

# Proposed Aquatic Life Criteria for Copper and Cadmium in Oregon

## Summary

EPA is proposing a rule to establish federal Clean Water Act (CWA) aquatic life criteria for freshwaters under the state of Oregon's jurisdiction to protect aquatic life from the effects of exposure to harmful levels of cadmium and copper.

## Background

CWA section 101(a)(2) establishes the national goal that water quality should provide for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water. To protect aquatic communities from the harmful effects of pollutants in surface waters, states must establish aquatic life criteria for their waters that are designated for such uses. EPA periodically publishes criteria recommendations under CWA section 304(a) for states to consider using to meet these CWA section 101(a)(2) goals.

On January 31, 2013, EPA determined that the freshwater copper criteria to limit acute (short-term) and chronic (long-term) adverse effects, and the freshwater cadmium criterion to limit acute adverse effects, that Oregon adopted in 2004 did not meet CWA requirements to protect aquatic life in the state. Therefore, to protect freshwater aquatic life in Oregon from the adverse effects of cadmium and copper, EPA is proposing the criteria in this rule using the best available science on cadmium and copper toxicity.

## How EPA Derived the Proposed Acute Cadmium Aquatic Life Criterion

In 2016, EPA published revised CWA section 304(a) recommended criteria for cadmium, based on the latest science on cadmium toxicity. Ambient water hardness (determined by the presence of calcium and magnesium ions) affects the toxicity of cadmium, such that organisms show more sensitivity to cadmium in water with lower hardness. EPA's freshwater 304(a) recommended cadmium criteria are equations to calculate protective cadmium criteria based on the relevant water body's hardness. EPA is proposing to use the updated CWA section 304(a) recommended acute cadmium criterion equation to protect freshwater aquatic life in Oregon. EPA is also proposing a protective default hardness value to use in the equation when sufficient representative data to determine the water body's hardness are not available.

## How EPA Derived the Proposed Copper Aquatic Life Criteria

In 2007, EPA issued CWA section 304(a) national recommended freshwater aquatic life criteria for copper. These criteria recommendations incorporate use of a Biotic Ligand Model (BLM) for developing criteria dependent on ambient water chemistry. The BLM uses ten ambient water body characteristics to develop water quality criteria on a site-specific basis. EPA proposes to use this 2007 copper BLM to protect aquatic life in Oregon. As with the hardness default for cadmium, EPA is proposing protective defaults to use in the BLM when sufficient

representative data on the relevant water body's characteristics are not available. EPA based the proposed defaults for Oregon on EPA's 2016 *Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Application in EPA's Biotic Ligand Model*.

## **How EPA's Proposal Relates to the State of Oregon's Efforts to Develop Criteria**

Oregon is currently engaging in its own rulemaking process to develop copper criteria that protect freshwater aquatic life, and is working closely with EPA and other technical experts. If Oregon adopts and submits new or revised water quality criteria and EPA approves them before finalizing this proposed rule, EPA would not proceed with the final rulemaking for those waters and/or pollutants for which EPA approves Oregon's new or revised criteria. If EPA finalizes this proposed rule, and Oregon subsequently adopts and submits new or revised criteria that EPA finds meet CWA requirements, EPA proposes that once EPA approves Oregon's criteria, they would become effective for CWA purposes, and EPA's corresponding promulgated criteria would no longer apply.

## **Public Hearings on the Proposed Rule**

EPA is offering two virtual public hearings on the proposed rule so that interested parties may provide oral comments. The first hearing will be on Monday, May 16, 2016 from 4:00pm to 6:00pm Pacific Time. The second hearing will be on Tuesday, May 17, 2016 from 9:00am to 11:00am Pacific Time.

## **Where can I find more information?**

Contact Erica Fleisig at (202) 566-1057, [fleisig.eric@epa.gov](mailto:fleisig.eric@epa.gov) or Rochelle Labiosa at (206) 553-1172, [labiosa.rochelle@epa.gov](mailto:labiosa.rochelle@epa.gov). To access the proposed rule, supporting documents, and more details on how to make written comments and/or how to register to make oral comments at the public hearings, visit EPA's Water Quality Standards website at:

<http://www.epa.gov/wqs-tech/water-quality-standards-regulations-oregon>.

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