



Focus on: Aquatic Life and Toxic Substances

Updating our Aquatic Life water quality criteria for toxic substances

Aquatic life toxics criteria are part of our water quality standards and are the rules that set the pollution limits for Washington's water. This is how we protect aquatic life – fish, plants, and invertebrates – from the effects of toxic chemicals in the water. We have separate criteria to protect humans from the effects of toxic chemicals in the water called the human health criteria.

Above certain levels, toxic chemicals, such as arsenic and cadmium, in the water can harm animals and plants. Water quality standards limit how much of a chemical can be in the water before it is likely to cause immediate effects, such as death, and long-term harm, such as changes in growth and reproduction. In the water quality standards, we call these levels “acute” and “chronic” values.

When we set limits for toxic chemicals, we look at how the most sensitive species in an ecosystem might respond to a certain level of a chemical in the water. We also look at the most sensitive life stage. For example, a baby fish (egg or larva) might be more sensitive to a certain toxic chemical than an adult fish, or vice versa. By protecting the most sensitive species at the most sensitive time, we ensure all other species and life stages are also protected by the limits we set.

Updating our criteria

Ecology last updated the majority of the aquatic life toxics criteria in 1993. Updating the criteria is a formal rulemaking process. Based on federal recommendations and public support, we are

proposing updates to our aquatic life toxics criteria to reflect new information about toxic chemicals. A formal draft of the rule updates is available for public comment until May 7, 2024.

Since the mid-1990s, the Environmental Protection Agency (EPA) has recommended limits for new chemicals, such as tributyltin and nonylphenol. We evaluated if EPA recommendations were protective enough for Washington based on previous reports outlining endangered species protection. We currently have criteria for 28 toxic chemicals. We are proposing updates to 16 of those chemicals and adding 14 new chemicals to the list.

Well-known chemicals on the list, including arsenic, copper, nickel, silver, zinc, are receiving updates to criteria. Proposed new additions to Washington's list include PFOA and PFOS (part of the PFAS chemical group), aluminum, and the emerging chemical of concern 6PPD-quinone, the chemical found in tire wear that is toxic to salmon.

To update Washington's limits for toxic chemicals, we:

- Compared EPA's recommendations to Washington's current list of toxic substances ([WAC 173-201A-240](#))
- Reviewed the latest science and models
- Looked at the most recent information to protect endangered species and endangered populations.

How we use science to set protective criteria

The conditions of the water, such as pH or hardness, can change how some toxic chemicals

effect aquatic life. We use models to calculate what the protective criteria should be, based on the local water conditions. We are proposing to use the multiple linear regression (MLR) model to set protective freshwater criteria for aluminum and copper based on local water quality conditions across the state. This model uses pH, hardness, and dissolved organic carbon data from rivers and streams in Washington to calculate protective criteria.

Spotlight on: 6PPD-quinone

Recent studies have shown that 6PPD-quinone, from tire wear, poses a significant threat to coho salmon and other trout. We are still studying the effects of 6PPD-quinone on other aquatic species. However, we do have enough data to propose criteria for Washington. Coho salmon are a culturally and economically important species and studies show that they are the most sensitive species. Our proposal is the first in the nation that includes an acute, fresh water numeric criterion for 6PPD-quinone at 8 nanograms per liter.

New types of aquatic life criteria for toxics

Our water quality criteria set limits on the amount of toxic chemicals in the water. But for some toxics, it's better to evaluate the effects on fish by looking at how much of that chemical has accumulated in their bodies, also called tissue. This will be the first time that Washington has proposed limits based on fish tissue for aquatic life criteria. Following EPA recommendations for PFOA, PFOS, and selenium we propose both tissue and water-based criteria.

Extending the comment period

Based on requests we have decided to extend the public comment period and add an informational workshop to share about our proposed updates. The comment period was extended from April 17 and will now **end May 7, 2024**.

Get involved

We invite you to comment on our proposed draft criteria until May 7, 2024.

You can comment in the following ways:

- [Submit comments online](#) (until 11:59 p.m. on May 7, 2024)
- By U.S. mail (must be postmarked by April 17, 2024):
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- At any of our public hearings listed below.

Public workshop and hearings

Ecology will hold virtual public workshop and hearings at:

- March 26, 2024 at 1:30 p.m. [Register](#)
Workshop only, no formal testimony
- April 4, 2024 at 1:30 p.m. [Register](#)
- April 10, 2024 at 5:30 p.m. [Register](#)

We will provide an overview of the proposed rule and hold a question-and-answer period. The hearings will have an opportunity for formal testimony.

We plan to make a final decision on adopting the proposed changes by summer 2024. However, EPA must approve our updates to the water quality criteria before they can be used for Clean Water Act programs such as permits.

Learn more

Visit our [rulemaking webpage](#) to learn more about the proposed. There you can learn about how we:

- [Reviewed the science, models and information for each toxic](#)
- [Plan to implement the rule](#)
- [Evaluated the potential costs and benefits](#)



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To request an ADA accommodation, contact Ecology by phone at 360-407-6600 or email at marla.koberstein@ecy.wa.gov, or visit <https://ecology.wa.gov/accessibility>. For Relay Service or TTY call 711 or 877-833-6341.