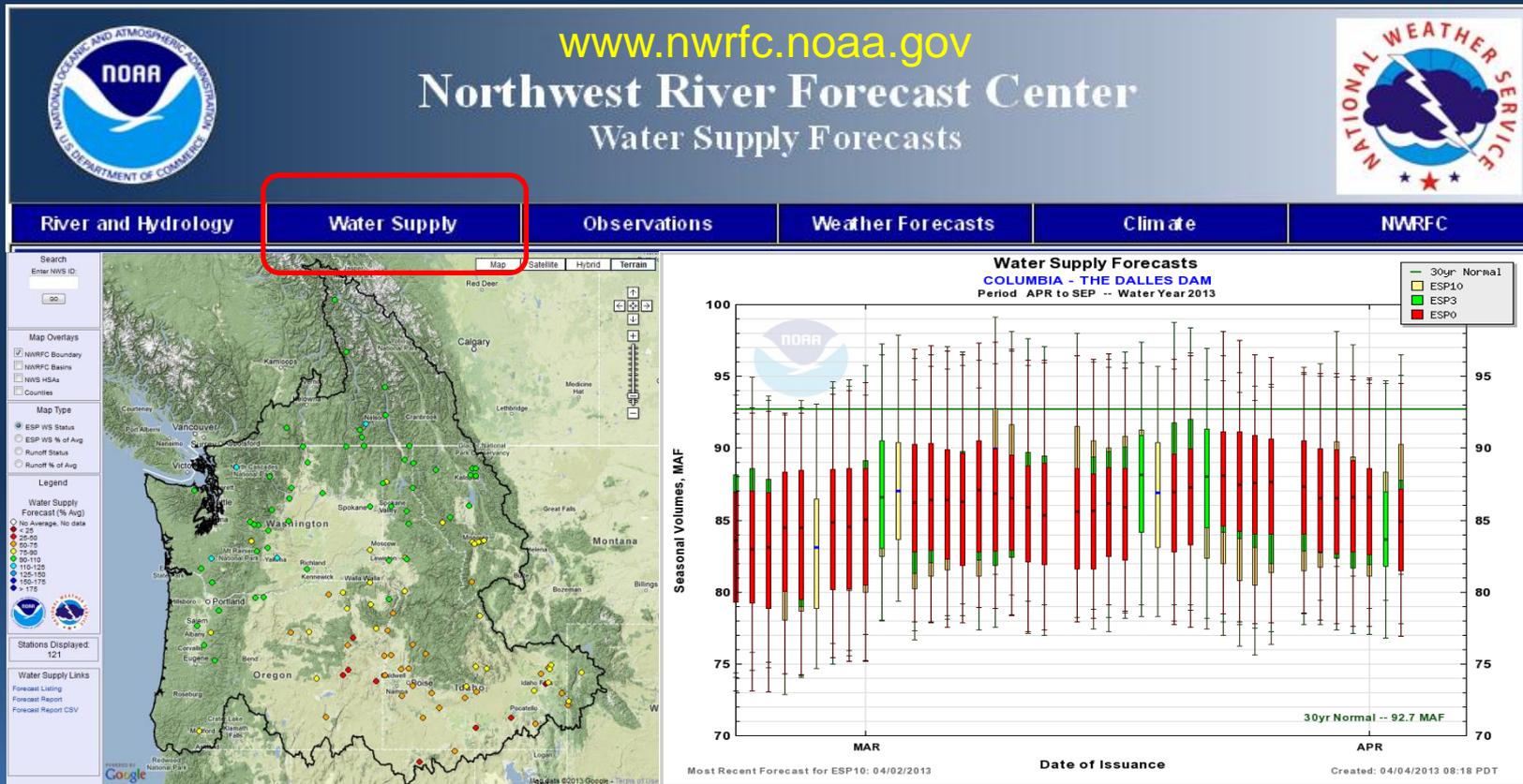


# April 2013 Water Supply Briefing



Steve King, NWRFC  
Stephen.King@noaa.gov  
(503)326-7291





# Observed Conditions



Precipitation

Temperature

Runoff

Snowpack



# New Water Supply Summary Webpage

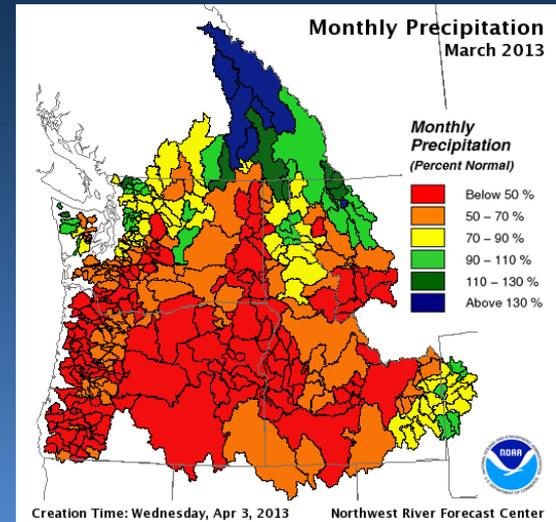
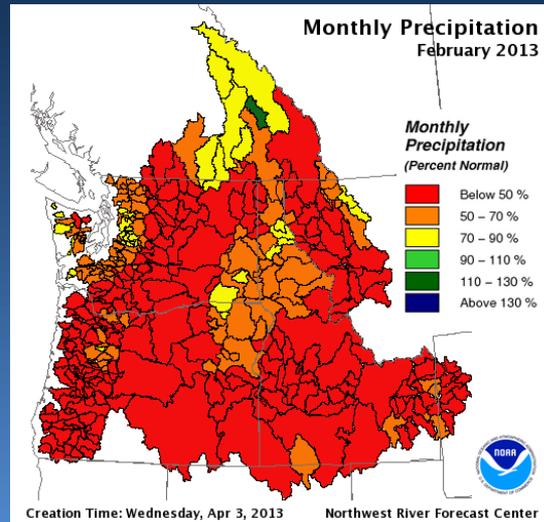
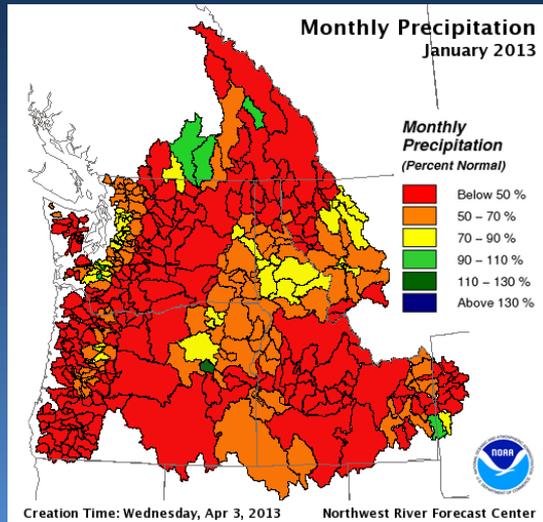
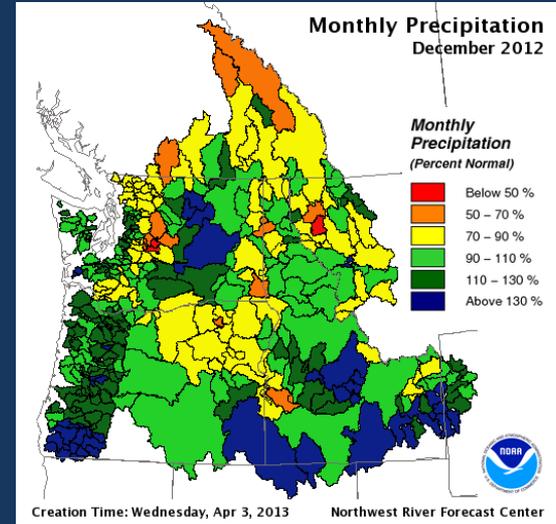
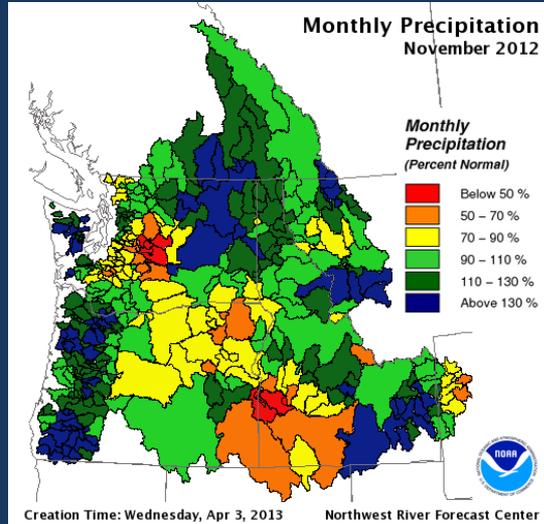
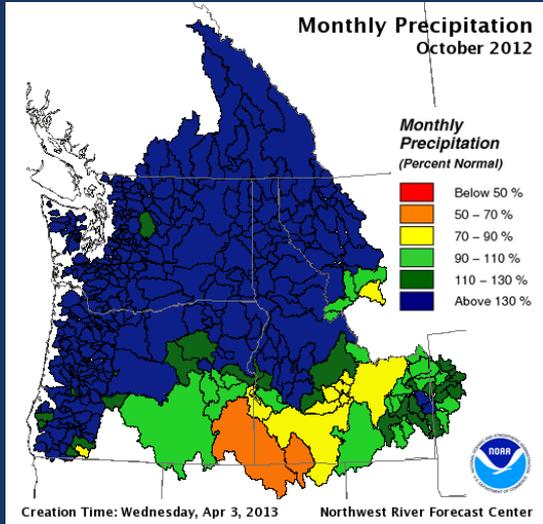


Presented at end of this presentation

- Monthly / Season Precipitation
- Forecast Precipitation 3 and 10 day volumes
- Monthly Temperature

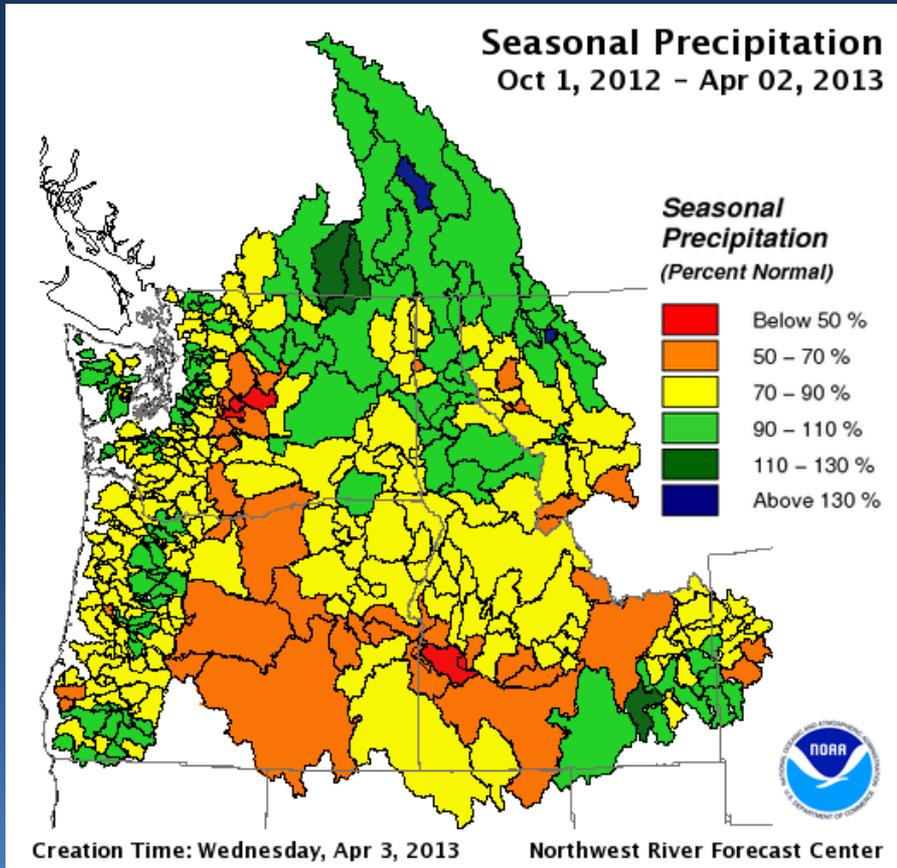


# Observed Monthly Precipitation





# Observed Seasonal Precipitation

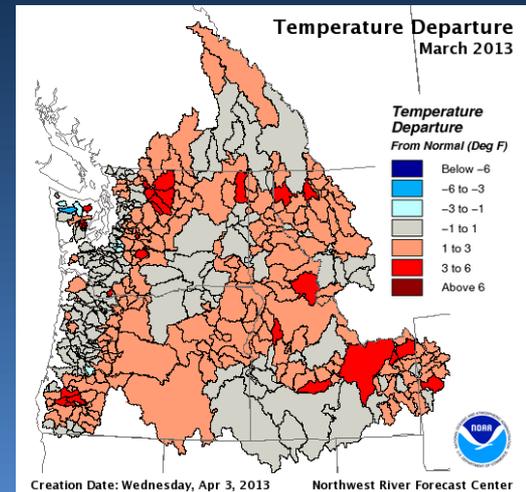
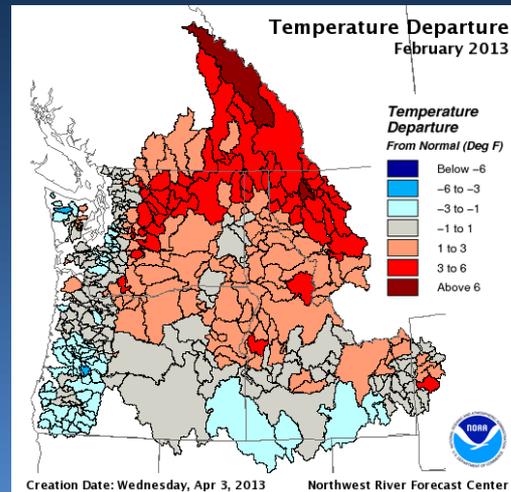
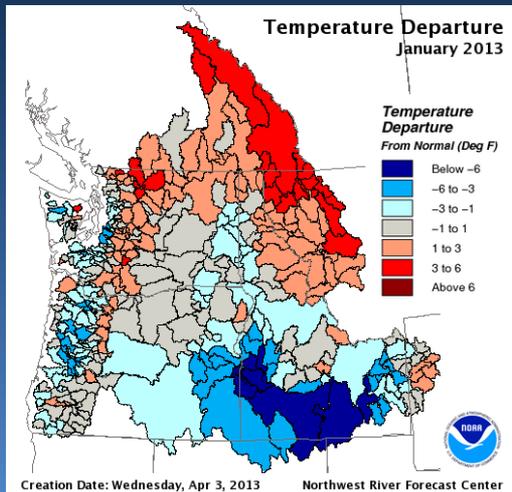
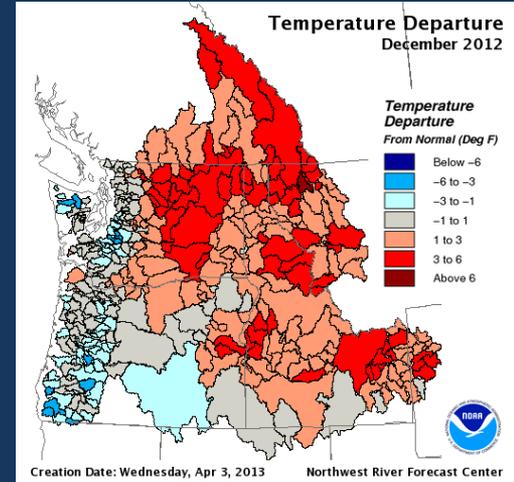
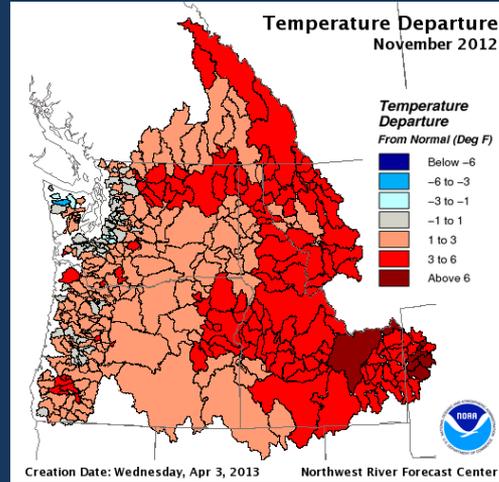
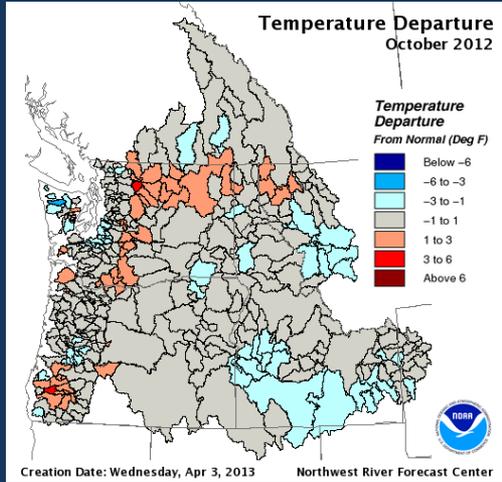


## Observed Precipitation Water Year to Date Columbia River Above the Dalles

DIVISION NAME	OBS (in)	% Norm
Snake River abv Ice Harbor Dam	11.1	79
Columbia River abv Grand Coulee	21.9	96
Columbia River abv The Dalles	14.6	84



# Temperature Departures

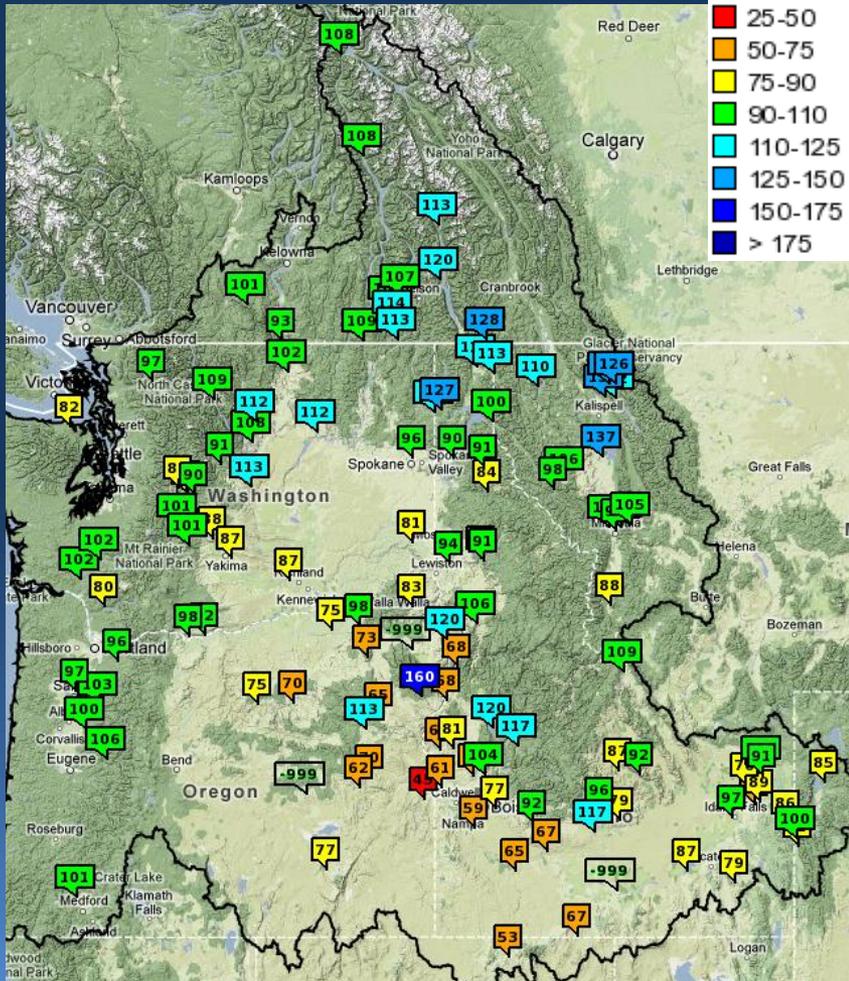
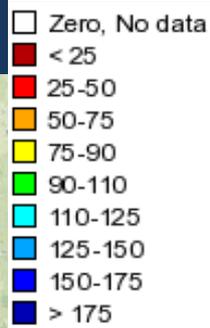




# Current Adjusted Runoff Conditions



Seasonal Runoff, Oct 1<sup>st</sup> – Apr 2<sup>th</sup>



Percent of Normal

Oct-Dec    Jan-Mar

MICA	107	108
LIBBY	121	96
GRAND COULEE	131	95
DWORSHAK	141	76
LOWER GRANITE	104	67
THE DALLES	119	83

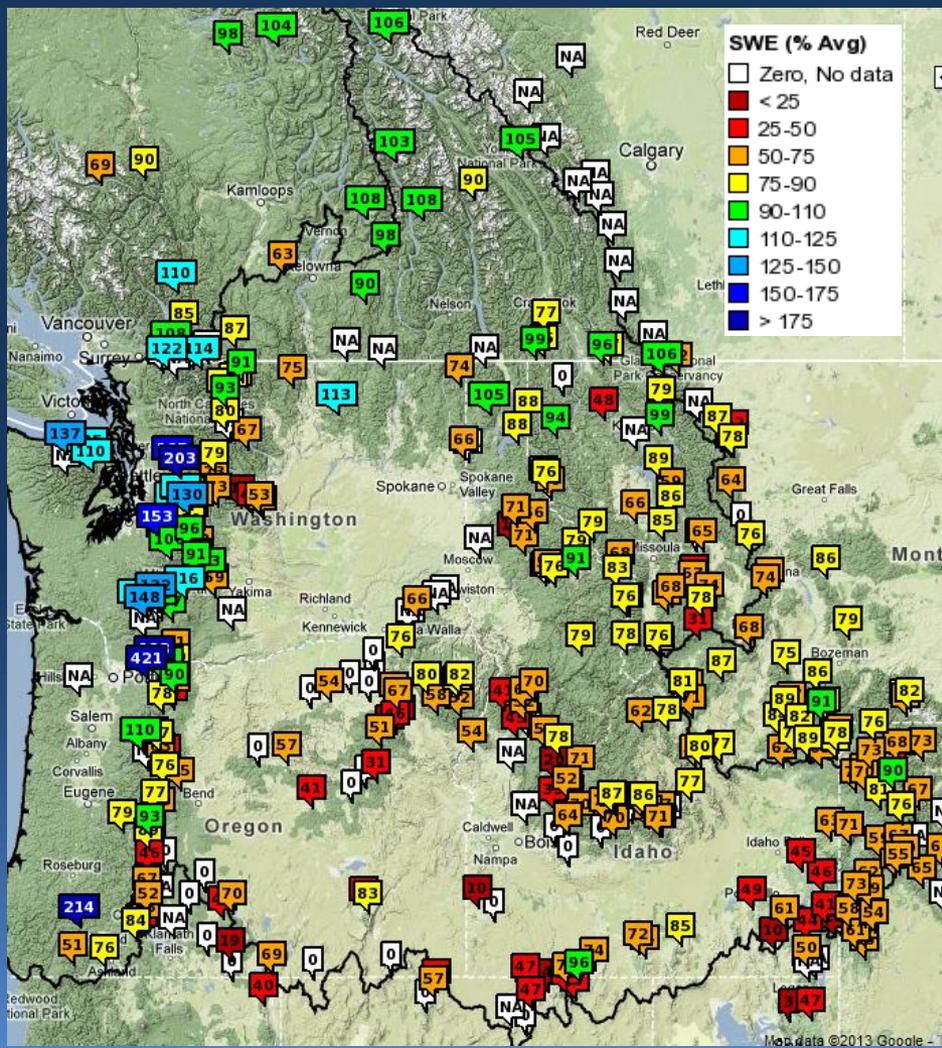
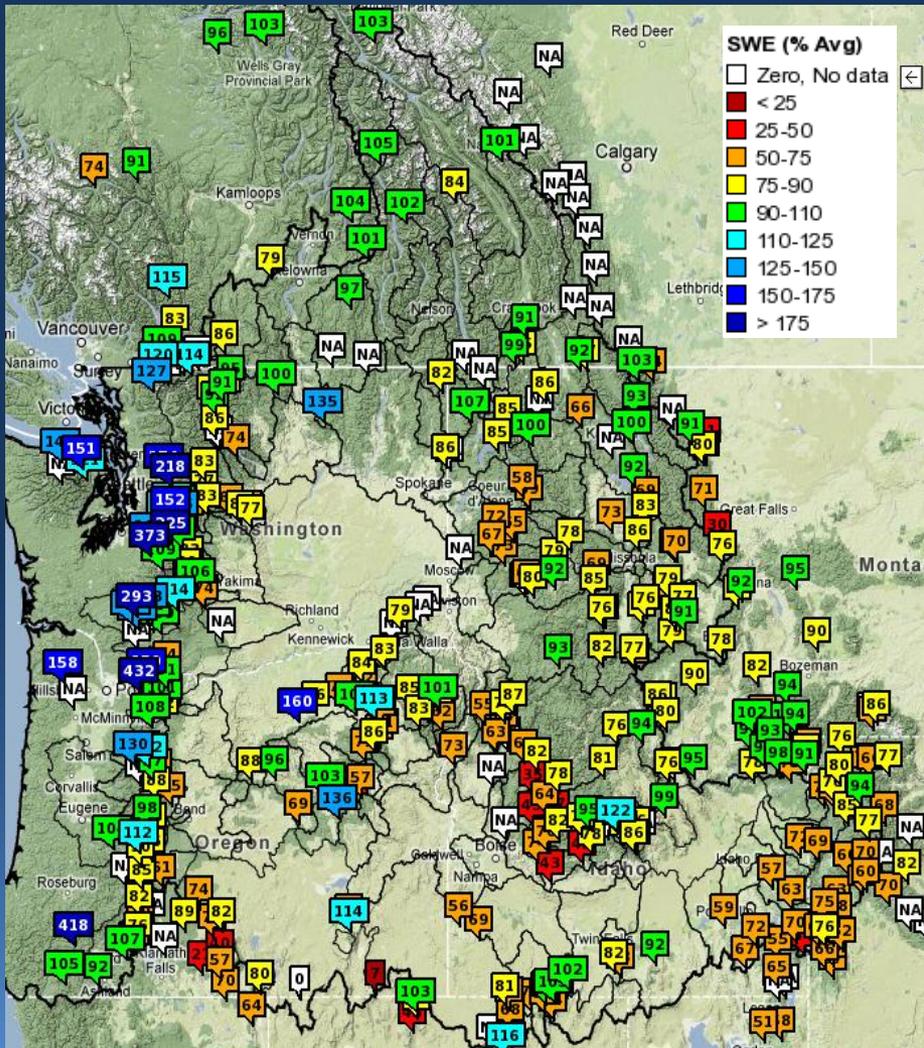


# Current Snow Conditions

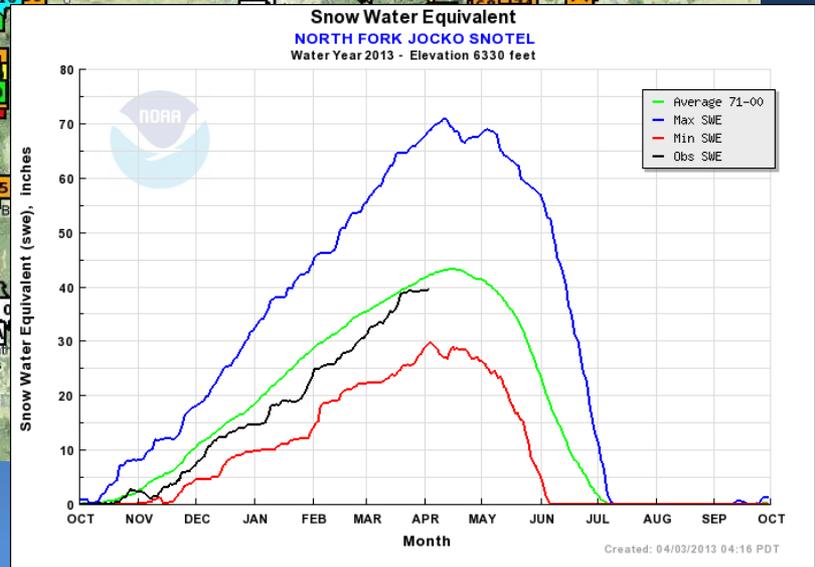
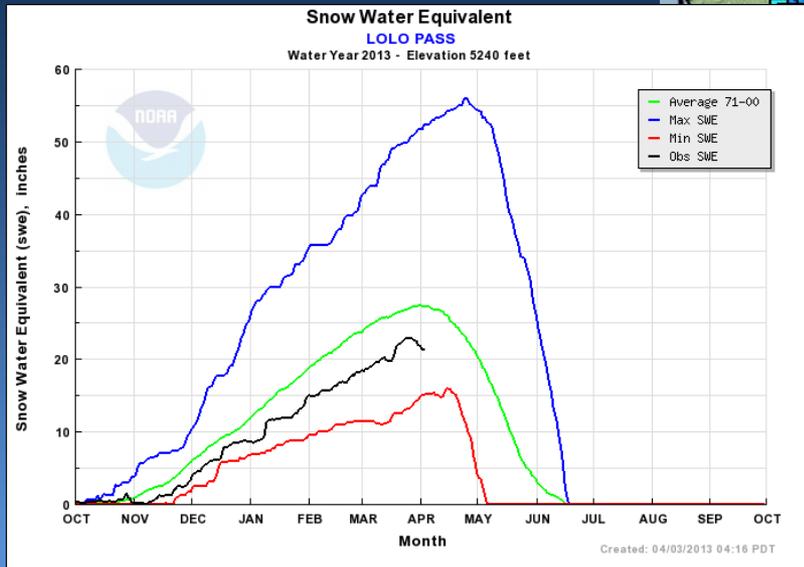
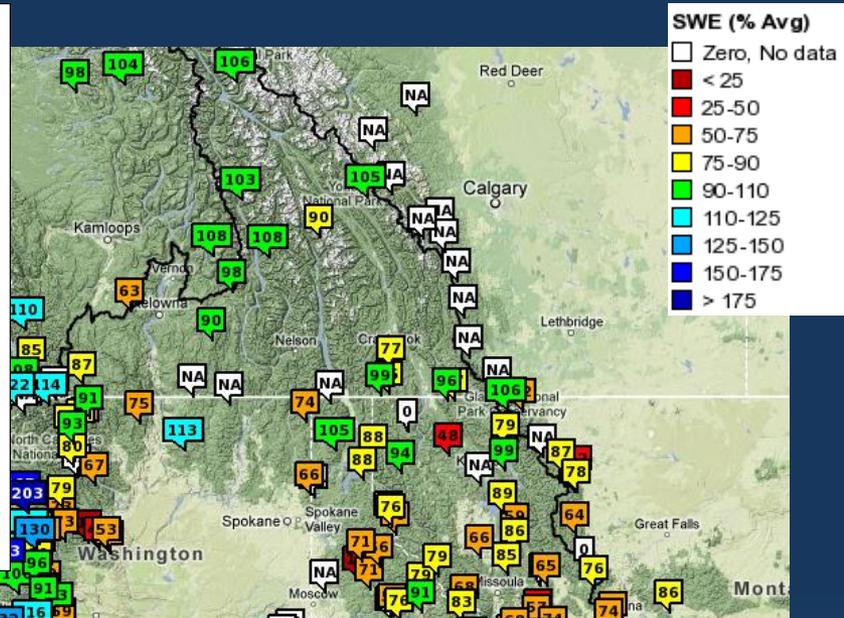
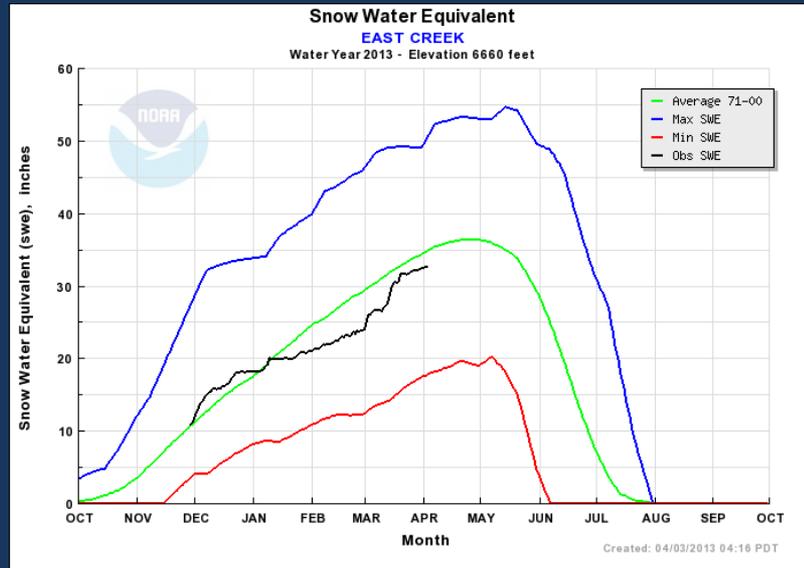


Mar 6, 2013

Apr 4, 2013

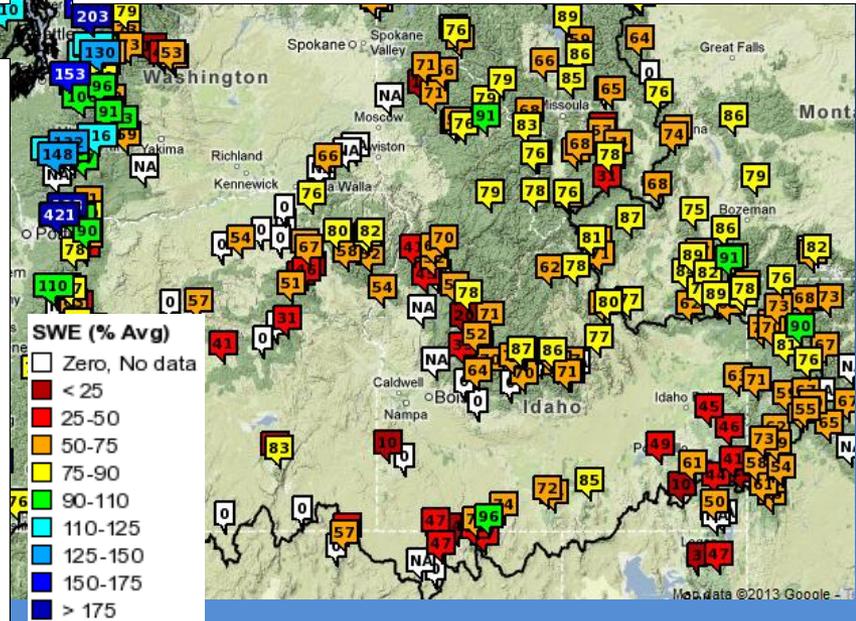
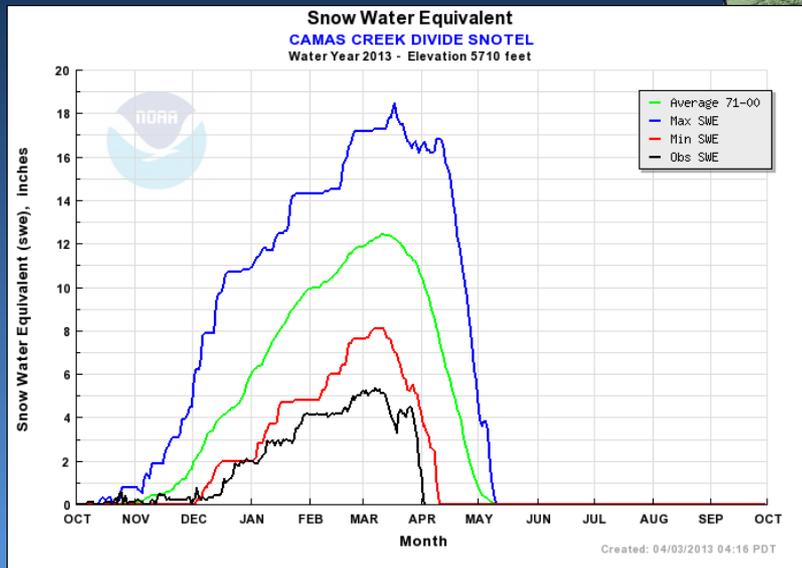
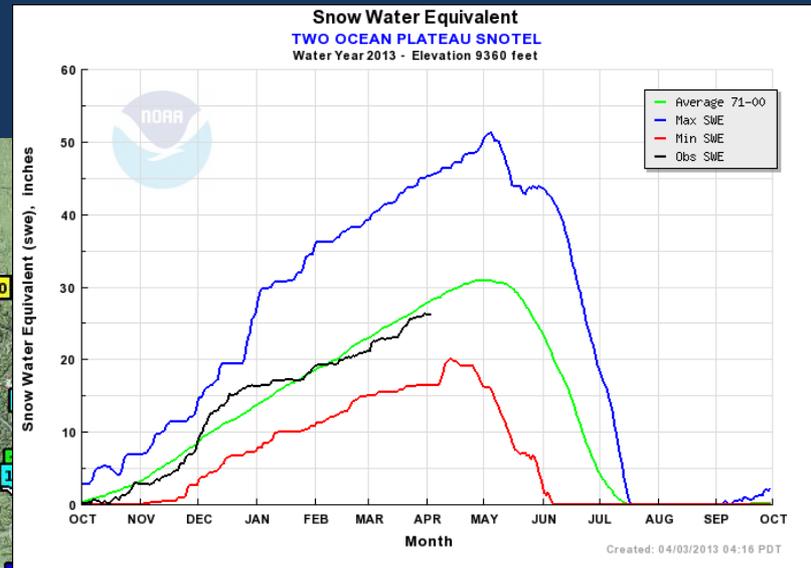
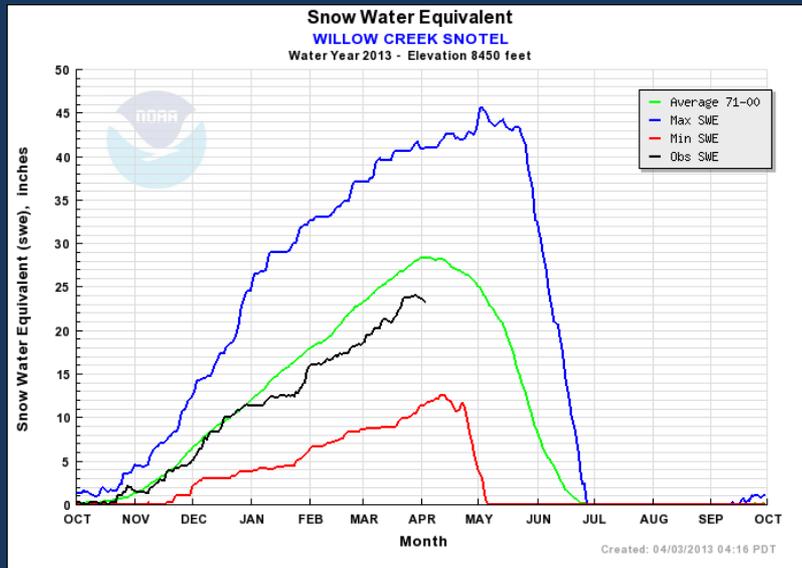


# Upper Columbia Snow Conditions





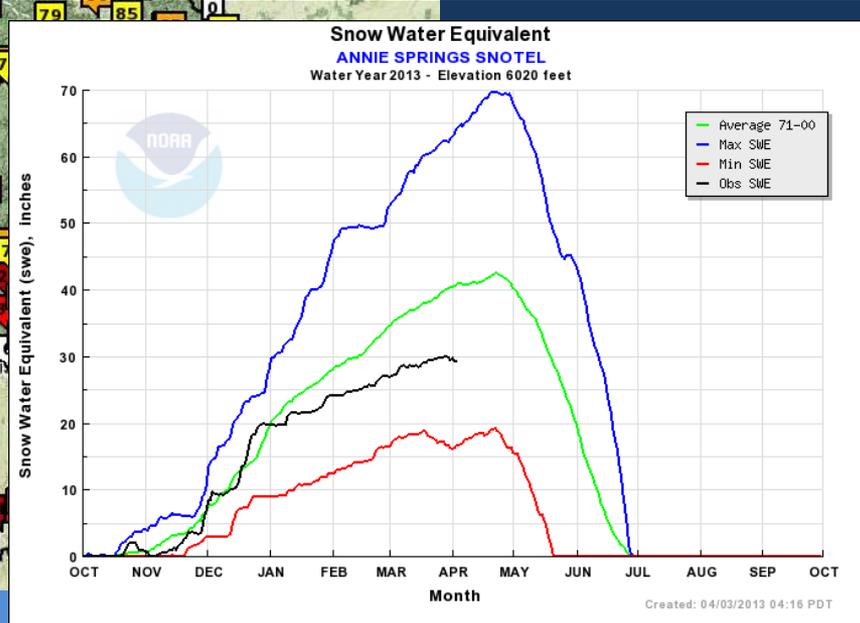
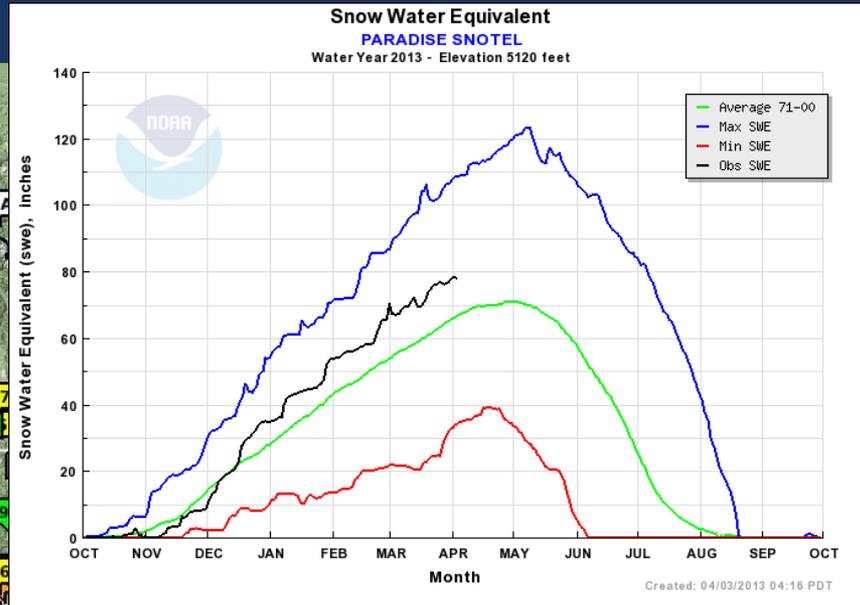
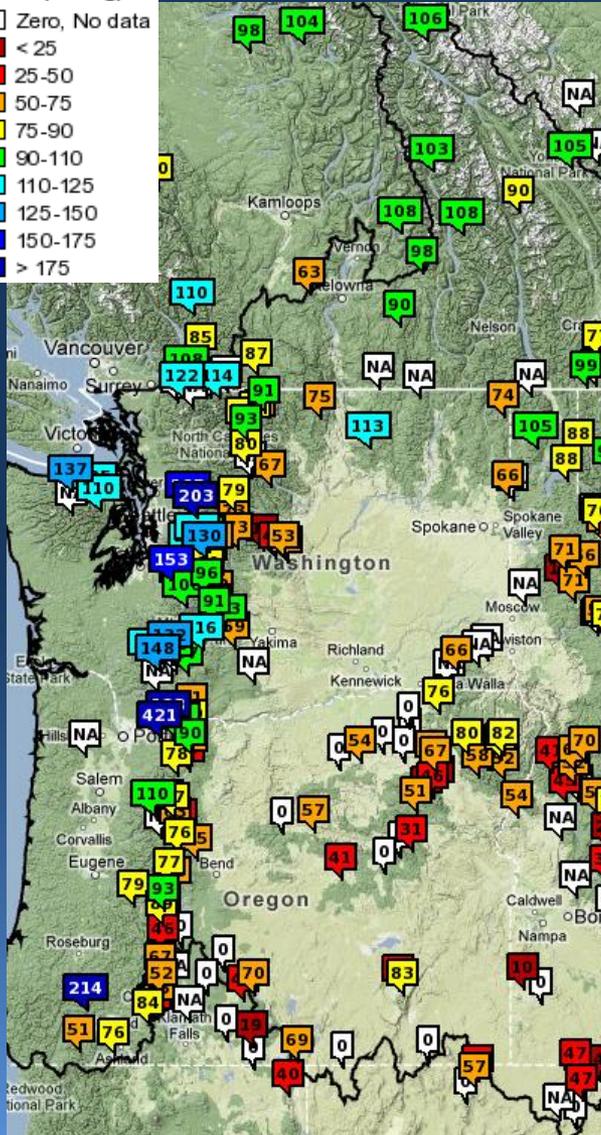
# Snake River Snow Conditions



# Lower Columbia Snow Conditions

## SWE (% Avg)

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





# Future Conditions



Climate Outlooks

10 Day Precipitation Forecast

Water Supply Forecasts



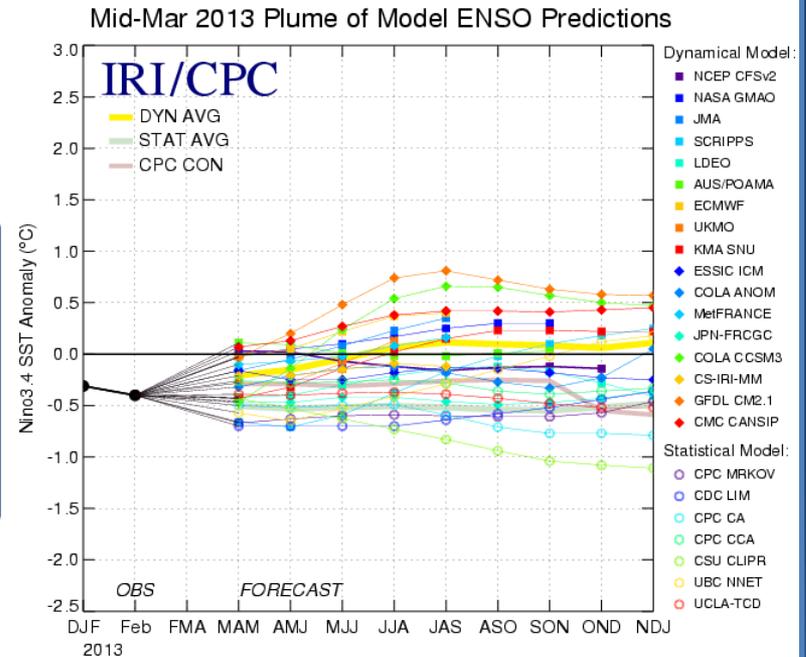
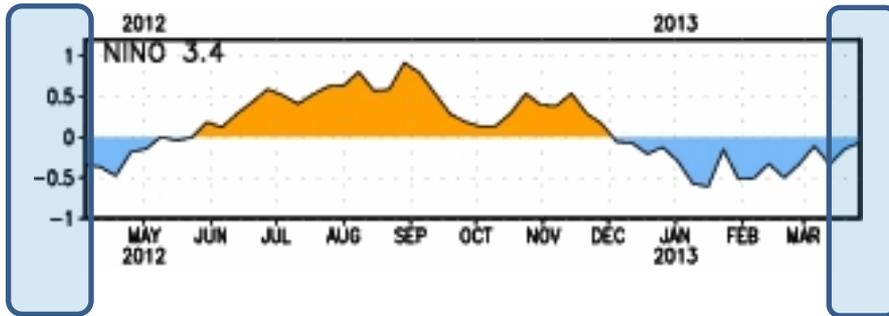
# Enso: Observed and Forecast

## SST Anomaly (Deg C)



Latest observed: SST 3.4 ~ -0.1Deg C

Latest calculated ONI 3.4 = -0.6 Deg C  
 ONI = 3 month running mean of SST (Nov-Jan)



**CPC Synopsis: ENSO-neutral conditions favored into fall 2013.**

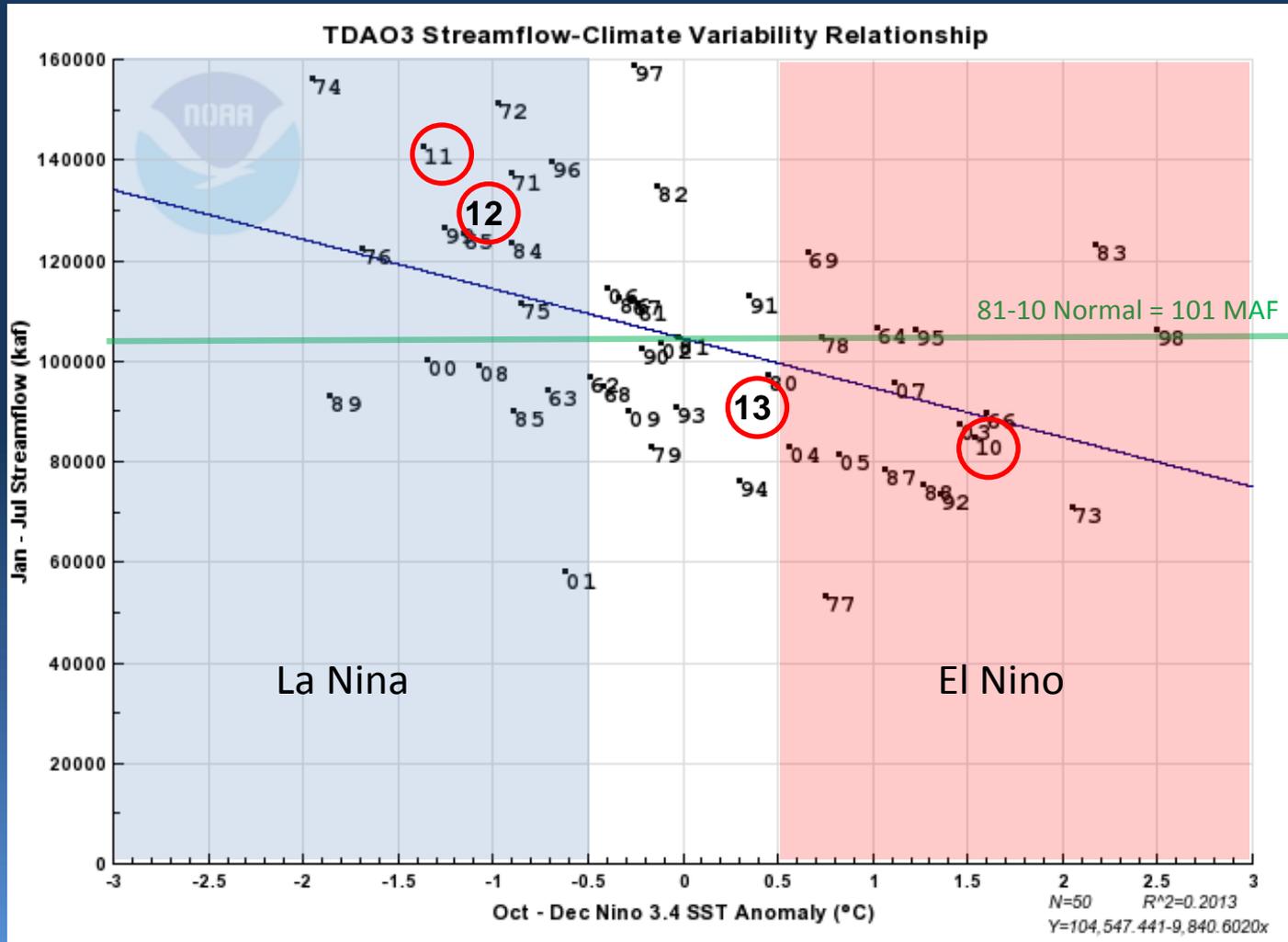
Source: Climate Prediction Center Weekly ENSO Update

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/lanina/enso\\_evolution-status-fcsts-web.pdf](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf)



# SST Anomaly vs Streamflow

## Columbia River near The Dalles



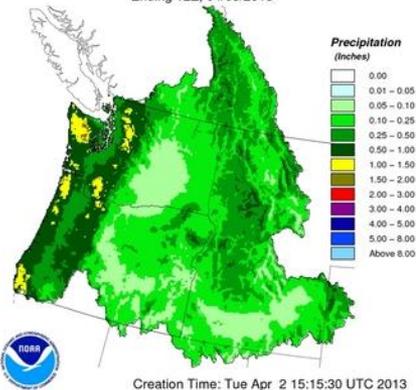


# ESP 3 and 10 Day Precipitation Forecast

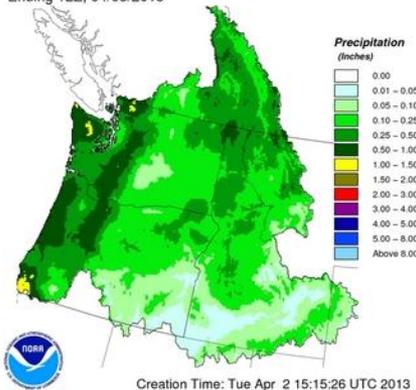


## 3 Day Forecast Precipitation: Volume Analysis

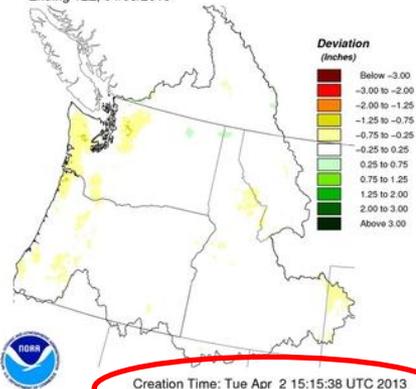
3 Day Precipitation Climatology  
Ending 12Z, 04/05/2013



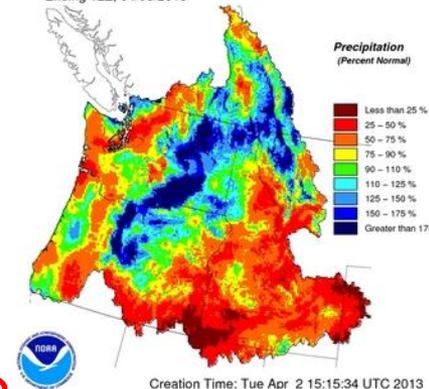
3 Day QPF  
Ending 12Z, 04/05/2013



3 Day QPF (Deviation from Climatology)  
Ending 12Z, 04/05/2013

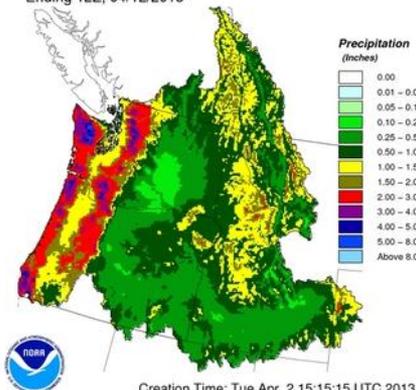


3 Day QPF (Percent of Climatology)  
Ending 12Z, 04/05/2013

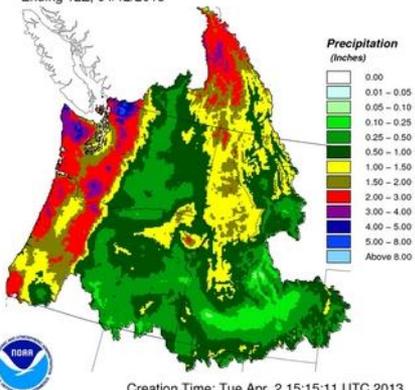


## 10 Day Forecast Precipitation: Volume Analysis

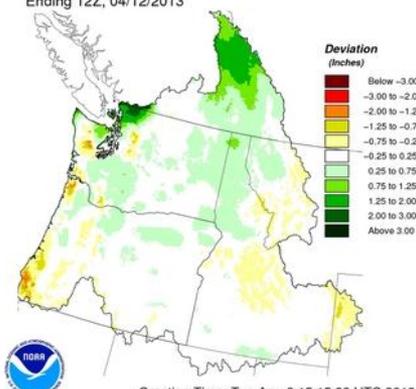
10 Day Precipitation Climatology  
Ending 12Z, 04/12/2013



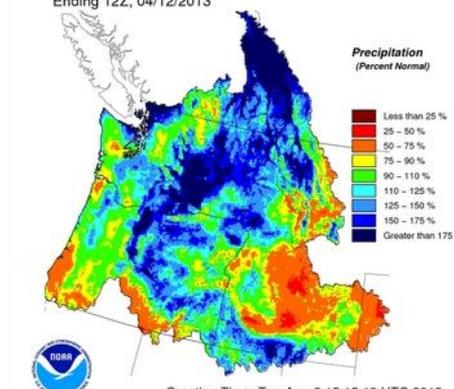
10 Day QPF  
Ending 12Z, 04/12/2013



10 Day QPF (Deviation from Climatology)  
Ending 12Z, 04/12/2013



10 Day QPF (Percent of Climatology)  
Ending 12Z, 04/12/2013



Daily Updates Now Available:

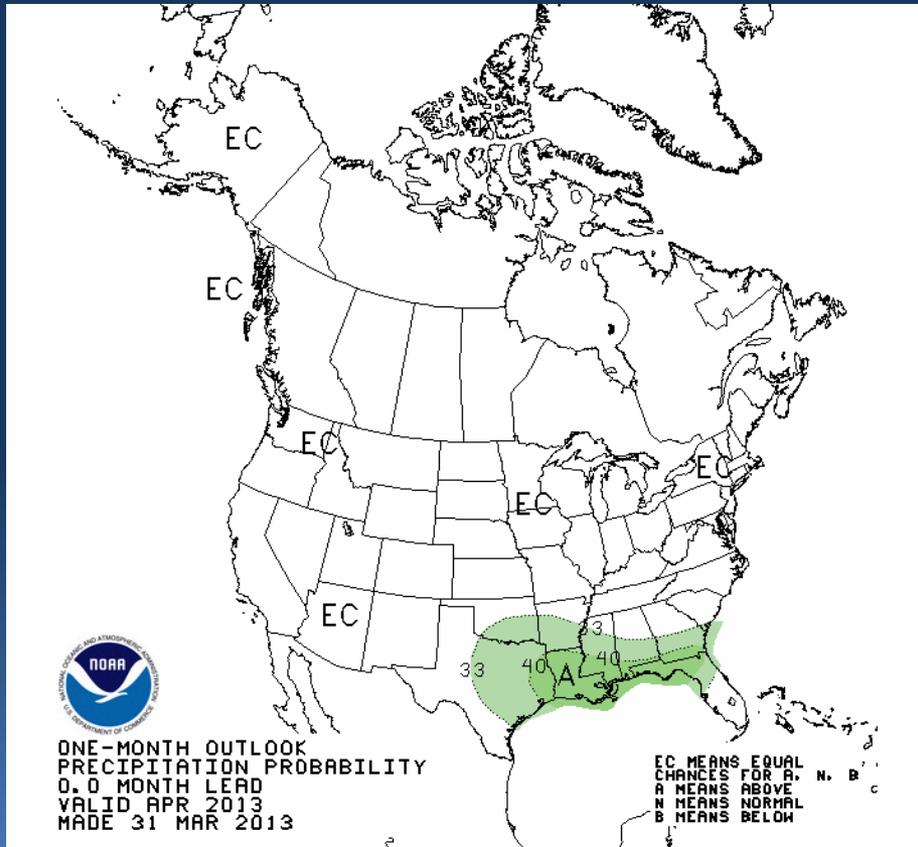
[http://www.nwrfc.noaa.gov/water\\_supply/wy\\_summary/wy\\_summary.php](http://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php)



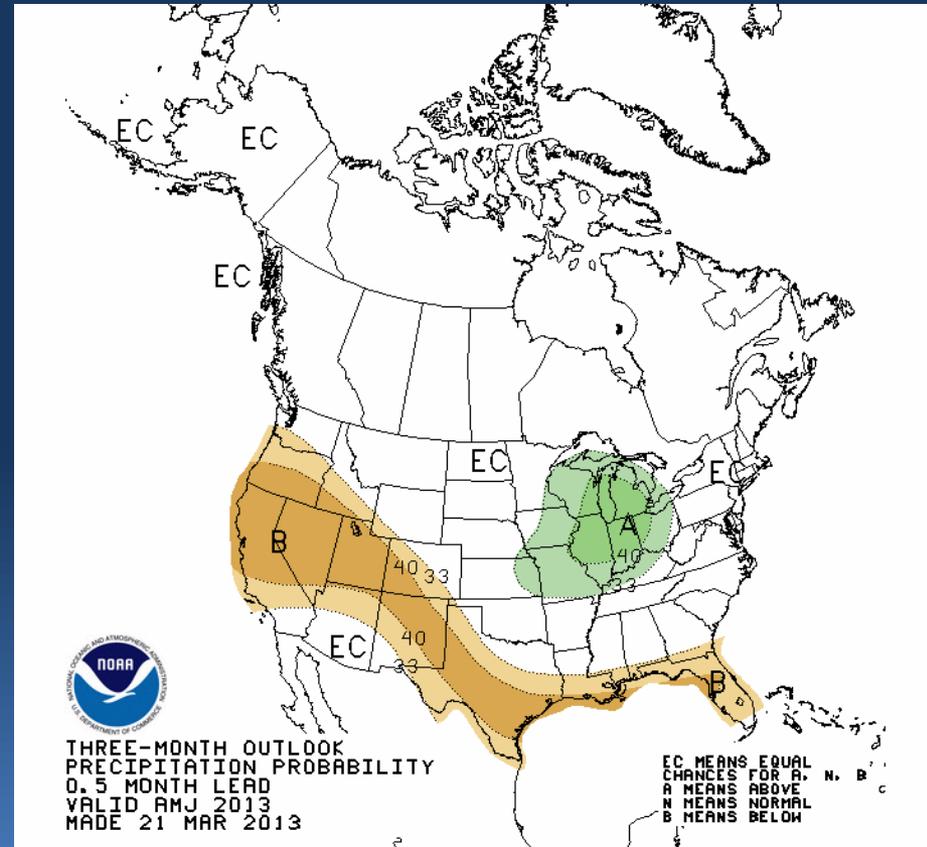
# Climate Outlook: Precipitation



## Current Month Outlook



## Three Month Outlook

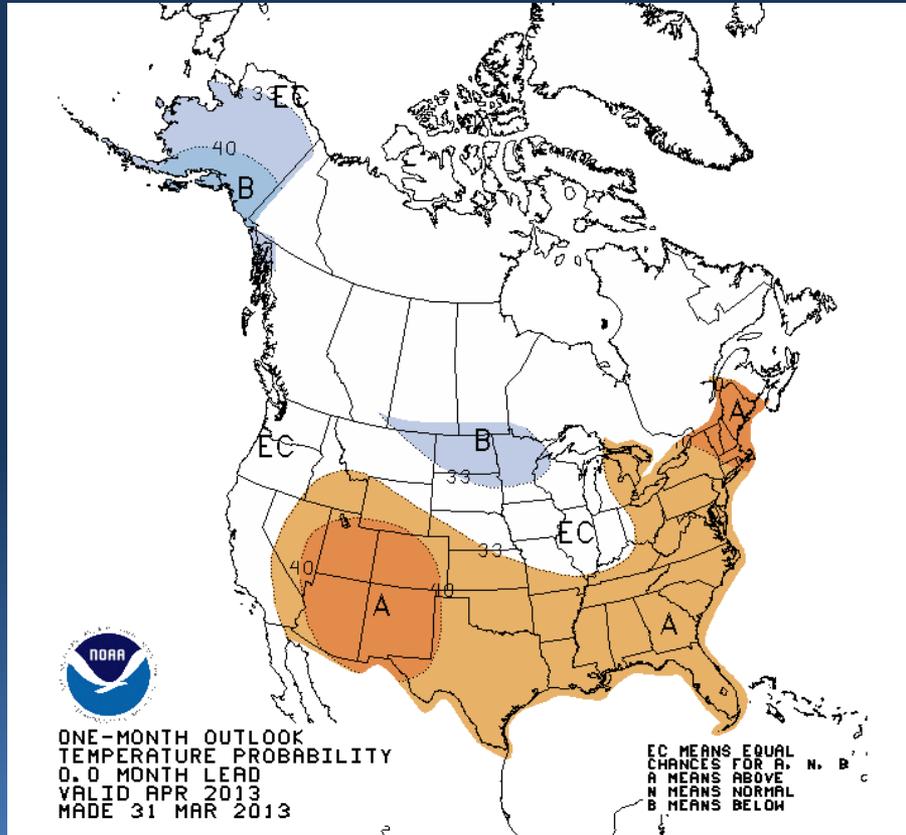




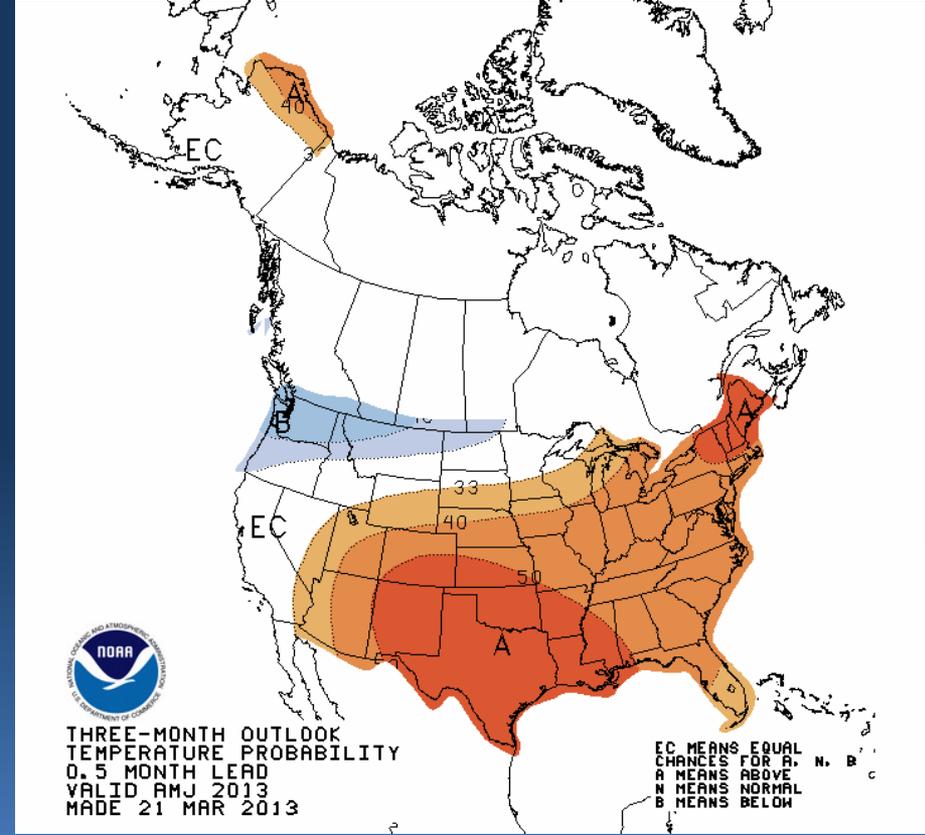
# Climate Outlook: Temperature



## Current Month Outlook



## Three Month Outlook





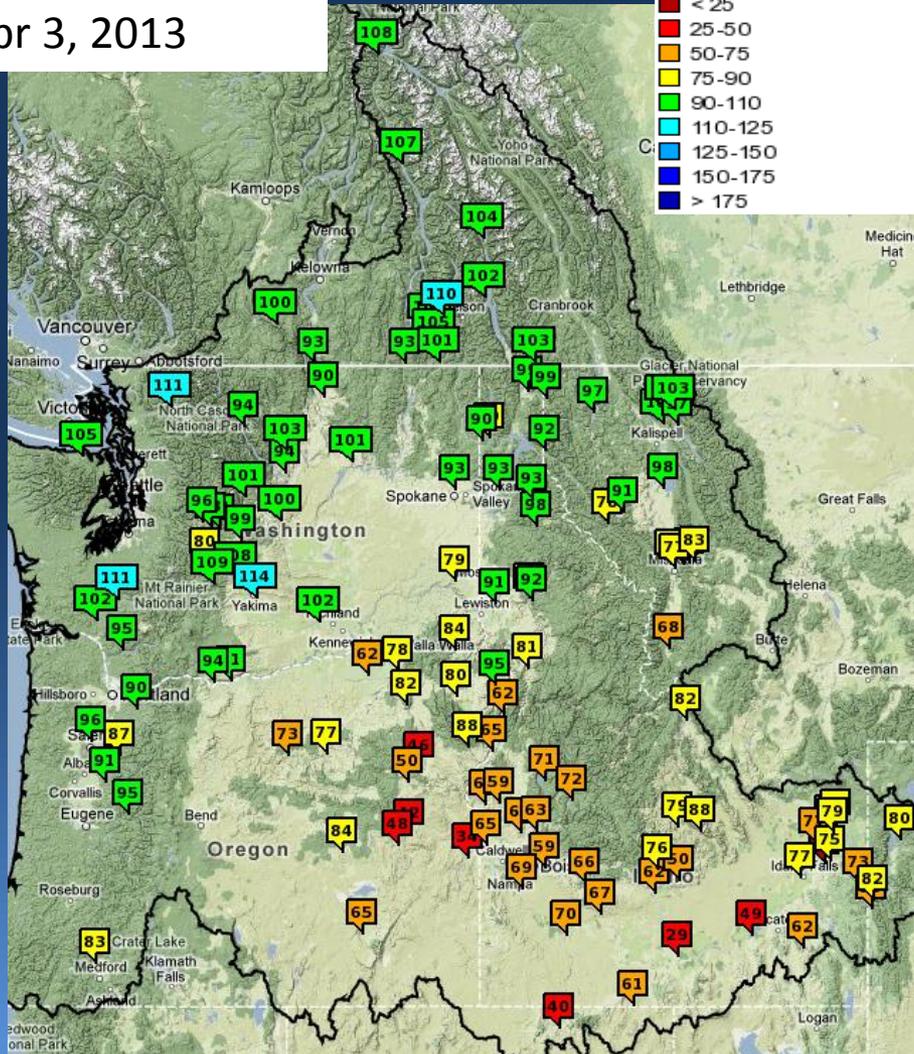
# Water Supply Forecasts



Issued  
Apr 3, 2013

### Water Supply Forecast (% Avg)

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



Ensemble Streamflow Procedure  
Apr 3 Issuance Date  
**Apr 2 Ensemble Date**

Official Forecasts include 10 days  
of forecast precipitation

NWRFC 3 and 0 day QPF available

Forecasts updated weekly/**daily**

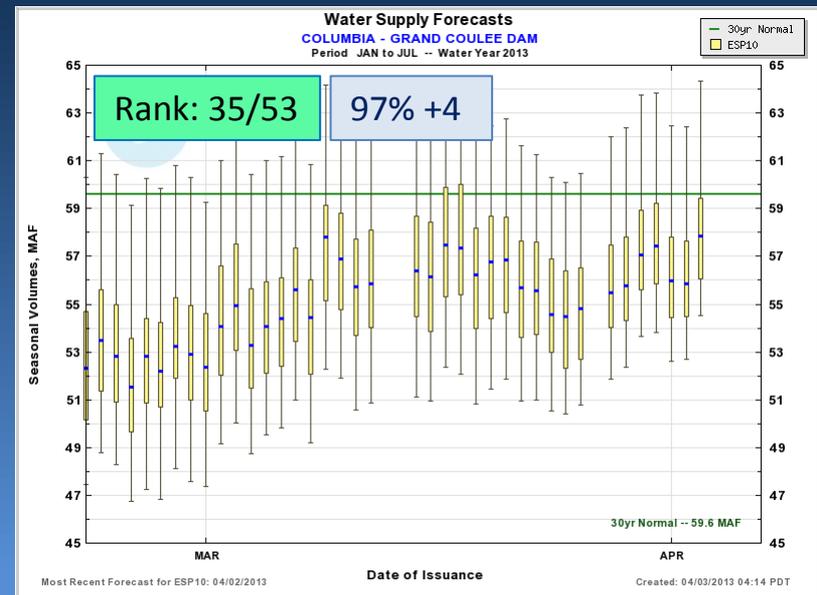
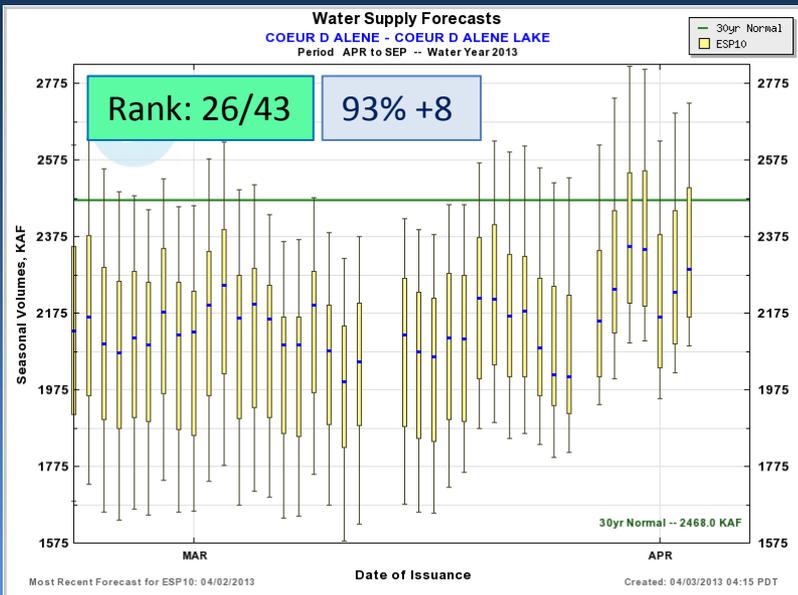
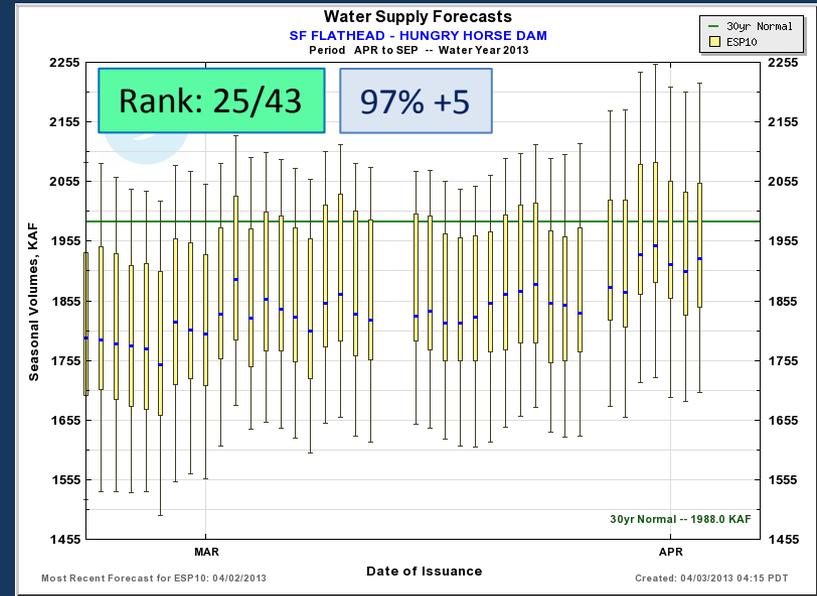
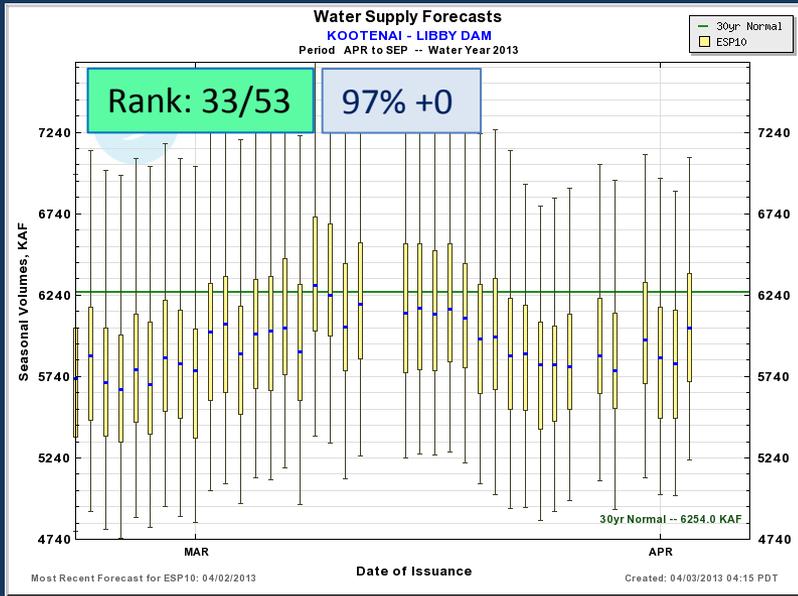
Agency Collaborated

Model States/Snow/Runoff updated  
continuously through month

Compared to 30 yr Runoff Normal  
(1981-2010)

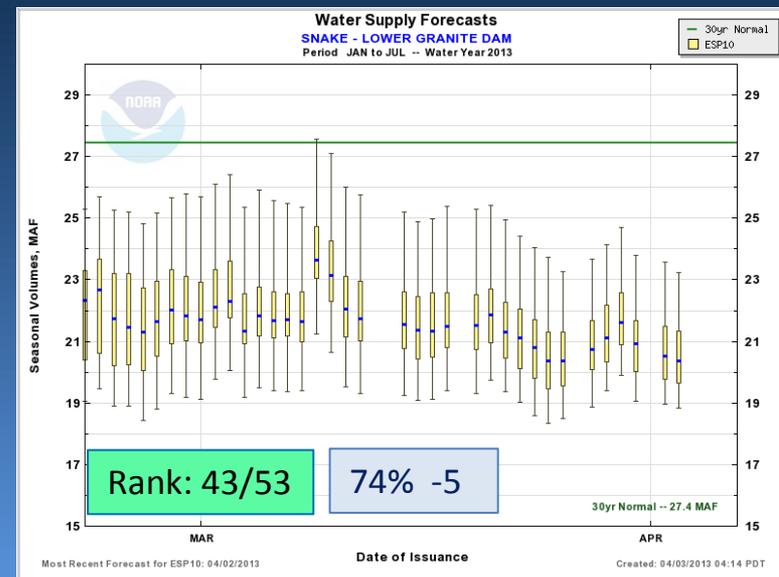
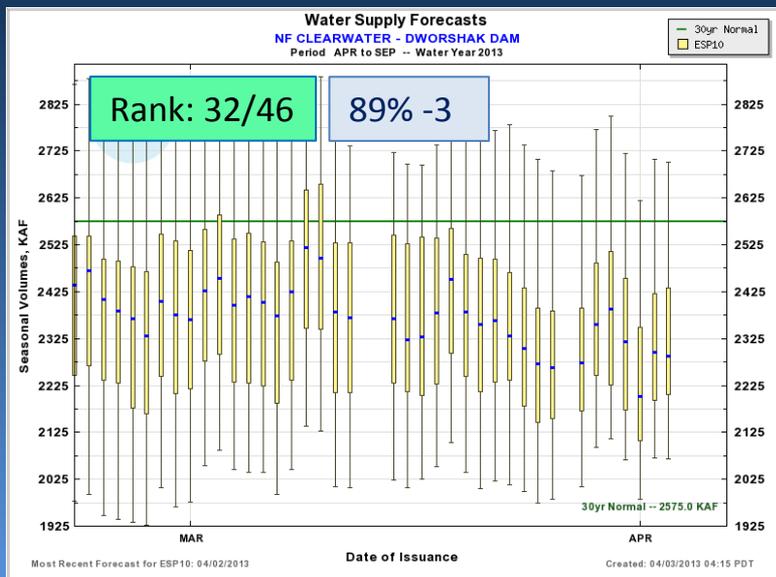
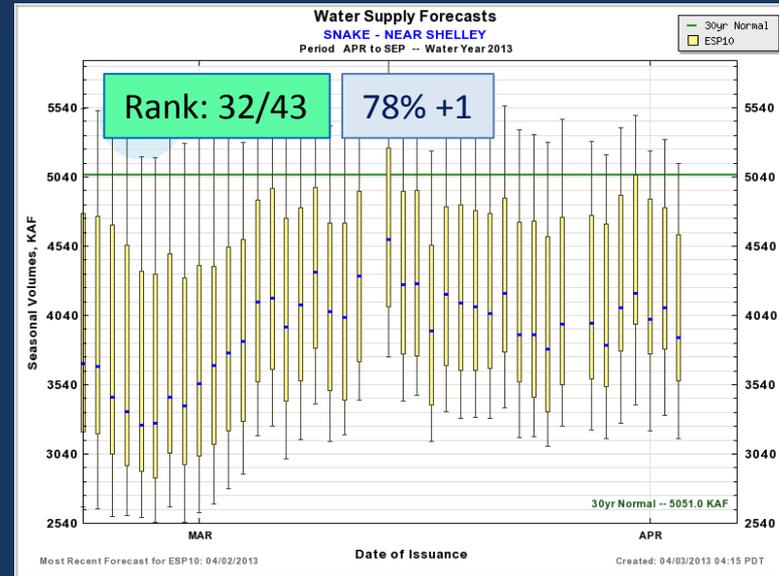
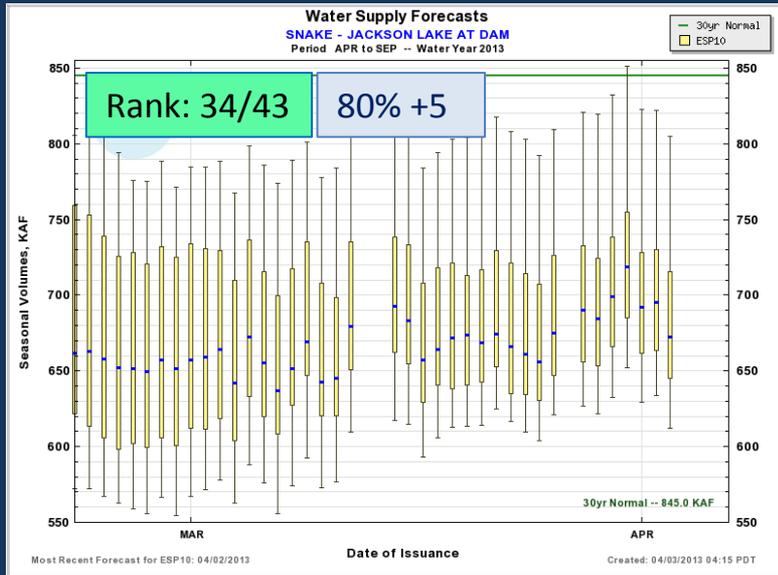


# Water Supply Forecast: Upper Columbia



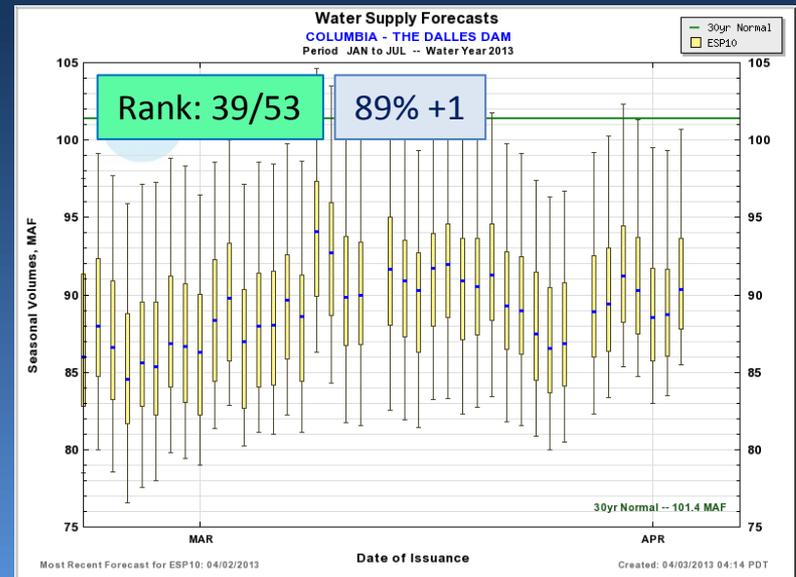
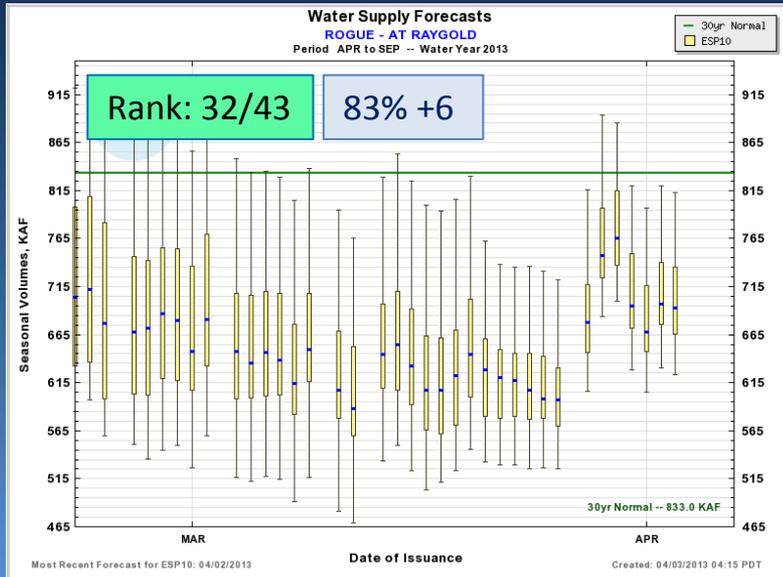
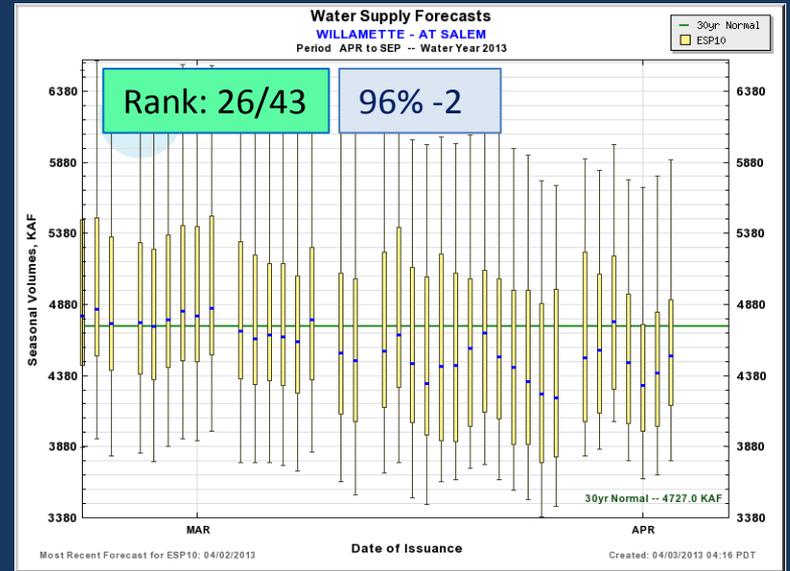
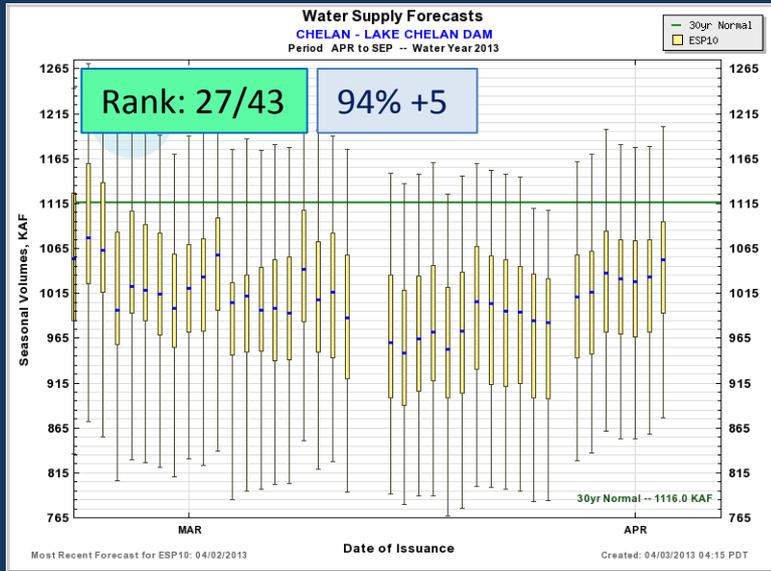


# Water Supply Forecast: Snake





# Water Supply Forecast: Lower Columbia





# New Water Supply Summary Webpage

[http://www.nwrfc.noaa.gov/water\\_supply/wy\\_summary/wy\\_summary.php](http://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php)



- Monthly / Season Precipitation
- Forecast Precipitation Summary
- Monthly Temperature Deviation
- Graphics, Tables, and CSV Formats
- Updated Daily and Date Selectable

Northwest River Forecast Center  
Water Year Summary

Home
Previous Page
Choose Date: 
Current

Water Year Summary Graphics	Current Month Summary Graphics	Forecast Precipitation Summary
Water Year Precipitation Table	Monthly Precipitation Table	Monthly Temperature Table

Seasonal Precipitation

Seasonal Precipitation  
Oct 1, 2012 - Oct 31, 2012

Creation Time: Tuesday, Mar 12, 2013 Northwest River Forecast Center

Monthly Precipitation

Monthly Precipitation  
October 2012

Creation Time: Wednesday, Apr 3, 2013 Northwest River Forecast Center

Temperature Departure

Temperature Departure  
October 2012

Creation Date: Wednesday, Apr 3, 2013 Northwest River Forecast Center

Seasonal Precipitation

Seasonal Precipitation  
Oct 1, 2012 - Nov 30, 2012

Creation Time: Tuesday, Mar 12, 2013 Northwest River Forecast Center

Monthly Precipitation

Monthly Precipitation  
November 2012

Creation Time: Wednesday, Apr 3, 2013 Northwest River Forecast Center

Temperature Departure

Temperature Departure  
November 2012

Creation Date: Wednesday, Apr 3, 2013 Northwest River Forecast Center

Seasonal Precipitation

Seasonal Precipitation  
Oct 1, 2012 - Dec 31, 2012

Creation Time: Tuesday, Mar 12, 2013 Northwest River Forecast Center

Monthly Precipitation

Monthly Precipitation  
December 2012

Creation Time: Wednesday, Apr 3, 2013 Northwest River Forecast Center

Temperature Departure

Temperature Departure  
December 2012

Creation Date: Wednesday, Apr 3, 2013 Northwest River Forecast Center



# New Water Supply Summary Webpage



- Closer representation of ESP model forcings
- Uses larger gage network and more extensive QC
- Based on 1971-2000 PRISM normals  
1981-2010 PRISM updates for US only  
2013 budget does not include update for BC
- Both pages displayed side by side for **limited time**
- *New method is to old, as apples are to oranges*



# NWRFC Water Supply Webpage

[http://www.nwrfc.noaa.gov/water\\_supply/ws\\_schd.cgi](http://www.nwrfc.noaa.gov/water_supply/ws_schd.cgi)



## 2013 Schedule for *Live Water Supply Briefings*

Jan	Feb	Mar	Apr	May	Jun
<b>10th</b>	<b>7th</b>	<b>7th</b>	<b>4th</b>	<b>9th</b>	<b>TBD</b>

*All presentations held at 10am PDT/PST, unless noted otherwise*

**[Click here for Registration Information](#)**

**[Archive of Previous Briefings](#)**

<http://www.nwrfc.noaa.gov/presentations/presentations.cgi>

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