Western Regional Environmental Conditions and Impacts Coordination Webinar
February 29, 2016

Roll Call:

Name	Affiliation
Alecia Van Atta	NMFS West Coast Regional Office
Amanda Sheffiled	California Nevada Applications Program (CNAP)
Andrea Bair	NWS Regional Office
Bill Peterson	NMFS Northwest Fisheries Science Center
Christopher Krembs	Washington State Department of Ecology
Cory Niles	Washington Department of Fish and Wildlife
Dan McEvoy	Western Regional Climate Center (WRCC)
Danielle Williams	Southern California Coastal Ocean Observing System
David DuBois	NESDIS OSGC
George Hart	
Irma Lagomarsino	NMFS West Coast Regional Office
Janelle Mueller	NMFS OST
Jennifer Hennessey	Washington State Department of Ecology
Jonathan Allan	Northwest Association of Networked Ocean Observing Systems
Karin Bumbaco	JISAO/Assistant WA State Climatologist
Kathie Dello	Oregon Climate Change Research Institute
Kelly Redmond	Western Regional Climate Center
Kevin Werner	NWS Headquarters
Kristen Koch	NMFS Southwest Fisheries Science Center
Linda Rhodes	NMFS Northwest Fisheries Science Center
Lisa Crozier	NMFS Northwest Fisheries Science Center
Michael Milstein	NMFS West Coast Regional Office
Mike Anderson	CA State Climatologist
Nate Mantua	NMFS Southwest Fisheries Science Center
Nina Oakley	Western Regional Climate Center (WRCC)
Patrick Rutten	NMFS Restoration Center
Richard Lataitis	OAR ESRL Physical Sciences Division
Simone Alin	OAR Pacific Marine Environmental Lab
Theresa Tsou	Washington Department of Fish and Wildlife
Timi Vann	NOAA Regional Coordinator
Todd Hallenbeck	West Coast Ocean Data Portal

Summary: Dan McEvoy, Western Regional Climate Center, welcomed attendees to the meeting, conducted roll call and reviewed the agenda. He noted this month's webinar included two guest presenters, Dr. Jonathan Allan with the Northwest Association of Networked Ocean Observing Systems and Dr. Bill Peterson, NOAA Fisheries.

Dan provided an overview of El Niño conditions and the regional climate brief. He noted that over the last month, the Northern Rockies were exceptionally warm ~ 5-deg warmer than normal, and that this was impacting snowpack. Precipitation for all of California and the desert Southwest was down (5-50% of normal) with only one major storm system passing through California over the last month.

Washington and the Northern Cascades were above normal for precipitation for the month and water year. Dan noted that this is the opposite of what seasonal forecasts predicted. He also noted that snowpack has fallen back due to warm temperatures in February, but that the outlook over the next couple weeks calls for storms that could boost snowpack.

Dan also discussed the El Niño flow patterns and different pressure anomalies across the 1983, 1998 and 2016 events. There is still dominant low pressure in the Gulf of Alaska in the 2016 graphic, but the scale bars are different – meaning that the pressure anomalies were stronger and deeper in 1983 and 1998. The high-pressure anomalies over Southern California deflected storms to the north.

There is no major change in the El Niño forecast. The current event is still considered strong, although it is decreasing rapidly, and conditions may transition to La Nina during the Fall time frame (greater than 50% probability going into fall).

Jonathan Allan, Northwest Association of Networked Ocean Observing Systems (NANOOS) provided an overview of the NANOOS climatology app that was launched in 2014. This app allows users to access a variety of datasets that reflect climatologies derived from satellite models and synthesized products. It also provides information from buoys, tide gauge stations, and other remote sensing assets. Jonathan described data collected from a buoy located off the mouth of the Columbia River. The top plot shows a time series of water temperatures, with the gray lines reflecting all data collected (back to the mid-1970s), the blue line showing seasonal means, and then standard deviations. 2015 is shown in red. The bottom plot shows seasonal conditions (winter/summer) with 2016 to-date shown in the magenta bar. Jonathan noted that the conditions this year and last were anomalous over 30-45 year record, with 2015 charting well above normal conditions. Jonathan also noted that in a major ENSO event, we generally experience increased wave height and water levels but that didn't happen in 2015 (note difference between 1998-99 event and 2015). In the bottom plot, the change in water levels is noted to be a more typical pattern. With elevated water and wave height we generally see increased erosion and flood along the coast. Jonathan also reported that NANOOS recently deployed a new buoy located off Bellingham Bay in ~ 25 m of water. The buoy will measure a variety of atmospheric and ocean conditions, and the data are now live on the NANOOS site.

Bill Peterson, Northwest Fisheries Science Center provided an overview of the state of the California Current and impacts of the warm water "blob". The warm water is still here, currently registering at ~ 2-degree anomaly. The PDO positive phase equals warm water at the coast. Bill explained that plankton are "tracers" for where the water that feeds the California current is originating. The current thought is that during "The Blob", the water came from farther off-shore rather than the south. Some of the plankton is known to live off of Japanese waters. Bill noted finding species mostly from the sub-tropics, some of which he and his team have never seen before. Bill reported that when the PDO is in negative phase, there are fewer copepod species, and he noted that those krill that were present mature adults but very small.

Bill also noted that during these warm water events, we generally have algal blooms but that they aren't always toxic. The event of 2015 was very toxic, and the extent (from California to Alaska) was unprecedented. The current thought by most in the science community is that the common trigger that caused the bloom is likely to be "The Blob". The Dungeness crab fishery was closed along the West Coast, with California largely remaining closed. The diatom blooms were almost solely single species, and the bloom was kept in the near shore environment and wasn't pushed off shore by the upwelling.

There was discussion of the persistent warm waters. Bill noted that when "The blob" first showed up it was very deep and stratified and once it reached this part of the Pacific, there was not a lot of transport. Nate Mantua noted that although there is talk about "The blob" going away or being gone, the subsurface

temperatures created with the surface warming is extensive - down to 100 to 150 meters; the warm water sub surface is massive and will likely stick around at least through the summer. The ecological impacts are sure to continue for the foreseeable future.

Timi Vann provided an overview of regional impacts on places and people in the region, as they showed up via media sources. Michael Milstein shared updates on the first edition of the NOAA West Watch. The group was encouraged to distribute this story collection through their networks. Link: http://campaign.r20.constantcontact.com/render?ca=2441efad-e4ce-4ea8-9a64-fc18581450a8&c=234caa90-d11a-11e5-b373-d4ae52900e00&ch=237e9000-d11a-11e5-b374-d4ae52900e00

The next webinar is scheduled for: **March 21, 2016 1:00 to 2:00 pm Pacific**.