

**Ocean and Plume Science and Management Forum**  
November 18, 2014  
Northwest Power and Conservation Council

Final Notes from the Conference Call and GoTo Meeting  
(Approved 3/4/15)

**Participants:** Phil Rockefeller (WA Council member), Patty O’Toole (NPCC staff), Jim Ruff (NPCC staff), Erik Merrill (NPCC staff), Jeff Allen (NPCC-ID staff), Stacy Horton (NPCC-WA staff), Dan Rawding (WDFW), Doug Olson (USFWS), Rich Carmichael (ODFW), Bill Maslen (BPA), Anne Creason (BPA), Steve Marx (Pew), Marc Trudell (DFO), John Mickett (UW), Ritchie Graves (NMFS), Lynne Krasnow (NMFS), Elizabeth Gaar (NMFS), Kurt Fresh (NWFSC), Brian Burke (NWFSC), Bill Peterson (NWFSC), Shane Scott (PPC), and Bill Rudolph (NW Fishletter).

**Welcome and Introductions**

Chair Rockefeller welcomed everyone to the meeting and led a round of introductions. This is the third meeting of the Ocean and Plume Science and Management Forum (Ocean Forum), an advisory committee to the Council. The last meeting occurred on January 24, 2014. The long time period between meetings was due to the fact the Council and its Fish and Wildlife Division staff were very busy during 2014 working on amending the CRB Fish and Wildlife Program. The intent of this meeting is to “re-boot” the Ocean Forum process.

Patty O’Toole reviewed the agenda and proposed a change in the agenda, e.g., getting the updates on current Pacific Ocean conditions first instead of last to accommodate NOAA scientists’ schedule.

**Update on Current Ocean Conditions**

Kurt Fresh of NOAA-NWFSC gave a presentation on Pacific Ocean conditions during the Fall of 2014 (see slides in Attachment 1). Kurt indicated the most current NOAA-CPC forecast shows a 58% chance of having an El Nino condition during the northern Hemisphere winter (2014-15). In late summer and early fall, researchers found a “blob” of extremely warm water off the coast of WA and extending north into the Gulf of Alaska (GOA) and west into the Bering Sea. This “blob” of very warm water has now broken up in the GOA and Bering Sea. Presently the near-shore ocean waters are up to 5 degrees C warmer than normal off the coasts of OR and WA, and it extends northward into B.C. waters.

Also, during 2014 the North Pacific Ocean experienced some atypical species due to these temperature anomalies. NOAA has concerns about salmon that went to sea in 2014 and possibly in 2015, as well as for the salmonids already residing in the GOA. It is possible a “salmon disaster” may be looming, similar to what occurred in 2007-2008.

In response to a question, Brian Burke of NWFSC said overall most of the ocean indicators he monitors were not that great for salmon in 2014, except for northern copepod indicator, which

was favorable. It was mentioned that weak North Pacific trade winds also contributed to the rise in sea surface temperatures in 2014.

Dan Rawding pointed out that coho salmon and some other species had really good returns to the Columbia River this year. We should monitor the jack returns and ocean indicators closely this year.

Chair Rockefeller asked about ocean conditions relative to steelhead? Kurt Fresh indicated steelhead tend to head northwest after leaving the river and into the GOA and Bering Sea, which would put them into these warm sea surface conditions. NOAA Science Center has not yet tried to develop run forecasts for steelhead based on ocean conditions.

Ritchie Graves pointed out that sea surface temperature can be misleading because it is measured at only a few centimeters deep, i.e., there can be cooler water below the surface. NOAA is trying to answer how this pool of warm water may affect future salmon survival and adult returns.

Bill Maslen asked how all this information may affect management decisions?

### **Review of Forum Charter and Objectives**

For background, Patty O'Toole reviewed with the group the Ocean Forum charter and Forum objectives and scope with the group.

### **Management Uncertainties, Questions and Potential Management Actions**

Jim Ruff introduced a revised list of four management questions developed by the small work group (Attachment 2) and asked the group for questions or comments.

Rich Carmichael said the four management questions attempt to form a logic path for the Ocean Forum to consider. Doug Olson suggested the group needs to be explicit in where we're trying to end up. Ultimately, it was suggested we're trying to identify potential management actions and key uncertainties or data gaps.

Marc Trudell asked what are the management objectives we're trying to achieve? They're identified in numerous documents, such as NMFS Recovery Plans, Council's F&WL Program, etc., for the various ocean-going species in the CRB.

In an earlier email message, Pete Hassemer suggested a modification to the fourth management question (Attachment 3), i.e., what has been lost or impaired and what needs to be protected? Rich Carmichael said we should be able to consider some practical management considerations, including those related to hatcheries. Lynne Krasnow suggested the Ocean Forum should consider ocean indicators that may suggest the ocean is heading toward a "downturn," which could affect management actions, e.g., key information that may inform an early warning system.

Dan Rawding said this group should focus on management actions and key uncertainties. He suggested breaking management question #4 into different parts, such as ecosystem function, a short-term and long-term temporal aspect for management actions, and productivity.

Patty O'Toole showed, and the group discussed, a possible framework to help prepare written narratives for each of the management questions, as well as the tables developed for each of the management questions (Attachments 4 and 5).

Elizabeth Gaar suggested another question under #4: How can ocean and plume information be used to inform Columbia River management needs for: and identify a list of management needs in different areas, e.g., in each of the four Hs.

### **Continued Update on Current Ocean Conditions**

John Mickett of UW presented a further update on ocean acidification conditions off the WA coast (Attachment 6). This fall ocean researchers have observed an unprecedented deep pool (~50 m) of warm water off La Push on the WA coast.

Lynne Krasnow asked what biological changes or changes in species composition were observed as a result of this warm temperature anomaly? Mickett said it's too soon to tell because researchers are still analyzing their 2014 data.

Chair Rockefeller asked whether there are any implications to the ocean food web or salmon from all this data? John said his group has received funding from Long Live the Kings organization to help fund some ocean sensors for measuring physical/chemical conditions. Researchers hope to be able to eventually link this data to salmon survival.

### **Wrap-up and Next Steps**

Chair Rockefeller suggested we need to have more interaction and discussion between researchers and resource managers to make progress.

Rich suggested we need the ocean and plume researchers to help flesh out the science for the narratives associated with these management questions. Brian Burke said the NWFSC has a team of ocean scientists that could help do this, and he would discuss it with Kurt Fresh.

Marc Trudell pointed the group to the 2012 synthesis report from NOAA and DFO as a rich source of information which could help us in preparing the narratives. Chair Rockefeller agreed.

Elizabeth Gaar discussed the ocean module for the Snake River Recovery Plan, which also has a good synthesis of ocean- and plume-related information by species. It also identifies anthropogenic risks and potential management actions that could be taken.

Marc Trudell agreed to share with the OF a draft manuscript related to SR sockeye and ocean conditions, as long as the draft paper is not released beyond the OF.

The meeting notes for the January 24, 2014 meeting were approved with a correction to the spelling of Doug Olson's name.

Next steps:

1. Patty, Jim and Dan Rawding will prepare a draft narrative for Management Question #1 as an example, with review and assistance from others.
2. Council staff will also begin preparing an annotated outline for the Ocean Forum's report to the Council. Rich Carmichael agreed to help prepare the draft outline for the report, and Elizabeth Gaar agreed to review it.
3. The Council staff will send out a doodle poll shortly with potential next meeting dates, with the goal of holding the next meeting in late February or early March 2015.

The meeting was adjourned by Chair Rockefeller at noon.

Attachments (6)

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