**WAC 173-201A-200 Fresh water designated uses and criteria.** The following uses are designated for protection in fresh surface waters of the state. Use designations for water bodies are listed in WAC 173-201A-600 and 173-201A-602.

(1) **Aquatic life uses.** Aquatic life uses are designated based on the presence of, or the intent to provide protection for, the key uses identified in (a) of this subsection. It is required that all indigenous fish and nonfish aquatic species be protected in waters of the state in addition to the key species described below.

(a) The categories for aquatic life uses are:

(i) **Char spawning and rearing.** The key identifying characteristics of this use are spawning or early juvenile rearing by native char (bull trout and Dolly Varden), or use by other aquatic species similarly dependent on such cold water. Other common characteristic aquatic life uses for waters in this category include summer foraging and migration of native char; and spawning, rearing, and migration by other salmonid species.

(ii) **Core summer salmonid habitat.** The key identifying characteristics of this use are summer (June 15 - September 15) salmonid spawning or emergence, or adult holding; use as important summer rearing habitat by one or more salmonids; or foraging by adult and subadult native char. Other common characteristic aquatic life uses for waters in this category include spawning outside of the summer season, rearing, and migration by salmonids.

(iii) **Salmonid spawning, rearing, and migration.** The key identifying characteristic of this use is salmon or trout spawning and emergence that only occurs outside of the summer season (September 16 - June 14). Other common characteristic aquatic life uses for waters in this category include rearing and migration by salmonids.

(iv) **Salmonid rearing and migration only.** The key identifying characteristic of this use is use only for rearing or migration by salmonids (not used for spawning).

(v) **Nonanadromous interior redband trout.** For the protection of waters where the only trout species is a nonanadromous form of self-reproducing interior redband trout (*O. mykiss*), and other associated aquatic life.

(vi) **Indigenous warm water species.** For the protection of waters where the dominant species under natural conditions would be temperature tolerant indigenous nonsalmonid species. Examples include dace, redside shiner, chiselmouth, sucker, and northern pikeminnow.

(b) **General criteria.** General criteria that apply to all aquatic life fresh water uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(c) **Aquatic life temperature criteria.** Except where noted, water temperature is measured by the 7-day average of the daily maximum temperatures (7-DADMax). Table 200 (1)(c) lists the temperature criteria for each of the aquatic life use categories.

**Table 200 (1)(c)**
**Aquatic Life Temperature Criteria in Fresh Water**

| Category | Highest 7-DADMax |
|---|---|
| Char Spawning and Rearing* | 12°C (53.6°F) |
| Core Summer Salmonid Habitat* | 16°C (60.8°F) |

| Category | Highest 7-DADMax |
|---|---|
| Salmonid Spawning, Rearing, and Migration* | 17.5°C (63.5°F) |
| Salmonid Rearing and Migration **Only** | 17.5°C (63.5°F) |
| Nonanadromous Interior Redband Trout | 18°C (64.4°F) |
| Indigenous Warm Water Species | 20°C (68°F) |

*Note: Some streams have a more stringent temperature criterion that is applied seasonally to further protect salmonid spawning and egg incubation. See (c)(iv) of this subsection.

(i) When a water body's temperature is warmer than the criteria in Table 200 (1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).

(ii) When the background condition of the water is cooler than the criteria in Table 200 (1)(c), incremental temperature increases resulting from individual point source activities must not exceed the numeric criteria and must not, at any time, exceed 28/(T+7) as measured at the edge of a mixing zone boundary (where "T" represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge).

(iii) Temperatures are not to exceed the criteria at a probability frequency of more than once every 10 years on average.

(iv) Spawning and incubation protection. The department has identified waterbodies, or portions thereof, which require special protection for spawning and incubation in ecology publication 06-10-038 (also available on ecology's website at www.ecology.wa.gov). This publication indicates where and when the following criteria are to be applied to protect the reproduction of native char, salmon, and trout:

• Maximum 7-DADMax temperatures of 9°C (48.2°F) at the initiation of spawning and at fry emergence for char; and

• Maximum 7-DADMax temperatures of 13°C (55.4°F) at the initiation of spawning for salmon and at fry emergence for salmon and trout.

The two criteria above are protective of incubation as long as human actions do not significantly disrupt the normal patterns of fall cooling and spring warming that provide significantly colder temperatures over the majority of the incubation period.

(v) For lakes, human actions considered cumulatively may not increase the 7-DADMax temperature more than 0.3°C (0.54°F) above natural conditions.

(vi) Temperature measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should:

(A) Be taken from well mixed portions of rivers and streams; and

(B) Not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(vii) The department will incorporate the following guidelines on preventing acute lethality and barriers to migration of salmonids into determinations of compliance with the narrative requirements for use protection established in this chapter (e.g., WAC 173-201A-310(1), 173-201A-400(4), and 173-201A-410 (1)(c)). The following site-level considerations do not, however, override the temperature criteria es-

tablished for waters in subsection (1)(c) of this section or WAC 173-201A-600 through 173-201A-602:

(A) Moderately acclimated (16-20°C, or 60.8-68°F) adult and juvenile salmonids will generally be protected from acute lethality by discrete human actions maintaining the 7-DADMax temperature at or below 22°C (71.6°F) and the 1-day maximum (1-DMax) temperature at or below 23°C (73.4°F).

(B) Lethality to developing fish embryos can be expected to occur at a 1-DMax temperature greater than 17.5°C (63.5°F).

(C) To protect aquatic organisms, discharge plume temperatures must be maintained such that fish could not be entrained (based on plume time of travel) for more than two seconds at temperatures above 33°C (91.4°F) to avoid creating areas that will cause near instantaneous lethality.

(D) Barriers to adult salmonid migration are assumed to exist any time the 1-DMax temperature is greater than 22°C (71.6°F) and the adjacent downstream water temperatures are 3°C (5.4°F) or more cooler.

(viii) Nothing in this chapter shall be interpreted to prohibit the establishment of effluent limitations for the control of the thermal component of any discharge in accordance with 33 U.S.C. 1326 (commonly known as section 316 of the Clean Water Act).

(d) **Aquatic life dissolved oxygen (D.O.) criteria.** The D.O. criteria are measured in milligrams per liter (mg/L) or percent oxygen saturation. Table 200 (1)(d) lists the D.O. criteria for each of the aquatic life use categories. Compliance may be demonstrated through either the water column or intragravel criteria in Table 200 (1)(d).

**Table 200 (1)(d)**
**Aquatic Life Dissolved Oxygen Criteria in Fresh Water**

| Category | Water Column (1-Day Minimum) |
|---|---|
| Char Spawning and Rearing* | 10 mg/L or 90% saturation |
| Core Summer Salmonid Habitat* | 10 mg/L or 95% saturation |
| Salmonid Spawning, Rearing, and Migration* | 10 mg/L or 90% saturation |
| Salmonid Rearing and Migration **Only** | 6.5 mg/L |
| Nonanadromous Interior Redband Trout* | 10 mg/L or 90% saturation |
| Indigenous Warm Water Species | 6.5 mg/L |

* Intragravel D.O. criteria for these aquatic life use categories may be used for compliance purposes. When intragravel D.O. is used for compliance, the intragravel D.O. (1-day minimum) concentration must be 8.0 mg/L or greater, and the D.O. water column (1-day minimum) concentration must be 9.0 mg/L or greater. Intragravel D.O. must be measured as a spatial median within the same habitat area.

(i) When a water body's D.O. is lower than the criteria in Table 200 (1)(d) (or within 0.2 mg/L of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.

(ii) For lakes, human actions considered cumulatively may not decrease the dissolved oxygen concentration more than 0.2 mg/L below natural conditions.

(iii) Concentrations of D.O. are not to fall below the criteria in the table at a probability frequency of more than once every 10 years on average.

(iv) D.O. measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should:

(A) Be taken from well mixed portions of rivers and streams; and

(B) Not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.

(e) **Aquatic life turbidity criteria.** Turbidity is measured in "nephelometric turbidity units" or "NTUs." Table 200 (1)(e) lists the maximum turbidity criteria for each of the aquatic life use categories.

**Table 200 (1)(e)**
**Aquatic Life Turbidity Criteria in Fresh Water**

| Category | NTUs |
|---|---|
| Char Spawning and Rearing | Turbidity shall not exceed:<br>• 5 NTU over background when the background is 50 NTU or less; or<br>• A 10 percent increase in turbidity when the background turbidity is more than 50 NTU. |
| Core Summer Salmonid Habitat | Same as above. |
| Salmonid Spawning, Rearing, and Migration | Same as above. |
| Salmonid Rearing and Migration **Only** | Turbidity shall not exceed:<br>• 10 NTU over background when the background is 50 NTU or less; or<br>• A 20 percent increase in turbidity when the background turbidity is more than 50 NTU. |
| Nonanadromous Interior Redband Trout | Turbidity shall not exceed:<br>• 5 NTU over background when the background is 50 NTU or less; or<br>• A 10 percent increase in turbidity when the background turbidity is more than 50 NTU. |
| Indigenous Warm Water Species | Turbidity shall not exceed:<br>• 10 NTU over background when the background is 50 NTU or less; or<br>• A 20 percent increase in turbidity when the background turbidity is more than 50 NTU. |

The turbidity criteria established under WAC 173-201A-200 (1)(e) shall be modified, without specific written authorization from the department, to allow a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. This temporary area of mixing is subject to the constraints of WAC 173-201A-400 (4) and (6) and can occur only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices to avoid or minimize disturbance of in-place sediments and exceedances of the turbidity criteria. A temporary area of mixing shall be as follows:

(i) For waters up to 10 cfs flow at the time of construction, the point of compliance shall be 100 feet downstream from the activity causing the turbidity exceedance.

(ii) For waters above 10 cfs up to 100 cfs flow at the time of construction, the point of compliance shall be 200 feet downstream of the activity causing the turbidity exceedance.

(iii) For waters above 100 cfs flow at the time of construction, the point of compliance shall be 300 feet downstream of the activity causing the turbidity exceedance.

(iv) For projects working within or along lakes, ponds, wetlands, or other nonflowing waters, the point of compliance shall be at a radius of 150 feet from the activity causing the turbidity exceedance.

(f) **Aquatic life total dissolved gas (TDG) criteria.** TDG is measured in percent saturation. Table 200 (1)(f) lists the maximum TDG criteria for each of the aquatic life use categories.

**Table 200 (1)(f)**
**Aquatic Life Total Dissolved Gas Criteria in Fresh Water**

| Category | Percent Saturation |
|---|---|
| Char Spawning and Rearing | Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection. |
| Core Summer Salmonid Habitat | Same as above. |
| Salmonid Spawning, Rearing, and Migration | Same as above. |
| Salmonid Rearing and Migration **Only** | Same as above. |
| Nonanadromous Interior Redband Trout | Same as above. |
| Indigenous Warm Water Species | Same as above. |

(i) The water quality criteria established in this chapter for TDG shall not apply when the stream flow exceeds the seven-day, 10-year frequency flood.

(ii) The TDG criteria may be adjusted to aid fish passage over hydroelectric dams that spill for anadromous juvenile fish as of the 2020 spill season. The elevated TDG levels are intended to allow increased fish passage without causing more harm to fish populations than caused by turbine fish passage. The following special fish passage exemptions for the Snake and Columbia rivers apply when spilling water at dams is necessary to aid fish passage:

(A) TDG must not exceed:

• An average of 115 percent as measured in the forebays of the next downstream dams and must not exceed an average of 120 percent as measured in the tailraces of each dam (these averages are calculated as an average of the 12 highest hourly readings in a calendar day, relative to atmospheric pressure); and

• A maximum TDG saturation level of 125 percent calculated as an average of the two highest hourly TDG measures in a calendar day during spillage for fish passage.

(B) To further aid fish passage during the spring spill season (generally from April through June), spill may be increased up to the following levels as measured at the tailrace fixed site monitoring location:

• A maximum TDG saturation level of 125 percent calculated as an average of the 12 highest hourly TDG measures in a calendar day; and

• A maximum TDG saturation level of 126 percent calculated as an average of any two consecutive hourly TDG measures.

These TDG criteria may be applied in place of (f)(ii)(A) of this subsection during spring spill operations when applied in accordance with the following conditions:

(I) In addition to complying with the requirements of this chapter, the tailrace maximum TDG criteria at hydropower dams shall be applied in accordance with Endangered Species Act consultation documents associated with spill operations on the Snake and Columbia rivers, including operations for fish passage. The Endangered Species Act consultation documents are those by which dams may legally operate during the time that the adjusted criteria in (f)(ii)(B) of this subsection are in use.

(II) Application of the tailrace maximum TDG criteria must be accompanied by a department approved biological monitoring plan designed to measure impacts of fish exposed to increased TDG conditions throughout the spring spill season. Beginning in the year 2021, plans must include monitoring for nonsalmonid fish species and must continue for a minimum of five years, and thereafter as determined by the department.

(III) TDG must be reduced to allowances specified in (f)(ii)(A) of this subsection if the calculated incidence of gas bubble trauma in salmonids (with a minimum sample size of 50 fish required weekly) or nonsalmonids (with a minimum sample size of 50 fish required weekly) exceeds:

• Gas bubble trauma in nonpaired fins of 15 percent; or

• Gas bubble trauma in nonpaired fins of five percent and gas bubbles occlude more than 25 percent of the surface area of the fin.

If gas bubble trauma exceeds these biological thresholds, additional monitoring must demonstrate the incidence of gas bubble trauma below biological thresholds before TDG can be adjusted to allowances specified in this subsection. Gas bubble trauma monitoring data shall be excluded from comparison to biological thresholds when higher than normal river flow contributes to excess spill above the ability to meet (f)(ii)(B) of this subsection. This monitoring data exclusion shall apply for one full calendar day after reduced river flow allows attainment of (f)(ii)(B) of this subsection.

(g) **Aquatic life pH criteria.** Measurement of pH is expressed as the negative logarithm of the hydrogen ion concentration. Table 200 (1)(g) lists the pH levels for each of the aquatic life use categories.

**Table 200 (1)(g)**

**Aquatic Life pH Criteria in Fresh Water**

| Use Category | pH Units |
|---|---|
| Char Spawning and Rearing | pH shall be within the range of 6.5 to 8.5, with a human-caused variation within the above range of less than 0.2 units. |
| Core Summer Salmonid Habitat | Same as above. |
| Salmonid Spawning, Rearing, and Migration | pH shall be within the range of 6.5 to 8.5 with a human-caused variation within the above range of less than 0.5 units. |
| Salmonid Rearing and Migration **Only** | Same as above. |
| Nonanadromous Interior Redband Trout | Same as above. |
| Indigenous Warm Water Species | Same as above. |

(h) **Aquatic life fine sediment criteria.** The following narrative criteria apply to all existing and designated uses for fresh water:

(i) Water bodies shall not contain excess fine sediment (<2 mm) from human-caused sources that impair designated uses.

(ii) When reference values are used to demonstrate compliance with the fine sediment criteria, measured conditions shall be compared to those from reference sites or regional data that represent least disturbed site conditions of a comparable water body or ecoregion. Reference locations should be comparable in hydrography, geology, ecology, and habitat to that of the water body evaluated.

(2) **Recreational uses.** The recreational use is primary contact recreation.

(a) **General criteria.** General criteria that apply to fresh water recreational uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(i) Toxic, radioactive, and deleterious materials; and

(ii) Aesthetic values.

(b) **Water contact recreation bacteria criteria.** Table 200 (2)(b) lists the bacteria criteria to protect water contact recreation in fresh waters. These criteria are based on *Escherichia coli* (*E. coli*) and fecal coliform organism levels, and expressed as colony forming units (CFU) or most probable number (MPN). The use of fecal coliform organism levels to determine compliance will expire December 31, 2020.

**Table 200 (2)(b)**
**Primary Contact Recreation Bacteria Criteria in Fresh Water**

| Bacterial Indicator | Criteria |
|---|---|
| *E. coli* | *E. coli* organism levels within an averaging period must not exceed a geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than 10 sample points exist) obtained within the averaging period exceeding 320 CFU or MPN per 100 mL. |

| Bacterial Indicator | Criteria |
|---|---|
| Fecal coliform (expires 12/31/2020) | Fecal coliform organism levels within an averaging period must not exceed a geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than 10 sample points exist) obtained within an averaging period exceeding 200 CFU or MPN per 100 mL. |

(i) A minimum of three samples is required to calculate a geometric mean for comparison to the geometric mean criteria. Sample collection dates shall be well distributed throughout the averaging period so as not to mask noncompliance periods.

(A) Effluent bacteria samples: When averaging effluent bacteria sample values for comparison to the geometric mean criteria, or for determining permit compliance, the averaging period shall be 30 days or less.

(B) Ambient water quality samples: When averaging bacteria sample values for comparison to the geometric mean criteria, it is preferable to average by season. The averaging period of bacteria sample data shall be 90 days or less.

(ii) When determining compliance with the bacteria criteria in or around small sensitive areas, such as swimming beaches, it is recommended that multiple samples are taken throughout the area during each visit. Such multiple samples should be arithmetically averaged together (to reduce concerns with low bias when the data is later used in calculating a geometric mean) to reduce sample variability and to create a single representative data point.

(iii) As determined necessary by the department, more stringent bacteria criteria may be established for rivers and streams that cause, or significantly contribute to, the decertification or conditional certification of commercial or recreational shellfish harvest areas, even when the preassigned bacteria criteria for the river or stream are being met.

(iv) Where information suggests that sample results are due primarily to sources other than warm-blooded animals (e.g., wood waste), alternative indicator criteria may be established on a site-specific basis as described in WAC 173-201A-430.

(3) **Water supply uses.** The water supply uses are domestic, agricultural, industrial, and stock watering.

**General criteria.** General criteria that apply to the water supply uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(a) Toxic, radioactive, and deleterious materials; and

(b) Aesthetic values.

(4) **Miscellaneous uses.** The miscellaneous fresh water uses are wildlife habitat, harvesting, commerce and navigation, boating, and aesthetics.

**General criteria.** General criteria that apply to miscellaneous fresh water uses are described in WAC 173-201A-260 (2)(a) and (b), and are for:

(a) Toxic, radioactive, and deleterious materials; and

(b) Aesthetic values.

[Statutory Authority: RCW 90.48.035 and 40 C.F.R. 131.20. WSR 22-07-095 (Order 19-05), § 173-201A-200, filed 3/22/22, effective 4/22/22; WSR 20-02-091 (Order 19-02), § 173-201A-200, filed 12/30/19, effective 1/30/20; WSR 19-04-007 (Order 16-07), § 173-201A-200, filed 1/23/19, effective 2/23/19. Statutory Authority: RCW 90.48.035. WSR 11-09-090 (Order 10-10), § 173-201A-200, filed 4/20/11, effective 5/21/11; WSR 06-23-117 (Order 06-04), § 173-201A-200, filed 11/20/06, effective 12/21/06. Statutory Authority: Chapters 90.48 and 90.54 RCW. WSR 03-14-129 (Order 02-14), § 173-201A-200, filed 7/1/03, effective 8/1/03.]