

**EPA Columbia Cold Water Refugia Plan – Reasonable and Prudent Alternative**  
**NOAA Fisheries November 3, 2015 Biological Opinion On EPA’s Approval of Oregon Water Quality Standards**

The EPA shall work with NMFS to facilitate an inter-agency team, including Oregon, to develop a Cold Water Refugia (CWR) Plan for the Columbia River that is consistent with the CWR Plan elements described below. The purpose of the CWR Plan is to adequately interpret the narrative criterion to allow for implementation of the criterion through Oregon’s Clean Water Act authorities. The EPA shall work with the NMFS, the Columbia River Federal Caucus and the Northwest Power and conservation Council (NWPPCC) to align this work with Amendment 1 of the 2010 Supplemental Federal Columbia River Biological Opinion and the water temperature and CWR strategies [https://www.salmonrecovery.gov/Files/BiologicalOpinions/2010/FCRPS\\_Supplemental\\_2010\\_05-20\[1\].pdf](https://www.salmonrecovery.gov/Files/BiologicalOpinions/2010/FCRPS_Supplemental_2010_05-20[1].pdf) and the Habitat, Water Quality and Climate Change Strategies of the 2014 Columbia River Basin Fish and Wildlife Program of the NWPPCC <https://www.nwcouncil.org/media/7148624/2014-12.pdf>.

- I. The EPA shall gather and synthesize readily available data, information and professional expertise, and use the “Primer for Identifying Cold-Water Refuges to Protect and Restore Thermal Diversity in Riverine Landscapes” (Torgersen et al.2012) as guidance, to characterize:
  - a. The current spatial and temporal distribution of CWR;
  - b. The current use of CWR by Snake River Fall Chinook, Snake River Sockeye salmon, Snake River Basin Steelhead, Upper Columbia River Steelhead; and
  - c. Potential locations for the restoration or enhancement of CWR.
- II. Using the above information and professional expertise, the EPA shall:
  - a. Assess whether the spatial and temporal extent of CWR present meets the CWR narrative criterion (ie., are CWR “sufficiently distributed to allow salmon and steelhead migration without significant adverse effects from higher water temperatures elsewhere in the water body”);
  - b. If the EPA concludes that the CWR criterion is not being met, characterize, to the maximum extent possible, the extent of additional CWR needed to attain the criterion; and
  - c. Identify and prioritize potential actions by Oregon and/or other parties to protect, restore or enhance CWR.
- III. The EPA, working with NMFS and the inter-agency team, shall finalize a Scope of Work for the CWR Plan for the Columbia River within 9 months of the signing of this opinion that addresses the plan elements described above in I and II. The scope of work shall identify data sources and methods that the EPA expects to use in completing the plan: a schedule with milestones for completing the plan: and a strategy to install continuous temperature data recorders during the summer (i.e. June through September) in Columbia River tributaries that are likely to provide CWR, preferably in the year 2016, but no later than the year 2017.
- IV. The EPA shall complete the CWR Plan for the Columbia River within 3 years of the signing of this opinion.