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State Water Resources Control Board

February 1, 2016

EPA Water Docket ID No. EPA-HQ-OW-2015-0753
Environmental Protection Agency
1200 Pennsylvania Ave. NW.
Washington, DC 20460

SUBJECT: DRAFT RECOMMENDED AQUATIC LIFE WATER QUALITY CRITERIA FOR CADMIUM

Attention Docket No. EPA-HQ-OW-2015-0753

Thank you for the opportunity to provide comment on the 2015 Draft Recommended Aquatic Life Water Quality Criteria for Cadmium. The California State Water Recourses Control Board has been working to revise the cadmium objectives included in the California Toxics Rule (CTR) which was promulgated by U.S. EPA in 2000. We were hopeful that the 2015 Draft Recommended Aquatic Life Water Quality Criteria for Cadmium (Draft Recommend Criteria) would help us in this process.

As the 2000 CTR was being written the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) developed a biological opinion and a draft jeopardy ruling. Although the CTR was approved, there were stipulations for the revision of certain standards, including the chronic cadmium standard. The reviewing Services recommended a new criterion in the range 0.096 µg/L – 0.180 µg/L at 50 mg/L $CaCO_3$. This was based on sensitivity of threatened and endangered salmonids and the unarmored threespine stickleback to low cadmium concentrations during early life stages.

U.S. EPA agreed to develop a new chronic cadmium criterion and to promulgate it in California by 2002. In apparent agreement with the requirements of the draft jeopardy ruling, the U.S. EPA 2001 Update of Ambient Water Quality Criteria for Cadmium (2001 Criteria) included a very low freshwater chronic criterion of 0.15 µg/L at 50 mg/L $CaCO_3$.

The State Water Board had considered using the 2001 Criteria for Cadmium recommendations to set new cadmium objectives for California. However, in 2004, the State of Oregon adopted the 2001 Criteria as part of a set of revisions to its state water quality standards for toxic pollutants, setting the criterion maximum concentration to 2.0 µg/L at a hardness of 100 mg/L (as $CaCO_3$) and the criterion continuous concentration to 0.25 µg/L at a hardness of 100 mg/L as $CaCO_3$. U.S. EPA Region X proposed approval of the criteria and began Endangered

Species Act Section 7(a)(2) consultation with the NMFS and the FWS. After eight years, in its Final Biological Opinion, NMFS concluded:

> "...listed species exposed to waters equal to the acute or chronic criteria [cadmium] concentrations will suffer acute and chronic toxic effects including mortality (high intensity), reduced growth (moderately-high-intensity), essential behaviors related to successful rearing and migration (moderate intensity), physiological trauma (moderate intensity), and reproductive failure (moderate intensity)."

U.S. EPA disapproved the State of Oregon's acute criterion for cadmium. NMFS outlined a detailed Process for Deriving Criteria as described in the Biological Opinion to develop a replacement. This process included:

1.) Only using toxicity data for cadmium that was specific to salmonid fishes, and green sturgeon and eulachon if available
2.) Curve-fitting all toxicity data used to derive the numeric criterion
3.) Extrapolating threshold acute and chronic toxic effect concentrations using the curve-fitted data;
4.) Adjusting derived criteria to account for chemical mixtures
5.) Using a population model that integrates the derived criteria to predict no negative change in each species population's intrinsic growth rate.

Perhaps because this prescription was intended for the State of Oregon, the recommended threshold in the Draft Recommend Criteria did not address any of the above requirements. Instead the criteria were derived using the same method used to derive the previous criteria set. The resulting criteria maximum concentration is actually higher than the 2001 acute value, at 2.1 µg/L at a hardness of 100 mg/L (as $CaCO_3$), despite the addition of new data for salmonids. California shares both contiguous and analogous populations of federally-listed threatened and endangered anadromous fish with Oregon. These include:

- Chinook Salmon: California Coastal ESU (Threatened)
- Coho Salmon: Central California Coast ESU (Endangered; Southern Oregon – Northern California Coast ESU (Threatened)
- Steelhead: Central California Coast DPS (Threatened); Northern California DPS (Threatened), Southern California DPS (Endangered)
- Green Sturgeon: Southern DPS (Threatened)

Because the threatened and endangered populations of salmonids and green sturgeon in California are either very similar or the same as the populations considered by NMFS in Oregon, we believe that the NMFS biological opinion must be considered for California waters where populations of these fish either do or may exist. In addition, since the NMFS determined that threatened and endangered species would likely be jeopardized by an acute cadmium limit of 2.0 µg/L, it is extremely likely that a 2.1 µg/L limit will not be viewed favorably in an Endangered Species Act consultation for an EPA approval action in this state.

Despite the inclusion of more and presumably better-quality data, the new chronic criterion presents our state with the same challenge: it is much higher than criteria contained in FWS and NMFS biological opinions, which are designed to minimize incidental take of threatened and

endangered species. Therefore the State Water Resources Control Board does not believe that the 2015 draft Recommended Water Quality Criterion for Cadmium is sufficiently protective of threatened and endangered species within the State of California, or for West Coast freshwater fisheries in general.

The State Water Resources Control Board appreciates the opportunity to review and comment on the U.S. EPA's 2015 Draft Recommended Aquatic Life Water Quality Criteria for Cadmium. If you have any questions regarding our comments please direct them to:

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Sincerely,

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