

September 14, 2011
Idaho Water Supply Meeting
2011 Runoff, Upper Snake & 2012 Outlook
Idaho NRCS



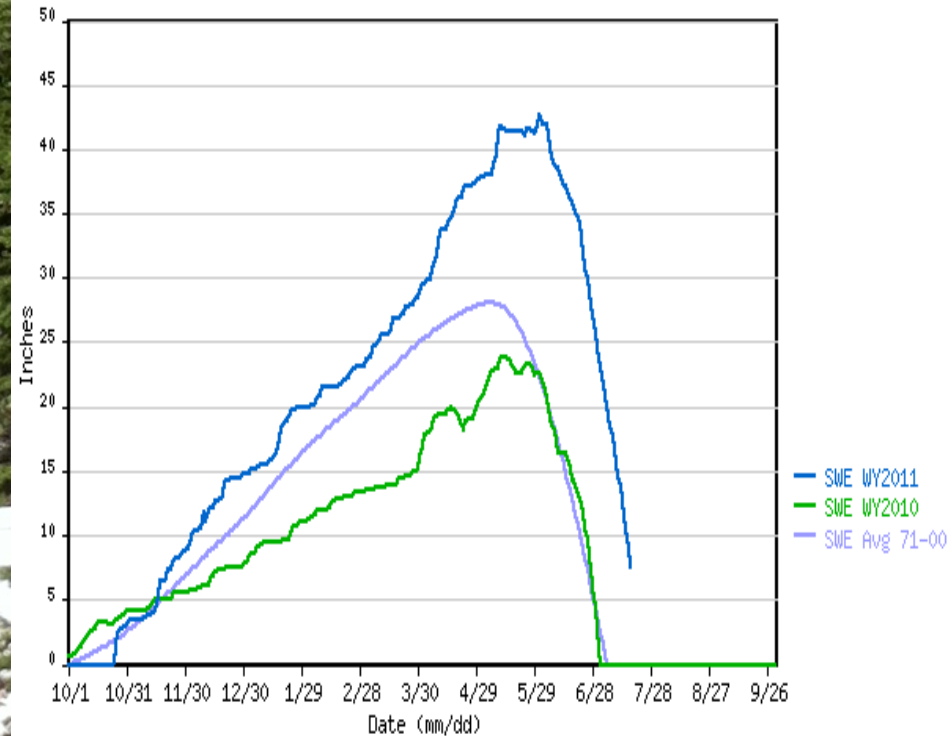
July 19, 2011 Togwotee Pass SNOTEL
Wyoming 9,580 feet

Summer field work with snow on snow pillow.

Snow pillow sensor had 4" of snow water with about 14 inches of depth on one side and melted on other side.

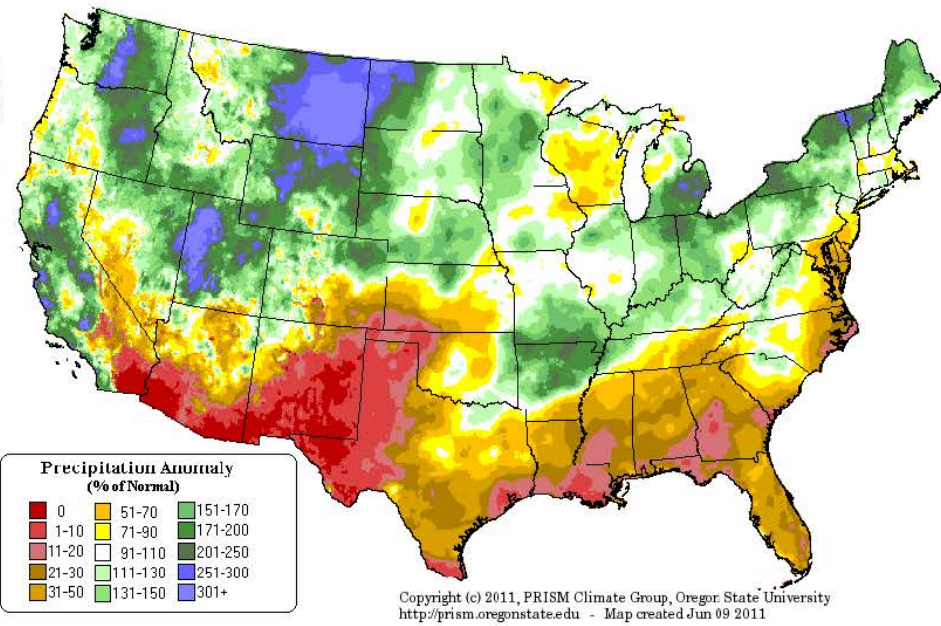
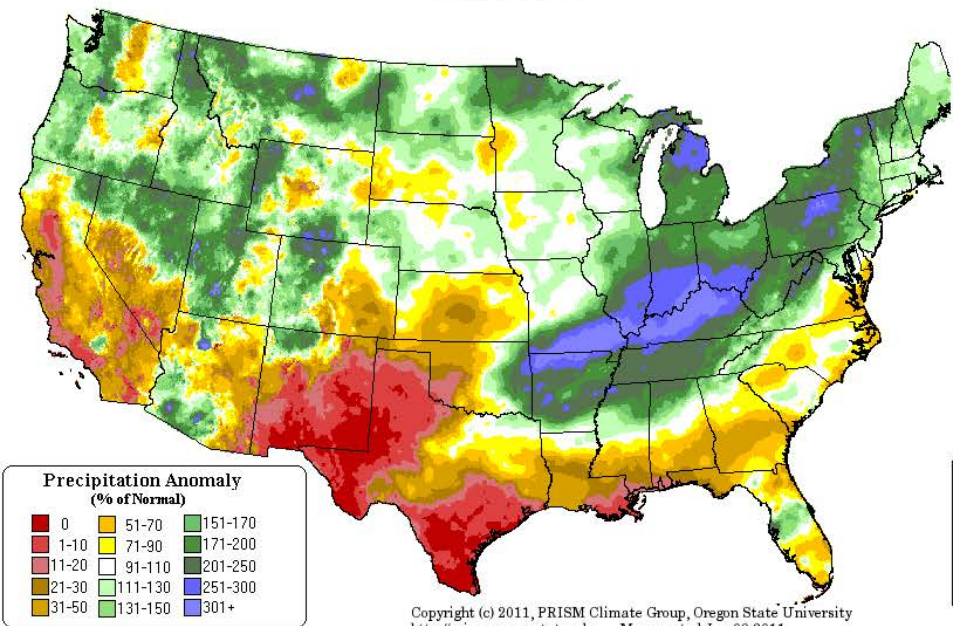
TOGWOTEE PASS SNOTEL as of 07/20/2011

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

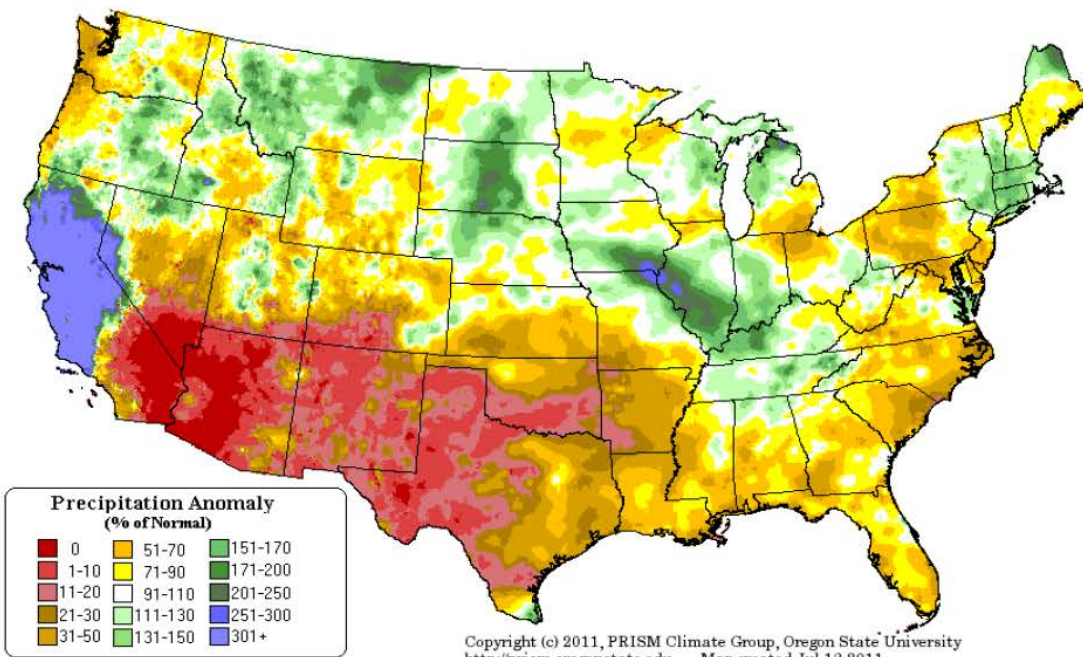


Precipitation Anomaly: Apr 2011
Provisional Data

Precipitation Anomaly: May 2011
Provisional Data

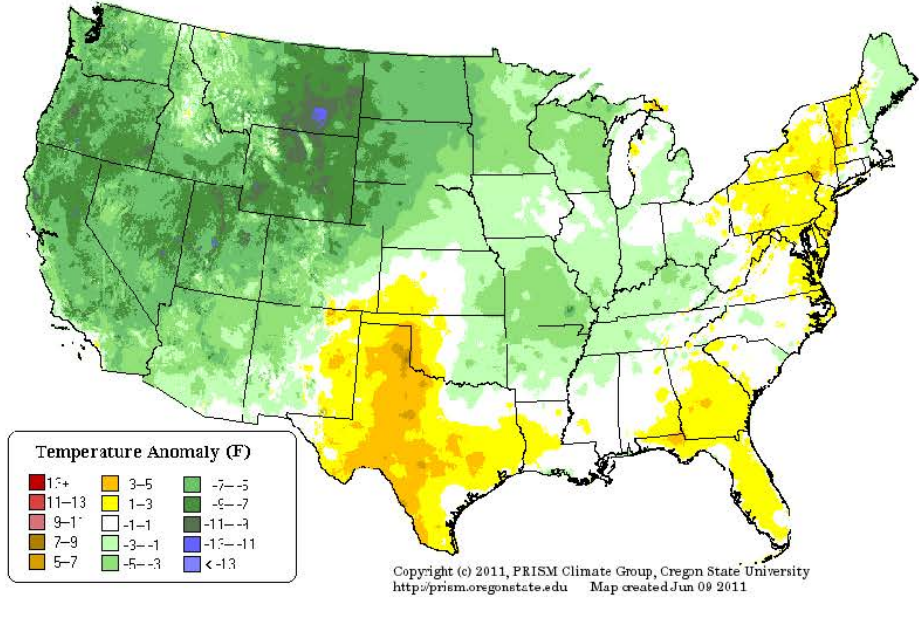
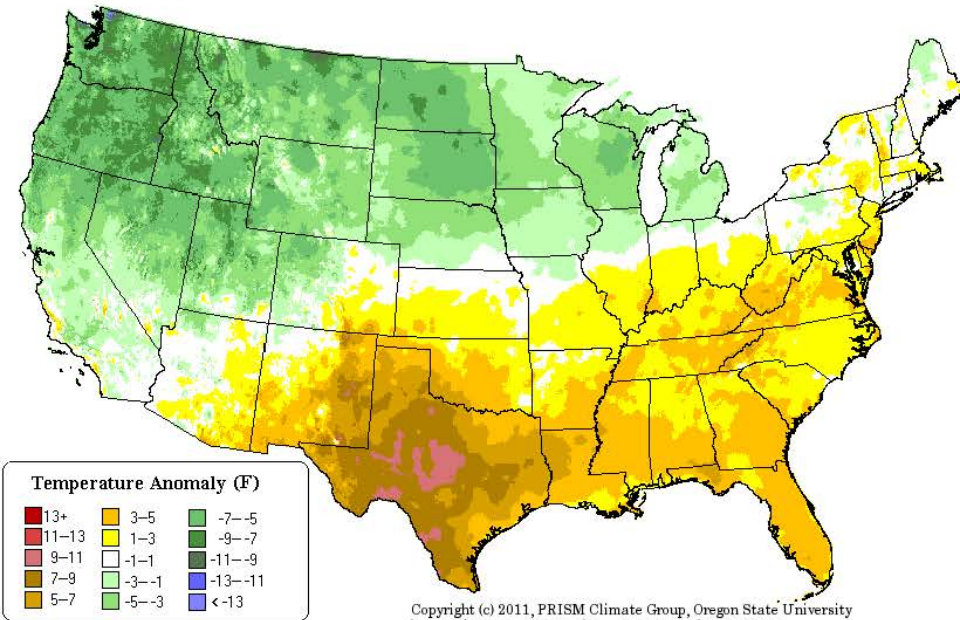


Precipitation Anomaly: Jun 2011
Provisional Data

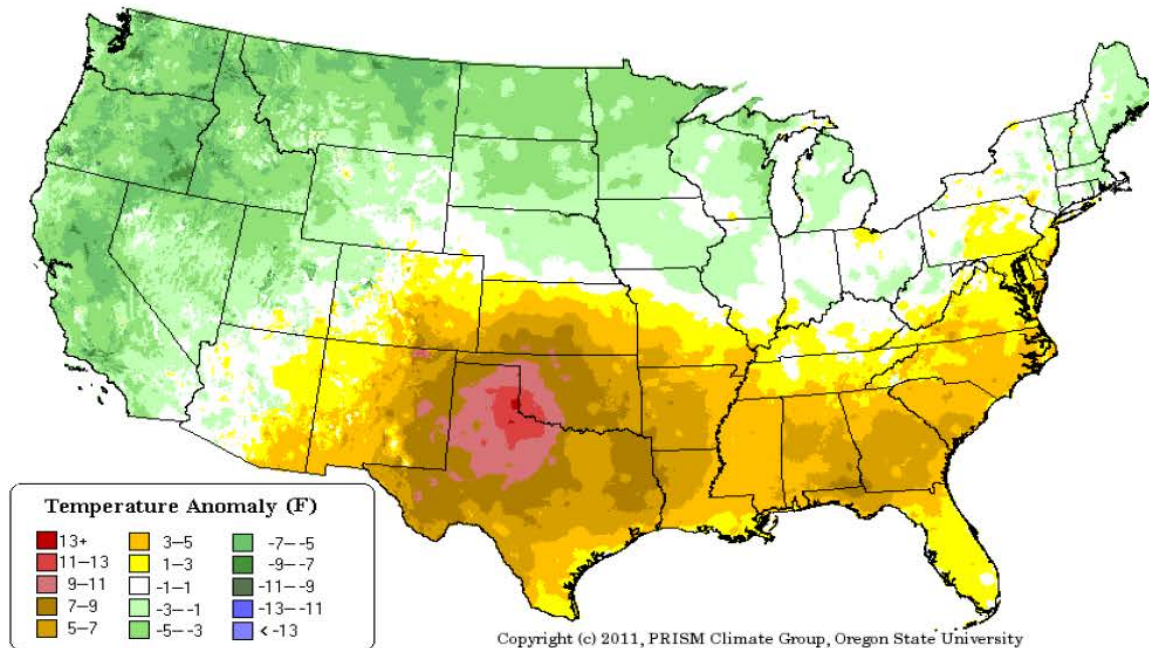


Maximum Temperature Anomaly: Apr 2011
Provisional Data

Maximum Temperature Anomaly: May 2011
Provisional Data

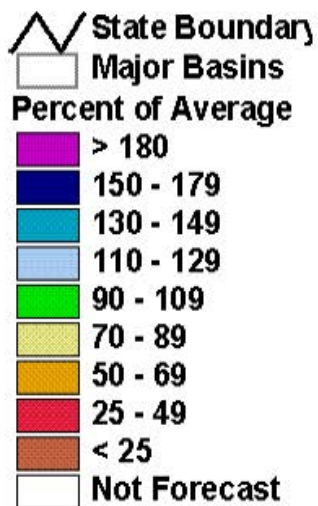


Maximum Temperature Anomaly: Jun 2011
Provisional Data



April - July 2011 Observed Streamflow

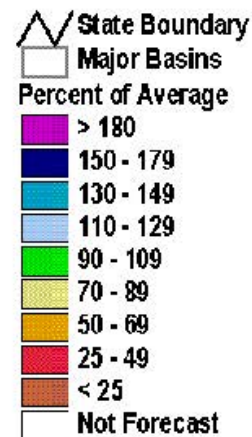
Idaho



Map based on provisional data

April 1, 2011 50% Exceedance Summer Streamflow Forecasts

Idaho



Map based on provisional data

Preliminary 2011 Water Supply Forecast Verification

- April 1 Pctile**
- 0 - 0.1
 - 0.1 - 0.3
 - 0.3 - 0.7
 - 0.7 - 0.9
 - 0.9 - 1.0

The non-exceedance probability of the observed flow in relationship to the forecast probability distribution.



Publication Date: 8/18/2011

Preliminary 2011 Water Supply Forecast Verification

- May 1 Pctile**
- 0 - 0.1
 - 0.1 - 0.3
 - 0.3 - 0.7
 - 0.7 - 0.9
 - 0.9 - 1.0

The non-exceedance probability of the observed flow in relationship to the forecast probability distribution.

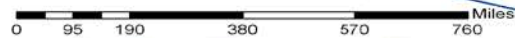


Publication Date: 8/18/2011

Preliminary 2011 Water Supply Forecast Verification

- June 1 Pctile**
- 0 - 0.1
 - 0.1 - 0.3
 - 0.3 - 0.7
 - 0.7 - 0.9
 - 0.9 - 1.0

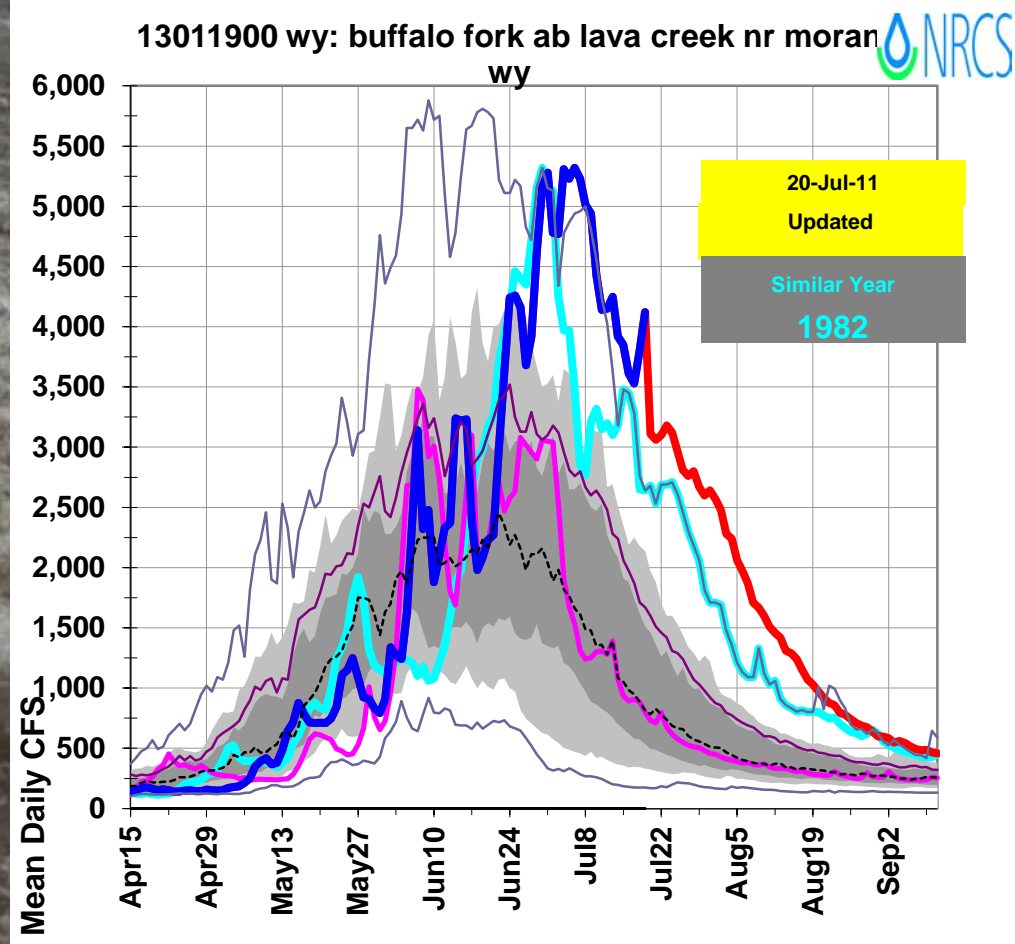
The non-exceedance probability of the observed flow in relationship to the forecast probability distribution.



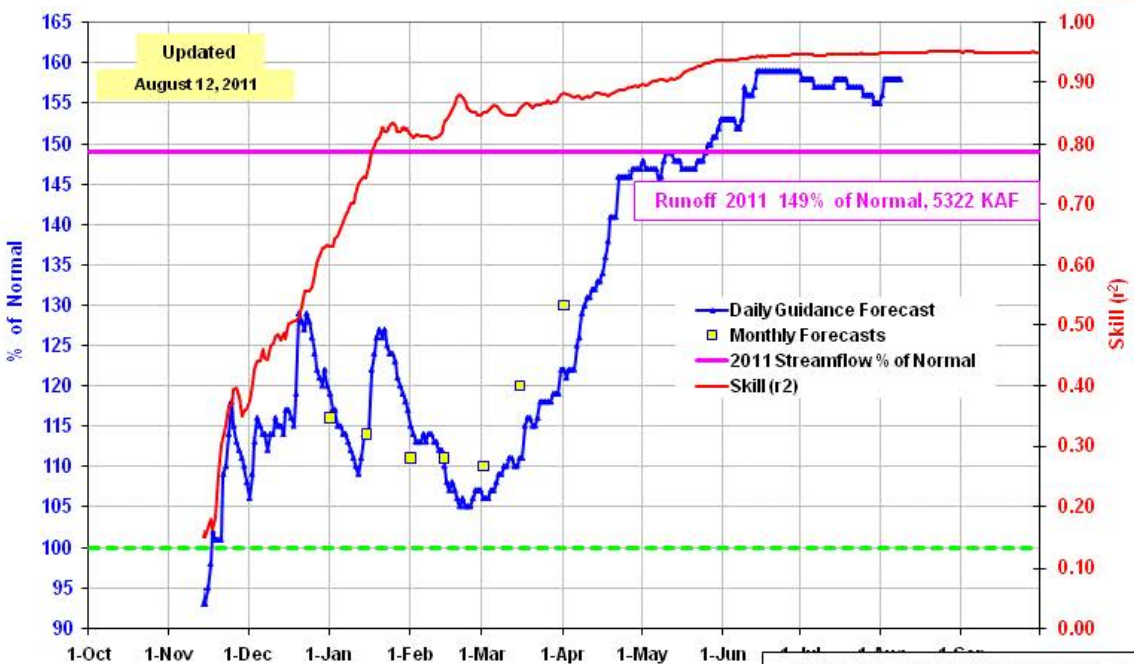
Publication Date: 8/19/2011



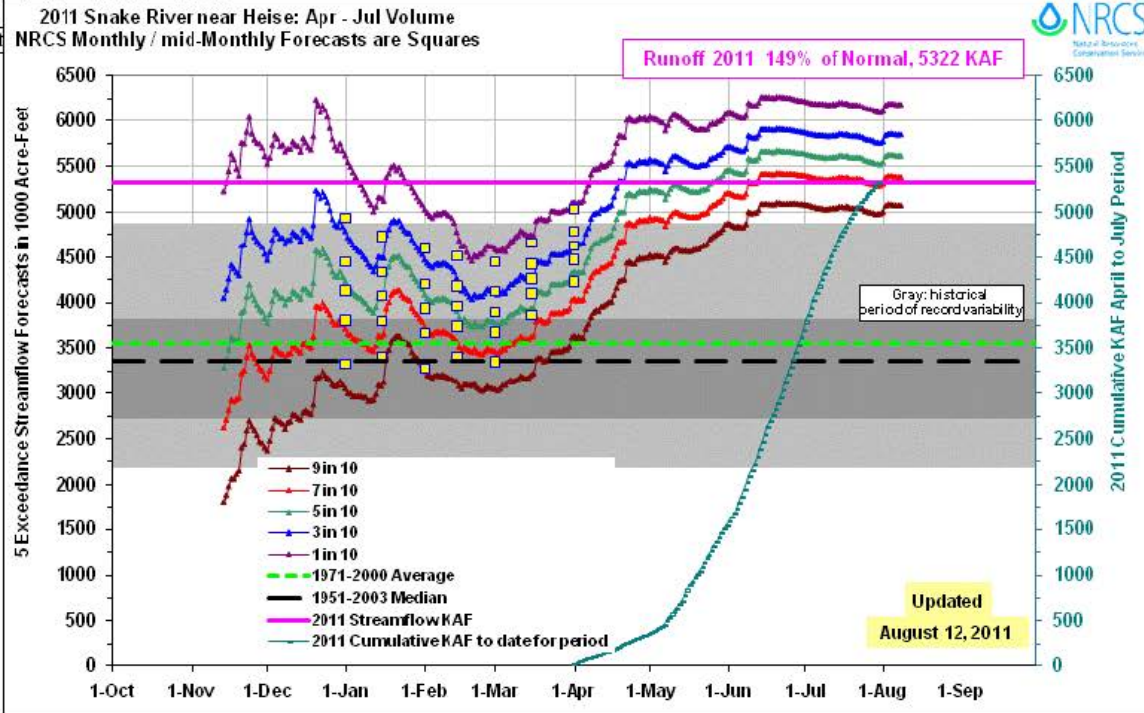
Buffalo Fork in Grand Teton National Park 19 July 2011



2011 Snake River near Heise: Apr - Jul Volume
 NRCS Monthly / mid-Monthly Forecasts are Squares



SNOTEL Sites used: Base Camp, Blind Bull, Cottonwood Ck, Lewis Lake, Snake River St



Teton River near Driggs SWSI

13052200 Teton River near Driggs

Period	Data Type	Years	# of Years	Units
Aug-Sep	strm	1971-2010	40	KAF

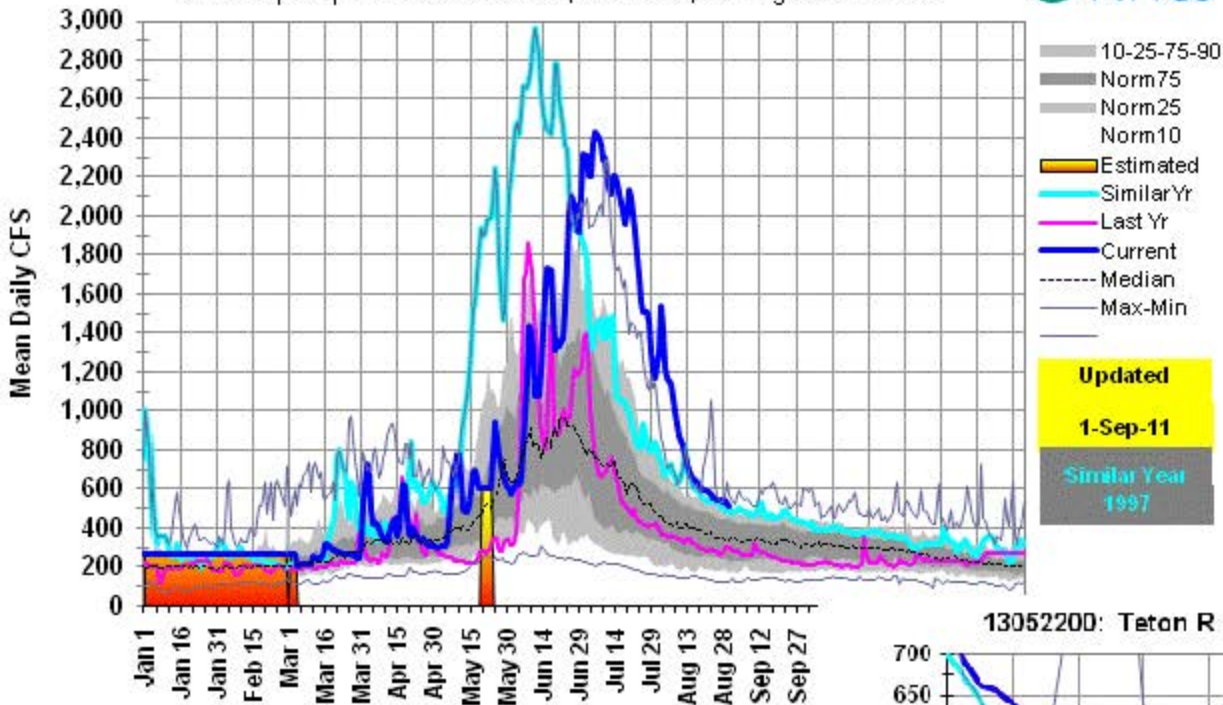
ENSO Classification

SE Strong El Nino - EN Mild El Nino - N Neutral - LN Mild La Nina - SL Strong La Nina

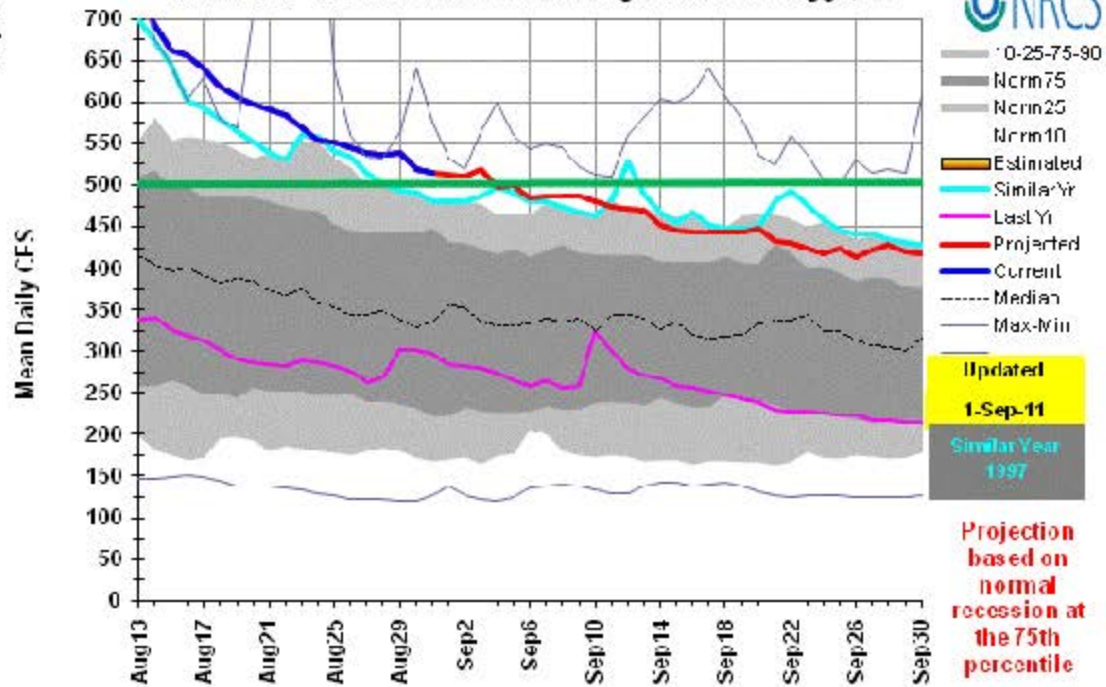
2010 Provisional Data

Historic Rank	Year	ENSO	Streamflow Aug-Sep	Non-Exceedance Probability	SWSI	Current Year Rank
	2011 Forecast	SL	68.0	0.99	4.1	1
1	1993	EN	67.1	0.98	4.0	
2	1997	N	65.7	0.95	3.8	
3	1971	LN	64.3	0.93	3.6	
4	1982	N	64.2	0.90	3.4	
5	1983	SE	62.7	0.88	3.2	
6	1975	LN	60.4	0.85	2.9	
7	1984	N	59.7	0.83	2.7	
8	1976	SL	58.3	0.80	2.5	
9	1972	LN	57.3	0.78	2.3	
10	1978	SE	56.1	0.76	2.1	
11	1974	SL	53.7	0.73	1.9	
12	1999	SL	52.3	0.71	1.7	
13	1986	N	51.8	0.68	1.5	
14	1995	SE	51.1	0.66	1.3	
15	1998	SE	47.6	0.63	1.1	
16	1996	N	47.5	0.61	0.9	
17	2008	N	44.7	0.59	0.7	
18	1973	SE	44.1	0.56	0.5	
19	2009	N	44.1	0.54	0.3	
20	1979	N	40.7	0.51	0.1	
21	1980	N	39.0	0.49	-0.1	
22	2004	N	38.4	0.46	-0.3	
23	1989	SL	36.7	0.44	-0.5	
24	1985	N	36.4	0.41	-0.7	
25	1991	N	35.3	0.39	-0.9	
26	2010	EN	35.3	0.37	-1.1	
27	2005	EN	35.2	0.34	-1.3	
28	2006	N	33.4	0.32	-1.5	
29	2002	N	31.4	0.29	-1.7	
30	1987	N	28.0	0.27	-1.9	
31	1981	N	27.9	0.24	-2.1	
32	2003	EN	26.0	0.22	-2.3	

13052200: Teton R above South Leigh Ck near Driggs, ID
 1997 Sep-Sep volume was 145%, 27.8 KAF, Average is 19.2 KAF

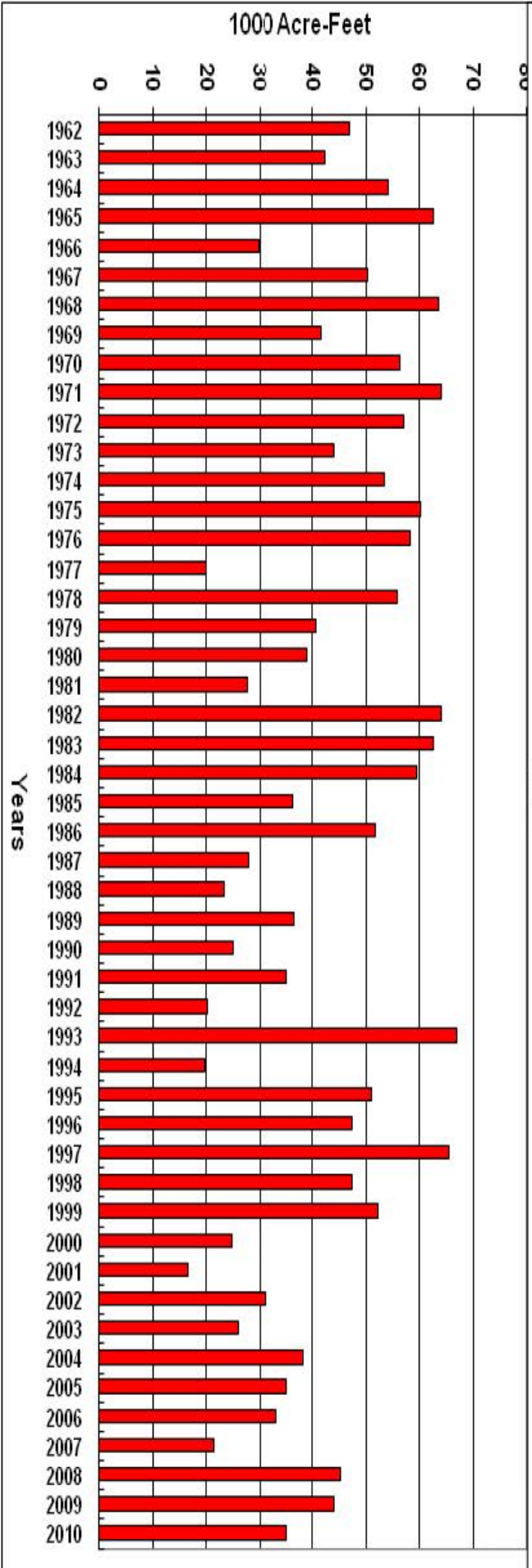
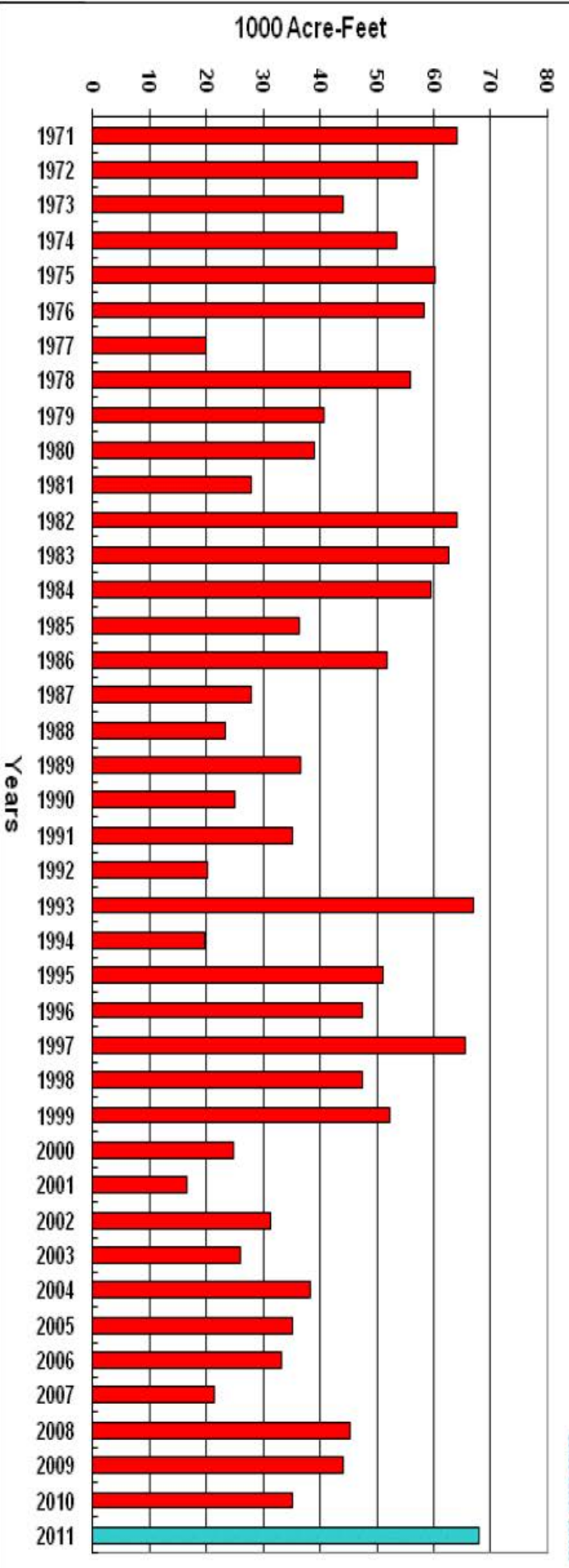


13052200: Teton R above South Leigh Ck near Driggs, ID



August 1 Surface Water Supply Index (SWSI)
Teton River near Driggs

■ Streamflow Aug-Sep



Snake River near Heise SWSI

	Period	Data Type	Years	# of Years	
13037500 Snake River near Heise	Sep-Sep	strm	1971-2010	40	Units KAF
13010500 Jackson Lake	31-Aug	resv	1971-2010	40	Units KAF
13032450 Palisades Reservoir	31-Aug	resv	1971-2010	40	Units KAF

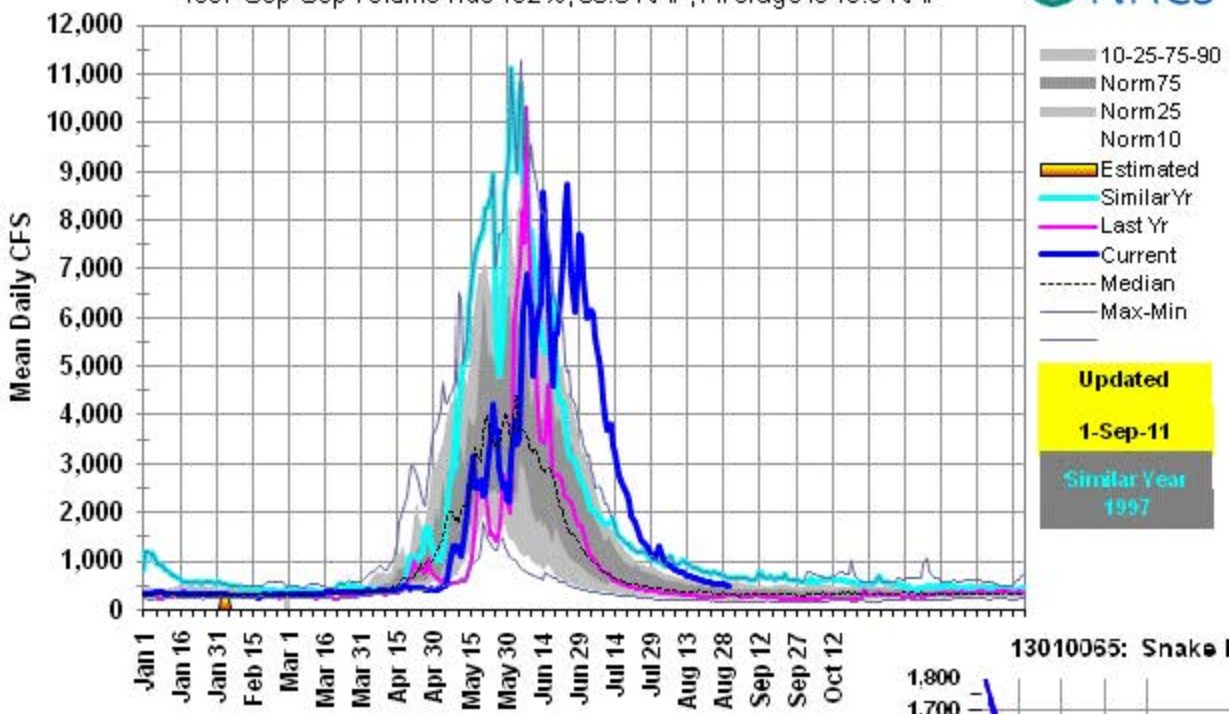
ENSO Classification

SE Strong El Nino - EN Mild El Nino - N Neutral - LN Mild La Nina - SL Strong La Nina

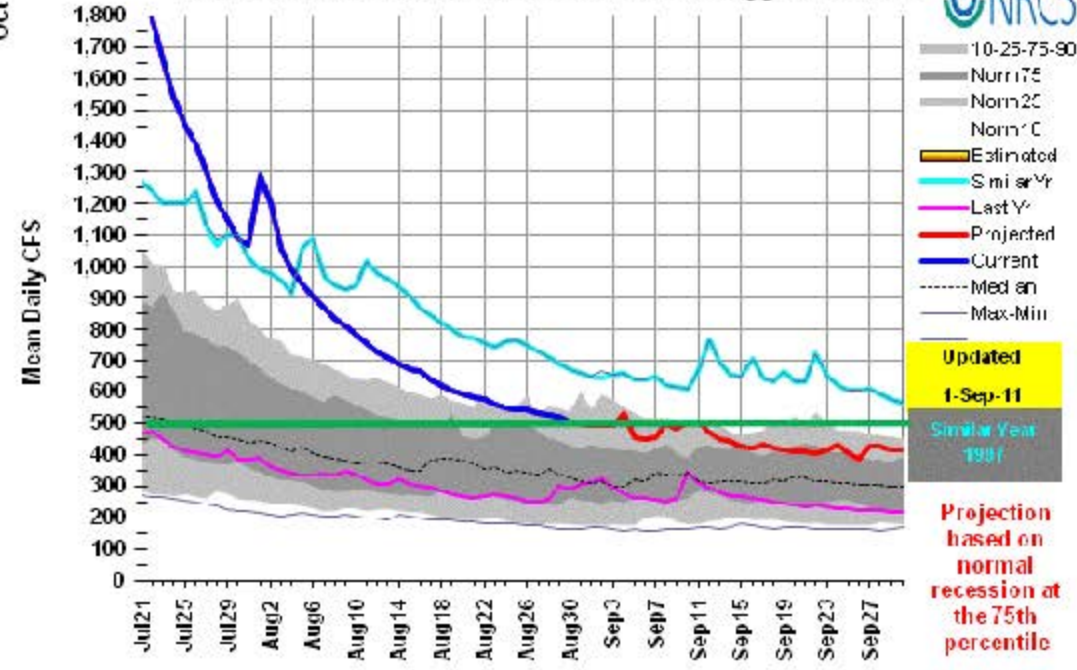
2010 Provisional Data

Historic Rank	Year	ENSO	Streamflow Sep-Sep	Summed Reservoirs 31-Aug	Streamflow + Reservoir Sum	Non-Exceedance Probability	SWSI	Current Year Rank
	2011 Forecast	SL	365	2140	2505	0.99	4.1	1
1	1997	N	365	2082	2447	0.98	4.0	
2	1971	LN	351	2046	2397	0.95	3.8	
3	1972	LN	343	2047	2390	0.93	3.6	
4	1982	N	362	1964	2326	0.90	3.4	
5	1975	LN	282	2033	2315	0.88	3.2	
6	1974	SL	267	2019	2286	0.85	2.9	
7	1983	SE	340	1937	2277	0.83	2.7	
8	1984	N	353	1920	2273	0.80	2.5	
9	1995	SE	260	2012	2272	0.78	2.3	
10	1999	SL	302	1952	2254	0.76	2.1	
11	1976	SL	278	1956	2234	0.73	1.9	
12	1998	SE	290	1918	2208	0.71	1.7	
13	1996	N	285	1922	2207	0.68	1.5	
14	1993	EN	240	1957	2197	0.66	1.3	
15	1978	SE	297	1885	2182	0.63	1.1	
16	2009	N	264	1790	2054	0.61	0.9	
17	1986	N	348	1582	1930	0.59	0.7	
18	2008	N	296	1631	1927	0.56	0.5	
19	2010	EN	277	1594	1871	0.54	0.3	
20	1980	N	267	1599	1866	0.51	0.1	
21	1989	SL	240	1610	1850	0.49	-0.1	
22	1991	N	250	1560	1810	0.46	-0.3	
23	2006	N	243	1537	1780	0.44	-0.5	
24	1973	SE	251	1494	1745	0.41	-0.7	
25	1979	N	189	1528	1717	0.39	-0.9	
26	2000	N	200	1336	1536	0.37	-1.1	
27	1981	N	175	1213	1388	0.34	-1.3	
28	1990	N	207	1179	1386	0.32	-1.5	
29	1985	N	245	1129	1374	0.29	-1.7	
30	2005	EN	229	1136	1365	0.27	-1.9	
31	1987	N	171	861	1032	0.24	-2.1	
32	1994	SE	150	855	1005	0.22	-2.3	
33	2002	N	213	721	934	0.20	-2.5	

13010065: Snake R above Jackson Lake at Flagg Ranch, WY
 1997 Sep-Sep volume was 192%, 38.3 KAF, Average is 19.9 KAF

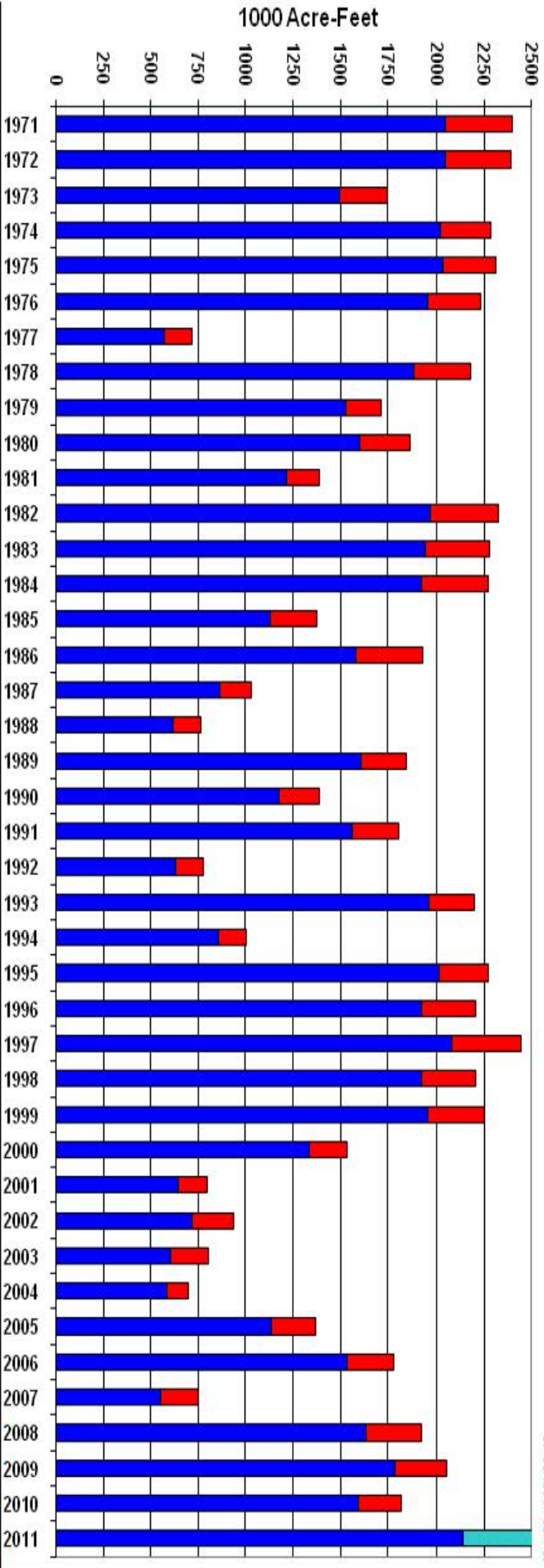


13010065: Snake R above Jackson Lake at Flagg Ranch, WY



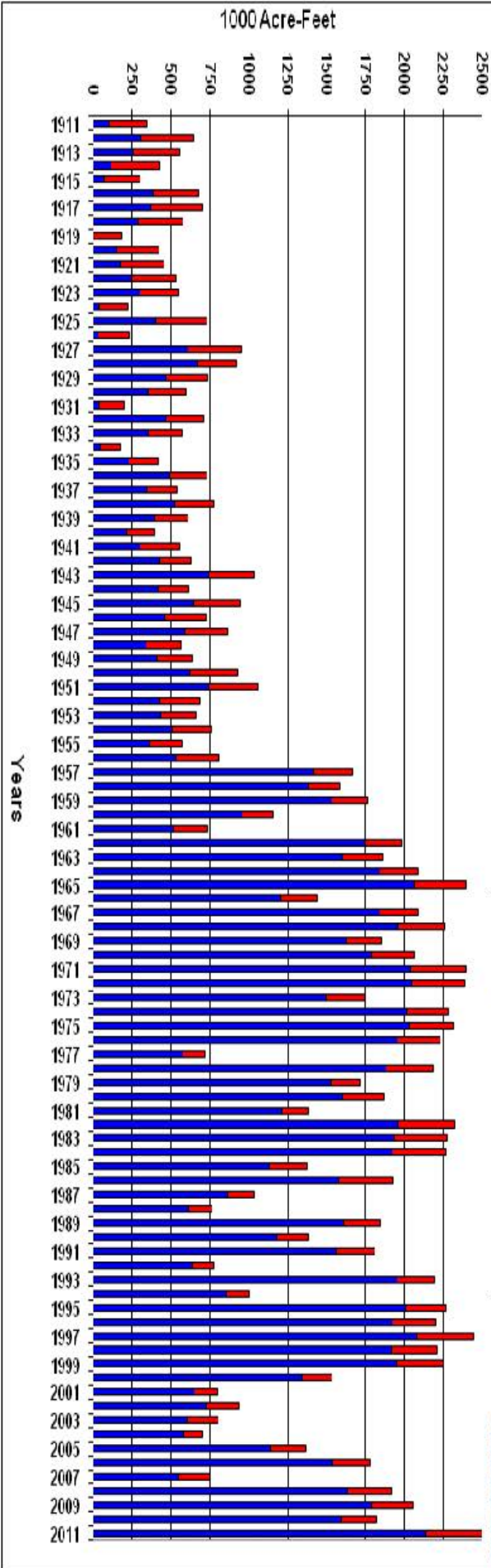
September 1 Surface Water Supply Index (SWSI) Snake River near Heise & Jackson and Palisades Reservoirs

■ Reservoir 31-Aug
■ Streamflow Sep-Sep



September 1 Surface Water Supply Index (SWSI) Snake River near Heise & Jackson and Palisades Reservoirs

■ Streamflow Sep-Sep
■ Reservoir 31-Aug



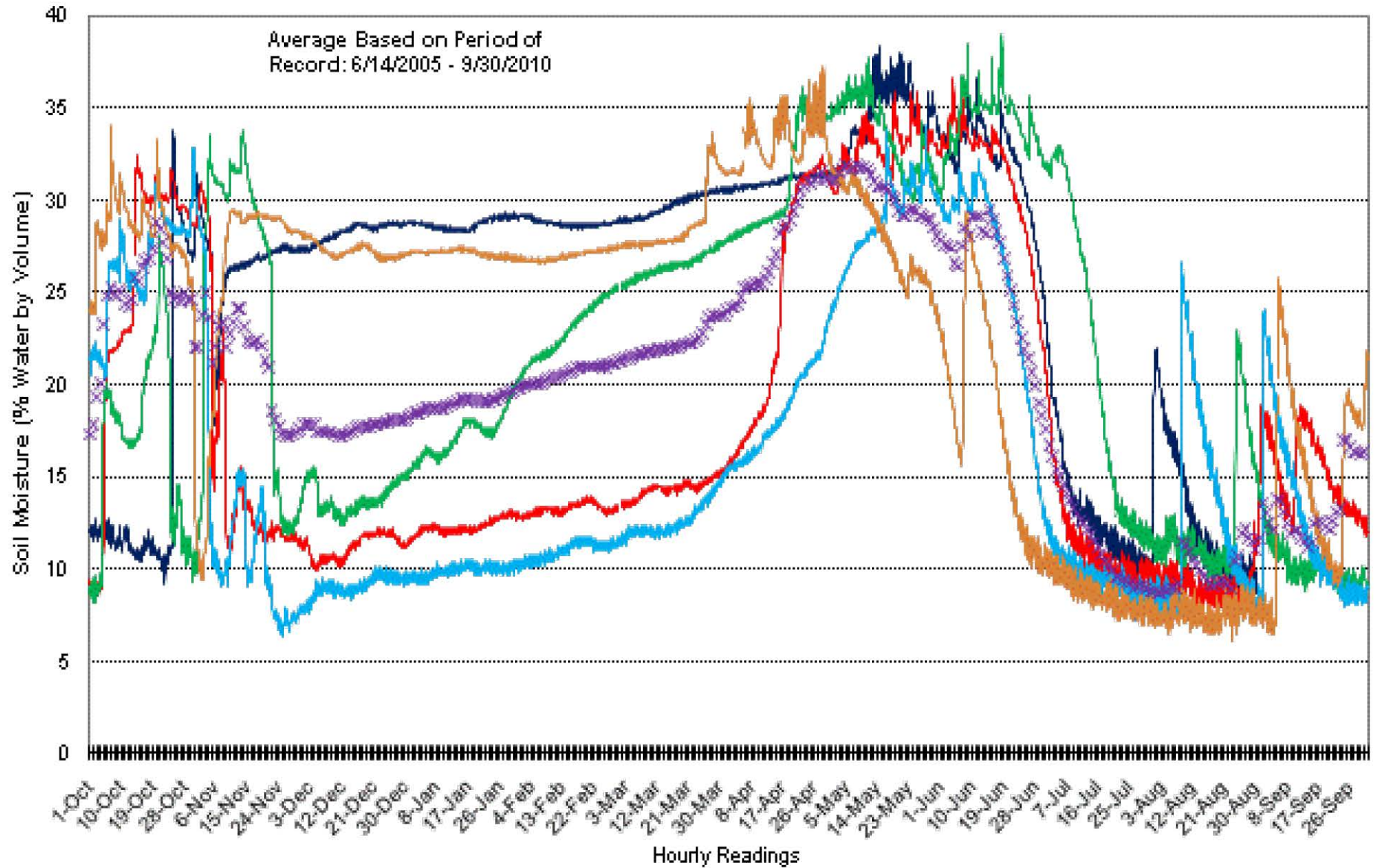
Years

Somsen Ranch, ID

2" Soil Moisture

Multi-Year

Average Based on Period of
Record: 6/14/2005 - 9/30/2010



— 2011 2" Soil Moisture

— 2010 2" Soil Moisture

— 2009 2" Soil Moisture

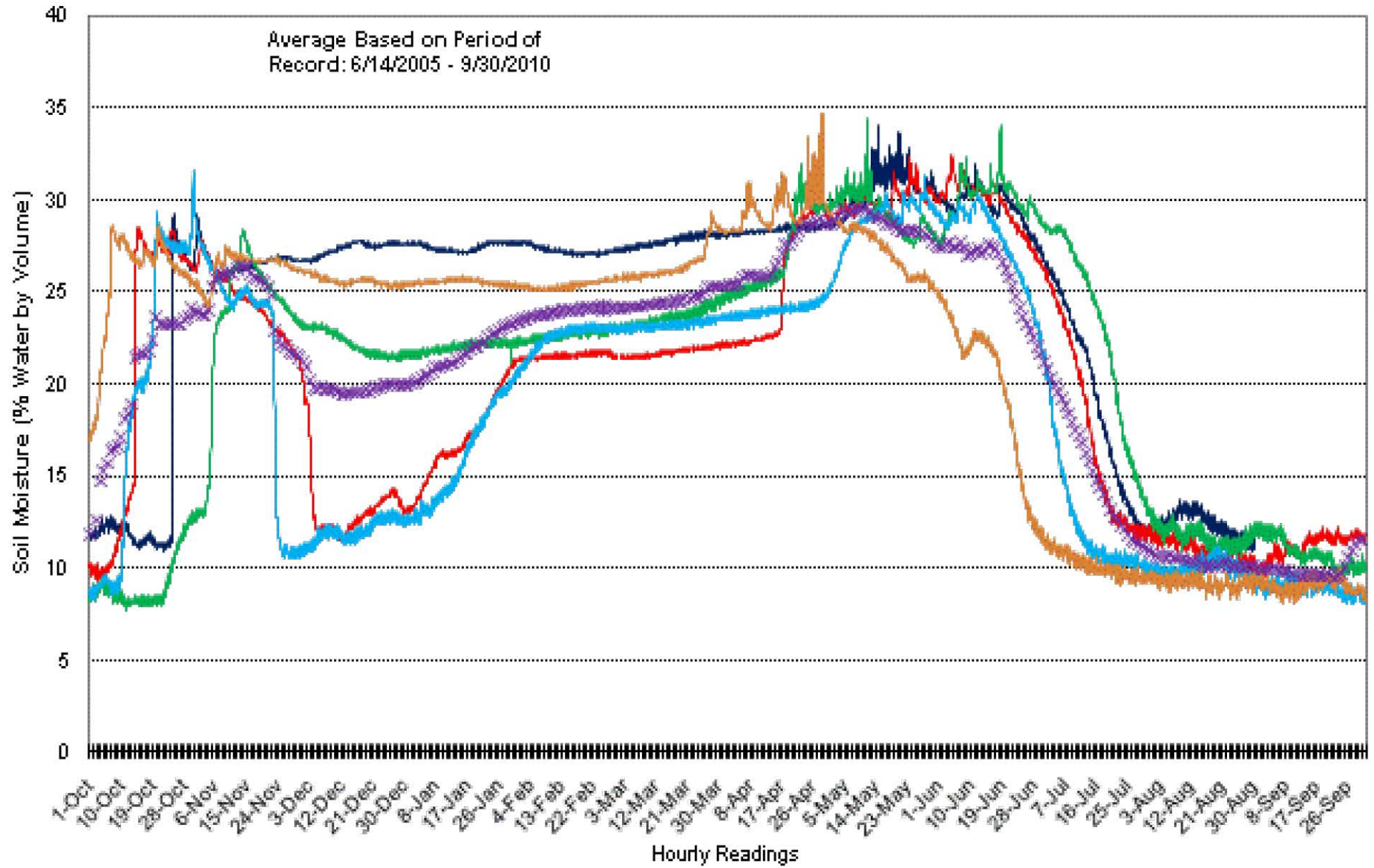
— 2008 2" Soil Moisture

— 2007 2" Soil Moisture

× 2" Soil Moisture Average

Somsen Ranch, ID 8" Soil Moisture Multi-Year

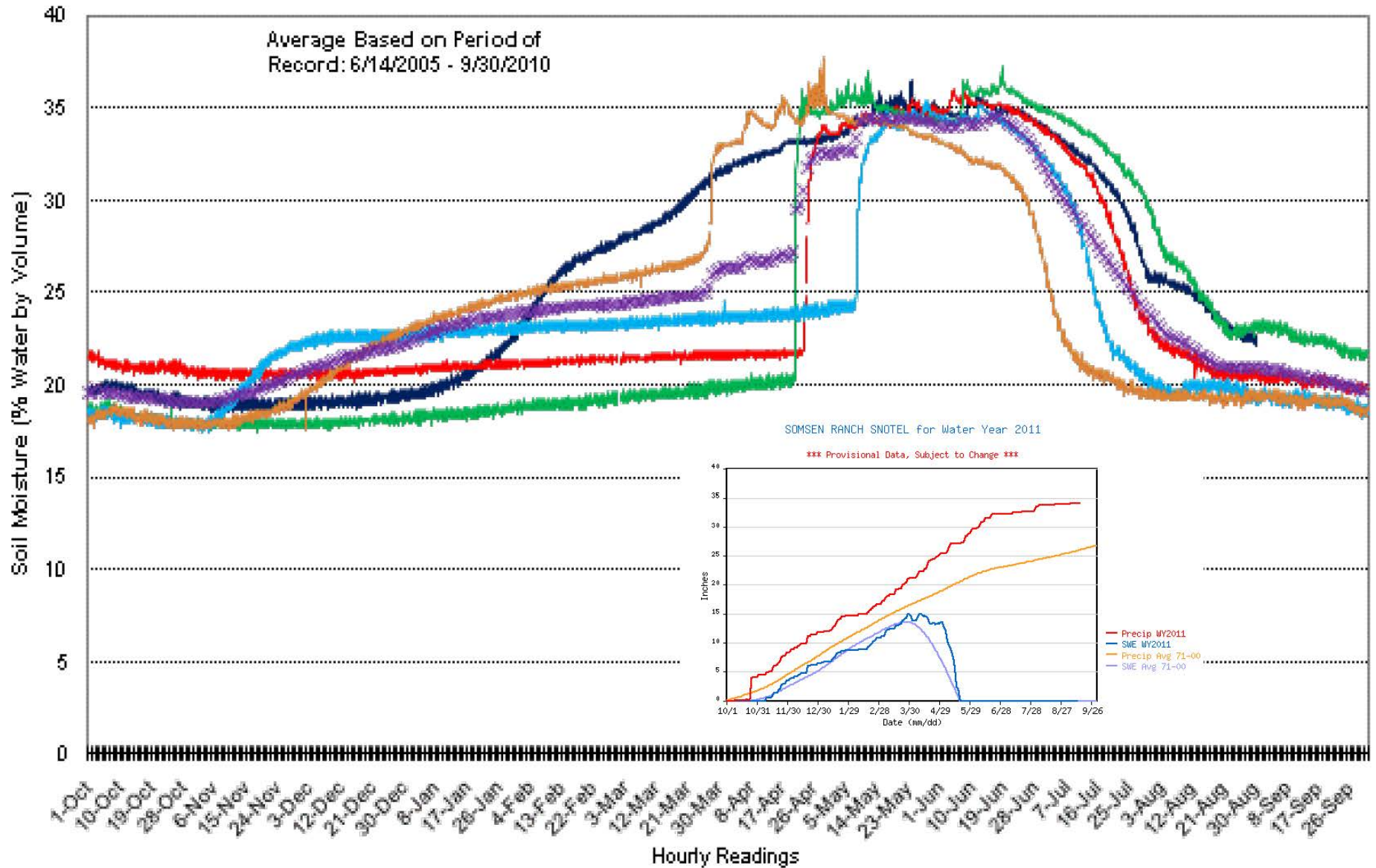
Average Based on Period of
Record: 6/14/2005 - 9/30/2010



- 2011 8" Soil Moisture
- 2010 8" Soil Moisture
- 2009 8" Soil Moisture
- 2008 8" Soil Moisture
- 2007 8" Soil Moisture
- × 8" Soil Moisture Average

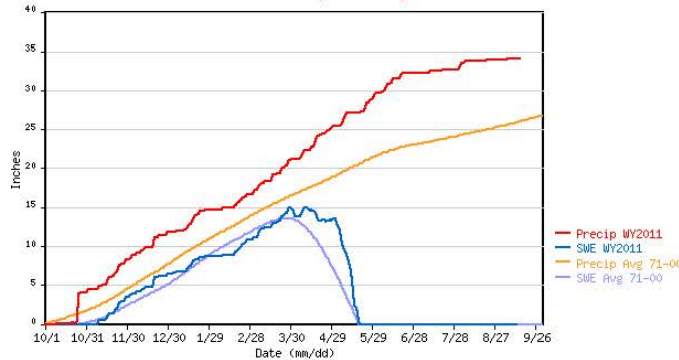
Somsen Ranch, ID 20" Soil Moisture Multi-Year

Average Based on Period of
Record: 6/14/2005 - 9/30/2010



SOMSEN RANCH SNOTEL for Water Year 2011

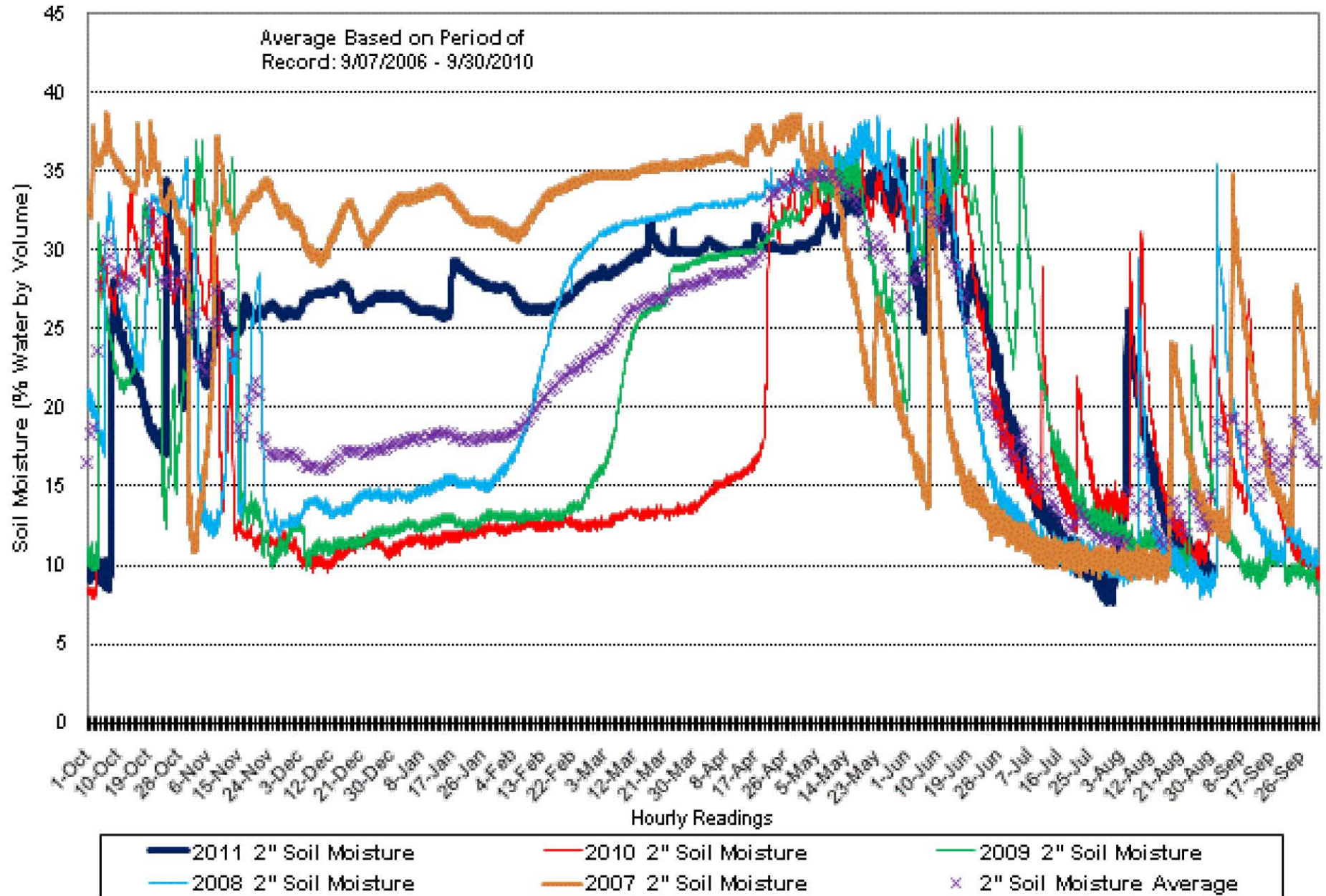
*** Provisional Data, Subject to Change ***



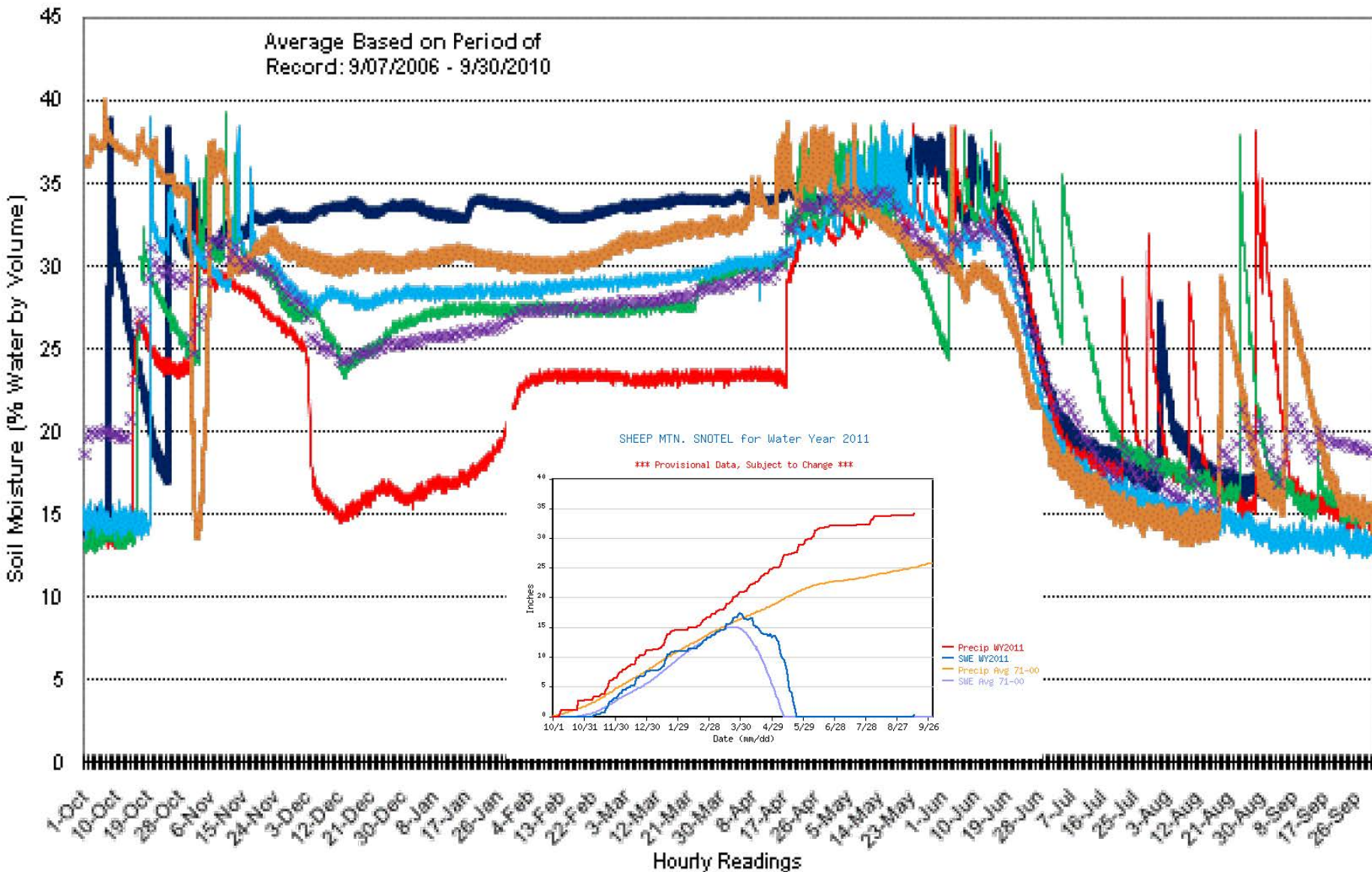
- 2011 20" Soil Moisture
- 2010 20" Soil Moisture
- 2009 20" Soil Moisture
- 2008 20" Soil Moisture
- 2007 20" Soil Moisture
- × 20" Soil Moisture Average

Sheep Mountain, ID 2" Soil Moisture Multi-Year

Average Based on Period of
Record: 9/07/2006 - 9/30/2010



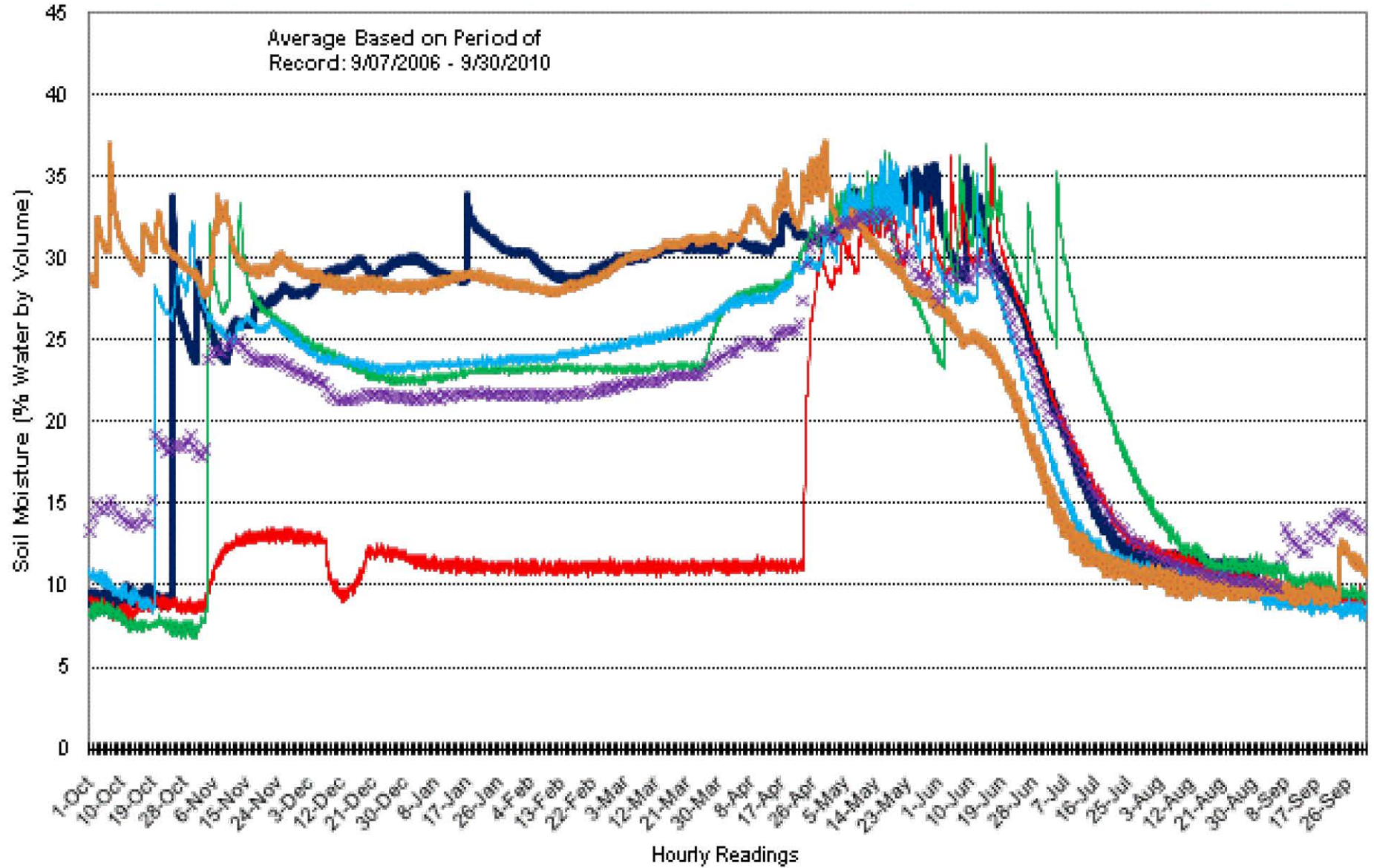
Sheep Mountain, ID 8" Soil Moisture Multi-Year



- | | | |
|--|---|--|
| — 2011 8" Soil Moisture | — 2010 8" Soil Moisture | — 2009 8" Soil Moisture |
| — 2008 8" Soil Moisture | — 2007 8" Soil Moisture | x 8" Soil Moisture Average |

Sheep Mountain, ID 20" Soil Moisture Multi-Year

Average Based on Period of
Record: 9/07/2006 - 9/30/2010



2011 20" Soil Moisture

2010 20" Soil Moisture

2009 20" Soil Moisture

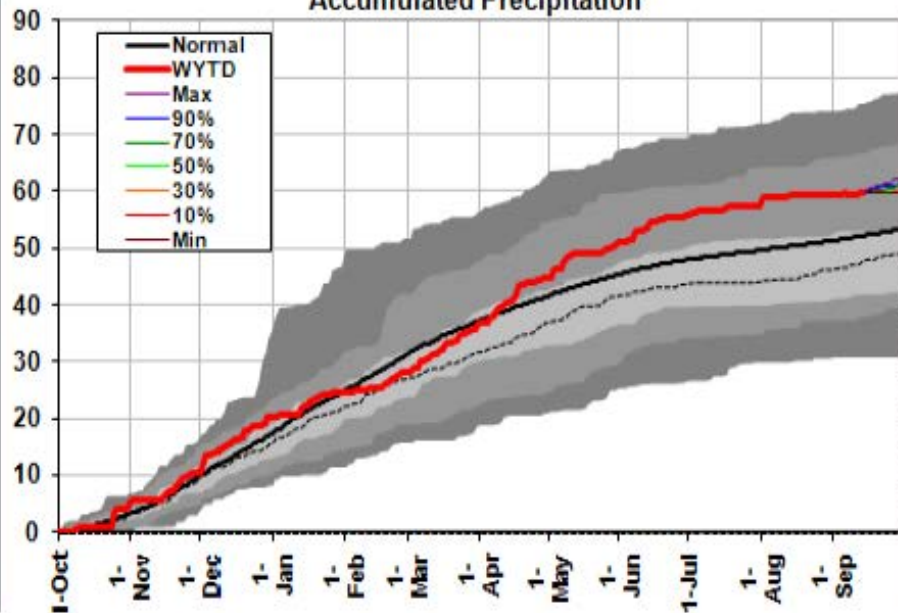
2008 20" Soil Moisture

2007 20" Soil Moisture

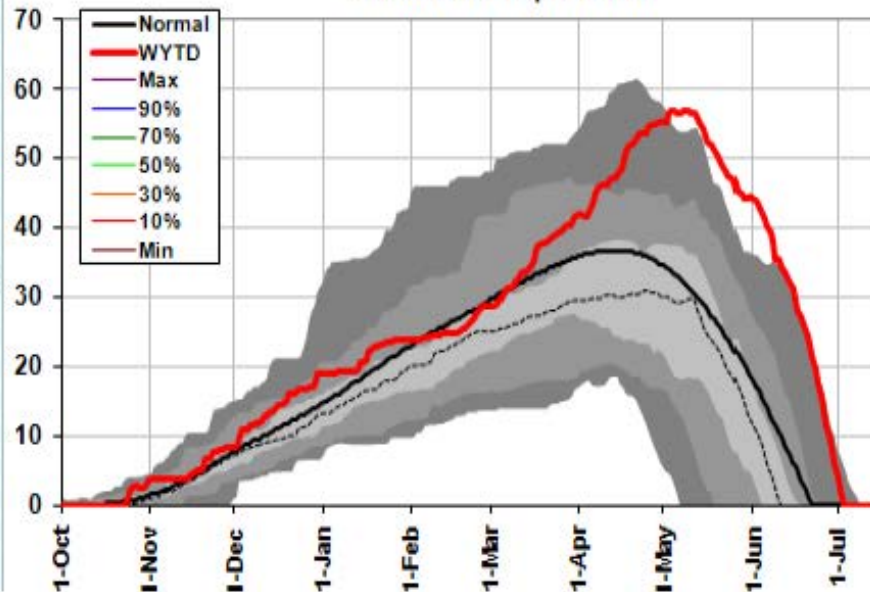
20" Soil Moisture Average

Lewis Lake Divide (10e09s)

Accumulated Precipitation

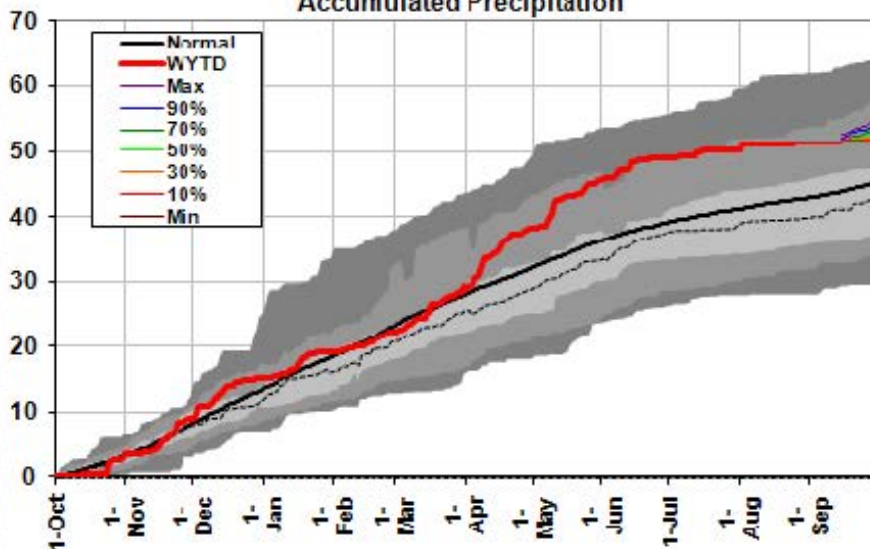


Snow Water Equivalent

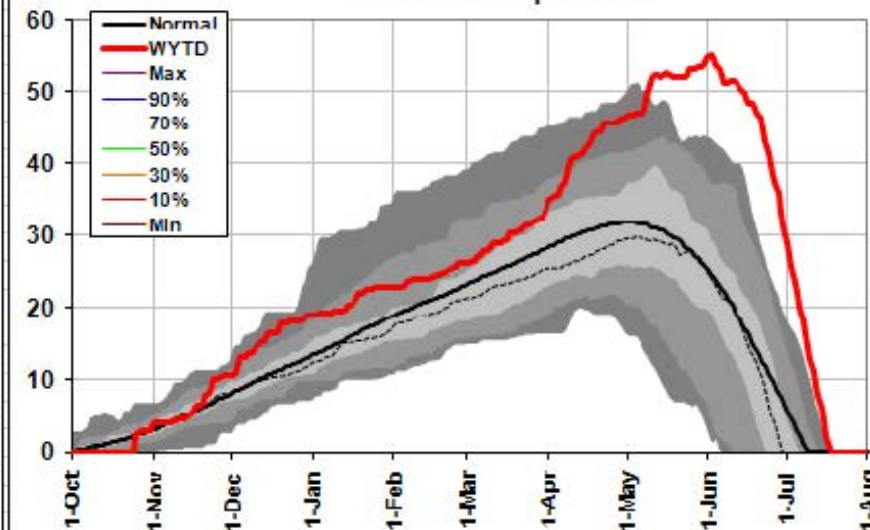


Two Ocean Plateau (10e17s)

Accumulated Precipitation

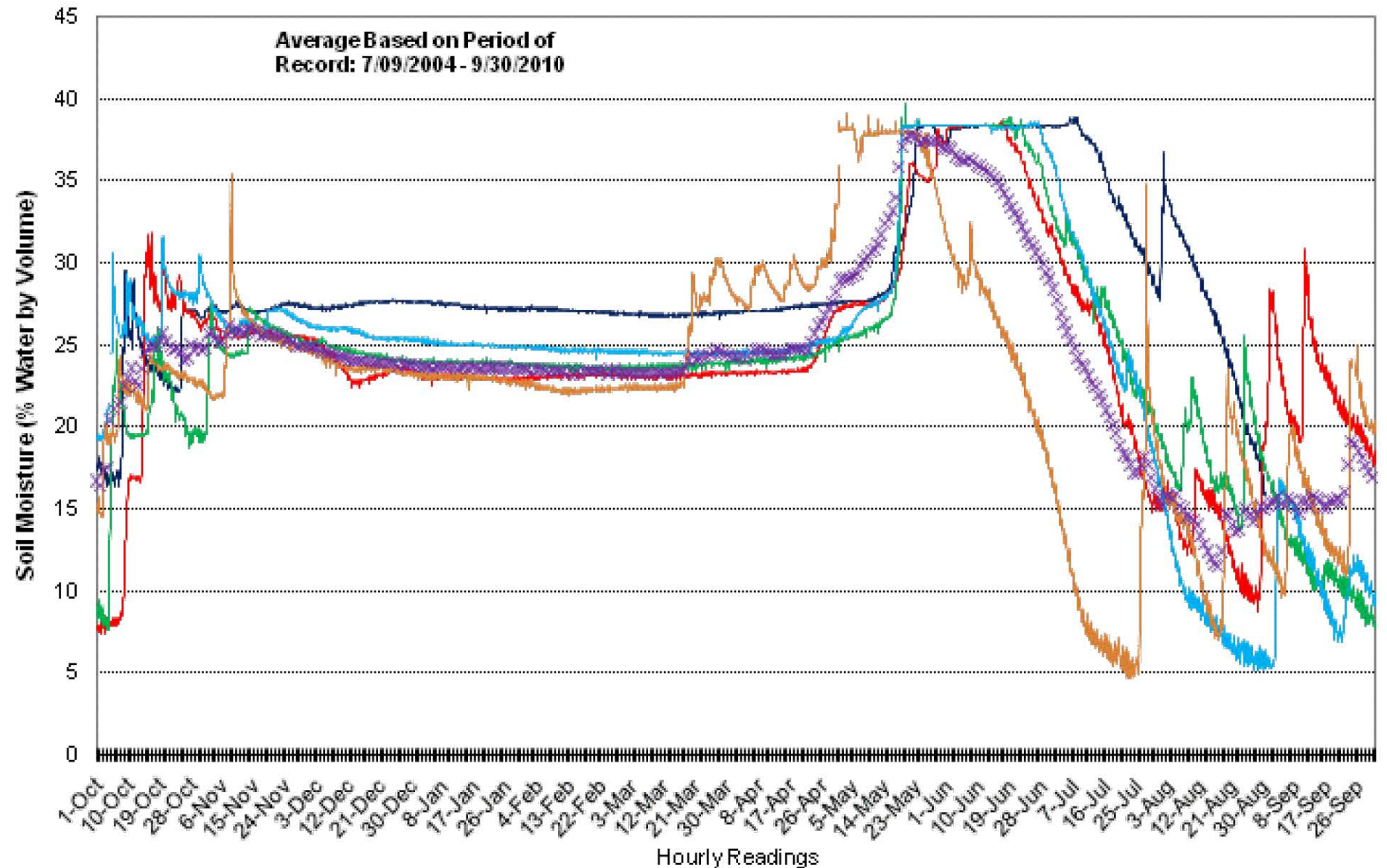


Snow Water Equivalent



Lewis Lake Divide, WY 2" Soil Moisture Multi-Year

Average Based on Period of
Record: 7/09/2004 - 9/30/2010



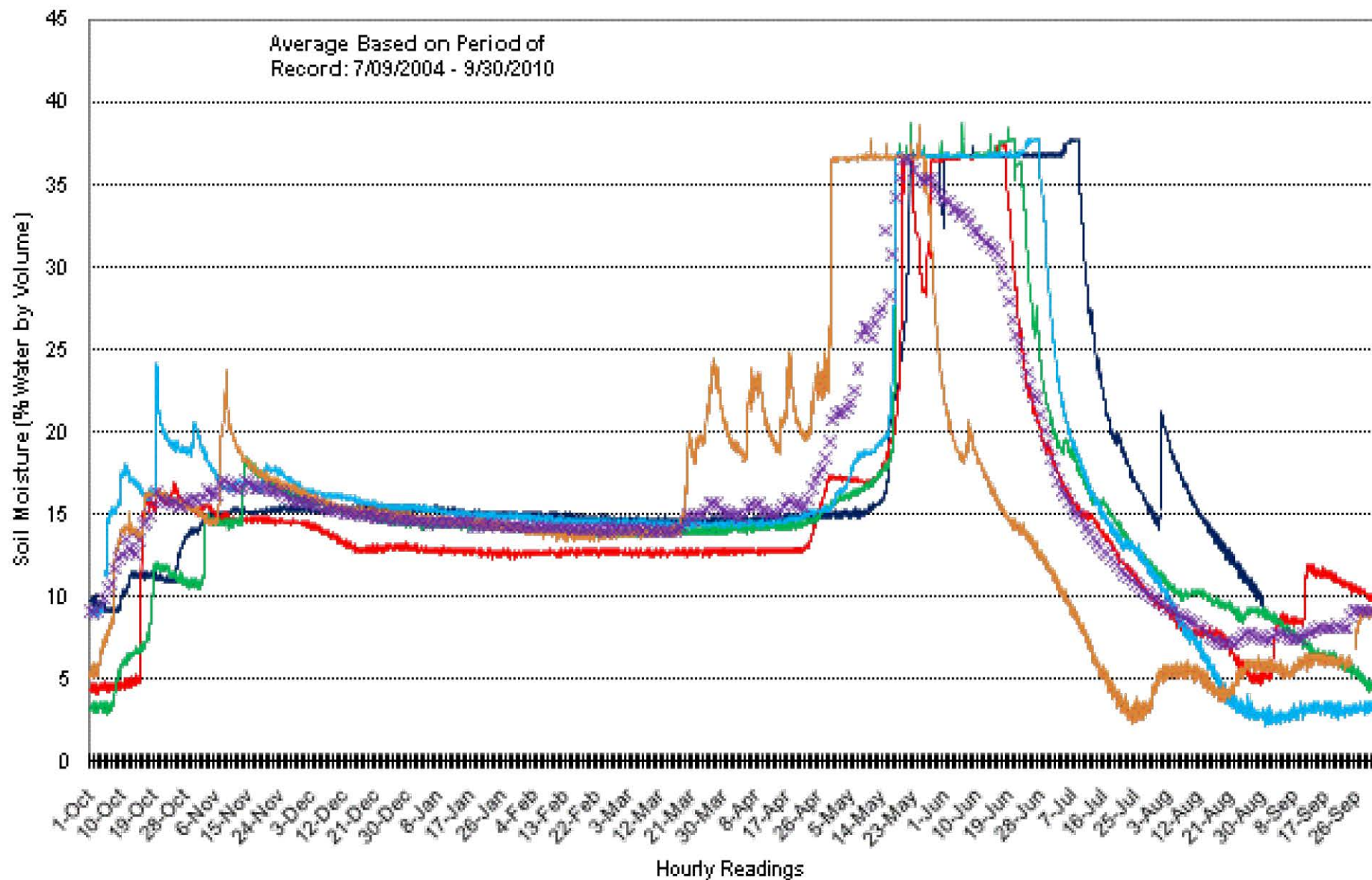
- 2011 2" Soil Moisture
- 2010 2" Soil Moisture
- 2009 2" Soil Moisture
- 2008 2" Soil Moisture
- 2007 2" Soil Moisture
- × 2" Soil Moisture Average

Lewis Lake Divide, WY

8" Soil Moisture

Multi-Year

Average Based on Period of
Record: 7/09/2004 - 9/30/2010



— 2011 8" Soil Moisture

— 2010 8" Soil Moisture

— 2009 8" Soil Moisture

— 2008 8" Soil Moisture

— 2007 8" Soil Moisture

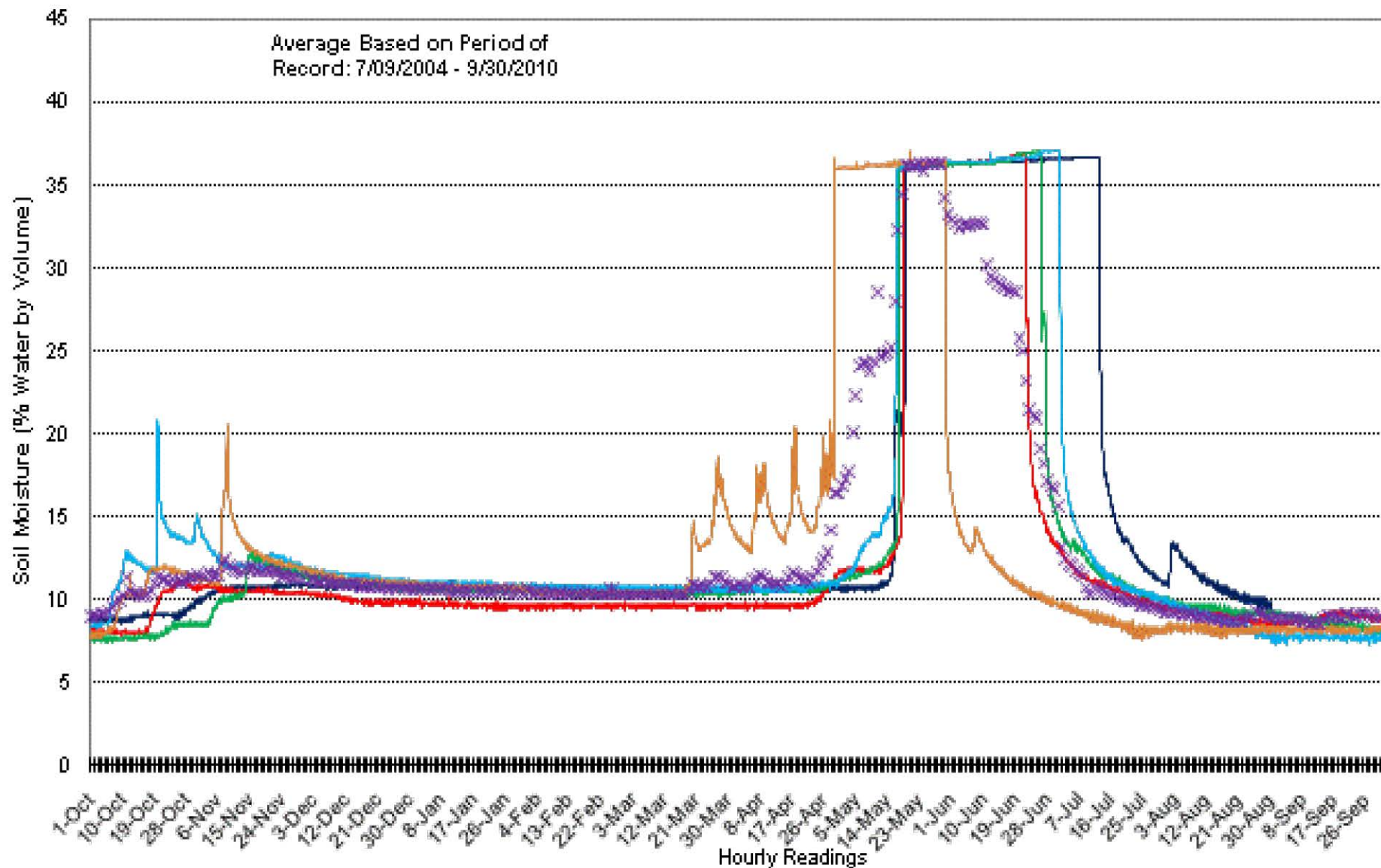
× 8" Soil Moisture Average

Lewis Lake Divide, WY

20" Soil Moisture

Multi-Year

Average Based on Period of
Record: 7/09/2004 - 9/30/2010



— 2011 20" Soil Moisture

— 2010 20" Soil Moisture

— 2009 20" Soil Moisture

— 2008 20" Soil Moisture

× 20" Soil Moisture Average

— 2007 20" Soil Moisture

2nd Season after Strong La Nina Year

Apr-Sep Snake River nr Heise flow as % of average

1951 **119%**

1956 **132%**

1966 **71%**

1972 **128%**

1975 **108%**

1990 **67%**

2012 **???**