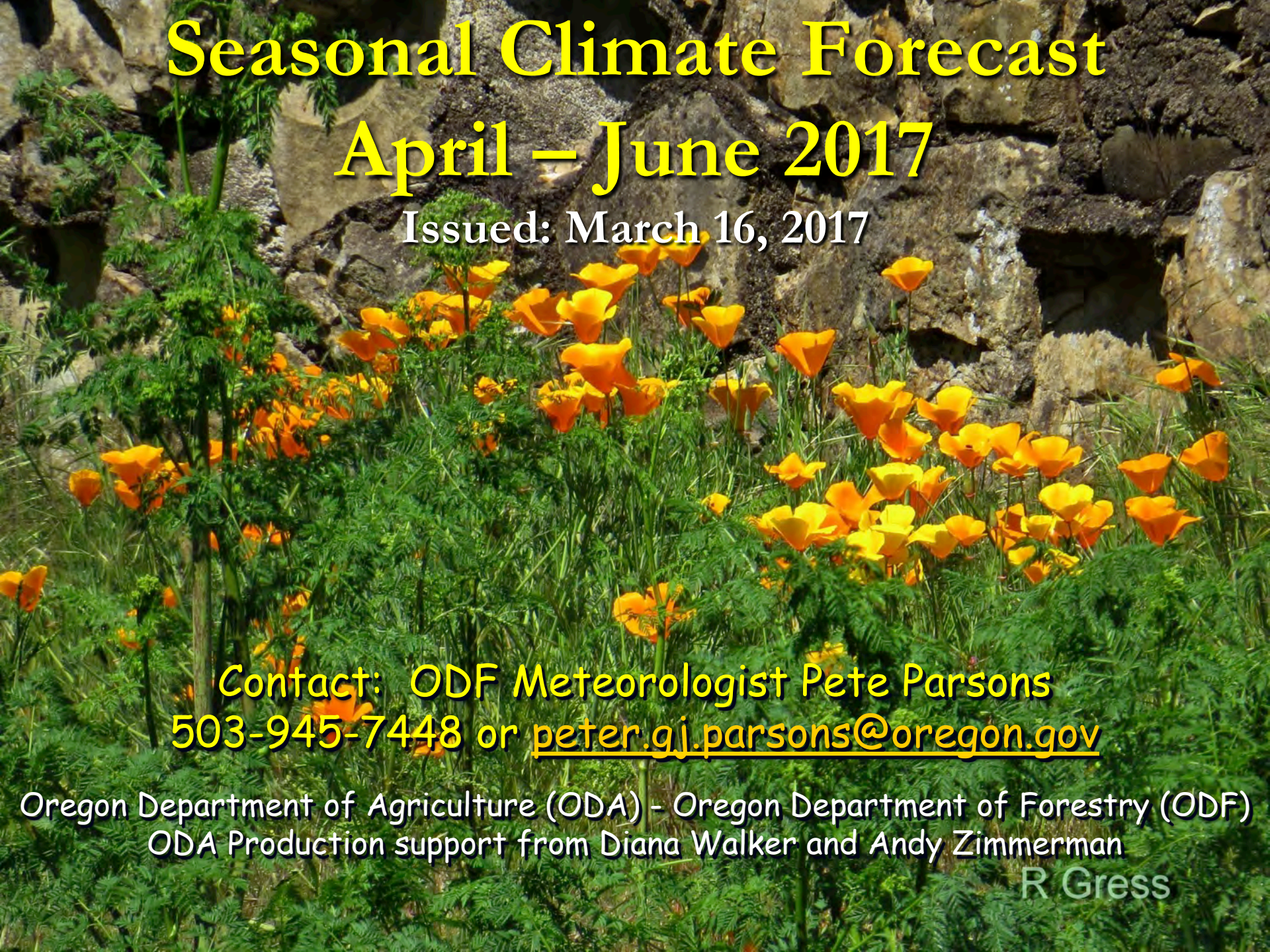
Seasonal Climate Forecast
April – June 2017

Issued: March 16, 2017



Contact: ODF Meteorologist Pete Parsons
503-945-7448 or peter.gj.parsons@oregon.gov

Oregon Department of Agriculture (ODA) - Oregon Department of Forestry (ODF)
ODA Production support from Diana Walker and Andy Zimmerman

R Gress

El Niño Southern Oscillation (ENSO) Current Status and Forecast

- Tropical Pacific sea-surface temperatures (SSTs) have warmed from La Niña Modoki (below-average SSTs, centered in the central tropical Pacific) to ENSO-neutral. Current SSTs range from slightly below average in the central Pacific to slightly above average in the eastern Pacific.

- The Climate Prediction Center (CPC) defines a La Niña event as having ONI values of -0.5°C or colder for 5 consecutive months. The Oceanic Niño Index (ONI) for Dec. - Feb. was -0.4°C. So, via the above definition, we are now in ENSO-neutral territory.

- CPC's forecast is for ENSO-neutral conditions to continue through this spring. Their dynamic models are favoring a transition to El Niño this summer. In contrast, their statistical models, and the analog years used in this forecast, favor ongoing ENSO-neutral conditions…possibly through the end of the year.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

Forecast Overview

- The analog years (1984, 1993, & 1999) have been performing exceptionally well and their composite SST pattern still closely resembles the most-recently observed SST pattern. Therefore, I chose to keep the same years for this month's update.

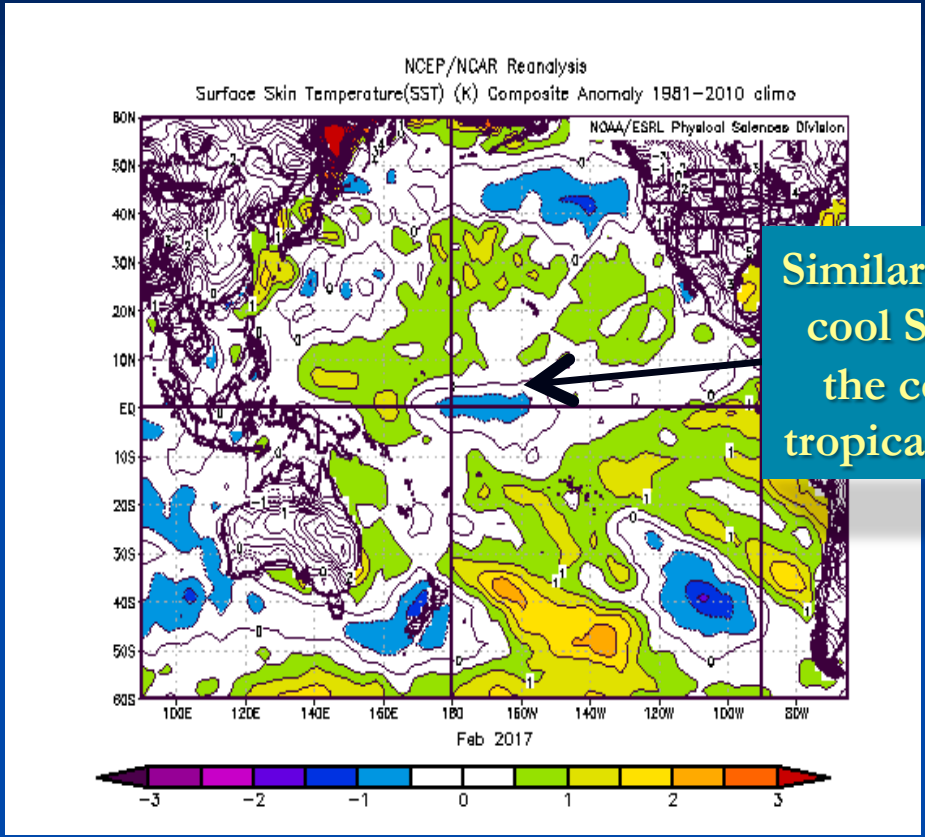
- Overall, expect below-average temperatures, especially across the eastern zones; above-average precipitation, mainly in the western zones.

- Mountain snowpacks should generally peak at greater-than-average depths and slightly later than usual. Cooler-than-average conditions should further delay the spring melt-off.

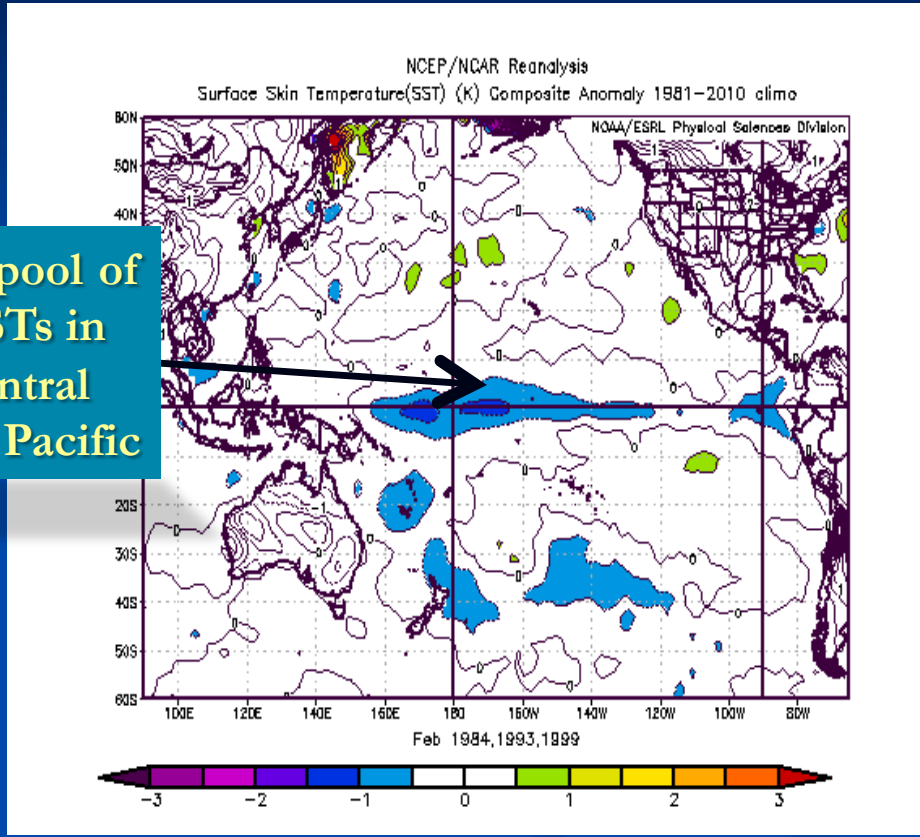
IMPORTANT NOTE: This forecast is based on past and current weather data, such as SSTs, and is not associated with CPC predictions (see Forecasting Methods) nor the official CPC "Three-Month Outlooks," which are available here: http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

February SST Anomalies (°C)

2017



Composite: 1984;1993;1999

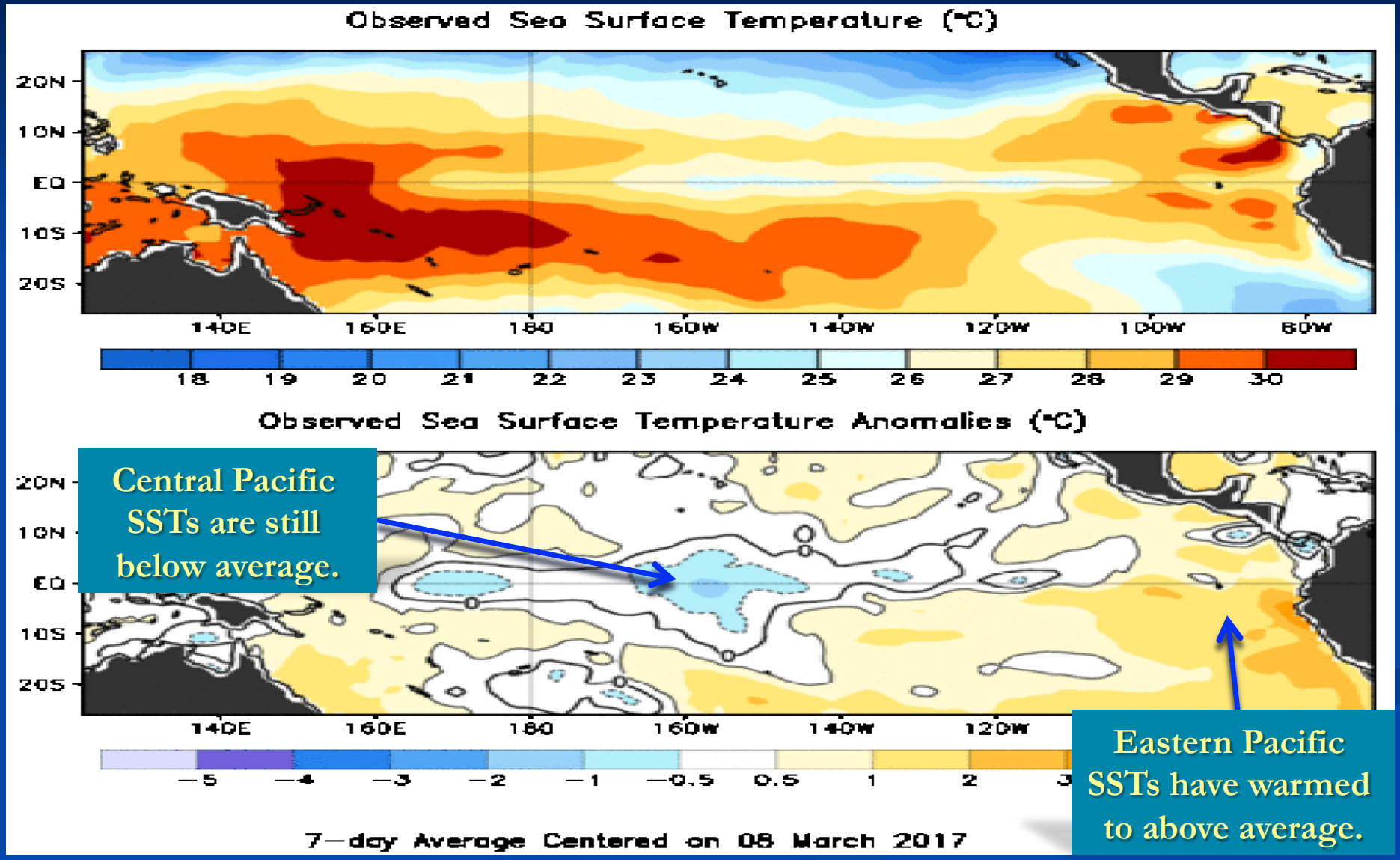


Similar pool of cool SSTs in the central tropical Pacific

- The February 2017 tropical Pacific SST anomaly pattern is similar to the February SST anomaly pattern from the composite of the analog years (1984; 1993; 1999).
- The current SST pattern reflects a transition from La Niña Modoki to ENSO-neutral, while the composite of the analogs appears to still have more of a La Niña pattern.

Tropical Pacific Ocean

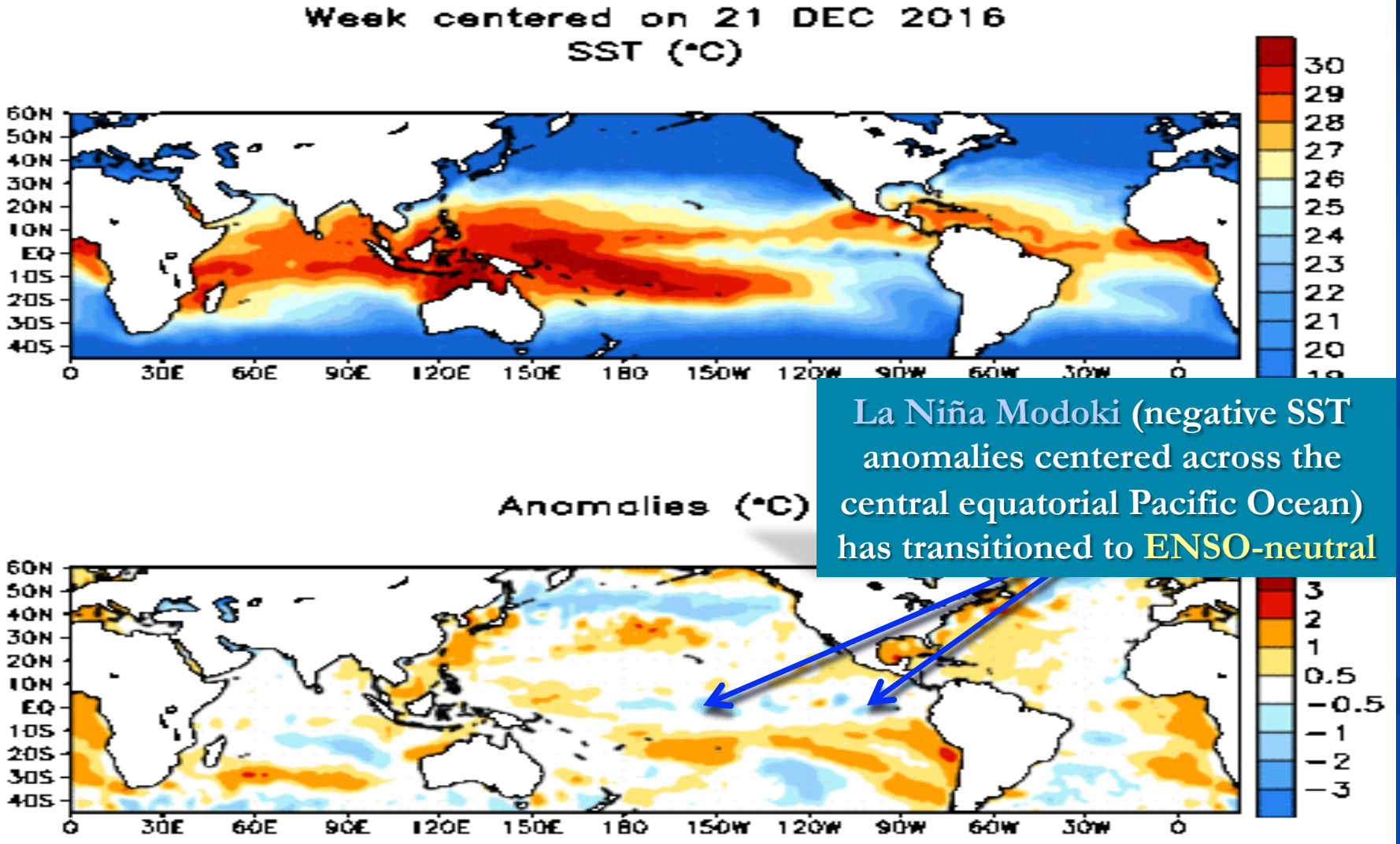
Current SST anomalies (bottom) reflect ENSO-neutral conditions



Courtesy: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/sstweek_c.gif

Pacific Ocean

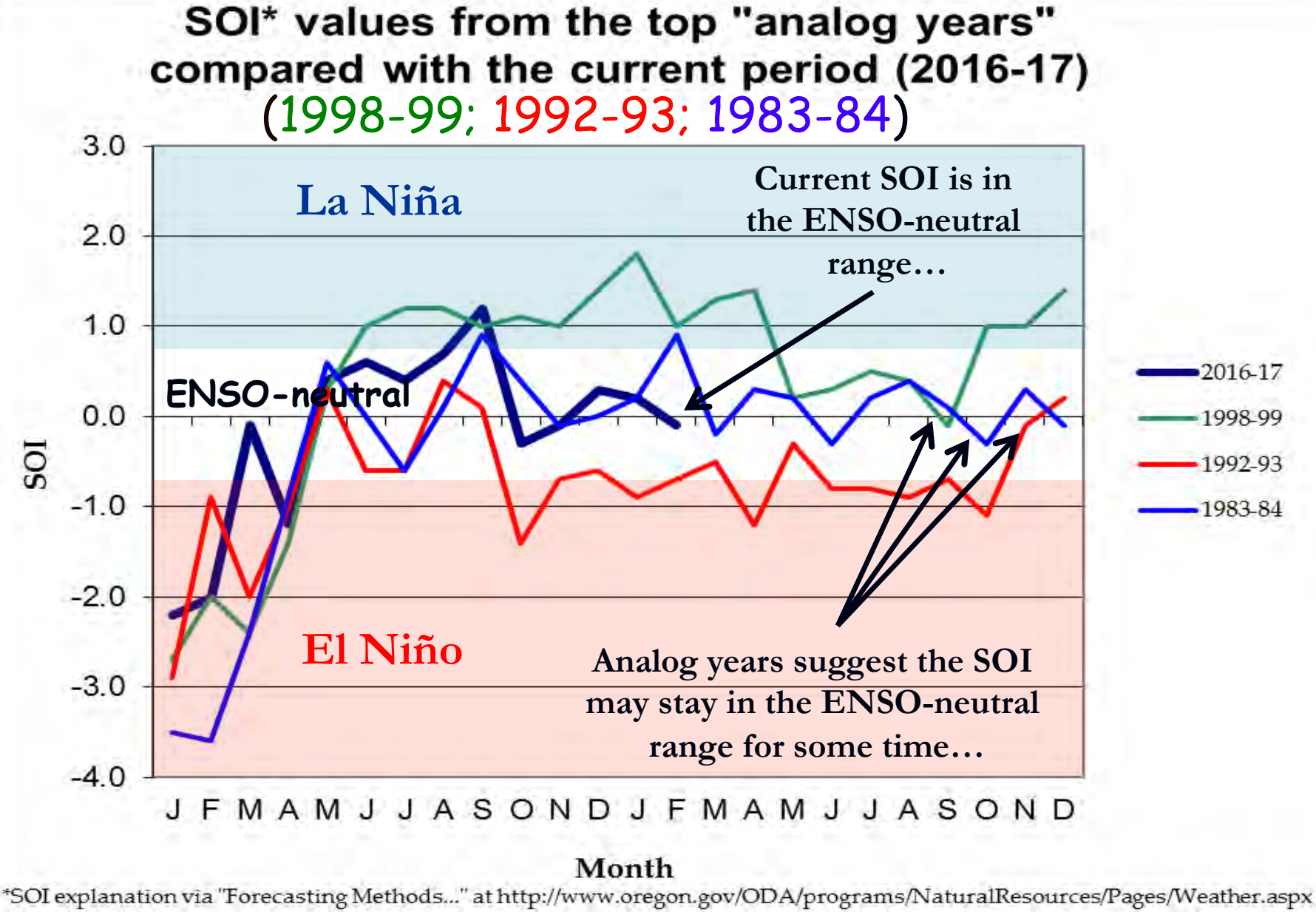
Animated (PowerPoint only) SSTs (top) / Anomalies (bottom)



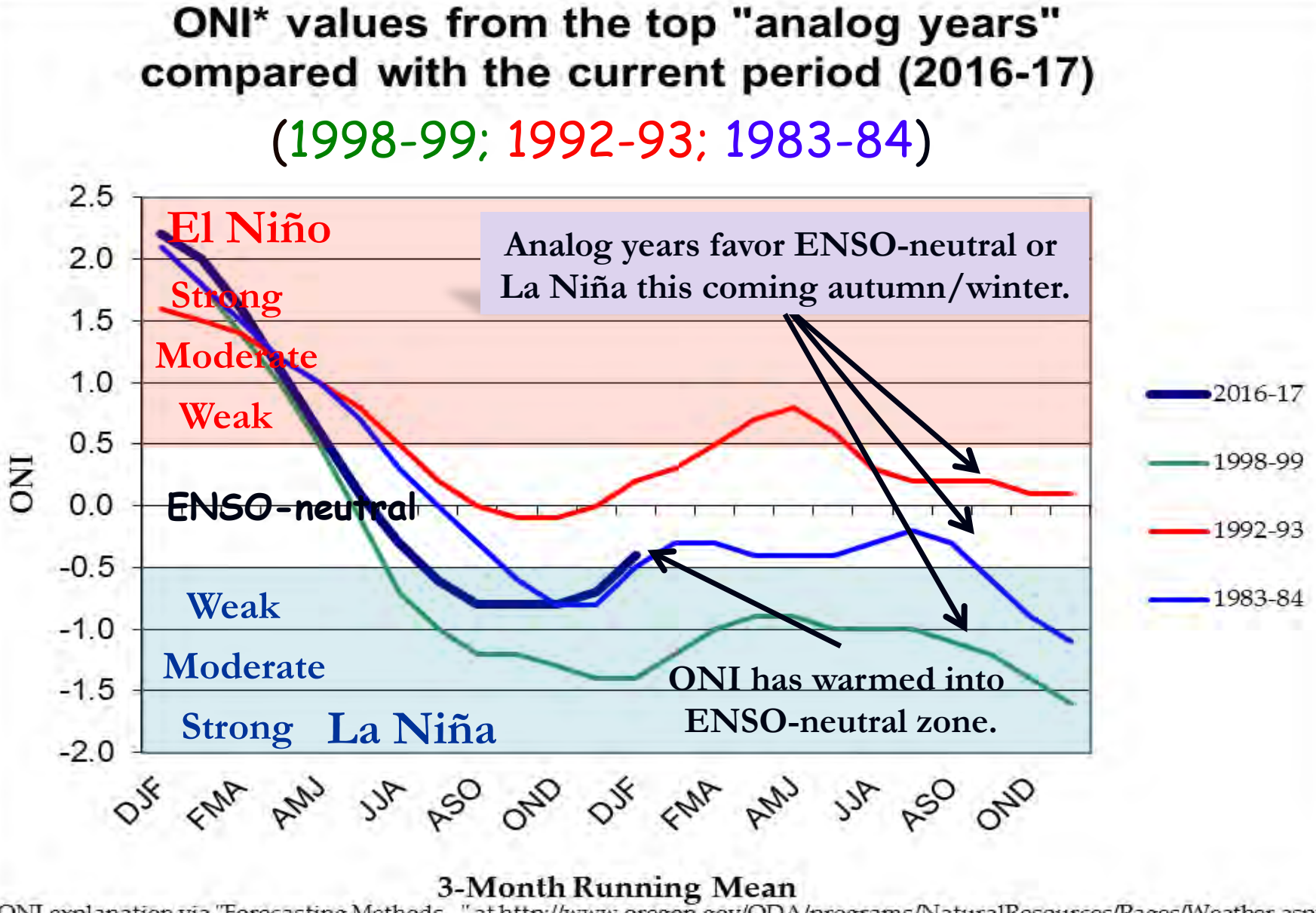
La Niña Modoki (negative SST anomalies centered across the central equatorial Pacific Ocean) has transitioned to ENSO-neutral

Courtesy: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_update/gsstanim.shtml

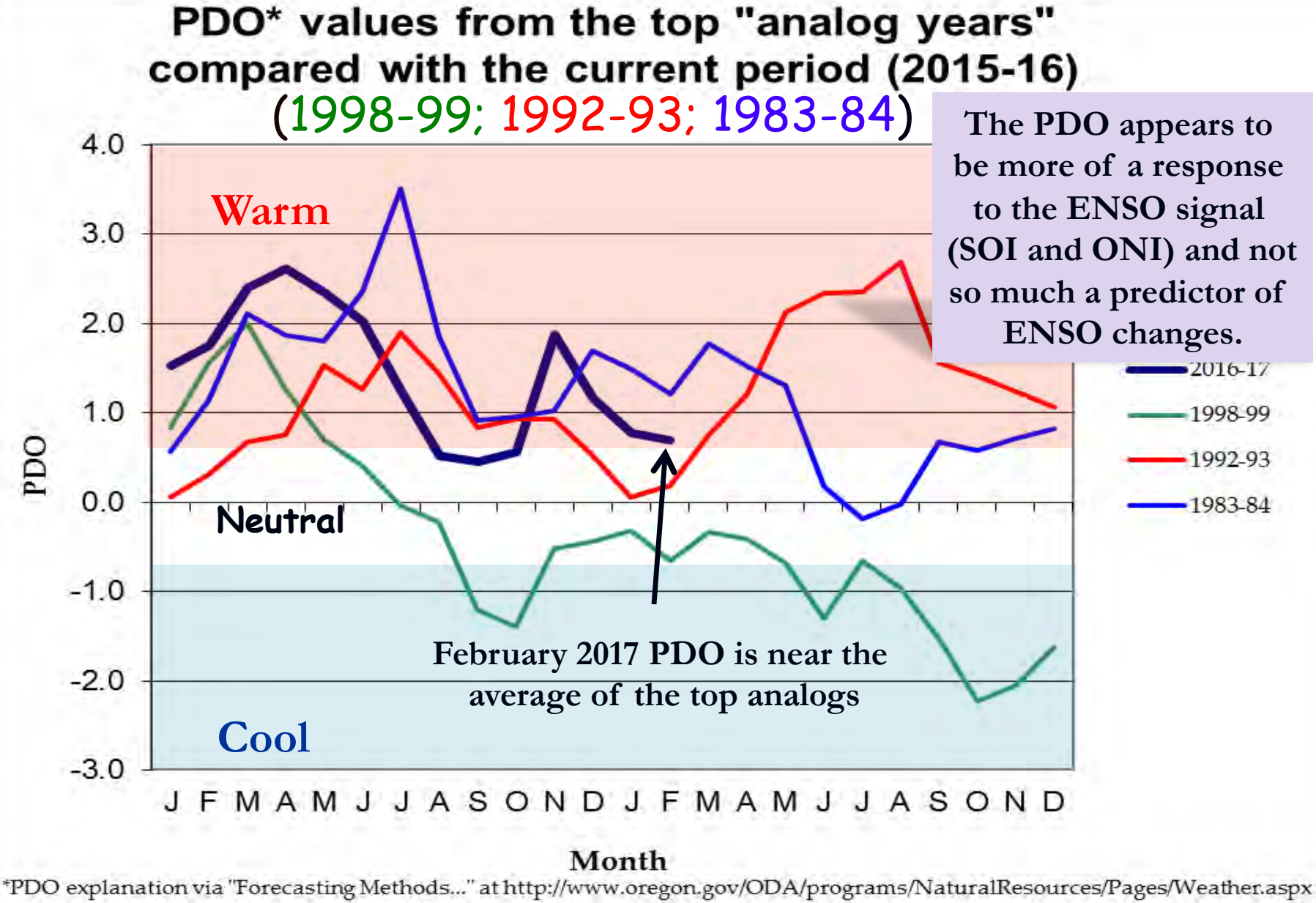
Tropical Pacific Ocean



Tropical Pacific Ocean



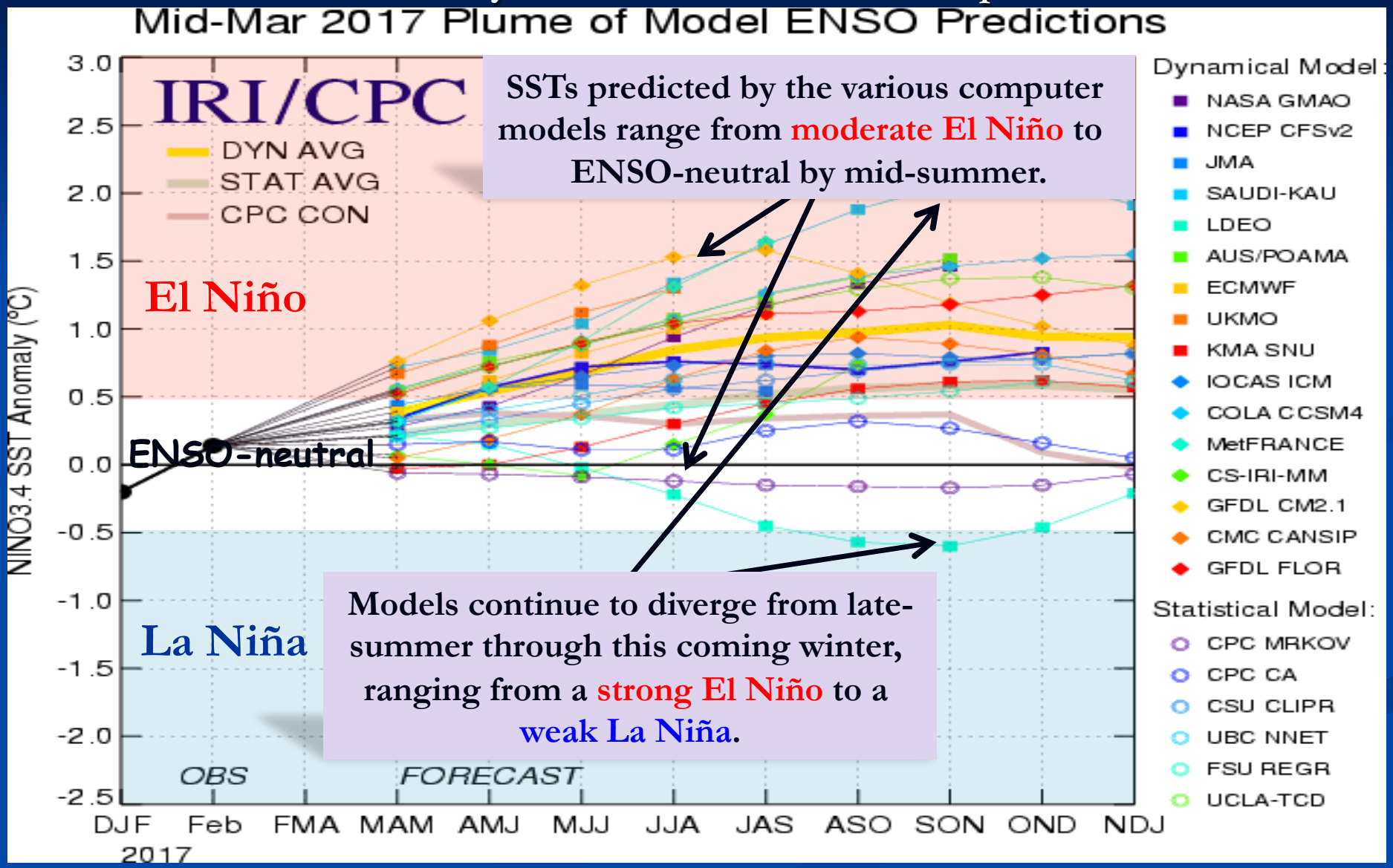
North Pacific Ocean



*PDO explanation via "Forecasting Methods..." at http://www.oregon.gov/ODA/programs/NaturalResources/Pages/Weather.aspx

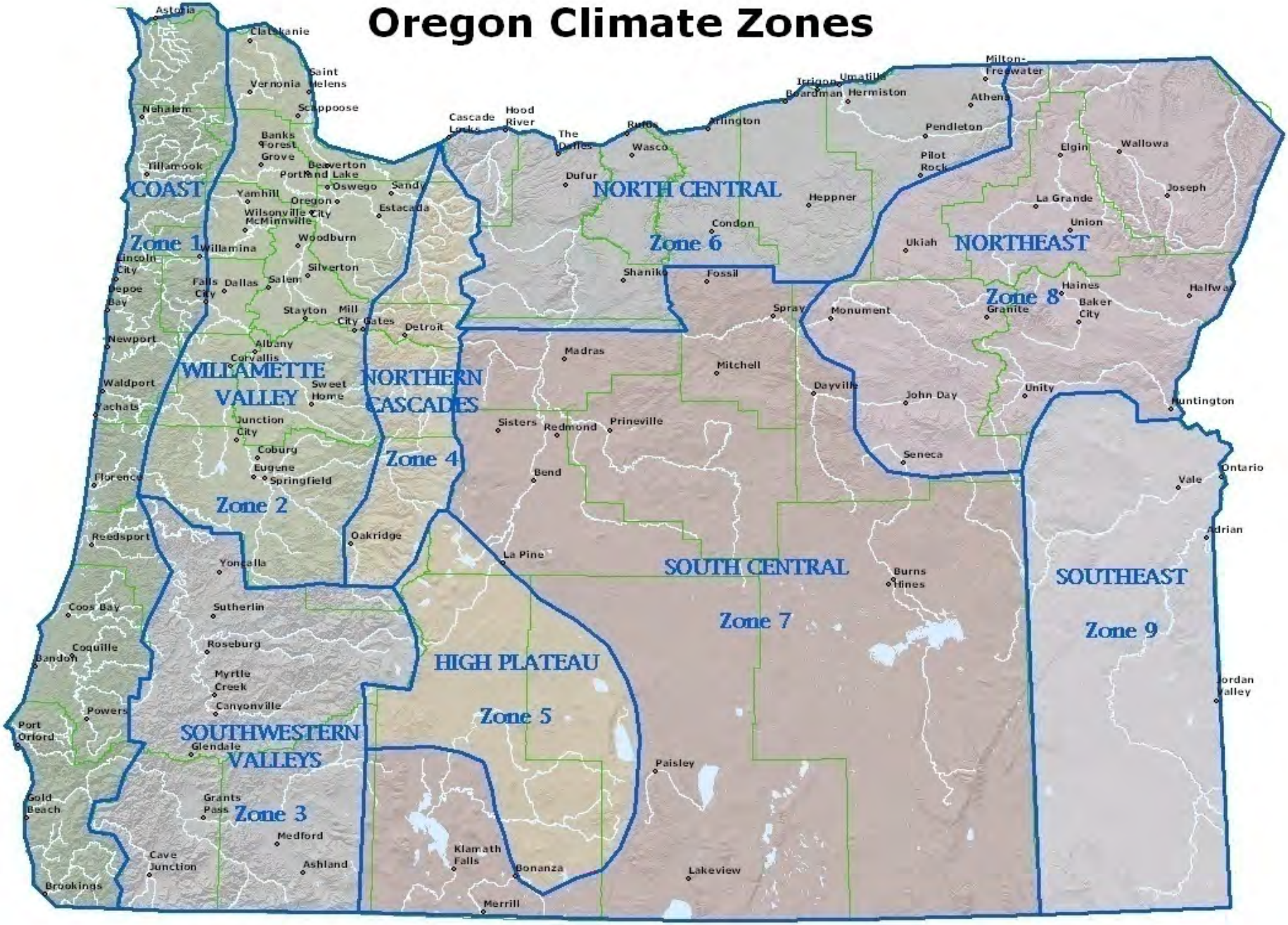
ENSO Predictive Models

Includes both dynamic and statistical model predictions



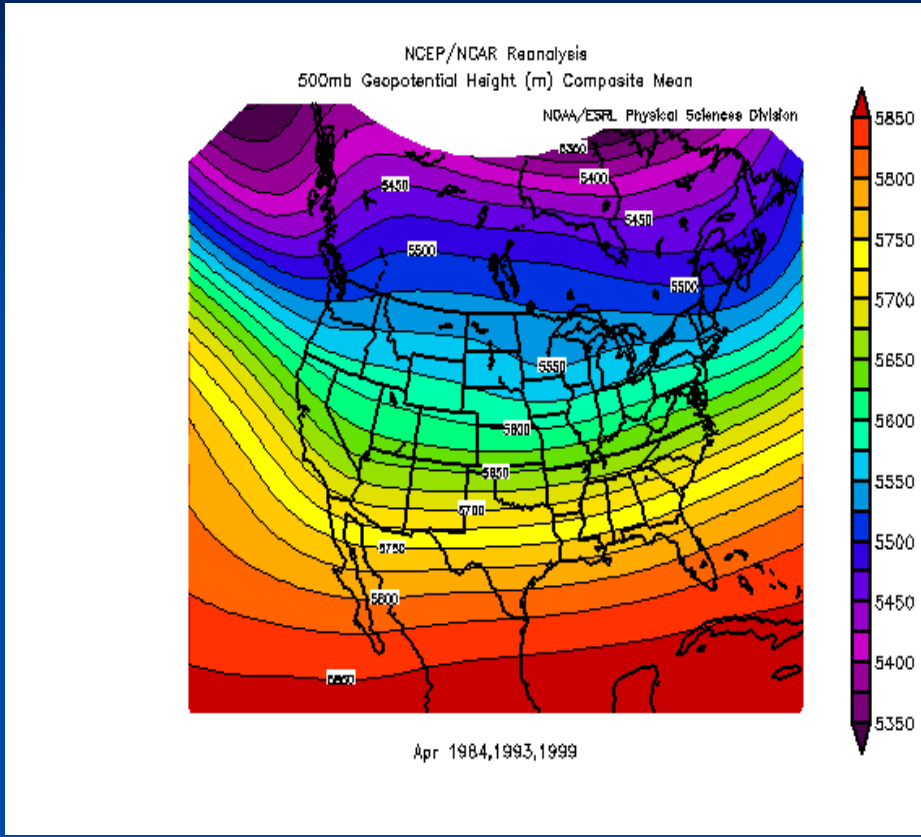
"Base" Graphic Courtesy: http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

Oregon Climate Zones

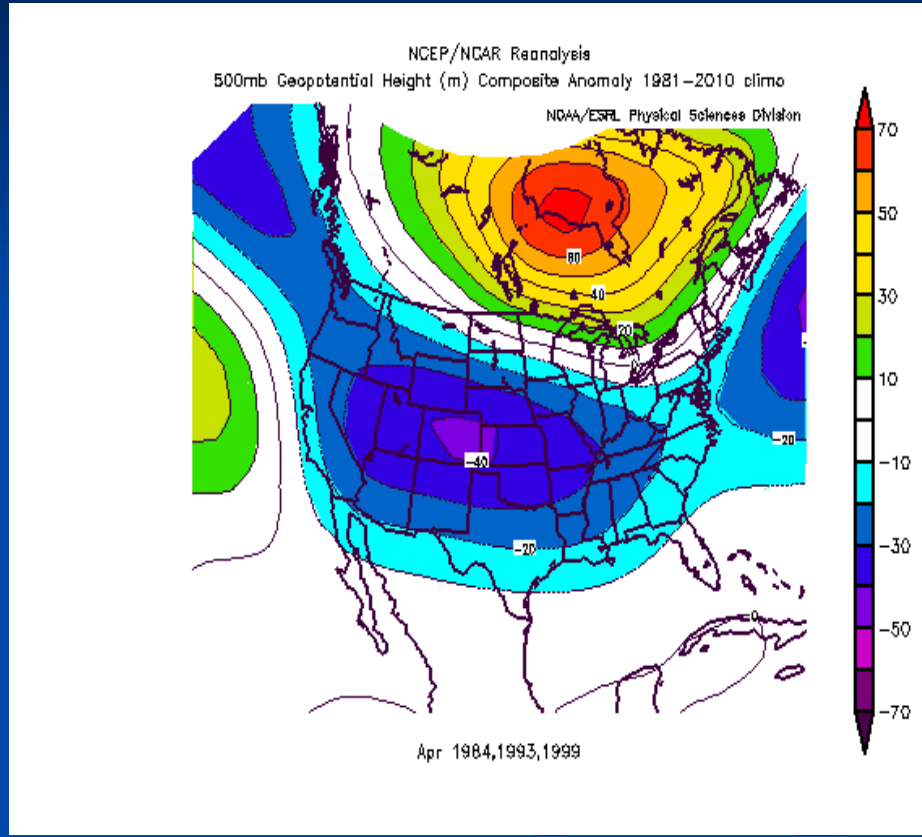


April 2017 Forecast

Mean Upper-Air Pattern



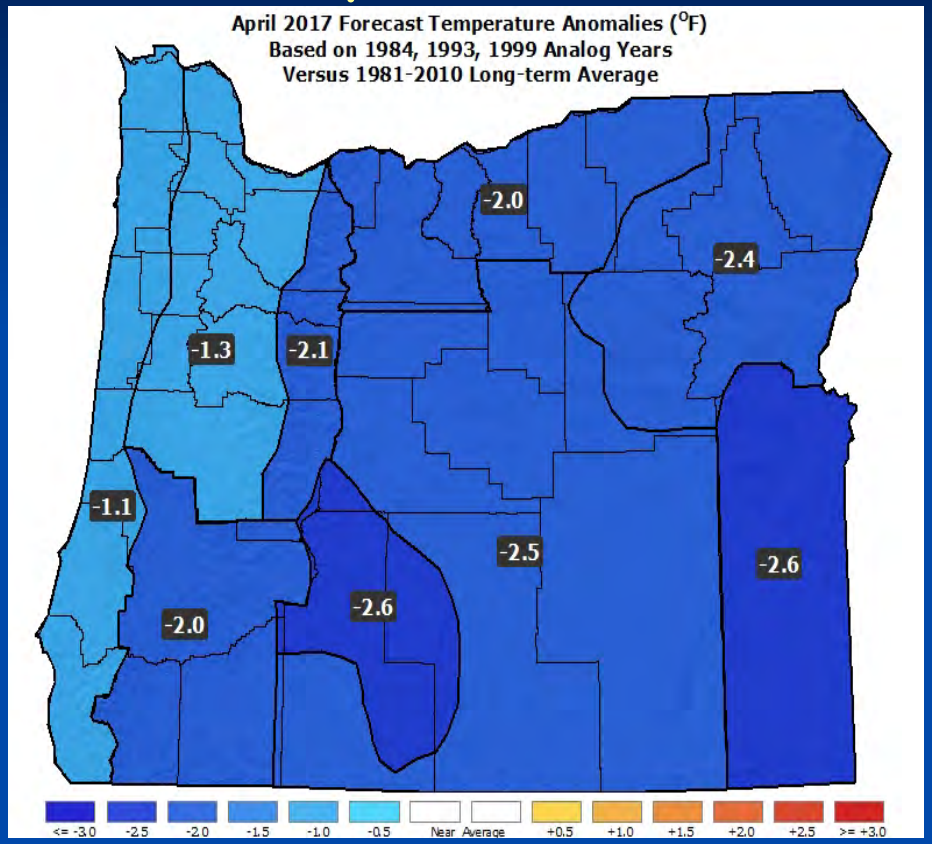
Upper-Air Anomalies



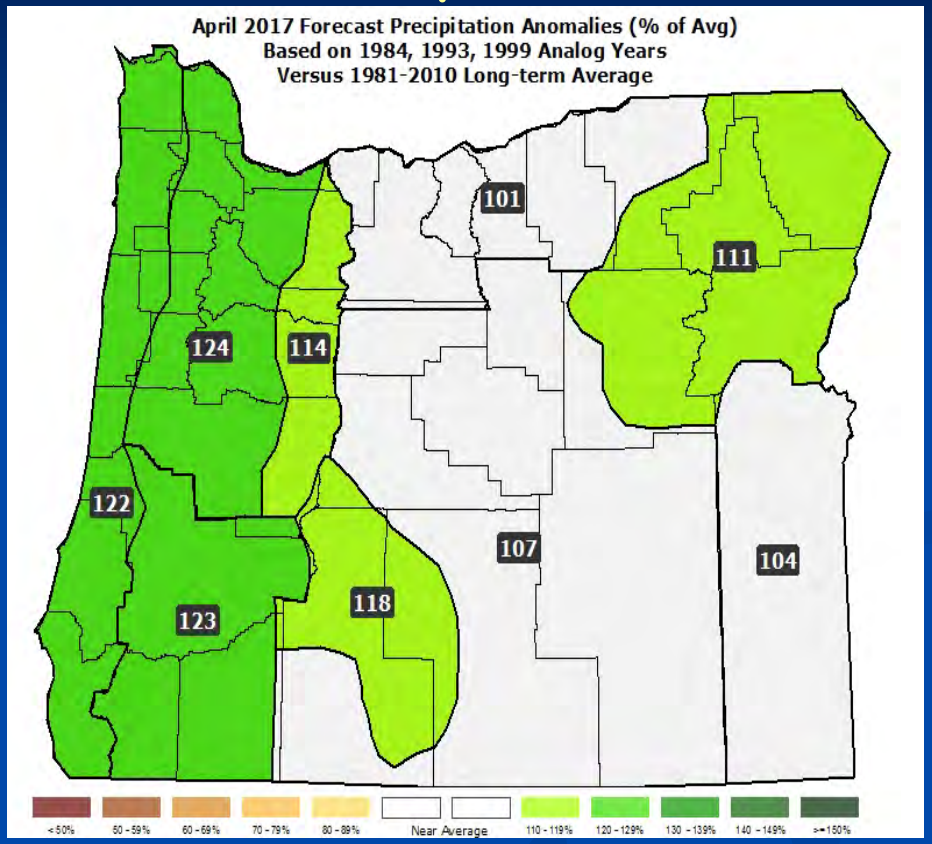
- Enhanced jet stream over Oregon should bring more cloudiness than usual, which will tend to suppress maximum temperatures.
- The air aloft should stay colder than average, likely delaying the peak and melt-off of most mountain snowpacks.

April 2017 Forecast

Temperatures



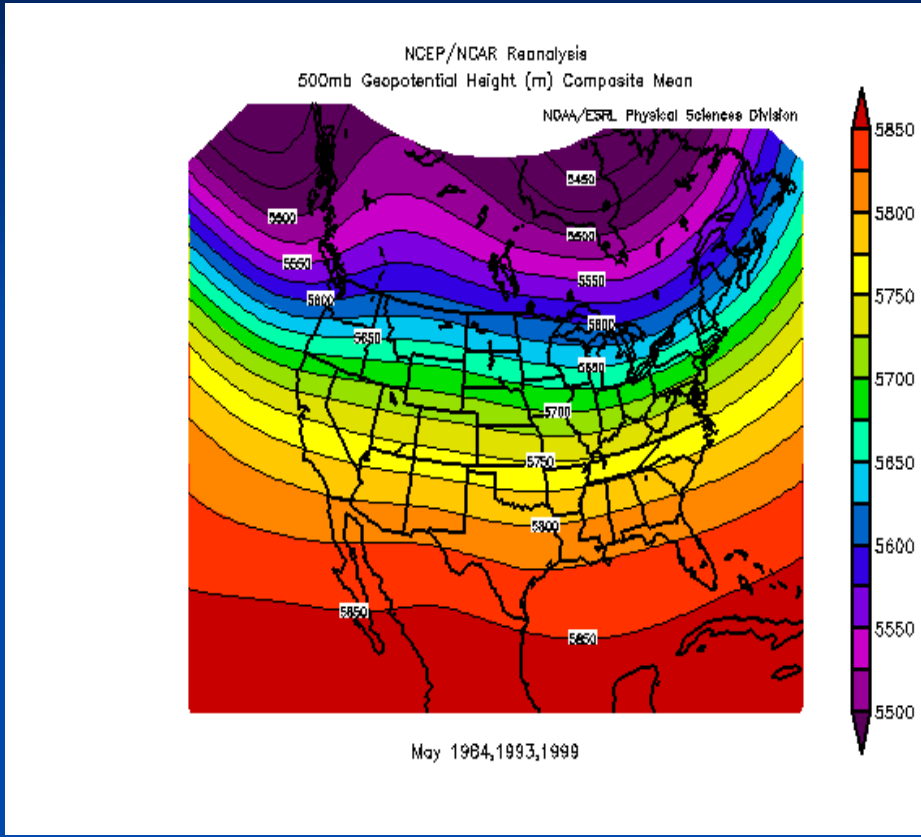
Precipitation



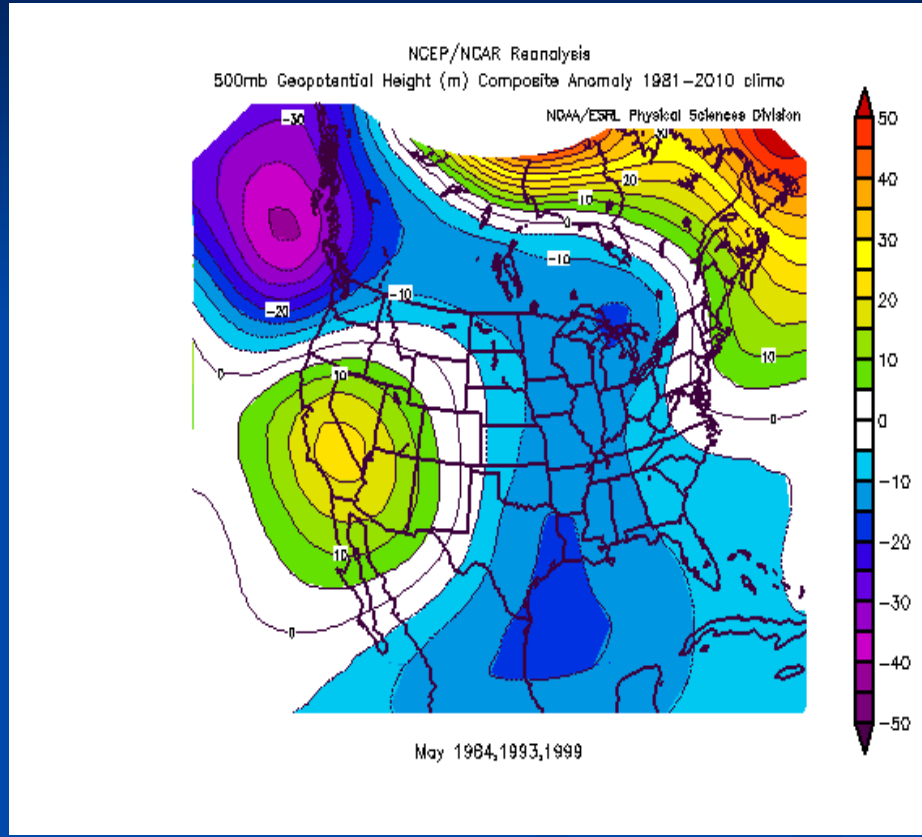
- Below-average temperatures, especially east of the Cascades.
- Lots of wet days with abundant rain and mountain snow. Snowpacks likely peaking higher and slightly later than usual.

May 2017 Forecast

Mean Upper-Air Pattern



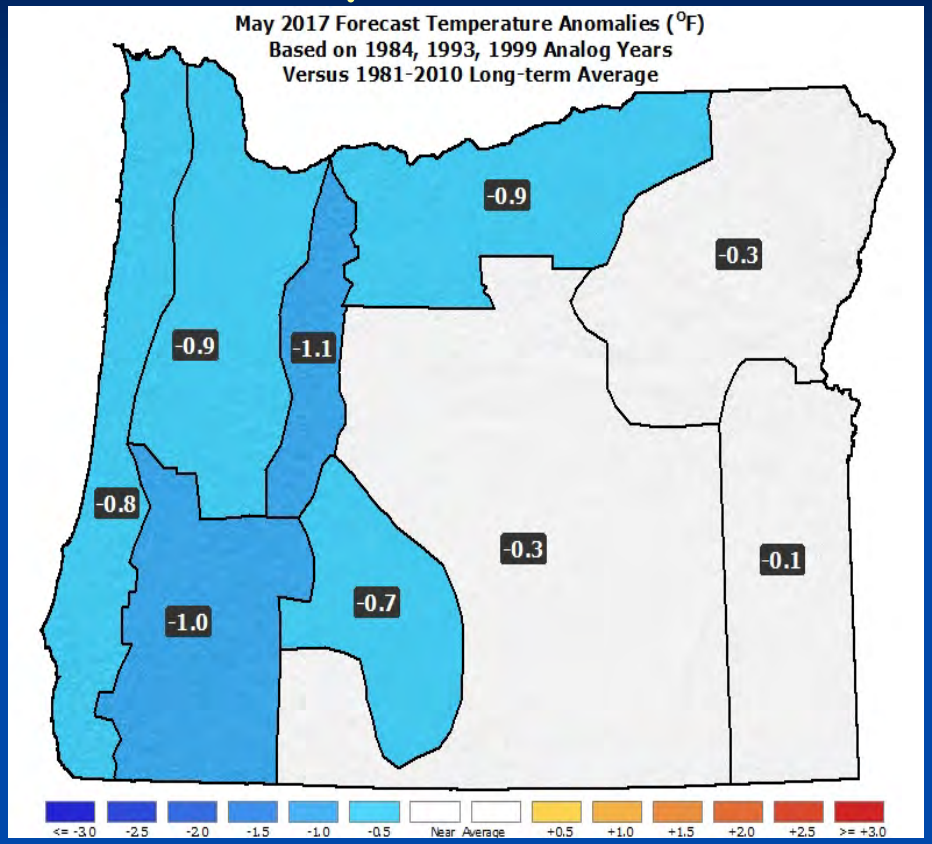
Upper-Air Anomalies



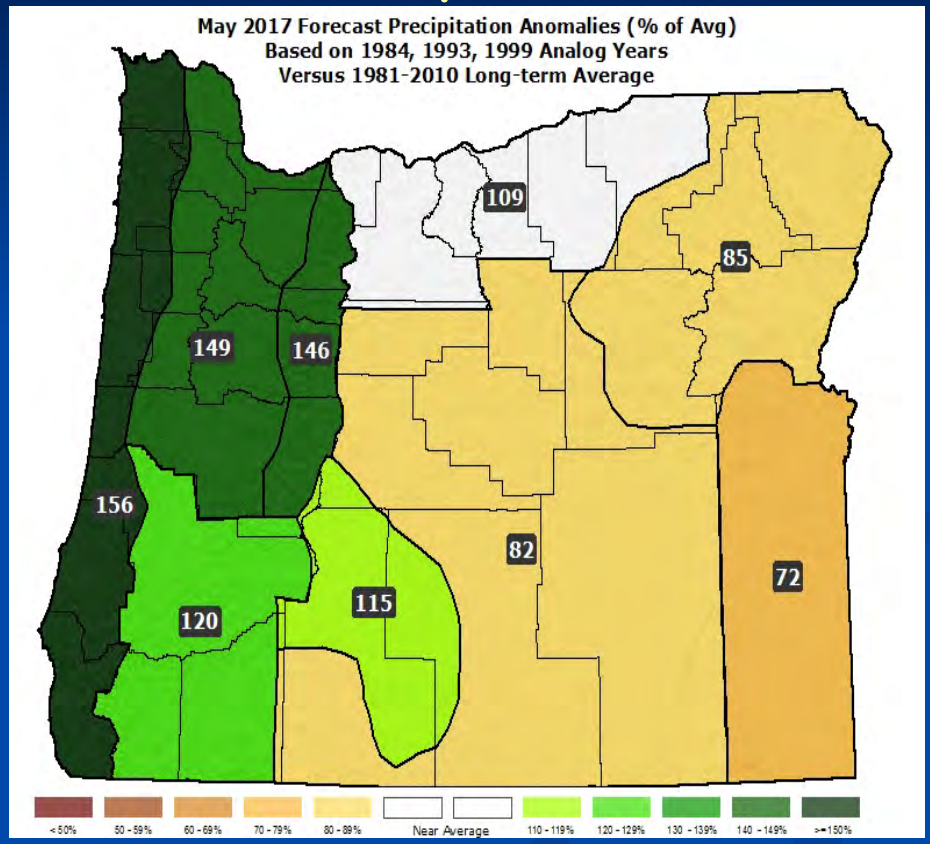
- Upper-air patterns of the top analog years have significant variation, which lowers forecast confidence.
- A blend of the analogs favors above-average storminess.

May 2017 Forecast

Temperatures



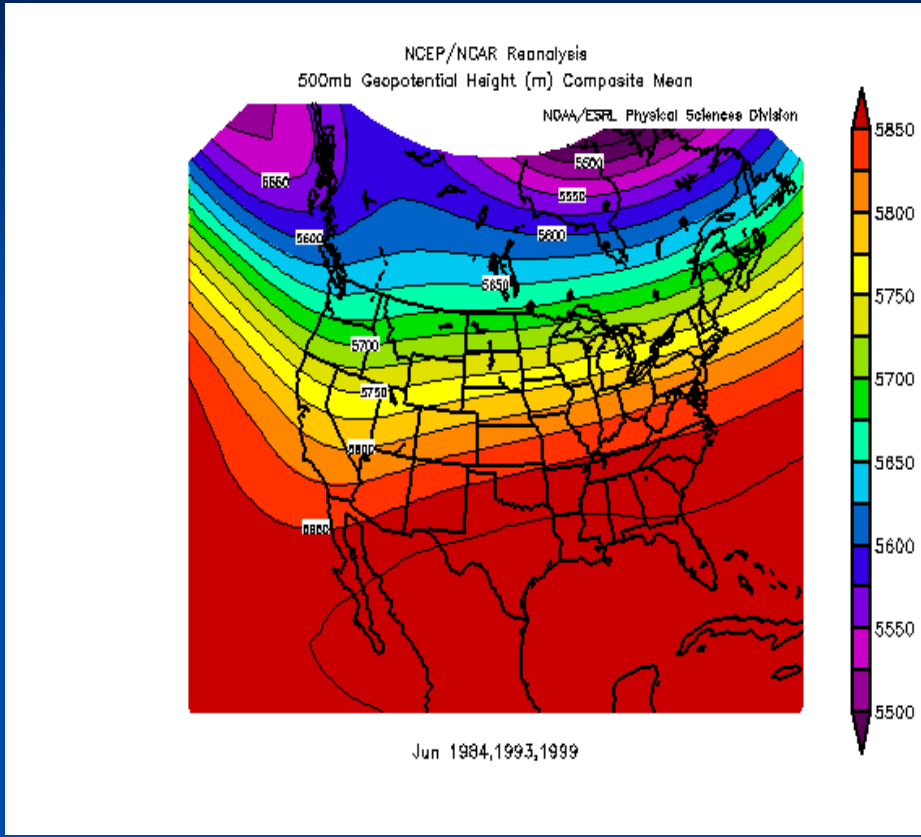
Precipitation



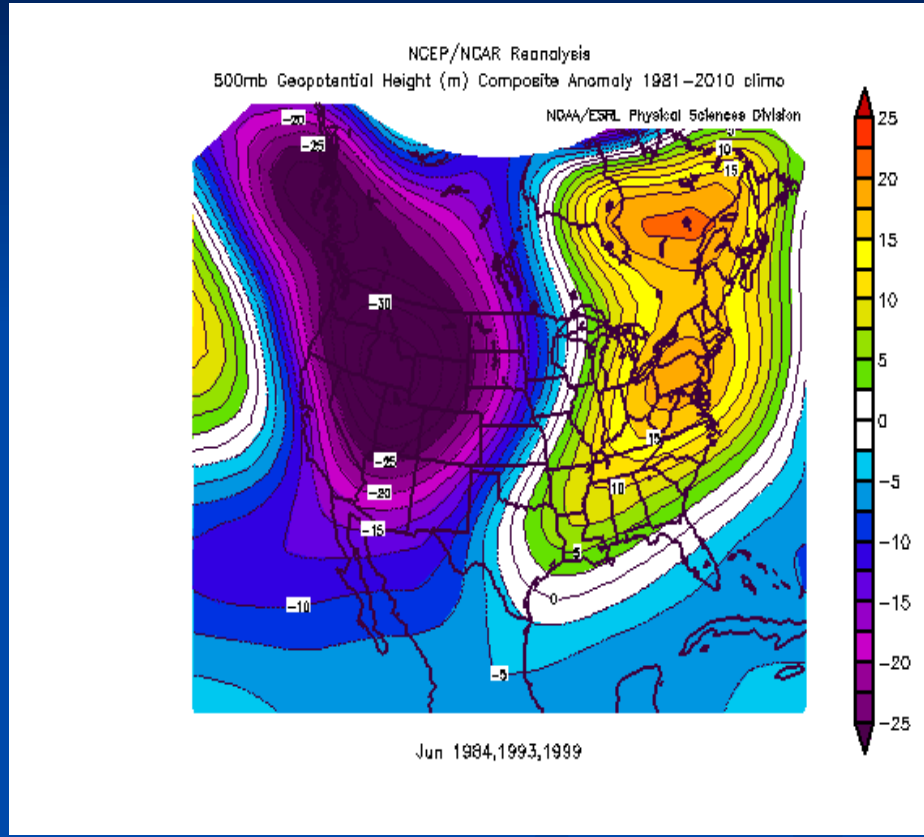
- Below-average temperatures are favored, especially west.
- Precipitation ranging from about 150% of average along the coast to slightly below average across the eastern zones.
- Seasonal melting of mountain snowpacks should be delayed.

June 2017 Forecast

Mean Upper-Air Pattern



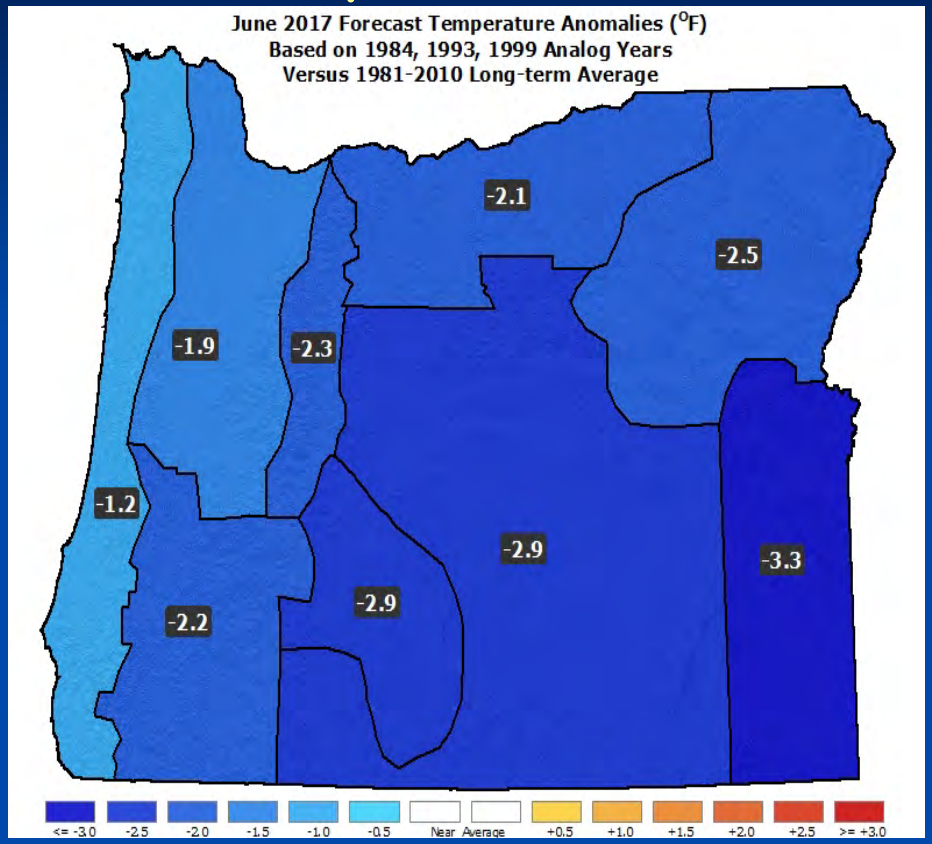
Upper-Air Anomalies



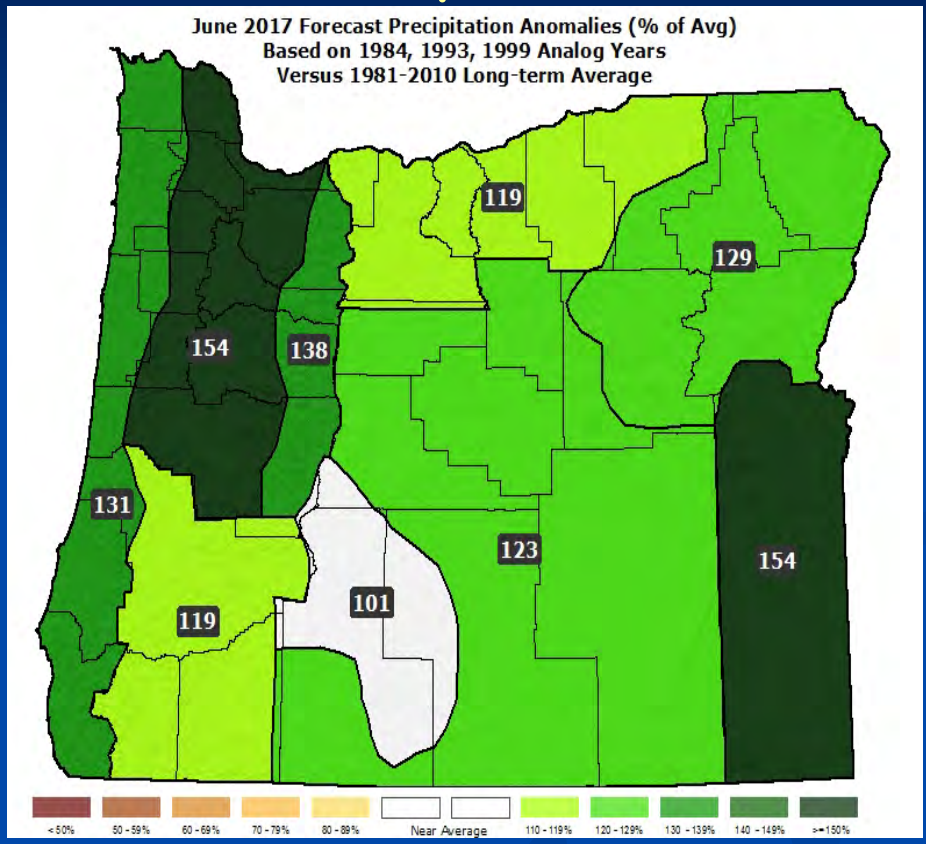
- Upper-air patterns from the analog years converge again on anomalous troughing over the Pacific Northwest.
- Stronger-than-normal onshore flow should provide more rainfall than usual and inhibit prolonged periods of warm weather.

June 2017 Forecast

Temperatures



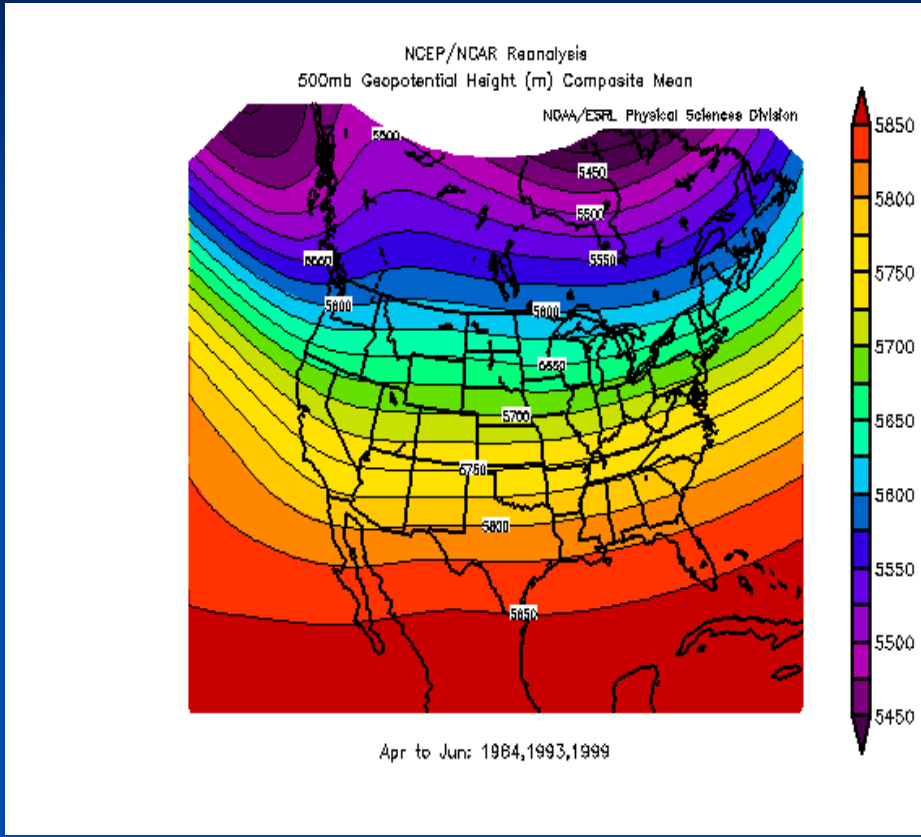
Precipitation



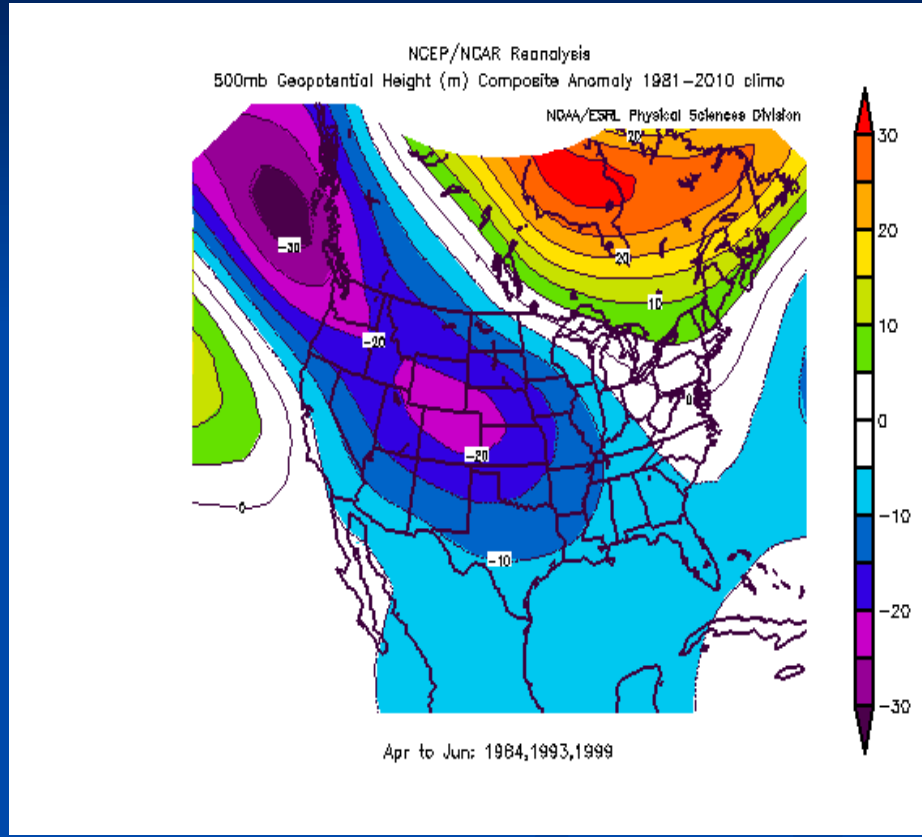
- Cooler-than-average temperatures statewide.
- Precipitation above average or well-above average.
- Above-average late-season mountain snowfall and snowpacks.

April – June 2017 Forecast

Mean Upper-Air Pattern



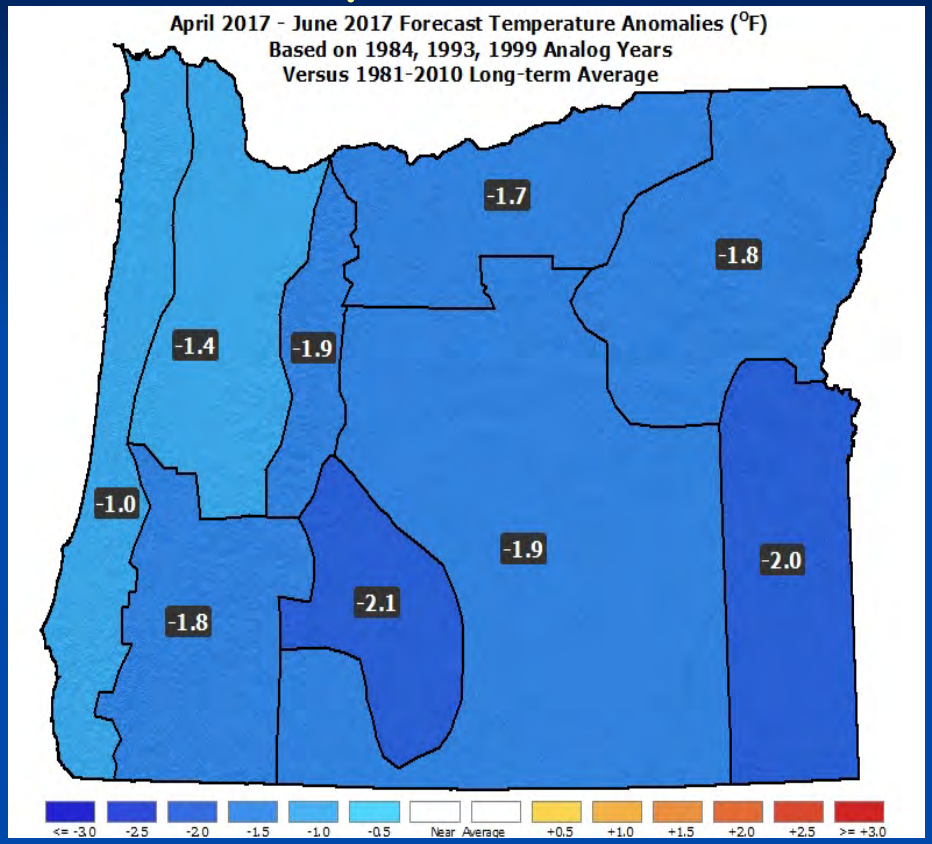
Upper-Air Anomalies



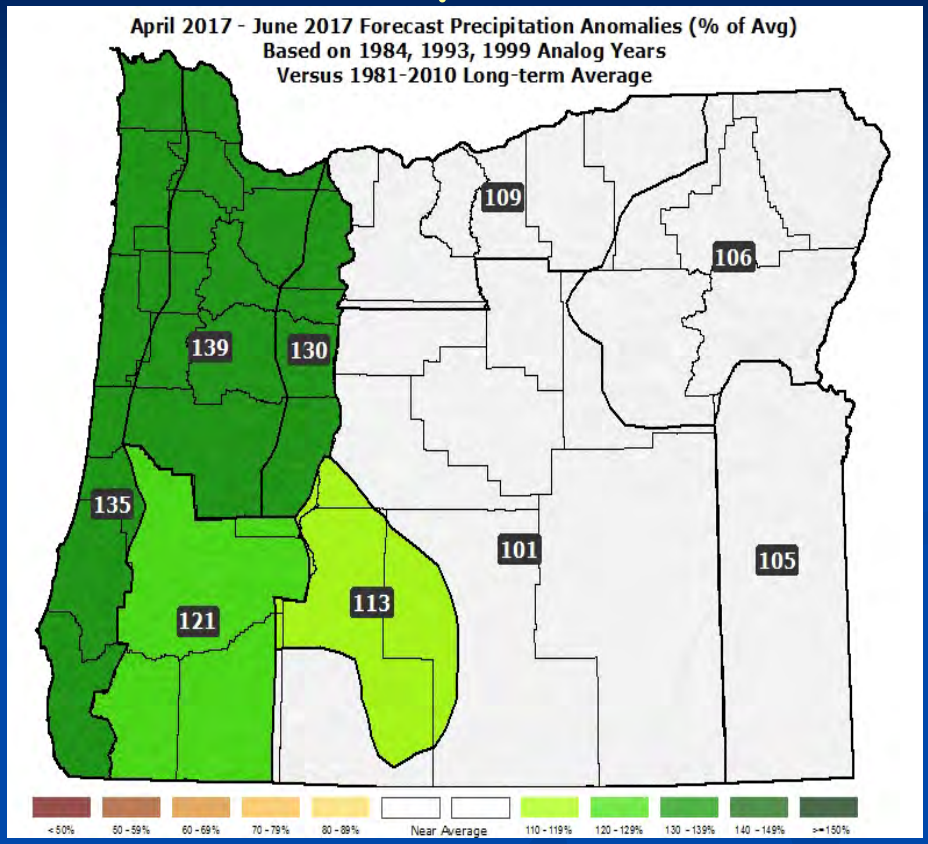
- Stronger upper-level troughing than usual should keep snow levels generally below average with increased storminess.
- An above-average snowpack, along with a slower-than-normal spring melt-off, correlates with a reduced potential for summertime wildfires.

April – June 2017 Forecast

Temperatures



Precipitation



- Below-average temperatures statewide, especially in April and June.
- Above-average precipitation, especially western zones.
- Snowpacks likely peaking later and persisting longer than average.

Forecast Resources

- CPC Official US Three-Month Forecasts (Graphics):

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=01

- CPC US 30-Day & 90-Day Forecasts (Discussions):

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/fxus07.html

- CPC Weekly & Monthly ENSO Discussions:

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

- Australian Government Weekly Tropical Climate Note:

http://www.bom.gov.au/climate/tropnote/tropnote.shtml

- Australian Government ENSO Wrap-Up:

http://www.bom.gov.au/climate/enso

- IRI ENSO Quick Look:

http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

- ODA Seasonal Climate Forecast Home:

http://www.oregon.gov/ODA/programs/NaturalResources/Pages/Weather.aspx

Water Supply Information

- NDMC U.S. Drought Monitor:

http://droughtmonitor.unl.edu/

- NIDIS North American Drought Portal:

http://www.drought.gov/nadm/content/percent-average-precipitation

- NRCS Snow Water Equivalent Oregon Map:

http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/or_swepctnormal_update.pdf

- NRCS Snow Water Equivalent Products:

http://www.wcc.nrcs.usda.gov/snow/snotel-wereports.html

- NRCS Weekly Water and Climate Update:

http://www.wcc.nrcs.usda.gov/cgibin/water/drought/wdr.pl

- NRCS Western Snowpack Data & Water Supply Forecast:

http://www.wcc.nrcs.usda.gov/cgibin/westsnowsummary.pl

- WRCC WestWideDroughtTracker:

http://www.wrcc.dri.edu/wwdt/

Updated Monthly
(Around the 20th)
Your Feedback is Welcome!
Sign-up for Email notification of updates at:
http://listsmart.osl.state.or.us/mailman/listinfo/seasonalclimateforecast
Contact: Pete Parsons, ODF Meteorologist
at 503-945-7448 or peter.gj.parsons@oregon.gov
R. GRESS