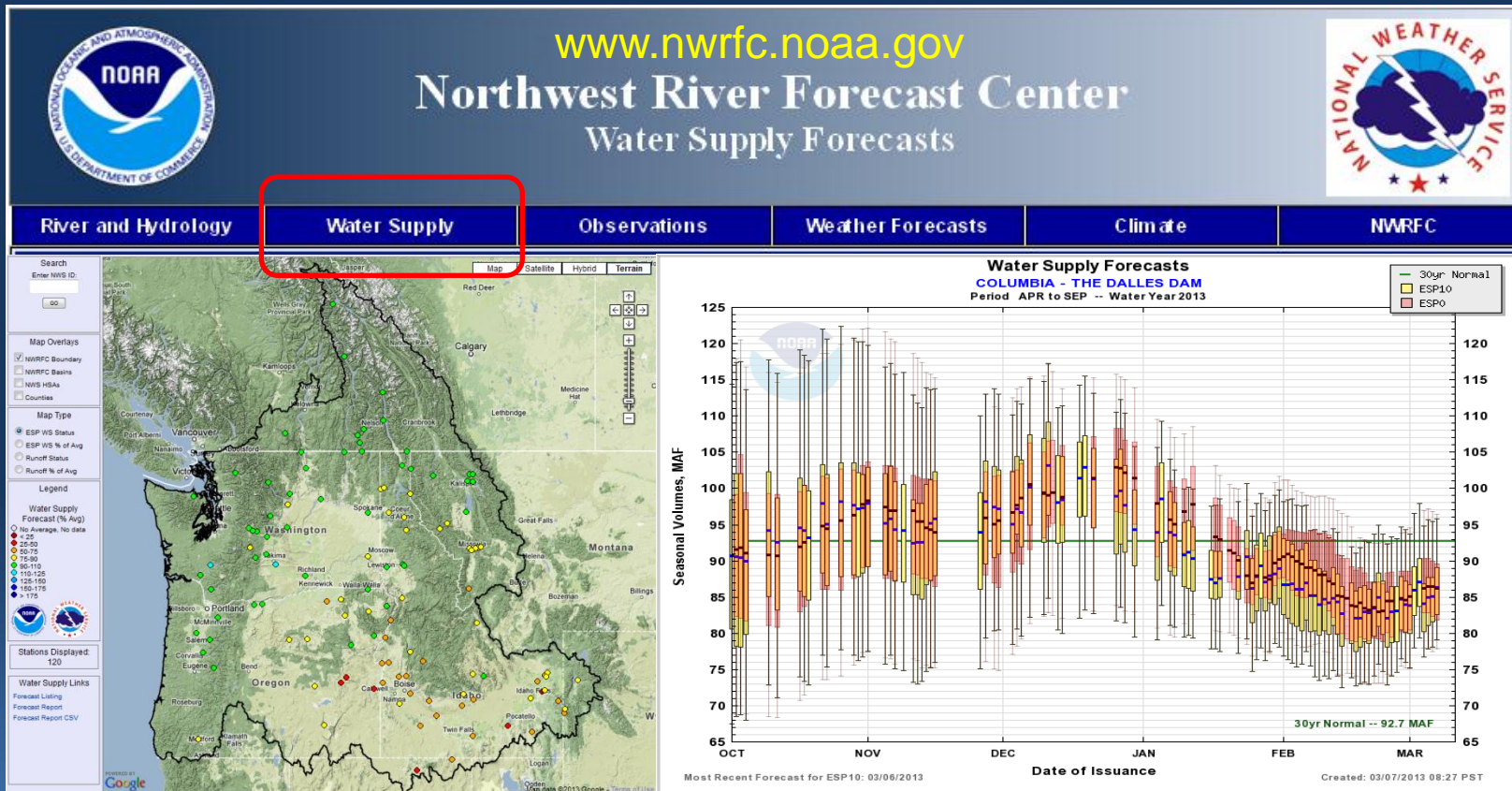


March 2013 Water Supply Briefing



Steve King, NWRFC
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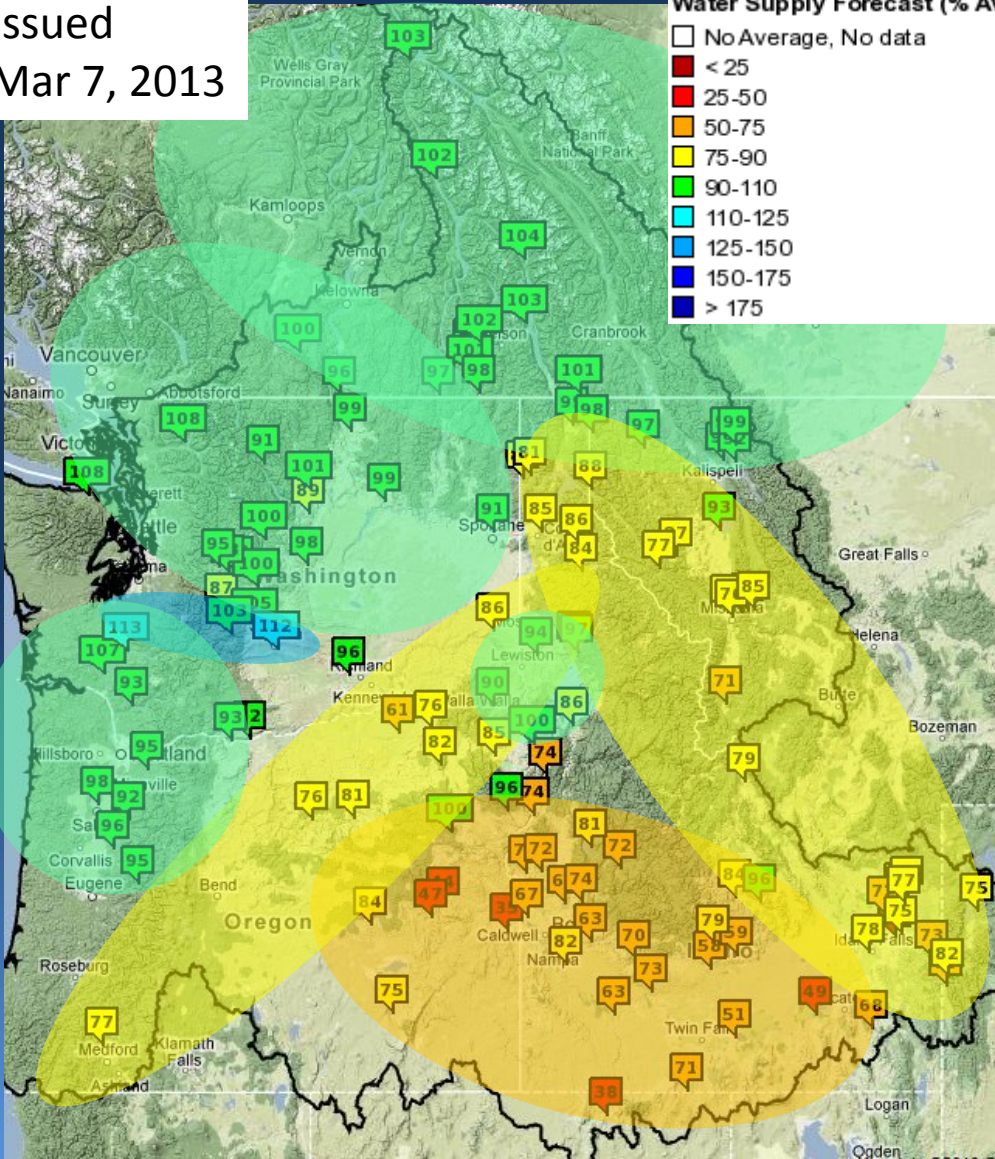
Water Supply Summary



Issued
Mar 7, 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



Most Apr-Sep forecasts are near or below normal

Generally, forecast volumes are similar to what they were in early February

Conditions are generally driest in the south-eastern basins

Wettest forecasts (above 105%) are in western Washington.



Observed Conditions



Precipitation

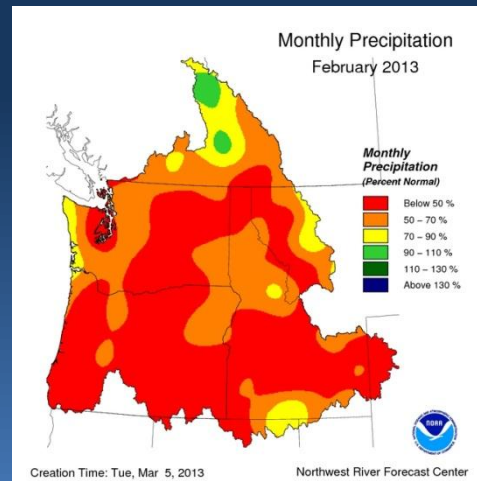
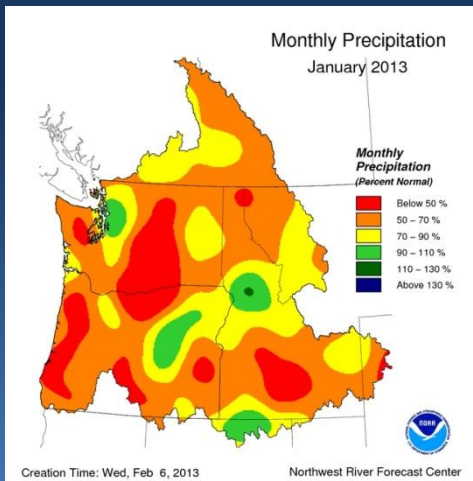
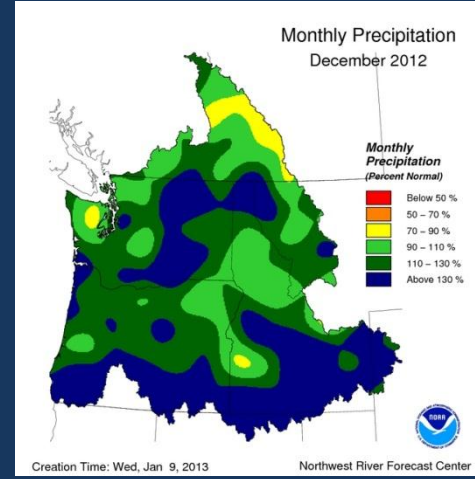
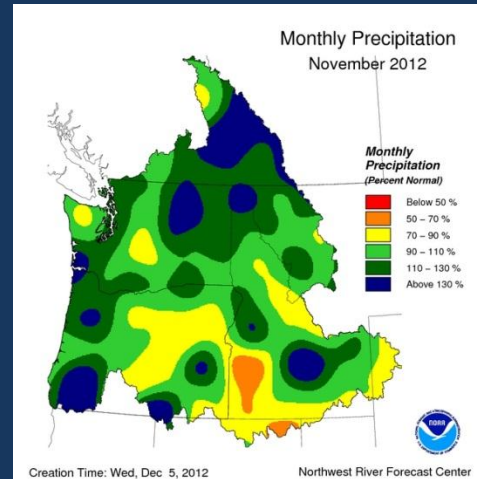
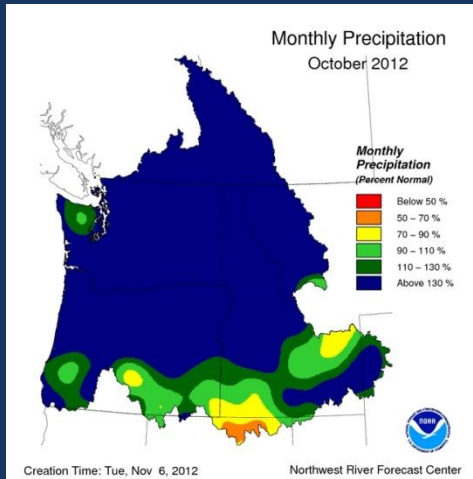
Temperature

Runoff

Snowpack



Observed Precipitation

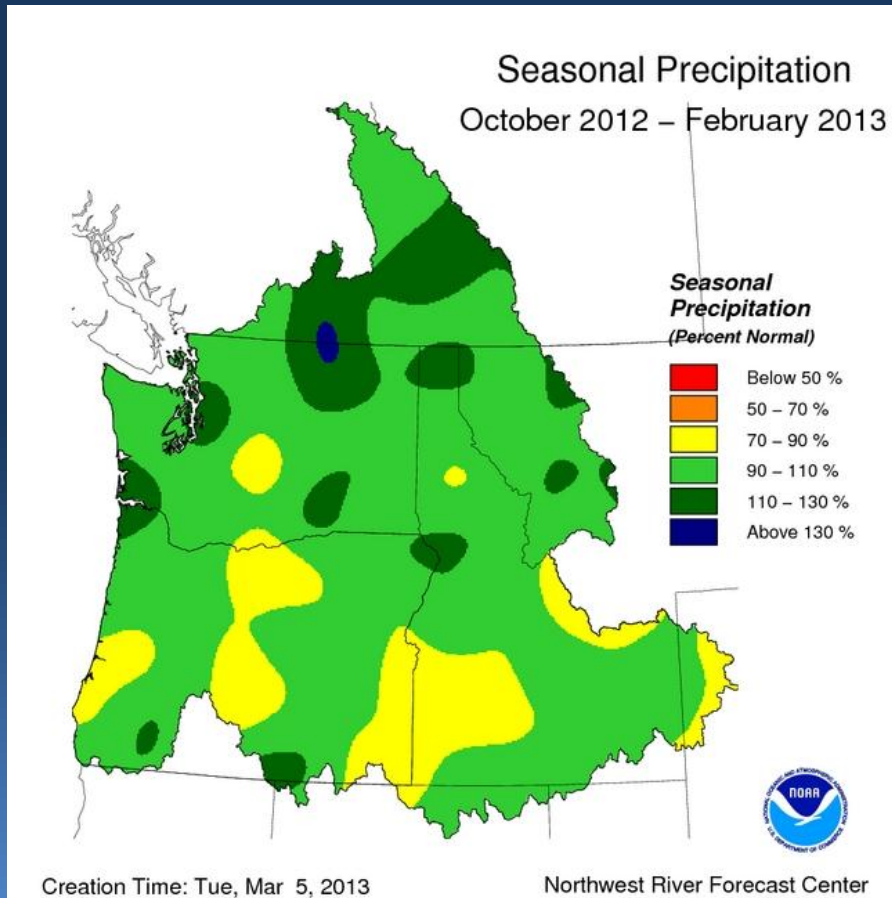


Observed Precipitation Columbia River Above the Dalles

| | | | |
|-----|------|------|------|
| Oct | 2012 | 3.13 | 189% |
| Nov | 2012 | 2.97 | 105% |
| Dec | 2012 | 3.61 | 121% |
| Jan | 2013 | 1.83 | 66% |
| Feb | 2013 | 1.16 | 55% |



Observed Precipitation

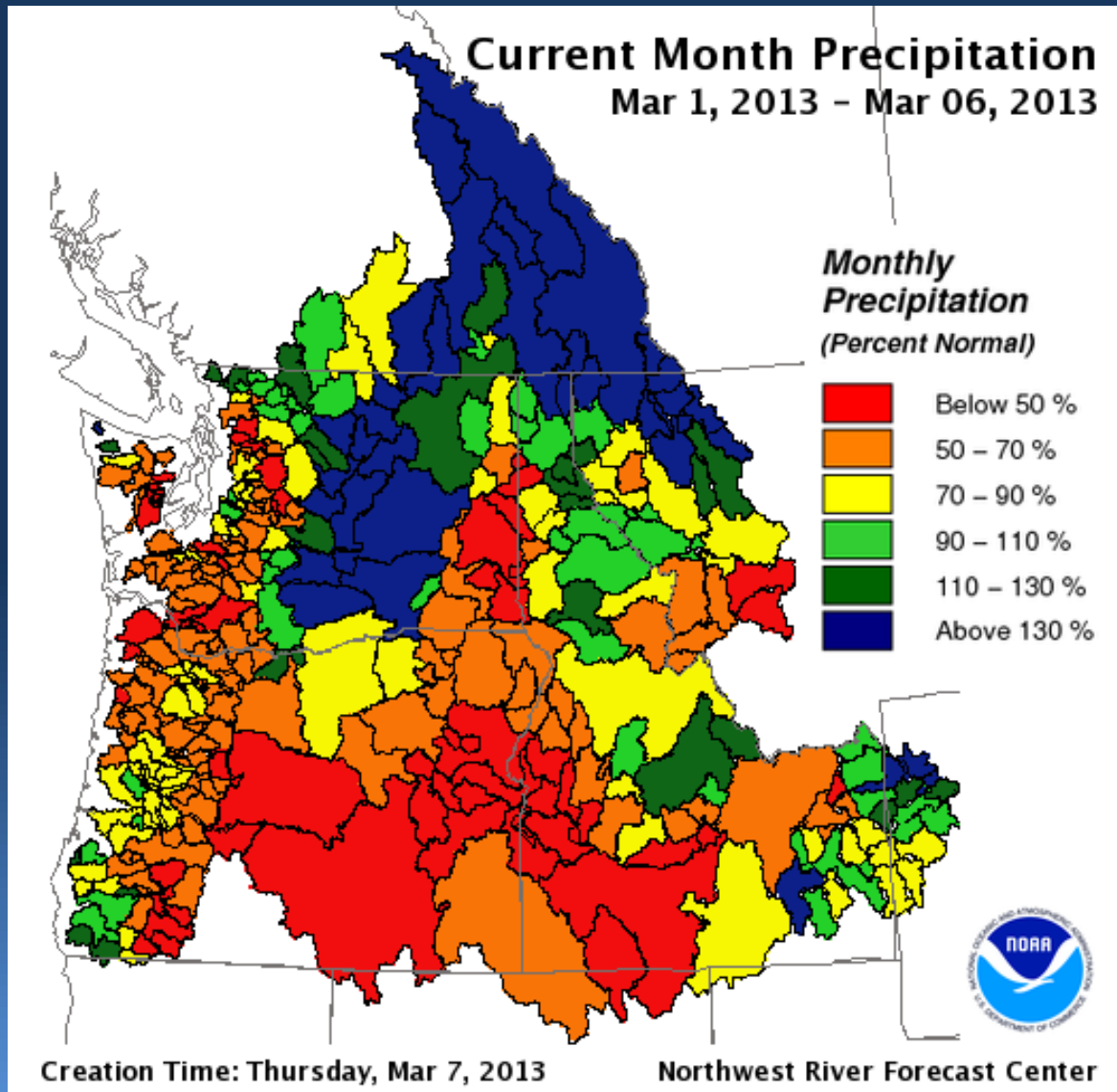


Observed Precipitation Water Year to Date Columbia River Above the Dalles

| | | |
|---------|------|------|
| Oct-Oct | 3.13 | 189% |
| Oct-Nov | 6.1 | 136% |
| Oct-Dec | 9.7 | 130% |
| Oct-Jan | 11.5 | 112% |
| Oct-Feb | 12.7 | 103% |

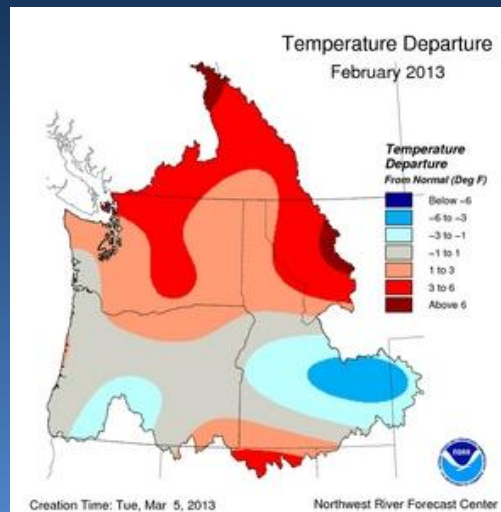
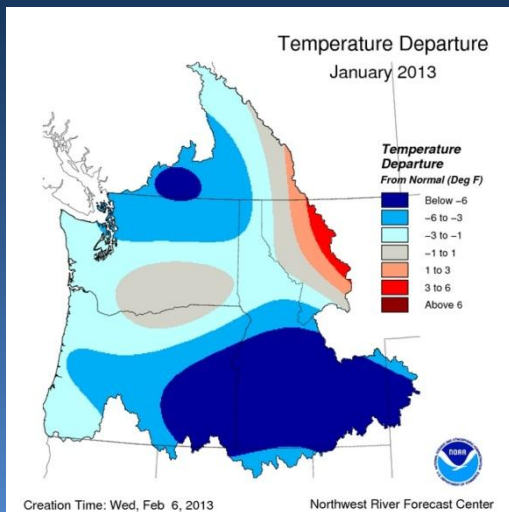
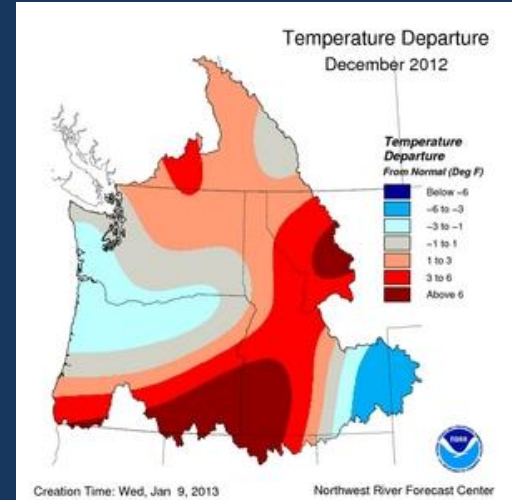
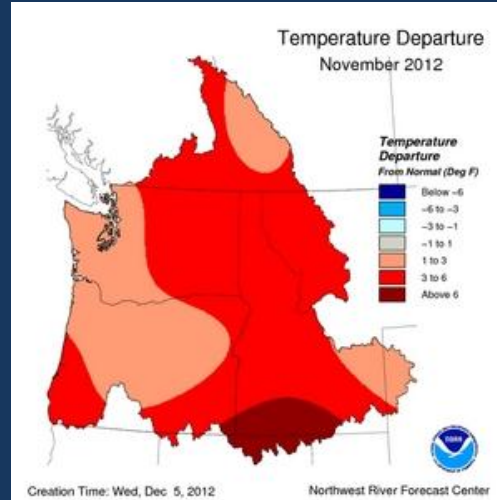
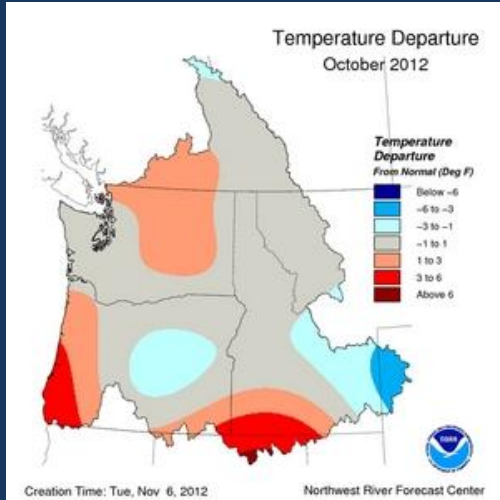


Observed Precipitation





Temperature Departures

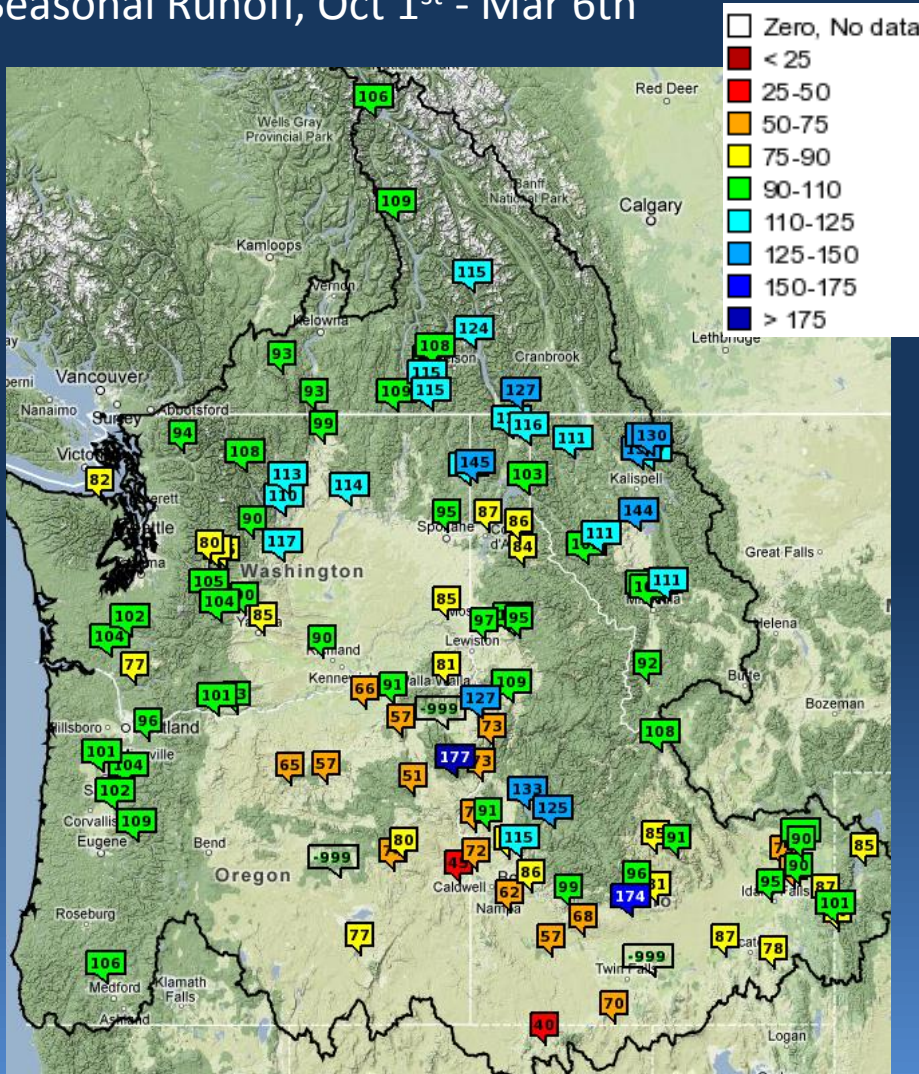




Current Adjusted Runoff Conditions



Seasonal Runoff, Oct 1st - Mar 6th



Percent of Normal

Oct-Dec Jan-Feb

| | | |
|---------------|-----|----|
| MICA | 107 | 99 |
| LIBBY | 121 | 91 |
| GRAND COULEE | 131 | 90 |
| DWORSHAK | 141 | 69 |
| LOWER GRANITE | 104 | 67 |
| THE DALLES | 119 | 83 |

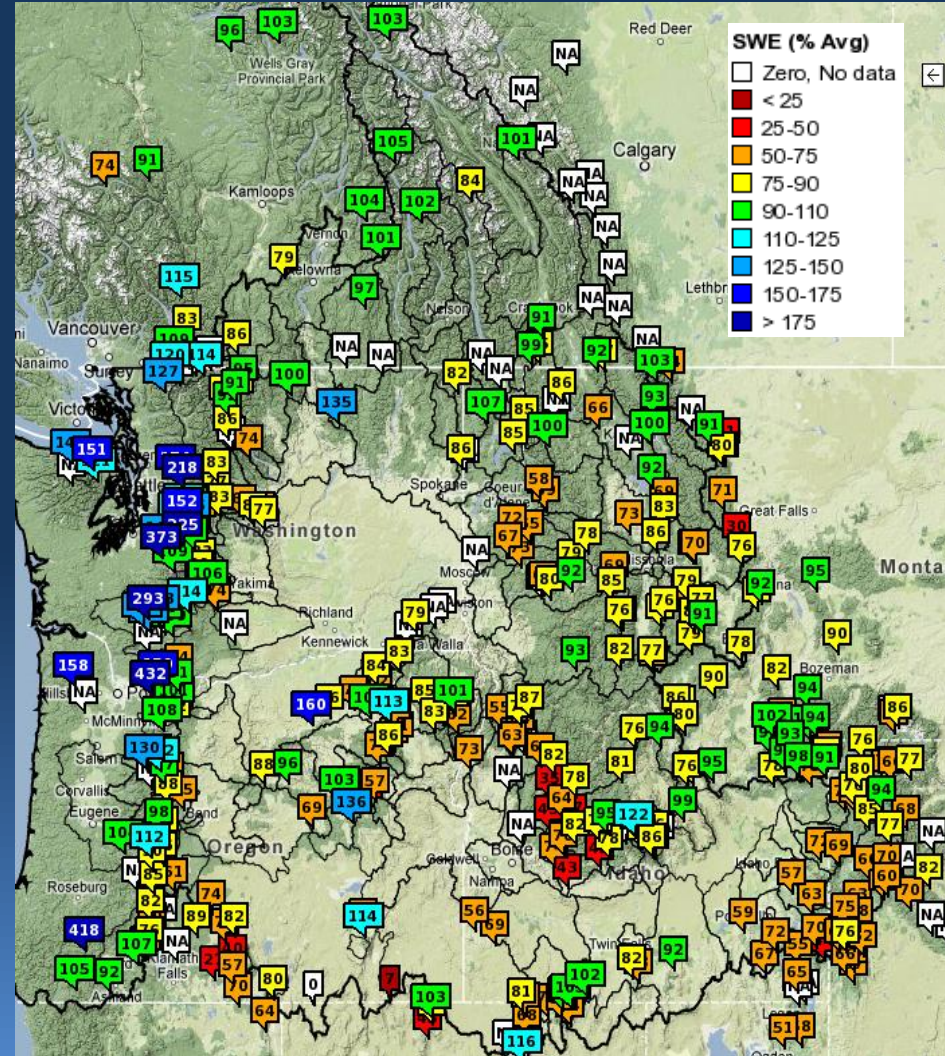
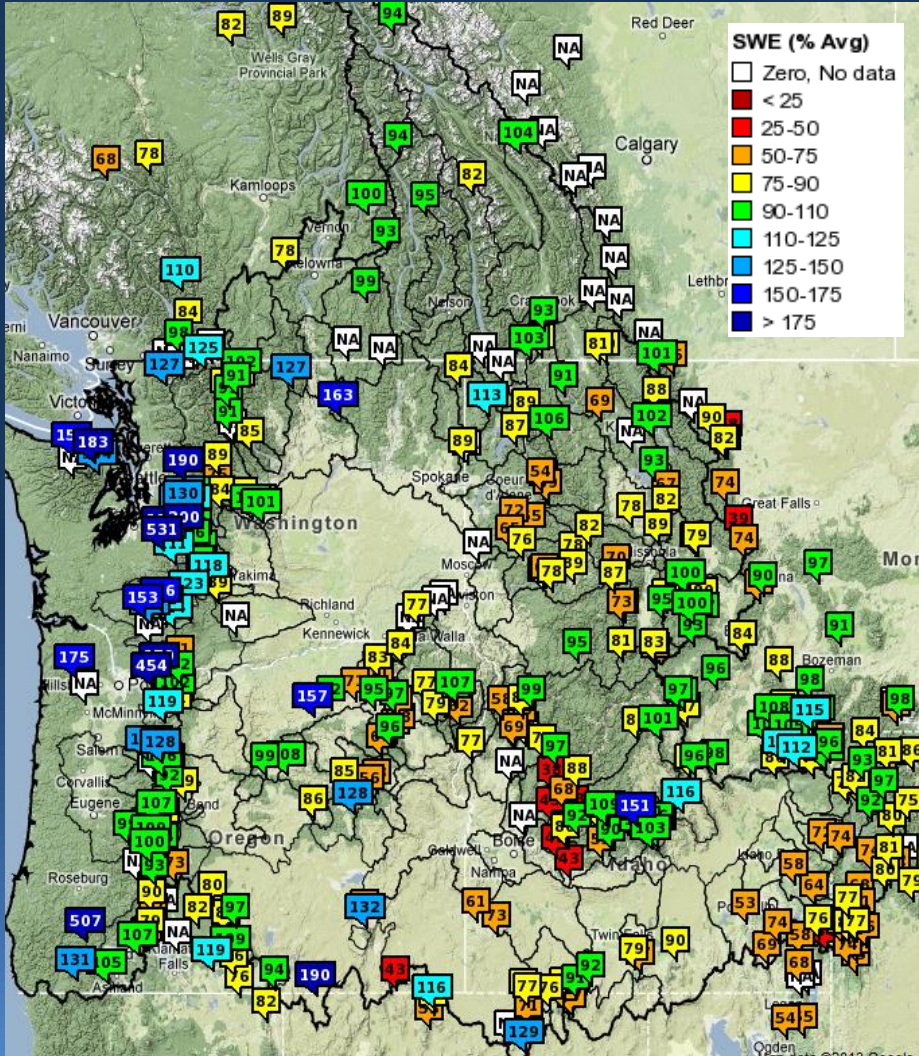


Current Snow Conditions



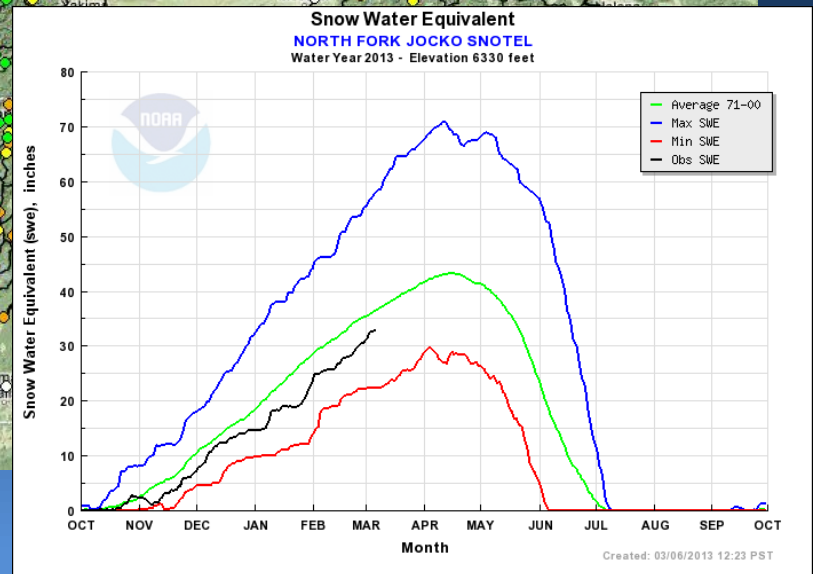
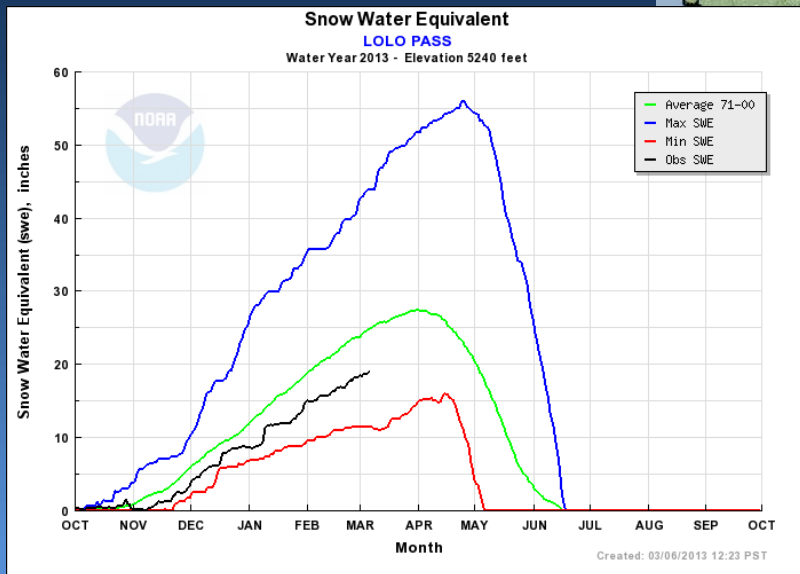
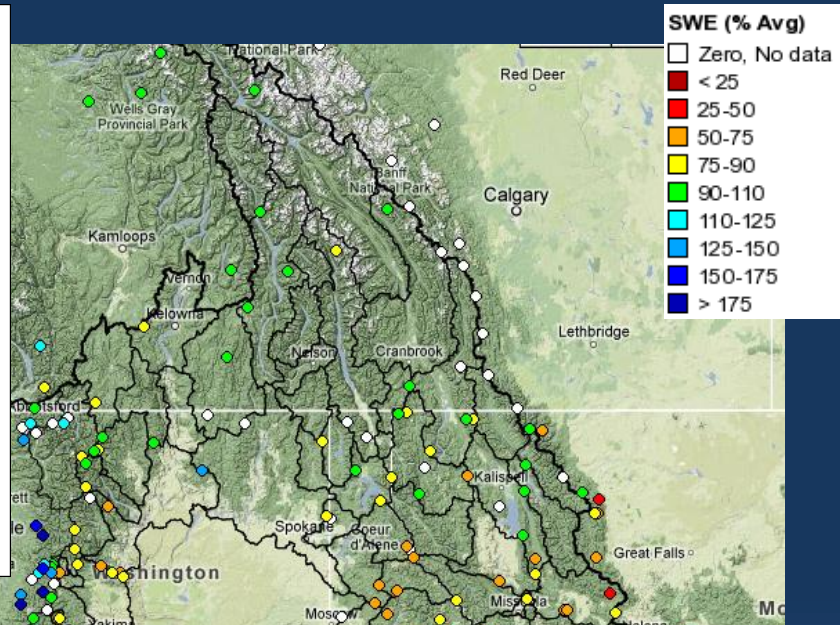
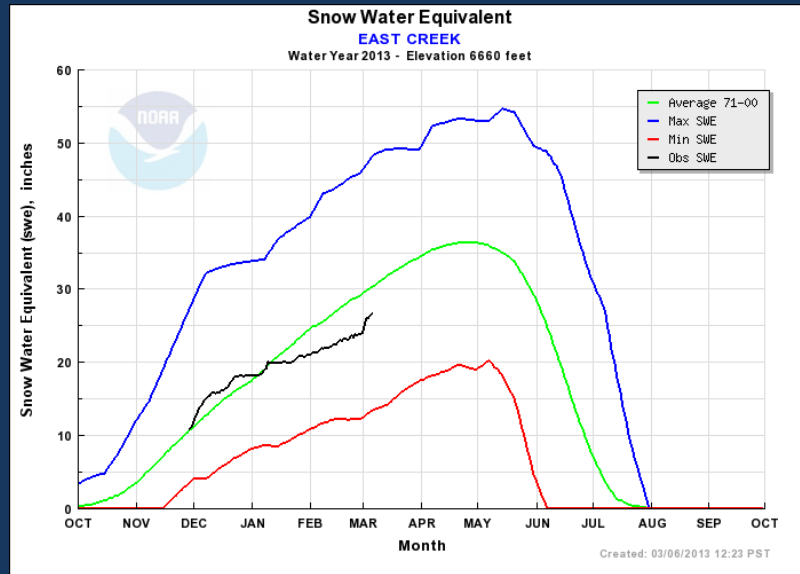
Feb 6, 2013

Mar 6, 2013



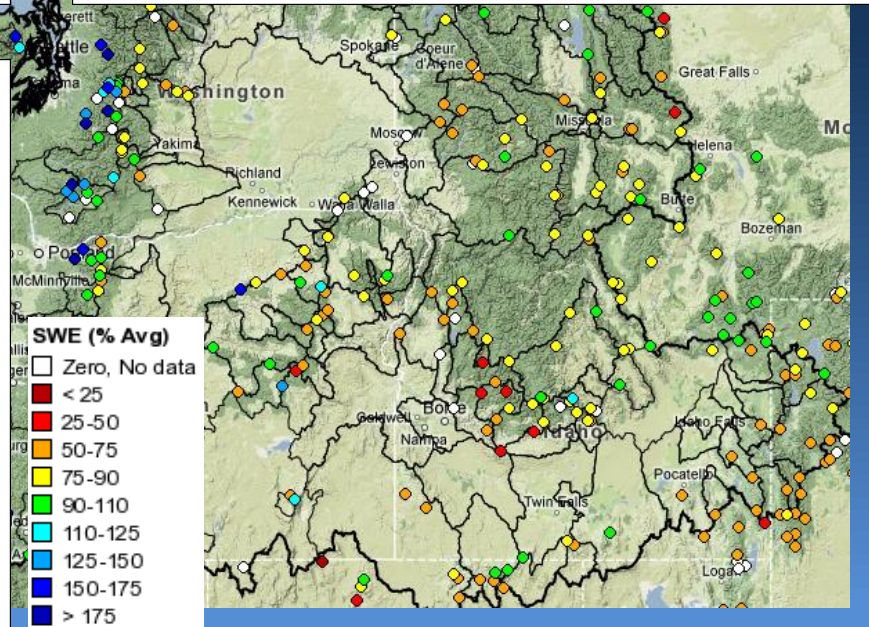
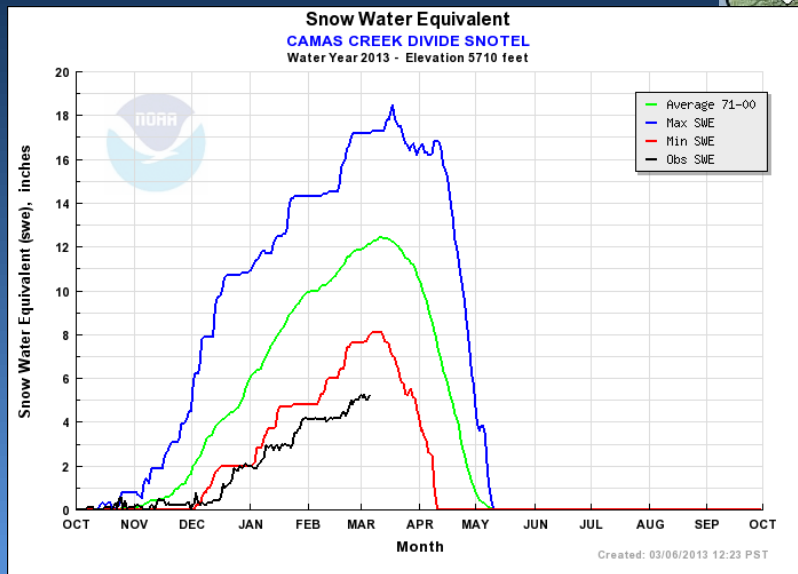
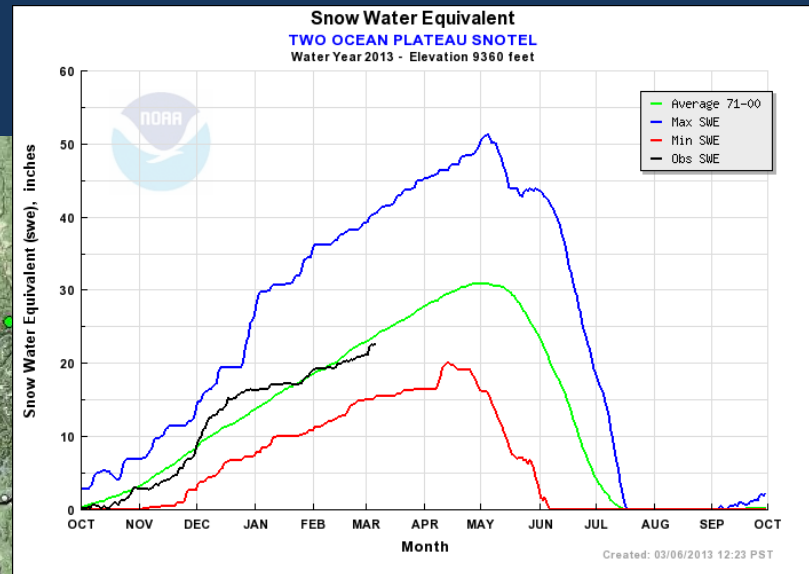
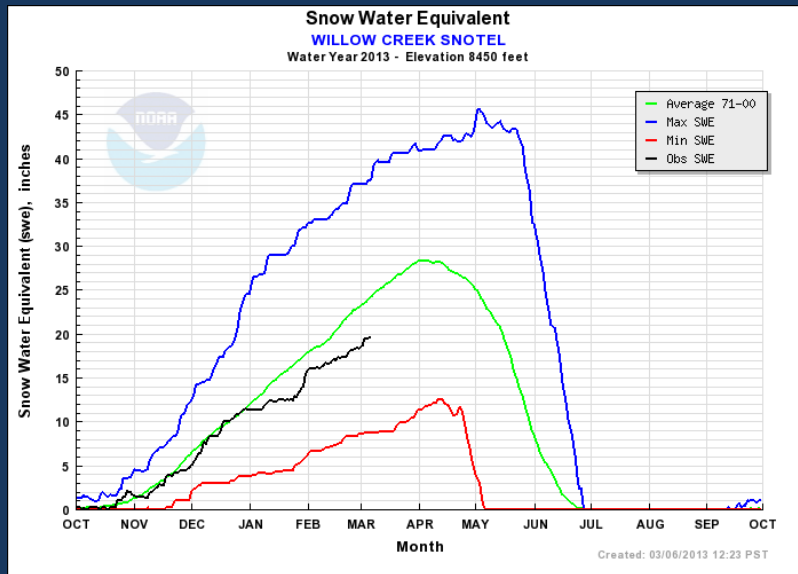


Upper Columbia Snow Conditions





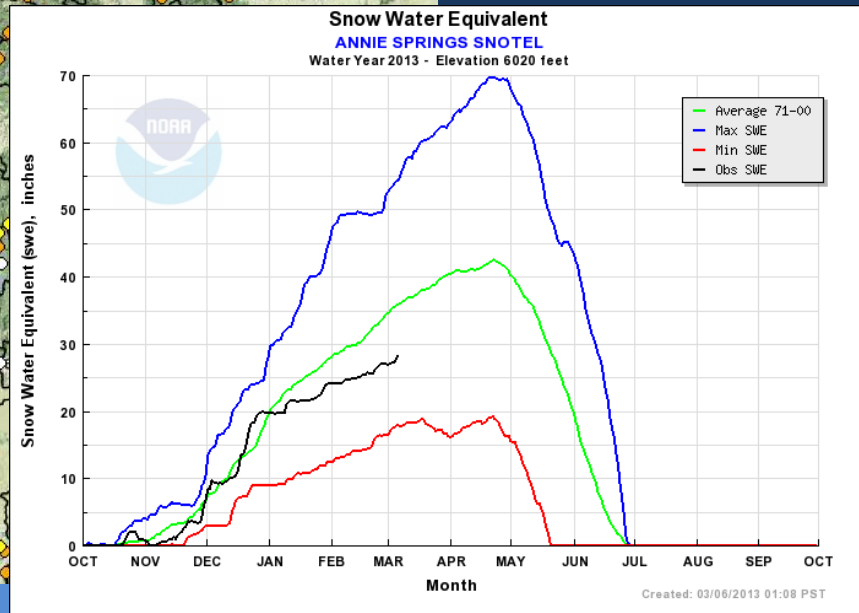
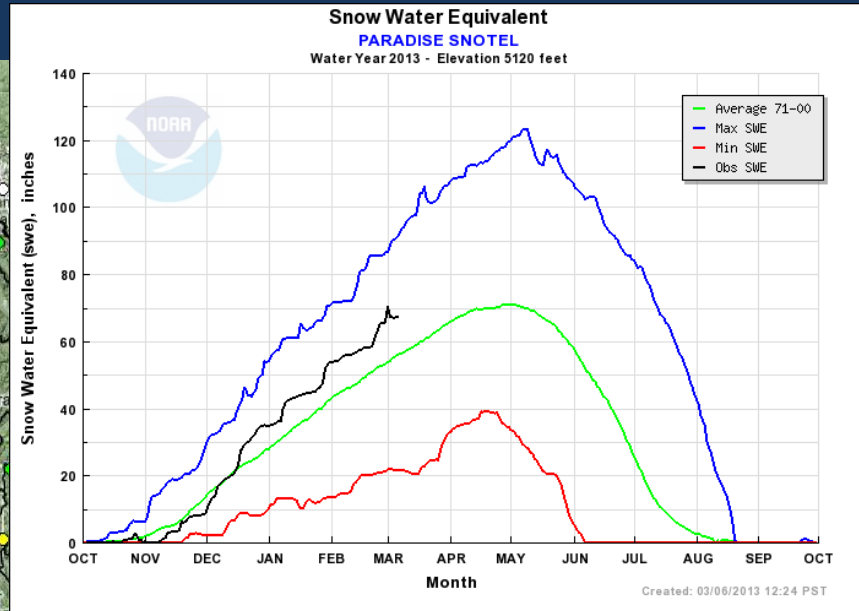
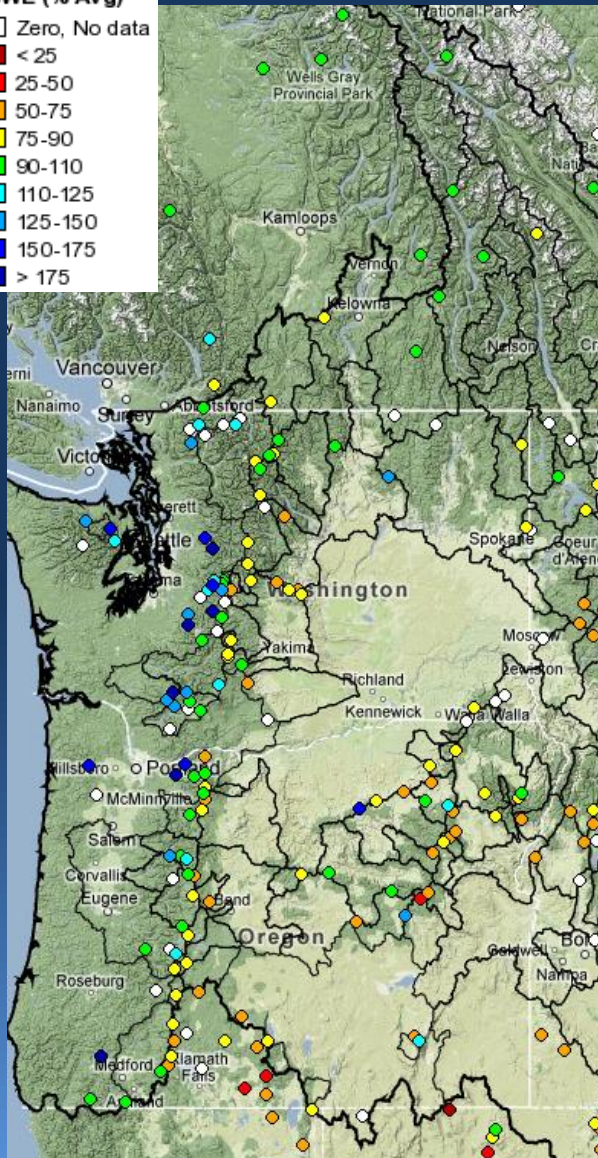
Snake River Snow Conditions



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



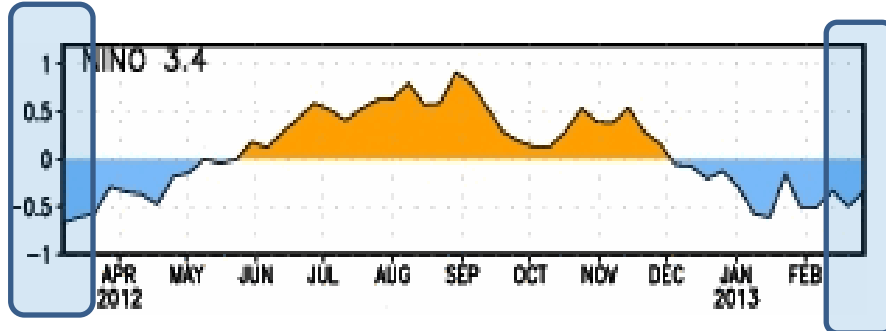
Enso: Observed and Forecast

SST Anomaly (Deg C)

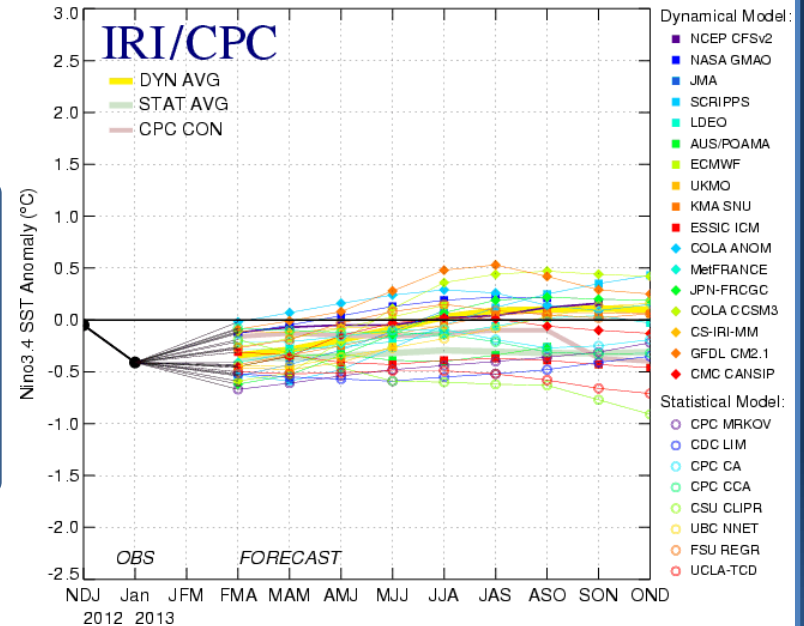


Latest observed: SST 3.4 ~ -0.3 Deg C

Latest calculated ONI 3.4 = -0.3 Deg C
ONI = 3 month running mean of SST (Nov-Jan)



Mid-Feb 2013 Plume of Model ENSO Predictions



CPC Synopsis: ENSO-neutral conditions favored through spring 2013.

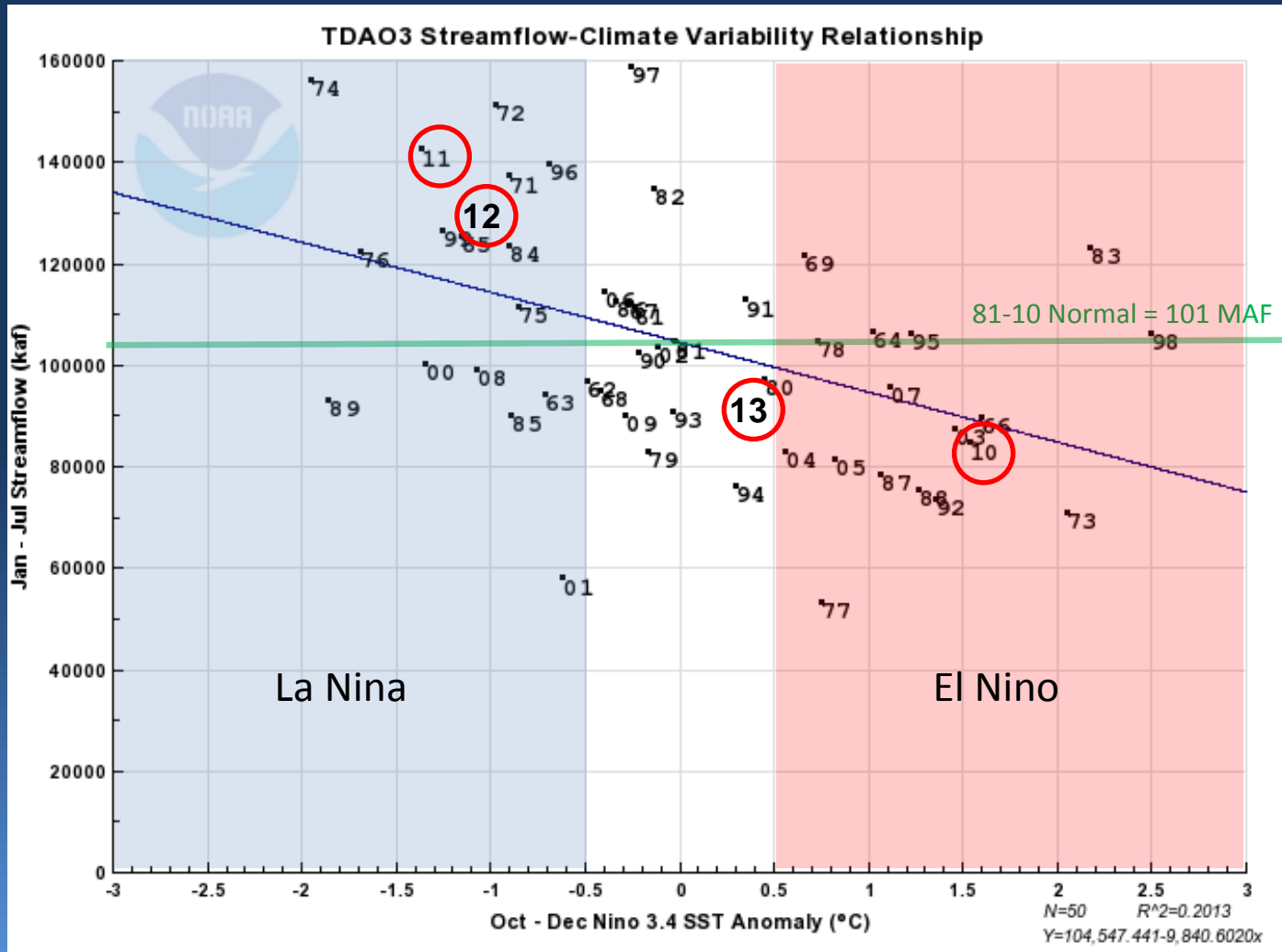
Source: Climate Prediction Center Weekly ENSO Update

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

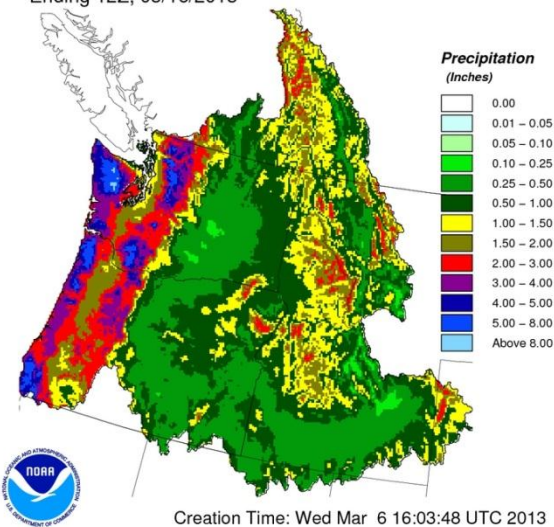




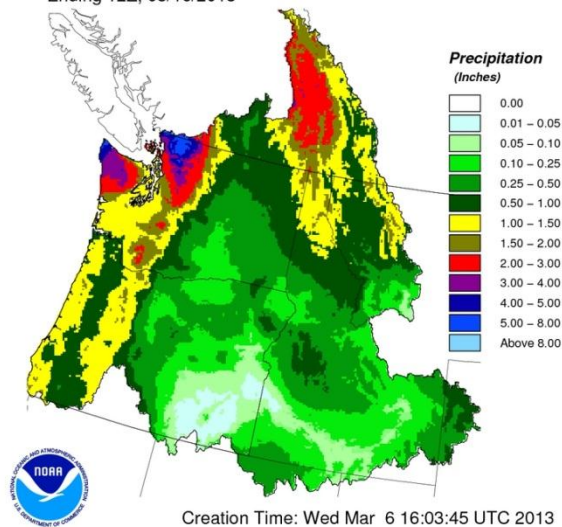
ESP 10 Day Precipitation Forecast



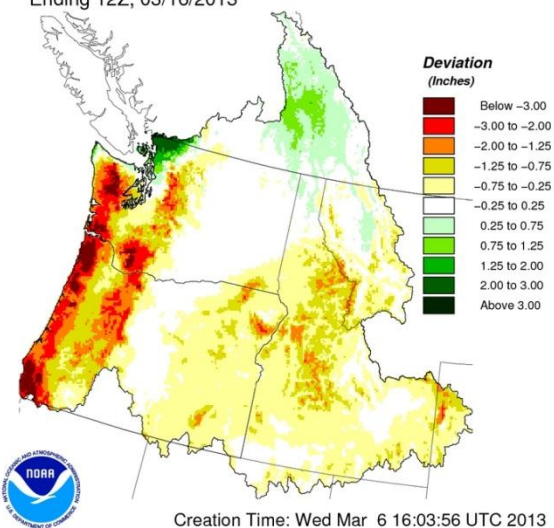
10 Day Precipitation Climatology
Ending 12Z, 03/16/2013



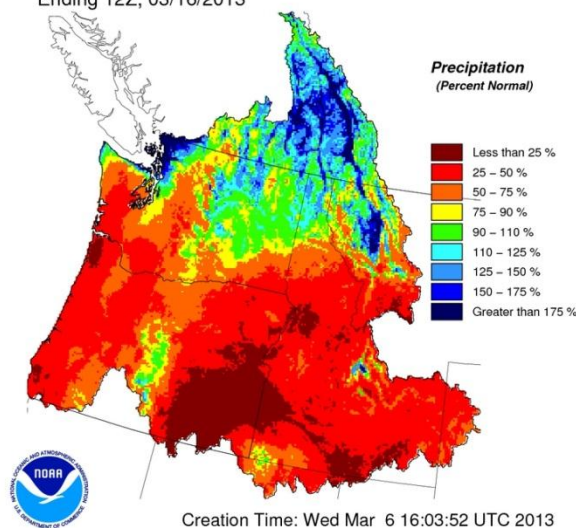
10 Day QPF
Ending 12Z, 03/16/2013



10 Day QPF (Deviation from Climatology)
Ending 12Z, 03/16/2013



10 Day QPF (Percent of Climatology)
Ending 12Z, 03/16/2013

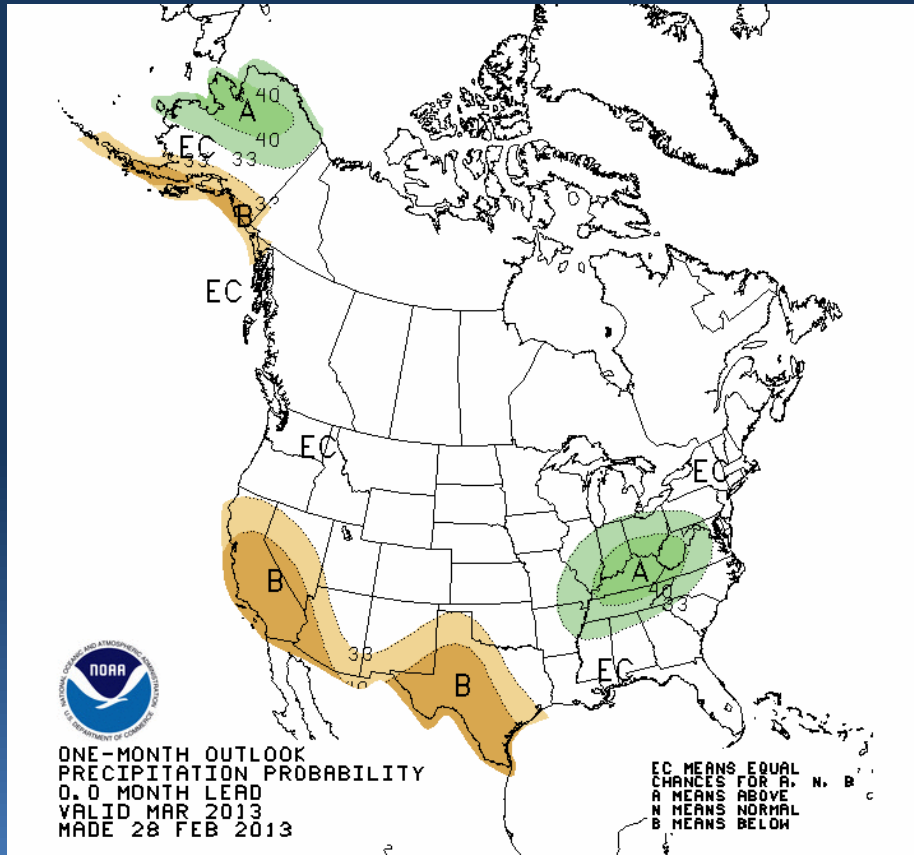




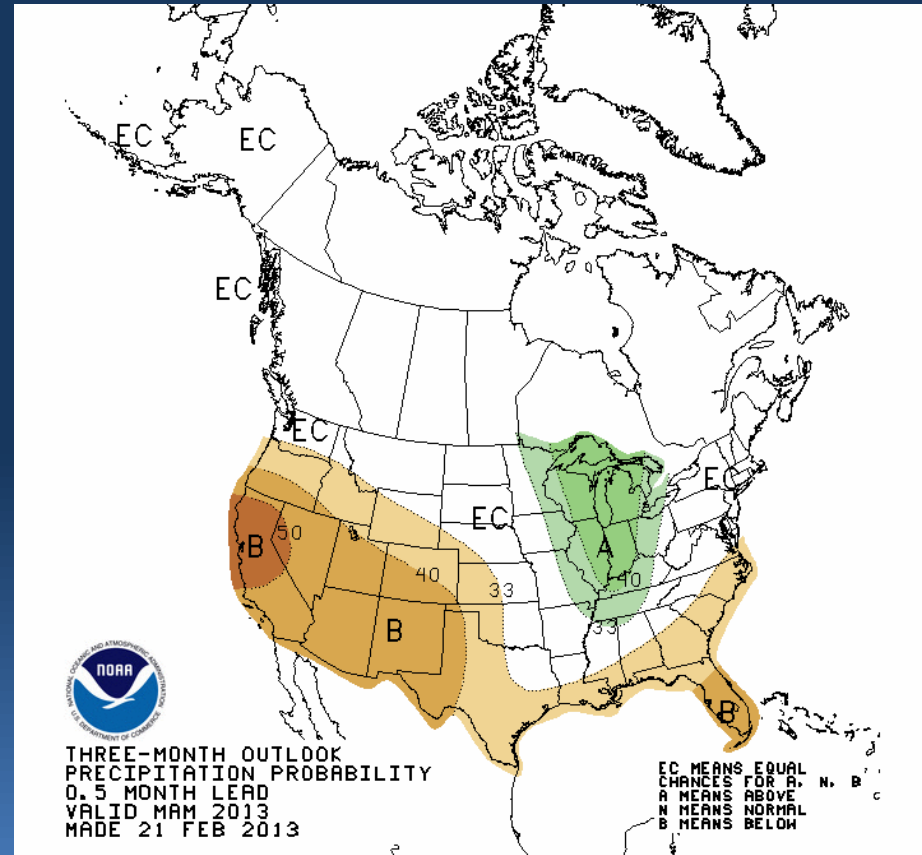
Climate Outlook: Precipitation



Current Month Outlook



Three Month Outlook

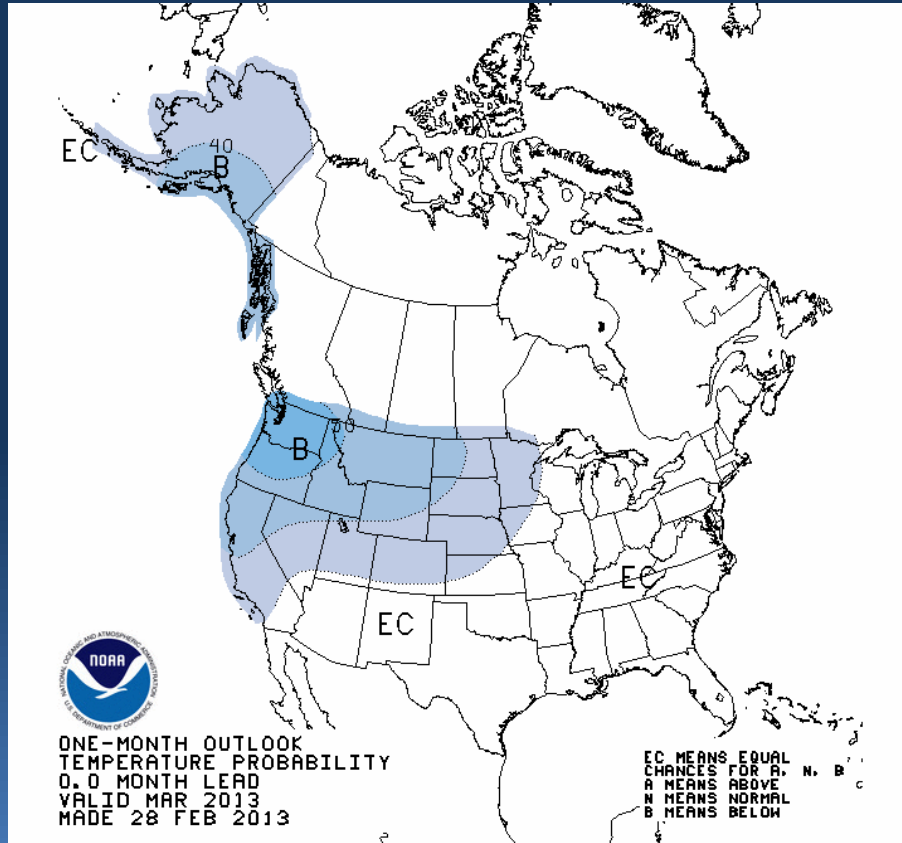




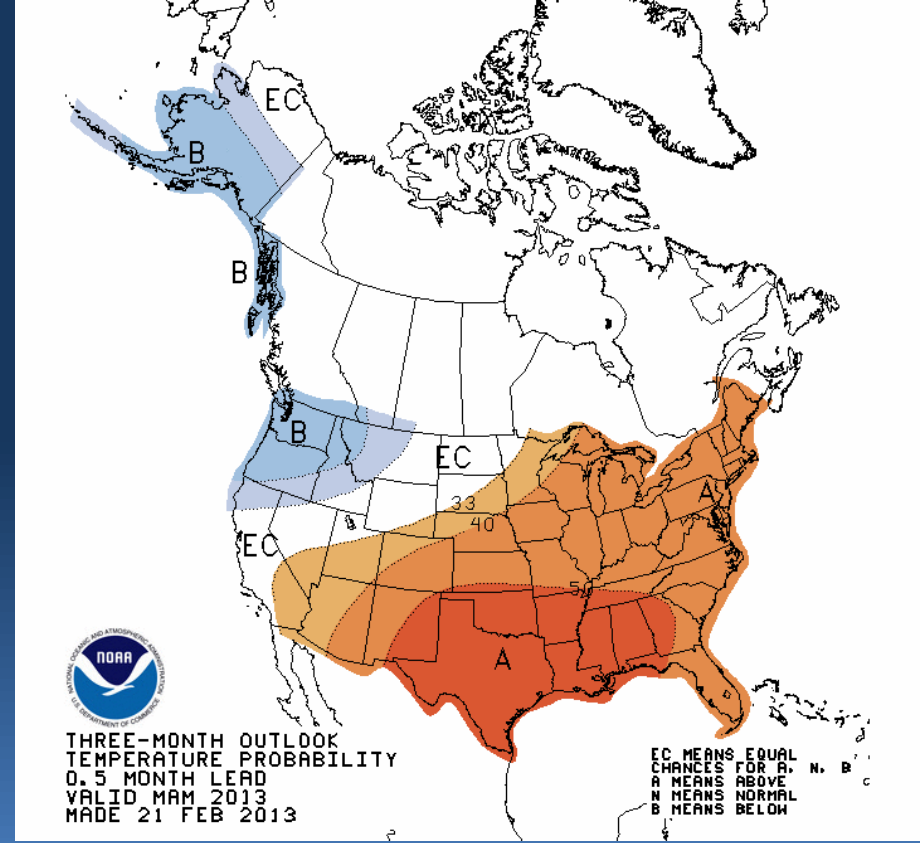
Climate Outlook: Temperature



Current Month Outlook



Three Month Outlook



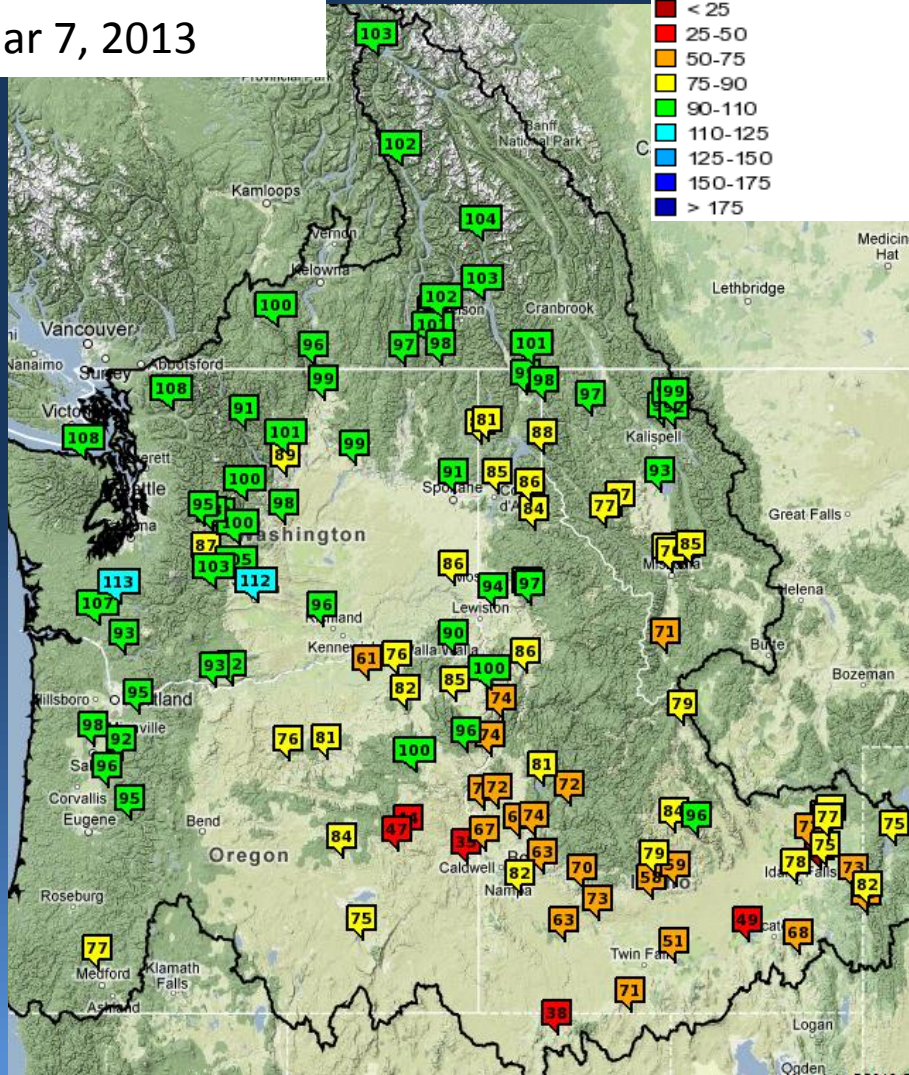
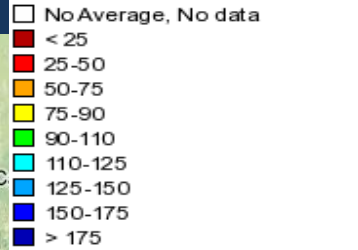


Water Supply Forecasts



Issued
Mar 7, 2013

Water Supply Forecast (% Avg)



Ensemble Streamflow Procedure
Mar 7 Issuance Date
Mar 6 Ensemble Date

Official Forecasts include 10 days
of forecast precipitation

NWRFC offers 3 and 0 day QPF
(limited network and releases)

Forecasts updated weekly/daily
All 10 day forecasts are 'official NWS'

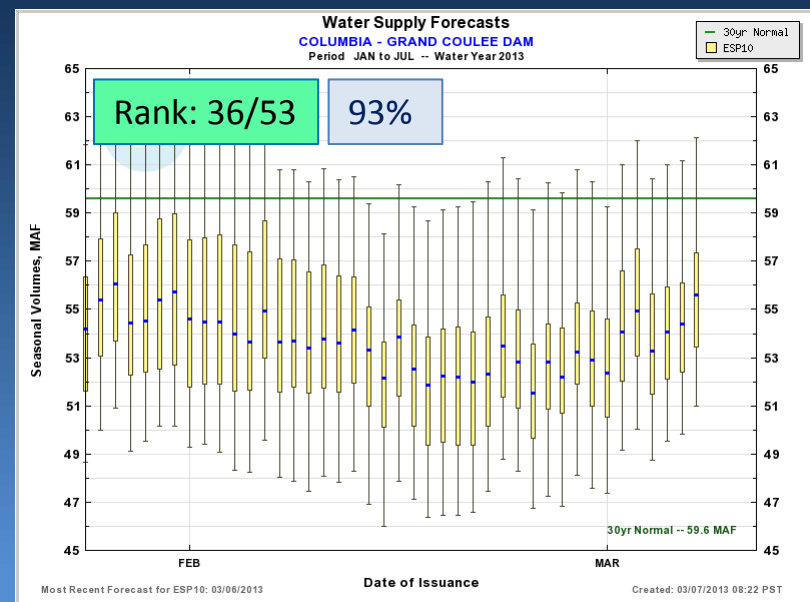
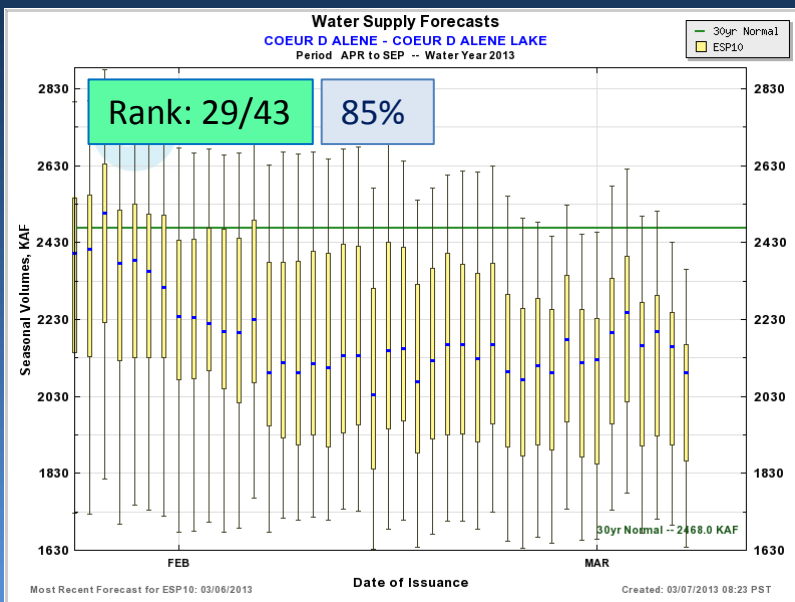
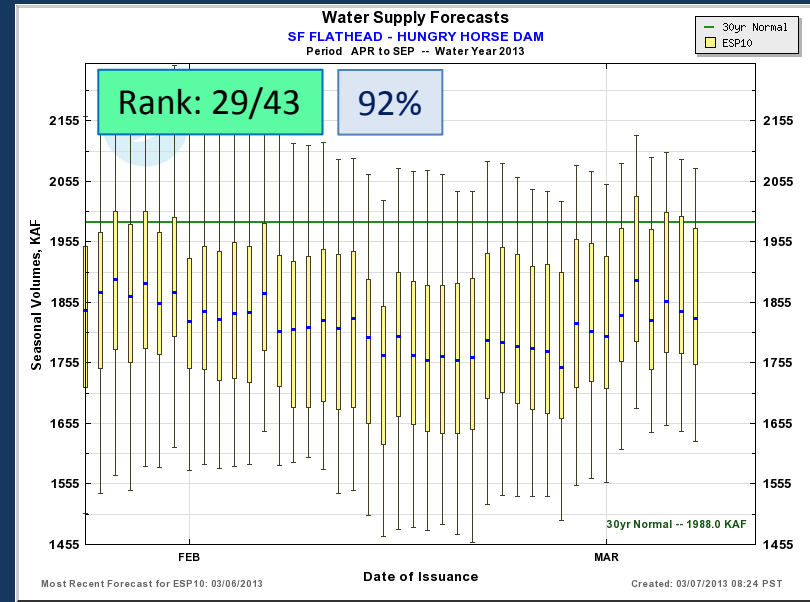
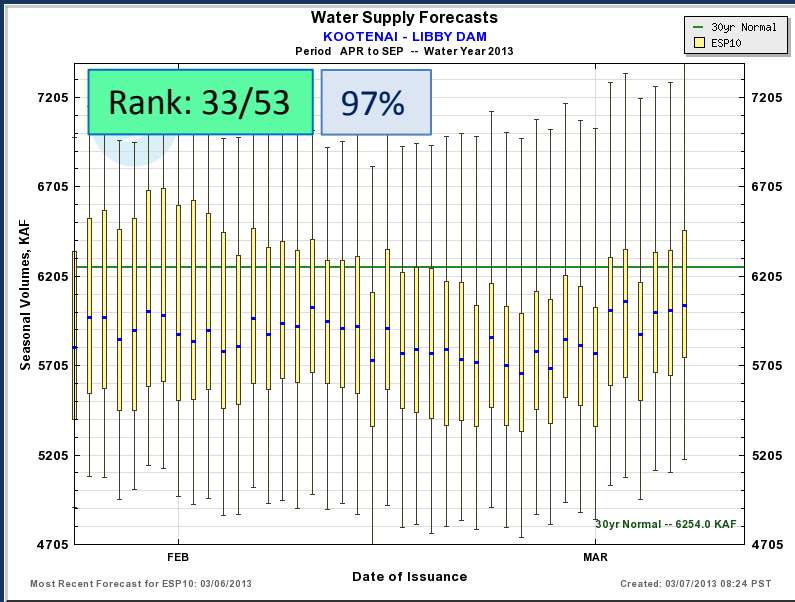
Agency Collaborated

Model States/Snow/Runoff updated
continuously through month

Compared to 30 yr Runoff Normal
(1981-2010)

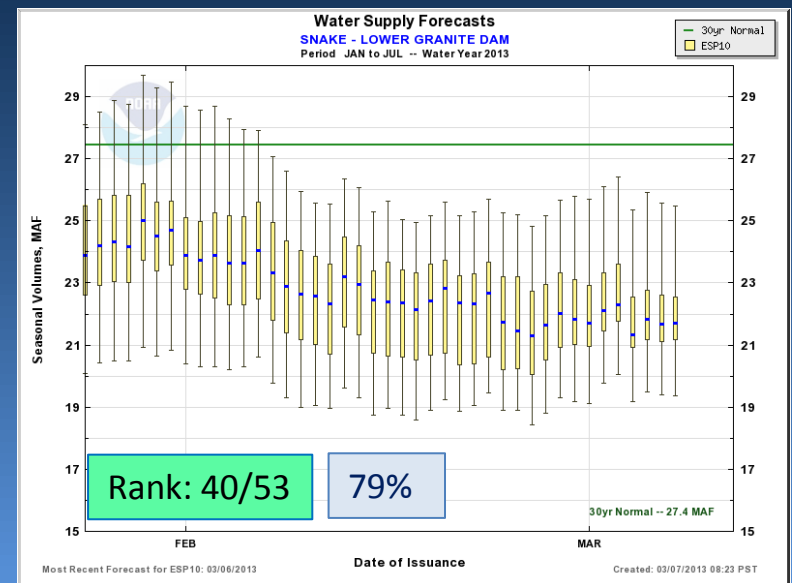
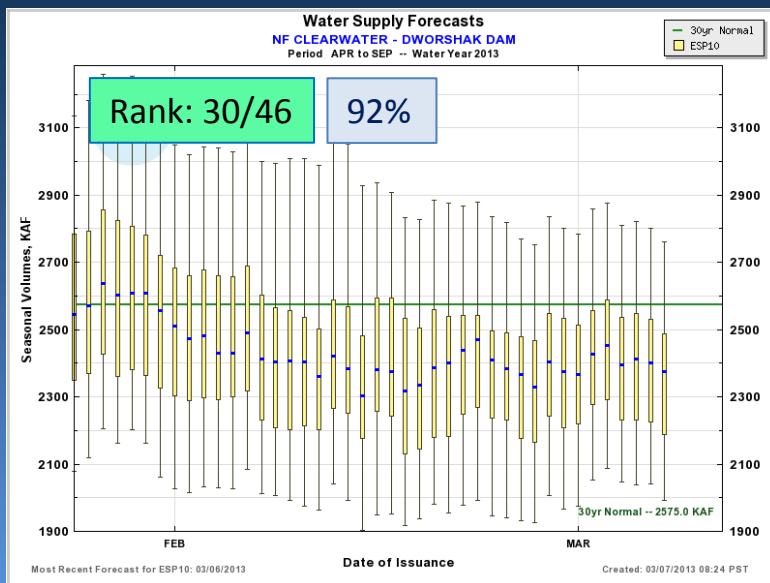
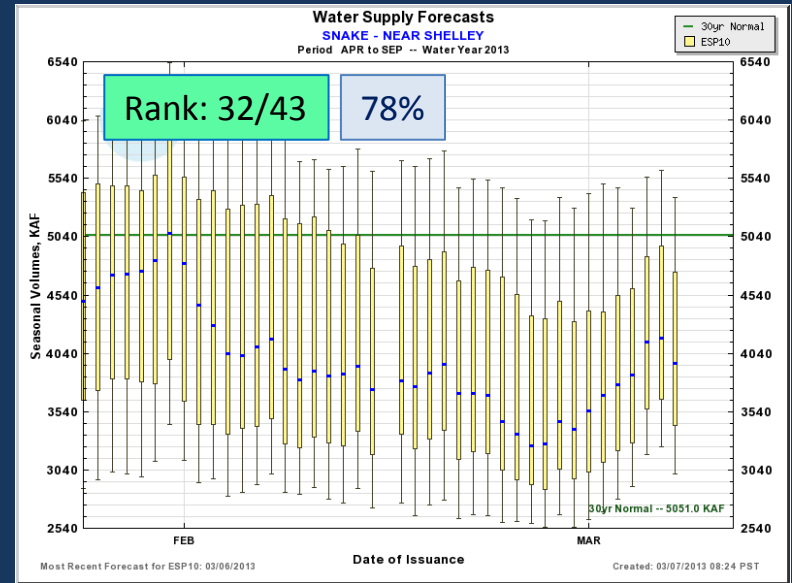
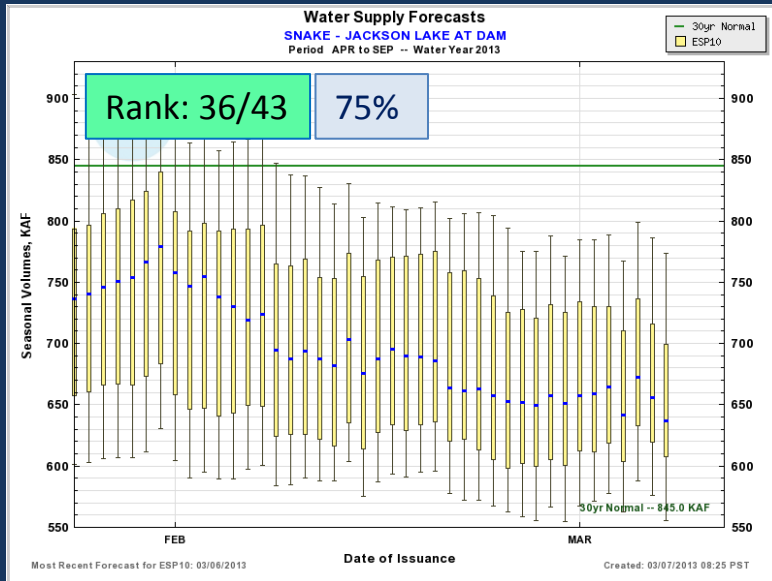


Water Supply Forecast: Upper Columbia



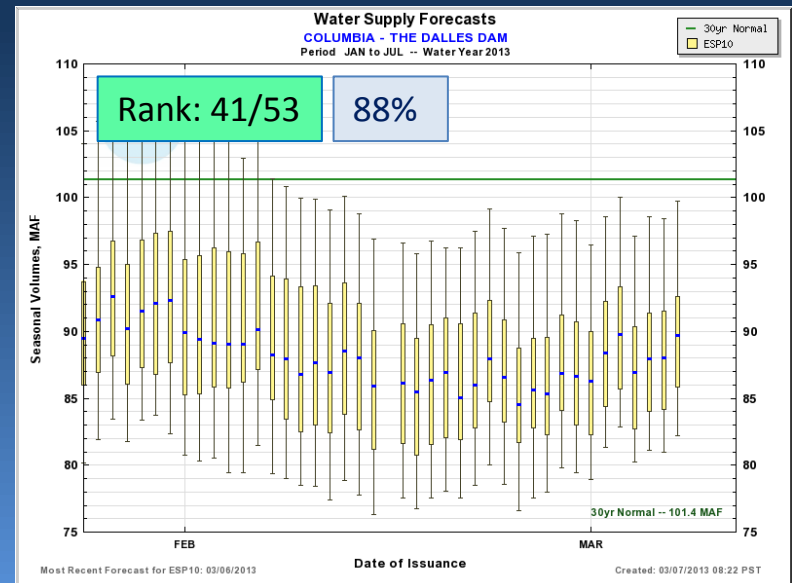
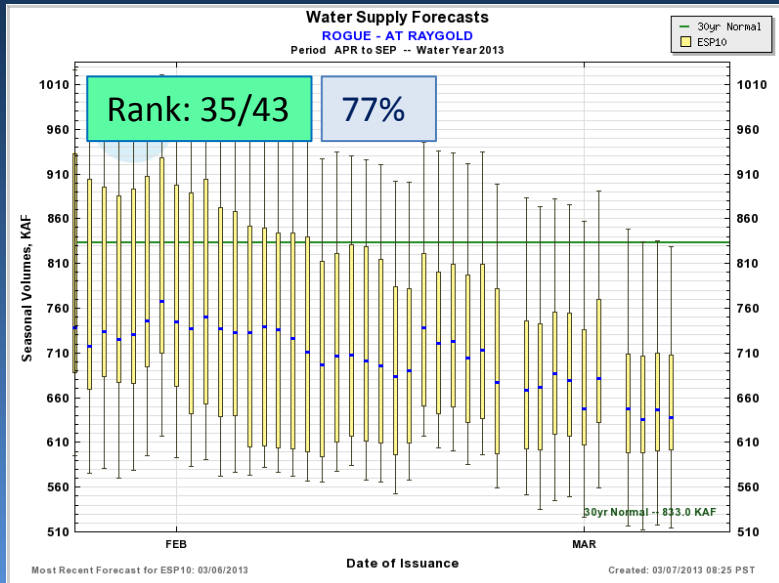
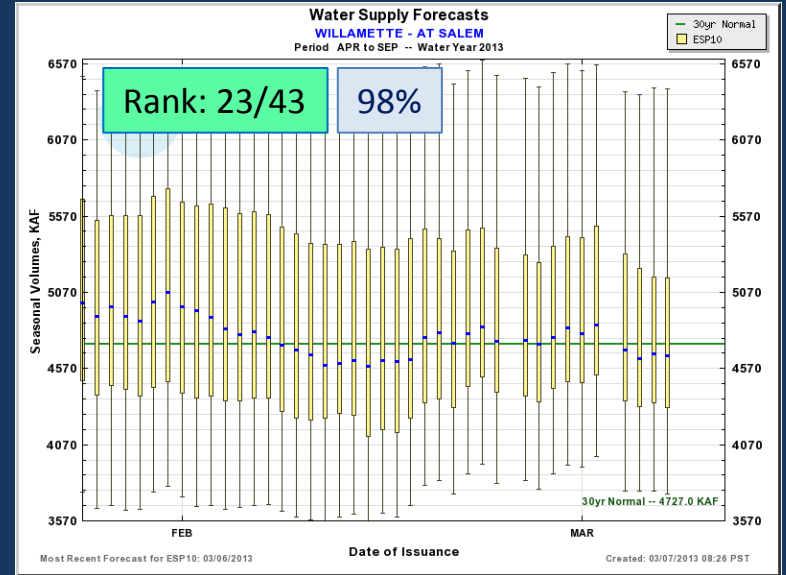
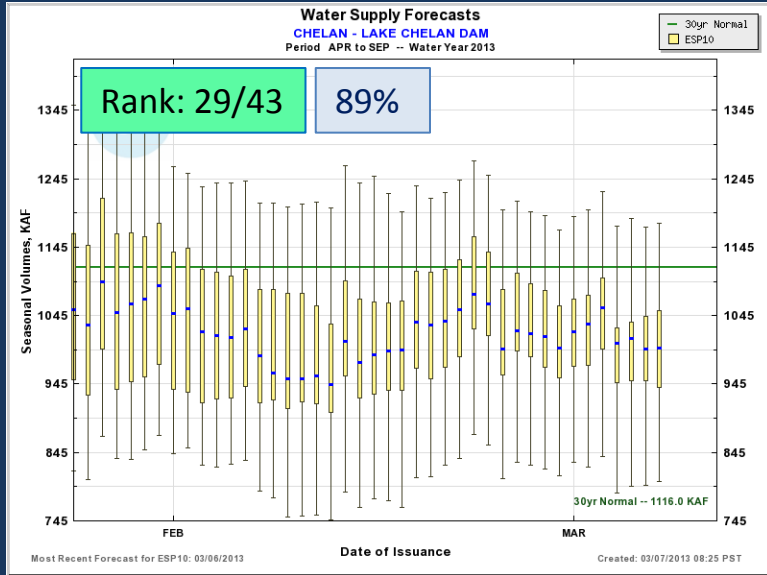


Water Supply Forecast: Snake





Water Supply Forecast: Lower Columbia

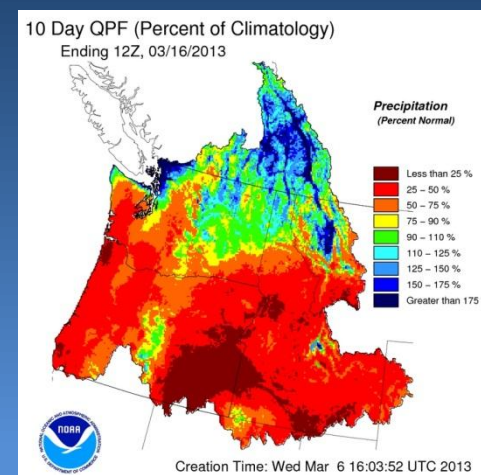
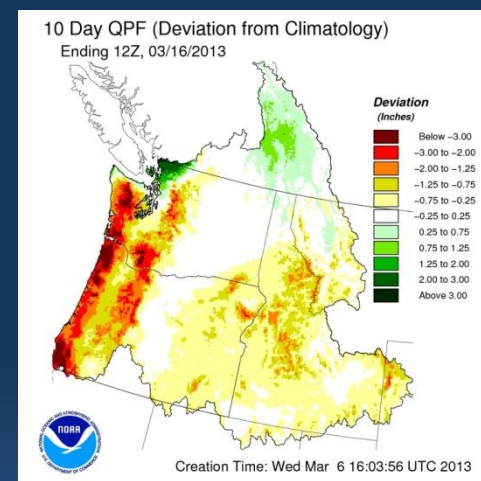
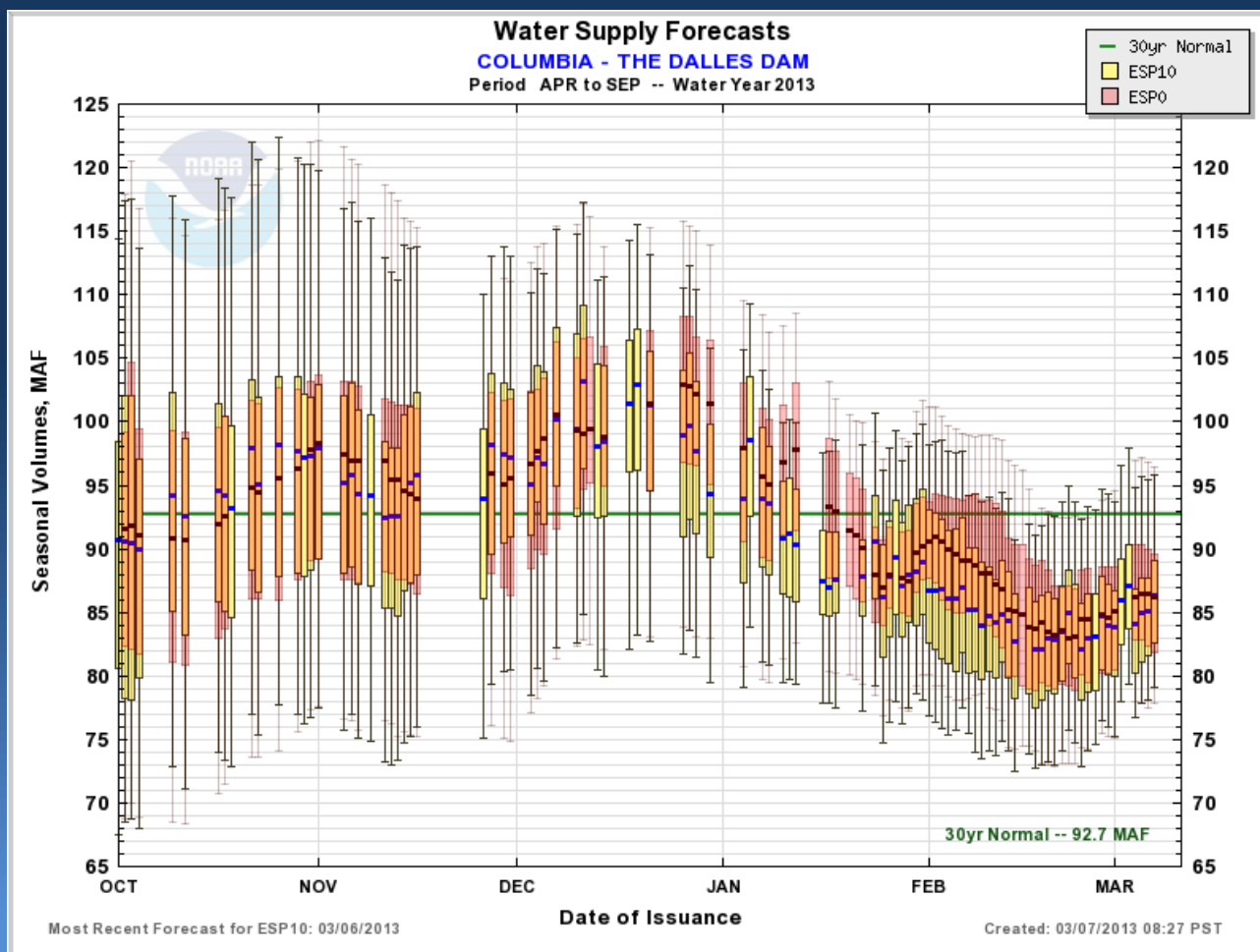




Water Supply Forecast: ESP0 vs ESP10



ESP combines current model states with future weather scenarios.
ESP0 uses the observed precip and temp record from 1948-2003 for its weather scenarios.
ESP10 uses the same 1948-2003 series, but replaces the 1st 10 days with a weather forecast.





NWRFC Water Supply Webpage

http://www.nwrfc.noaa.gov/water_supply/ws_schd.cgi



2013 Schedule for *Live Water Supply Briefings*

| Jan | Feb | Mar | Apr | May | Jun |
|-------------|------------|------------|------------|------------|------------|
| 10th | 7th | 7th | 4th | 9th | TBD |

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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