

**Western Regional Environmental Conditions and Impacts Coordination Webinar
April 25, 2016**

Roll Call:

Name	Affiliation
Andrea Bair	NWS Regional Office
Alicia Marrs	OAR ESRL Physical Sciences Division
Bill Peterson	NMFS Northwest Fisheries Science Center
Chris Harvey	NMFS Northwest Fisheries Science Center
Christina Fahy	NMFS West Coast Regional Office
Dan McEvoy	Western Regional Climate Center (WRCC)
Danielle Williams	Southern California Coastal Ocean Observing System
Dave Anderson	Central and Northern California Ocean Observing System (CeNCOOS)
Dave Lott	NOS Office of National Marine Sanctuaries
Jan Newton	Northwest Association of Networked Ocean Observing Systems
Jennifer McWhorter	Government Relations, Scripps Institution of Oceanography
Josh Foster	Oregon Climate Change Research Institute
Kristen Koch	NMFS Southwest Fisheries Science Center
Michael Milstein	NMFS West Coast Regional Office
Mike Anderson	CA State Climatologist
Roger Pierce	NWS Weather Forecast Office, San Diego
Ruth Howell	NMFS Northwest Fisheries Science Center
Timi Vann	NMFS Northwest Fisheries Science Center
Toby Garfield	NMFS Southwest Fisheries Science Center
Valerie Were	NOAA Headquarters

Summary: Dan McEvoy, Western Regional Climate Center, welcomed attendees to the meeting, conducted roll call and reviewed the agenda. Dan provided the regional climate brief. The climate overview highlighted temperature departures from average for the first three weeks of April, and for the water year (October 1, 2015 to April 23, 2016). April has been exceptionally warm, with some departures 8 to 10-deg F above normal; the only part of the region below average is New Mexico.

The part of the region that stands out for precipitation for the period April 1 – April 23 is Southern California, and it was certainly good to see some precipitation falling there. Dan reported that a lot of the West has been near normal except Southern California and the Desert Southwest. Washington and the Great Basin are well above normal for the water year. Dan discussed the Haywood plot (Slide 5) that shows the accumulated precipitation from October 1 through the end of the water year. He highlighted the six strong El Niño years (defined as events with SST anomaly greater than 1.5-deg. C), and noted that although there is a bump up in the curve (Slide 6) this year's El Niño is by far the driest among all of the strong El Niño events on record.

Dan reported on the exceptionally rapid decline in snowpack and early snowmelt due to the warm temperatures. On Slide 7, this is especially noticeable for Washington and Oregon where reductions in the Snow Water Equivalent (SWE) percent of normal over the last month have been dramatic (e.g., from 109% normal in March to 9% normal in April, in one instance). This is an exceptionally fast melt out. Dan reported that California is also having a rapid melt out and is statewide 60% of average.

On Slide 9 & 10, Dan described the significant discrepancy between precipitation percent of normal and snow water equivalent percent of normal. For example, in some basins in Washington, precipitation is measured at 120% of normal but only 60% for snow water equivalent. Again, this is very rapid melt – much faster than normal, and we are seasonally moving past the time of year when the region typically gets more snow. On that note, Dan did note recent storms in Colorado dropped significant snow in the front range (up to 4 feet of snow), so the SWE in that area is doing well.

Dan also reviewed the seasonal drought outlook, which depicts the tendency of specific geographies to move in/out of drought. He noted that the March 17 outlook (through June) looked promising for Northern California and Oregon, but the outlook released this month (through July) shows the entire state of California shifted back to a persistent state of drought. Dan highlighted key points on the complex relationship and effects of drought and precipitation on fuels and fire season and highlighted the seasonal fire outlook for the region. When the drought conditions occur has a big impact on the risk of wildfire. For example, a wet early winter followed by springtime drought conditions will limit fine fuel growth and thus help inhibit fires. Alternatively, early in the year drought conditions followed by a wet spring will help fuel (fine grasses) grow. There is above normal significant wildland fire potential in the Southwest, which is not surprising.

Dan reported that we are still under an El Niño advisory. The strong El Niño signal is starting to fade, but there is still plenty of warm water (Slide 17 & 18). A La Niña watch has been issued and there is an increasing chance of La Niña (50-60% probability) in the fall to winter timeframe. A question was asked about regional media reports stating that a strong El Niño is followed by a strong La Niña, and if that is true. Dan said the short answer is no, but that he too has heard media talk of a strong La Niña and big snow in the Pacific Northwest – and that it is really way too early to start talking about that.

As for seasonal forecasts, all point to higher probabilities for above normal temps especially in the June July August (JJA) timeframe. There was a question about how “normal” is calculated, and it is over the 1981-2010 base period. Dan wrapped up the climate overview with some comments on forecast verification. The January-March forecast validation for precipitation shows the forecast had a low score – that is, no skill. For temperature, the forecast is better. In many ways, this El Niño didn’t evolve like what was forecast.

Jan Newton, Executive Director of the Northwest Association of Networked Ocean Observing Systems (NANOOS) reported observations from the NANOOS Climatology application. She highlighted a March composite of satellite data for SST and sea surface elevation both coded for positive anomalies. The temperature composite shows remnants of an El Niño signature, and the sea surface elevation composite is interesting in that in the equatorial zone, it seems to have collapsed. Jan noted that one of the benefits of the regional ocean and coastal observation network is the ability to bring a more localized view of conditions to stakeholders. Slide 28 depicts coastal wave height anomaly data that shows positively high coastal waves. In this slide, the seasonal cycle is represented by the dark blue line, and the standard deviations by the pink and red lines.

Jan also highlighted a buoy asset off the Washington coast at Cape Elizabeth (Slide 29). Although the sea surface signature has died down overall, the coastal strip remains quite high – in fact some of the warmest registered at this particular site. Jan also highlighted some very interesting connections between off shore conditions and the Puget Sound. Within the Puget Sound estuary, profiler data (to 80-meter depth) shows Puget Sound deep waters at about 2-degrees warmer over the 11-year record. Deep waters are “off the charts warmer”, and the signal is very strong. The high regional precipitation signal is also showing up in salinity data collected from the same buoy asset. At the start of the year, salinity tracked close to normal but due to increased precipitation, we see sea waters that are now fresher than normal. Warmer temperatures and fresher water yields lighter sea water density and this will affect

estuarine circulation which is forced through sea water density gradients; lighter than normal waters will affect the speed of circulation. It will be very interesting to see what happens. This is a remnant effect of The Blob and El Niño.

Jan shared how much she and other NANOOS stakeholders appreciated the monthly WRECIC webinars. There is a groundswell of interest in these monthly updates, and a lot of value to being able to listen and discuss large-scale processes. She hopes this effort can continue.

Dave Anderson, Director of the Central and Northern California Ocean Observing System provided a slide on the spring transition – a shifting of winds, which marks the beginning of the upwelling season and generally occurs between March and June (Slide 33). Dave highlighted data that show the signal is becoming consistently positive at latitude 36N. The middle panel depicts current vectors directed southward. This is the southward current of the California Current that spins up each summer following the spring transition and draws upwelling throughout the summer. The transition does not occur at the same time everywhere along the coast. The upper right table shows the average Julian day of the spring transition, with transition occurring progressively later at higher latitudes. In general though, across the coast the average time of year for the spring transition is around April. This is the most massive and impactful transition that occurs in the California Current and impacts all economic sectors. In closing, Dave noted that it is not uncommon for winds to shift direction and obscure the transition – and that this is also happening now.

Timi Vann provided an overview of regional impacts on places and people in the region, as they showed up via media sources. She also noted that the second edition of the NOAA West Watch was distributed with positive feedback. The third issue is in works and will focus on changing environmental conditions within the interior region – likely the intersection of temperature, heat, forest ecosystem, drought and wildfire. Michael felt this should be done in the next couple weeks, and noted that part of what we're trying to capture and highlight are stories that haven't received any or much coverage.

Timi shared with the group the current plan for project close out. The project will likely conclude in May. She reminded participants of the project backdrop – the unusual ocean conditions – AKA “The Blob”, and the emerging so-called “Godzilla El Niño”. Last year, in talking with Kevin Werner, NOAA's Western Regional Climate Services Director at the time, it seemed potentially worthwhile to try and organize some sort of short term and targeted coordination over the summer/fall 2015 and winter/spring 2016 timeframe. The idea was to improve awareness of regional predictions (what we thought could happen), regional observations (what actually happened) and input on how people and places within the region were experiencing environmental change (i.e., impacts) – particularly during the time of unusually warm ocean waters and the strong El Niño. The forum was intended to improve information sharing across NOAA mission lines and also our regionally based partners, and to tell more compelling human interest stories related to changing regional environmental conditions.

After Kevin Werner left to take a new position within NOAA, the NOAA West team funded the Western Regional Climate Center to provide a short-term contract for Dan McEvoy to deliver regionally tailored climate information. That contract will term out in June. Michael Milstein was also brought into the project on rotational assignment to help craft the NOAA West Watch. His rotational assignment also concludes in June. The timing of the project close out coincides with the waning El Niño and is driven largely by the pending reduction in project expertise and capacity.

Timi noted that when this project started, it was unknown how well it would be received or work out. Over the last nine months, there has been sustained interest – and Timi thanked participants and contributors. There is a sense that this coordination should continue in a more routine or sustained way. However, more information is needed before potential options can be explored and developed. As part of

the project phase out participants will be asked for their feedback on this project. Timi asked participants to consider taking the very brief survey to help us assess the three primary project elements: the monthly webinar (including specific aspects), the NOAA West Watch, and the impacts spreadsheet. This feedback will help project participants better understand what aspects of the project seem to be most helpful, and could also be used to make a strong case for other parts of NOAA to re-initiate the project (in whole or part) in the future or on a more sustained basis. Timi will leave the survey open for a week or two, and plan on presenting findings on the next call. At that point it may become clearer what, if anything, might make sense to do.

Timi also noted that project materials will be retained on the Western Regional Climate Center website, or you can contact her directly. A BAMS Essay is also in works, and if the abstract is accepted, that work will be shared with project participants. Timi also noted there is some interest in holding one or two roundtables with Congressional offices in the region to share some of the information we've captured over the last year but that no plans have been hatched yet. If there is traction for this, it will be after the November elections and broad project participant involvement would be welcome.

Bill Peterson thought we should try to keep this work going, and thought it was very useful. Dave Anderson agreed, and thought the monthly time duration made good sense. He also would like to see the audience evolve to include decision makers (non-NOAA) who could potentially benefit from this kind of information. All project participants are encouraged to fill out the survey and share their thoughts.

<https://www.surveymonkey.com/r/78DZ62Z>

The next webinar is scheduled for: **Wednesday May 25, 2016 1:00 to 2:00 pm Pacific.**

--END/T. Vann