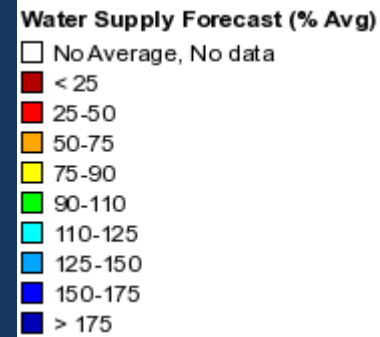
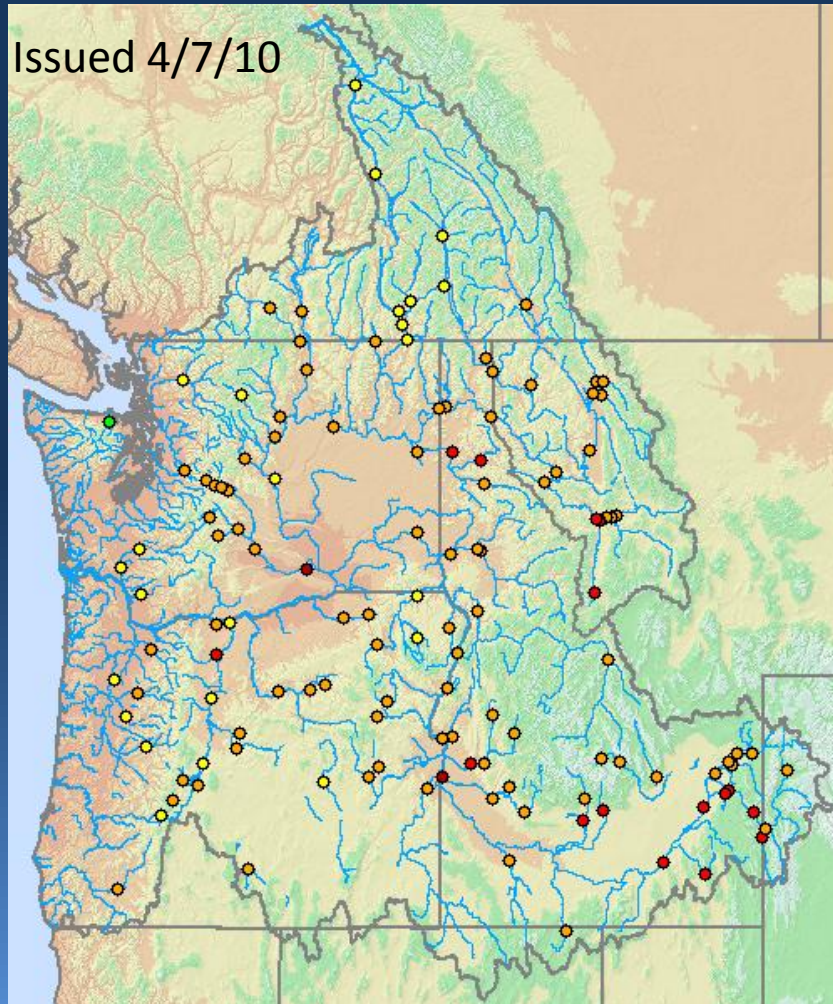




Northwest River Forecast Center Water Supply Briefing



Apr 7th "Final" Forecast

Legacy Regression Model

Agency Coordinated

100% of Normal
Precipitation Forecast

NWRFC Forecast for Canada



Observed Conditions



Precipitation

Snowpack

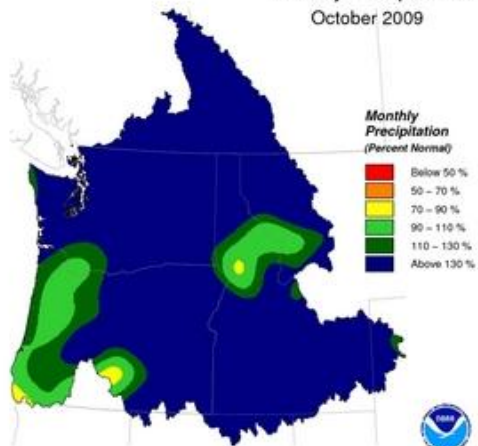
Runoff

Observed Monthly Precipitation

Monthly Precipitation Plots for Water Year 2010

Click on Image to Display Larger Plot

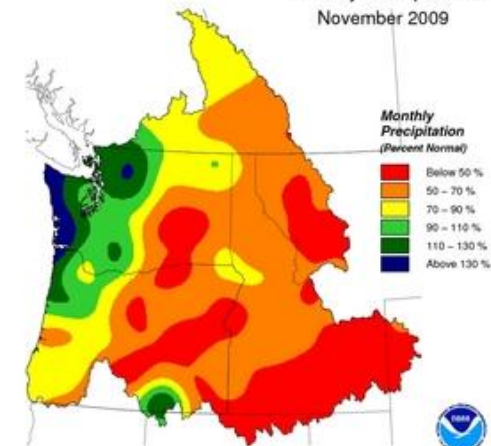
Monthly Precipitation
October 2009



Creation Time: Sun, Mar 7, 2010

Northwest River Forecast Center

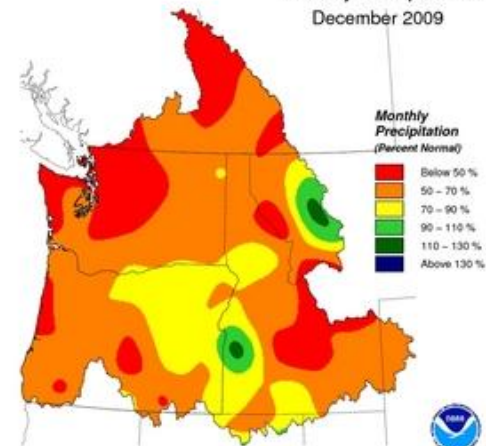
Monthly Precipitation
November 2009



Creation Time: Sun, Mar 7, 2010

Northwest River Forecast Center

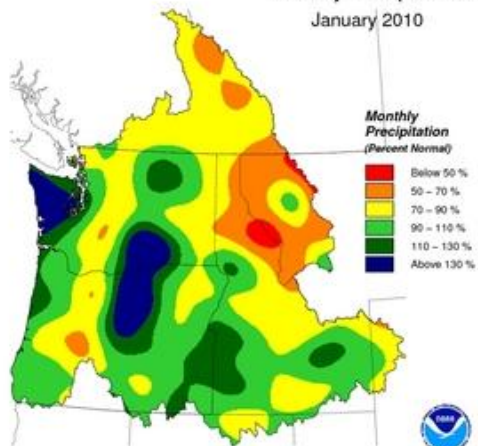
Monthly Precipitation
December 2009



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Northwest River Forecast Center

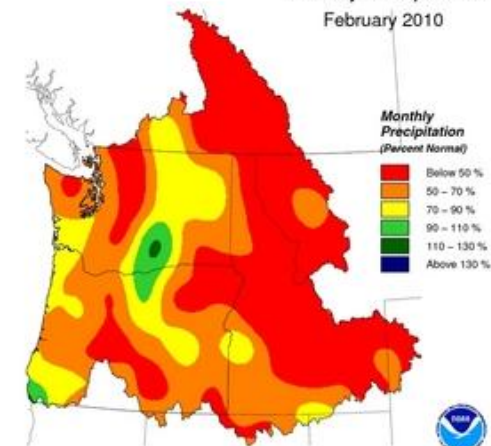
Monthly Precipitation
January 2010



Creation Time: Mon, Mar 8, 2010

Northwest River Forecast Center

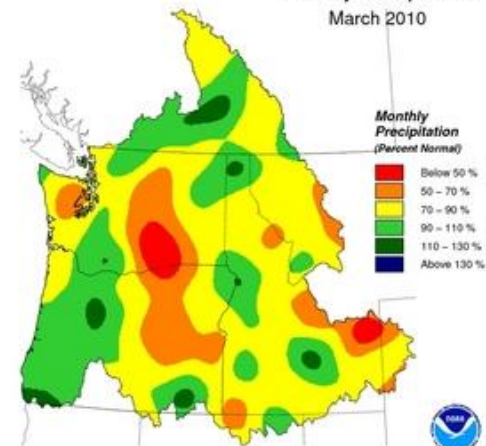
Monthly Precipitation
February 2010



Creation Time: Fri, Mar 19, 2010

Northwest River Forecast Center

Monthly Precipitation
March 2010



Creation Time: Wed, Apr 7, 2010

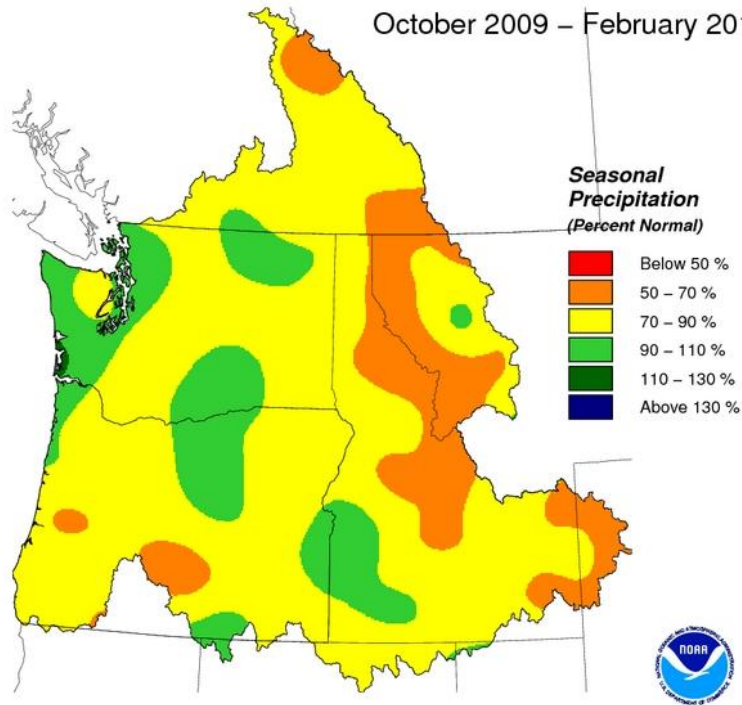
Northwest River Forecast Center



Observed Seasonal Precipitation



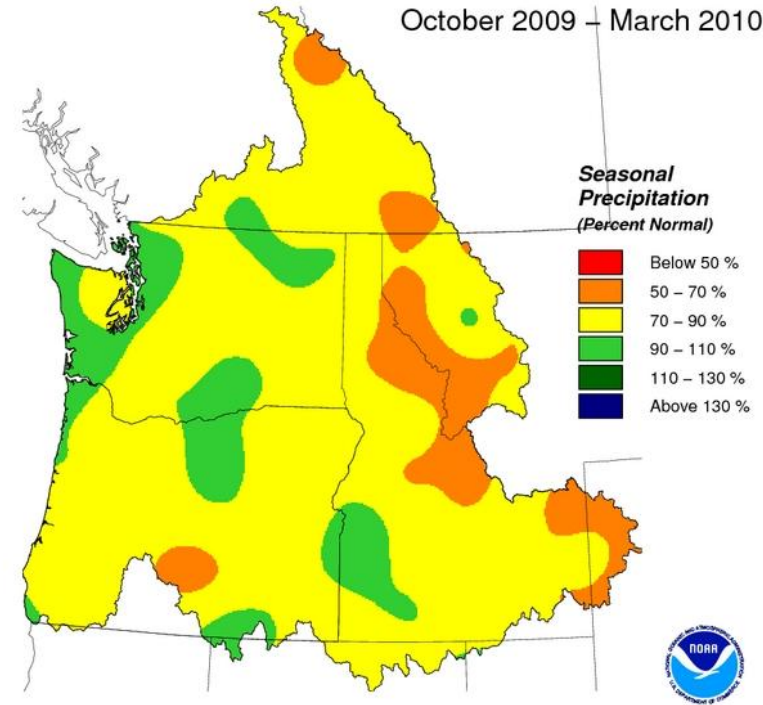
Seasonal Precipitation
October 2009 – February 2010



Creation Time: Fri, Mar 19, 2010

Northwest River Forecast Center

Seasonal Precipitation
October 2009 – March 2010



Creation Time: Wed, Apr 7, 2010

Northwest River Forecast Center

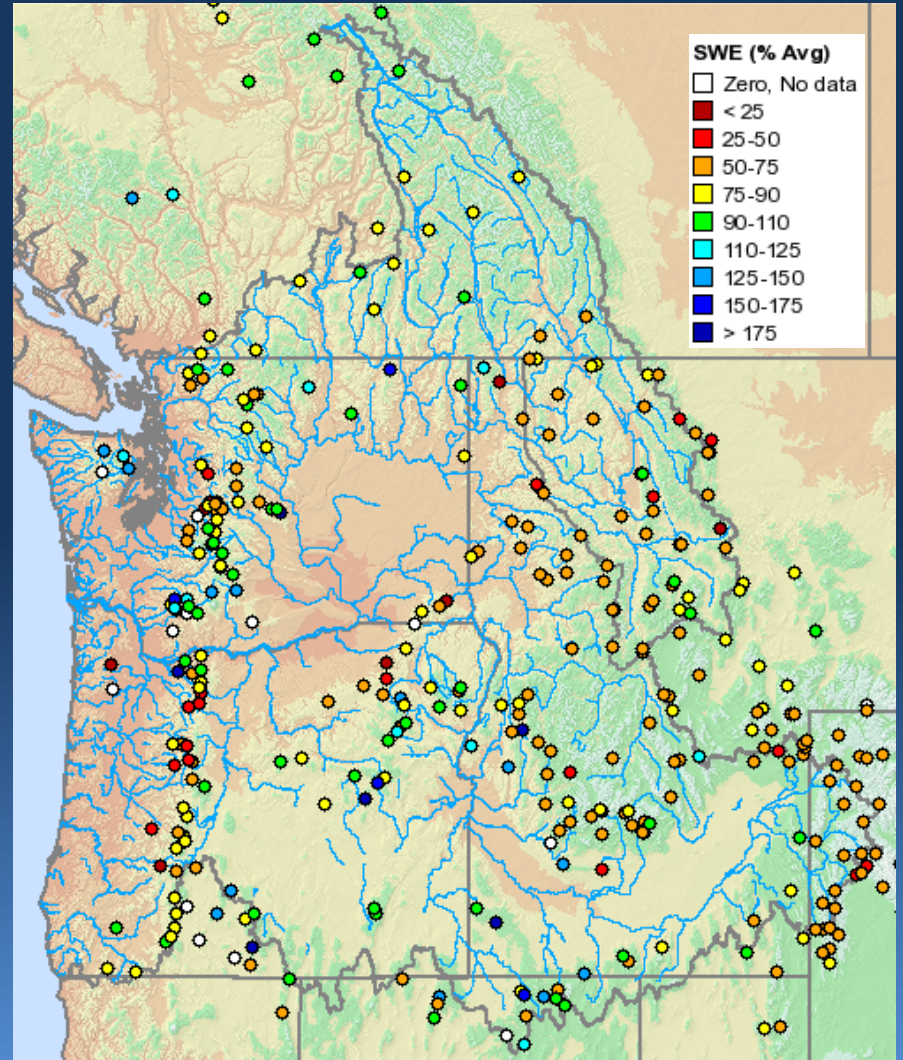
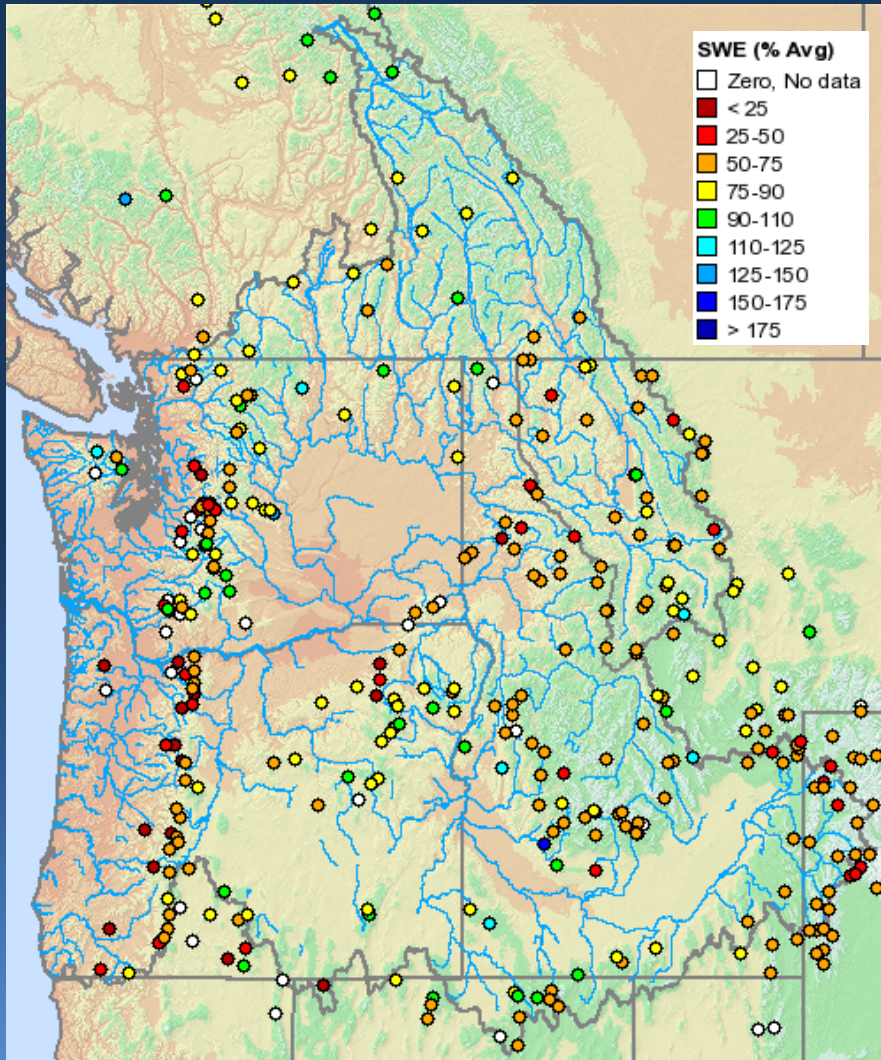


Current Snow Conditions



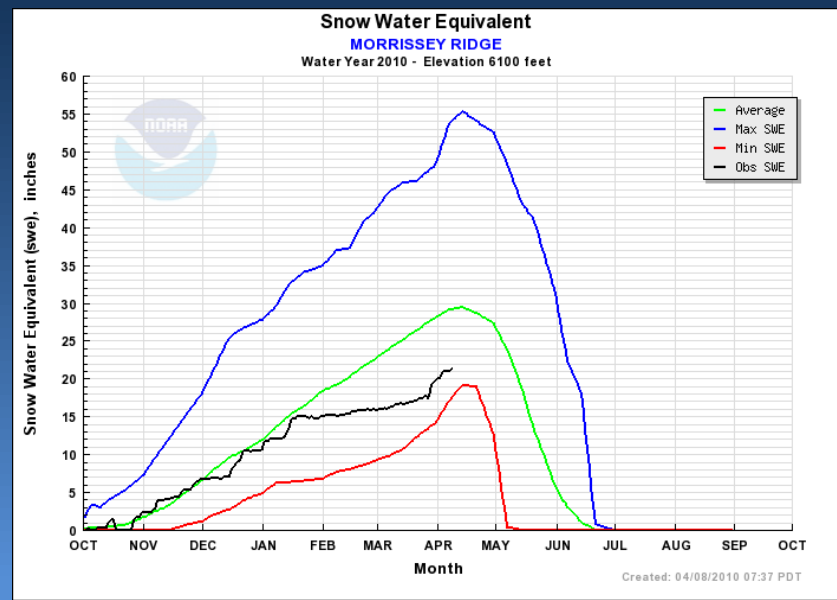
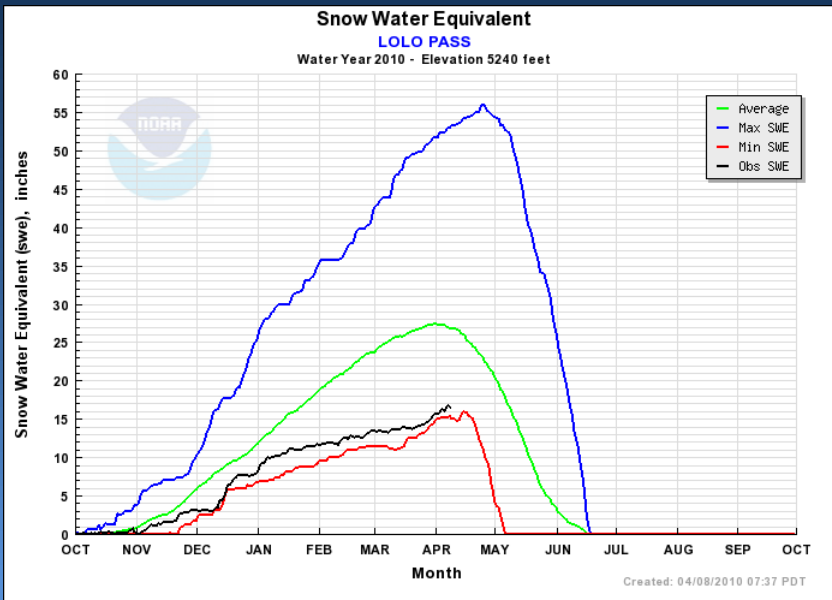
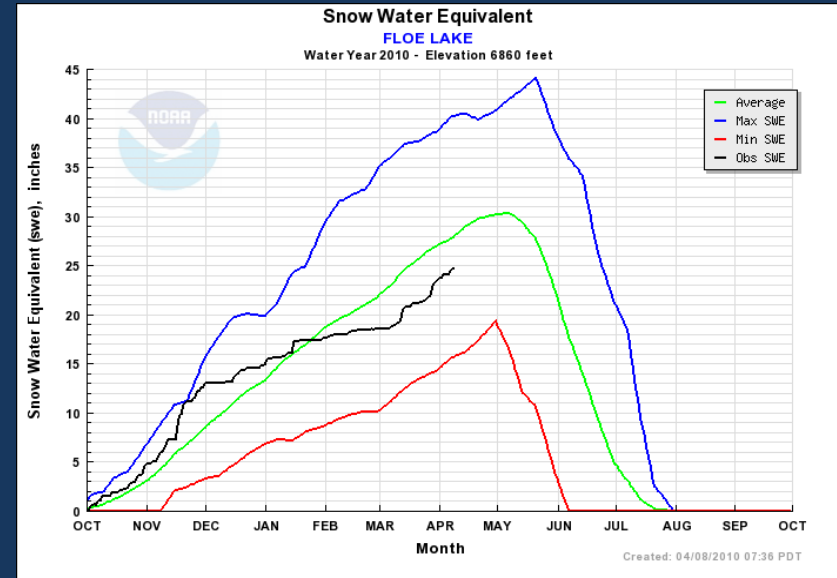
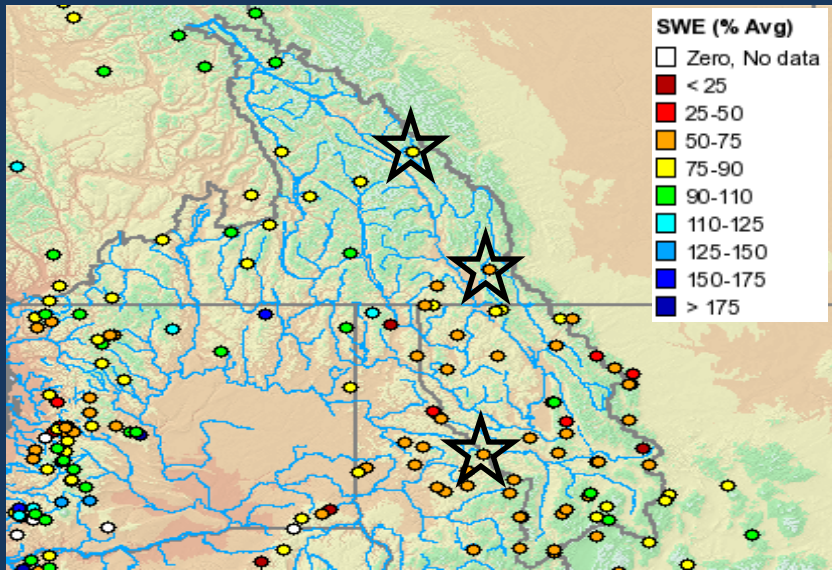
Mar 5, 2010

Apr 7, 2010



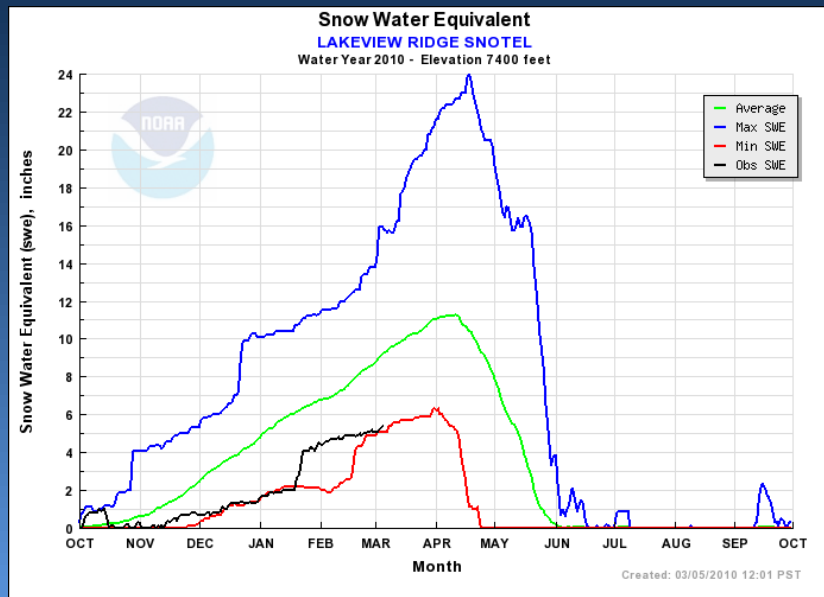
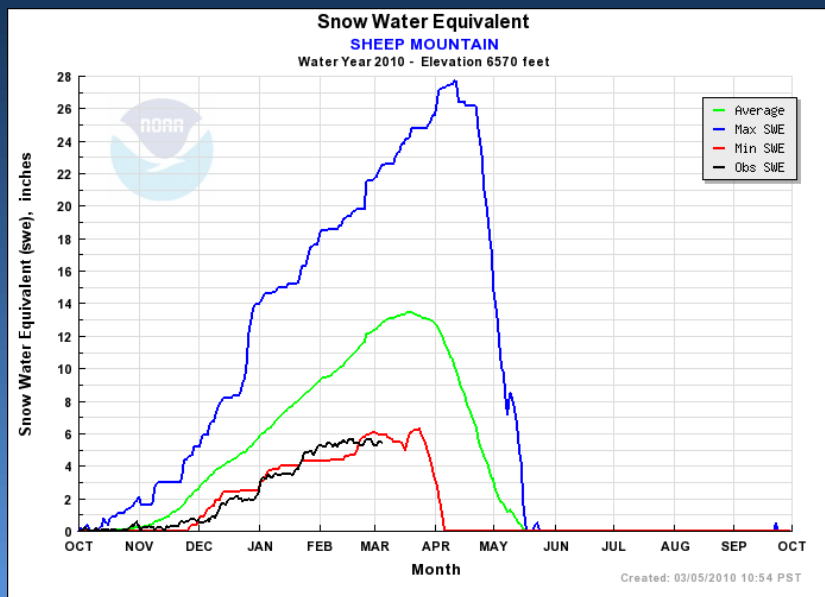
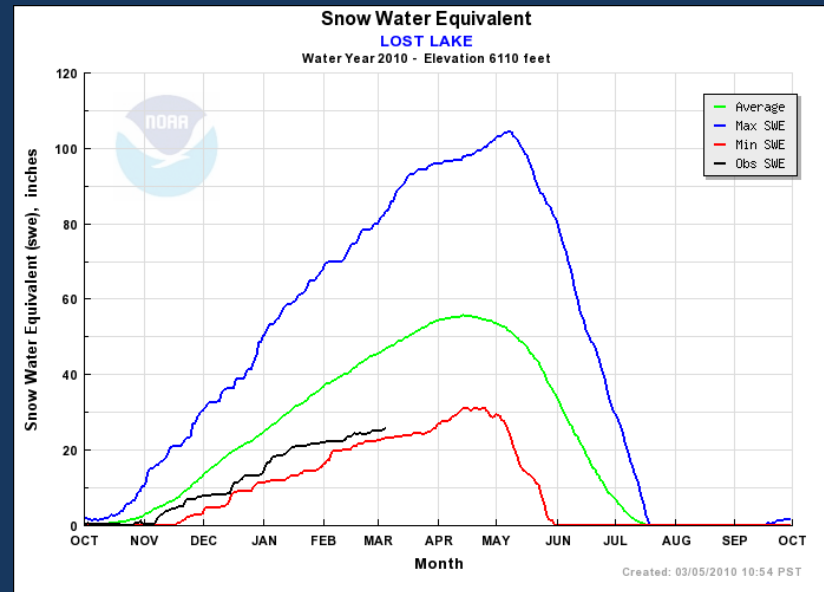
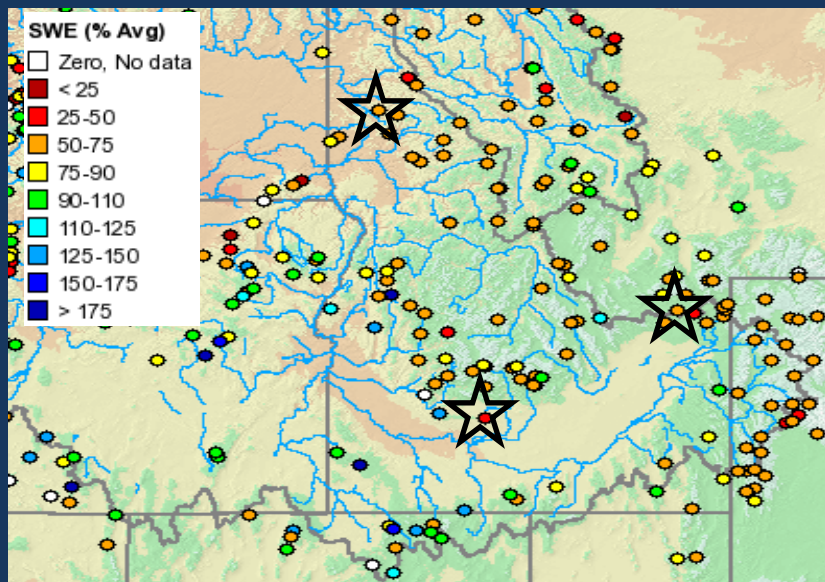


Upper Columbia Snow Conditions

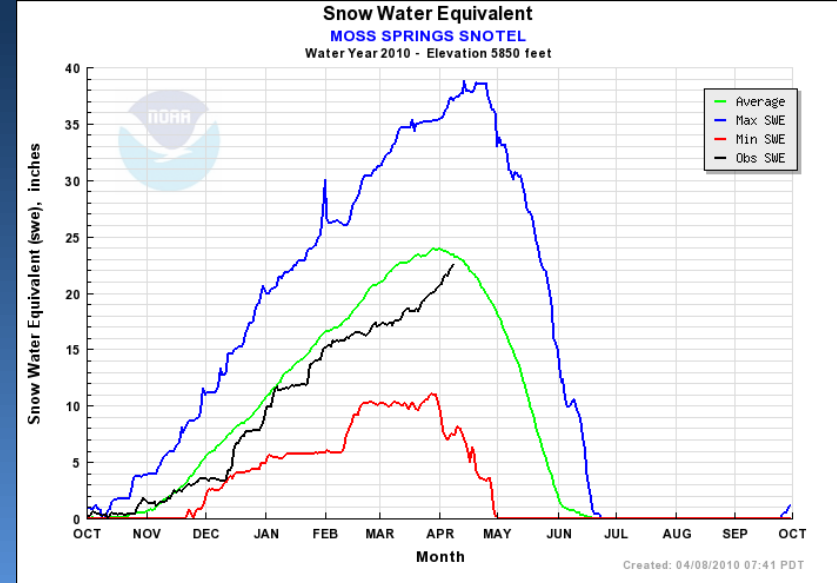
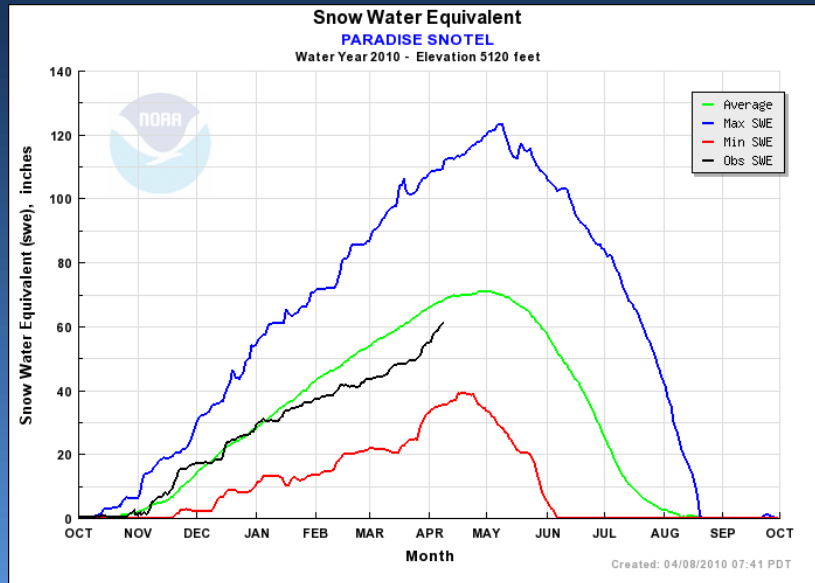
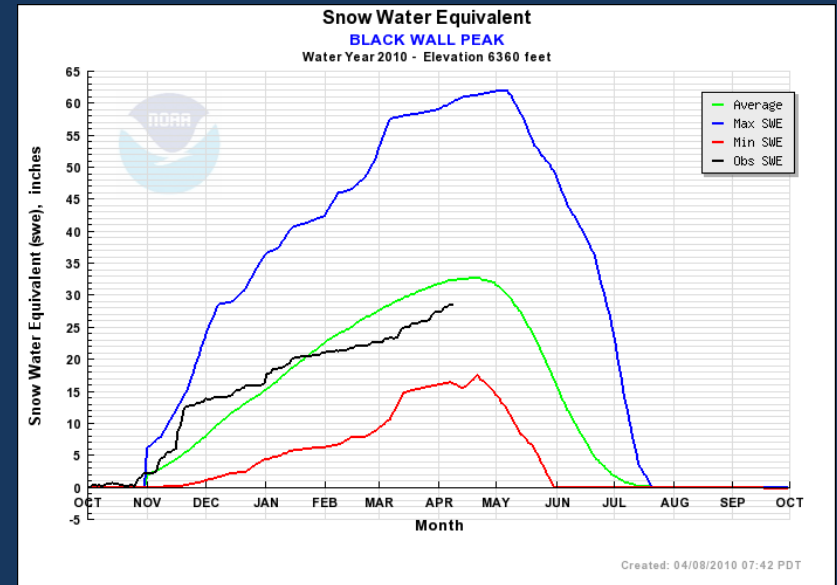
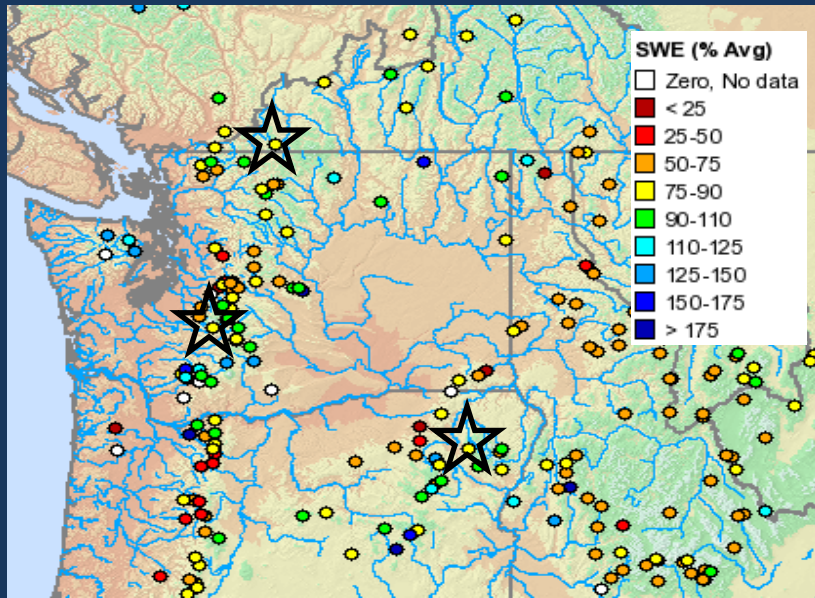




Snake River Snow Conditions



Lower Columbia Snow Conditions





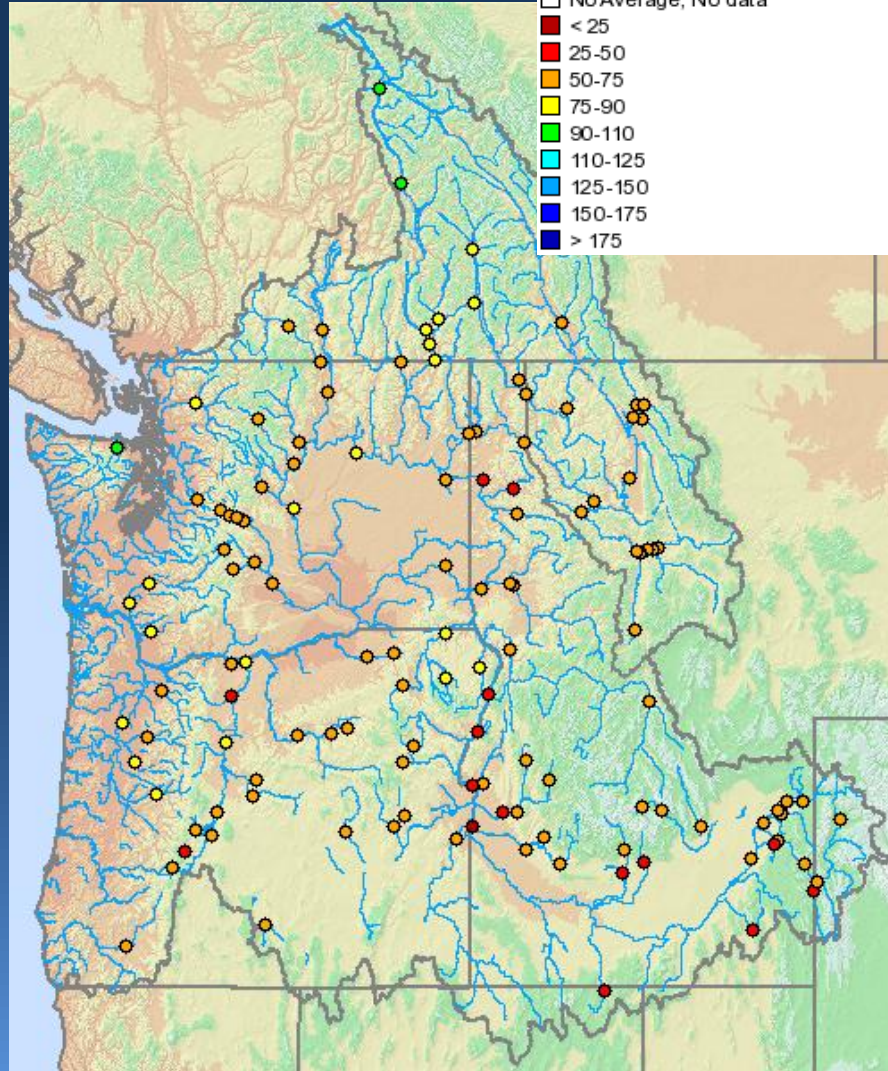
Current Runoff Conditions



Mar 5, 2010

Water Year Runoff Summary (% Avg)

- No Average, No data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175





Future Conditions



Climate Outlooks

Precipitation Assumptions

Water Supply Forecasts

Enso: Observed and Forecast

SST Anomaly (Deg C)

Observed: SST 3.4 ~ 1.0 Deg C

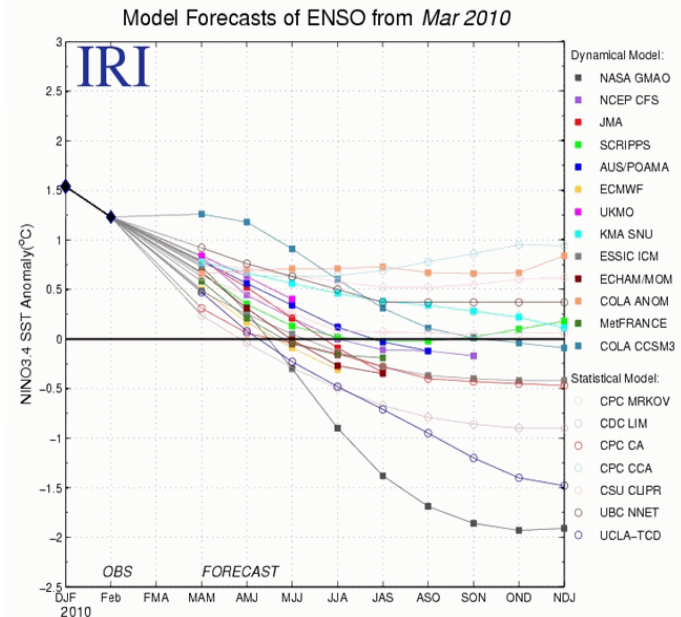
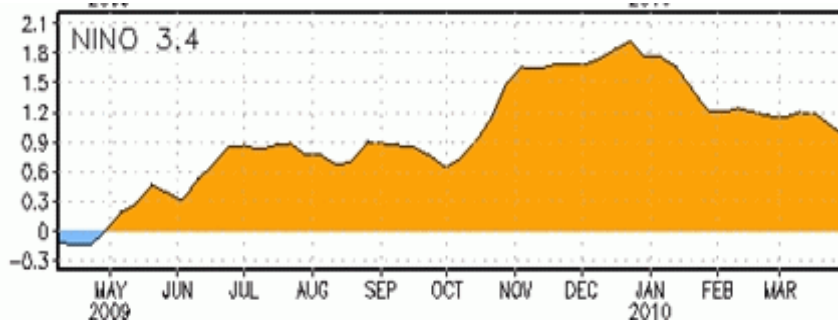


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure courtesy of the International Research Institute (IRI) for Climate and Society. Figure updated 16 March 2010.

CPC Synopsis: El Niño is expected to continue through spring of 2010 and lose strength into summer.

Source: El Niño/Southern Oscillation (ENSO) Diagnostic Discussion, Mar 4, 2010

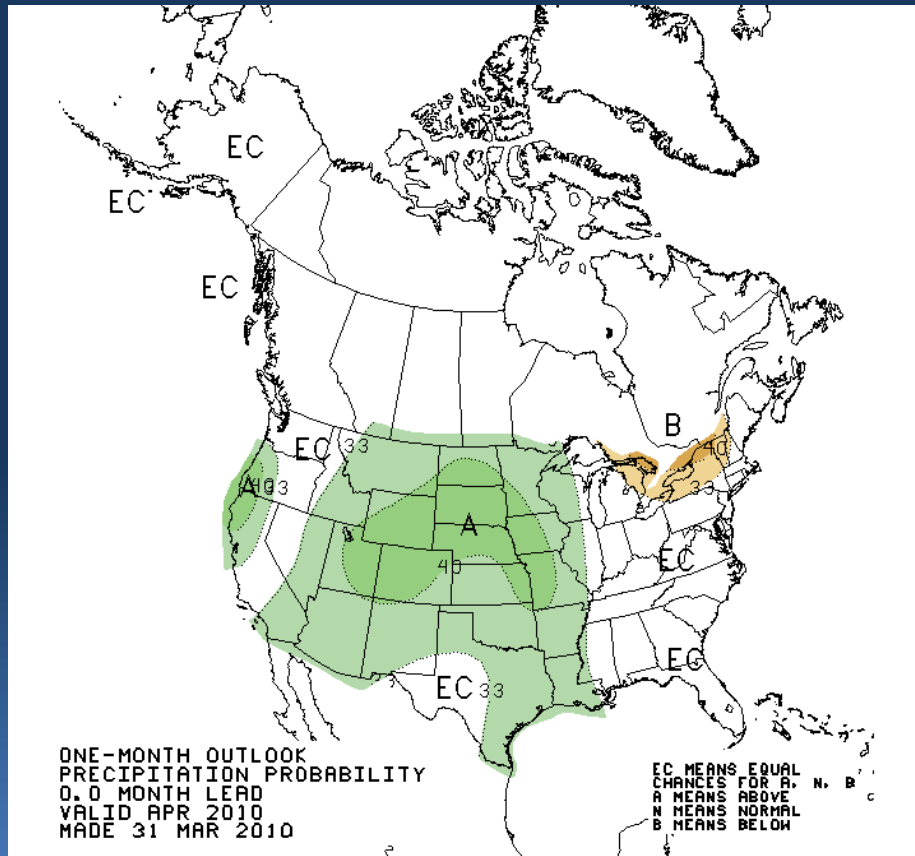
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/index.shtml



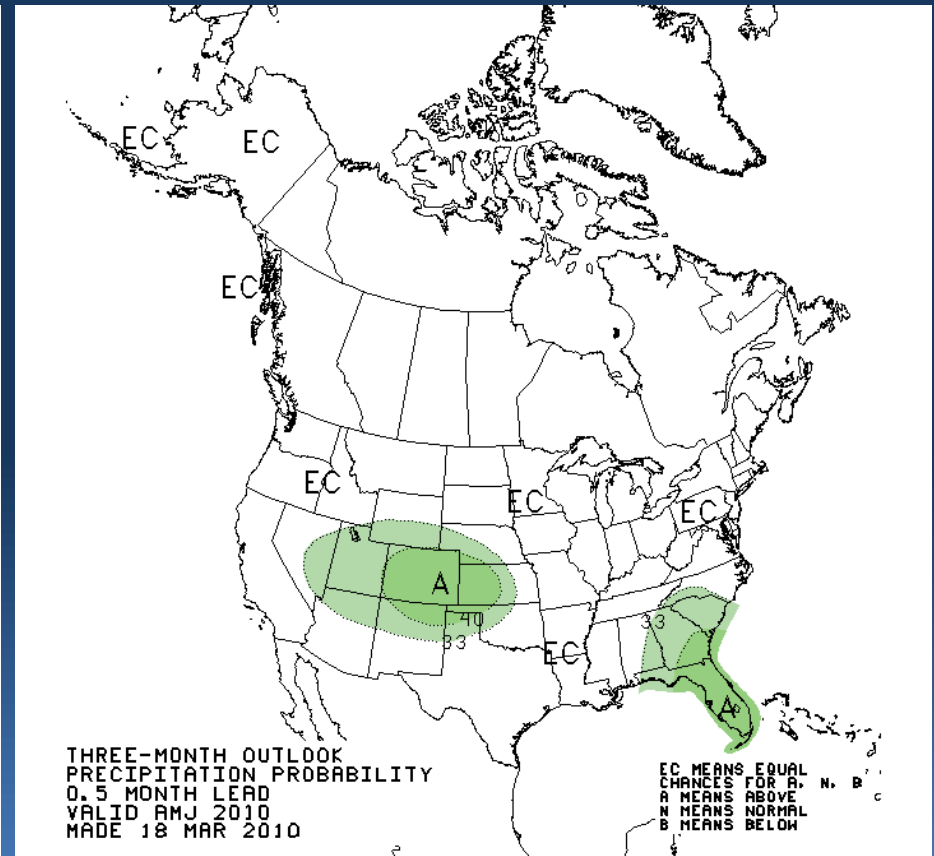
Climate Outlook: Precipitation



Current Month Outlook



Three Month Outlook

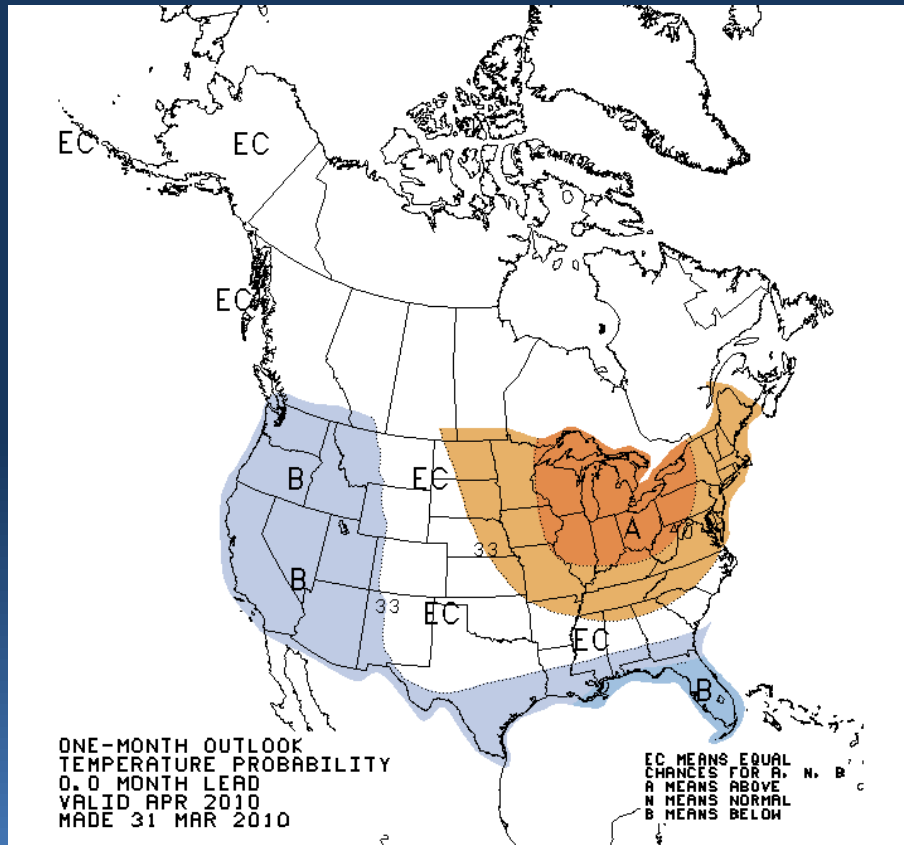




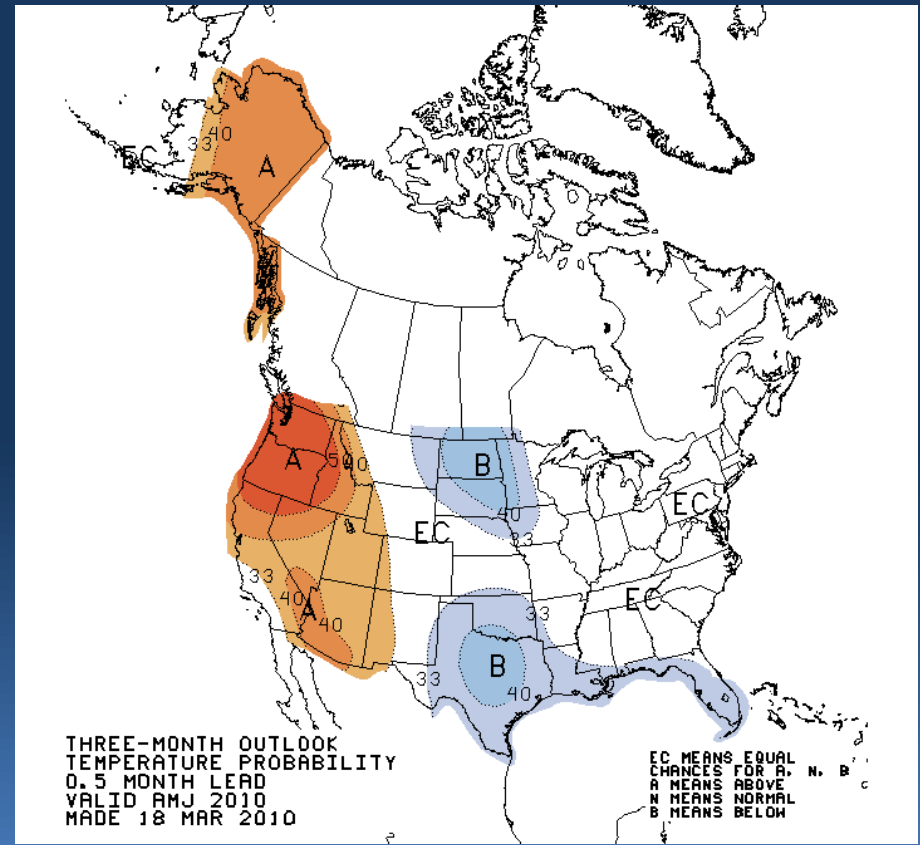
Climate Outlook: Temperature



Current Month Outlook



Three Month Outlook





Model Precipitation Assumptions



Apr Final Water Supply Forecast:

April Forecast Precipitation 100% of Normal

Mar Final Water Supply Forecast:

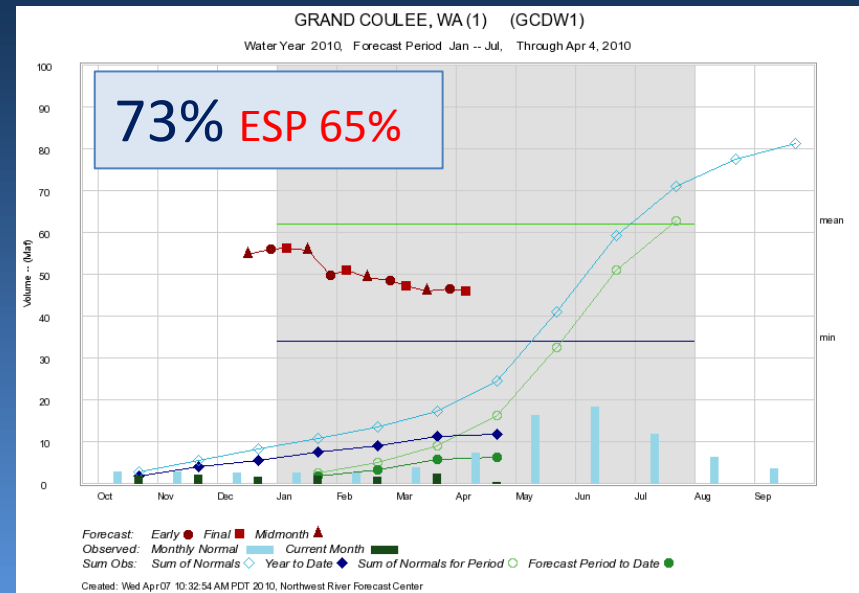
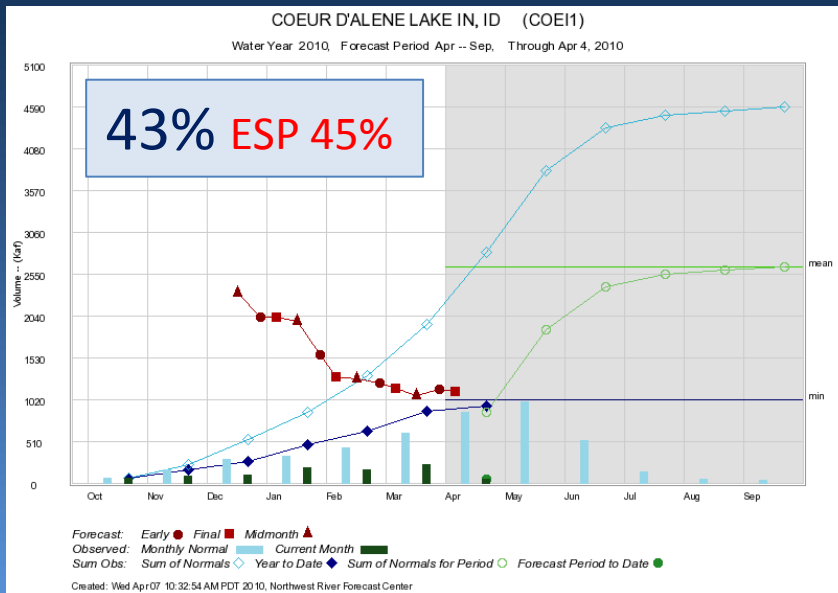
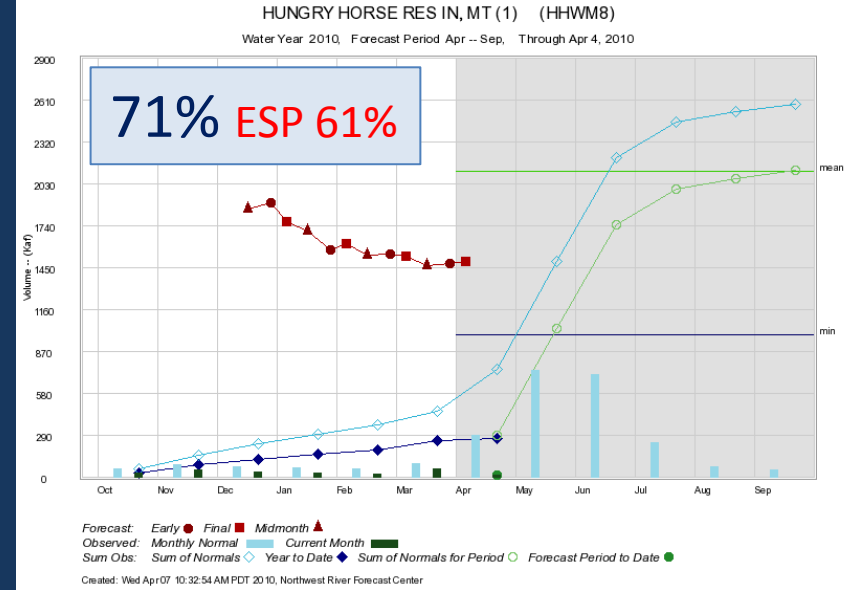
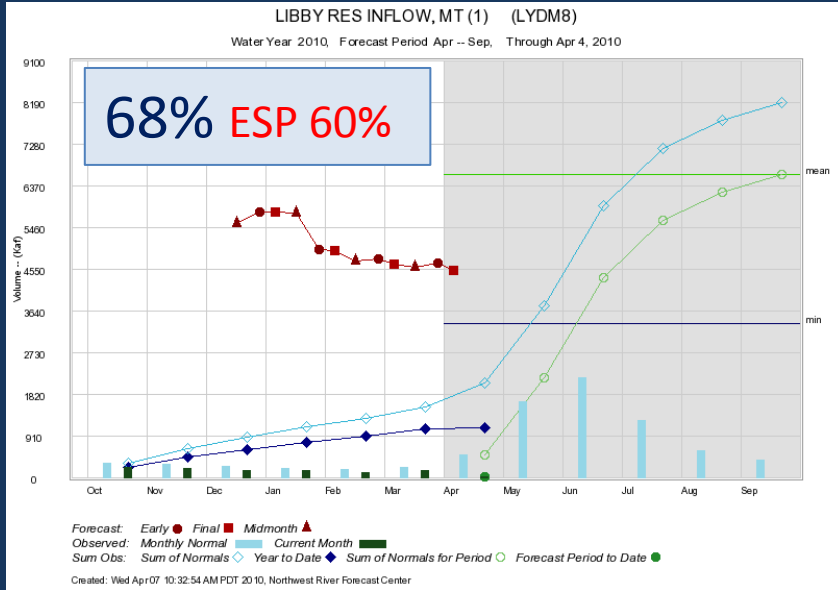
Mar Precipitation 75% of Normal (obs ~ 82%)

Feb Final Water Supply Forecast:

Feb Precipitation 60% of Normal (obs ~48%)

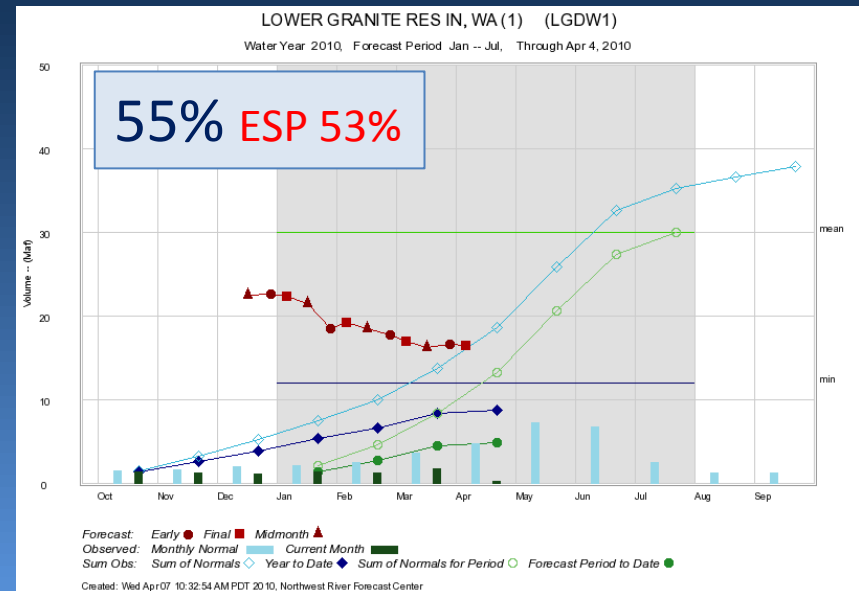
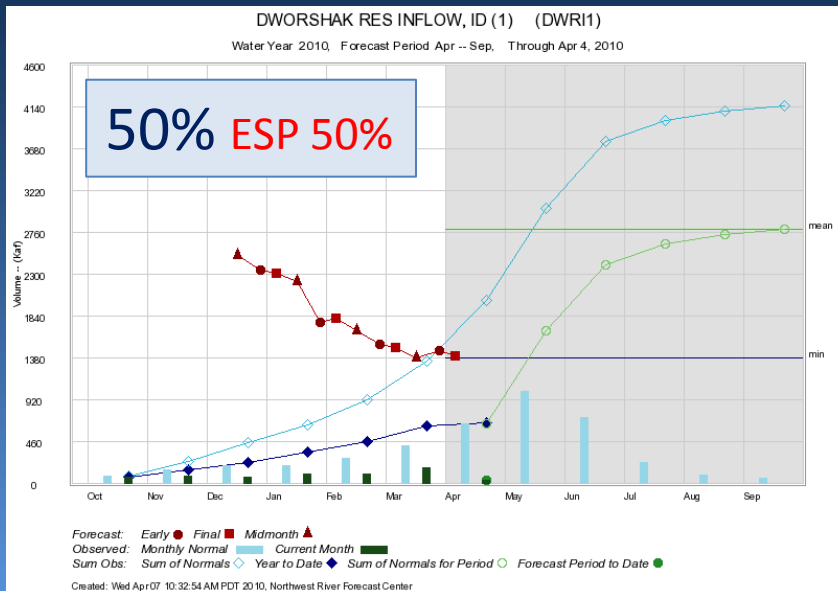
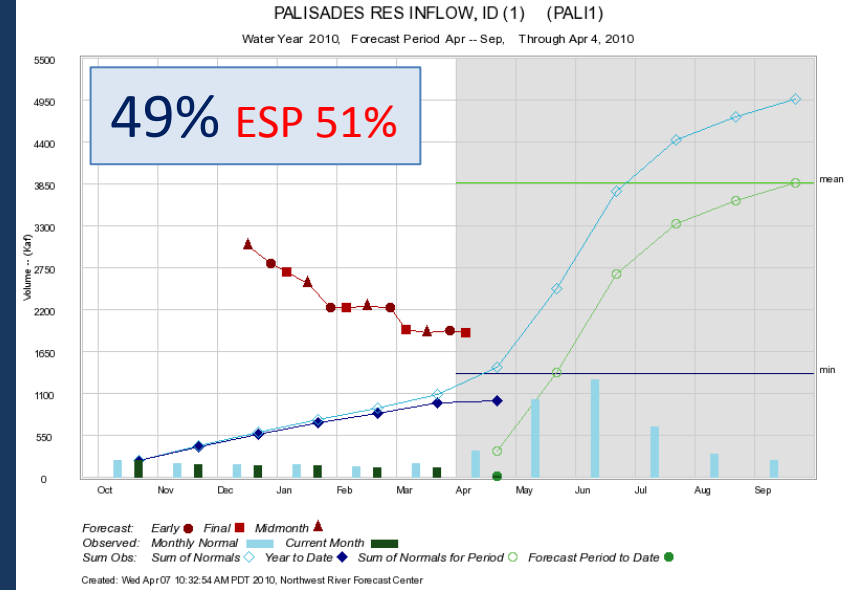
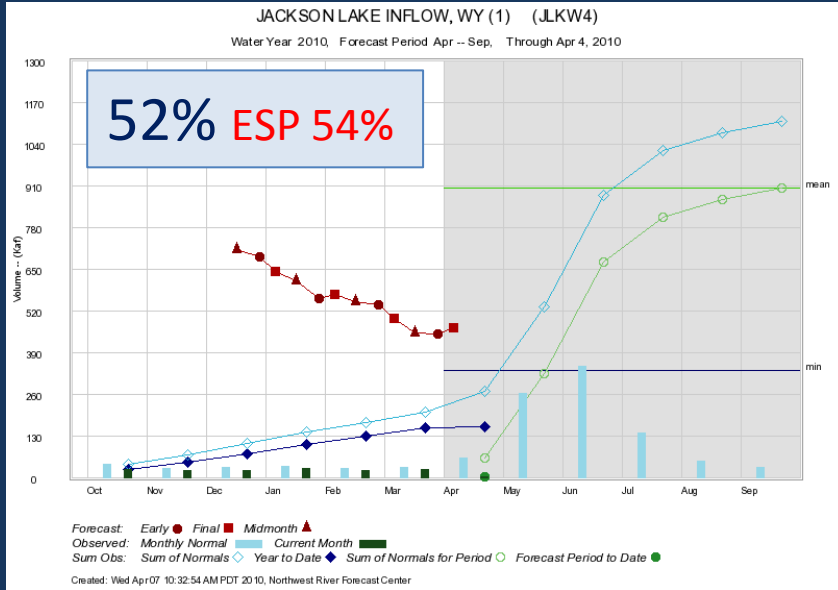


Water Supply Forecast: Upper Columbia



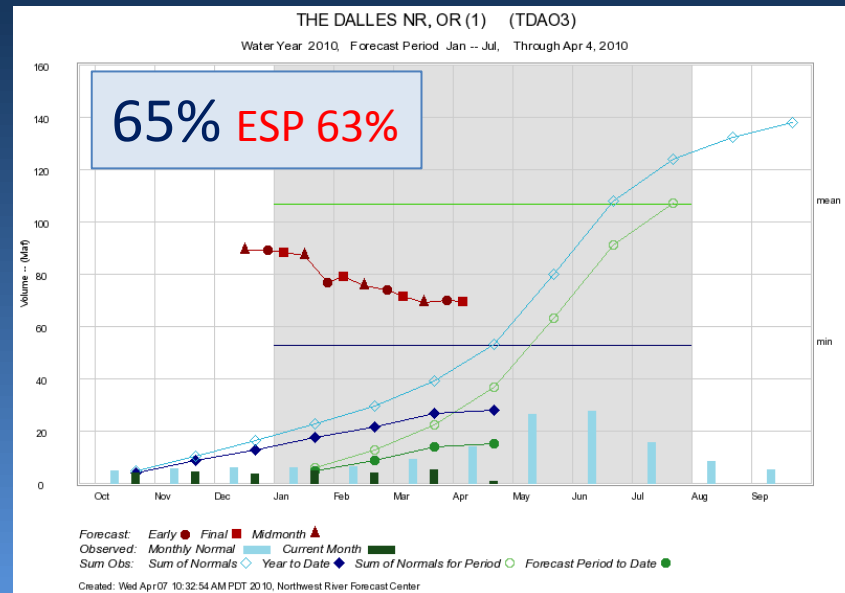
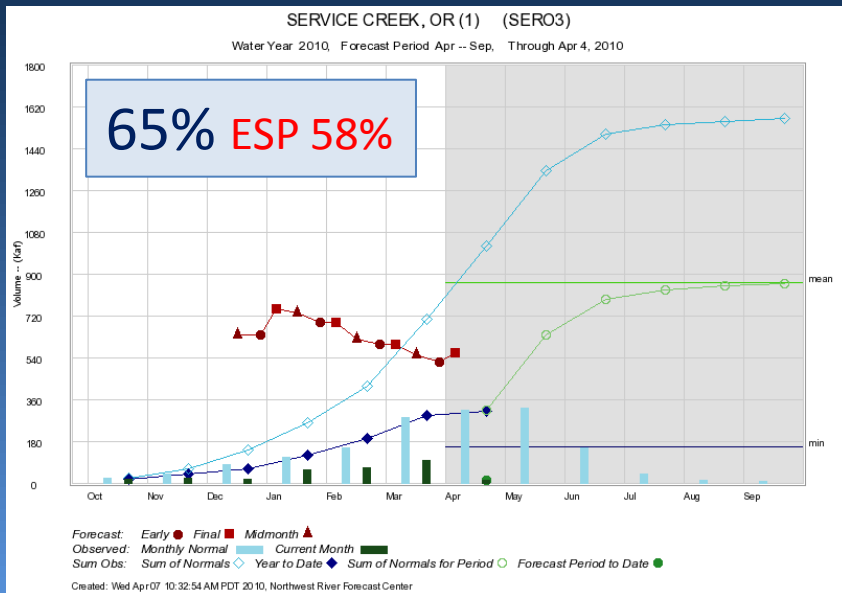
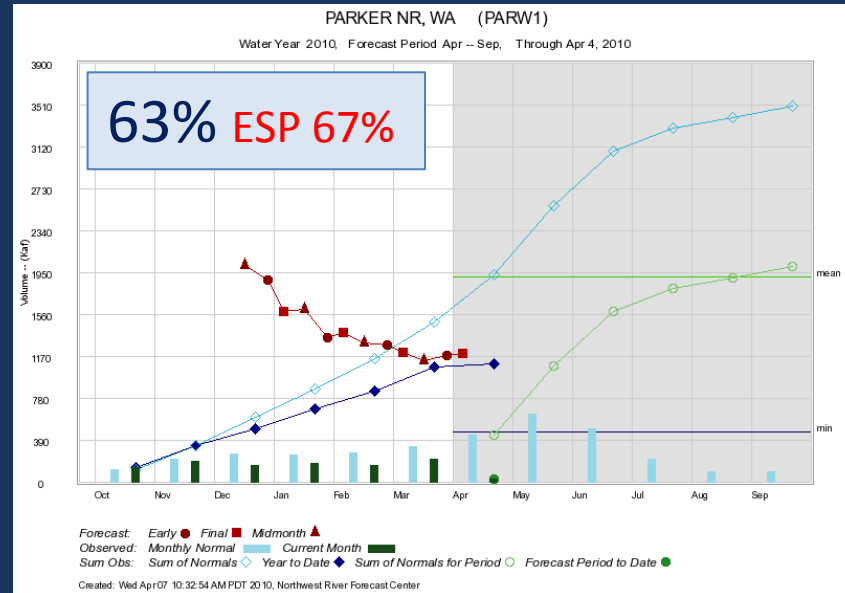
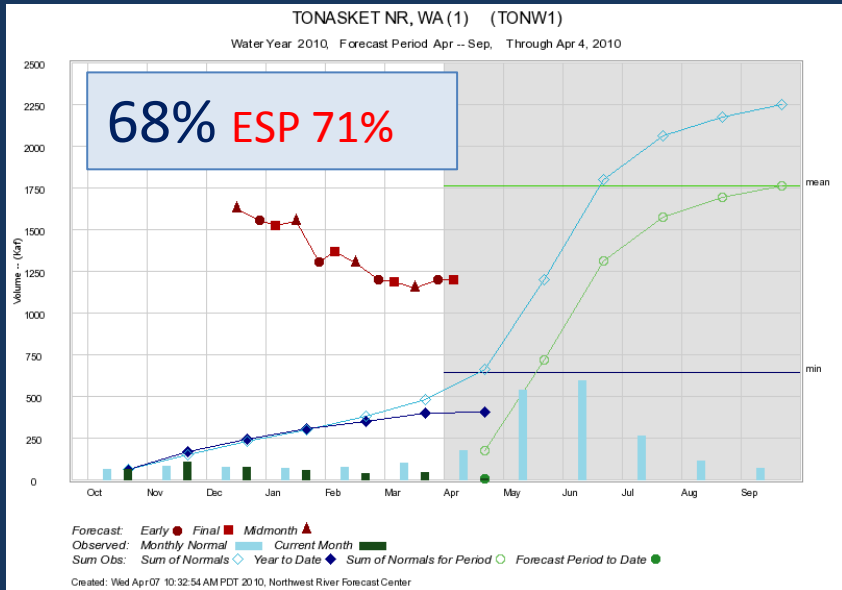


Water Supply Forecast: Snake





Water Supply Forecast: Lower Columbia





Water Supply Forecast Summary



69.7 MAF 65% of (1971-2000) average

Historical January-July Volumes in MAF
 Mean: 107 Min: 53 Max: 159

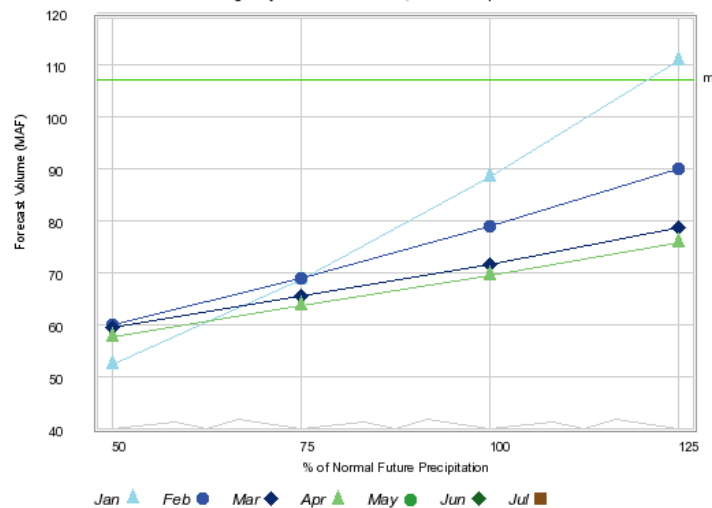
Year	Jan-Jul Vol (MAF)	Rank	Exceedance Prob
1987	78.64	43	84.314 %
1994	76.40	44	86.275 %
1988	75.54	45	88.235 %
1992	73.55	46	90.196 %
1973	70.99	47	92.157 %
2010	69.70	48	94.118 %
2001	58.19	49	96.078 %
1977	53.29	50	98.039 %

Rankings and probabilities based on historical water years 1961 to 2010
[Click for full ranking list of all years](#)

		Contingency Forecast (MAF)			
Date	Type	50%	75%	100%	125%
2010-01-01	Early Bird	52	69	89	111
2010-01-01	Final	52	68	88	111
2010-01-01	Mid Month	56	70	87	105
2010-02-01	Early Bird	57	69	77	99
2010-02-01	Final	60	69	79	90
2010-02-01	Mid Month	63	69	75	83
2010-03-01	Early Bird	61	67	74	81
2010-03-01	Final	59	65	71	78
2010-03-01	Mid Month	57	63	69	75
2010-04-01	Early Bird	58	64	70	76
2010-04-01	Final	57	63	69	75

THE DALLES (TDAO3)

Contingency forecast for 2010, Forecast period: Jan - Jul





Water Supply Forecast: ESP Comparison



COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for WY 2010

Official Forecast (Regression) <i>Issued: 2010-04-07</i> (Description)								ESP Forecasts <i>Issued: 2010-04-06</i>					
Period	Forecast (KAF)	% of Average	5% Forecast	95% Forecast	30yr (1971-2000) Average	Max of Record	Min of Record	Forecast Period	ESP Forecasts for Forecast Period (KAF)				
									90 % Exceedance Probability	70 % Exceedance Probability	50 % Exceedance Probability	30 % Exceedance Probability	10 % Exceedance Probability
JAN-SEP	53400.0	73	61947.0	44853.0	73040.0	103500.0	44000.0	JAN-SEP	46660.7	48333.8	50117.3	52951.1	55030.6
APR-SEP	47600.0	74	56147.0	39053.0	63990.0	88512.0	39829.0	APR-SEP	40825.7	42498.8	44282.3	47116.1	49195.6
APR-JUL	40200.0	75	48747.0	31653.0	53850.0	76239.0	31885.0	APR-JUL	32299.1	33655.1	35057.7	36850.8	40676.6
JAN-JUL	46000.0	73	54547.0	37453.0	62900.0	91140.0	34760.0	JAN-JUL	38134.1	39490.1	40892.7	42685.8	46511.6

SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for WY 2010

Official Forecast (Regression) <i>Issued: 2010-04-07</i> (Description)								ESP Forecasts <i>Issued: 2010-04-06</i>					
Period	Forecast (KAF)	% of Average	5% Forecast	95% Forecast	30yr (1971-2000) Average	Max of Record	Min of Record	Forecast Period	ESP Forecasts for Forecast Period (KAF)				
									90 % Exceedance Probability	70 % Exceedance Probability	50 % Exceedance Probability	30 % Exceedance Probability	10 % Exceedance Probability
JAN-SEP	18000.0	55	22916.0	13084.0	32610.0	53055.0	14754.0	JAN-SEP	16639.2	17417.4	18562.0	18999.0	20782.3
APR-SEP	13400.0	56	18316.0	8484.0	24140.0	37104.0	10420.0	APR-SEP	12048.2	12826.4	13971.0	14408.0	16191.3
APR-JUL	12000.0	56	16916.0	7084.0	21550.0	33528.0	8634.0	APR-JUL	9687.1	10448.0	11465.0	11967.3	13651.1
JAN-JUL	16600.0	55	21516.0	11684.0	30020.0	49478.0	12878.0	JAN-JUL	14278.1	15039.0	16056.0	16558.3	18242.1

COLUMBIA - THE DALLES DAM (TDA03) Forecasts for WY 2010

Official Forecast (Regression) <i>Issued: 2010-04-07</i> (Description)								ESP Forecasts <i>Issued: 2010-04-06</i>					
Period	Forecast (KAF)	% of Average	5% Forecast	95% Forecast	30yr (1971-2000) Average	Max of Record	Min of Record	Forecast Period	ESP Forecasts for Forecast Period (KAF)				
									90 % Exceedance Probability	70 % Exceedance Probability	50 % Exceedance Probability	30 % Exceedance Probability	10 % Exceedance Probability
JAN-SEP	78800.0	65	92391.0	65209.0	121300.0	176593.0	64517.0	JAN-SEP	74415.1	77444.6	79849.3	82212.2	86044.8
APR-SEP	64500.0	65	78091.0	50909.0	98650.0	141056.0	54091.0	APR-SEP	60087.1	63116.6	65521.3	67884.2	71716.8
APR-AUG	60900.0	65	74491.0	47309.0	93090.0	133733.0	49445.0	APR-AUG	55676.1	57636.1	60385.5	62712.3	66093.4
JAN-AUG	75200.0	65	88791.0	61609.0	115700.0	168669.0	59871.0	JAN-AUG	70004.1	71964.1	74713.5	77040.3	80421.4
JAN-JUL	69700.0	65	83291.0	56109.0	107300.0	159000.0	53359.0	JAN-JUL	62538.4	64624.1	67050.0	69474.7	73722.4



NWRFC Water Supply Webpage

www.nwrfc.noaa.gov



National Weather Service
Northwest
River Forecast Center

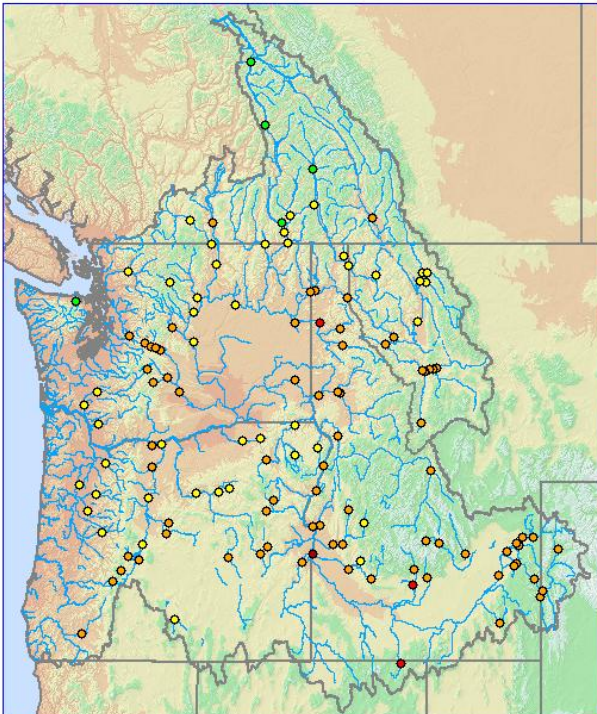
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Water Supply Forecast (Issued 02-05-2010)

Map data updated 02/05.16:55 GMT, 02/05.08:55 PST.

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[click for Water Supply Briefing -- 01/11/2010](#)

Place cursor over point for Station Info, click point for data plot.
 Select Zoom Option to zoom in on map
Click to: [Select](#) | [Zoom](#) **Zoom to:** [1x](#) [4x](#) [8x](#)



Legend

Water Supply Forecast (% Avg)

- No Average, No data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175

Point Info/Search

Station Name

ID

Forecast Period

Volume Forecast (KAF)

% of Avg (1971-2000)

5% Forecast (KAF)

95% Forecast (KAF)

30-YR Avg (KAF)

[Click for Summary List of Water Supply Forecasts](#)
[Click for Comma Delimited WS Forecasts \(Issued 02-05-2010\)](#)
 (Description)

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