

Winter 2013-2014 Climate Forecast



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October 26th, 2013

Oregon-AMS Meeting, OMSI, Portland

Columbia River Inter-Tribal Fish Commission
Portland, Oregon

Columbia River Inter-Tribal Fish Commission - CRITFC



The screenshot shows the CRITFC website with an orange header. The logo is on the left, followed by the text 'Columbia River Inter-Tribal Fish Commission' and the tagline 'putting fish back in the rivers'. Navigation links include 'Jobs', 'Calendar', 'Donate', 'Contact', and 'Press Room'. A search bar is labeled 'Search CRITFC'. Below the header is a menu with 'About CRITFC', 'Salmon Culture', 'Member Tribes', 'Blog', 'Buy Salmon', and social media icons for Twitter and Facebook. A secondary menu lists 'FISH AND WATERSHEDS', 'TRIBAL TREATY FISHING RIGHTS', 'EDUCATION', and 'FISHER SERVICES'. The main content area features a large image of a person in traditional regalia holding a fishing net, with the text 'Sharing Salmon Culture' and a paragraph about the meaning of 'Wya-Kan-Ush-Pum'. To the right is a yellow box titled '2013 Bonneville Fish Count' with text about daily fish counts. Below this are two columns: 'Currents' with an article 'Tribal Restoration Efforts Paying Off' and a 'Subscribe' button, and 'Advocacy Issues' with a 'Resident Fish Consumption Advisory' and a 'Continue Reading' link. A red 'CONSUMPTION ADVISORY' banner is also visible. The footer contains links for 'CRITFC Home', 'Contact CRITFC', 'Sitemap', 'CRITFC RESOURCES', 'RESEARCH', 'ACTIVITIES', and 'CONNECT'.



CRITFC website, <http://www.critfc.org>



2012-2013 Climate Forecast Performance

Month:	Temperature (mean monthly):	Avg. (20-yr)	Observed	Precipitation (% normal):	Avg. (20-yr)	Observed
November	Near Normal (-1.8 to + 1.8 degF)	1	3.4	Near Normal (90 - 110%)	92%	149%
December	Near Normal (-1.8 to + 1.8 degF)	1	2.1	Below Normal (70 - 90%)	86%	137%
January	Near Normal (-1.8 to + 1.8 degF)	1	-3.3	Near Normal (90 - 110%)	99%	75%
February	Near Normal (-1.8 to + 1.8 degF)	1	0.3	Below Normal (70 - 90%)	88%	32%
March	Near Normal (-1.8 to + 1.8 degF)	1	0.5	Near Normal (90 - 110%)	101%	41%
	average:	1	0.6	average:	93%	87%

...but what about Snow events?!

Forecasted four events...1 to 2 inches each, December to early March.

Observed THREE snow events...1 inch seasonal total.

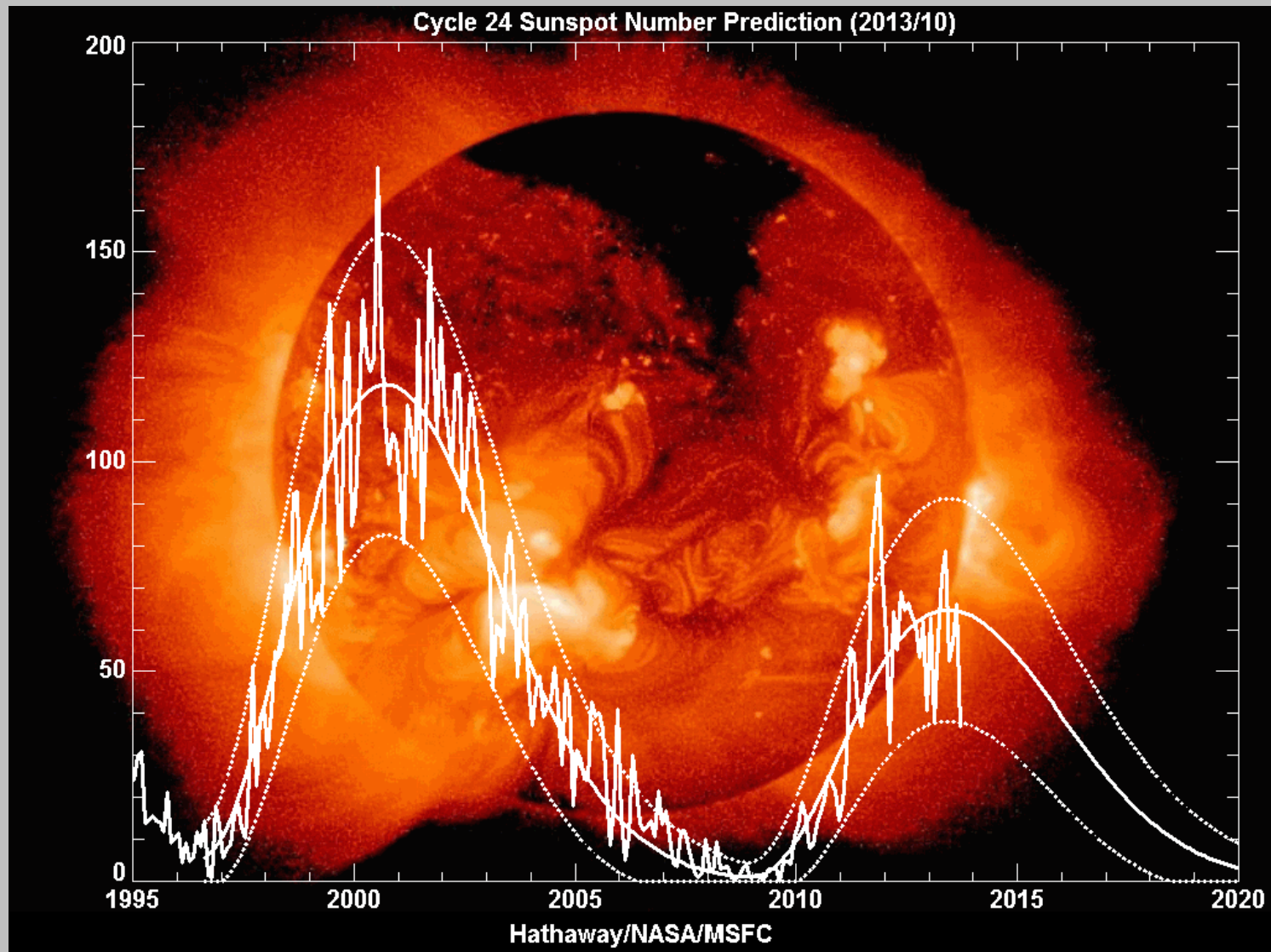
Water Supply Forecast (MEI method): Columbia R. at The Dalles, Jan.-July:
 102 MAF (issued Nov 2012), 95%. Observed: 97.7 MAF. Error $\pm 4\%$.
 102 MAF (issued April 2013), 95%. Observed: 97.7 MAF. Error $\pm 4\%$.



Introduction – Methods

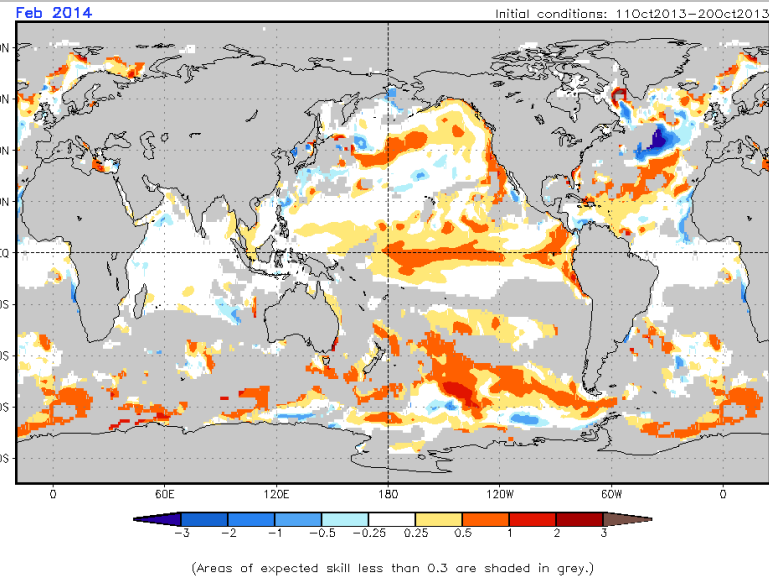
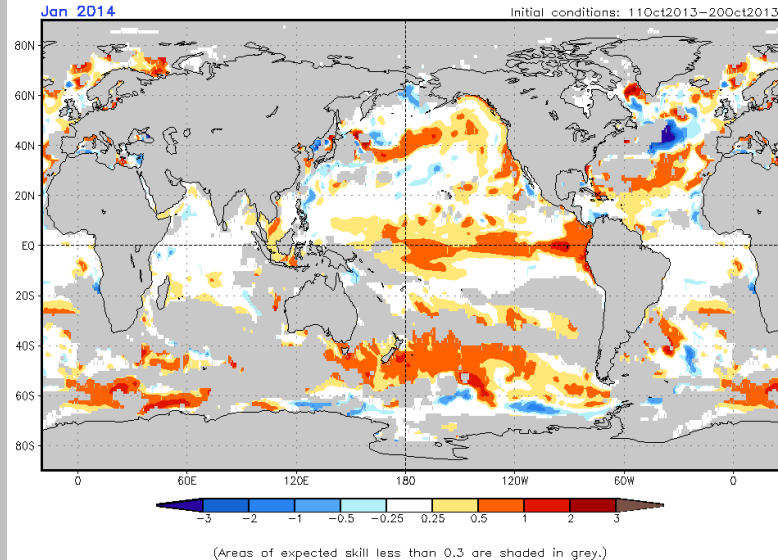
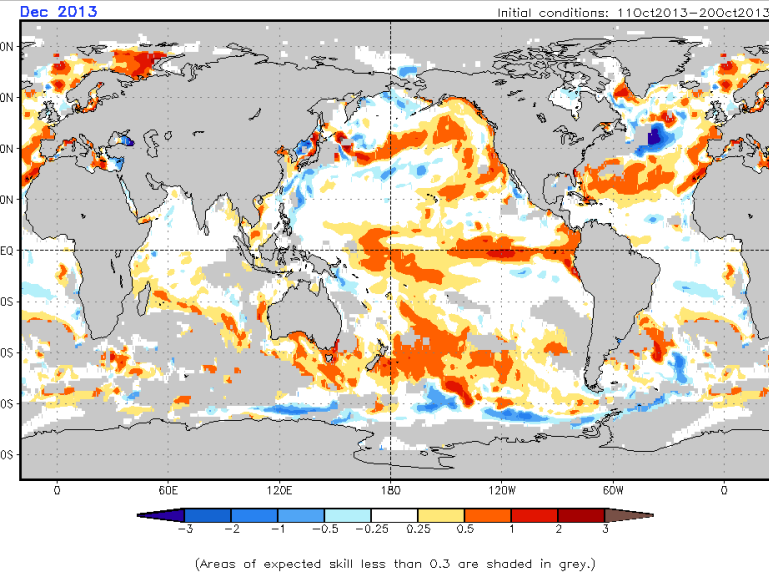
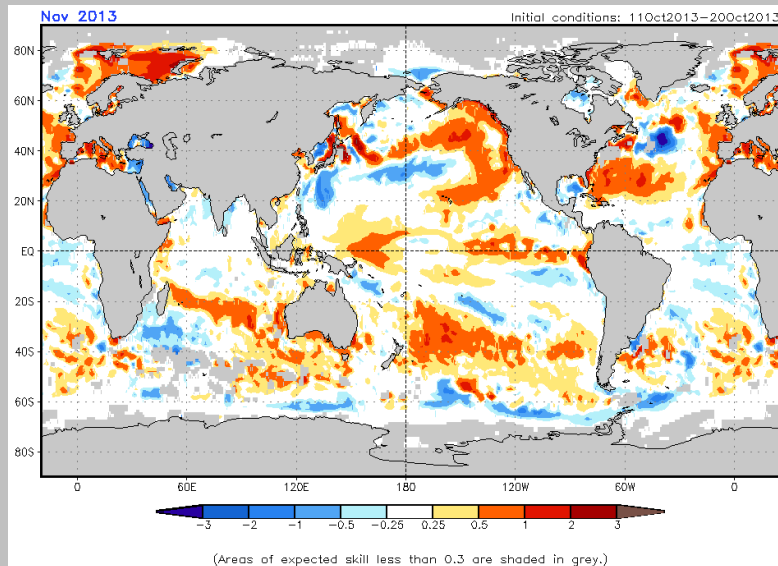
- CRITFC forecast uses a holistic, integrated big picture view.
- Big-picture: **Solar Forcing** (e.g., sunspot cycles) does influence our global weather patterns. *In memoriam:* Dr. Landscheidt, 1922 – 2004, of Germany.
- Track ENSO with the Multi-variable ENSO Index: **MEI**.
- Sea-Surface Temperature Departure Forecasts.
- Hydro-Climate approach: Water year 2014 volume forecast uses regressed Multi-variable ENSO Index vs. historic runoff for the Columbia R. at The Dalles. Use a suite of 20 past water years.
- Select the “right” mixture of past years: 1949, 1952, 1953, 1957, 1958, 1960, 1961, 1962, **1964**, 1967, 1975, 1981, 1982, 1984, 1990, 1991, **1996**, 2002, 2006, and **2012**.
- Pattern recognition is key: ***ENSO-neutral*** and ***La Niña***.

SUNSPOT COUNTS – TREND TO “LA NIÑA”?

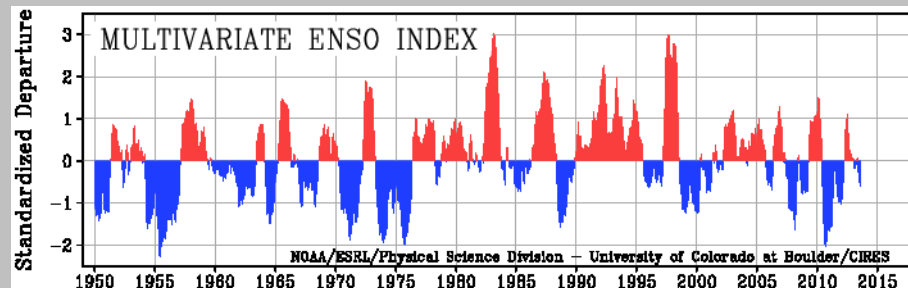
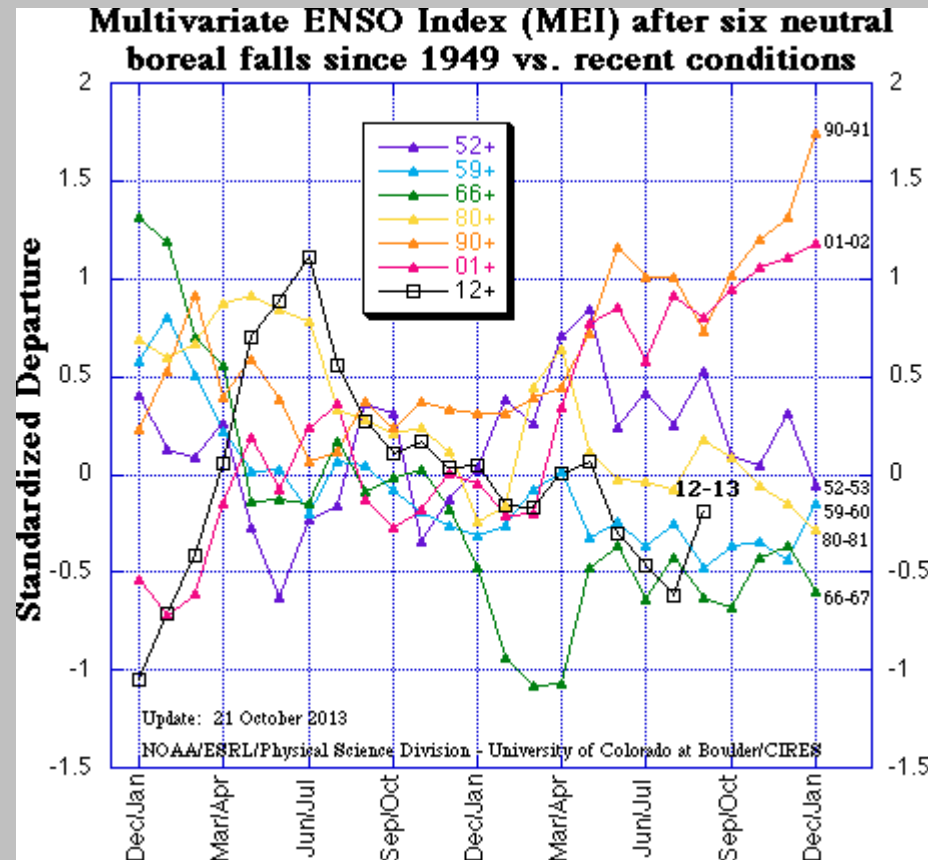


http://solarscience.msfc.nasa.gov/images/ssn_predict_l.gif

NOAA SEA SURFACE TEMPERATURES SUGGEST "????"

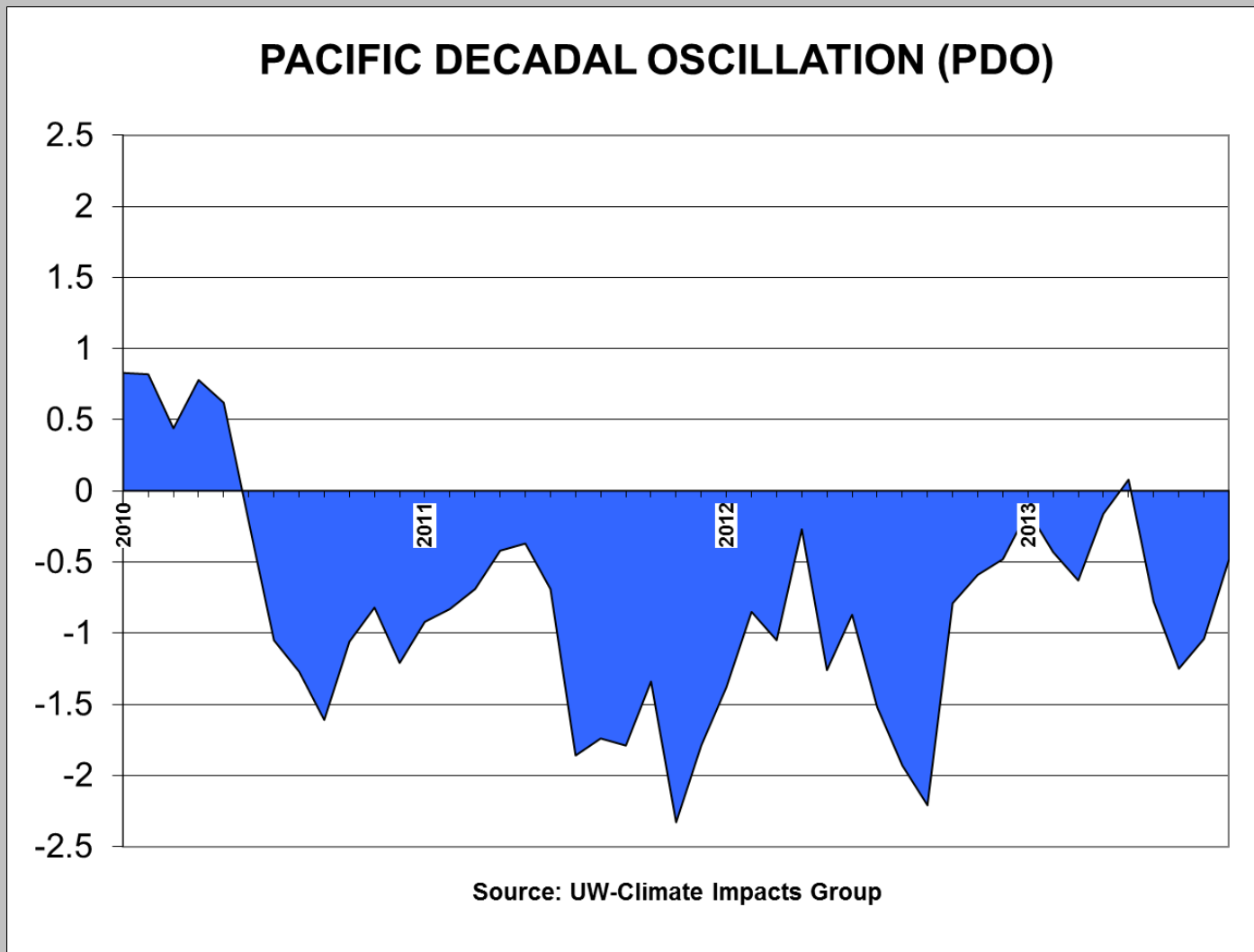


MEI SIGNAL SUGGESTS "ENSO-NEUTRAL" WINTER WEATHER

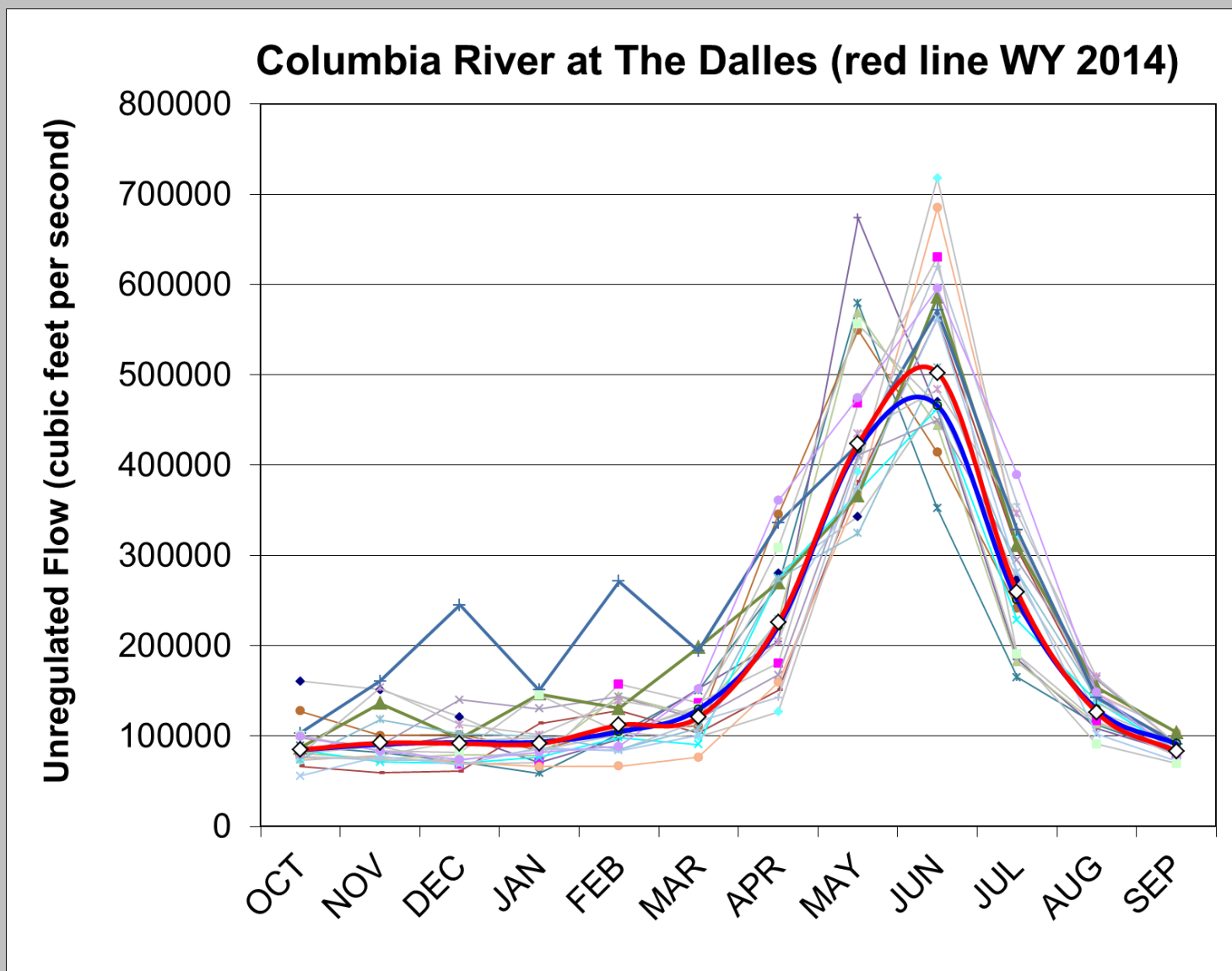


MEI tracks the Sea-Level Pressure, surface winds (2D), Sea-surface Temperature, Air Temperature, and fraction of Cloud cover.

PDO SIGNAL...THE COLD PHASE CONTINUES



ENSEMBLE STREAMFLOW FORECAST



Blue line = long-term average (WY 1929-2013)



Summary: The Forecast

Month:	Temperature (mean monthly):	Avg. (20-yr)	Precipitation (% normal):	Avg. (20-yr)
November	Near Normal (-1.8 to + 1.8 degF)	1	Near Normal (90 - 110%)	100%
December	Near Normal (-1.8 to + 1.8 degF)	1	Below Normal (70 - 90%)	84%
January	Near Normal (-1.8 to + 1.8 degF)	1	Near Normal (90 - 110%)	104%
February	Near Normal (-1.8 to + 1.8 degF)	1	Near Normal (90 - 110%)	105%
March	Near Normal (-1.8 to + 1.8 degF)	1	Near Normal (90 - 110%)	102%

EXPECT HIGH VARIABILITY PLUS EXTREMES — HEAVY RAIN EVENTS, DRY-SPELLS, FLOODS, etc. WATCH OUT FOR SPRING!

WATER SUPPLY FORECAST: **110 MAF** or 108%, COLUMBIA RIVER AT THE DALLES, JANUARY - JULY.

...but what about Snow events?!

Expect Four events...1 moderate (2-4 inch), 3 minor (1 inch)
(70% - 90% likely), January through late-March.

