

# February 2015 Water Supply Briefing

National Weather Service/Northwest River Forecast Center

Telephone Conference : 1-877-501-8577

Pass Code : 71967

2015 Briefing Dates:

March 5 - 10am Pacific

April 9 - 10am Pacific

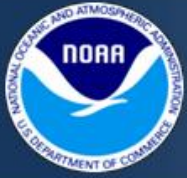
May 7 - 10am Pacific

Presentation available after brief at:

[www.nwrfc.noaa.gov/presentations/html/wy2015\\_ws/dp\\_cgi](http://www.nwrfc.noaa.gov/presentations/html/wy2015_ws/dp_cgi)

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# February 2015 Water Supply Briefing



[www.nwrfc.noaa.gov](http://www.nwrfc.noaa.gov)

Northwest River Forecast Center  
Water Supply Forecasts



River and Hydrology

**Water Supply**

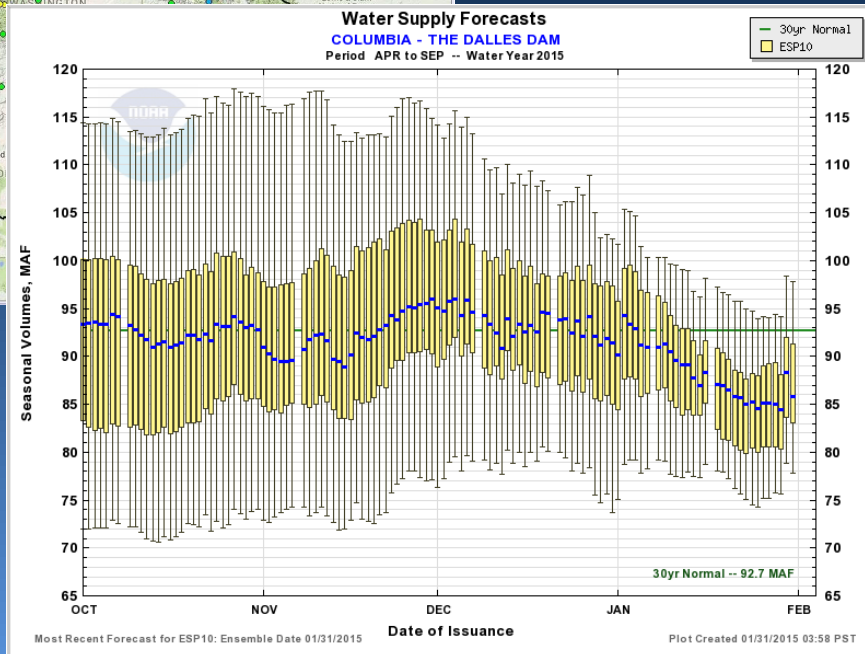
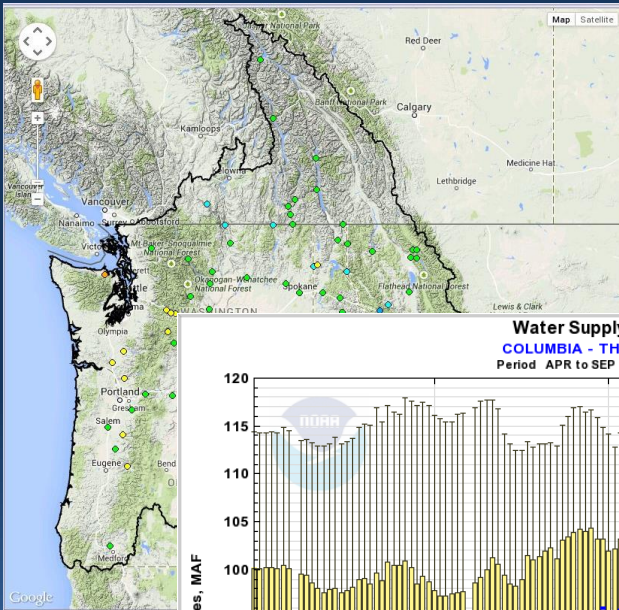
Observations

Weather Forecasts

Climate

NWRFC

## Ensemble Streamflow Prediction



Official Forecasts include 10 days of forecast precipitation and temperature (QPF)

NWRFC offers 5 and 0 day QPF

Forecasts updated daily

Model States/Snow/Runoff updated continuously through month

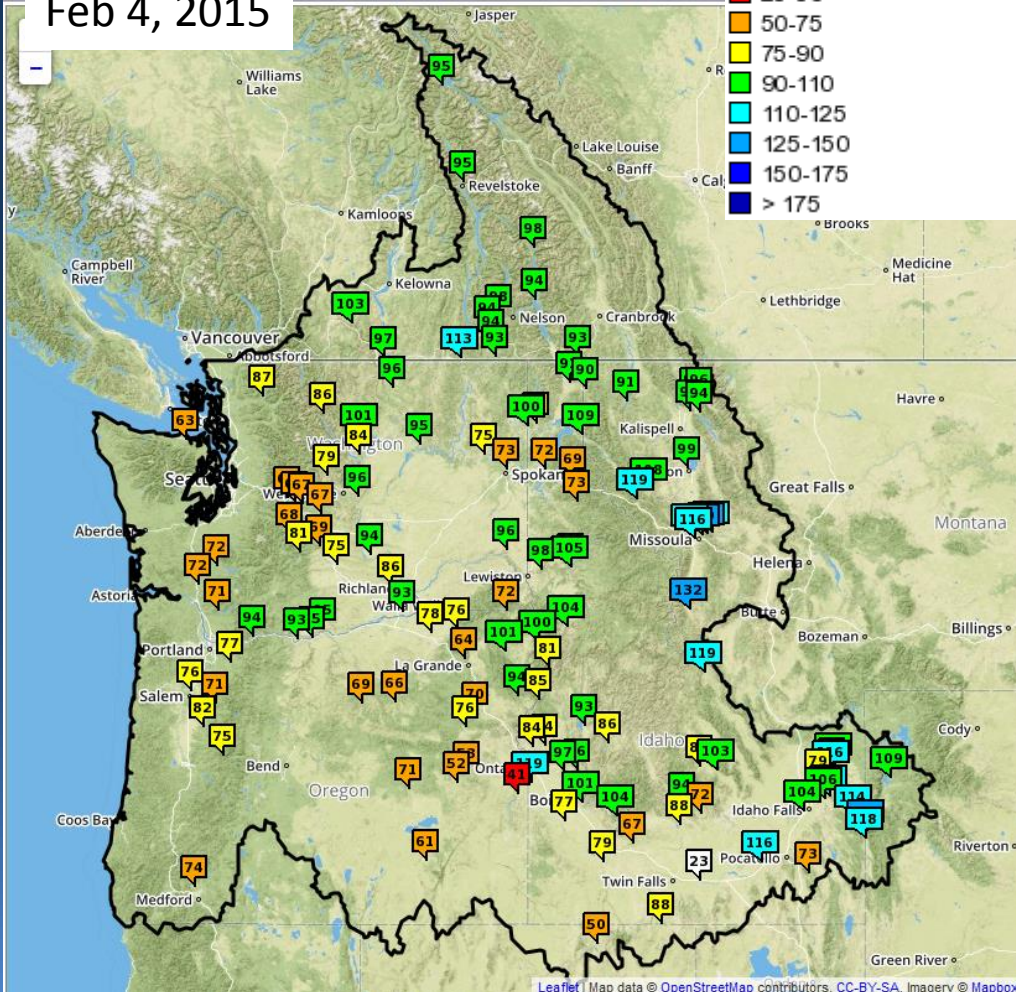
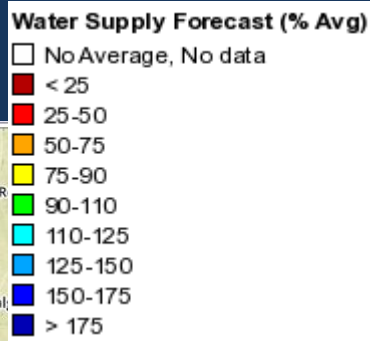
Compared to 30 yr Runoff Normal (1981-2010)



# Water Supply Summary



Issued  
Feb 4, 2015



Upper Columbia forecasts generally near or above normal

Upper Snake near or above normal

Middle and Lower Snake near or below normal

Cascades forecast well below normal



# Observed Conditions



Precipitation

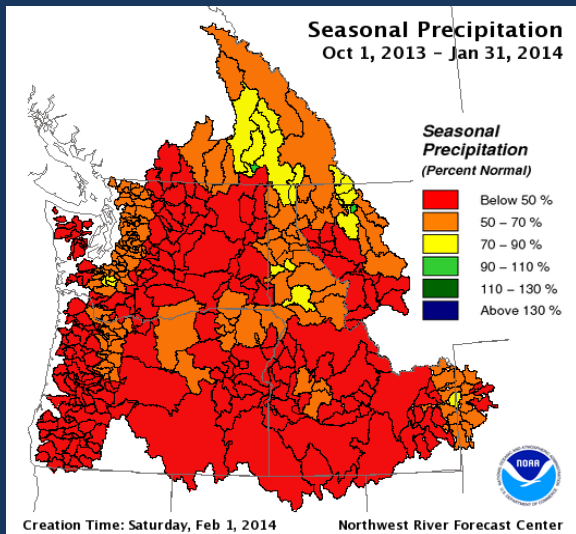
Temperature

Snowpack

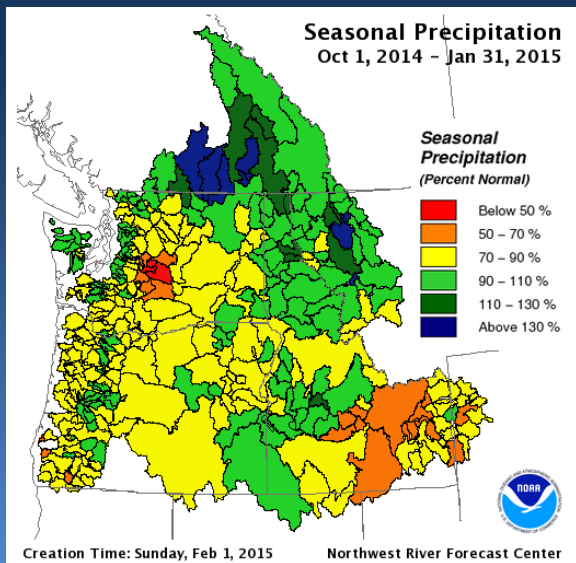
Runoff



# Observed Seasonal Precipitation



DIVISION NAME	2015wy OBS (in)	% Norm	2014wy % Norm
Columbia R abv Grand Coulee	17.7	106	62

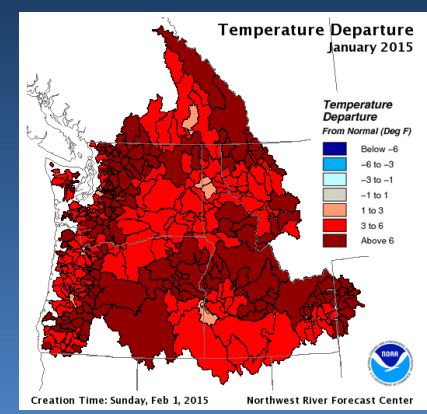
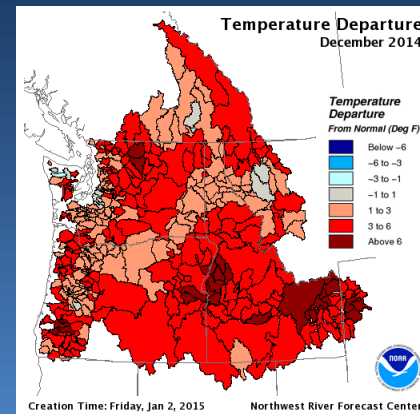
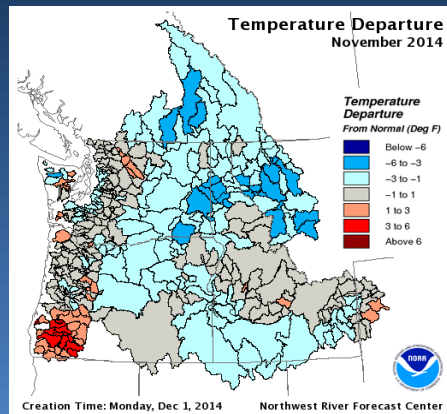
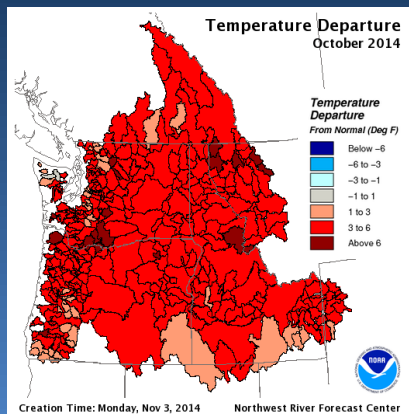
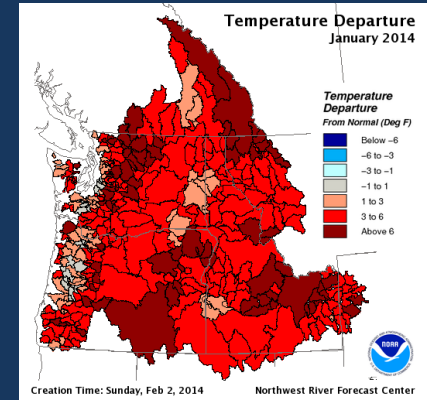
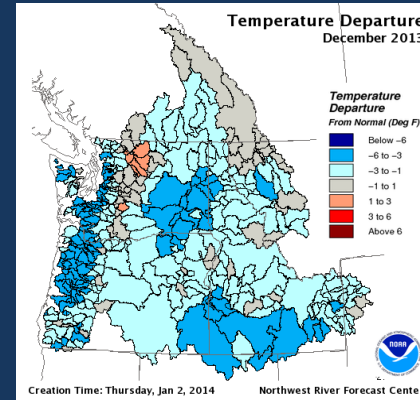
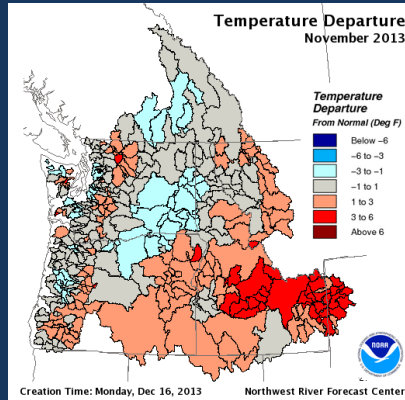
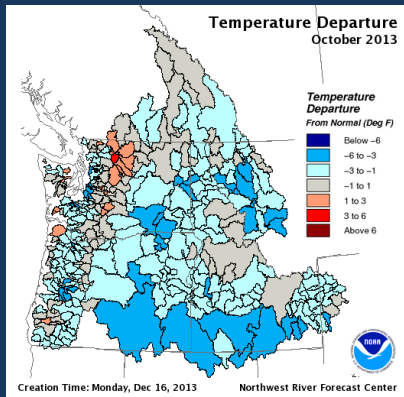


Snake R abv Ice Harbor	8.8	90	45
Columbia R abv The Dalles	11.9	94	51



# Temperature Departures

## Water Year 2014/2015 comparison



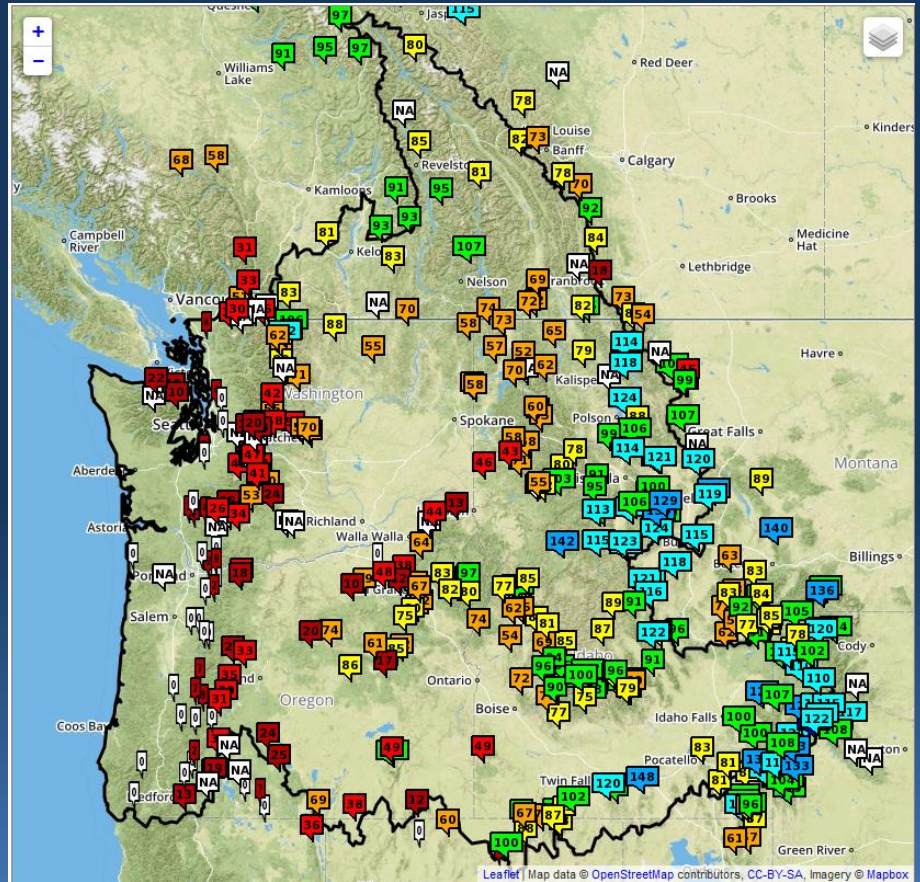
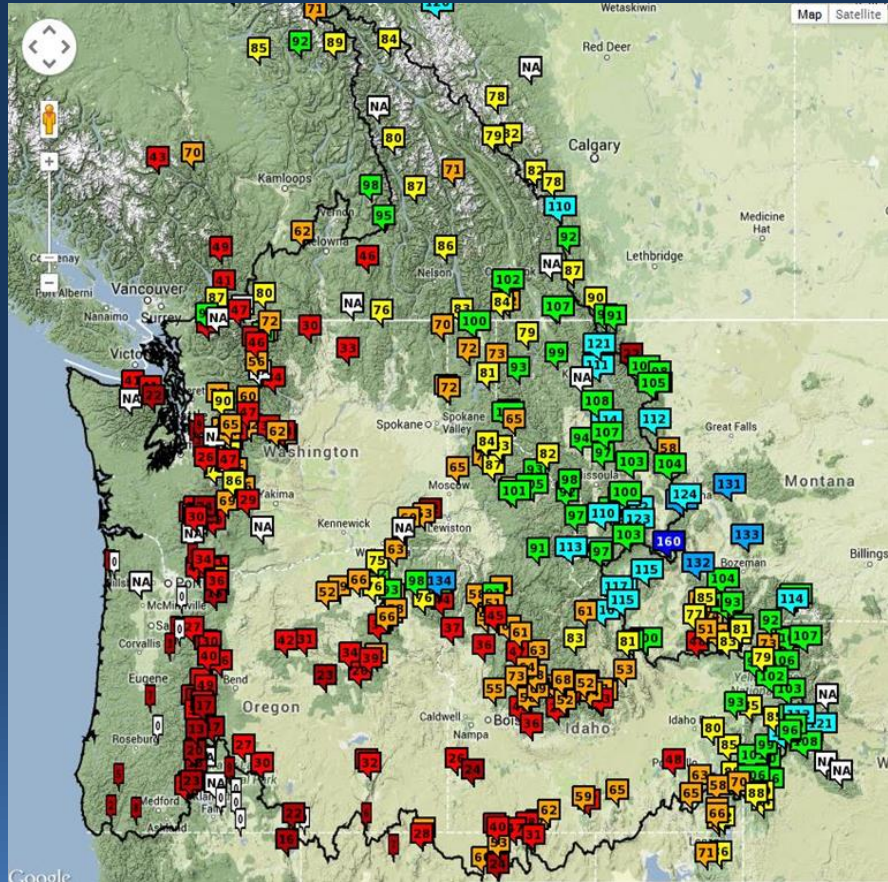


# Current Snow Conditions



Feb 3, 2014

Feb 3, 2015



<http://www.nwrfc.noaa.gov/snow/index.html?version=20150120v1>



# Cascades: Precip - Snow



Westside Cascades	% Normal Precip	% Normal SWE
NW Washington	100	38
SW Washington	103	26
Olympics	103	16
Willamette	97	14
Rogue, Umpqua	96	14

Eastside Cascades	% Normal Precip	% Normal SWE
NE Wash Cascades	100	74
Yakima	92	39
SE Wash Cascades	102	21
E Oregon Cascades	98	25

Information extracted from NRCS website at:

<http://www3.wcc.nrcs.usda.gov/reports/SelectUpdateReport.html>



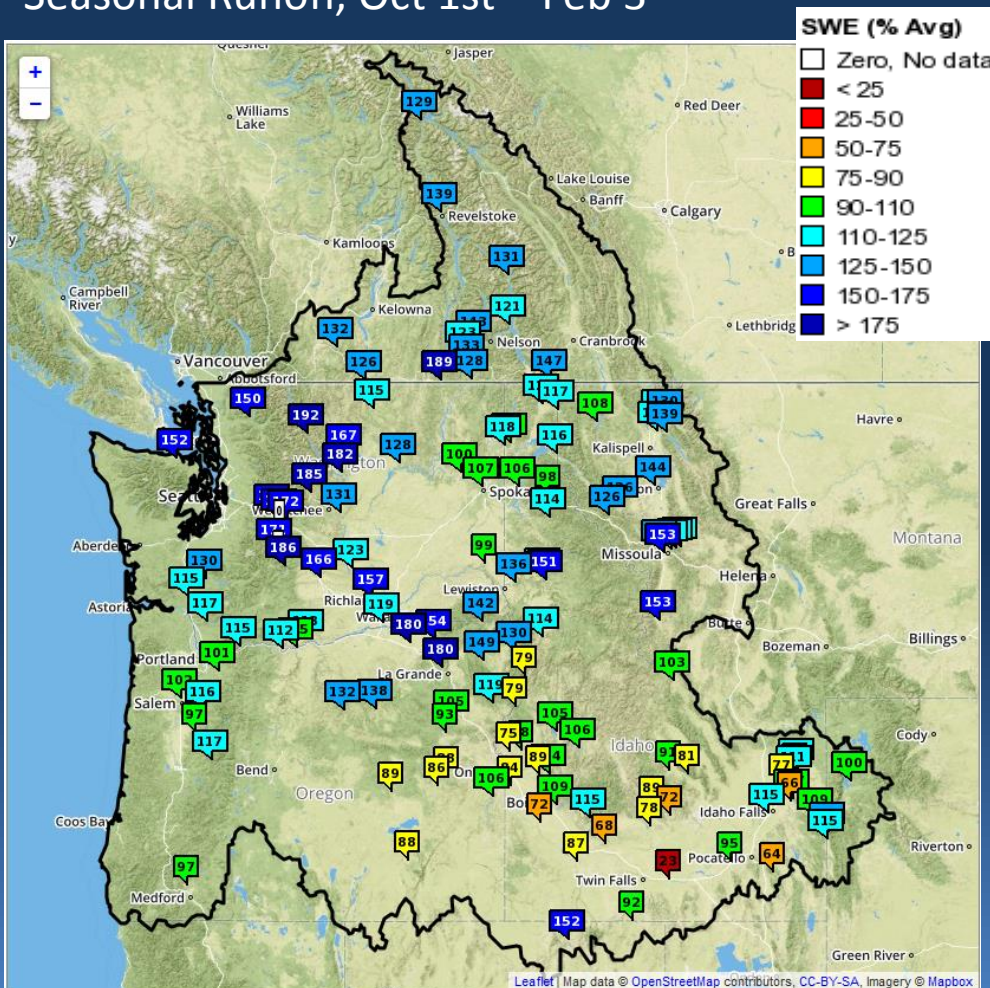


# Current Adjusted Runoff Conditions



Seasonal Runoff, Oct 1st – Feb 3

Percent of Normal  
Oct 1 – Feb 3



UPPER COLUMBIA BASIN	
MICA	129
DUNCAN	130
QUEENS BAY	121
LIBBY	109
HUNGRY HORSE	140
GRAND COULEE	130
SNAKE RIVER BASIN	
JACKSON LAKE	102
PALISADES	110
DWORSHAK	119
LOWER GRANITE	100
LOWER COLUMBIA BASIN	
THE DALLES	113



# Future Scenario



Climate Outlooks

10 Day Precipitation Forecast

Water Supply Forecasts



# ENSO: Observed and Forecast

## SST Anomaly (Deg C)

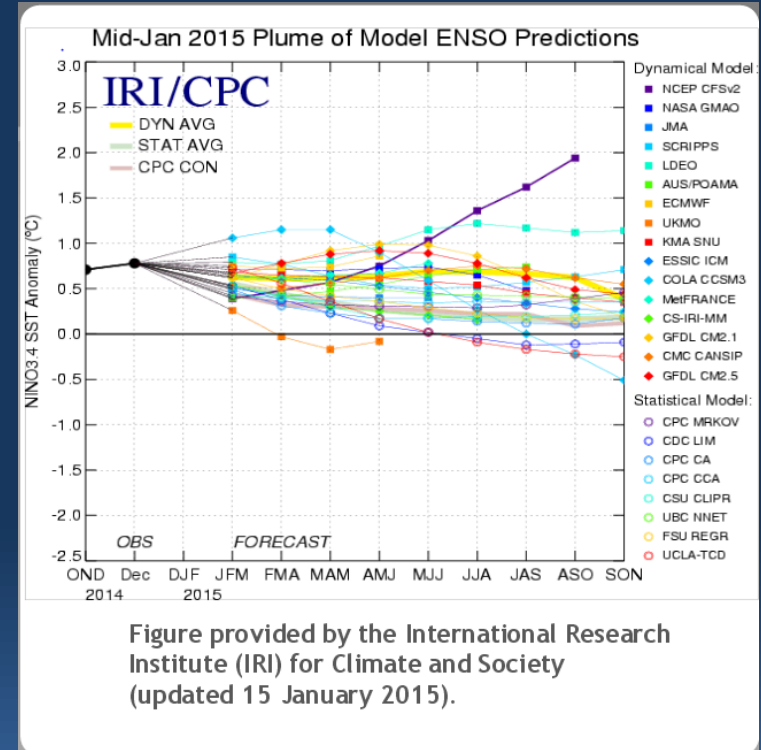
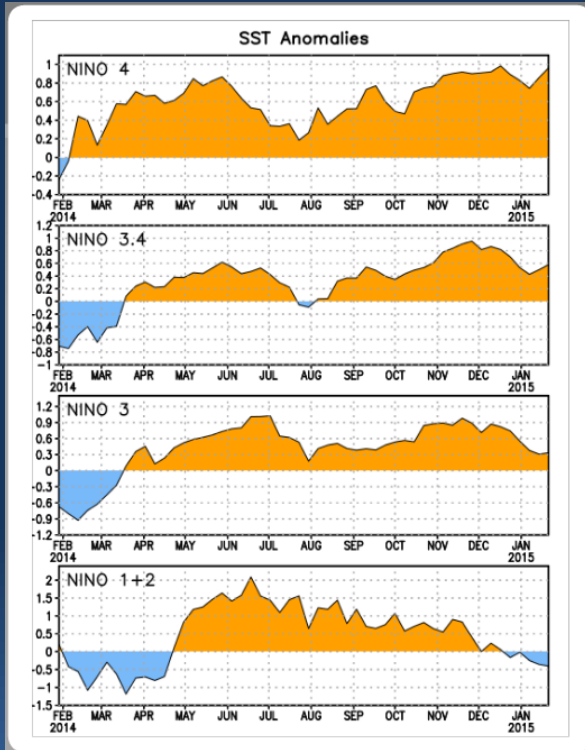


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 15 January 2015).

**CPC Synopsis: 50-65% chance of El Nino conditions during the next 2 months, with ENSO-neutral favored thereafter (Feb 2, 2015)**

- 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)  
 Plume Model Graphic provided by Intl Research Institute for Climate and Society – updated Jan 15, 2015



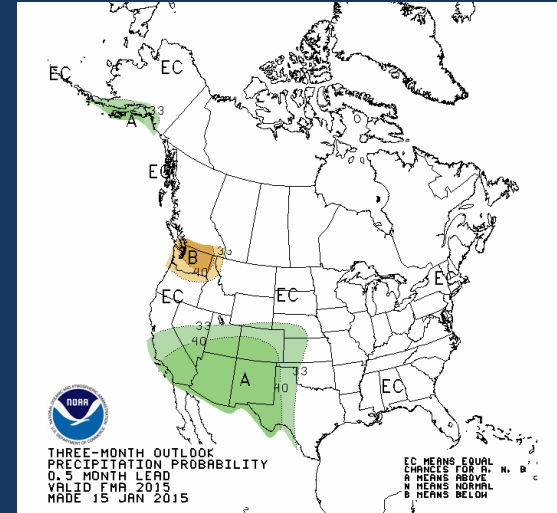
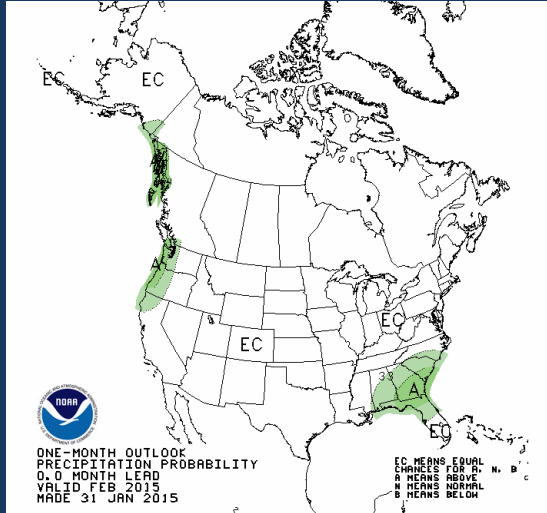
# CPC Climate Outlook



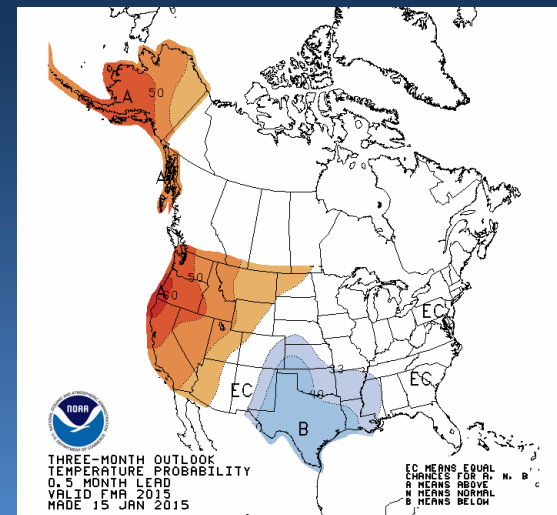
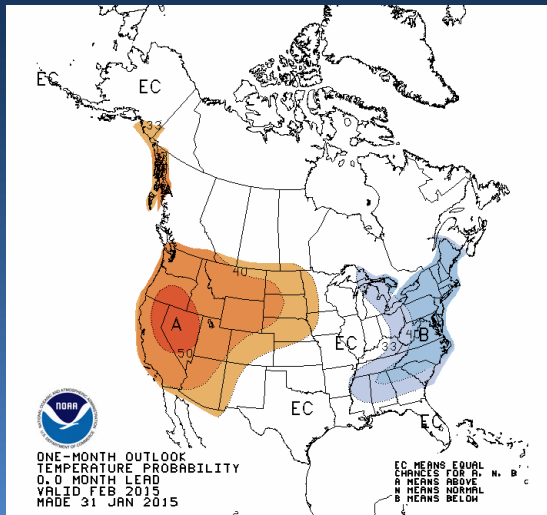
## Current Month Outlook

## Three Month Outlook

### Precipitation



### Temperature





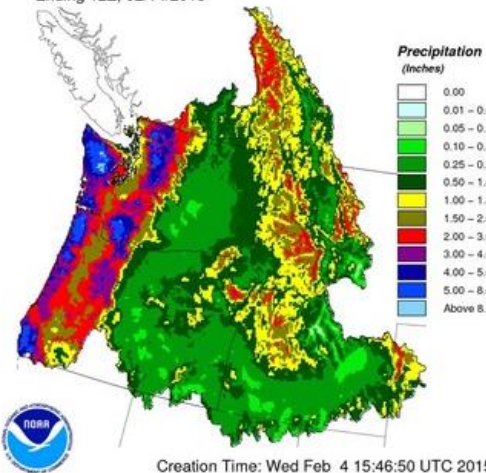
# 10 Day Cumulative Precip Forecast



## 10 Day Forecast Precipitation: Volume Analysis

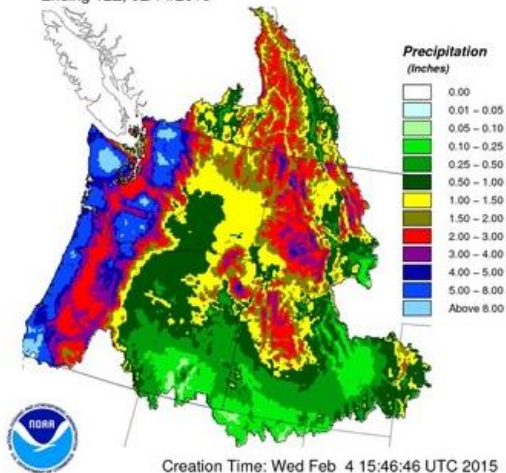
10 Day Precipitation Climatology

Ending 12Z, 02/14/2015



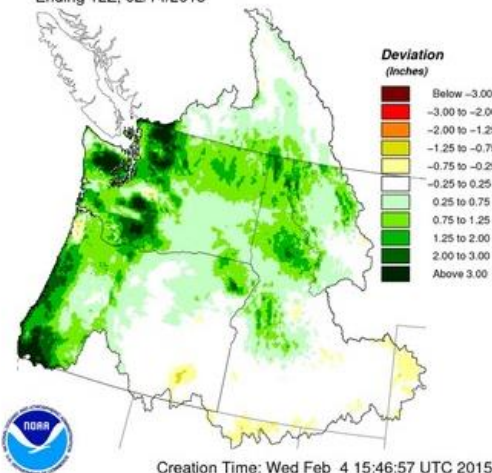
10 Day QPF

Ending 12Z, 02/14/2015



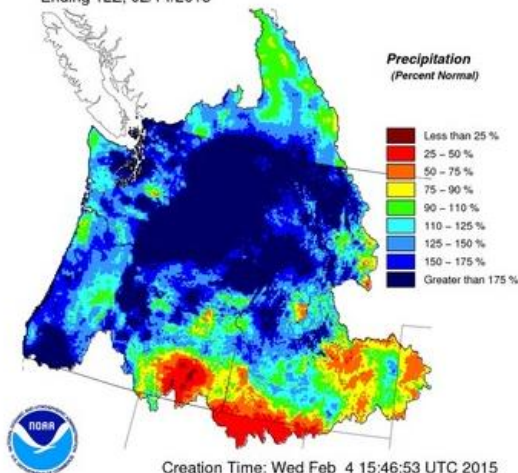
10 Day QPF (Deviation from Climatology)

Ending 12Z, 02/14/2015



10 Day QPF (Percent of Climatology)

Ending 12Z, 02/14/2015



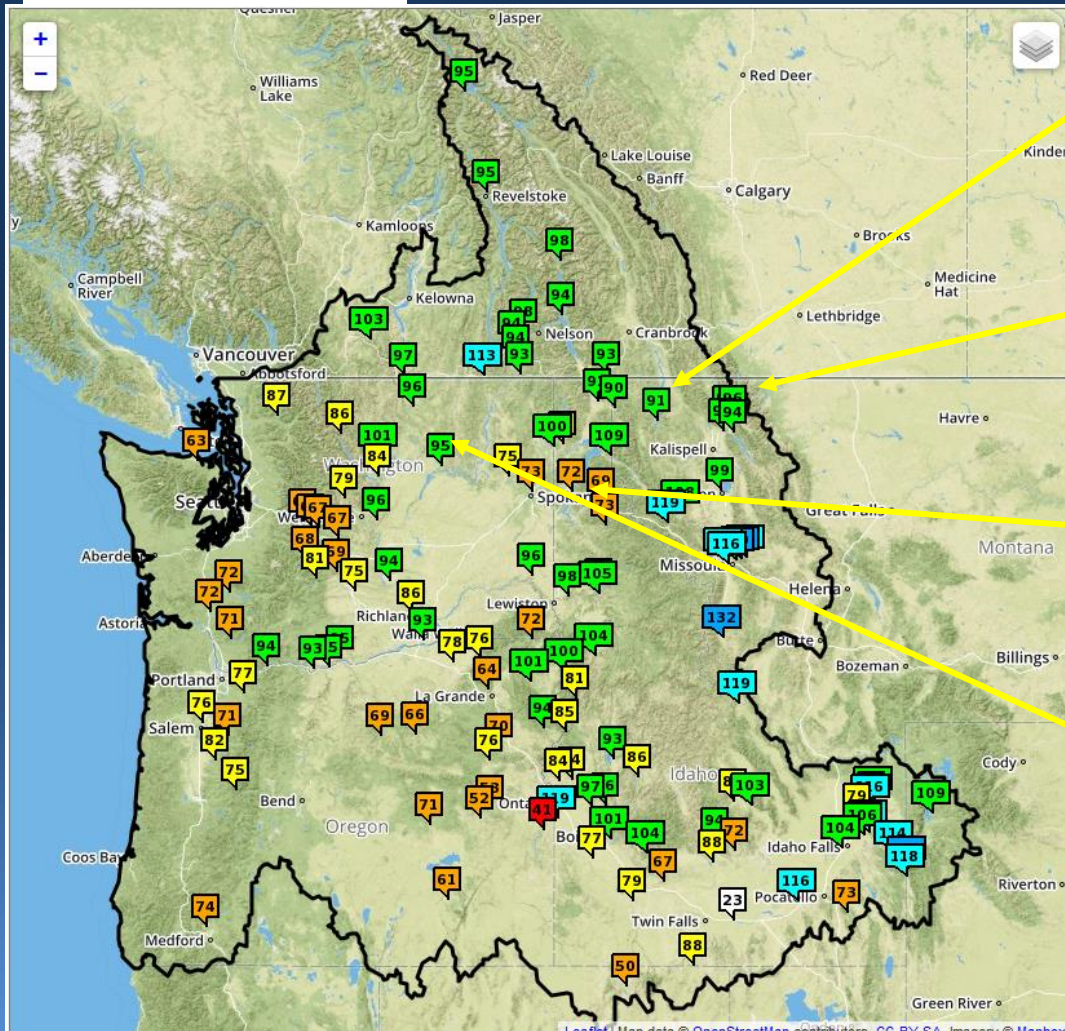


# Water Supply Forecasts Upper Columbia



Feb 2015 Apr – Sep Forecast

Feb 4, 2015



Kootenai River  
Libby Dam 91 %

SF Flathead River  
- Hungry Horse Dam 94 %

Coeur d'Alene River  
- Coeur d'Alene Lake 72 %

Columbia River  
- Grand Coulee Dam 95 %

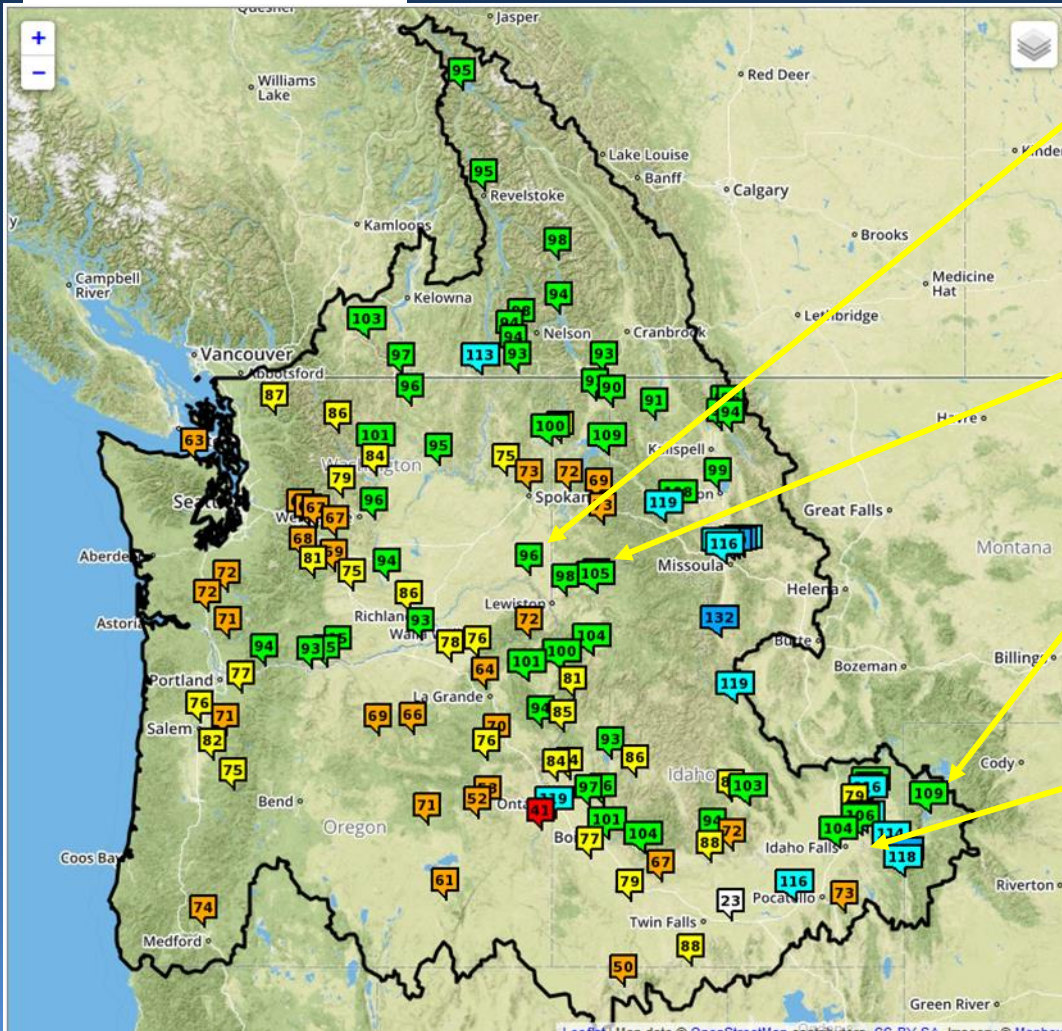


# Water Supply Forecasts Snake River Basin



Feb 2015 Apr – Sep Forecast

Feb 3, 2015



Lower Snake River  
- Lower Granite Dam 96 %

NF Clearwater River  
Dworschak Dam 86 %

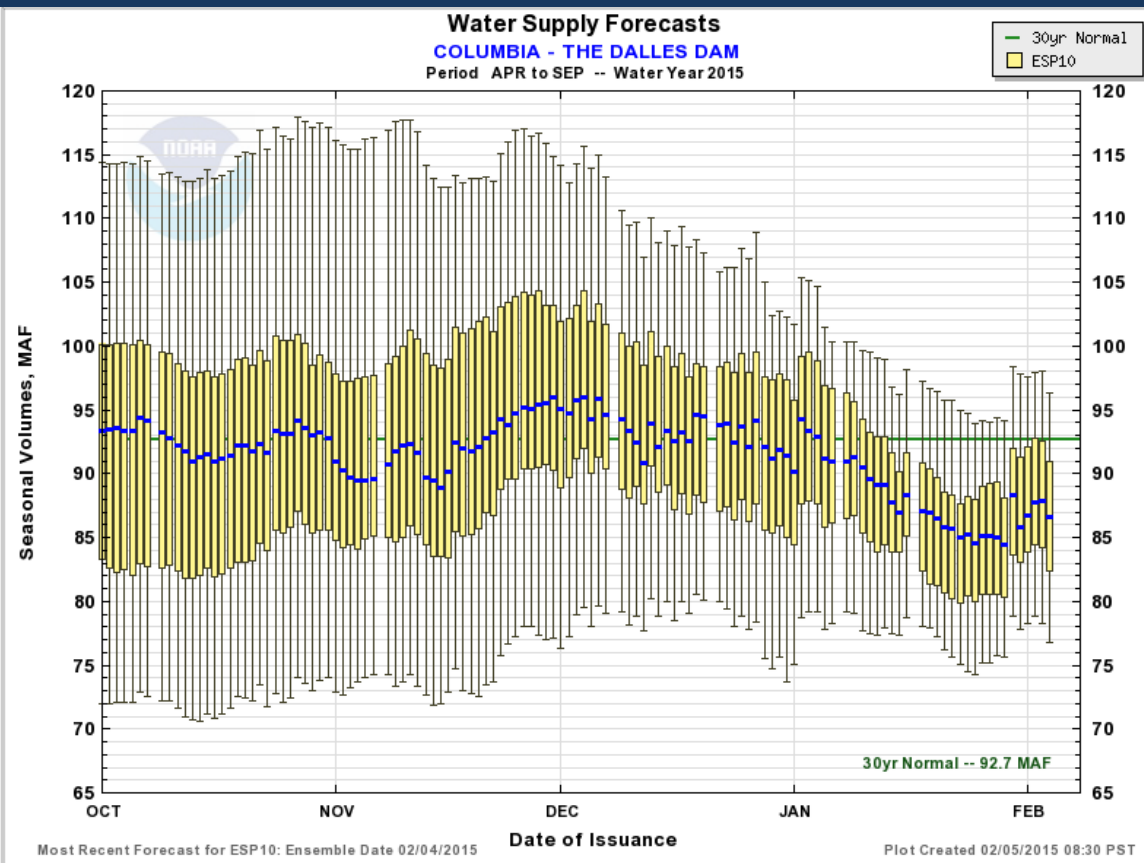
Upper Snake River  
- Jackson Lake Dam 109 %

Upper Snake River  
- near Shelley 104 %



# NWRFC Water Supply Product Columbia River at the Dalles

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2015					
Official Forecast					
10 days QPF: Ensemble: 2015-02-04 Issued: 2015-02-04					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	76801	86570	93	96326	92704
APR-JUL	65117	73576	92	84020	79855
APR-AUG	72097	80996	93	91559	87532
JAN-JUL	90164	101697	100	118005	101368
5 days QPF: Ensemble: 2015-02-04 Issued: 2015-02-04					
APR-SEP	79575	89032	96	99031	92704
APR-JUL	66867	75448	94	86662	79855
APR-AUG	74044	83240	95	93880	87532
JAN-JUL	92730	103332	102	128881	101368
0 days QPF: Ensemble: 2015-02-04 Issued: 2015-02-04					
APR-SEP	76914	87487	94	96763	92704
APR-JUL	65602	74019	93	83820	79855
APR-AUG	72395	82124	94	91442	87532
JAN-JUL	86681	95654	94	110070	101368
Move the mouse over the desired "Forecast Period" to display a graph.					



90% -> 9 in 10 chance of volume being exceeded (quite likely)  
 10% -> 1 in 10 chance of volume being exceeded (a possibility)  
 50% -> 5 in 10 chance of volume being exceeded (most expected)





# NWRFC Water Supply Webpage

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



2015 Schedule for <i>Live Water Supply Briefings</i>					
Jan	Feb	Mar	Apr	May	Jun
<b>8</b>	<b>5</b>	<b>5</b>	<b>9</b>	<b>7</b>	<b>TBD</b>
<i>All presentations held at 10am PDT/PST, unless noted otherwise</i>					
<b><a href="#">Click here for Registration Information</a></b>					
<b><a href="#">Archive of Previous Briefings</a></b>					

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

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# February 2015 Water Supply Briefing



National Weather Service/Northwest River Forecast  
Center

## Questions?

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# Climate Forecast Definitions



## Oceanic Nino Index (ONI)

- Defined as the 3 month running mean SST departures from average in the Nino 3.4 region
- NOAA operational definitions of El Nino and La Nina are keyed to the ONI index
- El Nino: characterized by a positive ONI  $\geq +0.5$  C.
- La Nina: characterized by negative ONI  $\leq -0.5$  C.
- By historical standards, to be classified as a full fledged El Nino or La Nina episode, these thresholds must be exceeded for a period of at least 5 consecutive overlapping 3 month seasons
- CPC considers El Nino or La Nina conditions to occur when the monthly Nino3.4 SST departures meet or exceed  $\pm 0.5$ C along with consistent atmospheric features. These anomalies must also be forecasted to persist for 3 consecutive months

[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)