

Appendix D. Natural Conditions Provisions in Washington's Water Quality Standards

Background

Natural conditions provisions in water quality standards recognize that conditions in some water bodies naturally do not meet biologically based aquatic life criteria. These waters may not meet biologically based aquatic life criteria because of natural processes or seasonal conditions. Natural conditions criteria are protective of aquatic life because they represent water quality conditions before any anthropogenic impacts. Aquatic organisms have adapted over time to these site-specific water quality conditions which support their survival, growth, and reproduction.

Natural conditions criteria have been a core part of Washington's surface water quality standards since the first regulations were adopted in 1967. Since then, multiple updates to these criteria, alongside published guidance documents, have ensured continued protection of designated and existing uses when using natural conditions provisions. Washington previously adopted its last major updates to natural conditions provisions and related criteria in 2003 and 2006 (referred to collectively as the 2006 provisions), receiving EPA approval in 2008.

EPA's 2021 reconsideration and disapproval of certain 2006 provisions

In November 2021, EPA completed a review and reconsideration of its 2008 approval of the 2006 provisions. EPA undertook this review and reconsideration in response to a complaint Northwest Environmental Advocates filed in the U.S. District Court for the Western District of Washington (Case No. 2:14-cv-0196-RSM) challenging EPA's 2008 approval.

Ultimately, EPA did not change its 2008 approval of the following sections of WAC Chapter 173-201A.

- WAC 173-201A-200(1)(c)(v): Natural condition narrative aquatic life temperature criteria for lakes
- WAC 173-201A-200(1)(d)(ii): Natural condition narrative aquatic life dissolved oxygen criteria for lakes

However, upon reconsideration, EPA disapproved the following sections of WAC Chapter 173-201A:

- WAC 173-201A-260(1)(a): Natural and irreversible human conditions
- WAC 173-201A-200(1)(c)(i) and WAC 173-201A-210(1)(c)(i): Allowable human contribution to natural conditions provisions for aquatic life temperature (fresh water and marine water, respectively)

- WAC 173-201A-200(1)(d)(i) and WAC 173-201A-210(1)(d)(i): Allowable human contribution to natural conditions provisions for aquatic life dissolved oxygen (fresh water and marine water, respectively)

EPA disapproved the above provisions because they were written in such a way that they could be interpreted as applying to human health criteria. In its disapproval rationale, EPA stated:

The natural conditions narrative provision at WAC 173-201A-260(1)(a) is broadly drafted and does not specify the types of criteria or pollutants to which it applies. On reconsideration, EPA concludes that as written this provision could be applied to a wide range of naturally occurring pollutants, including toxic pollutants, and could even allow an exception from otherwise applicable numeric human health criteria. Therefore, it is not consistent with EPA's interpretation of the relationship between natural conditions and the protection of designated human health uses, which is articulated in EPA's November 5, 1997 policy guidance entitled "Establishing Site Specific Aquatic Life Criteria Equal to Natural Background."⁴ EPA's 2008 decision document cited to the 1997 policy guidance, as well as to language in an Advance Notice of Proposed Rulemaking for the Water Quality Standards program (see 63 Fed. Reg. 36,724, 36761 (Jul. 7, 1998)), as setting forth the relevant policy considerations for establishing water quality criteria based on natural conditions. However, what EPA failed to appropriately consider in its 2008 decision is that these documents only addressed the establishment of aquatic life criteria for pollutants at levels equal to the natural background condition, and expressly did not apply to human health uses, whereas the provision at WAC 173-201A-260(1)(a) is not similarly limited in scope to aquatic life uses or to specific pollutants.

In contrast with aquatic life uses, a naturally occurring level of a pollutant does not necessarily protect designated human health uses. Naturally occurring levels of a pollutant are assumed to protect aquatic life species that have naturally developed in the affected waters. However, humans generally do not adapt to higher ambient pollutant levels, even if they are naturally caused. Consequently, the same assumptions of protectiveness cannot be made with regard to designated uses that affect human health (e.g., people eating fish or shellfish from Washington waters, and recreating in Washington waters). For this reason, EPA's 1997 guidance also states that where the natural background concentration exceeds the state-adopted human health criterion, at a minimum, states should re-evaluate the human health use designation.

Ecology's 2024 adoptions of revised natural conditions criteria provisions (2024)

In 2024, Ecology adopted revised natural condition criteria provisions (referred to collectively as the 2024 provisions). The revisions in the 2024 provisions include:

- WAC 173-201A-020, Definitions: adding a definition for a performance-based approach method and a definition for local and regional sources of human-caused pollution.
- WAC 173-201A-200(1)(c), Aquatic life temperature criteria, subsection (i): updating the allowable insignificant changes to freshwater temperature criteria when natural conditions are the applicable criteria.
- WAC 173-201A-200(1)(d), Aquatic life dissolved oxygen (D.O.) criteria, subsection (i): updating the allowable insignificant changes to freshwater dissolved oxygen criteria when natural conditions are the applicable criteria.
- WAC 173-201A-210(1)(c), Aquatic life temperature criteria, subsection (i) updating the allowable insignificant changes to marine water temperature when natural conditions are the applicable criteria.
- WAC 173-201A-210(1)(d), Aquatic life dissolved oxygen (D.O.), subsection (i): updating the allowable insignificant changes to marine water dissolved oxygen when natural conditions are the applicable criteria.
- WAC 173-201A-260(1), Natural and irreversible human conditions: updating the natural conditions criteria language and describing methods for determining natural conditions criteria values.
- WAC 173-201A-430(2), Site-specific criteria: updating how analyses must be conducted.
- WAC 173-201A-470, Performance-based approach: adding this new section to describe and reference the methodology to determine natural conditions criteria values.
- Ecology publication 24-10-017, A Performance-Based Approach for Developing Site-Specific Natural Conditions Criteria for Aquatic Life in Washington, a separate rule document that provides the methodology to determine natural conditions criteria values.
- Minor, non-substantive edits to rule language in WAC 173-201A-430(2) to reflect the latest version of referenced documents.

The revisions in the 2024 provisions address EPA's concern that the 2006 provisions could be applied to human health criteria. They also address concerns regarding narrative criteria supplanting numeric criteria. See

[*Nw. Env'tl. Advocates v. U.S. Env'tl. Prot. Agency*, 855 F. Supp. 2d 1199 \(D. Or. 2012\)](#)¹. The 2024 provisions have not yet been approved by EPA.

For marine dissolved oxygen the 2024 provisions do not change the 0.2 mg/L human use allowance in previous natural conditions provisions, including the 2006 provisions, nor how the criteria are applied to marine waters. However, the 2024 provisions provide that the human use allowance can only be provided to **local and regional sources**. Therefore, the PSNRP assigns the 0.2 mg/L human use allowance to local and regional sources. The PSNRP does not assign any of the human use allowance to non-local and regional sources such as climate change and Canada.

Key provisions of the 2024 provisions include:

WAC 173-201A-020 Definitions. The following definitions are intended to facilitate the use of chapter 173-201A WAC:

...

"Local and regional sources of human-caused pollution" means sources of pollution caused by human actions, and the pollution originates from: (1) Within the boundaries of the state; or (2) Within the boundaries of a U.S. jurisdiction abutting to the state that impacts surface waters of the state.

...

"Performance-based approach" means a water quality standard that is a transparent process (i.e., methodology) which is sufficiently detailed and has suitable safeguards that ensures predictable and repeatable outcomes, rather than a specific outcome. The outcomes from the performance-based approach are site-specific criteria.

¹ [https://signon.thomsonreuters.com/?productid=CBT&lr=0&culture=en-US&returnto=https%3a%2f%2f1.next.westlaw.com%2fCosi%2fSignOn%3fredirectTo%3d%252fLink%252fDocument%252fFullText%253ffindType%253dY%2526serNum%253d2027228913%2526pubNum%253d0004637%2526originatingDoc%253dl4fd002e0019411e8a964c4b0adba4447%2526refType%253dRP%2526fi%253dco_pp_sp_4637_1207%2526originationContext%253ddocument%2526transitionType%253dDocumentItem%2526ppcid%253d530857dd56774f2291d799ef2dbc8fb5%2526contextData%253d\(sc.Keycite\)%2526firstPage%253dtrue&tracetoken=0523251639490DZN_sahQwGaGkCan-UOxyaoyRBnsGPH2F2xHCBvbwjFq67SGJo5TjlvssuwEIF27qtCoRSADH0sYsdg5jG45WY8tq9anWbSVKezEWtfi0ckZ2SM21SvlMgNVP6jPlrzAX6A2vbe5yovogHcOfSeUCTRqZEOAKHWcWgbYowDO4L5rri4uVy65Ib2sRTH-p2N6M242hf6d9BIR4J9jVMX3BSFmx5HSUCgNYqNUJAOn1c3o-e0XwNQbk8lfvelm0Gr9g85U0o0DZ2xNFF6KaFdKGbPlcSV-AR2KmMuLrEvzZB3KK2sglnRctDwqM6Enl1NHBNMPd71Lf-MhfY2pljQzF8fu070EPyIDSYPEK230mrlDbkeVRCPAIY--hkcytBbn&bhcp=1&bhhash=1#co_pp_sp_4637_1207](https://signon.thomsonreuters.com/?productid=CBT&lr=0&culture=en-US&returnto=https%3a%2f%2f1.next.westlaw.com%2fCosi%2fSignOn%3fredirectTo%3d%252fLink%252fDocument%252fFullText%253ffindType%253dY%2526serNum%253d2027228913%2526pubNum%253d0004637%2526originatingDoc%253dl4fd002e0019411e8a964c4b0adba4447%2526refType%253dRP%2526fi%253dco_pp_sp_4637_1207%2526originationContext%253ddocument%2526transitionType%253dDocumentItem%2526ppcid%253d530857dd56774f2291d799ef2dbc8fb5%2526contextData%253d(sc.Keycite)%2526firstPage%253dtrue&tracetoken=0523251639490DZN_sahQwGaGkCan-UOxyaoyRBnsGPH2F2xHCBvbwjFq67SGJo5TjlvssuwEIF27qtCoRSADH0sYsdg5jG45WY8tq9anWbSVKezEWtfi0ckZ2SM21SvlMgNVP6jPlrzAX6A2vbe5yovogHcOfSeUCTRqZEOAKHWcWgbYowDO4L5rri4uVy65Ib2sRTH-p2N6M242hf6d9BIR4J9jVMX3BSFmx5HSUCgNYqNUJAOn1c3o-e0XwNQbk8lfvelm0Gr9g85U0o0DZ2xNFF6KaFdKGbPlcSV-AR2KmMuLrEvzZB3KK2sglnRctDwqM6Enl1NHBNMPd71Lf-MhfY2pljQzF8fu070EPyIDSYPEK230mrlDbkeVRCPAIY--hkcytBbn&bhcp=1&bhhash=1#co_pp_sp_4637_1207)

WAC 173-201A-210 Marine water designated uses and criteria. The following uses are designated for protection in marine surface waters of the state of Washington. Use designations for specific water bodies are listed in WAC 173-201A-612.

...

(d) Aquatic life dissolved oxygen (D.O.) criteria.

...

(i) When a water body's D.O. concentration is lower than the numeric criteria in Table 210 (1)(d) (or within 0.2 mg/L of the criteria) and that condition is due to natural conditions, then local and regional sources of human-caused pollution considered cumulatively may not cause the D.O. concentration of that water body to decrease more than 10 percent or 0.2 mg/L below natural conditions, whichever decrease is smaller.

WAC 173-201A-260 Natural conditions and other water quality criteria and applications. (1) Natural and irreversible human conditions.

(a) It is recognized that portions of many water bodies cannot meet the assigned aquatic life criteria due to the natural conditions of the water body. When a water body does not meet its assigned aquatic life criteria due to natural climatic or landscape attributes, the following will be used to determine site-specific numeric aquatic life criteria representing conditions unique to a water body:

(i) Aquatic life criteria based on natural conditions for temperature or dissolved oxygen for fresh or marine waters, or pH for fresh waters, will be derived by following either the site-specific criteria approach pursuant to WAC 173-201A-430 or the performance-based approach pursuant to WAC 173-201A-470.

(ii) For all aquatic life parameters other than those listed in (a)(i) of this subsection, aquatic life criteria based on natural conditions will be derived by following the site-specific criteria approach pursuant to WAC 173-201A-430.

(b) When a water body does not meet its assigned criteria due to human structural changes that cannot be effectively remedied (as determined consistent with the federal regulations at 40 C.F.R. 131.10), then alternative estimates of the attainable water quality conditions, plus any further allowances for human effects specified in this chapter for when natural conditions exceed the criteria, may be used to establish an alternative criteria for the water body (see WAC 173-201A-430 and 173-201A-440).

...

WAC 173-201A-470 Performance-based approach. The performance based approach may be used by the department to establish numeric criteria based on natural conditions that are fully protective of existing and designated aquatic life uses.

(1) Aquatic life water quality criteria must be derived using the procedures referenced in ecology publication 25-10-001, "A Performance-Based Approach for Developing Site-Specific Natural Conditions Criteria for Aquatic Life in Washington".

(2) Application of the performance-based approach for establishing aquatic life water quality criteria is limited to the following listed water quality constituents:

- (a) Aquatic life temperature criteria in fresh water;
- (b) Aquatic life dissolved oxygen criteria in fresh water;
- (c) Aquatic life pH criteria in fresh water;
- (d) Aquatic life temperature criteria in marine water;
- (e) Aquatic life dissolved oxygen criteria in marine water.

(3) Aquatic life water quality criteria developed using this approach are applicable to the water body upon derivation.

(4) If the requirements set forth in the performance-based approach cannot be met, then site-specific criteria can be established by following the alternatives listed at WAC 173-201A-260 (1)(a)(i).