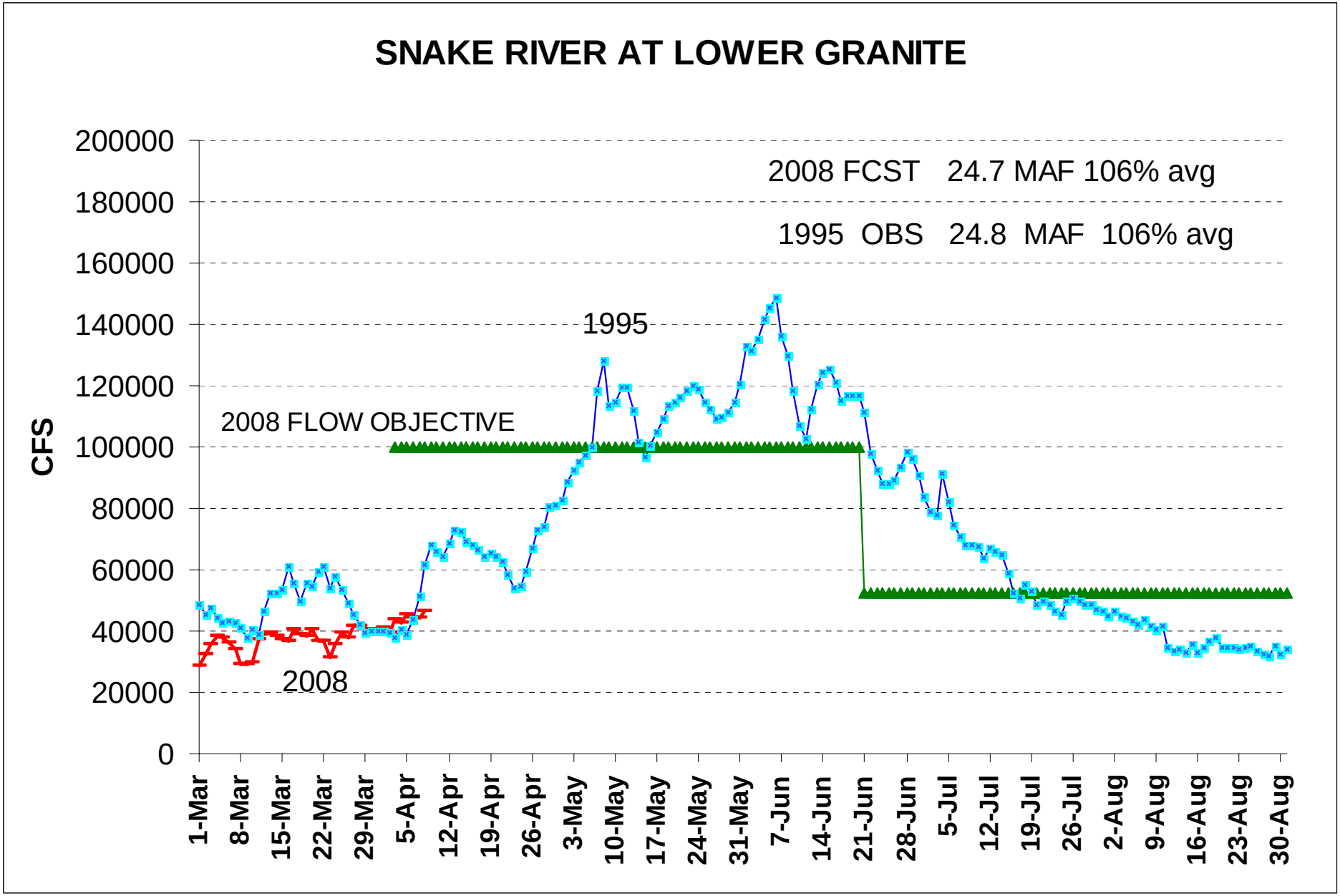
ESPA GROUND WATER CURTAILMENT

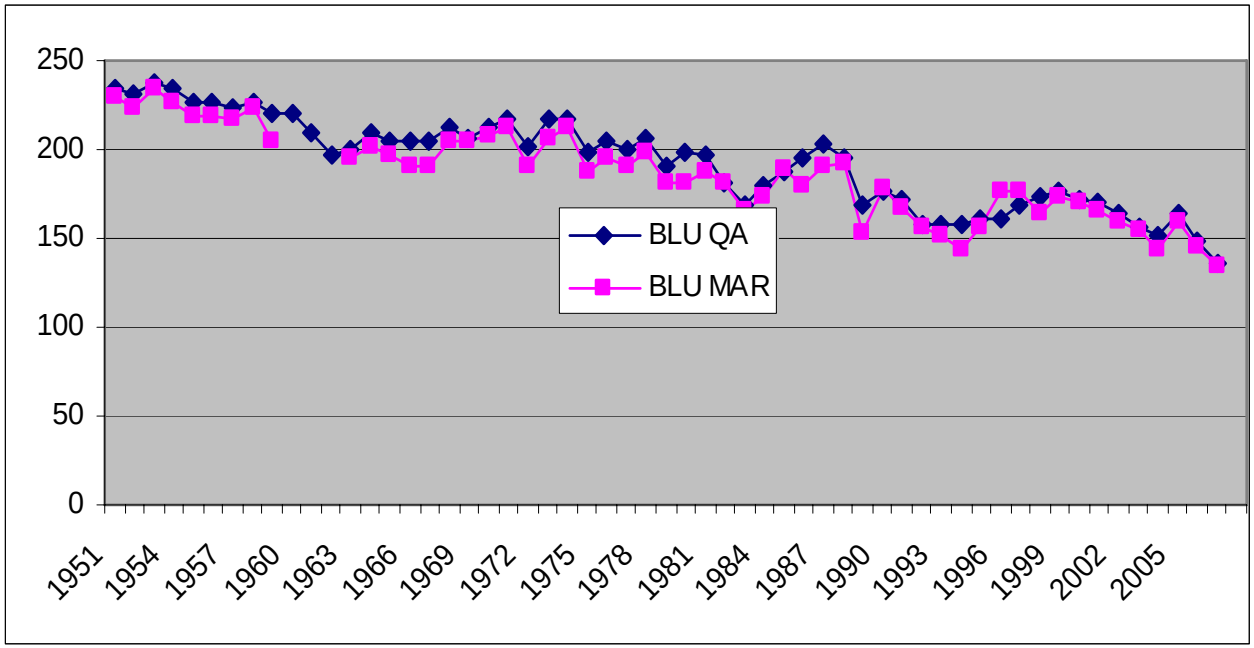
SURFACE WATER COALITION CALL

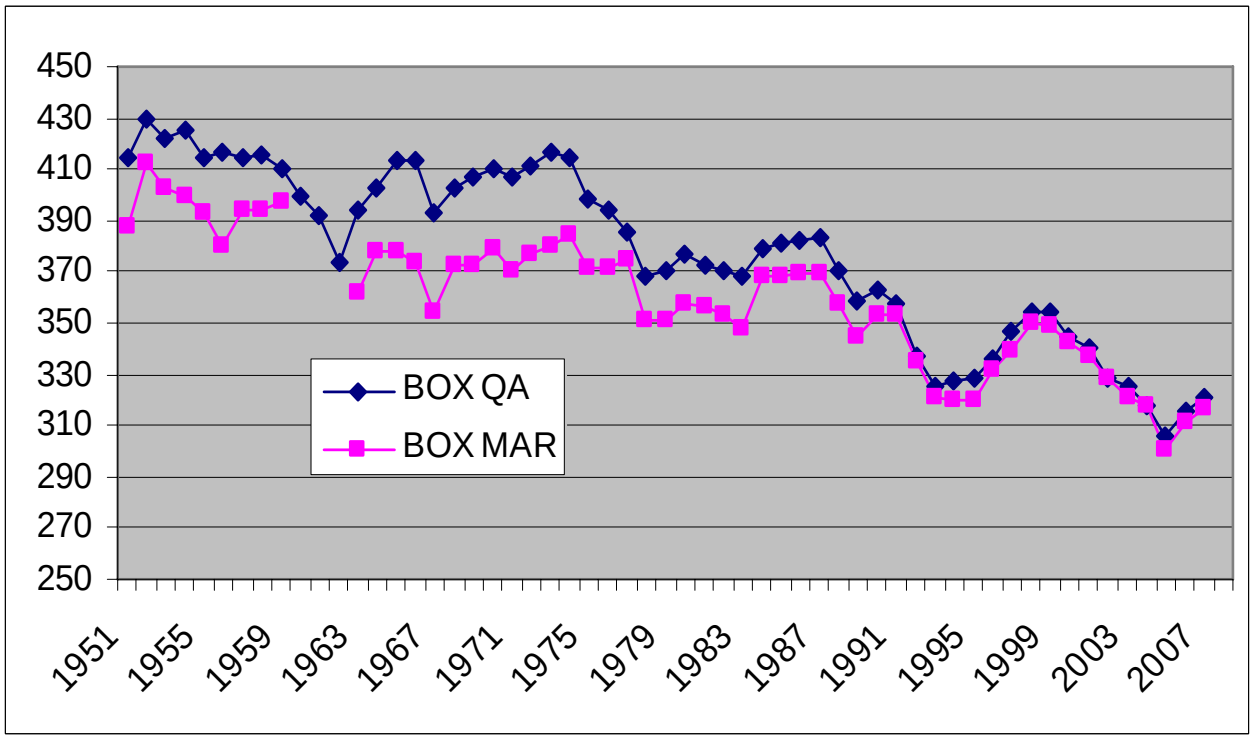
	% of Normal Runoff	Comparable year	Heise Apr-Jul Runoff (1000 ac-ft)	Predicted Surface Water Supply Shortfall (ac-ft)	Acres Curtailed	Ground Water Right Priority Date Cut
2008 Projection:	103	2006	3,650	0	0	none
	78	2005	2,643	27,700	0	27-Feb-79
	66	2007	1,923	486,000	482,449	19-Sep-60
	48	1977	1,177	720,000	703,074	4-Sep-50


TWIN FALLS CANAL COMPANY
Natural Flow Diversions with Heise Inflow
Natural Flow Diverted, thousands acre-feet
(Irrigation Year)
Heise Natural Flow, thousands acre-feet
(April 1 - July 31)
y = 0.0739x + 682.04
R2 = 0.5675
y = 0.0739x + 602.83
Solid line is one standard error of estimate below original trendline
1990
2000
1991
1998
1999
1997
1996
1993
2004
1994
2002
2001
2007
2003
1992
2005
2006
1995
0
200
400
600
800
1,000
1,200
1,400
0
1,000
2,000
3,000
4,000
5,000
6,000
7,000


AVERAGE ANNUAL SPRING DISCHARGE TO SNAKE RIVER
BETWEEN MILNER AND KING HILL
1902-2007
Discharge - Cubic Feet per Second
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1902
1908
1914
1920
1926
1932
1938
1944
1950
1956
1962
1968
1974
1980
1986
1992
1998
2004
Water Year


SNAKE RIVER AT LOWER GRANITE
2008 FCST 24.7 MAF 106% avg
1995 OBS 24.8 MAF 106% avg
1995
2008 FLOW OBJECTIVE
2008
CFS
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
1-Mar
8-Mar
15-Mar
22-Mar
29-Mar
5-Apr
12-Apr
19-Apr
26-Apr
3-May
10-May
17-May
24-May
31-May
7-Jun
14-Jun
21-Jun
28-Jun
5-Jul
12-Jul
19-Jul
26-Jul
2-Aug
9-Aug
16-Aug
23-Aug
30-Aug


250
200
150
100
50
0
BLU QA
BLU MAR
1951
1954
1957
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005


450
430
410
390
370
350
330
310
290
270
250
BOX QA
BOX MAR
1951
1955
1959
1963
1967
1971
1975
1979
1983
1987
1991
1995
1999
2003
2007